Terry O. Brown P.E.

<u>Kmart Site Redevelopment Project</u> (Indian School Rd. / Carlisle Blvd.)

Traffic Impact Study

July 02, 2019

DRAFT

Presented to:

City of Albuquerque Transportation Development Section

NM Dept. of Transportation District 3

Prepared for:

Angela Williamson Modulus Architects 100 Sun Ave. NE #305 Albuquerque, NM 87109



Terry O. Brown P.E. P.O. Box 92051 Albuquerque, NM 87199 505 883 8807

Terry & 1

Kmart Site Redevelopment Project (Indian School Rd. / Carlisle Blvd.) Traffic Impact Study

Executive Summary

The purpose of this study is to evaluate the transportation conditions before and after implementation of the proposed Kmart Site Redevelopment Project, determine the impact of the development on the adjacent transportation system and recommend mitigation measures where necessary. This study is prepared to meet the requirements of the City of Albuquerque Transportation Development Section, Planning Department and the New Mexico Department of Transportation (NMDOT), District 3 Office associated with their review of this project.

The proposed development is located at the northeast corner of Indian School Rd. / Carlisle Blvd. The study area includes the intersections of Indian School Rd. / Girard Ct., I-40 N. Ramp / Carlisle Blvd., I-40 S. Ramp / Carlisle Blvd., Indian School Rd. / Carlisle Blvd., Indian School Rd. / Washington St., Constitution Ave. / Carlisle Blvd., I-40 S. Ramp / San Mateo Blvd., I-40 N. Ramp / San Mateo Blvd. and three existing driveways for the project.

The proposed project is to be developed as a 50,000 S.F. supermarket, a 2,200 S.F. fast-food restaurant w/ drive-thru window and a 67,710 S.F. retail commercial uses. The anticipated implementation year for this site is the year 2021 and the horizon year is 2031. According to the Institute of Traffic Engineers' (ITE) trip generation rates (10th Edition), the weekday AM Peak Hour period is projected to be approximately 275 entering trips and 190 exiting trips. During the weekday PM Peak Hour period, it is anticipated that it will generate approximately 352 new entering trips and new 355 exiting trips. A PM pass-by trip rate of 25% was applied to this project.

The old Kmart site was accessed via the following driveways:

- 1) Main Driveway on Carlisle (Driveway "A") a full access unsignalized driveway.
- 2) Secondary Driveway on Carlisle (Driveway "B") a right-in, right-out driveway north of Indian School Rd. and south of Driveway "A"
- 3) Main Driveway on Indian School Rd. (Driveway "C") a full access unsignalized driveway.
- 4) Burger King exit only driveway an unsignalized right turn exit only driveway located on the north side of the existing Burger King fast food restaurant just north of Driveway "A". The Burger King exit only driveway will not be allowed by the New Mexico Department of Transportation and, therefore, will be closed. Burger King drive-thru traffic will exit directly into the new Kmart Redevelopment Site parking lot.

The new development will be accessed via three existing driveways (Driveways "A", "B", and "C"). (See the Appendix, Pg. A-3 for more details.) The proposed driveways will likely need to be reconstructed to bring them up to current design standards for commercial driveways as well as handicap access standards. The first driveway on Carlisle Blvd. (Driveway "A") is the unsignalized full access drive located approximately 515 feet north of Indian School Rd. (centerline to centerline). The second driveway on Carlisle Blvd. (Driveway "B") is the a right-in / right-out, unsignalized driveway located approximately 210 feet north of Indian School Rd. (centerline to centerline). The third driveway on Indian School Rd. is the unsignalized full access driveway (Driveway "C") located approximately 350 feet east of Carlisle Blvd. (centerline to centerline). Additionally, there is a new service vehicle / delivery vehicle driveway on Indian School Rd. at the extreme southeast corner of the site which will be restricted to westbound right turn in only movements. This driveway is called the Service Driveway and has no other designation in this report. Being a right-in only driveway, there will be no analysis in this Study. The right turn in volumes at this driveway are expected to be minimal.

Analysis results by analysis year are included in the following table:

Executive Summary Resutts Table

			2021 Co	nditions	2031 Co	nditions
Intersection No. / Name	Signalization	Case	AM Peak	PM Peak	AM Peak	PM Peak
1 Indian Cabaal Dd. / Circuid Ct	Cianalizad	NO BUILD	A - 9.9	A - 5.5	B - 10.3	A - 5.2
1 - Indian School Rd. / Girard Ct.	Signalized	BUILD	A - 9.9	A - 5.5	B - 10.3	A - 5.3
		NO BUILD	C - 23.5	C - 23.3	C - 26.0	C - 27.1
2 - I-40 N. Ramp / Carlisle Blvd.	Signalized	BUILD	C - 23.5	C - 23.5	C - 26.0	C - 27.7
		MIT.	C - 22.3	C - 21.9	C - 23.9	C - 25.0
3 - I-40 S. Ramp / Carlisle Blvd.	Signalized	NO BUILD	B - 18.1	B - 16.9	C - 20.7	C - 23.8
3 - 1-40 S. Ramp / Canisie bivu.	Signalized	BUILD	B - 17.5	C - 20.8	C - 20.2	C - 26.9
		NO BUILD	C - 30.7	D - 35.4	D - 44.9	E - 65.0
4 - Indian School Rd. / Carlisle Blvd.	Signalized	BUILD	C - 28.4	D - 39.1	D - 43.2	F - 80.7
		MIT.	C - 24.2	C - 31.1	D - 35.9	E - 58.6
5 - Indian School Rd. / Washington St.	Signalized	NO BUILD	C - 24.2	C - 30.1	C - 23.5	C - 32.5
5 - Indian School Rd. / Washington St.	Signalized	BUILD	C - 24.1	C - 30.3	C - 23.3	C - 33.2
6 - Constitution Ave. / Carliele Blvd.	Signalized	NO BUILD	B - 12.6	B - 16.4	B - 13.3	B - 17.3
0 - Constitution Ave. / Carriele biva.	Signalized	BUILD	B - 12.2	B - 15.8	B - 12.9	B - 17.0
		NO BUILD	C - 34.6	D - 43.4	E - 63.9	D - 49.1
7 - I-40 S. Ramp / San Mateo Blvd.	Signalized	BUILD	C - 34.5	D - 43.3	E - 63.5	D - 48.9
		MIT.	C - 28.5	C - 27.0	D - 48.4	C - 31.0
		NO BUILD	C - 26.0	C - 32.3	D - 43.3	D - 38.8
8 - I-40 N. Ramp / San Mateo Blvd.	Signalized	BUILD	C - 25.7	C - 32.3	D - 42.8	D - 38.8
		MIT.	C - 22.5	C - 23.0	D - 35.5	C - 31.0
9 - Driveway "A" / Carlisle Blvd.	Unsignalized	NO BUILD	N/A	N/A	N/A	N/A
9 - Driveway A / Carisie bivu.	Unsignalized	BUILD	C - 19.7	D - 27.7	C - 23.7	F - 53.5
10. Driveway "B" / Carlisle Blvd.	Unsignalized	NO BUILD	N/A	N/A	N/A	N/A
10. Driveway B / Carlisie bivu.	Unsignalized	BUILD	B - 10.9	B - 12.9	B - 11.9	C - 15.3
11. Indian School Rd. / Driveway "C"	Unsignalized	NO BUILD	N/A	N/A	N/A	N/A
11. Iliulati School Nu. / Driveway C	Orisignalized	BUILD	B - 14.0	C - 24.5	B - 13.4	D - 26.1

Even though the above table generally reports acceptable intersection levels-of-service and delays for all cases associated with the 2021 Implementation Year Conditions, there are some individual turning movements that experience longer delays than desirable. Those include the westbound right turn movement at the I-40 North Ramp / Carlisle Blvd. during the AM and PM Peak Hour, the eastbound left turn movement and the westbound right turn movement at Indian School Rd. / Carlisle Blvd. during the AM and PM Peak Hour, the eastbound right turn movement and the southbound left turn movement at the intersection of the I-40 South Ramp / San Mateo Blvd., and the westbound right turn movement at the I-40 North Ramp / San Mateo Blvd. during the AM and PM Peak Hour periods. Most all of those specific turning movements are already stressed for the implementation year NO BUILD conditions.

In summary, the proposed development does have a minor adverse impact to the intersections of the I-40 N. Ramp / Carlisle Blvd, the I-40 S. Ramp / San Mateo Blvd., and the I-40 N. Ramp /

San Mateo Blvd., and a moderately significant impact to the intersection of Indian School Rd. / Carlisle Blvd. The minimal to moderate impact to the transportation system can be mitigated by the recommended measures described in this Study. In summary, the recommendations of this study are:

Recommendations:

- I-40 North Ramp / Carlisle Blvd. Re-stripe the westbound ramp to re-designate the existing center lane from a thru / left turn lane to a thru / left / right turn lane. This project does not contribute any traffic to the westbound right turn movement.
- Indian School Rd. / Carlisle Blvd. Construct a new westbound right turn lane on Indian School Rd. at Carlisle Blvd. The length of the new westbound right turn lane will be restricted due to an existing major steel transmission line pole. It is estimated that the westbound right turn lane can be constructed to a length of approximately 100 feet plus transition.
- I-40 South Ramp / San Mateo Blvd. The volumes of traffic generated by the proposed Kmart Redevelopment project through the I-40 / San Mateo ramps are very minor. Thus, the impact to the interchange ramps is insignificant. The analysis of the I-40 South Ramp / San Mateo Blvd. does reveal a couple of stressed turning movements for both the AM Peak Hour and the PM Peak Hour. The eastbound right turn movement shows long delays during the AM Peak Hour and the southbound left turn movement shows long delays during the PM Peak Hour. The long delays for these turning movements exist for both the NO BUILD as well as the BUILD conditions since this proposed project does not contribute traffic to either of the two turning movements. Also, the overall intersection levels-of-service and associated delays seem to indicate that the issue can be remedied by modifying the traffic signal timing splits at the intersection for both the AM and PM Peak Hour periods. However, this Study cannot make that recommendation conclusively since this analysis is limited and does not evaluate the San Mateo Blvd. signalized coordinated corridor. The signal timing sheets for this intersection furnished by the City of Albuquerque indicate that the signal timing has not been adjusted for about eight years. Based on the results of this analysis and the fact that the signal timing has not been adjusted for about eight years, this Study recommends that the City of Albuquerque and / or the New Mexico Department of Transportation revisit the signal timing for this portion of the San Mateo Blvd. corridor. It appears from this analysis that the levels-of-service / delays / queueing issues at the I-40 S. Ramp / San Mateo Blvd. may be resolved with modifications to the signal timing / coordination plan that currently exists.
- I-40 North Ramp / San Mateo Blvd. The volumes of traffic generated by the proposed Kmart Redevelopment project through the I-40 / San Mateo ramps are very minor. Thus, the impact to the interchange ramps is insignificant. The analysis of the I-40 North

Ramp / San Mateo Blvd. does reveal a stressed turning movement for both the AM Peak Hour and the PM Peak Hour. The westbound right turn movement shows long delays during the AM and the PM Peak Hour periods. The long delays for these turning movements exist for both the NO BUILD as well as the BUILD conditions and this proposed project does not contribute traffic to that turning movement. Also, the overall intersection levels-of-service and associated delays seem to indicate that the issue can be remedied by modifying the traffic signal timing splits at the intersection for both the AM and PM Peak Hour periods. However, this Study cannot make that recommendation conclusively since this analysis is limited and does not evaluate the San Mateo Blvd. signalized coordinated corridor. The signal timing sheets for this intersection furnished by the City of Albuquerque indicate that the signal timing has not been adjusted for about eight years. Based on the results of this analysis and the fact that the signal timing has not been adjusted for about eight years, this Study recommends that the City of Albuquerque and / or the New Mexico Department of Transportation revisit the signal timing for this portion of the San Mateo Blvd. corridor. It appears from this analysis that the levels-of-service / delays / queueing issues at the I-40 N. Ramp / San Mateo Blvd. may be resolved with modifications to the signal timing / coordination plan that currently exists.

- Access Access to the proposed Kmart Redevelopment Project should be via three unsignalized driveways plus a service driveway at the extreme southeast corner of the site. The main driveway on Carlisle Blvd. (Driveway "A") is proposed as an unsignalized full access driveway located approximately 510 feet north of Indian School Rd. (centerline to centerline). The southern driveway on Carlisle Blvd. (Driveway "B") is proposed to be a right-in, right-out only access unsignalized driveway located approximately 210 feet north of Indian School Rd. (centerline to centerline). The main driveway on Indian School Rd. is proposed as an unsignalized full access driveway (Driveway "C") located approximately 350 feet east of Carlisle Blvd. (centerline to centerline).
- Driveway "A" on Carlisle Blvd. shall be designed and constructed with two exiting and one entering lane minimum. The throat depth for Driveway "A" should be a minimum of 150 feet deep. Driveway "B" on Carlisle Blvd. shall be designed and constructed with one exiting and one entering lane minimum. The throat depth for Driveway "B" should be a minimum of 30 feet. Driveway "C" on Indian School Rd. shall be designed and constructed with one exiting and one entering lane minimum. The throat depth for the southbound lane of Driveway "C" should be a minimum of 75 feet.
- All driveways for this development shall be constructed utilizing 30 feet curb return radii or larger if required to accommodate the design delivery vehicles.
- All proposed driveways associated with this project are subject to being reconstructed to bring them to current standards for retail commercial driveways and for handicap access.

y 02, 2019	Kmart Site Redevelopment Project (Indian School Rd. / Carlisle Blvd.)	Page vi
	stances at intersections and driveways to the extent feasible.	·
• All de	sign and construction associated with this development shall maintain	adequate

Kmart Site Redevelopment Project (Indian School Rd. / Carlisle Blvd.) Traffic Impact Study

Contents

Executive Summary	i
Recommendations:	iv
Introduction	1
Description of Proposed Development	2
Study Area Conditions	3
Analysis of Existing Conditions	5
Data Collection (Turning Movements Volumes)	6
Analysis of Implementation Year Conditions	6
Traffic Projections	6
Traffic Analysis – Implementation Year (2021)	11
Analysis of Horizon Year Conditions	23
Traffic Analysis – Horizon Year (2031)	23
Impact Assessment	44
Access Design Specifications	44
Summary of Deficiencies, Anticipated Impacts, and Recommendations	44
APPENDIX	47

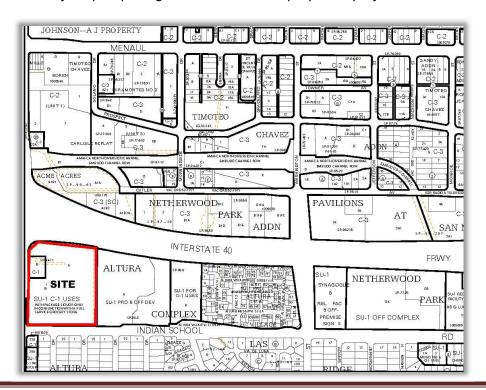
Kmart Site Redevelopment Project (Indian School Rd. / Carlisle Blvd.) Traffic Impact Study

Introduction

The purpose of this study is to evaluate the transportation conditions before and after implementation of the proposed Kmart Site Redevelopment Project and determine the impact of the development on the adjacent transportation system. The recommendations of this study will provide measures to mitigate the impact of the development of the site plan on critical intersections and street segments. This study is prepared to meet the requirements of the City of Albuquerque Transportation Development Section, Planning Department and the New Mexico Department of Transportation, District 3 associated with their review of the Kmart Site Redevelopment Project as shown on the plan on Page A-3 in the Appendix of this report.

The proposed development is located at the northeast corner of Indian School Rd. / Carlisle Blvd. in Albuquerque, New Mexico. If the property was to develop in a manner significantly different than the proposed plan considered in this report such that the number of generated trips is significantly greater, then an update to this study may be required by the City of Albuquerque Transportation Dev. Section, Planning Dept.

Following is a vicinity map depicting the location of the proposed project:



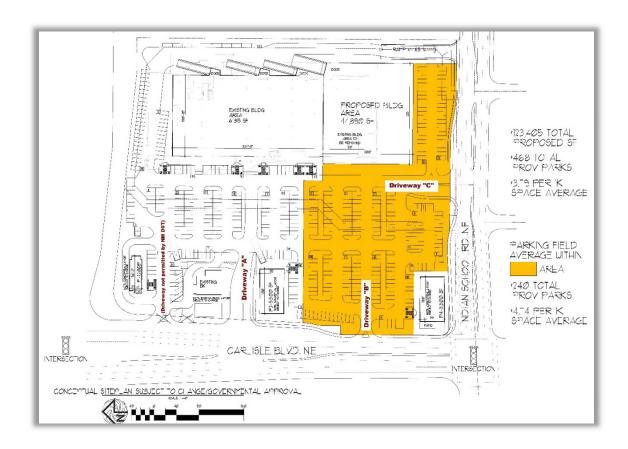
Description of Proposed Development

The proposed project is described as a 50,000 S.F. supermarket, a 2,200 S.F. fast-food restaurant w/ drive-thru window and a 67,710 S.F. shopping center, at the northeast corner of Indian School Rd. / Carlisle Blvd. The project lies in the city limits of Albuquerque, NM. The project will be required to comply with the requirements of the City of Albuquerque with regard to the overall development. The required Traffic Impact Study includes the analysis of two ramps on Carlisle Blvd. and two ramps on San Mateo Blvd. at Interstate 40 which are maintained by the New Mexico Department of Transportation. Therefore, the project will be required to comply with the requirements of the City of Albuquerque with regard to the overall development and local roadways, and with the requirements of the New Mexico Department of Transportation with regard to transportation issues along the Interstate.

It is assumed in this Study that the development will be constructed in one phase. This study will analyze an implementation year of 2021 and a horizon year of 2031.

The development will be accessed via three existing driveways for this parcel of land, two on Carlisle Blvd and one on Indian School Rd. See the Appendix, Pg. A-3 for more details. The first driveway on Carlisle Blvd. (Driveway "A") is an unsignalized full access drive located approximately 515 feet north of Indian School Rd. (centerline to centerline). The second driveway on Carlisle Blvd. (Driveway "B") is proposed to be a right-in / right-out, unsignalized driveway located approximately 210 feet north of Indian School Rd. (centerline to centerline). The proposed driveway on Indian School Rd. is an existing, unsignalized full access driveway (Driveway "C") located approximately 350 feet east of Carlisle Blvd. (centerline to centerline). There is also a service driveway proposed at the extreme southeast corner of the project site. The service driveway will be restricted to service vehicles and delivery trucks and will be designated as a right-turn-in only driveway. Therefore, no Highway Capacity Manual level-of-service analysis will be provided. Design and re-construction of the three driveways will be required to meet the requirements of the City of Albuquerque.

Following is the proposed site development plan depicting driveway (access) locations (also, see Appendix Page A-3 for a more complete version of the proposed site development plan):



Study Area Conditions

A Traffic Impact Study Scoping Meeting was held on May 13, 2019 with the City of Albuquerque Transportation Development Section, Planning Dept. with staff (Ernest Armijo) and with the New Mexico Department of Transportation, District 3 Office staff (Nancy Perea). During the meeting, it was determined that the study area would include the following list of intersections to be analyzed in the Traffic Impact Study:

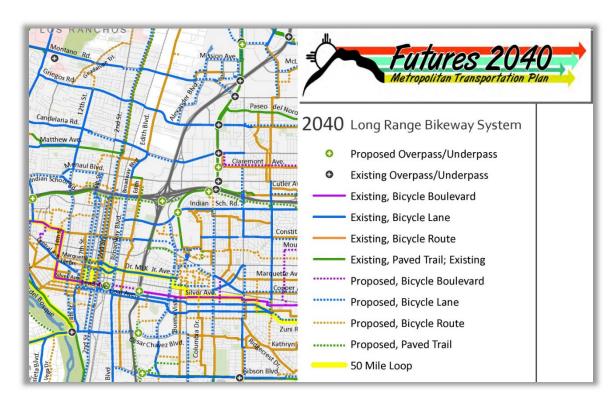
- 1. Indian School Rd. / Girard Ct.
- 2. I-40 N. Ramp / Carlisle Blvd.
- 3. I-40 S. Ramp / Carlisle Blvd.
- 4. Indian School Rd. / Carlisle Blvd.
- 5. Indian School Rd. / Washington St.
- 6. Constitution Ave. / Carlisle Blvd.
- 7. I-40 S. Ramp / San Mateo Blvd.
- 8. I-40 N. Ramp / San Mateo Blvd.
- 9. Driveway "A" / Carlisle Blvd. (full access unsignalized)
- 10. Driveway "B" / Carlisle Blvd. (right-in, right-out only unsignalized)
- 11. Indian School Rd. / Driveway "C" (full access unsignalized)

This scope of study was based on the assumption that the parcel in question would be developed as a 50,000 S.F. supermarket, a 2,200 S.F. fast-food restaurant w/ drive-thru window and a 67,710 S.F. shopping center as shown on the proposed site plan. The Scoping Letter furnished by the City of Albuquerque is on Page A-225 thru A-227 in the Appendix of this Study.

There are no other known land development projects in the area which need to be incorporated into the background traffic model for this study. Existing Burger King trips were calculated and added to the volumes at Driveway "A". There are no known Transportation Improvement Program projects in the area that need to be considered in the Traffic Impact Study.

This project is served by public transit services in the area; specifically Routes #5, 6 and 12. These routes run along Indian School Rd. from downtown ABQ to Tramway. See Appendix page A-224 for Transit Bus Route Maps.

There are designated routes in the project area on the Futures 2040 Metropolitan Transportation Plan (2040 Long Range Bikeway System) as shown on the following portion of the map.



There are pedestrian facilities in the project area – curb and gutter and sidewalks along the roads, as well as raised medians for pedestrians and bicyclists crossing against traffic. Also, the signalized intersections in the area are equipped with pedestrian pushbuttons and the intersections are striped with pedestrian crossing pavement markings.

Carlisle Blvd. and Indian School Rd. are classified as Minor Arterial Roadways on the Mid-Region Council of Government's Futures 2040 Long Range Roadway System Map. They are generally four-lane urban-type roadways with curb and gutter and sidewalks and some raised medians, especially near major intersections and driveways. The posted speed limit along Carlisle Blvd. is 35 MPH and 40 MPH along Indian School Rd.

San Mateo Blvd. is classified as Community Principal Arterial Roadway on the Mid-Region Council of Government's Futures 2040 Long Range Roadway System Map. It is generally a six-lane roadway with curb and gutter and sidewalks in the vicinity of the study area. The posted speed limit along this section of San Mateo Blvd. is 40 MPH.

Constitution Ave., Girard Ct. and Washington St. are classified as Major Collector Roadways on the Mid-Region Council of Government's Futures 2040 Long Range Roadway System Map. They are generally two-lane urban-type roadways with curb and gutter and sidewalks. The posted speed limit along these roadways is 30 MPH.

Analysis of Existing Conditions

Existing traffic volumes (turning movement counts) were collected at the intersections targeted for analysis in this study in May 2019 and are included on Appendix Pages A-216 thru A-223. Additionally, the Synchro 10 analysis for the intersections studied are included on Appendix Pages A-99 thru A-115. A summary of the results of the analysis of existing (2019) conditions is in the following table:

			2019 Co	nditions
Intersection No. / Name	Signalization	Case	AM Peak	PM Peak
1 - Indian School Rd. / Girard Ct.	Signalized	Existing	A - 9.8	A - 5.6
2 - I-40 N. Ramp / Carlisle Blvd.	Signalized	Existing	C - 23.0	C - 22.8
3 - I-40 S. Ramp / Carlisle Blvd.	Signalized	Existing	B - 17.7	B - 16.7
4 - Indian School Rd. / Carlisle Blvd.	Signalized	Existing	C - 28.5	D - 36.1
5 - Indian School Rd. / Washington St.	Signalized	Existing	C - 24.1	C - 29.8
6 - Constitution Ave. / Carliele Blvd.	Signalized	Existing	B - 12.5	B - 16.2
7 - I-40 S. Ramp / San Mateo Blvd.	Signalized	Existing	C - 31.4	D - 42.4
8 - I-40 N. Ramp / San Mateo Blvd.	Signalized	Existing	C - 23.9	C - 28.0
9 - Driveway "A" / Carlisle Blvd.	Unsignalized	Existing	N/A	N/A
10. Driveway "B" / Carlisle Blvd.	Unsignalized	Existing	N/A	N/A
11. Indian School Rd. / Driveway "C"	Unsignalized	Existing	N/A	N/A

Note that even though the results of the above table appear acceptable, there are individual turning movements that report LOS "E" or LOS "F".

Data Collection (Turning Movements Volumes)

As required by the New Mexico Department of Transportation, traffic counts (i.e., AM and PM Peak Hour Turning Movements Volumes) for signalized intersections on New Mexico Department of Transportation facilities were collected using drone video cameras to estimate end of period queueing for the end of each count interval for the intersections of I-40 N. Ramp / Carlisle Blvd., I-40 S. Ramp / Carlisle Blvd., I-40 N. Ramp / San Mateo Blvd., and I-40 S. Ramp / San Mateo Blvd. Other intersections in this study did not require the Demand Traffic Counts, but instead used the standard method of counting traffic.

The Demand Traffic Counts were conducted by launching a drone with a video camera at the end of each of the count intervals approximately 2 minutes before to 2 minutes after the end of the count interval. Using the drone technology, the traffic counts could quantify the queuing for each approach to an intersection at the end of each count interval. These queues were then added to the previous count interval and deducted from the subsequent count interval to adjust the traffic counts to determine the actual demand volumes at the intersection.

The traffic counts are included on Appendix Pages A-216 through A-223 of this report.

Analysis of Implementation Year Conditions

Traffic Projections

Background traffic volumes for the implementation year and horizon year were forecast by applying the calculated annual background traffic growth rate and applying it to recent turning movements volume data. Background annual growth rates were calculated based on Mid-Region Council of Governments' Traffic Flow Map data from 2008 to 2017. Background traffic growth rates were considered for each individual approach to an intersection that was targeted for analysis based on data from the 2008 thru 2017 Traffic Flow maps prepared by the Mid-Region Council of Governments (MRCOG). The data from those years for each approach was plotted on a graph and a linear "regression trend line" calculated using the equation format y=mx+b. The growth rate was determined by calculating the average volume increase per year during the time period considered and dividing that volume into the most recent AWDT used in the analysis from which future volumes will be calculated. The rate of growth of that trend line was utilized as the growth rate for each approach if that calculated rate appeared feasible. However, there were some instances where the rate indicated a negative growth trend. In those cases, an appropriate growth rate from an adjacent segment of the same roadway was considered. Due to the potential for growth in the area, it was believed that a zero percent growth rate was inappropriate for this study. Additionally, if the R² value of the trend line was low, other means of establishing a probable growth rate from the data accumulated was considered. Historical Growth Rate Graphs with linear regression trendlines are shown in the

Appendix on Pages A-36 thru A-47. A Historic Growth Map can be found on Appendix Page A-48.

This study assumes that the development will be implemented in one phase with an implementation year of 2021 and a horizon year of 2031.

Projected trips were calculated based on the Institute of Traffic Engineers (ITE) Trip Generation Manual (10th Edition). Trips for the development were determined based on land use defined on the Conceptual Site Development Plan on Page A-3 in the Appendix of this report. The following table summarized the trip generation rate for the project:

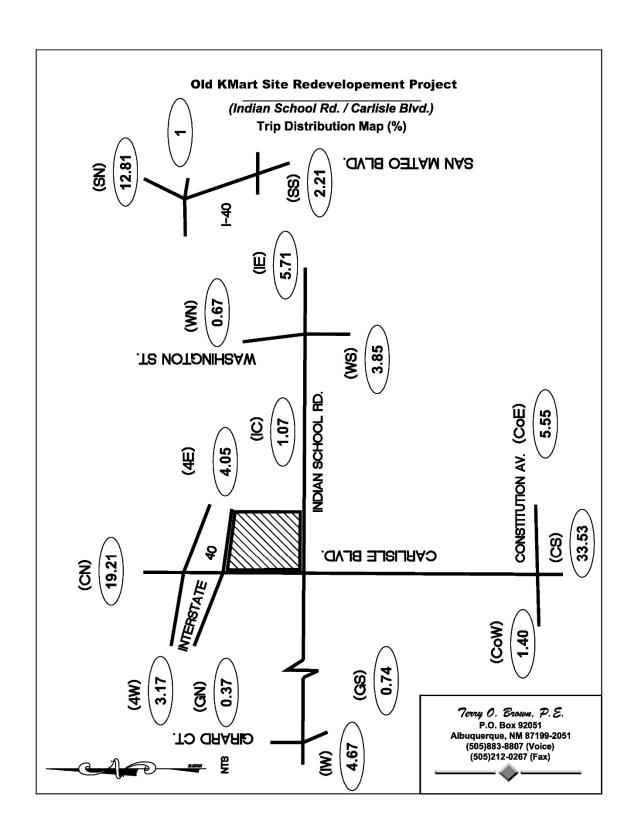
Old K-Mart Site Redevelopment (I-40 / Carlisle Blvd.)

Trip Generation Data (ITE Trip Generation Manual - 10th Edition)

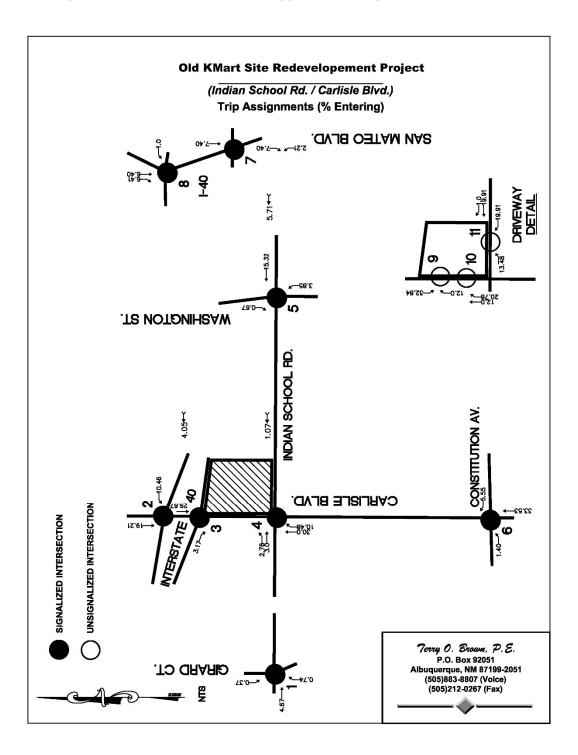
	USE (ITE CODE)			24 HR VOL	A. M. PE	AK HR.	P. M. PE	AK HR.
COMMENT	DESCRIPTION			GROSS	ENTER	EXIT	ENTER	EXIT
	Summary Sheet		Units					
Tract No.	Supermarket (850)	•	50.00	4,757	115	76	238	228
P1	Fast Food Restaurant w/ Drive-Thru Window (934)	7	2.20	1,036	45	43	37	34
P3, P4 & Remainder P1	Shopping Center (820)	7	67.71	4,611	115	71	195	212
	Net New Trips Generated			10,404	275	190	470	474
	Net New Trips Generated			10,404	213	130	4/0	717
	Pass-by Trips (PM ONLY)		25%	10,404	213	190	118	119
	•		25%	10,404	275	190	-	
NOTE: Trip Generation Ra	Pass-by Trips (PM ONLY)	od F		10,404	275		118	119

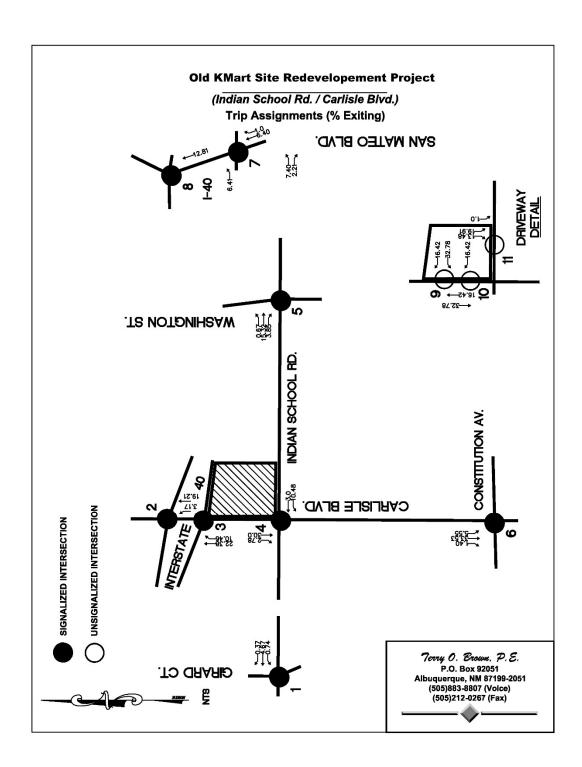
A pass-by trip rate of 25% was applied to the PM trips for this project. See Appendix Pages A-7 thru A-10 for more information regarding the trip generation.

The Gravity Model was used to determine trip distribution where primary trips for the commercial land use development were distributed proportionally to the 2021 projected population of Data Analysis Subzones (DASZ) within a 3-mile radius. Population data for the years 2012 and 2040 were taken from the 2040 Socioeconomic Forecasts by Subareas for the Mid-Region of New Mexico supplied by the Mid-Region Council of Governments (MRCOG). Population data from the years 2012 and 2040 was interpolated linearly to obtain 2021 population data to utilize for this analysis. Population Subzones were grouped based on the most likely major street(s) or route(s) to the subject development. The trip distribution worksheets and associated map of data analysis subzones are shown in the Appendix on Pages A-11 thru A-31. The commercial Trip Distribution map can be found below and in the Appendix on Page A-32.



Trip assignments are first made on a percentage basis derived from data established in the trip distribution determination process and logical routing. Those percentages are then applied to the projected trips to determine individual traffic movements. Percentage trip assignments for commercial trips are shown below and in the Appendix on Pages A-33 thru A-34.





The trip generation, trip distribution and trip assignments were utilized along with the existing 2019 background traffic volumes and the historical traffic growth rates to determine the Implementation and horizon year NO BUILD and BUILD volumes, see Appendix Pages A-49 thru A-73. Lane geometry, NO BUILD and BUILD volumes, and calculated levels-of-service for associated lane groups are shown on the Lanes / Volumes Analysis Maps at the end of the front-end text of this report.

Traffic Analysis - Implementation Year (2021)

A capacity analysis using existing traffic signal timing (see Appendix Pages A-116 thru A-165) was conducted for the Implementation Year (2021) NO BUILD and BUILD Conditions and the results are summarized as follows:

#1 - Indian School Rd. / Girard Ct. - Pages A-116 thru A-165

The results of the 2021 analyses of the full access signalized intersection of Indian School Rd. / Girard Ct. are summarized in the following tables:

Indian Sch. Rd. / Girard Ct.	EB (In	dian Sc	h. Rd.)	WB (In	dian Sc	h. Rd.)	NB	(Girard	Ct.)	SB	(Girard	Ct.)
2021 Conditions	L	T	R	L	Т	R	L	Т	R	L	T	R
Existing Lane Geometry	1	2>	0	1	2>	0	1	1>	0	1	1>	0
AM Peak Hour												
2021 NO BUILD Conditions Volumes	20	230	21	8	416	49	43	11	1	70	18	28
V/C Ratio	0.04	0.11	0.11	0.01	0.21	0.21	0.21	0.00	0.07	0.30	0.00	0.30
Level-of-Service	Α	Α	Α	Α	Α	Α	С	Α	С	С	Α	С
Control Delay (Seconds)	4.8	2.6	2.6	7.3	8.9	8.9	24.8	0.0	22.3	24.3	0.0	23.7
Intersection LOS						Α-	9.9					
2021 BUILD Conditions Volumes	20	243	21	9	425	50	43	11	2	71	18	28
V/C Ratio	0.04	0.12	0.12	0.01	0.22	0.22	0.21	0.00	0.08	0.30	0.00	0.30
Level-of-Service	Α	Α	Α	Α	Α	Α	С	Α	С	С	Α	С
Control Delay (Seconds)	4.9	2.7	2.7	7.4	9.0	9.0	24.7	0.0	22.3	24.3	0.0	23.5
Intersection LOS	A - 9.9											

PM Peak Hour												
2021 NO BUILD Conditions Volumes	29	471	39	9	500	68	71	22	2	75	16	22
V/C Ratio	0.05	0.22	0.22	0.01	0.24	0.24	0.32	0.00	0.12	0.32	0.00	0.21
Level-of-Service	Α	Α	Α	Α	Α	Α	С	Α	С	С	Α	С
Control Delay (Seconds)	2.6	3.2	3.2	0.1	0.3	0.3	27.0	0.0	24.2	26.5	0.0	24.7
Intersection LOS			:		•	Α-	5.5	•	•	•		
2021 BUILD Conditions Volumes	29	487	39	12	517	69	71	22	5	76	16	22
V/C Ratio	0.05	0.22	0.22	0.02	0.25	0.25	0.32	0.00	0.14	0.32	0.00	0.21
Level-of-Service	Α	Α	Α	Α	Α	Α	С	Α	С	С	Α	С
Control Delay (Seconds)	2.6	3.2	3.2	0.2	0.3	0.3	27.0	0.0	24.2	26.6	0.0	24.7
Intersection LOS				•	•	Α-	5.5				•	

The 2021 analysis of the intersection of Indian School Rd. / Girard Ct. demonstrates that the delays will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Indian School Rd. / Girard Ct.

#2 - I-40 N. Ramp / Carlisle Blvd. - Pages A-116 thru A-165

The results of the 2021 analyses of the full access signalized intersection of I-40 N. Ramp / Carlisle Blvd. are summarized in the following tables:

I-40 N. Ramp / Carlisle Blvd.	WB (I	-40 N. F	Ramp)	NB (C	arlisle	Blvd.)	SB (C	arlisle	Blvd.)
2021 Conditions	L	Τ	R	L	T	R	L	T	R
Existing Lane Geometry	1	<1	1	2	3	0	0	3	1
AM Peak Hour									
2021 NO BUILD Conditions Volumes	347	8	329	422	1,033	0	0	761	285
V/C Ratio	0.43	0.00	0.90	0.89	0.35	0.00	0.00	0.38	
Level-of-Service	С	Α	Е	D	Α	Α	Α	С	
Control Delay (Seconds)	34.1	0.0	56.8	50.8	0.3	0.0	0.0	20.7	0.0
Intersection LOS				(- 23.	5			
2021 BUILD Conditions Volumes	376	8	329	428	1,069	0	0	814	285
V/C Ratio	0.46	0.00	0.90	0.90	0.37	0.00	0.00	0.41	
Level-of-Service	С	Α	Е	D	Α	Α	Α	С	
Control Delay (Seconds)	34.4	0.0	56.5	51.1	0.3	0.0	0.0	21.2	0.0
Intersection LOS				(- 23.	5			
Mitigated Conditions	1	<1>	1	2	3	0	0	3	1
2021 BUILD Conditions [Mitigated] Volumes	376	8	329	428	1,069	0	0	814	285
V/C Ratio	0.79	0.00	0.82	0.90	0.33	0.00	0.00	0.35	
Level-of-Service	D	Α	D	D	Α	Α	Α	В	
Control Delay (Seconds)	44.1	0.0	48.2	51.1	0.2	0.0	0.0	16.3	0.0
Intersection LOS				C	- 22.	3			

PM Peak Hour									
2021 NO BUILD Conditions Volumes	259	5	280	504	1,300	0	0	1,112	470
V/C Ratio	0.37	0.00	0.89	0.92	0.39	0.00	0.00	0.47	
Level-of-Service	D	Α	Е	Е	Α	Α	Α	С	
Control Delay (Seconds)	40.7	0.0	63.7	57.0	0.3	0.0	0.0	20.7	0.0
Intersection LOS			•	(- 23.	3			
2021 BUILD Conditions Volumes	296	5	280	515	1,368	0	0	1,180	470
V/C Ratio	0.42	0.00	0.89	0.93	0.41	0.00	0.00	0.51	
Level-of-Service	D	Α	Е	Е	Α	Α	Α	О	
Control Delay (Seconds)	41.2	0.0	63.2	57.5	0.3	0.0	0.0	21.5	0.0
Intersection LOS				C	- 23.	5			
Mitigated Conditions	1	<1>	1	2	3	0	0	3	1
2021 BUILD Conditions [Mitigated] Volumes	296	5	280	515	1,368	0	0	1,180	470
V/C Ratio	0.74	0.00	0.81	0.93	0.38	0.00	0.00	0.45	
Level-of-Service	D	Α	Е	Е	Α	Α	Α	В	
Control Delay (Seconds)	50.3	0.0	55.4	57.5	0.2	0.0	0.0	16.9	0.0
Intersection LOS				(- 21.	9			

The 2021 analysis of the intersection of I-40 N. Ramp / Carlisle Blvd. demonstrates that the overall intersection delays will be acceptable for all conditions analyzed in this report. The westbound right turn movement is projected to experience moderately long delays during the AM and PM NO BUILD and BUILD conditions. This project does not contribute any new traffic to the subject westbound right turn movement. Also, the proposed development has no significant impact on this intersection. Therefore, no recommendations are made for the

intersection of I-40 N. Ramp / Carlisle Blvd. It would be beneficial to the operation of the intersection to convert the westbound thru / left turn lane to a thru / left / right turn lane.

#3 – I-40 S. Ramp / Carlisle Blvd. - Pages A-116 thru A-165

The results of the 2021 analyses of the full access signalized intersection of I-40 S. Ramp / Carlisle Blvd. are summarized in the following tables:

I-40 S. Ramp / Carlisle Blvd.	EB (I-	40 S. R	amp)	NB (C	arlisle	Blvd.)	SB (C	arlisle	Blvd.)
2021 Conditions	L	Т	R	L	Т	R	L	Т	R
Existing Lane Geometry	2	1>	2	0	5	1	2	3	0
AM Peak Hour									
2021 NO BUILD Conditions Volumes	554	5	571	0	887	257	190	887	0
V/C Ratio	0.82	0.00	0.64	0.00	0.24	0.33	0.78	0.29	0.00
Level-of-Service	D	Α	D	Α	Α	Α	D	Α	Α
Control Delay (Seconds)	46.2	0.0	39.8	0.0	0.1	0.7	54.6	1.7	0.0
Intersection LOS				E	- 18.	1			
2021 BUILD Conditions Volumes	554	5	580	0	930	277	190	969	0
V/C Ratio	0.82	0.00	0.65	0.00	0.25	0.36	0.78	0.32	0.00
Level-of-Service	D	Α	D	Α	Α	Α	D	Α	Α
Control Delay (Seconds)	46.2	0.0	40.0	0.0	0.1	1.1	54.5	1.8	0.0
Intersection LOS				E	- 17.	5			

PM Peak Hour											
2021 NO BUILD Conditions Volumes	538	12	506	0	1,277	439	407	970	0		
V/C Ratio	0.80	0.00	0.57	0.00	0.35	0.57	0.88	0.29	0.00		
Level-of-Service	D	Α	D	Α	Α	Α	D	Α	Α		
Control Delay (Seconds)	48.8	0.0	43.5	0.0	0.1	1.3	50.6	0.2	0.0		
Intersection LOS			B - 16.9								
2021 BUILD Conditions Volumes	538	12	517	0	1,356	476	407	1,074	0		
2021 BUILD Conditions Volumes V/C Ratio	538 0.80	12 0.00	517 0.58	0.00	1,356 0.37	476 0.62	407 0.88	1,074	0.00		
				_	,			,-			
V/C Ratio	0.80	0.00	0.58	0.00	0.37	0.62	0.88	0.32	0.00		

The 2021 analysis of the intersection of I-40 S. Ramp / Carlisle Blvd. demonstrates that the delays will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of I-40 S. Ramp / Carlisle Blvd.

#4 - Indian School Rd. / Carlisle Blvd. - Pages A-116 thru A-165

The results of the 2021 analysis of the full access signalized intersection of Indian School Rd. / Carlisle Blvd. are summarized in the following table:

Indian Sch. Rd. / Carlisle Blvd.	EB (In	dian Sc	h. Rd.)	WB (In	dian So	h. Rd.)	NB (C	arlisle	Blvd.)	SB (C	arlisle	Blvd.)
2021 Conditions	L	Т	R	L	Т	R	L	Т	R	L	Т	R
Existing Lane Geometry	1	2>	0	1	2>	0	1	3>	0	1	2	1
AM Peak Hour												
2021 NO BUILD Conditions Volumes	372	230	45	52	289	128	71	659	38	223	761	511
V/C Ratio	0.96	0.28	0.28	0.18	0.81	0.83	0.33	0.43	0.43	0.62	0.59	0.60
Level-of-Service	Е	В	В	D	D	D	С	С	С	С	С	В
Control Delay (Seconds)	59.9	19.6	19.6	35.5	52.2	54.6	22.5	33.6	34.6	21.1	20.2	12.9
Intersection LOS						C - :	30.7					
2021 BUILD Conditions Volumes	380	238	45	72	295	128	71	742	67	223	818	516
V/C Ratio	0.99	0.29	0.30	0.24	0.81	0.83	0.31	0.50	0.51	0.67	0.63	0.61
Level-of-Service	Е	С	С	С	D	Е	С	D	D	С	Α	Α
Control Delay (Seconds)	65.6	20.6	20.6	35.0	52.7	55.1	22.1	35.3	36.7	22.2	8.9	6.7
Intersection LOS						C - 2	28.4					
Mitigated Conditions	1	2>	0	1	2	1	1	3>	0	1	2	1
2021 BUILD Conditions [Mitigated] Volumes	380	238	45	72	295	128	71	742	67	223	818	516
V/C Ratio	0.91	0.32	0.33	0.27	0.75	0.40	0.29	0.47	0.47	0.64	0.60	0.57
Level-of-Service	D	С	С	D	D	D	В	С	С	В	Α	Α
Control Delay (Seconds)	48.7	23.4	23.5	38.9	48.9	36.5	20.0	32.9	34.0	19.7	6.1	4.3
Intersection LOS	C - 24.2											

PM Peak Hour												
2021 NO BUILD Conditions Volumes	415	589	85	72	333	227	116	1,017	51	230	871	443
V/C Ratio	1.00	0.57	0.58	0.26	0.89	0.91	0.50	0.71	0.71	0.79	0.74	0.53
Level-of-Service	Е	В	В	D	Е	Е	С	D	D	С	В	Α
Control Delay (Seconds)	64.6	14.2	14.2	35.7	68.0	72.6	28.0	45.9	48.9	32.7	16.8	8.5
Intersection LOS						D - 3	35.4					
2021 BUILD Conditions Volumes	425	600	85	109	344	227	116	1,123	88	230	978	453
V/C Ratio	1.03	0.61	0.61	0.36	0.90	0.91	0.55	0.81	0.81	0.85	0.83	0.55
Level-of-Service	F	В	В	С	Е	Е	С	D	Е	D	С	Α
Control Delay (Seconds)	71.3	16.6	16.7	34.9	70.0	74.7	30.2	50.3	55.2	40.7	20.8	9.1
Intersection LOS						D - 3	39.1					
Mitigated Conditions	1	2>	0	1	2	1	1	3>	0	1	2	1
2021 BUILD Conditions [Mitigated] Volumes	425	600	85	109	344	227	116	1,123	88	230	978	453
V/C Ratio	0.95	0.69	0.69	0.39	0.64	0.57	0.50	0.72	0.72	0.82	0.75	0.51
Level-of-Service	D	С	С	D	D	D	С	D	D	С	В	Α
Control Delay (Seconds)	52.9	23.4	23.4	38.3	47.9	38.7	25.1	43.7	46.6	34.6	13.0	6.0
Intersection LOS						C - :	31.1					

The 2021 analysis of the intersection of Indian School Rd. / Carlisle Blvd. demonstrates that the delays will be acceptable for all conditions analyzed in this report. There are marginally high delays expected for the northbound approach during the 2021 AM NO BUILD and BUILD conditions. While this project will contribute traffic to the northbound approach, the impact is minor (less than 1 second increase in delay). The impact of the project to the overall intersection

that the AM Peak Hour average control delay will be increased by 3.6 seconds dak Hour and by 1.3 seconds during the PM Peak Hour. Therefore, no recommende for the intersection of Indian School Rd. / Carlisle Blvd.	uring the AM endations are

#5 - Indian School Rd. / Washington St. - Pages A-116 thru A-165

The results of the 2021 analysis of the full access signalized intersection of Indian School Rd. / Washington St. are summarized in the following table:

Indian Sch. Rd. / Washington St.	EB (Indian Sch. Rd.) WB (Indian Sch. Rd.) NB (Washington St.) SB (Washington St.)												
2021 Conditions	L	T	R	L	Т	R	L	T	R	L	T	R	
Existing Lane Geometry	1	2>	0	1	2>	0	1	1>	0	1	1>	0	
AM Peak Hour													
2021 NO BUILD Conditions Volumes	62	217	39	18	230	34	67	168	36	38	120	146	
V/C Ratio	0.14	0.22	0.22	0.04	0.22	0.23	0.34	0.00	0.62	0.15	0.00	0.85	
Level-of-Service	В	В	В	В	В	В	С	Α	С	С	Α	D	
Control Delay (Seconds)	12.3	16.5	16.5	11.9	16.5	16.6	23.6	0.0	29.4	21.7	0.0	39.3	
Intersection LOS						C - 2	24.2						
2021 BUILD Conditions Volumes	63	246	46	18	272	34	78	168	36	38	120	148	
V/C Ratio	0.15	0.25	0.26	0.04	0.26	0.27	0.38	0.00	0.60	0.14	0.00	0.86	
Level-of-Service	В	В	В	В	В	В	С	Α	С	С	Α	D	
Control Delay (Seconds)	12.6	17.1	17.1	12.1	17.2	17.2	23.8	0.0	29.2	21.8	0.0	39.8	
Intersection LOS	C - 24.1												

PM Peak Hour												
2021 NO BUILD Conditions Volumes	178	480	83	41	297	60	71	269	53	52	264	142
V/C Ratio	0.37	0.43	0.44	0.11	0.30	0.31	0.37	0.00	0.71	0.20	0.00	0.93
Level-of-Service	В	С	С	В	С	С	С	Α	С	С	Α	П
Control Delay (Seconds)	15.9	21.8	21.8	16.2	21.8	21.9	25.1	0.0	33.8	22.7	0.0	55.1
Intersection LOS		•	•	•	•	C -	30.1	•	•	•	•	
2021 BUILD Conditions Volumes	180	534	97	41	351	60	85	269	53	52	264	144
V/C Ratio	0.40	0.49	0.49	0.12	0.35	0.35	0.44	0.00	0.70	0.20	0.00	0.93
Level-of-Service	В	С	С	В	С	С	С	Α	С	С	Α	П
Control Delay (Seconds)	16.3	23.0	23.1	16.7	22.8	22.9	25.7	0.0	33.6	22.8	0.0	56.2
Intersection LOS			•		•	_	30.3			•	•	

The 2021 analysis of the intersection of Indian School Rd. / Washington St. demonstrates that the delays will be acceptable for all conditions analyzed in this report. The southbound thru / right turn approach is projected to experience marginally long delays during the PM Peak Hour NO BUILD and BUILD conditions, but the impact of this development on that particular delay is minimal. There is no significant impact to the intersection caused by the traffic generated by the Kmart Redevelopment Project. Therefore, no recommendations are made for the intersection of Indian School Rd. / Washington St.

#6 - Constitution Ave. / Carlisle Blvd. - Pages A-116 thru A-165

The results of the 2021 analysis of the full access signalized intersection of Constitution Ave. / Carlisle Blvd. are summarized in the following table:

Constitution Ave. / Carlisle Blvd.	B (Co	nstitutio	on Ave	VB (Co	nstituti	on Ave	NB (C	arlisle	Blvd.)	SB (C	arlisle	Blvd.)
2021 Conditions	L	Т	R	L	Т	R	Ш	Т	R	L	Т	R
Existing Lane Geometry	1	1	1	1	1	1	1	2>	0	1	1	1
AM Peak Hour												
2021 NO BUILD Conditions Volumes	99	88	14	47	130	71	14	470	20	67	518	205
V/C Ratio	0.54	0.28	0.05	0.21	0.42	0.27	0.03	0.20	0.20	0.11	0.41	0.19
Level-of-Service	D	D	D	D	D	D	Α	Α	Α	Α	Α	Α
Control Delay (Seconds)	49.7	39.3	37.3	43.1	40.7	39.2	4.2	5.1	5.1	0.4	0.7	0.3
Intersection LOS						B - '	12.6				•	
2021 BUILD Conditions Volumes	103	88	14	47	130	86	14	562	20	78	582	208
V/C Ratio	0.55	0.27	0.05	0.21	0.40	0.31	0.03	0.24	0.24	0.14	0.47	0.20
Level-of-Service	D	D	D	D	D	D	Α	Α	Α	Α	Α	Α
Control Delay (Seconds)	49.5	38.8	36.8	42.5	40.1	39.3	4.4	5.6	5.6	0.7	0.8	0.3
Intersection LOS	B - 12.2											

PM Peak Hour												
2021 NO BUILD Conditions Volumes	215	199	16	66	134	80	18	711	37	76	604	128
V/C Ratio	0.72	0.40	0.04	0.25	0.27	0.19	0.04	0.34	0.34	0.18	0.53	0.13
Level-of-Service	D	D	С	D	С	С	Α	В	В	Α	Α	Α
Control Delay (Seconds)	49.7	35.7	31.6	42.6	34.1	33.2	8.2	10.9	10.8	1.7	1.1	0.2
Intersection LOS		•	•	•	•	В-	16.4	•	•	•	•	•
2021 BUILD Conditions Volumes	220	199	16	66	134	100	18	829	37	99	723	133
V/C Ratio	0.72	0.39	0.04	0.24	0.26	0.23	0.04	0.40	0.40	0.28	0.64	0.14
Level-of-Service	D	С	С	D	С	С	Α	В	В	Α	Α	Α
Control Delay (Seconds)	49.8	34.9	31.0	41.7	33.4	33.1	8.6	12.0	11.9	2.9	1.3	0.1
Intersection LOS		<u>-</u>		<u>-</u>	<u>-</u>	В-	15.8	<u>-</u>		<u>-</u>	<u>-</u>	·

The 2021 analysis of the intersection of Constitution Ave. / Carlisle Blvd. demonstrates that the delays will be acceptable for all conditions analyzed in this report. The average intersection delays in this analysis actually are reduced slightly as a result of the traffic added by the Kmart Redevelopment Project since the average intersection delay is a weighted average, and this project contributes mostly northbound and southbound thru movements which have low calculated average delays. Therefore, no recommendations are made for the intersection of Constitution Ave. / Carlisle Blvd.

#7 - I-40 S. Ramp / San Mateo Blvd. - Pages A-116 thru A-165

The results of the 2021 analysis of the full access signalized intersection of I-40 S. Ramp / San Mateo Blvd. are summarized in the following table:

I-40 S. Ramp / San Mateo Blvd.	EB (I-	40 S. R	Ramp)	NB (Sa	n Mate	Blvd.	SB (Sa	n Mate	o Blvd.)
2021 Conditions	L	Т	R	Ĺ	Т	R	Ĺ	Т	R
Existing Lane Geometry	2	1>	1	0	3	1	2	3	0
AM Peak Hour									
2021 NO BUILD Conditions Volumes	465	1	755	0	1,032	140	226	860	0
V/C Ratio	0.55	0.00	1.00	0.00	0.42		0.79	0.28	0.00
Level-of-Service	D	Α	F	Α	В		Е	В	Α
Control Delay (Seconds)	36.3	0.0	73.9	0.0	16.7	0.0	58.2	14.4	0.0
Intersection LOS				C	- 34.	6			
2021 BUILD Conditions Volumes	477	1	755	0	1,044	142	226	880	0
V/C Ratio	0.56	0.00	1.00	0.00	0.42		0.79	0.28	0.00
Level-of-Service	D	Α	F	Α	В		Е	В	Α
Control Delay (Seconds)	36.5	0.0	73.9	0.0	16.7	0.0	58.1	14.5	0.0
Intersection LOS				C	- 34.	5			
Mitigated Conditions (Adj. Signal Timing)	2	1>	1	0	3	1	2	3	0
2021 BUILD Conditions [Mitigated] Volumes	477	1	755	0	1,044	142	226	880	0
V/C Ratio	0.52	0.00	0.93	0.00	0.44		0.78	0.29	0.00
Level-of-Service	С	Α	D	Α	В		D	Α	Α
Control Delay (Seconds)	34.1	0.0	54.0	0.0	18.3	0.0	53.9	9.3	0.0
Intersection LOS				(- 28.	5			

PM Peak Hour									
2021 NO BUILD Conditions Volumes	329	12	443	0	1,647	369	432	955	0
V/C Ratio	0.53	0.00	0.82	0.00	0.60		1.25	0.28	0.00
Level-of-Service	D	Α	D	Α	В		F	В	Α
Control Delay (Seconds)	44.7	0.0	51.7	0.0	17.3	0.0	185.0	20.0	0.0
Intersection LOS					- 43.	4			
2021 BUILD Conditions Volumes	352	12	443	0	1,670	373	432	981	0
V/C Ratio	0.57	0.00	0.82	0.00	0.61		1.25	0.29	0.00
Level-of-Service	D	Α	D	Α	В		F	С	Α
Control Delay (Seconds)	45.1	0.0	51.6	0.0	17.5	0.0	185.0	20.2	0.0
Intersection LOS					- 43.	3			
Mitigated Conditions (Adj. Signal Timing)	2	1>	1	0	3	1	2	3	0
2021 BUILD Conditions [Mitigated] Volumes	352	12	443	0	1,670	373	432	981	0
V/C Ratio	0.58	0.00	0.84	0.00	0.67		0.85	0.28	0.00
Level-of-Service	D	Α	D	Α	С		D	Α	Α
Control Delay (Seconds)	45.6	0.0	54.8	0.0	21.7	0.0	52.4	5.5	0.0
Intersection LOS				C	- 27.	0			

The 2021 analysis of the intersection of I-40 S. Ramp / San Mateo Blvd. demonstrates that the overall intersection delays will be acceptable for all conditions analyzed in this report. The volumes of traffic generated by the proposed Kmart Redevelopment project through the I-40 / San Mateo ramps are very minor. Thus, the impact to the interchange ramps is insignificant. The analysis of the I-40 South Ramp / San Mateo Blvd. does reveal a couple of stressed turning

movements for both the AM Peak Hour and the PM Peak Hour. The eastbound right turn movement shows long delays during the AM Peak Hour and the southbound left turn movement shows long delays during the PM Peak Hour. The long delays for these turning movements exist for both the NO BUILD as well as the BUILD conditions since this proposed project does not contribute traffic to either of the two turning movements. Also, the overall intersection levels-of-service and associated delays seem to indicate that the issue can be remedied by modifying the traffic signal timing splits at the intersection for both the AM and PM Peak Hour periods. However, this Study cannot make that recommendation conclusively since this analysis is limited and does not evaluate the San Mateo Blvd. signalized coordinated corridor. The signal timing sheets for this intersection furnished by the City of Albuquerque indicate that the signal timing has not been adjusted for about eight years. Based on the results of this analysis and the fact that the signal timing has not been adjusted for about eight years, this Study recommends that the City of Albuquerque and / or the New Mexico Department of Transportation revisit the signal timing for this portion of the San Mateo Blvd. corridor. It appears from this analysis that the levels-of-service / delays / queueing issues at the I-40 S. Ramp / San Mateo Blvd. may be resolved with modifications to the signal timing / coordination plan that currently exists. Additionally, the impact of the proposed Kmart Redevelopment Project at this intersection is insignificant. Therefore, no recommendations are made for the intersection of I-40 S. Ramp / San Mateo Blvd.

#8 - I-40 N. Ramp / San Mateo Blvd. - Pages A-116 thru A-165

The results of the 2021 analysis of the full access signalized intersection of I-40 N. Ramp / San Mateo Blvd. are summarized in the following table:

I-40 N. Ramp / San Mateo Blvd.	EB (I-	40 N. F	Ramp)	WB (I	-40 N. F	Ramp)	NB (Sa	n Mate	o Blvd.	SB (Sa	n Mate	Blvd.)
2021 Conditions	L	Т	R	L Ì	T	R	Ĺ	T	R	Ĺ	Т	R
Existing Lane Geometry	2	0	1	2	1	1	2	3	0	0	3	1
AM Peak Hour												
2021 NO BUILD Conditions Volumes	50	0	150	270	136	321	142	928	0	0	1,032	92
V/C Ratio	0.35			0.28	0.38	1.05	0.71	0.32	0.00	0.00	0.44	0.12
Level-of-Service	D		Α	С	D	F	D	Α	Α	Α	В	В
Control Delay (Seconds)	52.2		0.0	29.6	37.9	107.0	50.8	0.2	0.0	0.0	18.1	12.4
Intersection LOS						C - 2	26.0					
2021 BUILD Conditions Volumes	50	0	150	273	136	321	142	952	0	0	1,050	110
V/C Ratio	0.35			0.29	0.38	1.05	0.71	0.33	0.00	0.00	0.45	0.14
Level-of-Service	D		Α	С	D	F	D	Α	Α	Α	В	В
Control Delay (Seconds)	52.2		0.0	29.6	37.9	107.0	50.8	0.2	0.0	0.0	18.2	12.6
Intersection LOS						C - :	25.7					
Mitigated Conditions	2	0	1	2	1	1	2	3	0	0	3	1
2021 BUILD Conditions [Mitigated] Volumes	50	0	150	273	136	321	142	952	0	0	1,050	110
V/C Ratio	0.35			0.26	0.34	0.94	0.71	0.35	0.00	0.00	0.47	0.14
Level-of-Service	D		Α	С	D	Е	D	Α	Α	Α	С	В
Control Delay (Seconds)	52.2		0.0	27.5	35.5	72.2	50.8	0.3	0.0	0.0	20.1	14.0
Intersection LOS	C - 22.5											

PM Peak Hour												
2021 NO BUILD Conditions Volumes	155	0	417	188	112	249	187	1,254	0	0	1,354	112
V/C Ratio	0.74			0.20	0.34	0.91	0.76	0.42	0.00	0.00	0.56	0.13
Level-of-Service	Е		Α	С	D	Ε	Ε	С	Α	Α	С	В
Control Delay (Seconds)	59.7		0.0	31.9	43.1	73.7	60.4	29.1	0.0	0.0	21.4	12.3
Intersection LOS						C - 3	32.3					
2021 BUILD Conditions Volumes	155	0	417	192	112	249	187	1,299	0	0	1,377	135
V/C Ratio	0.74			0.20	0.34	0.91	0.76	0.44	0.00	0.00	0.57	0.16
Level-of-Service	Е		Α	С	D	Ε	Ε	С	Α	Α	С	В
Control Delay (Seconds)	59.7		0.0	32.0	43.1	73.7	60.3	29.6	0.0	0.0	21.6	12.6
Intersection LOS						C - 3	32.3					
Mitigated Conditions	2	0	1	2	1	1	2	3	0	0	3	1
2021 BUILD Conditions [Mitigated] Volumes	155	0	417	192	112	249	187	1,299	0	0	1,377	135
V/C Ratio	0.74			0.20	0.34	0.88	0.78	0.44	0.00	0.00	0.57	0.16
Level-of-Service	Е		Α	С	D	Е	Ε	Α	Α	Α	С	В
Control Delay (Seconds)	60.6		0.0	31.5	42.5	60.3	61.7	5.2	0.0	0.0	21.8	12.7
Intersection LOS						C - 2	23.0					

The analyses of the signalized intersection of the I-40 N. Ramp / San Mateo Blvd. yield results that are similar in some ways to the preceding analyses of the South Ramp. The Summary Table above demonstrates that, while the overall intersection delays are acceptable, there are a limited number of stressed turning movements for both the AM and PM Peak Hour NO BUILD and BUILD Conditions. Normally, multiple period analyses would be required for this

intersection (and the South Ramp) since one or more individual turning movements are calculated to have a v/c ratio of 1.0 or greater. However, in the cases of the I-40 N. Ramp / San Mateo Blvd. (and the South Ramp), the proposed Kmart Redevelopment Project does not contribute any traffic to those particular oversaturated turning movements. Secondly, the overall intersection delays for both signalized intersections are found to be acceptable. Finally, the traffic signal timing sheets for the two intersections indicate that the signal timing for these two intersections was last established in 2011 (about eight years ago). It seems reasonable to assume that if the New Mexico Department of Transportation does not accept traffic count data that is more than two years old to be utilized in Traffic Impact Studies, it seems logical to assume that a signal timing plan based on 8-year old traffic counts would be suspect. The results of the signal analyses for the two Interchange Ramps on I-40 at San Mateo seem to suggest that it may be time to re-evaluate the traffic signal timing at the two ramps along with the timing / offset plan for the San Mateo corridor. The mitigated conditions reported in the preceding table for this intersection simple optimize the signal timing for the intersection to achieve a significantly improved performance. However, it is acknowledged that this analysis falls short in that it does not consider the San Mateo interconnected corridor in full. For the reasons stated above, no recommendation is made for the I-40 N. Ramp / San Mateo Blvd.

#9 - Driveway "A" / Carlisle Blvd. - Pages A-116 thru A-165

The results of the 2021 analysis of the full access unsignalized intersection of Driveway "A" / Carlisle Blvd. are summarized in the following table:

Driveway "A" / Carlisle Blvd.	WB (E)rivewa	y "A")	Blvd.)	.) SB (Carlisle Blvd				
2021 Conditions	L	Т	R	L	Т	R	L	Т	R
Proposed Lane Geometry	1		1		3	1	1	3	
AM Peak Hour									
2021 BUILD Conditions Volumes	97		66		1,190	69	126	1,495	
V/C Ratio	0.31		0.11				0.20		
Level-of-Service	С		В				В		
Control Delay (Seconds)	19.7		11.3				11.5		
Intersection LOS					TWSC	;			
95th Percentile Queue (veh)	1.3		0.4				0.8		

PM Peak Hour							
2021 BUILD Conditions Volumes	186	118	1,685	72	187	1,503	
V/C Ratio	0.57	0.24			0.31		
Level-of-Service	D	В			В		
Control Delay (Seconds)	27.7	14.1			12.9		
Intersection LOS			TWSC	;			
95th Percentile Queue (veh)	3.3	0.9			1.3		

The 2021 analysis of the intersection of Driveway "A" / Carlisle Blvd. demonstrates that the delays and the queuing will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Driveway "A" / Carlisle Blvd.

#10 - Driveway "B" / Carlisle Blvd. - Pages A-116 thru A-165

The results of the 2021 analysis of the right-in, right-out only access unsignalized intersection of Driveway "B" / Carlisle Blvd. are summarized in the following table:

Driveway "B" / Carlisle Blvd.	WB (Orivewa	y "B")	NB (C	arlisle	Blvd.)	SB (Carlisle Blvd.)			
2021 Conditions	L	T	R	L	T	R	L	T	R	
Proposed Lane Geometry			1		3>			3		
AM Peak Hour										
2021 BUILD Conditions Volumes	0		31		1,192	57	0	1,557		
V/C Ratio			0.05							
Level-of-Service			В							
Control Delay (Seconds)			10.9							
Intersection LOS	TWSC									
95th Percentile Queue (veh)			0.2							

PM Peak Hour							
2021 BUILD Conditions Volumes	0	58	1,669	105	0	1,661	
V/C Ratio		0.12					
Level-of-Service		В					
Control Delay (Seconds)		12.9					
Intersection LOS			TWSC	;			
95th Percentile Queue (veh)		0.4					

The 2021 analysis of the intersection of Driveway "B" / Carlisle Blvd. demonstrates that the delays will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Driveway "B" / Carlisle Blvd..

#11 - Indian School Rd. / Driveway "C" - Pages A-116 thru A-165

The results of the 2021 analyses of the full access unsignalized intersection of Indian School Rd. / Driveway "C" are summarized in the following tables:

Indian Sch. Rd. / Driveway "C"	EB (In	dian Sc	h. Rd.)	WB (In	dian Sc	h. Rd.)	.) SB (Driveway "C")			
2021 Conditions	L	Т	R	L	Т	R	L	Т	R	
Proposed Lane Geometry	1	2			2>			<1>		
AM Peak Hour										
2021 BUILD Conditions Volumes	37	491			469	55	38		26	
V/C Ratio	0.04						0.15			
Level-of-Service	Α						В			
Control Delay (Seconds)	8.9						14.0			
Intersection LOS	TWSC									
95th Percentile Queue (veh)	0.1						0.5			

PM Peak Hour							
2021 BUILD Conditions Volumes	75	842		615	87	100	65
V/C Ratio	0.10					0.50	
Level-of-Service	Α					С	
Control Delay (Seconds)	9.7					24.5	
Intersection LOS				TWSC	;		
95th Percentile Queue (veh)	0.3					2.6	

The 2021 analysis of the intersection of Indian School Rd. / Driveway "C" demonstrates that the delays and queueing will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Indian School Rd. / Driveway "C".

Analysis of Horizon Year Conditions

Traffic Analysis - Horizon Year (2031)

A capacity analysis using existing traffic signal timing (see Appendix Pages A-166 thru A-215) was conducted for the Horizon Year (2031) NO BUILD and BUILD Conditions. Additionally, the 95th Percentile Queueing data is based on the Horizon Year volumes and existing signal timing. The calculated 95th Percentile Queuing lengths are determined based on Highway Capacity Manual, 6th Edition methodology. The results are summarized as follows:

#1 - Indian School Rd. / Girard Ct. - Pages A-166 thru A-215

The results of the 2031 analyses of the full access signalized intersection of Indian School Rd. / Girard Ct. are summarized in the following tables:

Indian Sch. Rd. / Girard Ct.	EB (In	dian Sc	h. Rd.)	WB (In	dian Sc	h. Rd.)	NB	(Girard	Ct.)	SB	(Girard	Ct.)
2031 Conditions	L	Т	R	L	Т	R	L	Т	R	L	Т	R
Existing Lane Geometry	1	2>	0	1	2>	0	1	1>	0	1	1>	0
AM Peak Hour												
2031 NO BUILD Condition Volumes	21	242	22	10	567	66	46	12	1	73	19	30
V/C Ratio	0.04	0.11	0.11	0.01	0.27	0.27	0.22	0.00	0.07	0.30	0.00	0.31
Level-of-Service	Α	Α	Α	Α	Α	Α	С	Α	С	С	Α	С
Control Delay (Seconds)	5.8	2.6	2.6	7.3	9.7	9.7	24.9	0.0	22.4	24.4	0.0	23.8
Intersection LOS						В-	10.3					
95th Percentile Queue (veh)	0.2	0.4	0.4	0.1	3.8	3.9	1.1	0.0	0.3	1.7	0.0	1.2
2031 BUILD Conditions Volumes	21	255	22	11	576	67	46	12	2	74	19	30
V/C Ratio	0.04	0.12	0.12	0.01	0.28	0.28	0.21	0.00	80.0	0.30	0.00	0.31
Level-of-Service	Α	Α	Α	Α	Α	Α	С	Α	С	С	Α	О
Control Delay (Seconds)	5.9	2.7	2.7	7.4	9.8	9.8	24.8	0.0	22.3	24.3	0.0	23.7
Intersection LOS			•			В -	10.3	•	•			
95th Percentile Queue (veh)	0.2	0.4	0.4	0.1	4.0	4.0	1.1	0.0	0.3	1.7	0.0	1.2

PM Peak Hour												
2031 NO BUILD Condition Volumes	31	494	41	12	681	92	74	23	2	78	17	23
V/C Ratio	0.06	0.23	0.23	0.02	0.33	0.33	0.32	0.00	0.13	0.32	0.00	0.22
Level-of-Service	Α	Α	Α	Α	Α	Α	С	Α	С	С	Α	С
Control Delay (Seconds)	3.1	3.3	3.3	0.7	0.9	0.9	26.9	0.0	24.0	26.4	0.0	24.5
Intersection LOS						Α-	5.2					
95th Percentile Queue (veh)	0.2	1.1	1.2	0.0	0.5	0.5	2.0	0.0	0.6	2.1	0.0	1.0
2031 BUILD Conditions Volumes	31	510	41	15	698	93	74	23	5	79	17	23
V/C Ratio	0.06	0.23	0.23	0.02	0.34	0.34	0.32	0.00	0.14	0.33	0.00	0.22
Level-of-Service	Α	Α	Α	Α	Α	Α	С	Α	С	С	Α	С
Control Delay (Seconds)	3.1	3.3	3.3	0.8	0.9	0.9	26.9	0.0	24.1	26.5	0.0	24.5
Intersection LOS						Α-	5.2					
95th Percentile Queue (veh)	0.2	1.2	1.2	0.0	0.5	0.5	2.0	0.0	0.7	2.1	0.0	1.0

The 2031 analysis of the intersection of Indian School Rd. / Girard Ct. demonstrates that the delays will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Indian School Rd. / Girard Ct.

The following queuing summary table demonstrates that the existing auxiliary lanes are all of sufficient length to contain the projected horizon year 95th Percentile Queueing:

Queuing Summary	EB (Indian Sch. Rd.)			WB (In	WB (Indian Sch. Rd.)			(Girard	Ct.)	SB (Girard Ct.)		
	L	Т	R	L	Т	R	L	Т	R	L	Т	R
2031 NO BUILD Conditions (Max Queue)	0.2	1.1	1.2	0.1	3.8	3.9	2.0	0.0	0.6	2.1	0.0	1.2
20231BUILD Conditions (Max Queue)	0.2	1.2	1.2	0.1	4.0	4.0	2.0	0.0	0.7	2.1	0.0	1.2
Percent Heavy Commercial Traffic	3%				•					•		
2031 NO BUILD Conditions (Max Queue) - Ft.	5	28	31	3	98	100	52	0	15	54	0	31
2031 BUILD Conditions (Max Queue) - Ft.	5	31	31	3	103	103	52	0	18	54	0	31
Length of Existing Lane	125			60			40		-	100		

There are no significant deficiencies of storage lane capacities for the intersection of Indian School Rd. / Girard Ct. Therefore, no recommendation is made for this intersection.

#2 - I-40 N. Ramp / Carlisle Blvd. - Pages A-166 thru A-215

The results of the 2031 analyses of the full access signalized intersection of I-40 N. Ramp / Carlisle Blvd. are summarized in the following tables:

I-40 N. Ramp / Carlisle Blvd.	WB (I	-40 N. F	Ramp)	NB (C	arlisle	Blvd.)	SB (C	arlisle	Blvd.)
2031 Conditions	L	Т	R	L	Т	R	L	Т	R
Existing Lane Geometry	1	<1	1	2	3	0	0	3	1
AM Peak Hour									
2031 NO BUILD Condition Volumes	436	11	413	443	1,084	0	0	821	308
V/C Ratio	0.45	0.00	0.94	0.90	0.38	0.00	0.00	0.44	
Level-of-Service	С	Α	Е	D	Α	Α	Α	С	
Control Delay (Seconds)	31.3	0.0	64.6	50.4	0.3	0.0	0.0	24.3	0.0
Intersection LOS				C	- 26.	0			
95th Percentile Queue (veh)	8.9	0.0	21.6	9.7	0.2	0.0	0.0	9.4	0.0
2031 BUILD Conditions Volumes	465	11	413	449	1,120	0	0	874	308
V/C Ratio	0.48	0.00	0.94	0.90	0.40	0.00	0.00	0.47	
Level-of-Service	С	Α	Е	D	Α	Α	Α	С	
Control Delay (Seconds)	31.7	0.0	64.5	50.6	0.3	0.0	0.0	24.9	0.0
Intersection LOS				C	- 26.	0			
95th Percentile Queue (veh)	9.5	0.0	21.6	9.8	0.2	0.0	0.0	10.1	0.0
Mitigated Lane Geometry	1	<1>	1	2	3	0	0	3	1
2031 BUILD Conditions [Mitigated] Volumes	465	11	413	449	1,120	0	0	874	308
V/C Ratio	0.80	0.00	0.84	0.90	0.35	0.00	0.00	0.39	
Level-of-Service	D	Α	D	D	Α	Α	Α	В	
Control Delay (Seconds)	43.2	0.0	49.9	50.6	0.2	0.0	0.0	19.1	0.0
Intersection LOS				C	- 23.	9			
95th Percentile Queue (veh)	13.4	0.0	13.5	9.8	0.1	0.0	0.0	8.9	0.0

PM Peak Hour									
2031 NO BUILD Condition Volumes	326	7	352	529	1,364	0	0	1,199	507
V/C Ratio	0.39	0.00	0.94	0.96	0.45	0.00	0.00	0.58	
Level-of-Service	D	Α	Е	Е	Α	Α	Α	С	
Control Delay (Seconds)	36.9	0.0	72.4	61.5	0.3	0.0	0.0	26.4	0.0
Intersection LOS				•	- 27.	1			
95th Percentile Queue (veh)	7.8	0.0	20.5	12.9	0.2	0.0	0.0	14.3	0.0
2031 BUILD Conditions Volumes	363	7	352	540	1,432	0	0	1,267	507
V/C Ratio	0.44	0.00	0.94	0.98	0.47	0.00	0.00	0.62	
Level-of-Service	D	Α	Ε	Ε	Α	Α	Α	С	
Control Delay (Seconds)	37.5	0.0	72.2	65.8	0.4	0.0	0.0	27.1	0.0
Intersection LOS				C	- 27.	7			
95th Percentile Queue (veh)	8.6	0.0	20.5	13.5	0.2	0.0	0.0	15.3	0.0
Mitigated Lane Geometry	1	<1>	1	2	3	0	0	3	1
2031 BUILD Conditions [Mitigated] Volumes	363	7	352	540	1,432	0	0	1,267	507
V/C Ratio	0.75	0.00	0.85	0.98	0.43	0.00	0.00	0.54	
Level-of-Service	D	Α	Ε	Ε	Α	Α	Α	С	
Control Delay (Seconds)	47.9	0.0	57.6	65.8	0.3	0.0	0.0	20.9	0.0
Intersection LOS				C	- 25.	0			
95th Percentile Queue (veh)	12.0	0.0	13.1	13.5	0.2	0.0	0.0	13.4	0.0

The 2031 analysis of the intersection of I-40 N. Ramp / Carlisle Blvd. demonstrates that the overall intersection delays will be acceptable for all conditions analyzed in this report. Similar to the Implementation Year analysis, the westbound right turn movement is projected to experience moderately long delays during the AM and PM NO BUILD and BUILD conditions. This project does not contribute any new traffic to the subject westbound right turn movement. Also, the proposed development has no significant impact on this intersection. Therefore, no recommendations are made for the intersection of I-40 N. Ramp / Carlisle Blvd. It would be beneficial to the operation of the intersection to convert the westbound thru / left turn lane to a thru / left / right turn lane.

The following queuing summary table demonstrates that the existing auxiliary lanes are all of sufficient length to contain the projected horizon year 95th Percentile Queueing:

Queuing Summary	WB (I-40 N. Ramp)			NB (C	arlisle	Blvd.)	SB (Carlisle Blvd.)			
	L	T	R	L	T	R	L	T	R	
2031 NO BUILD Conditions (Max Queue)	8.9	0.0	21.6	12.9	0.2	0.0	0.0	14.3	0.0	
20231BUILD Conditions (Max Queue)	9.5	0.0	21.6	13.5	0.2	0.0	0.0	15.3	0.0	
Percent Heavy Commercial Traffic										
2031 NO BUILD Conditions (Max Queue) - Ft.	229	0	556	332	5	0	0	368	0	
2031 BUILD Conditions (Max Queue) - Ft.	245	0	556	348	5	0	0	394	0	
Length of Existing Lane	175	-	175	250	-	-	-	_	380	

The queuing analysis for the intersection of the I-40 N. Ramp / Carlisle Blvd. based on the 2031 AM and PM Peak Hour volumes demonstrates that there are storage lane deficiencies for both the NO BUILD and the BUILD conditions. The proposed Kmart Site Redevelopment Project contributes a slight volume of traffic to the westbound left turn movement so that the calculated 95th Percentile queue length is increased from 229 feet to 245 feet (about 1 vehicle length). A similar case is demonstrated for the northbound left turn lane on Carlisle Blvd. at the I-40 N. Ramp where the calculated queue length increases from 332 feet to 248 feet (about 1 vehicle length). Therefore, it can be concluded that the proposed Kmart Site Redevelopment Project does not have a significant impact on the intersection of the I-40 N. Ramp / Carlisle Blvd. Therefore, no recommendation is made related to the queueing analysis.

#3 – I-40 S. Ramp / Carlisle Blvd. - Pages A-166 thru A-215

The results of the 2031 analyses of the full access signalized intersection of I-40 S. Ramp / Carlisle Blvd. are summarized in the following tables:

I-40 S. Ramp / Carlisle Blvd.	EB (I-	40 S. R	lamp)	NB (C	arlisle	Blvd.)	SB (C	arlisle	Blvd.)	
2031 Conditions	L	Т	R	L	T	R	L	T	R	
Existing Lane Geometry	2	1>	2	0	5	1	2	3	0	
AM Peak Hour										
2031 NO BUILD Condition Volumes	711	7	733	0	931	269	205	957	0	
V/C Ratio	0.89	0.00	0.69	0.00	0.25	0.35	0.78	0.31	0.00	
Level-of-Service	D	Α	D	Α	Α	Α	D	Α	Α	
Control Delay (Seconds)	50.7	0.0	39.3	0.0	0.0	0.4	54.7	2.6	0.0	
Intersection LOS		•	•	C	- 20.	7	•	•		
95th Percentile Queue (veh)	16.8	0.0	10.9	0.0	0.0	0.2	5.7	1.8	0.0	
2031 BUILD Conditions Volumes	711	7	742	0	974	289	205	1,039	0	
V/C Ratio	0.89	0.00	0.70	0.00	0.26	0.37	0.78	0.34	0.00	
Level-of-Service	D	Α	D	Α	Α	Α	D	Α	Α	
Control Delay (Seconds)	50.7	0.0	39.5	0.0	0.2	1.3	54.6	2.7	0.0	
Intersection LOS	C - 20.2									
95th Percentile Queue (veh)	16.8	0.0	11.0	0.0	0.1	0.5	5.7	2.0	0.0	

PM Peak Hour									
2031 NO BUILD Condition Volumes	691	15	649	0	1,340	461	439	1,047	0
V/C Ratio	0.85	0.00	0.61	0.00	0.41	0.68	0.89	0.34	0.00
Level-of-Service	D	Α	D	Α	В	В	D	Α	Α
Control Delay (Seconds)	50.0	0.0	40.6	0.0	14.2	17.0	50.5	0.2	0.0
Intersection LOS				(- 23.	8			
95th Percentile Queue (veh)	17.0	0.0	10.4	0.0	4.4	8.7	9.9	0.1	0.0
2031 BUILD Conditions Volumes	691	15	660	0	1,419	498	439	1,151	0
V/C Ratio	0.85	0.00	0.62	0.00	0.44	0.73	0.89	0.37	0.00
Level-of-Service	D	Α	D	Α	С	С	D	Α	Α
Control Delay (Seconds)	49.9	0.0	40.8	0.0	21.6	32.1	50.1	0.2	0.0
Intersection LOS			•	(- 26.	9	•		•
95th Percentile Queue (veh)	17.0	0.0	10.6	0.0	9.7	19.3	9.8	0.1	0.0

The 2031 analysis of the intersection of I-40 S. Ramp / Carlisle Blvd. demonstrates that the delays will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of I-40 S. Ramp / Carlisle Blvd.

Following is the Queuing Summary Table for the intersection of the I-40 S. Ramp / Carlisle Blvd.:

Queuing Summary	EB (I-40 S. Ramp)			NB (Carlisle Blvd.)			SB (Carlisle Blvd.)		
	L	Т	R	L	Т	R	L	Т	R
2031 NO BUILD Conditions (Max Queue)	17.0	0.0	10.9	0.0	4.4	8.7	9.9	1.8	0.0
20231BUILD Conditions (Max Queue)	17.0	0.0	11.0	0.0	9.7	19.3	9.8	2.0	0.0
Percent Heavy Commercial Traffic	3%								
2031 NO BUILD Conditions (Max Queue) - Ft.	438	0	281	0	113	224	255	46	0
2031 BUILD Conditions (Max Queue) - Ft.	438	0	283	0	250	497	252	52	0
Length of Existing Lane	450		450			310	310		

The preceding table indicates that the northbound right turn lane queuing for the horizon year BUILD PM Peak Hour condition is 497 feet long. The existing northbound right turn lane is

approximately 310 feet long at which point it is intersected by Driveway "A" of this project. The northbound right turn lane extends south of Driveway "A" to provide a total length of approximately 450 feet plus transition. The total length of the existing northbound right turn lane is of sufficient length to contain almost all of the 95th Percentile queue length calculated in this report. There is a very small probability that the lane will spill into the thru lane a couple of vehicles during the 2031 PM Peak Hour. Therefore, no recommendation is made with regard to queuing at this intersection.

#4 - Indian School Rd. / Carlisle Blvd. - Pages A-166 thru A-215

The results of the 2031 analysis of the full access signalized intersection of Indian School Rd. / Carlisle Blvd. are summarized in the following table:

Indian Sch. Rd. / Carlisle Blvd.	EB (Indian Sch. Rd.) WB (Indian Sch. Rd.) NB (Carlisle Blvd									SB (C	arlisle	Blvd.)
2031 Conditions	L	T	R	L	T	R	L	Т	R	L	Т	R
Existing Lane Geometry	1	2>	0	1	2>	0	1	3>	0	1	2	1
AM Peak Hour												
2031 NO BUILD Condition Volumes	506	313	62	54	303	135	96	891	51	234	798	536
V/C Ratio	1.27	0.36	0.37	0.19	0.81	0.83	0.42	0.56	0.56	0.71	0.61	0.63
Level-of-Service	F	С	С	D	D	D	С	С	С	С	С	В
Control Delay (Seconds)	165.0	20.0	20.1	35.3	52.5	55.0	22.7	30.8	32.4	25.5	21.5	14.0
Intersection LOS						D - 4	44.9					
95th Percentile Queue (veh)	36.3	4.9	5.0	2.3	11.1	11.1	3.1	11.6	12.6	7.3	10.9	10.8
2031 BUILD Conditions Volumes	514	321	62	74	309	135	96	974	80	234	855	541
V/C Ratio	1.29	0.38	0.39	0.24	0.81	0.83	0.39	0.64	0.64	0.76	0.66	0.63
Level-of-Service	F	С	С	С	D	Е	С	С	С	С	В	Α
Control Delay (Seconds)	174.0	21.0	21.0	34.8	52.9	55.4	22.0	32.7	34.9	28.8	10.3	7.9
Intersection LOS						D - 4	43.2					
95th Percentile Queue (veh)	37.8	5.2	5.3	3.1	11.3	11.3	3.1	13.2	14.3	7.5	5.5	5.2
Mitigated Lane Geometry	1	2>	0	1	2	1	1	3>	0	1	2	1
2031 BUILD Conditions [Mitigated] Volumes	514	321	62	74	309	135	96	974	80	234	855	541
V/C Ratio	1.20	0.42	0.43	0.28	0.75	0.40	0.37	0.59	0.59	0.73	0.62	0.59
Level-of-Service	F	С	С	D	D	D	В	С	С	С	Α	Α
Control Delay (Seconds)	136.0	24.0	24.1	38.8	48.8	36.3	19.9	29.6	31.3	24.9	7.1	5.1
Intersection LOS						D - :	35.9					
95th Percentile Queue (veh)	33.7	5.8	5.9	3.3	8.0	6.0	2.9	12.6	13.6	6.8	4.0	3.6
PM Peak Hour												
2031 NO BUILD Condition Volumes	565	802	116	75	350	239	157	1,376	68	242	914	465
V/C Ratio	1.39	0.78	0.78	0.32	0.91	0.93	0.68	1.04	1.04	0.92	0.84	0.59
Level-of-Service	F	В	В	D	Е	Е	С	F	F	Е	С	В
Control Delay (Seconds)	209.0	19.7	19.7	35.2	72.0	76.6	33.7	79.8	89.5	55.2	24.2	11.7
Intersection LOS						E - (65.0					
95th Percentile Queue (veh)	44.7	9.3	9.3	3.4	17.5	17.0	6.6	26.8	30.2	10.6	10.6	7.4
2031 BUILD Conditions Volumes	575	813	116	112	361	239	157	1,482	105	242	1,021	475
V/C Ratio	1.42	0.83	0.83	0.46	0.92	0.93	0.76	1.15	1.15	0.92	0.95	0.61
Level-of-Service	F	С	С	D	Е	Е	D	F	F	Е	D	В
Control Delay (Seconds)	222.0	24.9	24.8	35.1	74.6	79.3	39.7	121.0	129.0	57.3	35.6	12.6
Intersection LOS						F - 8	B0.7					
95th Percentile Queue (veh)	46.9	10.7	10.8	5.0	18.3	17.7	6.9	35.3	38.7	11.1	15.3	8.0
Mitigated Lane Geometry	1	2>	0	1	2	1	1	3>	0	1	2	1
2031 BUILD Conditions [Mitigated] Volumes	575	813	116	112	361	239	157	1,482	105	242	1,021	475
V/C Ratio	1.30	0.93	0.93	0.57	0.65	0.55	0.68	1.02	1.02	0.92	0.84	0.56
Level-of-Service	F	D	D	D	D	D	С	F	F	Е	В	Α
Control Delay (Seconds)	176.0	45.2	45.1	40.3	47.9	36.4	31.1	70.6	80.1	58.3	19.6	8.4
Intersection LOS						E - 9	58.6					

95th Percentile Queue (veh)

42.5 | 16.1 | 16.2 | 5.4 | 9.3 | 10.5 | 6.2 | 27.7 | 31.1 | 11.1 | 9.8

The 2031 analysis of the intersection of Indian School Rd. / Carlisle Blvd. demonstrates that the overall intersection delays will be acceptable for the 2031 AM Peak Hour conditions analyzed in this report. However, the 2031 PM Peak Hour conditions shows moderate to significantly long delays for both the NO BUILD and the BUILD conditions. There are marginally to significantly high delays expected for some individual turning movements at the intersection during the 2031 AM / PM NO BUILD and BUILD condition. It is demonstrated in the analysis above for the 2031 conditions that construction of a new westbound right turn lane at the intersection will mitigate the impact of this development on the intersection of Indian School Rd. / Carlisle Blvd.

Following is the Queuing Summary Table for the intersection of the Indian School Rd. / Carlisle Blvd:

Queuing Summary	EB (Indian Sch. Rd.)			WB (In	dian Sc	h. Rd.)	NB (C	arlisle	Blvd.)	SB (C	arlisle	Blvd.)
	L	T	R	L	T	R	L	T	R	L	T	R
2031 NO BUILD Conditions (Max Queue)	44.7	9.3	9.3	3.4	17.5	17.0	6.6	26.8	30.2	10.6	10.9	10.8
20231BUILD Conditions (Max Queue)	46.9	10.7	10.8	5.0	18.3	17.7	6.9	35.3	38.7	11.1	15.3	8.0
Percent Heavy Commercial Traffic	3%											
2031 NO BUILD Conditions (Max Queue) - Ft.	1,151	239	239	88	451	438	170	690	778	273	281	278
2031 BUILD Conditions (Max Queue) - Ft.	1,208	276	278	129	471	456	178	909	997	286	394	206
Length of Existing Lane	260			150			100			250		200

The preceding table indicates that there is a significant deficit in queuing for the eastbound left turn movement on Indian School Rd. at Carlisle Blvd. The eastbound left turn lane is reported as 260 feet long at which point it transitions to a center two-way left turn lane which extends an additional 400 feet through existing driveways and intersections. Total queueing, therefore, for the eastbound left turn movement can be up to 660 feet but it would block existing driveways and intersections along Indian School Rd. at that length. The proposed Kmart Redevelopment Project only adds approximately 50 feet to the 2031 NO BUILD queue length of 1,151 feet. The impact of the proposed Kmart Redevelopment Project to the eastbound queue length is not significant. The northbound left turn queue is approximately 78 feet deficient to contain the projected 2031 PM Peak Hour queuing. However, the northbound left turn lane length cannot be extended without adversely affecting the complementary southbound left turn lane on Carlisle Blvd. into the small retail center on the east side of Carlisle Blvd. The southbound left turn lane is approximately 36 feet deficient to contain the projected 2031 PM Peak Hour queuing. The southbound left turn lane length cannot be extended without adversely affecting the length of the complementary northbound left turn lane into the shopping center on the west side of Carlisle Blvd. Therefore, no recommendation is made with regard to queuing at this intersection.

#5 - Indian School Rd. / Washington St. - Pages A-166 thru A-215

The results of the 2031 analysis of the full access signalized intersection of Indian School Rd. / Washington St. are summarized in the following table:

Indian Sch. Rd. / Washington St.	EB (In	dian Sc	h. Rd.)	WB (In	dian Sc	h. Rd.)	NB (W	ashingt	on St.)	SB (W	ashingt	on St.)	
2031 Conditions	L	T	R	L	T	R	L	T	R	L	T	R	
xisting Lane Geometry	1	2>	0	1	2>	0	1	1>	0	1	1>	0	
M Peak Hour													
2031 NO BUILD Condition Volumes	65	228	41	19	242	36	70	176	38	40	126	154	
V/C Ratio	0.12	0.20	0.21	0.04	0.21	0.21	0.31	0.00	0.60	0.14	0.00	0.84	
Level-of-Service	В	В	В	В	В	В	С	Α	С	С	Α	D	
Control Delay (Seconds)	11.8	15.8	15.9	11.4	15.9	15.9	23.5	0.0	29.5	21.9	0.0	37.5	
Intersection LOS	C - 23.5												
95th Percentile Queue (veh)	1.1	3.0	3.1	0.3	3.1	3.2	1.9	0.0	7.2	1.1	0.0	10.1	
2031 BUILD Conditions Volumes	66	257	48	19	284	36	81	176	38	40	126	156	
V/C Ratio	0.13	0.23	0.24	0.04	0.24	0.24	0.36	0.00	0.60	0.14	0.00	0.84	
Level-of-Service	В	В	В	В	В	В	С	Α	С	С	Α	D	
Control Delay (Seconds)	12.0	16.2	16.3	11.5	16.3	16.3	23.8	0.0	29.4	21.8	0.0	37.8	
Intersection LOS				•		C - 2	23.3		•		•		
95th Percentile Queue (veh)	1.1	3.4	3.5	0.3	3.6	3.7	2.3	0.0	7.2	1.1	0.0	10.3	
		•		•		•	•		•		•		
M Peak Hour													
2031 NO BUILD Condition Volumes	187	504	87	43	312	63	74	282	55	54	277	149	

PM Peak Hour														
2031 NO BUILD Condition Volumes	187	504	87	43	312	63	74	282	55	54	277	149		
V/C Ratio	0.40	0.46	0.47	0.12	0.32	0.33	0.42	0.00	0.74	0.22	0.00	0.96		
Level-of-Service	В	С	С	В	С	С	С	Α	D	С	Α	Е		
Control Delay (Seconds)	16.2	22.6	22.7	16.9	22.8	22.9	26.0	0.0	35.5	23.0	0.0	63.4		
Intersection LOS						C - :	32.5							
95th Percentile Queue (veh)	4.4	8.8	8.8	1.0	5.7	5.8	2.2	0.0	12.4	1.6	0.0	19.9		
2031 BUILD Conditions Volumes	189	558	101	43	366	63	88	282	55	54	277	151		
V/C Ratio	0.43	0.52	0.52	0.14	0.37	0.38	0.49	0.00	0.73	0.22	0.00	0.97		
Level-of-Service	В	С	С	В	С	С	С	Α	С	С	Α	Е		
Control Delay (Seconds)	16.7	24.0	24.0	17.4	23.8	23.9	26.6	0.0	34.9	23.2	0.0	66.6		
Intersection LOS	C - 33.2													
95th Percentile Queue (veh)	4.5	10.0	10.0	1.0	6.8	6.9	2.7	0.0	12.4	1.6	0.0	20.5		

The 2031 analysis of the intersection of Indian School Rd. / Washington St. demonstrates that the delays will be acceptable for all conditions analyzed in this report. The southbound thru / right turn approach is projected to experience marginally long delays during the PM Peak Hour NO BUILD and BUILD conditions, but the impact of this development on that particular delay is minimal. There is no significant impact to the intersection caused by the traffic generated by the Kmart Redevelopment Project. Therefore, no recommendations are made for the intersection of Indian School Rd. / Washington St.

Following is the Queuing Summary Table for the intersection of the Indian School Rd. / Washington St.:

Queuing Summary	EB (In	dian Sc	h. Rd.)	WB (In	dian Sc	h. Rd.)	NB (W	ashing	ton St.)	SB (W	ashingt	ton St.)
	L	T	R	L	T	R	L	T	R	L	T	R
2031 NO BUILD Conditions (Max Queue)	4.4	8.8	8.8	1.0	5.7	5.8	2.2	0.0	12.4	1.6	0.0	19.9
20231BUILD Conditions (Max Queue)	4.5	10.0	10.0	1.0	6.8	6.9	2.7	0.0	12.4	1.6	0.0	20.5
Percent Heavy Commercial Traffic	3%											
2031 NO BUILD Conditions (Max Queue) - Ft.	113	227	227	26	147	149	57	0	319	41	0	512
2031 BUILD Conditions (Max Queue) - Ft.	116	258	258	26	175	178	70	0	319	41	0	528
Length of Existing Lane	90			75			125			150		

There is slight deficiency in the current length of the eastbound left turn lane to accommodate the 2031 PM Peak Hour 95th Percentile queueing. Lengthening the eastbound left turn lane by about 25 feet would involve restriping the approach. Since the deficiency is so minor and the impact of this development on the queue for the turning movement is insignificant, no recommendation is made related to the queueing analysis.

#6 - Constitution Ave. / Carlisle Blvd. - Pages A-166 thru A-215

The results of the 2031 analysis of the full access signalized intersection of Constitution Ave. / Carlisle Blvd. are summarized in the following table:

Constitution Ave. / Carlisle Blvd.	EB (Co	nstitutio	n Ave.)	WB (Co	nstitutio	on Ave.)	NB (C	arlisle	Blvd.)	SB (C	Carlisle	Blvd.)	
2031 Conditions	L	T	R	L	T	R	L	T	R	L	T	R	
Existing Lane Geometry	1	1	1	1	1	1	1	2>	0	1	1	1	
AM Peak Hour													
2031 NO BUILD Condition Volumes	104	92	15	59	166	90	15	493	21	70	544	215	
V/C Ratio	0.56	0.26	0.05	0.23	0.46	0.30	0.03	0.22	0.22	0.13	0.46	0.21	
Level-of-Service	D	D	С	D	D	D	Α	Α	Α	Α	Α	Α	
Control Delay (Seconds)	49.3	36.6	34.7	40.8	38.8	37.1	5.2	6.3	6.3	0.6	0.8	0.3	
Intersection LOS						B - '	13.3						
95th Percentile Queue (veh)	5.6	4.1	0.6	2.8	7.7	4.1	0.2	3.8	4.0	0.1	0.5	0.2	
2031 BUILD Conditions Volumes	108	92	15	59	166	105	15	585	21	81	608	218	
V/C Ratio	0.57	0.25	0.05	0.23	0.45	0.34	0.03	0.26	0.26	0.16	0.51	0.22	
Level-of-Service	D	D	С	D	D	D	Α	Α	Α	Α	Α	Α	
Control Delay (Seconds)	49.1	36.1	34.3	40.3	38.3	37.1	5.4	6.8	6.8	0.9	1.0	0.3	
Intersection LOS	B - 12.9												
95th Percentile Queue (veh)	5.9	4.1	0.6	2.8	7.7	4.8	0.2	4.8	4.9	0.1	0.6	0.2	

PM Peak Hour														
2031 NO BUILD Condition Volumes	226	209	17	84	171	102	19	746	39	80	634	135		
V/C Ratio	0.75	0.38	0.04	0.28	0.31	0.22	0.05	0.40	0.40	0.24	0.63	0.16		
Level-of-Service	D	С	С	D	С	С	В	В	В	Α	Α	Α		
Control Delay (Seconds)	51.4	31.6	27.7	39.1	30.7	29.6	10.5	14.3	14.2	2.9	1.3	0.2		
Intersection LOS						В - 1	17.3							
95th Percentile Queue (veh)	12.3	8.9	0.7	4.1	7.4	4.3	0.5	10.1	10.4	0.5	0.7	0.1		
2031 BUILD Conditions Volumes	231	209	17	84	171	122	19	864	39	100	753	140		
V/C Ratio	0.76	0.37	0.03	0.28	0.30	0.25	0.05	0.47	0.47	0.36	0.75	0.17		
Level-of-Service	D	С	С	D	С	С	В	В	В	Α	Α	Α		
Control Delay (Seconds)	51.8	30.9	27.1	38.3	30.0	29.5	11.0	15.8	15.7	4.6	1.3	0.1		
Intersection LOS	B - 17.0													
95th Percentile Queue (veh)	12.6	8.8	0.6	4.1	7.3	5.1	0.5	12.1	12.4	1.2	0.7	0.0		

The 2031 analysis of the intersection of Constitution Ave. / Carlisle Blvd. demonstrates that the delays will be acceptable for all conditions analyzed in this report. The average intersection delays in this analysis actually are reduced slightly as a result of the traffic added by the Kmart Redevelopment Project since the average intersection delay is a weighted average, and this project contributes mostly northbound and southbound thru movements which have low calculated average delays. Therefore, no recommendations are made for the intersection of Constitution Ave. / Carlisle Blvd.

Following is the Queuing Summary Table for the intersection of the Constitution Ave. / Carlisle Blvd.:

Queuing Summary	B (Cor	nstitutio	on Ave	VB (Co	nstituti	on Ave	NB (C	arlisle	Blvd.)	SB (C	arlisle	Blvd.)
	L	T	R	Ĺ	T	R	L	T	R	Ĺ	T	R
2031 NO BUILD Conditions (Max Queue)	12.3	8.9	0.7	4.1	7.7	4.3	0.5	10.1	10.4	0.5	0.7	0.2
20231BUILD Conditions (Max Queue)	12.6	8.8	0.6	4.1	7.7	5.1	0.5	12.1	12.4	1.2	0.7	0.2
Percent Heavy Commercial Traffic	3%											
2031 NO BUILD Conditions (Max Queue) - Ft.	317	229	18	106	198	111	13	260	268	13	18	5
2031 BUILD Conditions (Max Queue) - Ft.	324	227	15	106	198	131	13	312	319	31	18	5
Length of Existing Lane	25			75		75	100			75		900

There is a projected queueing deficiency demonstrated in the preceding table for the eastbound left turn lane and westbound left turn lane on Constitution Ave. There are geometric constraints on the west leg of Constitution Ave. that preclude the eastbound left turn lane from being extended. The proposed Kmart Redevelopment Project does not contribute any traffic to the westbound left turn movement. Therefore, no recommendation is made.

#7 - I-40 S. Ramp / San Mateo Blvd. - Pages A-166 thru A-215

The results of the 2031 analysis of the full access signalized intersection of I-40 S. Ramp / San Mateo Blvd. are summarized in the following table:

I-40 S. Ramp / San Mateo Blvd	EB (I-40 S. Ramp) NB (San Mateo Blvd) SB (San Mateo Blvd)											
2031 Conditions	L	T	R	Ĺ	T	R	L	T	R			
Existing Lane Geometry	2	1>	1	0	3	1	2	3	0			
AM Peak Hour												
2031 NO BUILD Condition Volumes	584	1	948	0	1,083	147	237	902	0			
V/C Ratio	0.71	0.00	1.29	0.00	0.45		0.80	0.30	0.00			
Level-of-Service	D	Α	F	Α	В		Е	В	Α			
Control Delay (Seconds)	39.8	0.0	180.0	0.0	17.4	0.0	58.5	14.7	0.0			
Intersection LOS				E	- 63.	9						
95th Percentile Queue (veh)	12.6	0.0	39.4	0.0	10.3	0.0	6.8	9.2	0.0			
2031 BUILD Conditions Volumes	596	1	948	0	1,095	149	237	922	0			
V/C Ratio	0.72	0.00	1.29	0.00	0.46		0.80	0.30	0.00			
Level-of-Service	D	Α	F	Α	В		Е	В	Α			
Control Delay (Seconds)	40.3	0.0	180.0	0.0	17.5	0.0	58.4	14.8	0.0			
Intersection LOS				E	- 63.	5						
95th Percentile Queue (veh)	12.9	0.0	39.4	0.0	10.5	0.0	6.7	9.3	0.0			
Mitigated Lane Geometry	2	1>	1	0	3	1	2	3	0			
2031 BUILD Conditions [Mitigated] Volumes	596	1	948	0	1,095	149	237	922	0			
V/C Ratio	0.65	0.00	1.16	0.00	0.48		0.79	0.32	0.00			
Level-of-Service	D	Α	F	Α	В		D	Α	Α			
Control Delay (Seconds)	36.2	0.0	125.0	0.0	19.6	0.0	54.1	9.7	0.0			
Intersection LOS				C	- 48.	4						
95th Percentile Queue (veh)	12.3	0.0	32.8	0.0	11.1	0.0	6.4	6.3	0.0			

PM Peak Hour									
2031 NO BUILD Condition Volumes	413	15	556	0	1,729	387	454	1,003	0
V/C Ratio	0.56	0.00	0.87	0.00	0.69		1.33	0.31	0.00
Level-of-Service	D	Α	D	Α	С		F	С	Α
Control Delay (Seconds)	41.8	0.0	53.5	0.0	21.5	0.0	213.0	22.7	0.0
Intersection LOS					- 49.	1			
95th Percentile Queue (veh)	10.0	0.0	14.7	0.0	18.6	0.0	20.3	13.1	0.0
2031 BUILD Conditions Volumes	436	15	556	0	1,752	391	454	1,029	0
V/C Ratio	0.59	0.00	0.86	0.00	0.70		1.33	0.32	0.00
Level-of-Service	D	Α	D	Α	С		F	С	Α
Control Delay (Seconds)	42.3	0.0	53.4	0.0	21.8	0.0	213.0	23.0	0.0
Intersection LOS					- 48.	9			
95th Percentile Queue (veh)	10.5	0.0	14.7	0.0	18.9	0.0	20.2	13.4	0.0
Mitigated Lane Geometry	2	1>	1	0	3	1	2	3	0
2031 BUILD Conditions [Mitigated] Volumes	436	15	556	0	1,752	391	454	1,029	0
V/C Ratio	0.62	0.00	0.90	0.00	0.77		0.86	0.32	0.00
Level-of-Service	D	Α	Е	Α	С		D	Α	Α
Control Delay (Seconds)	44.0	0.0	60.7	0.0	27.2	0.0	50.9	7.0	0.0
Intersection LOS				C	- 31.	0			
95th Percentile Queue (veh)	10.7	0.0	15.5	0.0	21.2	0.0	10.0	5.2	0.0

The 2031 analysis of the intersection of I-40 S. Ramp / San Mateo Blvd. is somewhat similar to the 2021 analysis in that it demonstrates that the overall intersection delays will be acceptable for the 2031 PM Peak Hour conditions analyzed in this report and marginal for the 2031 AM Peak Hour conditions. The volumes of traffic generated by the proposed Kmart Redevelopment project through the I-40 / San Mateo ramps are very minor. Thus, the impact to the interchange ramps is insignificant. The analysis of the I-40 South Ramp / San Mateo Blvd. does reveal a couple of stressed turning movements for both the AM Peak Hour and the PM Peak Hour. The eastbound right turn movement shows long delays during the AM Peak Hour and the southbound left turn movement shows long delays during the PM Peak Hour. The long delays for these turning movements exist for both the NO BUILD as well as the BUILD conditions since this proposed project does not contribute traffic to either of the two turning movements. Also, the overall intersection levels-of-service and associated delays seem to indicate that the issue can be remedied by modifying the traffic signal timing splits at the intersection for both the AM and PM Peak Hour periods. However, this Study cannot make that recommendation conclusively since this analysis is limited and does not evaluate the San Mateo Blvd. signalized coordinated corridor. The signal timing sheets for this intersection furnished by the City of Albuquerque indicate that the signal timing has not been adjusted for about eight years. Based on the results of this analysis and the fact that the signal timing has not been adjusted for about eight years, this Study recommends that the City of Albuquerque and / or the New Mexico Department of Transportation revisit the signal timing for this portion of the San Mateo Blvd. corridor. It appears from this analysis that the levels-of-service / delays / queueing issues at the I-40 S. Ramp / San Mateo Blvd. may be resolved with modifications to the signal timing / coordination plan that currently exists. Additionally, the impact of the proposed Kmart Redevelopment Project at this intersection is insignificant. Therefore, no recommendations are made for the intersection of I-40 S. Ramp / San Mateo Blvd.

Following is the Queuing Summary Table for the intersection of the I-40 S. Ramp / San Mateo Blvd:

Queuing Summary	EB (I-	-40 S. F	Ramp)	NB (Sa	n Mate	o Blvd)	SB (Sa	n Mate	o Blvd)
	L	Т	R	L	Т	R	L	Т	R
2031 NO BUILD Conditions (Max Queue)	12.6	0.0	39.4	0.0	18.6	0.0	20.3	13.1	0.0
20231BUILD Conditions (Max Queue)	12.9	0.0	39.4	0.0	18.9	0.0	20.2	13.4	0.0
Percent Heavy Commercial Traffic	3%								
2031 NO BUILD Conditions (Max Queue) - Ft.	324	0	1,015	0	479	0	523	337	0
2031 BUILD Conditions (Max Queue) - Ft.	332	0	1,015	0	487	0	520	345	0
Length of Existing Lane	250+		135+			200	340		

The preceding Queuing Summary Table demonstrates that there are deficiencies in storage capacity for the eastbound left and right turn movements as well as the southbound left turn movement based on 2031 AM or PM Peak Hour volumes. Even though there are deficiencies, it is important to note that the impact of the proposed Kmart Site Redevelopment Project has only minimal impact on the calculated queue lengths. Secondly, even though the eastbound

auxiliary lanes are deficient, the spillover will still be contained within the I-40 S. Ramp which has a total length of well over 1,300 feet to contain the calculated queues. The outside lane of the I-40 segment west of San Mateo is designated as a ramp exit only lane, so there should be no thru traffic in that lane. The southbound left turn queue for the 2031 PM Peak Hour condition is problematic, but as demonstrated in this report, it possibly may be reduced significantly by adjusting the traffic signal timing plan. Therefore, no recommendation is made for this intersection as a result of the queuing analysis.

#8 - I-40 N. Ramp / San Mateo Blvd. - Pages A-166 thru A-215

The results of the 2031 analysis of the full access signalized intersection of I-40 N. Ramp / San Mateo Blvd. are summarized in the following table:

I-40 N. Ramp / San Mateo Blvd	EB (I-	40 N. F	Ramp)	WB (I	-40 N. I	Ramp)	NB (Sa	n Mate	o Blvd)	SB (Sa	n Mate	o Blvd										
2031 Conditions	L	Т	R	L	Т	R	L	Т	R	L	Т	R										
Existing Lane Geometry	2	0	1	2	1	1	2	3	0	0	3	1										
AM Peak Hour																						
2031 NO BUILD Condition Volumes	62	0	188	342	172	406	149	974	0	0	1,083	96										
V/C Ratio	0.43			0.36	0.48	1.34	0.71	0.34	0.00	0.00	0.47	0.12										
Level-of-Service	D			С	D	F	D	Α	Α	Α	В	В										
Control Delay (Seconds)	53.0			30.4	39.2	216.0	52.5	4.9	0.0	0.0	18.7	12.6										
Intersection LOS						D - 4	43.3															
95th Percentile Queue (veh)	1.7			7.0	8.0	37.7	4.0	3.2	0.0	0.0	10.6	2.3										
2031 BUILD Conditions Volumes	62	0	188	345	172	406	149	998	0	0	1,101	114										
V/C Ratio	0.43			0.36	0.48	1.34	0.71	0.35	0.00	0.00	0.48	0.15										
Level-of-Service	D			С	D	F	D	Α	Α	Α	В	В										
Control Delay (Seconds)	53.0			30.5	39.2	216.0	52.5	4.9	0.0	0.0	18.8	12.8										
Intersection LOS						D - 4	42.8															
95th Percentile Queue (veh)	1.7			7.1	8.0	37.7	4.0	3.2	0.0	0.0	10.7	2.8										
Mitigated Lane Geometry	2	0	1	2	1	1	2	3	0	0	3	1										
2031 BUILD Conditions [Mitigated] Volumes	62	0	188	345	172	406	149	998	0	0	1,101	114										
V/C Ratio	0.43			0.33	0.43	1.19	0.71	0.37	0.00	0.00	0.50	0.15										
Level-of-Service	D			С	D	F	D	Α	Α	Α	С	В										
Control Delay (Seconds)	53.0			28.1	36.3	150.0	52.5	6.3	0.0	0.0	21.0	14.4										
Intersection LOS						D - 3	35.5															
95th Percentile Queue (veh)	1.7			6.7	7.7	31.4	4.0	4.0	0.0	0.0	11.3	3.0										
PM Peak Hour												•										
2031 NO BUILD Condition Volumes	195	0	524	238	142	315	196	1,317	0	0	1,421	118										
V/C Ratio	0.78			0.23	0.40	1.04	0.77	0.48	0.00	0.00	0.66	0.15										
Level-of-Service	Е			С	D	F	Е	С	Α	Α	С	В										
Control Delay (Seconds)	63.2			29.3	41.7	109.0	60.8	32.4	0.0	0.0	26.1	13.9										
Intersection LOS			1	1		D - 3	38.8		ı	ı												
95th Percentile Queue (veh)	6.3			4.9	7.2	22.3	5.9	18.5	0.0	0.0	16.7	3.2										
2031 BUILD Conditions Volumes	195	0	524	242	142	315	196	1,362	0	0	1,444	141										
V/C Ratio	0.78			0.23	0.40	1.04	0.77	0.50	0.00	0.00	0.67	0.18										
Level-of-Service	Е			С	D	F	Е	С	Α	Α	С	В										
Control Delay (Seconds)	63.2			29.4	41.7	109.0	60.7	32.9	0.0	0.0	26.4	14.3										
Intersection LOS						D - :	38.8															
95th Percentile Queue (veh)	6.3			5.0	7.2	22.3	5.8	19.0	0.0	0.0	17.1	3.9										
Mitigated Lane Geometry	2	0	1	2	1	1	2	3	0	0	3	1										
2031 BUILD Conditions [Mitigated] Volumes	195	0	524	242	142	315	196	1,362	0	0	1,444	141										
V/C Ratio	0.79			0.21	0.35	0.91	0.80	0.52	0.00	0.00	0.71	0.19										
Level-of-Service	Е			С	D	Е	Е	В	Α	Α	С	В										
Control Delay (Seconds)	65.3			26.8	38.4	65.2	62.6	16.9	0.0	0.0	29.4	16.0										
Intersection LOS						C - :	31.0															

95th Percentile Queue (veh)

11.7

6.4

4.2

0.0 18.0

The 2031 analyses of the signalized intersection of the I-40 N. Ramp / San Mateo Blvd. yield results that are much like the 2021 analysis and are similar in some ways to the preceding analyses of the South Ramp. The Summary Table above demonstrates that, while the overall intersection delays are acceptable, there are a limited number of stressed turning movements for both the AM and PM Peak Hour NO BUILD and BUILD Conditions. Normally, multiple period analyses would be required for this intersection (and the South Ramp) since one or more individual turning movements are calculated to have a v/c ratio of 1.0 or greater. However, in the cases of the I-40 N. Ramp / San Mateo Blvd. (and the South Ramp), the proposed Kmart Redevelopment Project does not contribute any traffic to those particular oversaturated turning movements. Secondly, the overall intersection delays for both signalized intersections are found to be acceptable. Finally, the traffic signal timing sheets for the two intersections indicate that the signal timing for these two intersections was last established in 2011 (about eight years ago). It seems reasonable to assume that if the New Mexico Department of Transportation does not accept traffic count data that is more than two years old to be utilized in Traffic Impact Studies, it seems logical to assume that a signal timing plan based on 8-year old traffic counts would be suspect. The results of the signal analyses for the two Interchange Ramps on I-40 at San Mateo seem to suggest that it may be time to re-evaluate the traffic signal timing at the two ramps along with the timing / offset plan for the San Mateo corridor. The mitigated conditions reported in the preceding table for this intersection simple optimize the signal timing for the intersection to achieve a significantly improved performance. However, it is acknowledged that this analysis falls short in that it does not consider the San Mateo interconnected corridor in full. For the reasons stated above, no recommendation is made for the I-40 N. Ramp / San Mateo Blvd.

Following is the Queuing Summary Table for the intersection of the I-40 N. Ramp / San Mateo Blvd:

Queuing Summary	EB (I	-40 N. F	Ramp)	WB (I	-40 N. F	Ramp)	NB (Sa	n Mate	o Blvd)	SB (Sa	n Mate	o Blvd)
	L	T	R	L	T	R	L	T	R	L	T	R
2031 NO BUILD Conditions (Max Queue)	6.3	0.0	0.0	7.0	8.0	37.7	5.9	18.5	0.0	0.0	16.7	3.2
20231BUILD Conditions (Max Queue)	6.3	0.0	0.0	7.1	8.0	37.7	5.8	19.0	0.0	0.0	17.1	3.9
Percent Heavy Commercial Traffic	3%						-					
2031 NO BUILD Conditions (Max Queue) - Ft.	162	0	0	180	206	971	152	476	0	0	430	82
2031 BUILD Conditions (Max Queue) - Ft.	162	0	0	183	206	971	149	489	0	0	440	100
Length of Existing Lane	330+		350	240+		450+	150					150

The only deficient storage lane at the intersection of the I-40 N. Ramp / San Mateo Blvd. is for the westbound right turn movement. The proposed Kmart Site Redevelopment Project does not contribute any traffic to this movement. Also, any spillover beyond the existing westbound right turn storage lane will be accommodated by the I-40 westbound off-ramp which is well over 1,200 feet long. Therefore, no recommendation is made for this intersection with regard to the queuing analysis.

#9 - Driveway "A" / Carlisle Blvd. - Pages A-166 thru A-215

The results of the analysis of the full access unsignalized intersection of Driveway "A" / Carlisle Blvd. are summarized in the following table:

Driveway "A" / Carlisle Blvd.	WB (E)rivewa	y "A")	NB (C	arlisle	Blvd.)	SB (C	arlisle	Blvd.)
2031 Conditions	L	T	R	L	T	R	L	T	R
Proposed Lane Geometry	1		1		3	1	1	3	
AM Peak Hour									
2031 BUILD Conditions Volumes	97		66		1,563	69	126	1,568	
V/C Ratio	0.36		0.13				0.20		
Level-of-Service	С		В				В		
Control Delay (Seconds)	23.7		12.4				11.4		
Intersection LOS					TWSC	;			
95th Percentile Queue (veh)	1.6		0.4				0.7		

PM Peak Hour							
2031 BUILD Conditions Volumes	186	118	2,206	72	187	1,580	
V/C Ratio	0.77	0.33			0.42		
Level-of-Service	F	С			С		
Control Delay (Seconds)	53.5	18.7			17.5		
Intersection LOS			TWSC	;			
95th Percentile Queue (veh)	5.7	1.4			2.0		

The 2031 analysis of the intersection of Driveway "A" / Carlisle Blvd. demonstrates that the delays and the queuing will be acceptable for all conditions analyzed in this report except that the westbound left turn movement will have long delays during the 2031 PM Peak Hour period. During that period, exiting vehicles have the option to go to Driveway "C" on Indian School Rd. and exit using that alterative driveway. Therefore, no recommendations are made for the intersection of Driveway "A" / Carlisle Blvd.

Maximum queuing for 2031 conditions is the westbound left turn lane which is expected to queue about 150 feet. Therefore, the westbound left turn lane in Driveway "A" should be a minimum of 150 feet in length.

#10 - Driveway "B" / Carlisle Blvd. - Pages A-166 thru A-215

The results of the analysis of the right-in, right-out only access unsignalized intersection of Driveway "B" / Carlisle Blvd. are summarized in the following table:

Driveway "B" / Carlisle Blvd.	WB (Orivewa	y "B")	NB (C	arlisle	Blvd.)	SB (C	arlisle	Blvd.)
2031 Conditions	L	T	R	L	T	R	L	Τ	R
Proposed Lane Geometry			1		3>			3	
AM Peak Hour									
2031 BUILD Conditions Volumes	0		31		1,565	57	0	1,630	
V/C Ratio			0.06						
Level-of-Service			В						
Control Delay (Seconds)			11.9						
Intersection LOS					TWSC	;			
95th Percentile Queue (veh)			0.2						

PM Peak Hour							
2031 BUILD Conditions Volumes	0	58	2,190	105	0	1,738	
V/C Ratio		0.15					
Level-of-Service		С					
Control Delay (Seconds)		15.3					
Intersection LOS			TWSC	;			
95th Percentile Queue (veh)		0.5					

The 2031 analysis of the intersection of Driveway "B" / Carlisle Blvd. demonstrates that the delays will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Driveway "B" / Carlisle Blvd.

Maximum queuing for 2031 conditions is expected to queue less than one vehicle. Therefore, the westbound right turn lane in Driveway "B" should be a minimum of 30 feet in length.

#11 - Indian School Rd. / Driveway "C" - Pages A-166 thru A-215

The results of the 2031 analyses of the full access unsignalized intersection of Indian School Rd. / Driveway "C" are summarized in the following tables:

Indian Sch. Rd. / Driveway "C"	EB (In	dian Sc	h. Rd.)	WB (In	dian So	h. Rd.)	SB (D	rivewa	y "C")
2031 Conditions	L	T	R	L	Т	R	L	Т	R
Proposed Lane Geometry	1	2			2>			<1>	
AM Peak Hour									
2031 BUILD Conditions Volumes	37	598			492	55	38		26
V/C Ratio	0.04						0.14		
Level-of-Service	Α						В		
Control Delay (Seconds)	8.9						13.4		
Intersection LOS					TWSC	;			
95th Percentile Queue (veh)	0.1						0.5		

PM Peak Hour							
2031 BUILD Conditions Volumes	75	1,084		647	87	100	65
V/C Ratio	0.10					0.52	
Level-of-Service	Α					D	
Control Delay (Seconds)	9.9					26.1	
Intersection LOS			1	TWSC	;		
95th Percentile Queue (veh)	0.3					2.8	

The 2031 analysis of the intersection of Indian School Rd. / Driveway "C" demonstrates that the delays and queueing will be acceptable for all conditions analyzed in this report. Therefore, no recommendations are made for the intersection of Indian School Rd. / Driveway "C".

The 95th Percentile calculated queue for the southbound approach in Driveway "C" is 2.8 vehicles. Therefore, the throat depth for southbound lane of Driveway "C" should be 75 feet minimum.

Impact Assessment

The proposed development will have minimal to moderate adverse impact on the adjacent transportation system. All the levels-of-service for the implementation year analyses were determined to be acceptable for the overall intersections. The majority of the impact is near the project – especially the intersection of Indian School Rd. / Carlisle Blvd. The capacity issues are not prolific and are relatively minor. Due to the fact that this area is virtually fully developed, there is insufficient right-of-way that prevents widening of the intersections to provide more laneage. Also, there are structures in the field that preclude such improvements. Based on the results of the analyses in this Study, the mitigation recommendations are focused on improvements to the signalized intersection of Indian School Rd. / Carlisle Blvd. and the proposed access (driveways).

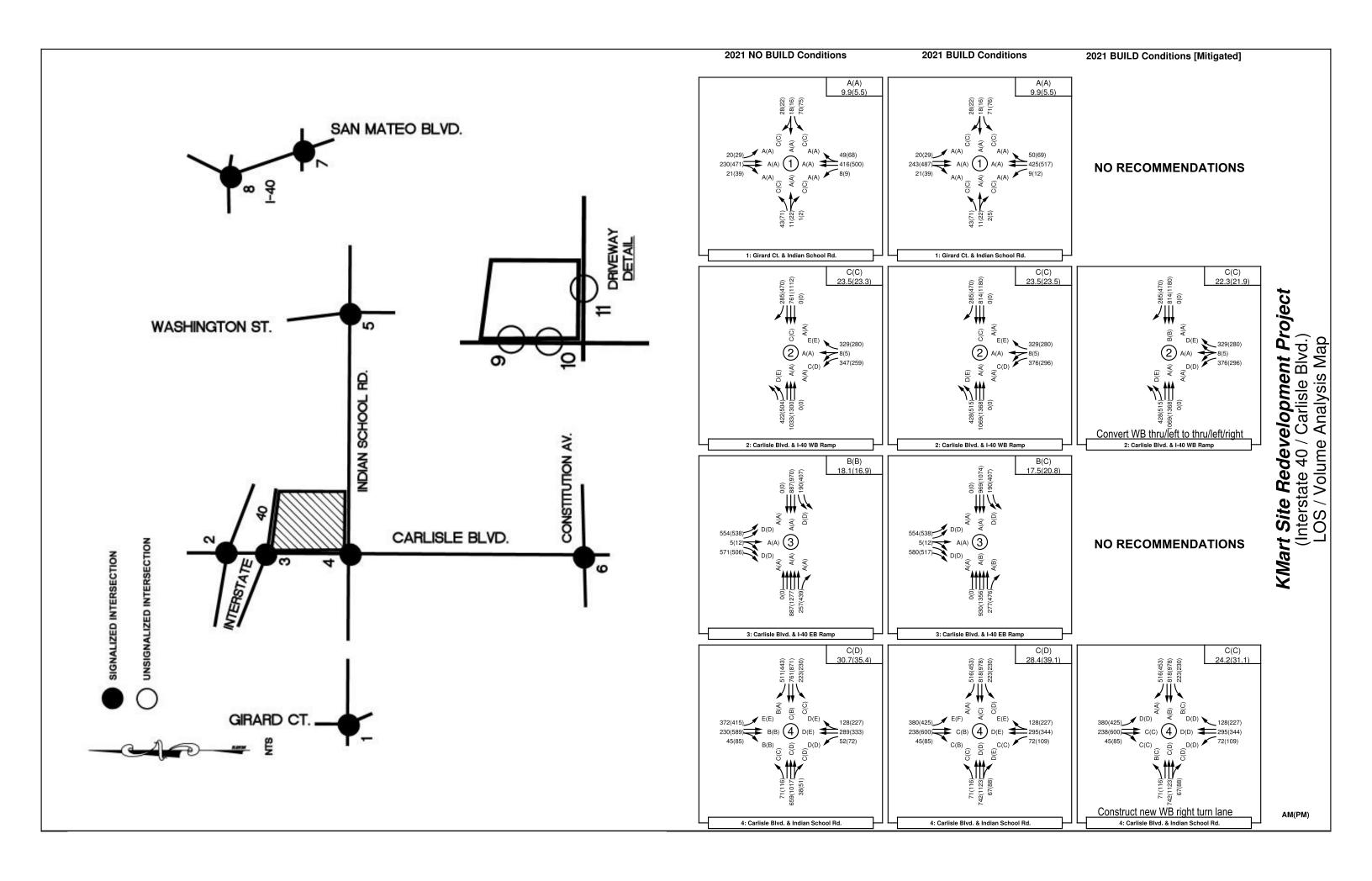
Access Design Specifications

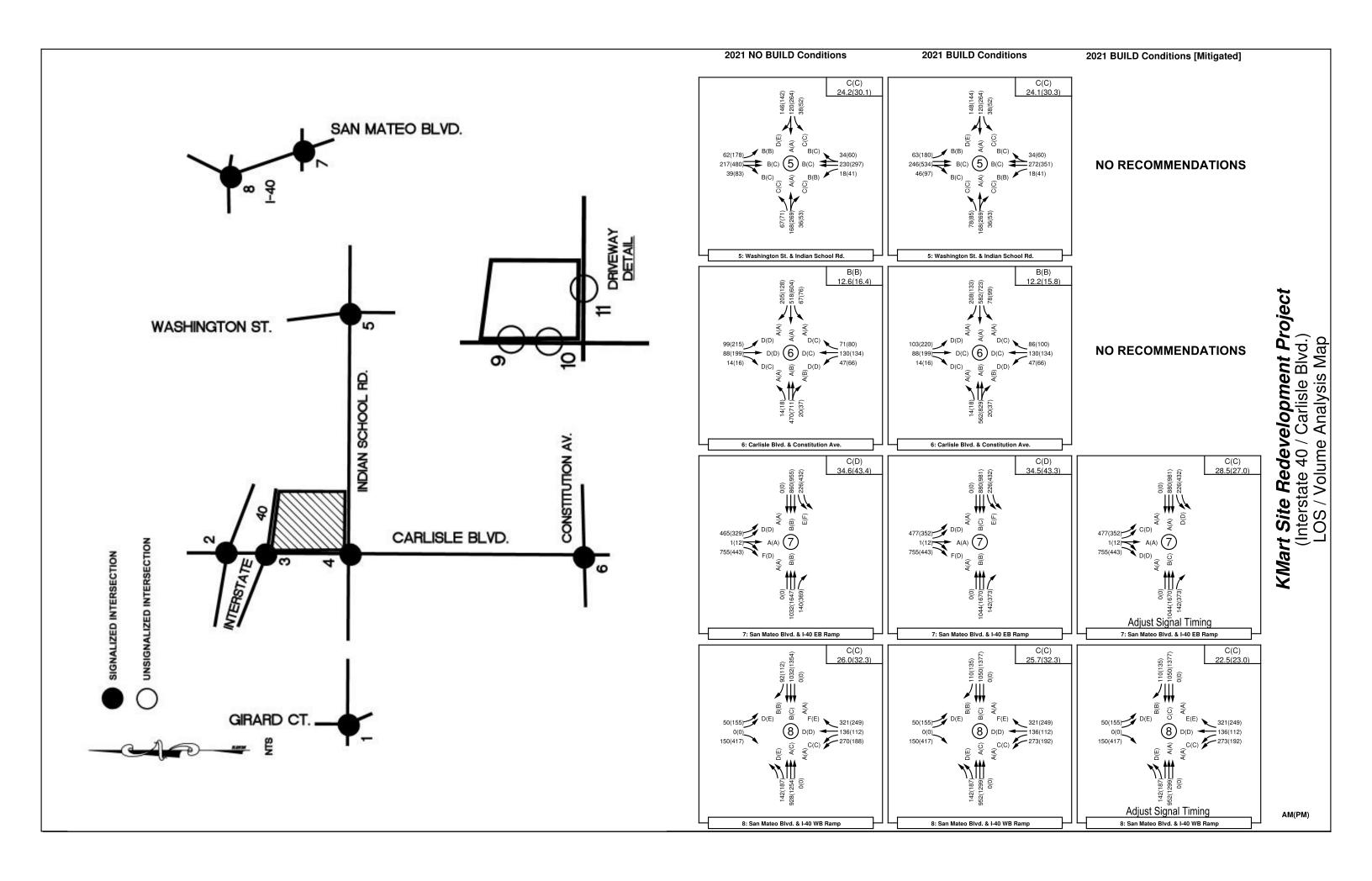
Sight distances at Driveway "A" are adequate as are the sight distances at Driveways "B" and "C". There are no vertical or horizontal curves along this portion of Menaul Blvd. nor Carlisle Blvd., and there are no structures that are blocking sight distance into and out of the driveway. The New Mexico Department of Transportation has mandated that the right-turn exit only driveway on the north side of Burger King for drive-thru traffic be closed. Burger King drive-thru traffic will be required to exit directly into the Kmart Site parking lot and maneuver to Driveway "A", "B", or "C" to exit the center. The exiting Burger King right-turn-exit only driveway for drive-thru traffic is located too close to the I-40 S. Ramp and, therefore, does not meet the New Mexico Department of Transportation's driveway spacing standards.

Design and construction of the proposed driveways on Indian School Rd. and the one on Carlisle Blvd. are required to meet the standards of the City of Albuquerque Development Process Manual. Driveway "A" is a full access unsignalized intersection on Carlisle Blvd. with two exiting lanes and one entering lane. The northbound traffic on Carlisle Blvd. at Driveway "A" has a northbound right turn deceleration lane and a southbound left turn deceleration lane to serve the driveway. Driveway "B" on Carlisle Blvd. is a right-in, right-out only driveway south of Driveway "A" and north of Indian School Rd. Driveway "C" is a full access unsignalized driveway on Indian School Rd. with one exiting lane and one entering lane. There is an existing eastbound left turn lane that will serve Driveway "C". Finally, there is a service / delivery vehicle driveway at the extreme southeast corner of the project site to delivery trucks and service vehicles. The service / delivery driveway will be restricted to right-turn-in only movement.

Summary of Deficiencies, Anticipated Impacts, and Recommendations

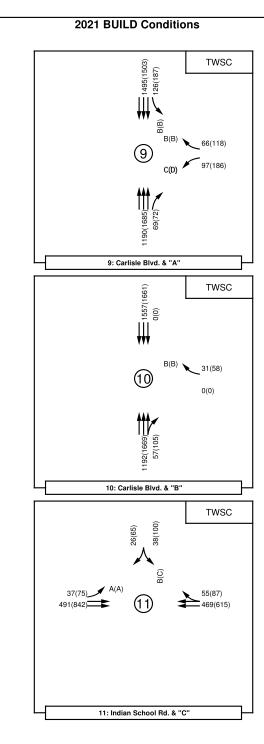
The proposed Kmart Site Redevelopment Project will have no significant adverse impact to the adjacent transportation system provided that the recommendation listed in the Executive Summary of this report are followed.





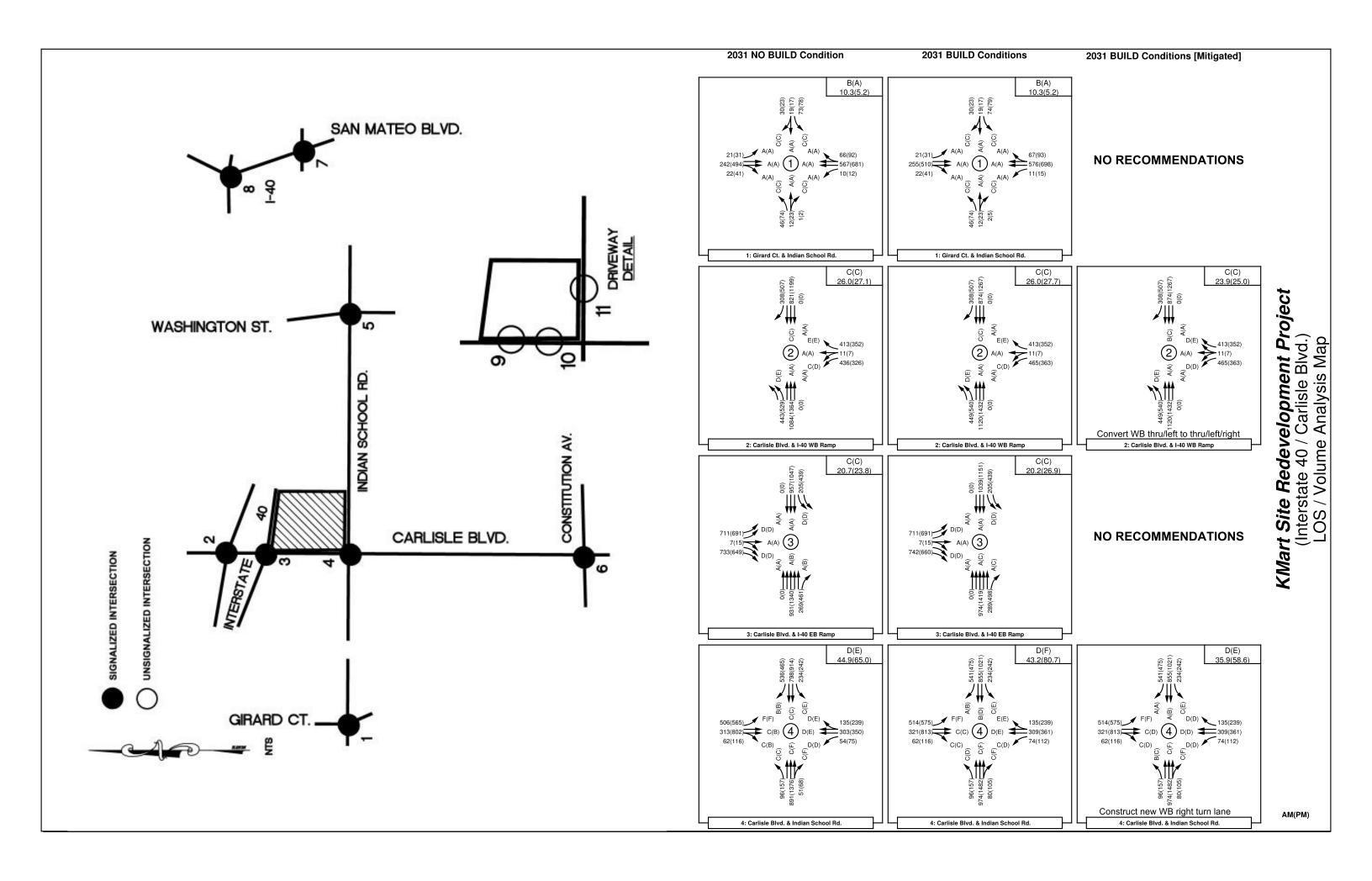
Driveways "A", "B", & "C" Exist but traffic volumes in and out are minimal. Therefore, a NO BUILD analysis was

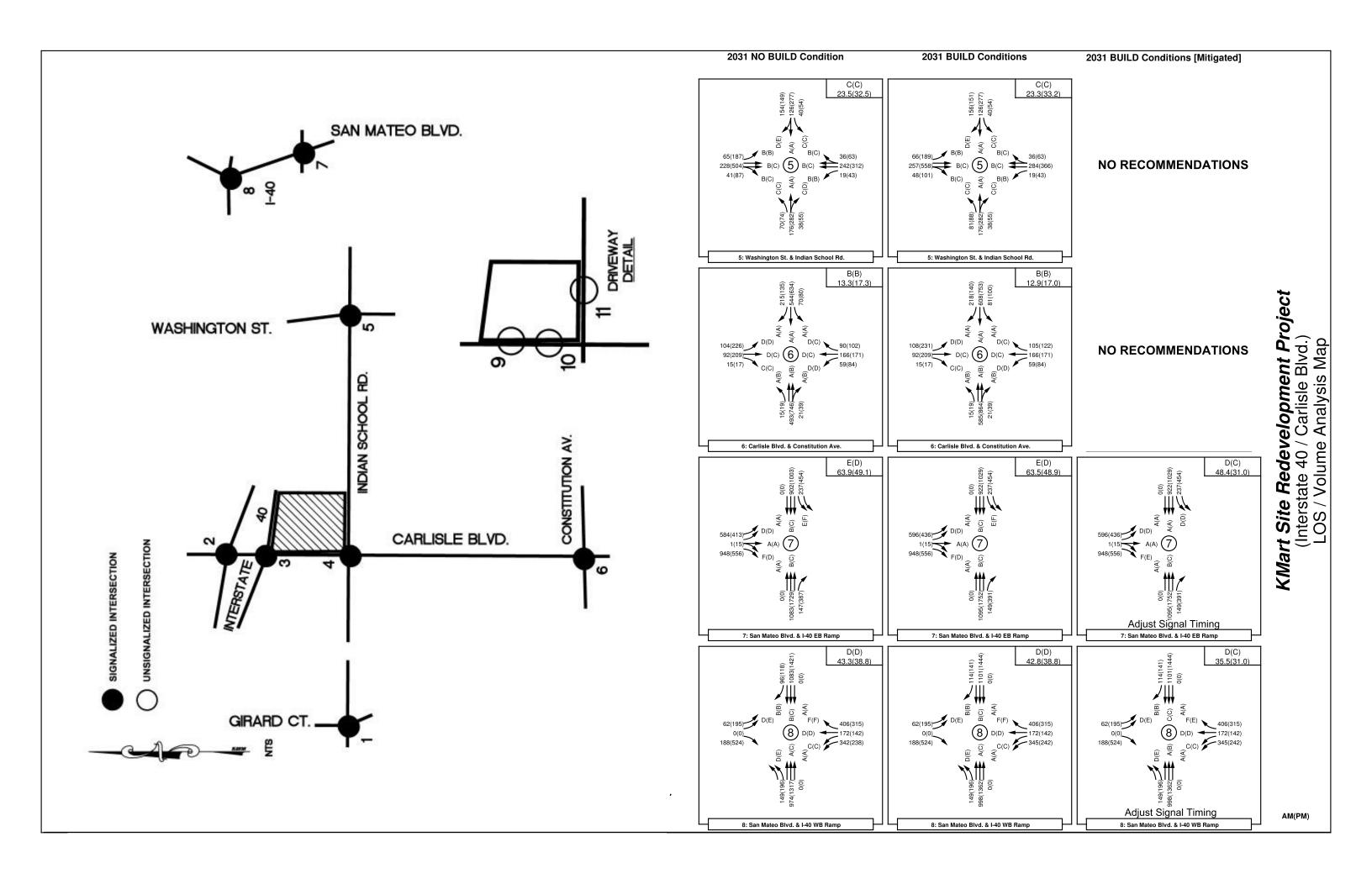
2021 NO BUILD Conditions

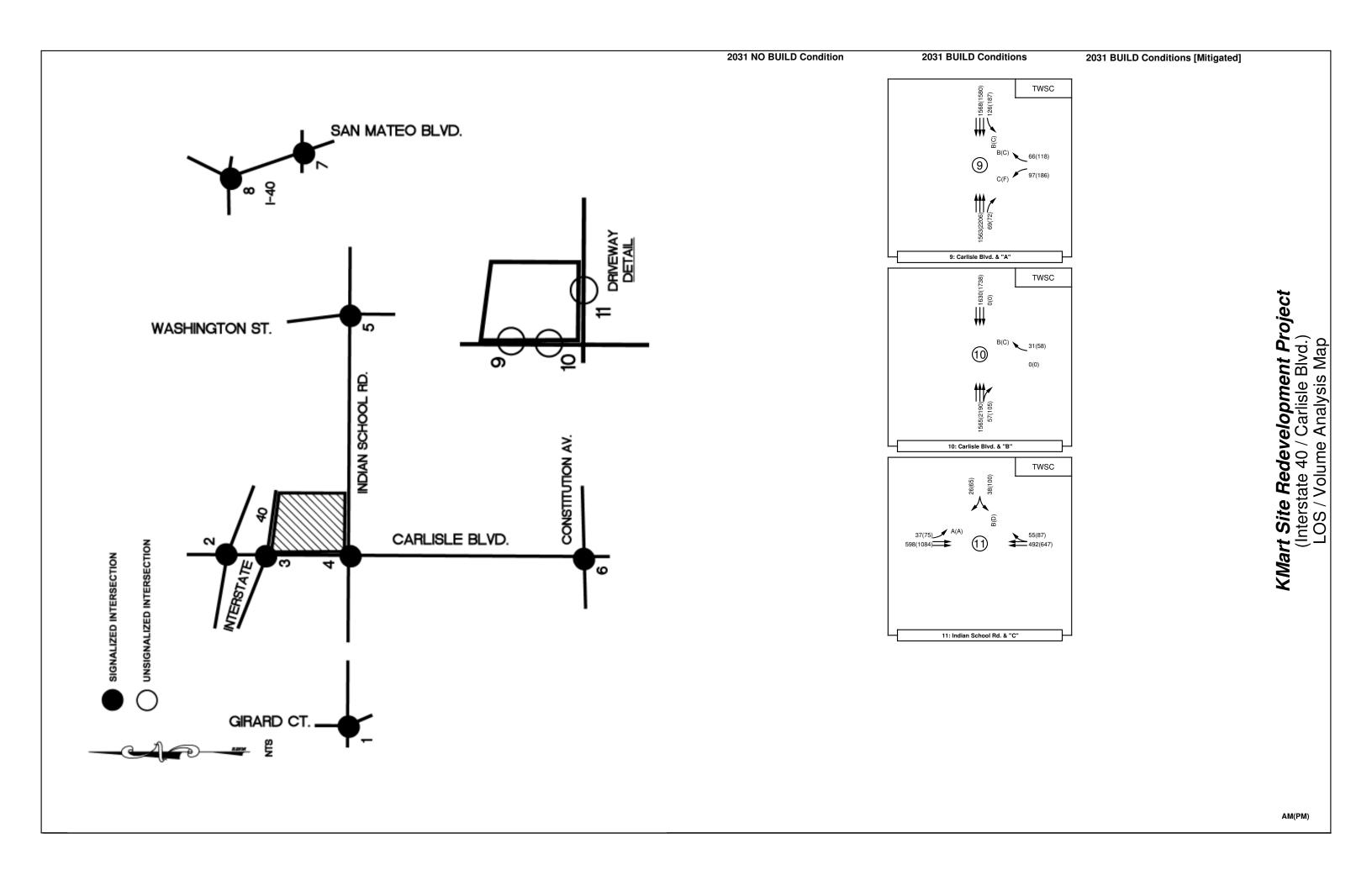


KMart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.) LOS / Volume Analysis Map

AM(PM)





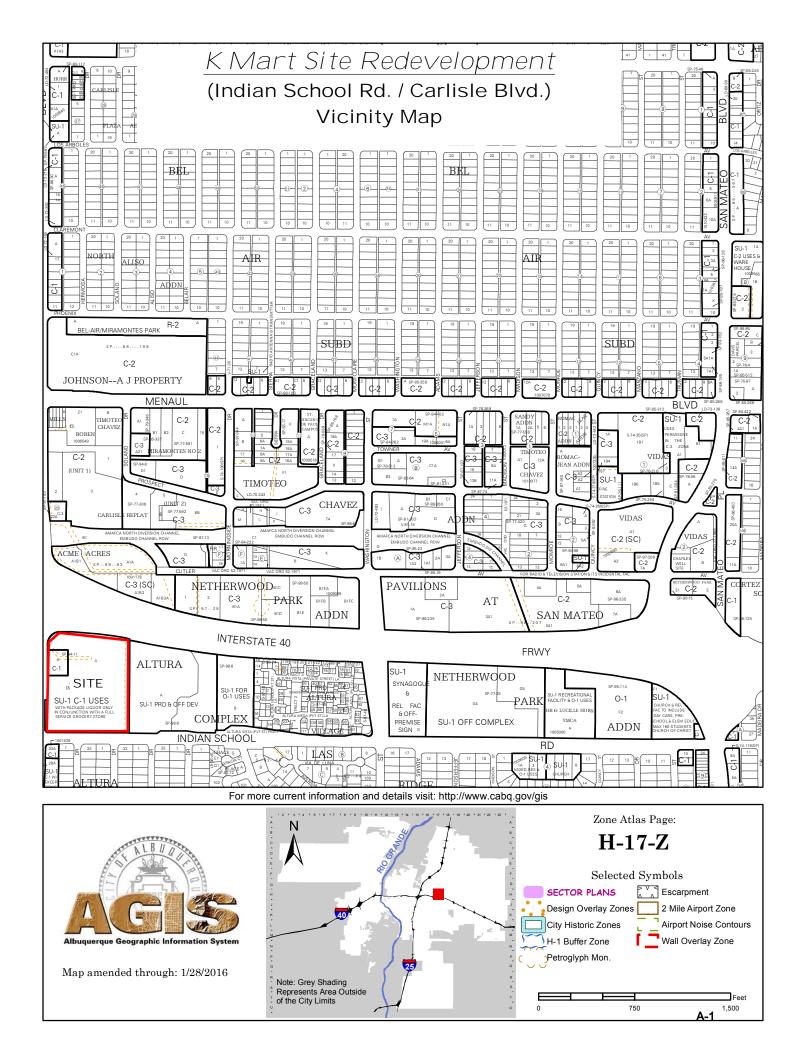


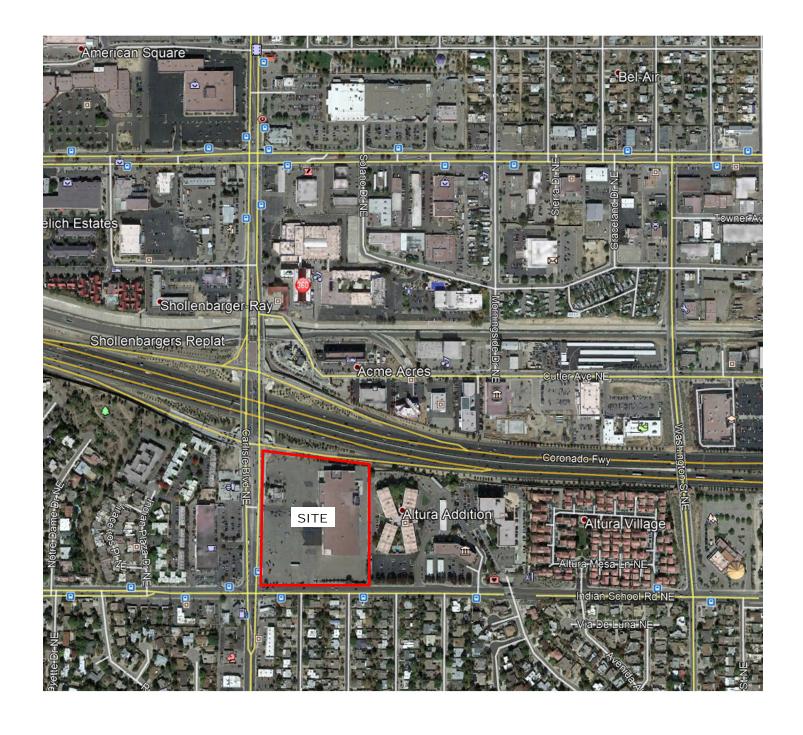
Appendix

SITE INFORMATION	
Vicinity Map	A-1
Aerial Map	A-2
Conceptual Site Development Plan	A-3
Portion - 2040 Long Range Roadway System Map (from MRMPO)	A-4
Portion – 2040 Long Range Bikeway System Map (from MRMPO)	A-5
Portion - 2017 Traffic Flow Map	A-6
TRIP GENERATION	
Trip Generation Data Sheet	A-7
Trip Generation Worksheets for Individual Land Uses	A-8 thru A-10
TRIP DISTRIBUTION	
DASZ Map - Trip Distribution Area	A-11
Trip Distribution Worksheets	A-12 thru A-31
Trip Distribution Map	A-32
Trip Assignments Map (% Entering)	A-33
Trip Assignments Map (% Exiting)	A-34
PM Pass-by Trip Assignments Map	A-35
HISTORIC GROWTH RATE	A 20
Historic Growth Table	A-36
Historic Growth Trendline Charts	A-37 thru A-47
Growth Rate Map IMPLEMENTATION YEAR TURNING MOVEMENT COUNTS	A-48
Summary Table of Intersection Counts	A-49 thru A-51
Individual Intersection Turning Movement Counts Tables	A-43 thru A-73
•	A-32 tillu A-73
HORIZON YEAR TURNING MOVEMENT COUNTS Summary Table of Intersection Counts	A-74 thru A-76
Individual Intersection Turning Movement Counts Tables	A-77 thru A-98
	A-11 tillu A-30
EXISTING (2019) INTERSECTION ANALYSES	A 00 II A 445
Intersection #1 - Signalized Intersection Analyses (Indian School Rd. / Girard Ct.)	A-99 thru A-115
Intersection #2 - Signalized Intersection Analysis (I-40 N. Ramp / Carlisle Blvd.)	
Intersection #3 - Signalized Intersection Analysis (I-40 S. Ramp/ Carlisle Blvd.)	
Intersection #4 - Signalized Intersection Analyses (Indian School Rd. / Carlisle Blvd.)	
Intersection #5 - Signalized Intersection Analysis (Indian School Rd. / Washington St.)	
Intersection #6 - Signalized Intersection Analyses (Constitution Ave. / Carlisle Blvd.)	
Intersection #7 - Signalized Intersection Analysis (I-40 S. Ramp / San Mateo Blvd.)	
Intersection #8 - Signalized Intersection Analyses (I-40 N. Ramp / San Mateo Blvd.)	
IMPLEMENTATION YEAR (2021) INTERSECTION ANALYSES	
	A-116 thru A-165
Intersection #1 - Signalized Intersection Analyses (Indian School Rd. / Girard Ct.)	A-110 tillu A-105
Intersection #2 - Signalized Intersection Analysis (I-40 N. Ramp / Carlisle Blvd.) Intersection #3 - Signalized Intersection Analysis (I-40 S. Ramp/ Carlisle Blvd.)	
Intersection #4 - Signalized Intersection Analyses (I-40 S. Ramp Carlisle Blvd.)	
Intersection #5 - Signalized Intersection Analysis (Indian School Rd. / Washington St.)	
Intersection #6 - Signalized Intersection Analyses (Constitution Ave. / Carlisle Blvd.)	
Intersection #7 - Signalized Intersection Analysis (I-40 S. Ramp / San Mateo Blvd.)	
Intersection #8 - Signalized Intersection Analyses (I-40 N. Ramp / San Mateo Blvd.)	

Intersection #9 - Unsignalized Intersection Analysis (Driveway "A" / Carlisle Blvd.)	
Intersection #10 - Unsignalized Intersection Analyses (Driveway "B" / Carlisle Blvd.)	
Intersection #11 - Unsignalized Intersection Analysis (Indian School Rd. / Driveway "C")	
HORIZON YEAR (2031) INTERSECTION ANALYSES	
Intersection #1 - Signalized Intersection Analyses (Indian School Rd. / Girard Ct.)	A-166 thru A-215
Intersection #2 - Signalized Intersection Analysis (I-40 N. Ramp / Carlisle Blvd.)	
Intersection #3 - Signalized Intersection Analysis (I-40 S. Ramp/ Carlisle Blvd.)	
Intersection #4 - Signalized Intersection Analyses (Indian School Rd. / Carlisle Blvd.)	
Intersection #5 - Signalized Intersection Analysis (Indian School Rd. / Washington St.)	
Intersection #6 - Signalized Intersection Analyses (Constitution Ave. / Carlisle Blvd.)	
Intersection #7 - Signalized Intersection Analysis (I-40 S. Ramp / San Mateo Blvd.)	
Intersection #8 - Signalized Intersection Analyses (I-40 N. Ramp / San Mateo Blvd.)	
Intersection #9 - Unsignalized Intersection Analysis (Driveway "A" / Carlisle Blvd.)	
Intersection #10 - Unsignalized Intersection Analyses (Driveway "B" / Carlisle Blvd.)	
Intersection #11 - Unsignalized Intersection Analysis (Indian School Rd. / Driveway "C")	
Miscellaneous Data	
Traffic Count Data	A-216 thru A-223
ABQ Ride Route Schedules	A-224
City of Albuquerque Scoping Letter	A-225 thru A-227

APPENDIX



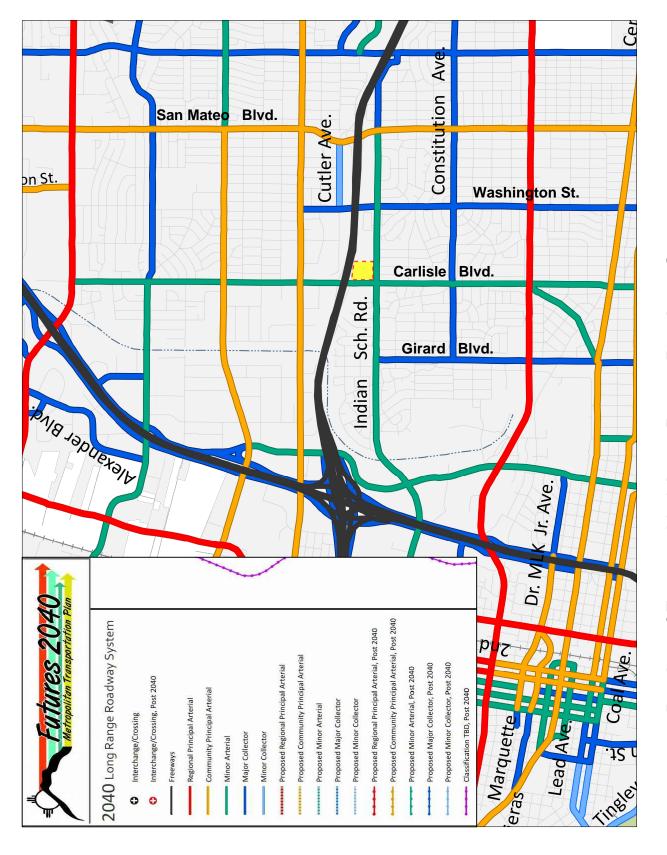


K Mart Site Redevelopment

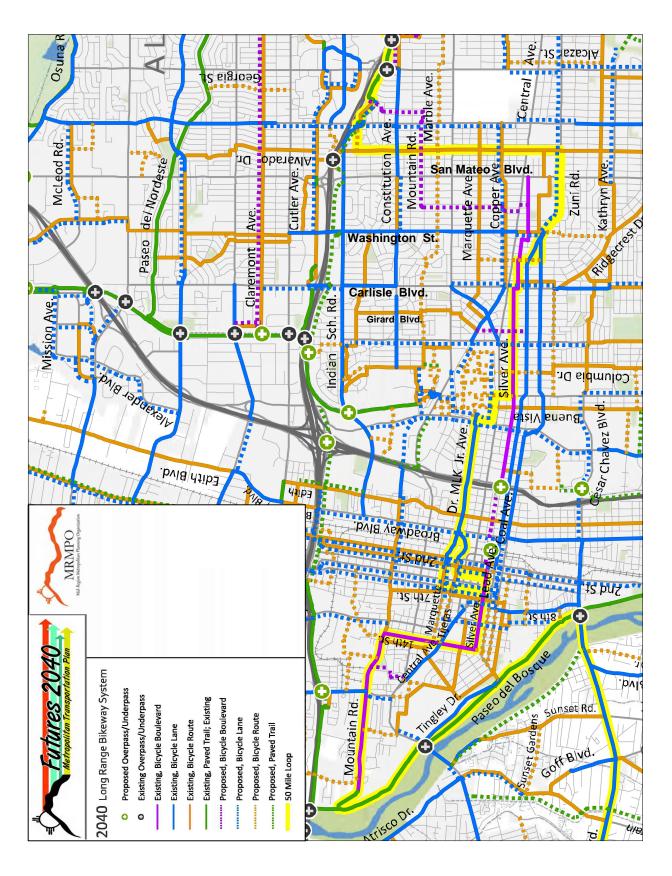
(Indian School Rd. / Carlisle Blvd.) Aerial Map



A-3



Portion of Futures 2040 Long Range Roadway System (from Mid-Region Council of Governments)



Portion of Futures 2040 Long Range Bikeway System (from Mid-Region Council of Governments)

Portion of 2017 Traffic Flow Map (from Mid-Region Council of Governments)

Trip Generation Data (ITE Trip Generation Manual - 10th Edition) Old K-Mart Site Redevelopment (I-40 / Carlisle Blvd.)

	USE (ITE CODE)	24 1	IR VOL	24 HR VOL A. M. PEAK HR.	AK HR.	P. M. PEAK HR.	AK HR.
COMMENT	DESCRIPTION	15	GROSS	ENTER	EXIT	ENTER	EXIT
	Summary Sheet Units	ts					
Tract No.	Supermarket (850) 50	20.00	4,757	115	9/	238	228
P1	Fast Food Restaurant w/ Drive-Thru Window (934)	2.20	1,036	45	43	37	34
P3, P4 & Remainder P1	Shopping Center (820) 67	67.71	4,611	115	71	195	212
	Net New Trips Generated		10,404	275	190	470	474
	Pass-by Trips (PM ONLY)	25%				118	119
	Net New Primary Trips Generated	10	10,404	275	190	352	322

NOTE: Trip Generation Rates above do not include existing Burger King Fast Food Restaurant (to remain):

72 1,648 3.50 Exist.Burger King FF Rest. Fast Food Restaurant w/ Drive-Thru Window (934)

22

59

69

Trip Generation Data (ITE Trip Generation Manual - 10th Edition) Old K-Mart Site Redevelopment (I-40 / Carlisle Blvd.)

USE (ITE CODE)		24 HOUR TWO-WAY VOLUME	.M.A	PEAK	.M. ^q	PEAK
		GROSS	ENTER	EXIT	ENTER	EXIT
	Units					
Supermarket (850)	20.00	4,757	115	9/	238	228
	1.000 S.F.					

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

T =
$$70.89 (X) + 1212.64$$

50% Enter, 50% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR

$$T = 3.82 (X) + 0$$

60% Enter, 40% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR

$$Ln(T) = 0.75 Ln(X) + 3.21$$

51% Enter, 49% Exit

Comments:

Tract No.

Based on ITE Trip Generation Manual - 10th Edition

Trip Generation Data (ITE Trip Generation Manual - 10th Edition) Old K-Mart Site Redevelopment (I-40 / Carlisle Blvd.)

USE (ITE CODE)		ZA HOUR TWO-WAY VOLUME	.M.A	HOUR HOUR	.M. [.] 4	PEAK
		GROSS	ENTER	EXIT	ENTER	EXIT
	Units					
Fast Food Restaurant w/ Drive-Thru Window (934)	2.20	1,036	45	43	37	34
	1,000 S.F.					

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$T = 470.95 (X) + 0$$

50% Enter, 50% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR

$$T = 40.19 (X) + 0$$

57% Enter, 49% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR

$$T = 32.67 (X) + 0$$

$$52\% \text{ Enter}, 48\% \text{ Exit}$$

Comments: P1

Based on ITE Trip Generation Manual - 10th Edition

Trip Generation Data (ITE Trip Generation Manual - 10th Edition) Old K-Mart Site Redevelopment (I-40 / Carlisle Blvd.)

USE (ITE CODE)	ANO-WAY TWO-WAY JWU-UWE	.M.A	PEAK HOUR	.M. ^q	PEAK HOUR
	GROSS	ENTER	EXIT	ENTER	EXIT
Units					
Shopping Center (820) 67.71	4,611	115	71	195	212
1,000 S.F.					

ITE Trip Generation Equations:

Average Vehicle Trip Ends on a Weekday (24 HOUR TWO-WAY VOLUME)

$$Ln(T) = 0.68 Ln(X) + 5.57$$

50% Enter, 50% Exit

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7am and 9am (A.M. PEAK HOUR

Average Vehicle Trip Ends on a Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4pm and 6pm (P.M. PEAK HOUR

$$Ln(T) = 0.74 Ln(X) + 2.89$$

48% Enter, 52% Exit

Comments:

P3, P4 & Remainder P1

Based on ITE Trip Generation Manual - 10th Edition



DATA ANALYSIS SUBZONE (DASZ) MAP

Old KMart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial Trips**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

							Ca	(CN) rlisle Blvd. No	orth	Cor	(CoE) estitution Av. E	ast	In	(4E) terstate 40 Ea	ıst
DASZ#	% Sub Area in Study	2012 Population	2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2021											
	ecified on DAS	•													
5001	80%	0		32	26		0%	0.00%	0		0.00%	0		0.00%	
5002	100%	0		299	299	0.23%	0%	0.00%	0		0.00%	0		0.00%	
5003	45%	0		149	67	0.05%	0%	0.00%	0		0.00%	0		0.00%	
5007	10%	2		68	7	0.0.7	0%	0.00%			0.00%	0		0.00%	
5008	65%	126		234	152		0%	0.00%	0		0.00%	0		0.00%	
5011	100%	215		908	908		0%	0.00%	0		0.00%	0		0.00%	
5012	95%	55		101	96		0%	0.00%	0		0.00%	0		0.00%	
5101	55%	1615		1,670	919		0%	0.00%	0		0.00%	0		0.00%	
5102	5%	479		492	25	0.02%	0%	0.00%	0		0.00%	0	0,70	0.00%	
5103	100%	650		787	787	0.60%	0%	0.00%	0	0%	0.00%	0		0.00%	
5173	15%	972		1,055	158		0%	0.00%	0	0%	0.00%	0		0.00%	
5201	5%	756	2031	1,166	58	0.04%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	C
5212	95%	479	603	519	493	0.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	C
5213	100%	240	381	285	285	0.22%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	C
5221	100%	24	69	38	38	0.03%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	C
5231	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	C
5232	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	C
5241	100%	474	570	505	505	0.38%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	C
5242	100%	1473	1958	1,629	1,629	1.23%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	C
5251	100%	77	449	197	197	0.15%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	C
5261	80%	765	3822	1,748	1,398	1.06%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	C
5262	100%	69	1067	390	390	0.30%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	C
5271	100%	408		555	555	0.42%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	C
5272	100%	0	9	3	3	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	C
5273	100%	365	734	484	484	0.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
6001	60%	534		559	335	0.25%	50%	0.13%	168	0%	0.00%	0	0%	0.00%	C
6002	60%	1295	1393	1,327	796	0.60%	50%	0.30%	398	0%	0.00%	0	0%	0.00%	C
6003	100%	607		644	644	0.49%	50%	0.24%	322		0.00%	0	0%	0.00%	
6004	100%	76		103	103		50%	0.04%			0.00%				
6011	50%	545		588	294		100%	0.22%	294		0.00%	0		0.00%	
6012	25%	1031	1031	1,031	258		100%	0.20%	258		0.00%	0		0.00%	
6021	20%	2060		2,129	426		50%	0.16%	213		0.00%	0		0.00%	
6022	100%	997	1079	1,023	1,023	0.78%	50%	0.39%	512		0.00%	0		0.00%	
6031	85%	322		315	268		100%	0.20%			0.00%	0		0.00%	
6033	25%	617		609	152		100%	0.12%			0.00%	0		0.00%	
6061	15%	354		362	54		100%	0.04%			0.00%	0		0.00%	
6062	50%	1323		1,455	728		100%	0.55%	728		0.00%	0		0.00%	
6063	45%	0		0	0		100%	0.00%			0.00%	0		0.00%	
6064	100%	0		632	632		100%	0.48%			0.00%	0			
6071	100%	463		495	495		75%	0.28%			0.00%				

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial Trips**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

							Ca	(CN) arlisle Blvd. No	orth	Cor	(CoE) nstitution Av. E	East	In	(4E) terstate 40 Ea	st
DASZ#	% Sub Area in Study		2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2021											
	ecified on DASZ														
6072	100%	471		496	496			0.28%			0.00%	0		0.00%	0
6073	100%	44		47	47	0.04%	75%	0.03%			0.00%	0		0.00%	0
6074	100%	42		42	42			0.03%			0.00%	0		0.00%	0
6075	100%	82		88	88			0.07%			0.00%	0		0.00%	0
6076	100%	C		0	0			0.00%			0.00%	0		0.00%	0
6077	100%	290	377	318	318		100%	0.24%			0.00%	0		0.00%	0
6094	10%	C	0	×	0		100%	0.00%		• , •	0.00%	0		0.00%	0
6095	100%	C	0	•	0	0.007	100%	0.00%		0,0	0.00%	0		0.00%	0
6096	55%	C		-	0		100%	0.00%			0.00%	0		0.00%	0
7001	100%	C			5	0.00%	100%	0.00%		0%	0.00%	0		0.00%	0
7002	100%	55			70	0.05%	100%	0.05%	70	0%	0.00%	0		0.00%	0
7003	100%	125	201	149	149	0.11%	100%	0.11%	149	0%	0.00%	0	0%	0.00%	0
7004	100%	C	4	1	1	0.00%	100%	0.00%	1	0%	0.00%	0	0%	0.00%	0
7011	100%	C	0	0	0	0.00%	100%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7012	100%	582	799	652	652	0.49%	100%	0.49%	652	0%	0.00%	0	0%	0.00%	0
7013	100%	1198	1230	1,208	1,208	0.92%	100%	0.92%	1,208	0%	0.00%	0	0%	0.00%	0
7014	100%	2145	2460	2,246	2,246	1.70%	100%	1.70%	2,246	0%	0.00%	0	0%	0.00%	0
7021	100%	1285	1217	1,263	1,263	0.96%	100%	0.96%	1,263	0%	0.00%	0	0%	0.00%	0
7022	100%	1668	1742	1,692	1,692	1.28%	100%	1.28%	1,692	0%	0.00%	0	0%	0.00%	0
7031	100%	1976	2439	2,125	2,125	1.61%	50%	0.81%	1,063	0%	0.00%	0	0%	0.00%	0
7032	100%	1649	2056	1,780	1,780	1.35%	50%	0.67%	890	0%	0.00%	0	0%	0.00%	0
7041	100%	201	236	212	212	0.16%	50%	0.08%	106	0%	0.00%	0	0%	0.00%	0
7042	100%	1104	1608	1,266	1,266	0.96%	100%	0.96%	1,266	0%	0.00%	0	0%	0.00%	0
7043	100%	1456	1508	1,473	1,473	1.12%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7044	100%	C	254	82	82	0.06%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7051	100%	3374	3860	3,530	3,530		100%	2.68%	3,530	0%	0.00%	0	0%	0.00%	0
7052	65%	C	3	1	1	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7053	100%	120	257	164	164	0.12%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7101	70%	2375	3067	2,597	1,818	1.38%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7105	25%	1963		2,198	550			0.00%			0.00%			0.00%	0
7106	85%	2011		2,085	1,772			0.00%		0%	0.00%			0.00%	0
7107	100%	2629		3,025	3,025			0.00%			0.00%	0		0.00%	0
7401	5%	743			38			0.03%			0.00%	0		0.00%	0
7402	5%	1134		1,355	68			0.05%			0.00%			0.00%	0
7511	5%	1281			64			0.00%			0.00%			0.05%	64
7601	100%	943			934	0.71%		0.00%			0.00%	0		0.00%	0
7602	100%	1103			1,116			0.00%			0.00%	0		0.00%	0
7603	100%	1243		1,320	1,320			0.00%			0.00%			0.00%	0
7611	100%	1797		1,789	1,789						0.00%			0.00%	0
7612	100%	936			974						0.00%				

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial Trips**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

							Co	(CN)	مادي	Cor	(CoE)	-oot	los	(4E)	ot .
DASZ#	% Sub Area in Study	2012 Population 2	040 Population 2040	Interpolated Population for the Year 2021	Population in Study	Percent Population	% Utilizing	rlisle Blvd. No % Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	terstate 40 Ea % Population Utilizing	Population
Boundary Sp	ecified on DAS		2040	2021											
7621	100%	1223	1271	1,238	1,238	0.94%	50%	0.47%	619	0%	0.00%	0	0%	0.00%	0
7622	100%	1036	1232	1,099	1,099	0.83%	50%	0.47%	550	0%	0.00%	0		0.00%	
7631	100%	1166	1220	1,183	1,183	0.90%	50%	0.45%	592	0%	0.00%	0		0.00%	
7632	95%	989	1107	1,027	976	0.74%	50%	0.37%	488	0%	0.00%	0		0.00%	
7633	20%	1869	2020	1,918	384	0.29%	50%	0.15%	192		0.00%	0		0.00%	
7634	60%	688	718	698	419	0.32%	50%	0.16%	210		0.00%	0		0.00%	
7641	100%	1291	1372	1,317	1,317	1.00%	50%	0.50%	659	0%	0.00%	0	0%	0.00%	
7642	95%	841	906	862	819	0.62%	50%	0.31%	410	0%	0.00%	0	0%	0.00%	
7652	100%	1035	1040	1,037	1,037	0.79%	50%	0.39%	519		0.00%	0		0.00%	
7661	95%	298	503	364	346	0.26%	0%	0.00%	0	0%	0.00%	0	100%	0.26%	
7662	100%	1724	1769	1,738	1,738	1.32%	0%	0.00%	0		0.00%	0		1.32%	
7681	100%	0	2510	807	807	0.61%	25%	0.15%	202		0.00%	0		0.00%	
7682	100%	0	300	96	96	0.07%	0%	0.00%	0		0.00%	0		0.00%	
7683	100%	127	349	198	198	0.15%	0%	0.00%	0		0.00%	0		0.00%	
7684	100%	855	1798	1,158	1,158	0.88%	0%	0.00%	0		0.00%	0		0.00%	
7685	100%	0	447	144	144	0.11%	0%	0.00%	0		0.00%	0		0.00%	
7691	100%	277	2619	1,030	1,030	0.78%	0%	0.00%	0		0.00%	0		0.78%	
7692	100%	501	789	594	594	0.45%	0%	0.00%	0		0.00%	0		0.45%	594
7693 7694	100% 100%	184	500 946	286 304	286 304	0.22% 0.23%	0% 0%	0.00% 0.00%	0		0.00% 0.00%	0		0.22% 0.23%	286 304
7694	100%	0	4111	1,321	1,321	1.00%	0%	0.00%	0		0.00%	0		1.00%	1,321
7696	100%	798	1373	983	983	0.75%	0%	0.00%	0		0.00%	0		0.75%	983
8001	100%	9	457	153	153	0.12%	0%	0.00%	0		0.00%	0		0.70%	0
8002	100%	418	745	523	523	0.40%	0%	0.00%	0		0.00%	0		0.00%	C
8011	100%	2431	2935	2,593	2,593	1.97%	0%	0.00%	0		0.00%	0		0.00%	
8012	100%	505	1570	847	847	0.64%	0%	0.00%	0		0.00%	0		0.00%	
8021	100%	835	2133	1,252	1,252	0.95%	0%	0.00%	0		0.00%	0		0.00%	
8022	100%	1064	2062	1,385	1,385	1.05%	0%	0.00%	0		0.00%	0		0.00%	
8031	100%	1717	2591	1,998	1,998		0%	0.00%	0		0.00%			0.00%	
8032	100%	2	2	2		0.00%	0%	0.00%			0.00%	0		0.00%	
8041	100%	2899	4149	3,301	3,301	2.50%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8051	95%	0	0	0	0	0.00%	0%	0.00%			0.00%	0		0.00%	
8052	100%	454	471	459	459	0.35%	0%	0.00%			0.00%	0		0.00%	
8061	60%	1292	3401	1,970	1,182	0.90%	0%	0.00%	0		0.00%	0		0.00%	
8062	100%	3048	3304	3,130	3,130	2.37%	0%	0.00%	0		0.00%	0		0.00%	
8071	5%	864	2836	1,498	75	0.06%	0%	0.00%	0		0.00%	0		0.00%	
8072	45%	1274	3872	2,109	949	0.72%	0%	0.00%	0		0.00%	0		0.00%	
8101	100%	2332	2652	2,435	2,435	1.85%	0%	0.00%	0		0.00%	0		0.00%	
8102	100%	1540	1760	1,611	1,611	1.22%	0%	0.00%	0		0.00%	0		0.00%	
8111	100%	1708	1796	1,736	1,736	1.32%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	(

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial Trips**

2012 and 2040 Data Taken from Mid-Region Council of Governments'
2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

								(CN)		_	(CoE)			(4E)	
DAC7.#	% Sub Area	2012 Deputation	2040 Denulation	Interpolated	Population in	Percent		rlisle Blvd. No % Population			nstitution Av. E % Population			nterstate 40 Ea	
DASZ#	in Study	2012 Population	•	Population for the Year	Study	Population	% Utilizing	Utilizing	Population	% Utilizing	Utilizing	Population	% Utilizing	Utilizing	Population
		2012	2040	2021											
	ecified on DASZ														
8121	100%	1238	1314	1,262	•		0%	0.00%	0	30%	0.29%	379	0%		C
8122	100%	1230	1306	1,254	1,254		0%	0.00%	0	35%	0.33%	439	0%	0.00%	(
8123	100%	509	639	551	551	0.42%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	(
8131	100%	1229	1397	1,283	•		0%	0.00%	0	0%	0.00%	0	0%	0.00%	(
8132	100%	1156	1233	1,181	1,181	0.90%	0%	0.00%	0	0%	0.00%	0	0%		C
8133	100%	0	0	0	0	0.007	0%	0.00%	0	0%	0.00%	0	0%		C
8141	100%	998	1149	1,047	1,047			0.00%	0	40%	0.32%	419	0%		C
8142	100%	1527	1582	1,545				0.00%	0	40%	0.47%	618	0%		0
8151	100%	1800	2142	1,910	•			0.00%	0	0%	0.00%	0	0%		C
8161	100%	1960	2795	2,228	•			0.00%	0	0%	0.00%	0	0%		C
8171	100%	1017	1134	1,055	1,055		0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8172	100%	1590	1908	1,692			0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8201	100%	1131	1186	1,149	•		0%	0.00%	0	35%	0.30%	402	0%	0.00%	0
8202	100%	861	873	865	865		0%	0.00%	0	25%	0.16%	216	0%		0
8211	100%	1609	2364	1,852			0%	0.00%	0	50%	0.70%	926	0%		0
8212	90%	283	407	323		0.22%	0%	0.00%	0	0%	0.00%	0	0%		0
8221	100%	10	42	20			0%	0.00%	0	0%	0.00%	0	0%		0
8231	95%	1542	1609	1,564	1,486		0%	0.00%	0	0%	0.00%	0	0%	0.00%	C
8232	100%	1496	1814	1,598	·		0%	0.00%	0	0%	0.00%	0	0%	0.00%	C
8233	50%	2775	2735	2,762	·	1.05%		0.00%	0	0%	0.00%	0	0%	0.00%	C
8234	5%	2086	3417	2,514	126		0%	0.00%	0	0%	0.00%	0	0%	0.00%	C
8242	10%	3662	3958	3,757	376		0%	0.00%	0	35%	0.10%	132	0%		C
8243	35% 90%	994	2228	1,391	487 1,860	0.37%	0%	0.00%	0	35% 0%	0.13%	170	0%		C
8501		1930	2355	2,067	,			0.00%	0		0.00%	0	0%		
8502 8511	100% 100%	1219 1087	1343	1,259 1,163			0% 0%	0.00% 0.00%	0	0% 0%	0.00% 0.00%	0	0% 0%		C
	100%	394	1322 635	471	471	0.36%	0%	0.00%	0	0%		0	0%	0.00%	0
8512 8521	100%	856	1773	1,151	1,151	0.36%	0%	0.00%	0	0%	0.00% 0.00%	0	0%	0.00%	0
					•				0	50%		•			0
8531 8532	100% 100%	2014 869	2283 1425	2,100 1,048			0% 0%	0.00%	0		0.80% 0.40%	1,050 524	0% 0%	0.00% 0.00%	0
8533	100%	708		1,048				0.00%	0		0.40%	535	0%		
8534	85%	2140		2,268				0.00%	0		0.41%	964	0%		
8541	30%	3350	4409	3,690				0.00%	0	50% 50%	0.73%	554	0%		
8553	85%	2455	3118	2,668				0.00%	0	0%	0.42%	0	0%		
8561	95%	2711	3136	2,848				0.00%			0.00%	0	0%		
0001	3070	2/11	3130	39,719				0.00%	25,342	U%	0.00%	7,327	U%	0.00%	6,666
				,	- ,- · -				19.21%			5.55%			5.05%

 $Whole Foods_TD_Comm.xlsx$

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

								(WN)			(IE)			(WS)	
	T	1	Т		1		Was	shington St. N	lorth	India	n School Rd.	East	Was	shington St. S	outh
DASZ#	% Sub Area in Study	'	2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2021											
	ecified on DASZ		00	20	20	0.000/	00/	0.000/		00/	0.000/		00/	0.000/	
5001	80%	0	98	32	26	0.02%	0%	0.00%			0.00%	0		0.00%	
5002	100%	0	930	299	299	0.23%	0%	0.00%			0.00%	0		0.00%	
5003	45%	0	465	149	67	0.05%	0%	0.00%			0.00%	0		0.00%	
5007	10%	2	206	68	7	0.01%	0%	0.00%		0,0	0.00%	0		0.00%	
5008	65%	126	461	234	152	0.12%	0%	0.00%		0,0	0.00%	0		0.00%	
5011	100%	215	2371	908	908	0.69%	0%	0.00%		0,0	0.00%	0		0.00%	
5012	95%	55	198	101	96	0.07%	0%	0.00%			0.00%	0		0.00%	
5101	55%	1615	1785	1,670	919	0.70%	0%	0.00%			0.00%	0		0.00%	
5102	5%	479	518	492	25	0.02%	0%	0.00%			0.00%	0		0.00%	
5103	100%	650	1077	787	787	0.60%	0%	0.00%			0.00%	0		0.00%	
5173	15%	972	1230	1,055	158	0.12%	0%	0.00%			0.00%	0		0.00%	
5201	5%	756	2031	1,166	58	0.04%	0%	0.00%			0.00%	0		0.00%	
5212	95%	479	603	519	493	0.37%	0%	0.00%			0.00%	0		0.00%	
5213	100%	240	381	285	285	0.22%	0%	0.00%			0.00%	0		0.00%	
5221	100%	24	69	38	38	0.03%	0%	0.00%			0.00%	0		0.00%	
5231	100%	0	0	0	0	0.00%	0%	0.00%			0.00%	0		0.00%	
5232	100%	0	0	0	0	0.00%	0%	0.00%			0.00%	0		0.00%	
5241	100%	474	570	505	505	0.38%	0%	0.00%			0.00%	0		0.00%	
5242	100%	1473	1958	1,629	1,629	1.23%	0%	0.00%			0.00%	0		0.00%	
5251	100%	77	449	197	197	0.15%	0%	0.00%		0,0	0.00%	0		0.00%	
5261	80%	765	3822	1,748	1,398	1.06%	0%	0.00%		0,0	0.00%	0		0.00%	
5262	100%	69	1067	390	390	0.30%	0%	0.00%			0.00%	0		0.00%	
5271	100%	408	866	555	555	0.42%	0%	0.00%			0.00%	0		0.00%	
5272	100%	0	9	3	3	0.00%	0%	0.00%			0.00%	0		0.00%	
5273	100%	365	734	484	484	0.37%	0%	0.00%			0.00%	0		0.00%	
6001	60%	534	612	559	335	0.25%	0%	0.00%			0.00%	0		0.00%	
6002 6003	60% 100%	1295 607	1393 723	1,327 644	796 644	0.60% 0.49%	0% 0%	0.00% 0.00%		- , -	0.00% 0.00%	0		0.00% 0.00%	
6004	100%	76	160		103	0.49%		0.00%			0.00%	_		0.00%	
6011	50%	545	678		294	0.06%	0%	0.00%			0.00%			0.00%	
6012	25%	1031	1031	1,031	258	0.22%		0.00%			0.00%			0.00%	
6021	20%	2060	2275		426	0.20%		0.00%			0.00%			0.00%	
6021	100%	997	1079	1,023	1,023	0.32%		0.00%			0.00%	0		0.00%	
6031	85%	322	301	315	268	0.76%		0.00%			0.00%			0.00%	
6033	25%	617	592	609	152	0.20%		0.00%			0.00%			0.00%	
6061	15%	354	378	362	54	0.12%	0%	0.00%			0.00%	0		0.00%	
6062	50%	1323	1733	1,455	728	0.04%	0%	0.00%			0.00%	0		0.00%	
6063	45%	0	0	0		0.00%	0%	0.00%			0.00%			0.00%	
6064	100%	0	1967	632	0 632	0.00%	0%	0.00%			0.00%			0.00%	
6071	100%	463	563		495	0.48%		0.00%			0.00%			0.00%	

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

							Wa	(WN) shington St. N	North	India	(IE) In School Rd.	East	Was	(WS) shington St. S	outh
DASZ#	% Sub Area in Study	·	2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2021											
	ecified on DASZ														
6072	100%	471		496	496			0.00%			0.00%	0		0.00%	0
6073	100%	44		47	47	0.04%	0%	0.00%			0.00%	0		0.00%	0
6074	100%	42		42	42			0.00%			0.00%	0		0.00%	0
6075	100%	82		88	88						0.00%	0		0.00%	0
6076	100%	(0	0						0.00%	0		0.00%	0
6077	100%	290		318	318						0.00%	0		0.00%	0
6094	10%	C		-	0	0.00,0	0%				0.00%	0		0.00%	0
6095	100%	C		•	0	0.007		0.00%		0,0	0.00%	0		0.00%	0
6096	55%	C		-	0	0.00.7	0%	0.00%		0,0	0.00%	0		0.00%	0
7001	100%	C			5	0.00%	0%	0.00%			0.00%	0		0.00%	0
7002	100%	55			70			0.00%			0.00%	0		0.00%	0
7003	100%	125		149	149			0.00%			0.00%	0		0.00%	0
7004	100%	C		1	1	0.00%	0%	0.00%			0.00%	0		0.00%	0
7011	100%	C	•	0	0	0.00.7	0%				0.00%	0		0.00%	0
7012	100%	582		652	652	0.49%	0%				0.00%	0		0.00%	0
7013	100%	1198		1,208	1,208	0.92%		0.00%			0.00%	0		0.00%	0
7014	100%	2145		2,246	2,246	1.70%	0%	0.00%			0.00%	0		0.00%	0
7021	100%	1285		1,263	1,263	0.96%	0%	0.00%			0.00%	0		0.00%	0
7022	100%	1668		1,692	1,692	1.28%		0.00%			0.00%	0		0.00%	0
7031	100%	1976		2,125	2,125	1.61%		0.00%			0.00%	0		0.00%	0
7032	100%	1649		1,780	1,780	1.35%		0.00%			0.00%	0		0.00%	0
7041	100%	201		212	212	0.16%		0.08%			0.00%	0		0.00%	0
7042	100%	1104		1,266	1,266	0.96%	0%	0.00%			0.00%	0		0.00%	0
7043	100%	1456		1,473	1,473	1.12%		0.56%			0.00%	0		0.00%	0
7044	100%	C	254	82	82			0.03%			0.00%	0		0.00%	0
7051	100%	3374		3,530	3,530			0.00%			0.00%	0		0.00%	0
7052	65%	C	,		1	0.00%	0%	0.00%		0,0	0.00%	0		0.00%	0
7053	100%	120		164	164	0.12%	0%	0.00%			0.00%			0.00%	0
7101	70%	2375			1,818					0 70	0.00%		0 70		
7105	25%	1963		2,198	550						0.00%				0
7106	85%	2011		2,085	1,772						0.00%			0.00%	0
7107	100%	2629		3,025	3,025						0.00%	0			0
7401	5%	743			38						0.00%				0
7402	5%	1134		1,355	68						0.00%			0.00%	0
7511	5%	1281			64						0.00%			0.00%	0
7601	100%	943			934	0.71%					0.35%	467		0.00%	0
7602	100%	1103			1,116						0.42%	558			0
7603	100%	1243		1,320	1,320						1.00%				0
7611	100%	1797		1,789	1,789						0.00%				0
7612	100%	936	1054	974	974	0.74%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

							Wa	(WN) shington St. N	lorth	India	(IE) n School Rd.	East	Was	(WS) shington St. So	outh
DASZ#	% Sub Area in Study		2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2021											
	ecified on DASZ														
7621	100%	1223		1,238	1,238	0.94%	0%	0.00%			0.00%	0		0.00%	0
7622	100%	1036		1,099	1,099	0.83%	0%	0.00%			0.00%	0		0.00%	0
7631	100%	1166		1,183	1,183	0.90%	0%	0.00%			0.00%	0		0.00%	0
7632	95%	989		1,027	976		0%	0.00%			0.00%	0		0.00%	0
7633	20%	1869		1,918	384	0.29%	0%	0.00%			0.00%	0		0.00%	0
7634	60%	688		698	419		0%	0.00%			0.00%	0		0.00%	0
7641	100%	1291		1,317	1,317	1.00%	0%	0.00%			0.00%	0		0.00%	0
7642	95%	841		862	819		0%	0.00%		9	0.00%	0		0.00%	0
7652	100%	1035		1,037	1,037	0.79%	0%	0.00%	0		0.00%	0		0.00%	0
7661	95%	298		364	346	0.26%	0%	0.00%	0		0.00%	0		0.00%	0
7662	100%	1724	1769	1,738	1,738	1.32%	0%	0.00%	0	0%	0.00%	0	0,0	0.00%	0
7681	100%	C	2510	807	807	0.61%	0%	0.00%	0	50 %	0.31%	404		0.00%	0
7682	100%	C	300	96	96	0.07%	0%	0.00%	0	100%	0.07%	96	0%	0.00%	0
7683	100%	127	349	198	198	0.15%	0%	0.00%	0	100%	0.15%	198	0%	0.00%	0
7684	100%	855	1798	1,158	1,158	0.88%	0%	0.00%	0	100%	0.88%	1,158	0%	0.00%	0
7685	100%	C	447	144	144	0.11%	0%	0.00%	0	100%	0.11%	144	0%	0.00%	0
7691	100%	277	2619	1,030	1,030	0.78%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7692	100%	501	789	594	594	0.45%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7693	100%	184	500	286	286	0.22%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7694	100%	C	946	304	304	0.23%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7695	100%	C	4111	1,321	1,321	1.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7696	100%	798	1373	983	983	0.75%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8001	100%	9		153	153	0.12%	0%	0.00%	. 0	0%	0.00%	0	0%	0.00%	0
8002	100%	418	745	523	523	0.40%	0%	0.00%	. 0	0%	0.00%	0	0%	0.00%	0
8011	100%	2431	2935	2,593	2,593	1.97%	0%	0.00%	. 0	0%	0.00%	0	0%	0.00%	0
8012	100%	505		847	847	0.64%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8021	100%	835	2133	1,252	1,252	0.95%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8022	100%	1064		1,385	1,385	1.05%	0%	0.00%	0	0%	0.00%	0		0.00%	0
8031	100%	1717	2591	1,998	1,998	1.51%	0%	0.00%	0	0%	0.00%		0%	0.00%	0
8032	100%	2		2	2		0%				0.00%			0.00%	0
8041	100%	2899	4149	3,301	3,301	2.50%	0%	0.00%		0%	0.00%			0.00%	0
8051	95%	C	0		0		0%	0.00%			0.00%	0		0.00%	0
8052	100%	454	471	459	459		0%	0.00%			0.00%			0.00%	0
8061	60%	1292		1,970	1,182		0%	0.00%			0.00%			0.00%	0
8062	100%	3048			3,130			0.00%			0.00%	0		0.00%	0
8071	5%	864			75			0.00%			0.00%	0		0.00%	0
8072	45%	1274		· ·	949			0.00%			0.00%	0		0.00%	0
8101	100%	2332		· ·	2,435			0.00%			0.00%	0		0.00%	0
8102	100%	1540		· ·	1,611	1.22%					0.00%			0.00%	0
8111	100%	1708		· ·	1,736						0.00%				

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments'
2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

							Wa	(WN)	orth	lodie	(IE)	Foot	Wo	(WS)	ath
DASZ#	% Sub Area in Study	•	2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	shington St. N % Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	shington St. Some Section Section Willizing	Population
		2012	2040	2021											
	ecified on DASZ														
8121	100%	1238	1314	1,262	•		0%	0.00%	0	0%	0.00%	0		0.29%	379
8122	100%	1230	1306	1,254	1,254		0%	0.00%	0	0%	0.00%	0	35%	0.33%	439
8123	100%	509	639	551	551	0.42%	0%	0.00%	0		0.00%	0	0%	0.00%	0
8131	100%	1229	1397	1,283	•		0%	0.00%	0	0%	0.00%	0	25%	0.24%	321
8132	100%	1156	1233	1,181	1,181	0.90%	0%	0.00%	0	50%	0.45%	591	25%	0.22%	295
8133	100%	0	0	0	0		0%	0.00%	0		0.00%	0	0%	0.00%	0
8141	100%	998	1149	1,047	1,047			0.00%	0	30%	0.24%	314	30%	0.24%	314
8142	100%	1527	1582	1,545				0.00%	0	30%	0.35%	464	30%	0.35%	464
8151	100%	1800	2142	1,910	•			0.00%	0	40%	0.58%	764	30%	0.43%	573
8161	100%	1960	2795	2,228	•			0.00%	0	0%	0.00%	0	50%	0.84%	1,114
8171	100%	1017	1134	1,055	1,055		0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8172	100%	1590	1908	1,692			0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8201	100%	1131	1186	1,149	•		0%	0.00%	0	35%	0.30%	402	30%	0.26%	345
8202	100%	861	873	865	865		0%	0.00%	0	75%	0.49%	649	0%	0.00%	0
8211	100%	1609	2364	1,852			0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8212	90%	283	407	323		0.22%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8221	100%	10	42	20			0%	0.00%	0	50%	0.01%	10	25%	0.00%	5
8231	95%	1542	1609	1,564	1,486		0%	0.00%	0	0%	0.00%	0		0.00%	0
8232	100%	1496	1814	1,598	·		0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8233	50%	2775	2735	2,762	·	1.05%		0.00%	0	0%	0.00%	0	0%	0.00%	0
8234	5%	2086	3417	2,514	126		0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8242	10%	3662	3958	3,757	376		0%	0.00%	0	0%	0.00%	0		0.09%	113
8243	35%	994	2228	1,391	487	0.37%	0%	0.00%	0	0%	0.00%	0		0.11%	146
8501	90%	1930	2355	2,067	1,860			0.00%	0	0%	0.00%	0	0%	0.00%	0
8502	100%	1219	1343	1,259				0.00%	0	0%	0.00%	0	0%	0.00%	0
8511	100%	1087	1322	1,163	•		0%	0.00%	0	0%	0.00%	0		0.00%	0
8512	100%	394	635	471	471	0.36%	0%	0.00%	0	0%	0.00%	0		0.00%	<u>0</u>
8521	100%	856	1773	1,151	1,151	0.87%	0%	0.00%	0	0%	0.00%	0		0.44%	576 0
8531	100%	2014	2283	2,100			0%	0.00%)	0	0.00%	U	0 70	0.00%	
8532	100%	869 708		1,048			0%	0.00%	0	0% 0%	0.00%	0		0.00%	0
8533 8534	100%	2140		1,070				0.00%	0	0%	0.00% 0.00%	0	0% 0%	0.00%	0
8541	85% 30%	3350	2539 4409	2,268 3,690				0.00% 0.00%	0	0%	0.00%	0	0%	0.00% 0.00%	0
8553	85%	2455		2,668				0.00%	0	0%	0.00%	0	0%	0.00%	0
8561	95%	2711	3116	2,848				0.00%			0.00%				0
0001	30%	2/11	3130	39,719	l .			0.00%	884	U%	0.00%	7,538	U%	0.00%	5,082
				39,719	131,943	100.00%			0.67%			5.71%			3, 062 3.85%

 $Whole Foods_TD_Comm.xlsx$

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

							Ca	(CS) Irlisle Blvd. Sc	outh	India	(IW) n School Rd. '	West	In	(4W) terstate 40 We	est
DASZ#	% Sub Area in Study	·	2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2021											
	ecified on DASZ														
5001	80%	C			26	0.02%		0.02%		0%	0.00%	0		0.00%	0
5002	100%	C		299	299	0.23%	100%	0.23%		0%	0.00%	0		0.00%	0
5003	45%	C		149	67	0.05%		0.05%		0%	0.00%	0		0.00%	0
5007	10%	2		68	7	0.01%		0.01%		0	0.00%	0		0.00%	0
5008	65%	126		234	152	0.12%		0.12%		0%	0.00%	0		0.00%	0
5011	100%	215		908	908	0.69%	100%	0.69%		0%	0.00%	0		0.00%	0
5012	95%	55		101	96	0.07%	100%	0.07%		0%	0.00%	0		0.00%	0
5101	55%	1615		1,670	919	0.70%	100%	0.70%		0%	0.00%	0		0.00%	0
5102	5%	479		492	25	0.02%	100%	0.02%		0%	0.00%	0		0.00%	0
5103	100%	650		787	787	0.60%	100%	0.60%		0%	0.00%	0		0.00%	0
5173	15%	972		1,055	158	0.12%	50%	0.06%	79	0%	0.00%	0	50%	0.06%	79 58
5201	5%	756	2031	1,166	58	0.04%	0%	0.00%	0	0%	0.00%	0	100%	0.04%	58
5212	95%	479	603	519	493	0.37%	0%	0.00%	0	0%	0.00%	0	100%	0.37%	493
5213	100%	240	381	285	285	0.22%	0%	0.00%	0	0%	0.00%	0	100%	0.22%	285
5221	100%	24	. 69	38	38	0.03%	0%	0.00%	0	0%	0.00%	0	100%	0.03%	38
5231	100%	C	0	0	0	0.00%	0%	0.00%	0	100%	0.00%	0	0%	0.00%	0
5232	100%	C	0	0	0	0.00%	0%	0.00%	0	50%	0.00%	0	50%	0.00%	0
5241	100%	474	570	505	505	0.38%	25%	0.10%	126	75%	0.29%	379	0%	0.00%	0
5242	100%	1473	1958	1,629	1,629	1.23%	0%	0.00%	0	75%	0.93%	1,222	25%	0.31%	407
5251	100%	77	449	197	197	0.15%	0%	0.00%	0	0%	0.00%	0	100%	0.15%	197
5261	80%	765	3822	1,748	1,398	1.06%	75%	0.79%	1,049	0%	0.00%	0	25%	0.26%	350
5262	100%	69		390	390	0.30%	75%	0.22%		0%	0.00%	0	25%	0.07%	98
5271	100%	408		555	555	0.42%	75%	0.32%	416	0%	0.00%	0	25%	0.11%	139
5272	100%	C		3	3	0.00%	75%	0.00%	2	0%	0.00%	0	25%	0.00%	1
5273	100%	365	734	484	484	0.37%	75%	0.28%		0%	0.00%	0		0.09%	121
6001	60%	534		559	335	0.25%		0.00%		0%	0.00%	0		0.13%	168
6002	60%	1295		1,327	796	0.60%	0%	0.00%	0	0%	0.00%	0	50%	0.30%	398
6003	100%	607		644	644	0.49%	0%	0.00%	0	0%	0.00%	0	50%	0.24%	322
6004	100%	76		103	103	0.08%	0%			0%	0.00%	0	50%	0.04%	
6011	50%	545		588	294	0.22%		0.00%			0.00%				0
6012	25%	1031		1,031	258	0.20%		0.00%			0.00%			0.00%	
6021	20%	2060			426	0.32%		0.00%			0.00%	0		0.16%	
6022	100%	997		·	1,023	0.78%		0.00%			0.00%				512
6031	85%	322		315	268	0.20%		0.00%			0.00%			0.00%	
6033	25%	617			152	0.12%		0.00%			0.00%	0		0.00%	
6061	15%	354			54	0.04%		0.00%			0.00%	0		0.00%	
6062	50%	1323			728	0.55%		0.00%			0.00%	0		0.00%	
6063	45%	0		-	0	0.00%		0.00%			0.00%				
6064	100%	0		632	632	0.48%					0.00%				
6071	100%	463			495						0.00%				

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

							Ca	(CS) rlisle Blvd. So	uth	India	(IW) n School Rd. V	West	Int	(4W) erstate 40 We	est
DASZ#	% Sub Area in Study	2012 Population	2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2021											
	ecified on DAS														
6072	100%	471		496	496	0.38%	0%	0.00%	0		0.00%	0		0.09%	124
6073	100%	44		47	47	0.04%	0%	0.00%	0		0.00%	0		0.01%	
6074	100%	42		42	42	0.03%	0%	0.00%	0		0.00%	0		0.00%	
6075	100%	82		88	88	0.07%	0%	0.00%	0		0.00%	0		0.00%	
6076	100%	0		0	0	0.00%	0%	0.00%	0		0.00%	0		0.00%	
6077	100%	290	377	318	318	0.24%	0%	0.00%	0		0.00%	0		0.00%	
6094	10%	0	0	0	0	0.00%	0%	0.00%	0		0.00%	0		0.00%	
6095	100%	0	0	0	0	0.00%	0%	0.00%	0		0.00%	0		0.00%	
6096	55%	0		0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0,70	0.00%	
7001	100%	0		5	5	0.00%	0%	0.00%	0	0%	0.00%	0		0.00%	
7002	100%	55		70	70	0.05%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
7003	100%	125	201	149	149	0.11%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7004	100%	0	4	1	1	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7011	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7012	100%	582	799	652	652	0.49%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7013	100%	1198	1230	1,208	1,208	0.92%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7014	100%	2145	2460	2,246	2,246	1.70%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7021	100%	1285	1217	1,263	1,263	0.96%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7022	100%	1668	1742	1,692	1,692	1.28%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7031	100%	1976	2439	2,125	2,125	1.61%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7032	100%	1649	2056	1,780	1,780	1.35%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7041	100%	201	236	212	212	0.16%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7042	100%	1104	1608	1,266	1,266	0.96%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7043	100%	1456	1508	1,473	1,473	1.12%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7044	100%	0		82	82	0.06%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7051	100%	3374		3,530	3,530	2.68%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
7052	65%	0		1	1	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7053	100%	120	257	164	164	0.12%	0%	0.00%	0	0%	0.00%	0		0.00%	
7101	70%	2375		2,597	1,818			0.00%			0.00%			0.00%	
7105	25%	1963		2,198	550	0.42%	0%	0.00%			0.00%	0		0.00%	
7106	85%	2011	2240	2,085	1,772	1.34%	0%	0.00%	0		0.00%	0		0.00%	
7107	100%	2629		3,025	3,025	2.29%	0%	0.00%	0		0.00%	0		0.00%	
7401	5%	743		761	38	0.03%	0%	0.00%			0.00%	0		0.00%	
7402	5%	1134		1,355	68	0.05%	0%	0.00%			0.00%	0		0.00%	
7511	5%	1281		1,273	64	0.05%	0%	0.00%			0.00%	0		0.00%	
7601	100%	943		934	934	0.71%	0%	0.00%			0.00%	0		0.00%	
7602	100%	1103		1,116	1,116	0.85%	0%	0.00%			0.00%	0		0.00%	
7603	100%	1243		1,320	1,320	1.00%	0%	0.00%			0.00%	0		0.00%	
7611	100%	1797		1,789	1,789	1.36%	0%	0.00%			0.00%	0		0.00%	
7612	100%	936		974			0%	0.00%			0.00%			0.00%	

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

							Ca	(CS) rlisle Blvd. So	outh	India	(IW) an School Rd. '	West	In	(4W) terstate 40 We	est
DASZ#	% Sub Area in Study	2012 Population		Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2021											
	ecified on DAS														
7621	100%	1223		1,238	1,238	0.94%	0%	0.00%		0 70	0.00%	0		0.00%	0
7622	100%	1036		1,099	1,099	0.83%	0%	0.00%		0 70		0		0.00%	0
7631	100%	1166		1,183	1,183	0.90%	0%	0.00%		0 70	0.00%	0		0.00%	0
7632	95%	989		1,027	976	0.74%	0%	0.00%		0 70		0		0.00%	
7633	20%	1869		1,918	384	0.29%	0%	0.00%		0%		0		0.00%	0
7634	60%	688		698	419	0.32%	0%	0.00%		0%	0.00%	0		0.00%	0
7641	100%	1291	1372	1,317	1,317	1.00%	0%	0.00%		0 70	0.00%	0		0.00%	0
7642	95%	841	906	862	819	0.62%	0%	0.00%		0 70	0.00%	0		0.00%	0
7652	100%	1035		1,037	1,037	0.79%	0%	0.00%		0 70		0		0.00%	0
7661	95%	298		364	346	0.26%	0%	0.00%		0 70	0.00%	0		0.00%	0
7662	100%	1724		1,738	1,738	1.32%	0%	0.00%		0 70	0.00%	0		0.00%	0
7681	100%	0		807	807	0.61%	0%	0.00%		0 70	0.00%	0		0.00%	0
7682	100%	0		96	96	0.07%	0%	0.00%		0 70	0.00%	0		0.00%	0
7683	100%	127	349	198	198	0.15%	0%	0.00%		0%	0.00%	0		0.00%	0
7684	100%	855		1,158	1,158	0.88%	0%	0.00%		0%	0.00%	0		0.00%	0
7685	100%	0		144	144	0.11%	0%	0.00%		0 70	0.00%	0		0.00%	0
7691	100%	277	2619	1,030	1,030	0.78%	0%	0.00%		0 70	0.00%	0		0.00%	0
7692	100%	501	789	594	594	0.45%	0%	0.00%		0 70	0.00%	0		0.00%	0
7693	100%	184		286	286	0.22%	0%	0.00%		0 70	0.00%	0		0.00%	0
7694	100%	0		304	304	0.23%	0%	0.00%		0 70	0.00%	0		0.00%	0
7695	100%	0		1,321	1,321	1.00%	0%	0.00%		0%	0.00%	0		0.00%	0
7696	100%	798		983	983	0.75%	0%	0.00%		0%	0.00%	0		0.00%	0
8001	100%	9		153	153	0.12%	0%	0.00%		10070	0.12%	153		0.00%	0
8002	100%	418		523	523	0.40%	0%	0.00%		100%	0.40%	523		0.00%	0
8011	100%	2431	2935	2,593	2,593	1.97%	100%	1.97%	,		0.00%	0		0.00%	0
8012	100%	505		847	847	0.64%	50%	0.32%			0.32%	424		0.00%	0
8021	100%	835		1,252	1,252	0.95%	25%	0.24%			0.71%	939		0.00%	0
8022	100%	1064		1,385	1,385	1.05%	0%	0.00%		10070	1.05%	1,385		0.00%	0
8031	100%	1717		1,998	1,998		100%	1.51%					0 70		
8032	100%	2		2	2	0.00%	100%	0.00%				0		0.00%	0
8041	100%	2899		3,301	3,301	2.50%	100%	2.50%				0		0.00%	
8051	95%	0		0	0	0.00%	100%	0.00%		0%		0		0.00%	
8052	100%	454		459	459	0.35%	100%	0.35%				0		0.00%	
8061	60%	1292		1,970	1,182		100%	0.90%				0		0.00%	
8062	100%	3048		3,130	3,130		100%	2.37%				0		0.00%	
8071	5%	864		1,498	75	0.06%	100%	0.06%				0		0.00%	
8072	45%	1274		2,109	949	0.72%	100%	0.72%				0		0.00%	
8101	100%	2332		2,435	2,435		0%	0.00%				487		0.00%	
8102	100%	1540		1,611	1,611	1.22%	0%	0.00%		40%		644		0.00%	
8111	100%	1708	1796	1,736	1,736	1.32%	50%	0.66%	868	0%	0.00%	0	0%	0.00%	0

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments'
2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

							Co	(CS) Irlisle Blvd. So	uth	India	(IW) In School Rd. \	Most	In	(4W) terstate 40 We	not.
DASZ#	% Sub Area in Study	2012 Population		Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2021											ļ
	ecified on DASZ														
8121	100%	1238	1314	1,262			40%	0.38%	505	0%	0.00%	0		0.00%	
8122	100%	1230	1306	1,254		0.95%	0%	0.00%		0%	0.00%	0	0%		
8123	100%	509	639	551	551	0.42%	0%	0.00%		0%	0.00%	0	0%		
8131	100%	1229	1397	1,283			50%	0.49%		0%	0.00%	0	0%		
8132	100%	1156	1233	1,181	1,181	0.90%	0%	0.00%		0%	0.00%	0			
8133	100%	0	0	0	J	0.00%	0%	0.00%		0%	0.00%	0		0.00%	
8141	100%	998	1149	1,047	,	0.79%	0%	0.00%		0%	0.00%	0		0.00%	
8142	100%	1527	1582	1,545			0%	0.00%	0	0%	0.00%	0		0.00%	
8151	100%	1800	2142	1,910			30%	0.43%	573	0%	0.00%	0		0.00%	
8161	100%	1960	2795	2,228			50%	0.84%	1,114	0%	0.00%	0		0.00%	
8171	100%	1017	1134	1,055			100%	0.80%	1,055	0%	0.00%	0	0%	0.00%	<u> </u>
8172	100%	1590	1908	1,692			100%	1.28%	1,692	0%	0.00%	0	0%	0.00%	
8201	100%	1131	1186	1,149			0%	0.00%	0	0%	0.00%	0	0%	0.00%	
8202	100%	861	873	865			0%	0.00%		0%	0.00%	0	0%	0.00%	
8211	100%	1609	2364	1,852			50%	0.70%		0%	0.00%	0	0%	0.00%	<u> </u>
8212	90%	283	407	323		0.22%	100%	0.22%		0%	0.00%	0	0%	0.00%	
8221	100%	10	42	20			25%	0.00%		0%	0.00%	0	0%	0.00%	
8231	95%	1542	1609	1,564			50%	0.56%	743	0%	0.00%	0	0%		
8232	100%	1496	1814	1,598			50%	0.61%	799	0%	0.00%	0	0%		<u> </u>
8233	50%	2775	2735	2,762		1.05%		0.52%	691	0%	0.00%	0	0%		<u> </u>
8234	5%	2086	3417	2,514			50%	0.05%		0%	0.00%	0	0%		<u> </u>
8242	10%	3662	3958	3,757	376		35%	0.10%	132	0%	0.00%	0		0.00%	<u> </u>
8243	35%	994	2228	1,391	487	0.37%	35%	0.13%		0%	0.00%	0		0.00%	<u> </u>
8501	90%	1930	2355	2,067	1,860		100%	1.41%	1,860	0%	0.00%	0		0.00%	
8502	100%	1219	1343	1,259			100%	0.95%	1,259	0%	0.00%	0		0.00%	
8511	100%	1087	1322	1,163			100%	0.88%	1,163	0%	0.00%	0		0.00%	
8512	100%	394	635	471	471	0.36%	100%	0.36%	471	0%	0.00%	0		0.00%	
8521	100%	856	1773	1,151	1,151	0.87%	50%	0.44%	576	0%	0.00%	0	0%	0.00%	
8531	100%	2014	2283	2,100				0.80%			0.00%	0			
8532	100%	869	1425	1,048				0.40%		0%	0.00%	0			
8533	100%	708	1833	1,070				0.41%		0%	0.00%	0			
8534	85%	2140	2539	2,268				0.73%		0%	0.00%	0			
8541	30%	3350	4409	3,690				0.42%		0%	0.00%	0			
8553	85%	2455	3118	2,668				1.72%		0%	0.00%	0			
8561	95%	2711	3136	2,848				2.05%		0%	0.00%	0.455	0%	0.00%	
				39,719	131,943	100.00%			44,236 33.53%			6,155 4.67%			4,18 8

WholeFoods_TD_Comm.xlsx

A-23

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

							Cor	(CoW) estitution Av. V	Vest	Indiar	(IC) n School Rd. C	Central	San	(SN) Mateo Blvd. N	North
DASZ#	% Sub Area in Study		2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2021											
	ecified on DAS	•													
5001	80%	0		32	26	0.02%	0%	0.00%		0 70	0.00%	0		0.00%	
5002	100%	0		299	299	0.23%	0%	0.00%		0 70	0.00%	0		0.00%	
5003	45%	0		149	67	0.05%	0%	0.00%		0 70	0.00%	0		0.00%	
5007	10%	2		68	7	0.01%	0%	0.00%		0 70	0.00%	0		0.00%	
5008	65%	126		234	152		0%	0.00%		0%	0.00%	0		0.00%	
5011	100%	215		908	908	0.69%	0%	0.00%		0%	0.00%	0		0.00%	
5012	95%	55		101	96	0.07%	0%	0.00%		0 70	0.00%	0		0.00%	
5101	55%	1615		1,670	919	0.70%	0%	0.00%		0 70	0.00%	0		0.00%	
5102	5%	479		492	25	0.02%	0%	0.00%		0 70	0.00%	0		0.00%	
5103	100%	650		787	787	0.60%	0%	0.00%		0 70	0.00%	0		0.00%	
5173	15%	972		1,055	158	0.12%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5201	5%	756		1,166	58	0.04%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5212	95%	479	603	519	493	0.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5213	100%	240	381	285	285	0.22%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5221	100%	24	69	38	38	0.03%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5231	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5232	100%	0	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5241	100%	474	570	505	505	0.38%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5242	100%	1473	1958	1,629	1,629	1.23%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5251	100%	77	449	197	197	0.15%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5261	80%	765	3822	1,748	1,398	1.06%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5262	100%	69		390	390	0.30%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5271	100%	408	866	555	555	0.42%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5272	100%	0	9	3	3	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5273	100%	365	734	484	484	0.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6001	60%	534	612	559	335	0.25%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6002	60%	1295	1393	1,327	796	0.60%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6003	100%	607	723	644	644	0.49%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
6004	100%	76	160	103	103	0.08%	0%			0%		0	0%	0.00%	
6011	50%	545		588	294	0.22%	0%	0.00%			0.00%	0		0.00%	
6012	25%	1031	1031	1,031	258	0.20%	0%	0.00%		0%	0.00%	0	0%	0.00%	
6021	20%	2060		2,129	426	0.32%	0%	0.00%			0.00%			0.00%	
6022	100%	997		1,023	1,023	0.78%	0%	0.00%			0.00%			0.00%	
6031	85%	322		315	268	0.20%	0%	0.00%						0.00%	
6033	25%	617		609	152		0%	0.00%			0.00%			0.00%	
6061	15%	354		362	54	0.04%	0%	0.00%			0.00%			0.00%	
6062	50%	1323		1,455	728		0%	0.00%			0.00%			0.00%	
6063	45%	0		0	0	0.00%	0%	0.00%		0%	0.00%			0.00%	
6064	100%	0		632	632		0%			0%				0.00%	
6071	100%	463		495	495		0%								

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

								(CoW)			(IC)			(SN)	
				Internelated	1		Con	stitution Av. V	vvest	Indian	School Rd. C	entral	San	Mateo Blvd. I	vorth
DASZ#	% Sub Area in Study	·	2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2021											
	ecified on DASZ			100	100	2.224				00/				0.000/	
6072	100%	471	550	496	496	0.38%	0%	0.00%		•	0.00%	0		0.00%	
6073	100%	44	54	47	47	0.04%	0%	0.00%		•	0.00%	0		0.00%	
6074	100%	42	43	42	42	0.03%	0%	0.00%		•	0.00%	0		0.00%	
6075	100%	82	101	88	88	0.07%	0%	0.00%		3	0.00%	0		0.00%	
6076	100%	0	0	•	0	0.00%	0%	0.00%		3	0.00%	0		0.00%	
6077	100%	290	377	318	318	0.24%	0%	0.00%		0 70	0.00%	0		0.00%	
6094	10%	0	0	0	0	0.00%	0%	0.00%		- , ,	0.00%	0		0.00%	
6095	100%	0	0	~	0	0.00%	0%	0.00%		•	0.00%	0		0.00%	
6096	55%	0	0	0	0	0.00%	0%	0.00%			0.00%	0		0.00%	
7001	100%	0	16	5	5	0.00%	0%	0.00%			0.00%	0		0.00%	
7002	100%	55	103	70	70	0.05%	0%	0.00%			0.00%	0		0.00%	
7003	100%	125	201	149	149	0.11%	0%	0.00%			0.00%	0		0.00%	
7004	100%	0	4	1	1	0.00%	0%	0.00%			0.00%	0		0.00%	
7011	100%	0	0	0	0	0.00%	0%	0.00%			0.00%	0		0.00%	
7012	100%	582	799	652	652	0.49%	0%	0.00%			0.00%	0		0.00%	
7013	100%	1198	1230	1,208	1,208	0.92%	0%	0.00%			0.00%	0		0.00%	
7014	100%	2145	2460	2,246	2,246	1.70%	0%	0.00%			0.00%	0		0.00%	
7021	100%	1285	1217	1,263	1,263	0.96%	0%	0.00%			0.00%	0		0.00%	
7022	100%	1668	1742	1,692	1,692	1.28%	0%	0.00%			0.00%	0		0.00%	
7031	100%	1976	2439	2,125	2,125	1.61%	0%	0.00%		0,0	0.00%	0		0.81%	
7032	100%	1649	2056	1,780	1,780	1.35%	0%	0.00%		0,0	0.00%	0		0.67%	
7041	100%	201	236	212	212	0.16%	0%	0.00%			0.00%	0		0.00%	
7042	100%	1104	1608	1,266	1,266	0.96%	0%	0.00%			0.00%	0		0.00%	
7043	100%	1456	1508	1,473	1,473	1.12%	0%	0.00%			0.00%	0		0.56%	
7044	100%	0	254	82	82	0.06%	0%	0.00%			0.00%	0		0.03%	
7051	100%	3374	3860	3,530	3,530	2.68%	0%	0.00%		- , ,	0.00%	0		0.00%	
7052	65%	0	3	104	1	0.00%	0%	0.00%		- , ,	0.00%	0		0.00%	
7053	100%	120	257	164	164	0.12%	0%	0.00%		•	0.00%	0		0.12%	
7101	70%	2375			1,818	1.38%					0.00%				
7105	25%	1963	2694	·	550	0.42%		0.00%			0.00%			0.42%	
7106	85%	2011	2240	·	1,772	1.34%		0.00%			0.00%			1.34%	
7107	100%	2629	3860	·	3,025	2.29%		0.00%			0.00%			2.29%	The state of the s
7401	5%	743	800		38	0.03%		0.00%			0.00%	0			
7402	5%	1134	1821	1,355	68	0.05%		0.00%			0.00%				
7511	5%	1281	1256		64	0.05%		0.00%			0.00%	0		0.00%	
7601	100%	943	915		934	0.71%	0%	0.00%			0.00%			0.35%	
7602	100%	1103	1143	·	1,116	0.85%	0%	0.00%			0.00%	0		0.42%	
7603	100%	1243	1484	·	1,320	1.00%		0.00%			0.00%			0.00%	
7611	100%	1797	1772		1,789	1.36%		0.00%			0.00%			0.68%	
7612	100%	936	1054	974	974	0.74%	0%	0.00%	0	0%	0.00%	0	50%	0.37%	48

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

							Cor	(CoW) nstitution Av. V	Vest	Indian	(IC) School Rd. C	Central	San	(SN) Mateo Blvd. N	North
DASZ#	% Sub Area in Study	2012 Population	2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2021											
	ecified on DASZ														
7621	100%	1223		1,238	1,238	0.94%	0%	0.00%			0.00%	0	50%	0.47%	619
7622	100%	1036		1,099	1,099	0.83%	0%	0.00%			0.00%	0	50%	0.42%	550
7631	100%	1166		1,183	1,183	0.90%	0%	0.00%			0.00%	0		0.45%	592
7632	95%	989		1,027	976		0%	0.00%		• , •	0.00%	0		0.37%	488
7633	20%	1869		1,918	384	0.29%	0%	0.00%			0.00%	0		0.15%	192
7634	60%	688		698	419		0%	0.00%		• , •	0.00%	0		0.16%	210
7641	100%	1291		1,317	1,317	1.00%	0%	0.00%		• , •	0.00%	0		0.50%	659
7642	95%	841		862	819		0%	0.00%		0,0	0.00%	0		0.31%	410
7652	100%	1035		1,037	1,037	0.79%	0%	0.00%	0	0%	0.00%	0		0.39%	519
7661	95%	298	503	364	346	0.26%	0%	0.00%	0	0%	0.00%	0		0.00%	0
7662	100%	1724	1769	1,738	1,738	1.32%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7681	100%	C	2510	807	807	0.61%	0%	0.00%	0	0%	0.00%	0	25%	0.15%	202
7682	100%	C	300	96	96	0.07%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7683	100%	127	349	198	198	0.15%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7684	100%	855	1798	1,158	1,158	0.88%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7685	100%	C	447	144	144	0.11%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7691	100%	277	2619	1,030	1,030	0.78%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7692	100%	501	789	594	594	0.45%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7693	100%	184	500	286	286	0.22%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7694	100%	C		304	304	0.23%	0%	0.00%	. 0	0%	0.00%	0	0%	0.00%	0
7695	100%	C	4111	1,321	1,321	1.00%	0%	0.00%	. 0	0%	0.00%	0	0%	0.00%	0
7696	100%	798	1373	983	983	0.75%	0%	0.00%	. 0	0%	0.00%	0	0%	0.00%	0
8001	100%	9		153	153	0.12%	0%	0.00%	. 0	0%	0.00%	0	0%	0.00%	0
8002	100%	418	745	523	523	0.40%	0%	0.00%	. 0	0%	0.00%	0	0%	0.00%	0
8011	100%	2431	2935	2,593	2,593	1.97%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8012	100%	505		847	847	0.64%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8021	100%	835	2133	1,252	1,252	0.95%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8022	100%	1064	2062	1,385	1,385	1.05%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8031	100%	1717	2591	1,998	1,998	1.51%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8032	100%	2		2	2		0%			0%	0.00%	0		0.00%	0
8041	100%	2899	4149	3,301	3,301	2.50%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8051	95%	C	0		0	0.00%	0%	0.00%	. 0	0%	0.00%	0	0%	0.00%	0
8052	100%	454	471	459	459		0%	0.00%			0.00%			0.00%	
8061	60%	1292		1,970	1,182		0%	0.00%			0.00%			0.00%	
8062	100%	3048			3,130			0.00%			0.00%	0		0.00%	
8071	5%	864			75			0.00%			0.00%	0		0.00%	
8072	45%	1274		· ·	949			0.00%			0.00%	0		0.00%	
8101	100%	2332		· ·	2,435						0.00%			0.00%	
8102	100%	1540		· ·	1,611	1.22%					0.37%			0.00%	
8111	100%	1708		· ·	1,736						0.00%			0.00%	

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments'
2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

							Con	(CoW) stitution Av. V	Vest	Indiar	(IC) School Rd. C	entral	San	(SN) Mateo Blvd. N	Jorth
DASZ#	% Sub Area in Study	2012 Population		Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2021											
	ecified on DASZ														
8121	100%	1238	1314	1,262			0%	0.00%	0	0%	0.00%	0	0%		(
8122	100%	1230	1306	1,254	1,254		0%	0.00%		30%	0.29%	376	0%	0.00%	(
8123	100%	509	639	551	551	0.42%	0%	0.00%			0.42%	551	0%	0.00%	(
8131	100%	1229	1397	1,283			0%	0.00%		0%	0.00%	0	0%	0.00%	(
8132	100%	1156	1233	1,181	1,181	0.90%	0%	0.00%		0%	0.00%	0	0%		(
8133	100%	0	0	0	0		0%	0.00%		0%	0.00%	0	0%		(
8141	100%	998	1149	1,047	1,047			0.00%		0%	0.00%	0	0%		(
8142	100%	1527	1582	1,545				0.00%		0%	0.00%	0	0%		C
8151	100%	1800	2142	1,910				0.00%		0%	0.00%	0			(
8161	100%	1960	2795	2,228				0.00%		0%	0.00%	0			(
8171	100%	1017	1134	1,055	1,055		0%	0.00%		0%	0.00%	0		0.00%	(
8172	100%	1590	1908	1,692			0%	0.00%		0%	0.00%	0		0.00%	(
8201	100%	1131	1186	1,149			0%	0.00%	0	0%	0.00%	0		0.00%	(
8202	100%	861	873	865	865		0%	0.00%	0	0%	0.00%	0		0.00%	(
8211	100%	1609	2364	1,852			0%	0.00%	0	0%	0.00%	0	0%		(
8212	90%	283	407	323		0.22%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	(
8221	100%	10	42	20			0%	0.00%	0	0%	0.00%	0	0%		(
8231	95%	1542	1609	1,564	1,486		0%	0.00%	0	0%	0.00%	0	0%	0.00%	(
8232	100%	1496	1814	1,598			0%	0.00%		0%	0.00%	0	0%	0.00%	(
8233	50%	2775	2735	2,762		1.05%		0.00%		0%	0.00%	0	0%	0.00%	(
8234	5%	2086	3417	2,514	126		0%	0.00%		0%	0.00%	0	0%	0.00%	(
8242	10%	3662	3958	3,757	376		0%	0.00%		0%	0.00%	0	0%		(
8243	35%	994	2228	1,391	487		0%	0.00%		0%	0.00%	0			(
8501	90%	1930	2355	2,067	1,860			0.00%	0	0%	0.00%	0	0%		(
8502	100%	1219	1343	1,259				0.00%	0	0%	0.00%	0	0%		(
8511	100%	1087	1322	1,163			0%	0.00%	0	0%	0.00%	0			(
8512	100%	394	635	471	471	0.36%	0%	0.00%		0%	0.00%	0		0.00%	(
8521	100%	856	1773	1,151	1,151	0.87%	0%	0.00%		0%	0.00%	0		0.00%	(
8531	100%	2014	2283	2,100			0%	0.00%		0 70	0.00%	U	0	0.00%	(
8532	100%	869 708		1,048			0%	0.00%		0% 0%	0.00%	0			(
8533 8534	100%	2140		1,070				0.00%		0%	0.00% 0.00%	0	0% 0%		(
8541	85%	3350		2,268				0.00%			0.00%	0	0%		(
	30%		4409	3,690				0.00%		0%					(
8553	85%	2455 2711		2,668				0.00% 0.00%		0% 0%	0.00%	0	0% 0%		(
8561	95%	2/11	3136	2,848				0.00%		0%	0.00%	1 411	U%	0.00%	16 004
				39,719	131,943	100.00%			1,842 1.40%			1,411 1.07%			16,904 12.81%

WholeFoods_TD_Comm.xlsx

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

							San	(SS) Mateo Blvd. S	South	G	(GN) Girard Ct. Nort	h	G	(GS) Girard Ct. Sout	h
DASZ#	% Sub Area in Study		2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2021											
Boundary Spe	ecified on DASZ	Z Мар													
5001	80%	C			26	0.02%	0%	0.00%	0		0.00%	0		0.00%	0
5002	100%	C			299	0.23%	0%	0.00%			0.00%	0		0.00%	0
5003	45%	C			67	0.05%	0%	0.00%	0		0.00%	0		0.00%	0
5007	10%	2			7	0.01%	0%	0.00%			0.00%	0		0.00%	0
5008	65%	126		234	152	0.12%	0%	0.00%	0		0.00%	0		0.00%	0
5011	100%	215		908	908	0.69%	0%	0.00%	0	0%	0.00%	0		0.00%	0
5012	95%	55	198	101	96	0.07%	0%	0.00%	0	0%	0.00%	0		0.00%	0
5101	55%	1615	1785	1,670	919	0.70%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5102	5%	479	518	492	25	0.02%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5103	100%	650	1077	787	787	0.60%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5173	15%	972	1230	1,055	158	0.12%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5201	5%	756	2031	1,166	58	0.04%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5212	95%	479	603	519	493	0.37%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5213	100%	240	381	285	285	0.22%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
5221	100%	24			38	0.03%	0%	0.00%	. 0	0%	0.00%	0	0%	0.00%	0
5231	100%	C		0	0	0.00%	0%	0.00%		0%	0.00%	0		0.00%	0
5232	100%	C	0	0	0	0.00%	0%	0.00%		0%	0.00%	0		0.00%	0
5241	100%	474	570	505	505	0.38%	0%	0.00%			0.00%	0		0.00%	0
5242	100%	1473			1,629	1.23%	0%	0.00%			0.00%	0		0.00%	0
5251	100%	77			197	0.15%	0%	0.00%			0.00%	0		0.00%	0
5261	80%	765			1,398	1.06%	0%	0.00%			0.00%	0		0.00%	0
5262	100%	69		390	390	0.30%	0%	0.00%			0.00%	0		0.00%	0
5271	100%	408			555	0.42%	0%	0.00%			0.00%	0		0.00%	0
5272	100%	C			3	0.00%	0%	0.00%			0.00%	0		0.00%	0
5273	100%	365		484	484	0.37%	0%	0.00%			0.00%	0		0.00%	0
6001	60%	534			335	0.25%	0%	0.00%			0.00%	0		0.00%	0
6002	60%	1295			796	0.60%	0%	0.00%			0.00%	0		0.00%	0
6003	100%	607			644	0.49%	0%	0.00%			0.00%	0		0.00%	0
6004	100%	76			103	0.08%		0.00%			0.00%		0%		
6011	50%	545			294	0.22%	0%	0.00%			0.00%	0		0.00%	0
6012	25%	1031		1,031	258	0.20%	0%	0.00%			0.00%			0.00%	0
6021	20%	2060			426	0.32%	0%	0.00%			0.00%	0		0.00%	0
6022	100%	997			1,023	0.78%	0%	0.00%			0.00%			0.00%	0
6031	85%	322		315	268	0.20%	0%	0.00%			0.00%			0.00%	0
6033	25%	617			152	0.12%	0%	0.00%			0.00%	0		0.00%	0
6061	15%	354			54	0.04%	0%	0.00%			0.00%	0		0.00%	0
6062	50%	1323			728	0.55%		0.00%			0.00%	0		0.00%	0
6063	45%	1020			0	0.00%		0.00%			0.00%			0.00%	0
6064	100%	C			632	0.48%		0.00%			0.00%			0.00%	0
6071	100%	463			495						0.00%				

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

							San	(SS) Mateo Blvd. S	South	G	(GN) Girard Ct. Nort	h	G	(GS) Girard Ct. Sout	h
DASZ#	% Sub Area in Study		2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2021											
	ecified on DASZ														
6072	100%	471		496	496		0%	0.00%			0.00%	0		0.00%	0
6073	100%	44		47	47	0.04%	0%	0.00%			0.00%	0		0.00%	0
6074	100%	42		42	42		0%	0.00%			0.00%	0		0.00%	0
6075	100%	82		88	88		0%	0.00%			0.00%	0		0.00%	0
6076	100%	C		0	0		0%	0.00%			0.00%	0		0.00%	0
6077	100%	290	377	318	318		0%	0.00%			0.00%	0		0.00%	0
6094	10%	C		×	0		0%	0.00%			0.00%	0		0.00%	0
6095	100%	C	0	•	0	0.00,0		0.00%		9	0.00%	0		0.00%	0
6096	55%	C		•	0		0%	0.00%		0,0	0.00%	0		0.00%	0
7001	100%	C			5	0.00%	0%	0.00%	0		0.00%	0		0.00%	0
7002	100%	55			70	0.05%	0%	0.00%	0	0%	0.00%	0		0.00%	0
7003	100%	125	201	149	149	0.11%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7004	100%	C	4	1	1	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7011	100%	C	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7012	100%	582	799	652	652	0.49%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7013	100%	1198	1230	1,208	1,208	0.92%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7014	100%	2145	2460	2,246	2,246	1.70%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7021	100%	1285	1217	1,263	1,263	0.96%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7022	100%	1668	1742	1,692	1,692	1.28%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7031	100%	1976	2439	2,125	2,125	1.61%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7032	100%	1649	2056	1,780	1,780	1.35%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7041	100%	201	236	212	212	0.16%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7042	100%	1104	1608	1,266	1,266	0.96%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7043	100%	1456	1508	1,473	1,473	1.12%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7044	100%	C	254	82	82		0%	0.00%		0%	0.00%	0		0.00%	0
7051	100%	3374	3860	3,530	3,530	2.68%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7052	65%	C	3	1	1	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7053	100%	120	257	164	164	0.12%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7101	70%	2375	3067	2,597	1,818	1.38%	0%	0.00%	0	0%	0.00%		0%	0.00%	0
7105	25%	1963		2,198	550		0%	0.00%			0.00%			0.00%	0
7106	85%	2011		2,085	1,772		0%	0.00%		0%	0.00%			0.00%	0
7107	100%	2629		3,025	3,025		0%	0.00%			0.00%	0		0.00%	0
7401	5%	743			38		0%	0.00%			0.00%	0		0.00%	0
7402	5%	1134		1,355	68			0.00%			0.00%			0.00%	0
7511	5%	1281			64			0.00%			0.00%			0.00%	0
7601	100%	943			934	0.71%		0.00%			0.00%	0		0.00%	0
7602	100%	1103			1,116			0.00%			0.00%	0		0.00%	0
7603	100%	1243		1,320	1,320			0.00%			0.00%			0.00%	0
7611	100%	1797		1,789	1,789						0.00%			0.00%	
7612	100%	936			974						0.00%				

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

2012 and 2040 Data Taken from Mid-Region Council of Governments'

							San	(SS) Mateo Blvd. S	South	G	(GN) Girard Ct. Nort	h	G	(GS) Girard Ct. Sout	h
DASZ#	% Sub Area in Study	·	2040 Population	Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2021											
	ecified on DASZ														
7621	100%	1223		1,238	1,238	0.94%	0%	0.00%			0.00%	0		0.00%	0
7622	100%	1036		1,099	1,099	0.83%	0%	0.00%			0.00%	0		0.00%	0
7631	100%	1166		1,183	1,183	0.90%	0%	0.00%			0.00%	0		0.00%	0
7632	95%	989		1,027	976		0%	0.00%			0.00%	0		0.00%	0
7633	20%	1869		1,918	384	0.29%	0%	0.00%			0.00%	0		0.00%	0
7634	60%	688		698	419		0%	0.00%			0.00%	0		0.00%	0
7641	100%	1291		1,317	1,317	1.00%	0%	0.00%			0.00%	0		0.00%	0
7642	95%	841		862	819		0%	0.00%		0,0	0.00%	0		0.00%	0
7652	100%	1035		1,037	1,037	0.79%	0%	0.00%		0,0	0.00%	0		0.00%	0
7661	95%	298		364	346	0.26%	0%	0.00%	0		0.00%	0		0.00%	0
7662	100%	1724	1769	1,738	1,738	1.32%	0%	0.00%	0	0%	0.00%	0		0.00%	0
7681	100%	C	2510	807	807	0.61%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7682	100%	C		96	96	0.07%	0%	0.00%	0	0%	0.00%	0		0.00%	0
7683	100%	127	349	198	198	0.15%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7684	100%	855	1798	1,158	1,158	0.88%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7685	100%	0	447	144	144	0.11%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7691	100%	277	2619	1,030	1,030	0.78%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7692	100%	501	789	594	594	0.45%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7693	100%	184	500	286	286	0.22%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7694	100%	C	946	304	304	0.23%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7695	100%	C	4111	1,321	1,321	1.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
7696	100%	798	1373	983	983	0.75%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8001	100%	g	457	153	153	0.12%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8002	100%	418	745	523	523	0.40%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8011	100%	2431	2935	2,593	2,593	1.97%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8012	100%	505	1570	847	847	0.64%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8021	100%	835	2133	1,252	1,252	0.95%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8022	100%	1064	2062	1,385	1,385	1.05%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8031	100%	1717	2591	1,998	1,998	1.51%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8032	100%	2	2 2	2	2		0%	0.00%		0%	0.00%		0%	0.00%	0
8041	100%	2899	4149	3,301	3,301	2.50%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8051	95%	C	0	0	0	0.00%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	0
8052	100%	454	471	459	459		0%	0.00%			0.00%	0		0.00%	0
8061	60%	1292		1,970	1,182		0%	0.00%			0.00%			0.00%	0
8062	100%	3048			3,130			0.00%			0.00%	0		0.00%	0
8071	5%	864			75			0.00%			0.00%	0		0.00%	0
8072	45%	1274		·	949			0.00%			0.00%	0	+	0.00%	0
8101	100%	2332		·	2,435			0.00%			0.00%			0.74%	974
8102	100%	1540		·	1,611	1.22%		0.00%			0.37%			0.00%	0
8111	100%	1708		·	1,736						0.00%				

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

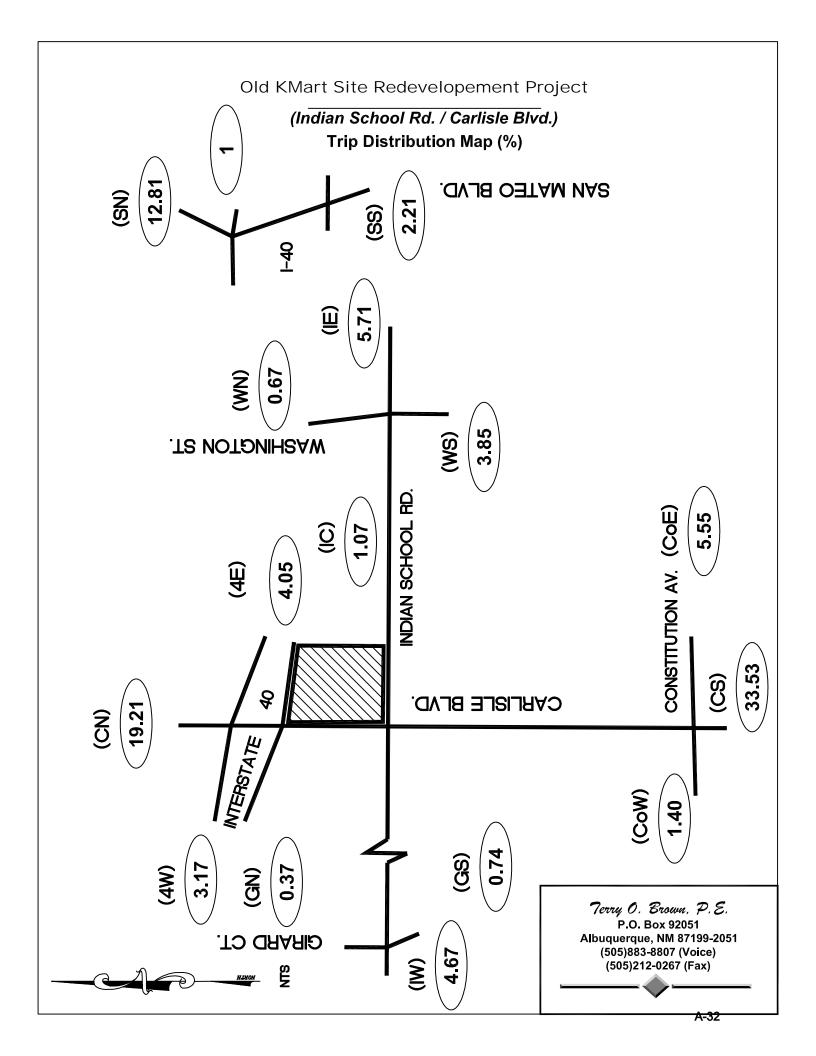
Data Analysis Subzone Population Data for determination of Local Trip Distribution for Proposed **Retail Commercial**

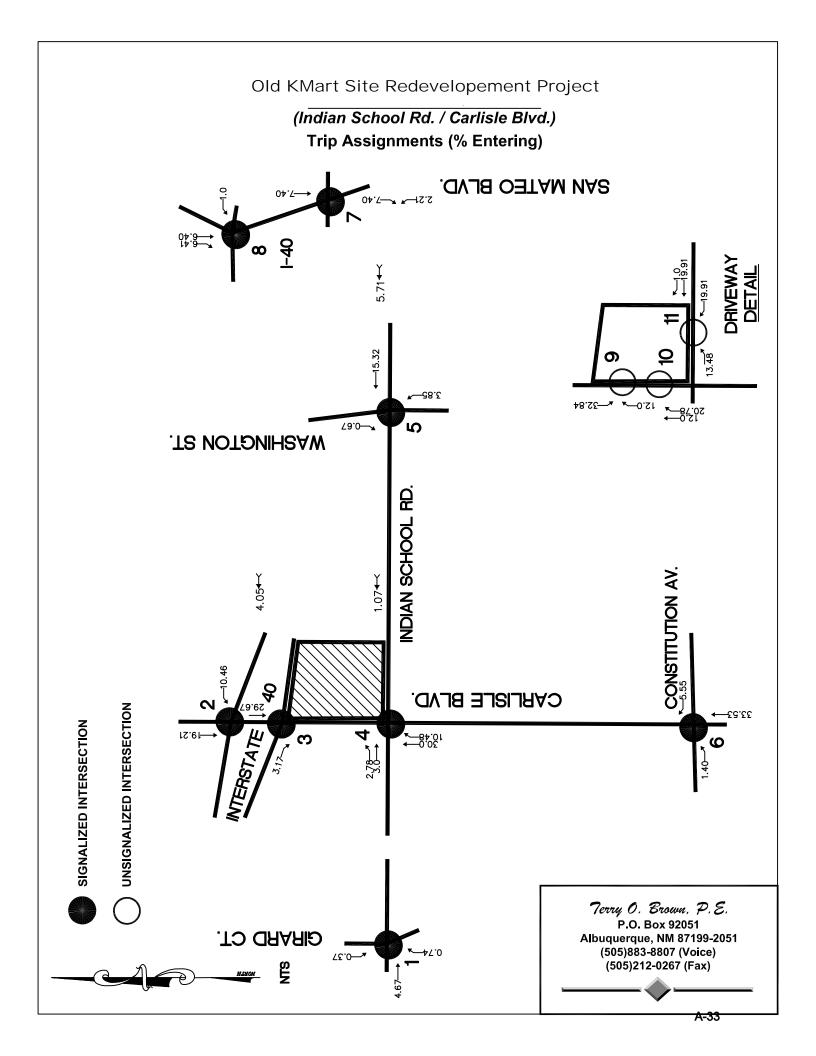
2012 and 2040 Data Taken from Mid-Region Council of Governments'
2040 Socioeconomic Forecasts by Data Analysis Subzones for the Mid-Region of New Mexico

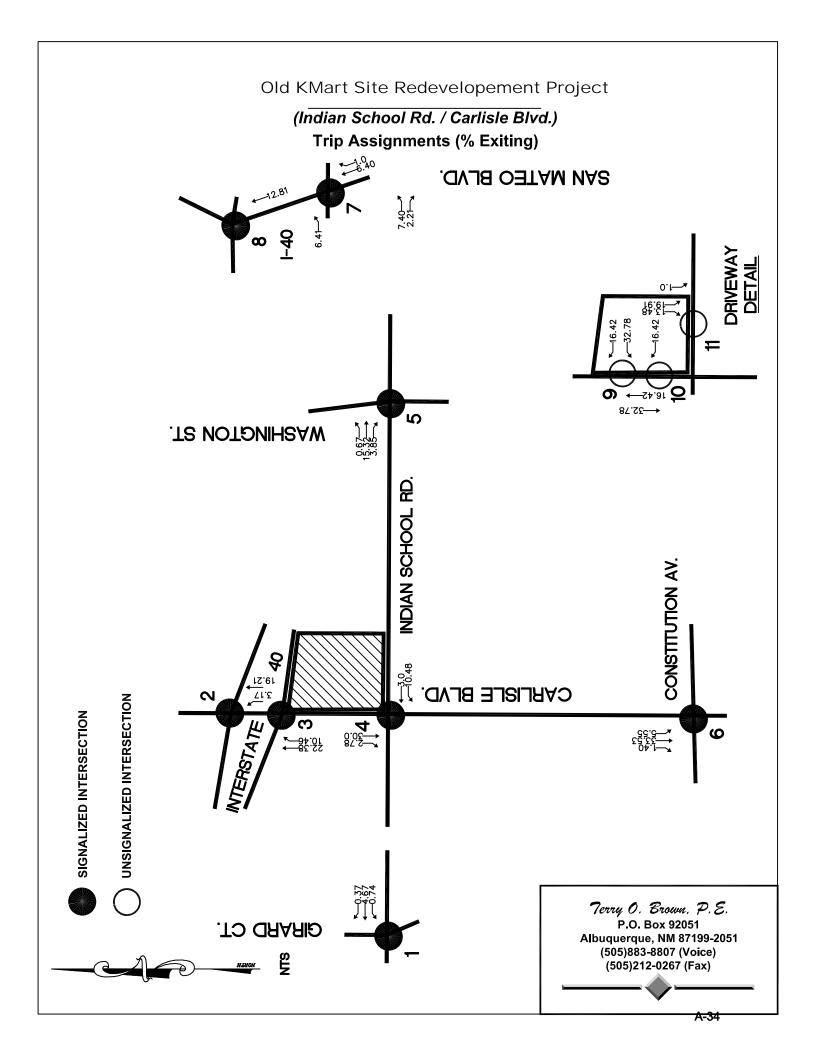
							San	(SS) Mateo Blvd. S	Courth	((GN) Girard Ct. North	2		(GS) Girard Ct. Sout	·h
DASZ#	% Sub Area in Study	2012 Population		Interpolated Population for the Year	Population in Study	Percent Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population	% Utilizing	% Population Utilizing	Population
		2012	2040	2021											
	ecified on DASZ														
8121	100%	1238	1314	1,262			0%	0.00%		0%	0.00%	0			
8122	100%	1230	1306	1,254		0.95%	0%	0.00%		0%	0.00%	0	0%		
8123	100%	509	639	551	551	0.42%		0.00%		0%	0.00%	0	0%		
8131	100%	1229	1397	1,283				0.24%		0%	0.00%	0	0%		
8132	100%	1156	1233	1,181	1,181	0.90%	25%	0.22%	295	0%	0.00%	0			
8133	100%	0	0	0	J	0.00%	0%	0.00%		0%	0.00%	0			
8141	100%	998	1149	1,047	,	0.79%	0%	0.00%		0%	0.00%	0		0.00%	
8142	100%	1527	1582	1,545			0%	0.00%		0%	0.00%	0		0.00%	
8151	100%	1800	2142	1,910			0%	0.00%	0	0%	0.00%	0		0.00%	
8161	100%	1960	2795	2,228			0%	0.00%	0	0%	0.00%	0		0.00%	
8171	100%	1017	1134	1,055			0%	0.00%	0	0%	0.00%	0	0%		
8172	100%	1590	1908	1,692			0%	0.00%	0	0%	0.00%	0	0%	0.00%	
8201	100%	1131	1186	1,149			0%	0.00%	0	0%	0.00%	0		0.00%	
8202	100%	861	873	865			0%	0.00%		0%	0.00%	0	0%	0.00%	
8211	100%	1609	2364	1,852			0%	0.00%		0%	0.00%	0	0%	0.00%	
8212	90%	283	407	323		0.22%		0.00%		0%	0.00%	0	0%	0.00%	
8221	100%	10	42	20			0%	0.00%		0%	0.00%	0	0%	0.00%	
8231	95%	1542	1609	1,564			50%	0.56%	743	0%	0.00%	0			
8232	100%	1496	1814	1,598			50%	0.61%		0%	0.00%	0			
8233	50%	2775	2735	2,762		1.05%		0.52%	691	0%	0.00%	0	0%		
8234	5%	2086	3417	2,514			50%	0.05%		0%	0.00%	0	0%		
8242	10%	3662	3958	3,757	376		0%	0.00%	0	0%	0.00%	0			
8243	35%	994	2228	1,391	487	0.37%	0%	0.00%		0%	0.00%	0			
8501	90%	1930	2355	2,067	1,860		0%	0.00%	0	0%	0.00%	0		0.00%	
8502	100%	1219	1343	1,259			0%	0.00%	0	0%	0.00%	0		0.00%	
8511	100%	1087	1322	1,163			0%	0.00%	0	0%	0.00%	0		0.00%	
8512	100%	394	635	471	471	0.36%	0%	0.00%	0	0%	0.00%	0		0.00%	
8521	100%	856	1773	1,151	1,151	0.87%	0%	0.00%	0	0%	0.00%	0	0%	0.00%	
8531	100%	2014	2283	2,100							0.00%	0			
8532	100%	869	1425	1,048				0.00%			0.00%	0			
8533	100%	708	1833	1,070				0.00%			0.00%	0			
8534	85%	2140	2539	2,268				0.00%			0.00%	0			
8541	30%	3350	4409	3,690				0.00%			0.00%	0			
8553	85%	2455	3118	2,668		1.72%	0%	0.00%	0		0.00%	0			
8561	95%	2711	3136	2,848	2,706			0.00%		0%	0.00%	0	0%	0.00%	
				39,719	131,943	100.00%			2,912 2.21%			483 0.37%			974 0.74%

A-31

WholeFoods_TD_Comm.xlsx





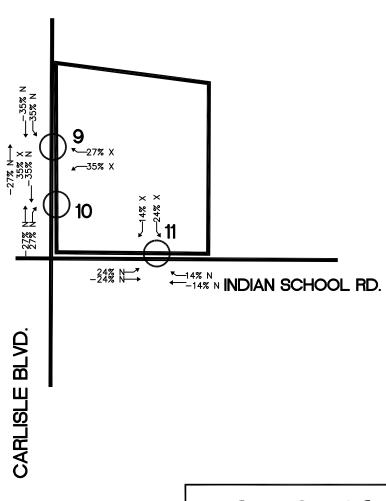




(Indian School Rd. / Carlisle Blvd.)

PM Passby Trip Assignments (eNtering, eXiting)





7erry O. Brown, P. E. P.O. Box 92051 Albuquerque, NM 87199-2051 (505)883-8807 (Voice) (505)212-0267 (Fax)



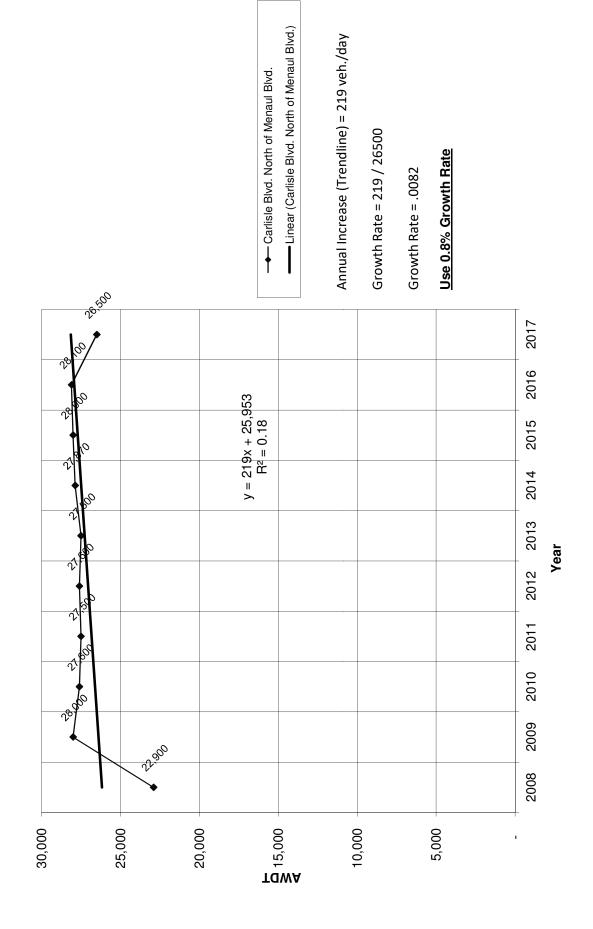
KMart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.)

Historic Growth Rate Table

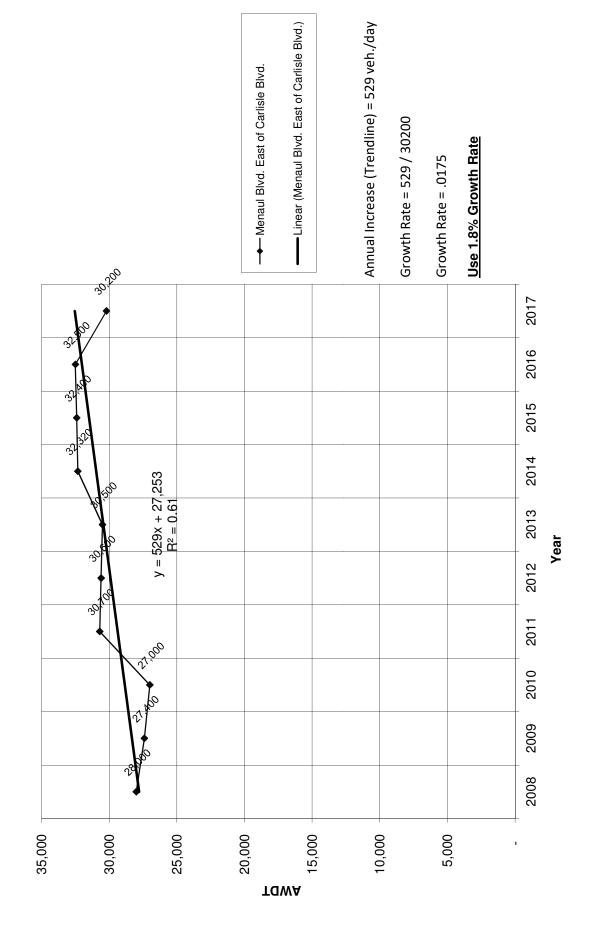
Traffic Flows from MRCOG Map

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Carlisle Blvd. North of Menaul Blvd.	22,900	28,000	27,600	27,500	27,600	27,500	27,870	28,000	28,100	26,500
Menaul Blvd. East of Carlisle Blvd.	28,000	27,400	27,000	30,700	30,600	30,500	32,320	32,400	32,500	30,200
Interstate 40 East of Carlisle Blvd.	152,600	145,300	149,700	170,200	176,500	175,500	180,100	188,800	186,400	191,900
Indian School Rd. East of Washington St.	008'6	9,700	9,500	7,500	7,500	7,500	9,240	9,300	9,300	7,400
Washington St. South of Indian School Rd.	8,100	8,000	7,800	6,800	6,800	6,800	6,700	6,700	6,700	8,000
Indian School btwn Washington & Carlisle	16,300	15,900	15,700	11,200	11,200	11,100	12,810	12,900	12,900	11,000
Carlisle Blvd. South of Indian School Rd.	19,300	19,000	18,700	23,400	23,400	23,300	26,930	27,000	27,100	24,400
Indian School Rd. West of Carlisle Blvd.	10,700	10,500	10,400	14,700	14,600	14,600	15,220	15,300	15,300	14,100
Interstate 40 West of Carlisle Blvd.	161,900	154,200	160,400	180,000	185,100	185,100	197,500	207,000	204,700	198,600
Menaul Blvd. West of Carlisle Blvd.	26,900	26,400	26,000	20,800	20,800	22,100	21,970	22,100	25,100	25,200
Washington St. South of Menaul Blvd.	008'6	009'6	9,500	8,300	8,300	8,300	8,000	8,000	8,000	7,400

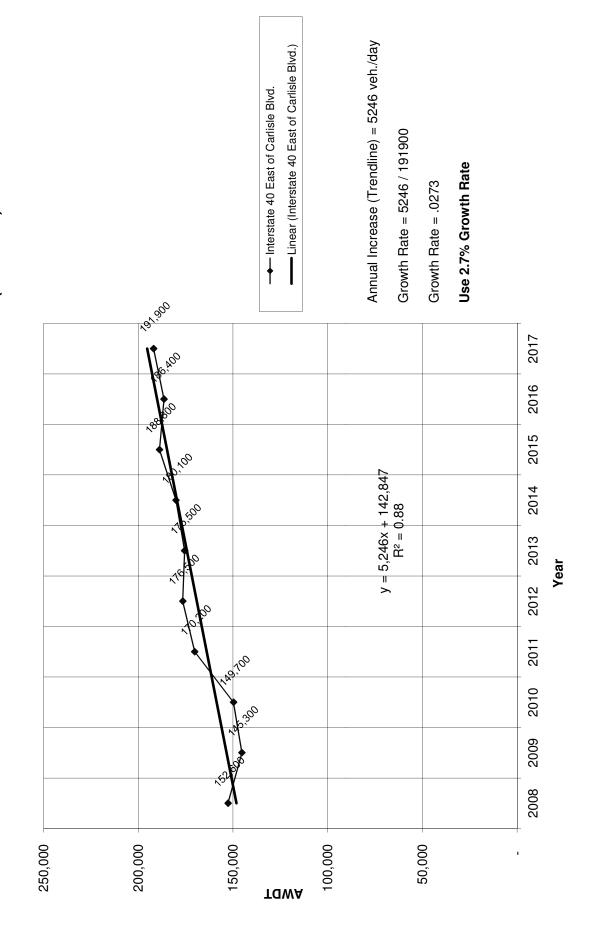
Historic Growth Chart Carlisle Blvd. North of Menaul Blvd. (2008-2017)



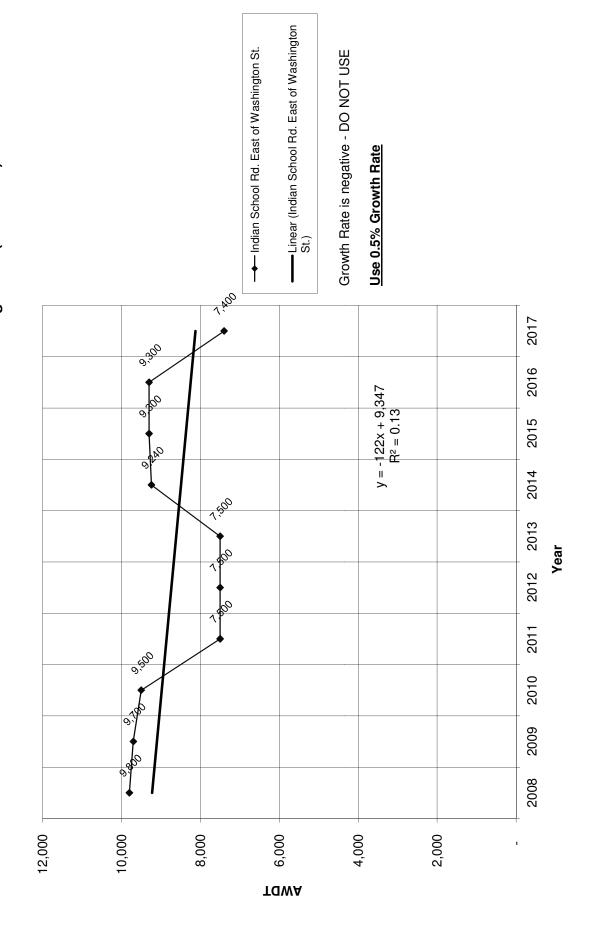
Historic Growth Chart Menaul Blvd. East of Carlisle Blvd. (2008-2017)



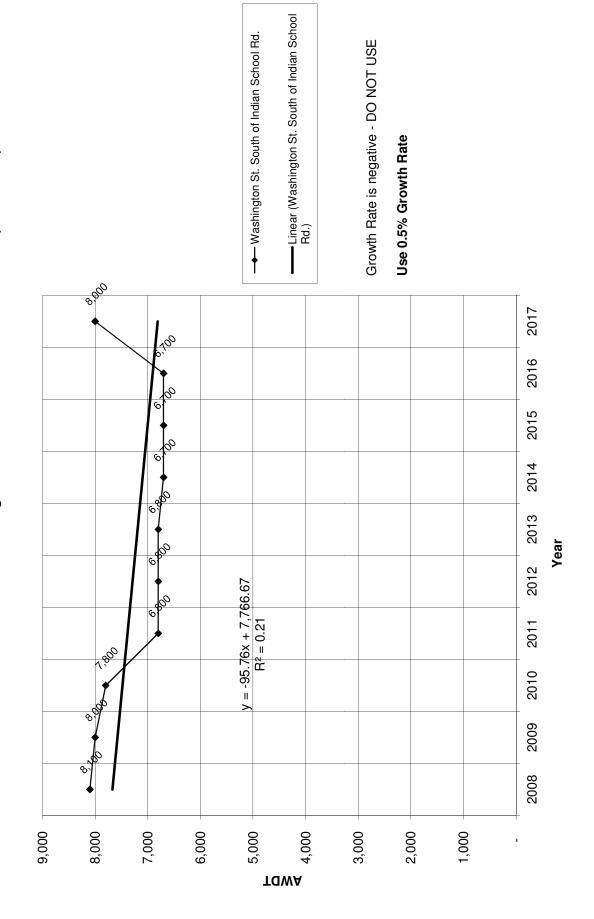
Historic Growth Chart Interstate 40 East of Carlisle Blvd. (2008-2017)



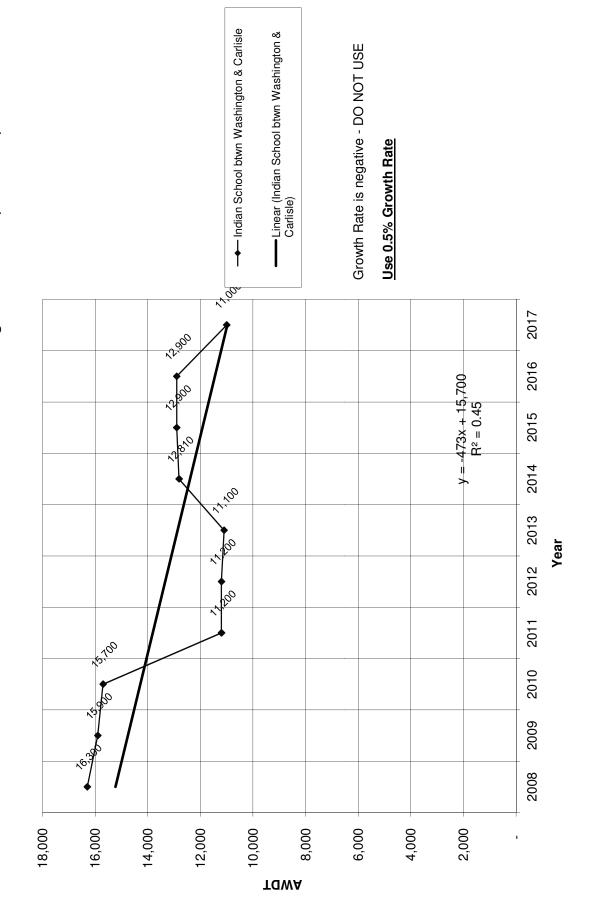
Historic Growth Chart Indian School Rd. East of Washington St. (2008-2017)



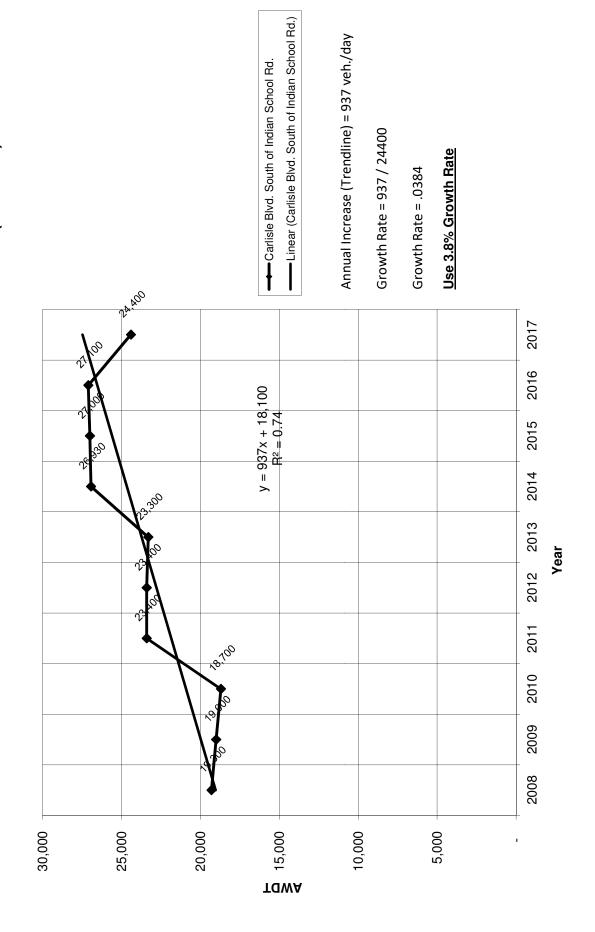
Historic Growth Chart Washington St. South of Indian School Rd. (2008-2017)



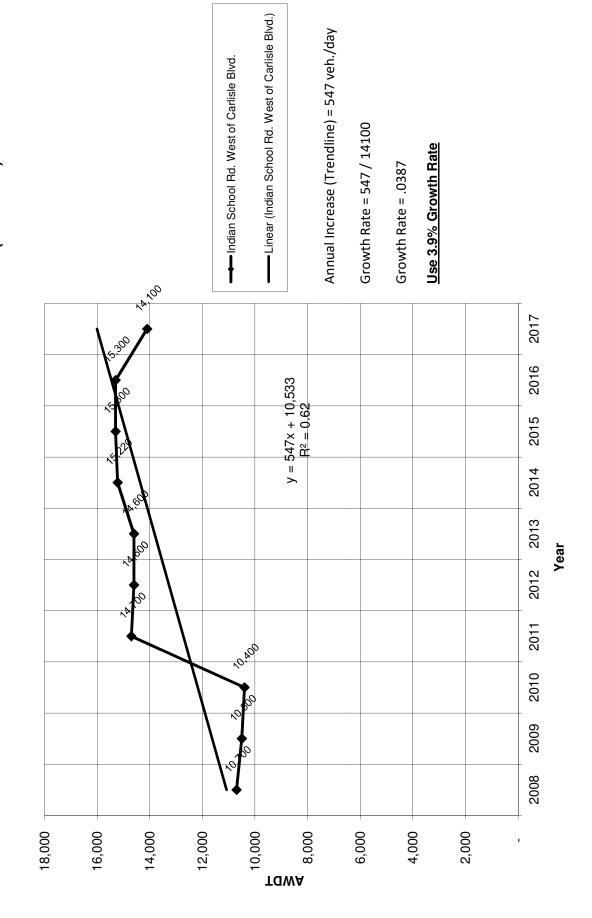
Historic Growth Chart Indian School btwn Washington & Carlisle (2008-2017)



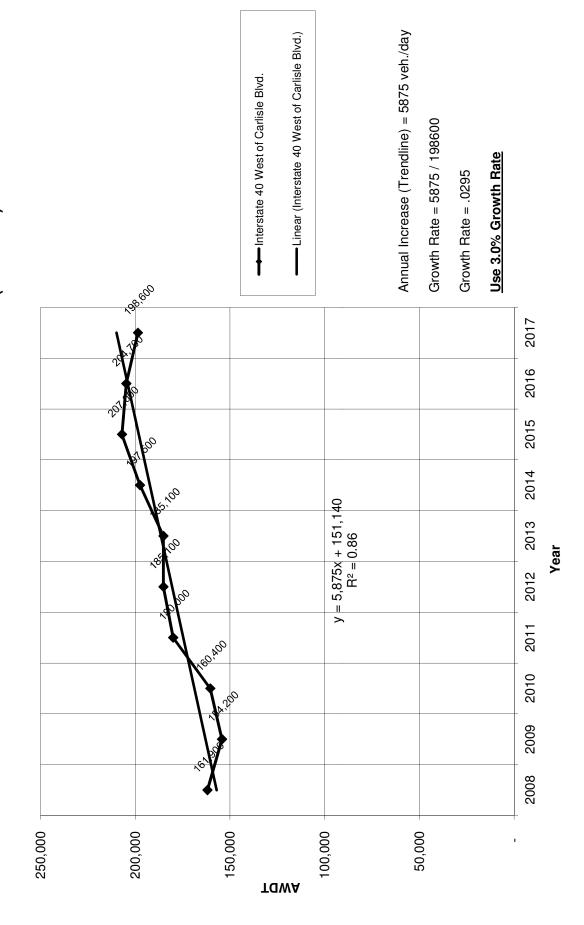
Historic Growth Chart Carlisle Blvd. South of Indian School Rd. (2008-2017)



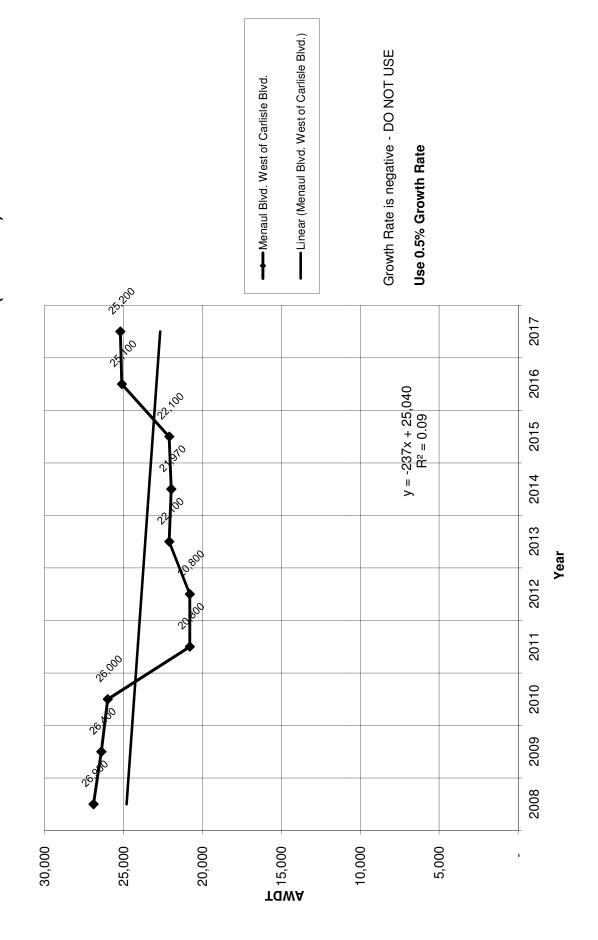
Historic Growth Chart Indian School Rd. West of Carlisle Blvd. (2008-2017)



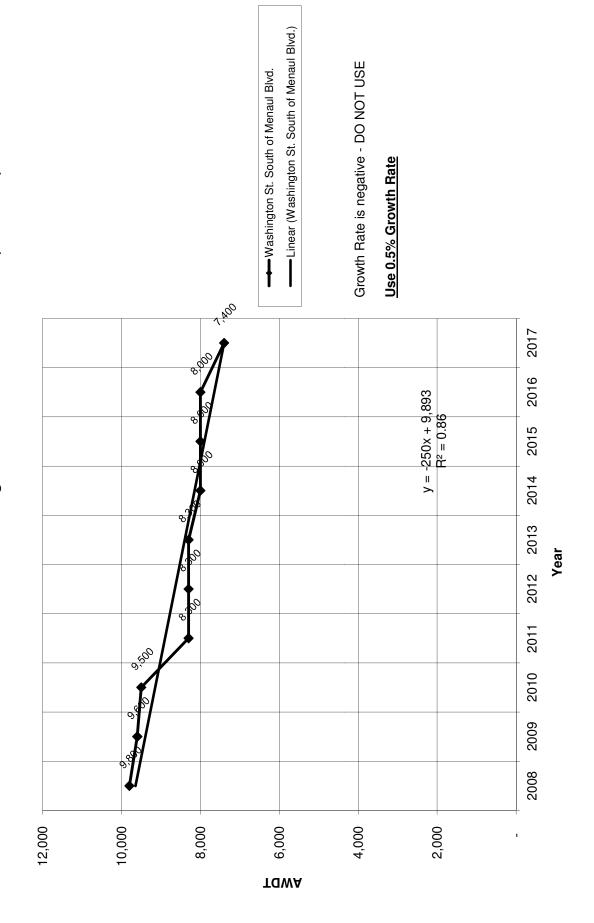
Historic Growth Chart Interstate 40 West of Carlisle Blvd. (2008-2017)

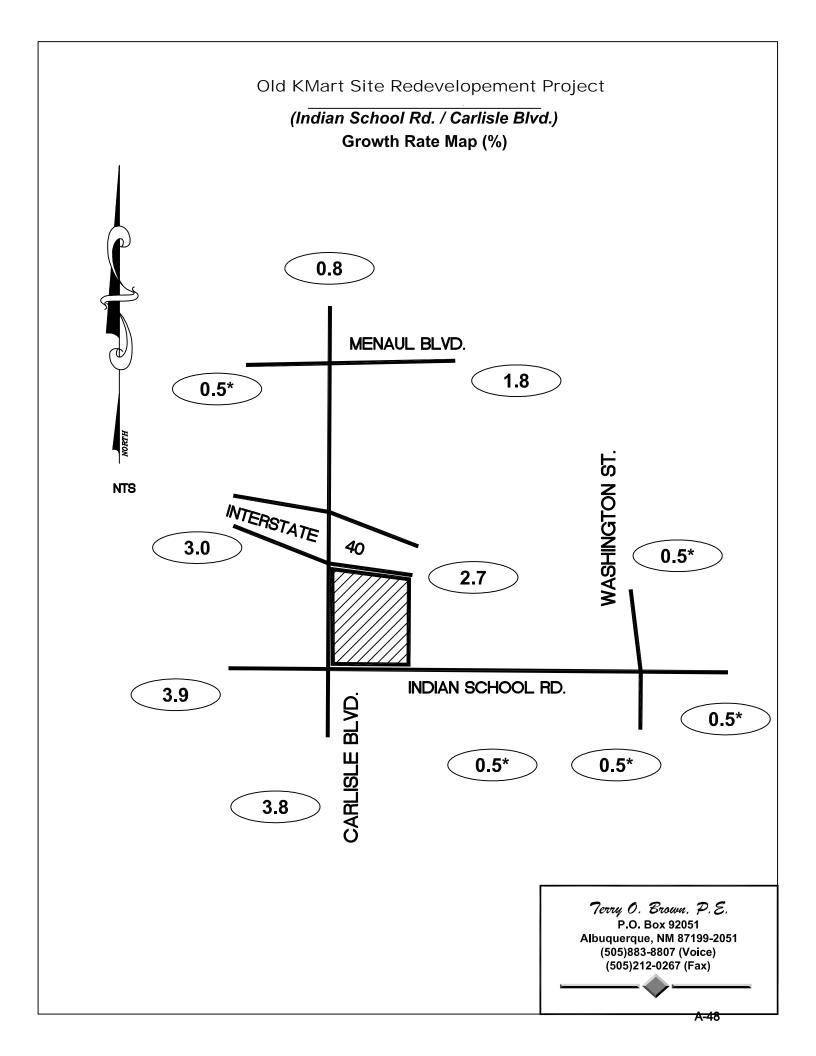


Historic Growth Chart Menaul Blvd. West of Carlisle Blvd. (2008-2017)



Historic Growth Chart Washington St. South of Menaul Blvd. (2008-2017)





Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.) Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2021) - 100% Development

INTERSECTION: Summary

Indian School Rd. / Girard Ct		0.87			0.87			0.87			0.87	PHF
(1)		d (Indian Sc			d (Indian So			ound (Girar			ound (Girar	
3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	20	228	21	7	386	45	43	11	0	69	18	28
2021 (NO BUILD - A.M.)	20	230	21	8	416	49	43	11	0	70	18	28
2021 (BUILD - A.M.)	20	243	21	9	425	50	43	11	2	71	18	28
		0.92			0.92	•	·	0.92	·		0.92	PHF
	Eastbound	d (Indian Sc	hool Rd.)	Westboun	d (Indian So	chool Rd.)	Northb	ound (Girar	d Ct.)	Southb	ound (Girar	d Ct.)
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	29	466	39	8	464	63	70	22	2	74	16	22
2021 (NO BUILD - P.M.)	29	471	39	9	500	68	71	22	2	75	16	22
2021 (BUILD - P.M.)	29	487	39	12	517	69	71	22	5	76	16	22
LAON Barra (Oadlala Blad												
I-40 N.Ramp / Carlisle Blvd.		0.89			0.89	_ ,		0.89		• 411	0.89	PHF
(2) 3.0% Truck		und (I-40 N. Thru			und (I-40 N			und (Carlisle			und (Carlisle	
	Left		Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	0	0	0	329	8	312	418	1,023	0	0	749	281
2021 (NO BUILD - A.M.)	0	0	0	347	8	329	422	1,033	0	0	761	285
2021 (BUILD - A.M.)	0	0	0	376	8	329	428	1,069	0	0	814	285
,		0.94		187 (1	0.94	5 , [N 411	0.94	51 IV T	0 (1)	0.94	PHF
	Left	und (I-40 N. Thru	Ramp) Right	Left	und (I-40 N Thru	Right	Left	und (Carlisto Thru	Right	Left	und (Carlisle Thru	Right
Existing (2019)	0	0	1 Xigiit 0	246	5	266	499	1,287	O O	0		463
Existing (2019) 2021 (NO BUILD - P.M.)	0	0	0	259	5	280	504	1,300	0	0	1,094 1,112	470
'	-									-		
2021 (BUILD - P.M.)	0	0	0	296	5	280	515	1,368	0	0	1,180	470
1400 B												
I-40 S. Ramp / Carlisle Blvd.		0.87			0.87			0.87			0.87	PHF
I-40 S. Ramp / Carlisle Blvd. (3)	Eastbo	0.87 und (I-40 S.	Ramp)	Westbo	0.87 und (I-40 S.	Ramp)	Northbo	0.87 und (Carlisle	e Blvd.)	Southbo	0.87 und (Carlisle	
	Eastbo		Ramp) Right	Westbo Left		Ramp) Right	Northbo Left		e Blvd.) Right	Southbo Left		
(3)		und (I-40 S.			und (I-40 S.			und (Carlisl			und (Carlisle	e Blvd.) Right
(3) 3.0% Truck	Left	und (I-40 S. Thru	Right	Left	und (I-40 S. Thru	Right	Left	und (Carlisle Thru	Right	Left	und (Carlisle Thru	Blvd.) Right
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.)	Left 523	und (I-40 S. Thru 5	Right 539	Left 0	und (I-40 S. Thru 0	Right 0	Left 0	und (Carlisle Thru 878	Right 254	Left 187	und (Carlisle Thru 873	Right 0
(3) 3.0% Truck Existing (2019)	Left 523 554	und (I-40 S. Thru 5	Right 539 571	Left 0 0	und (I-40 S. Thru 0 0	Right 0	Left 0 0	Thru 878 887	Right 254 257	Left 187 190	Thru 873 887	Right 0
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.)	Left 523 554 554	5 5 5	Right 539 571 580	0 0 0	und (I-40 S. Thru 0 0 0	Right 0 0 0 0	0 0 0	878 887 930	254 257 277	187 190 190	873 887 969	Right C 0 PHF
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.)	Left 523 554 554	5 5 0.93	Right 539 571 580	0 0 0	und (I-40 S. Thru 0 0 0 0 0.93	Right 0 0 0 0	0 0 0	878 887 930	254 257 277	187 190 190	873 887 969	Right C 0 PHF
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.)	Left 523 554 554 Eastboo	5 5 0.93 und (I-40 S.	Right 539 571 580 Ramp)	Left 0 0 0 Westbo	und (I-40 S. Thru 0 0 0 0 0 0.93 und (I-40 S.	Right 0 0 0 Ramp)	Left 0 0 0 Northbo	878 887 930 0.93 und (Carlisle	Right 254 257 277 e Blvd.)	Left 187 190 190 Southbo	873 887 969 0.93 und (Carlisle	Blvd.) Right 0 0 PHF Blvd.) Right
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.)	Left 523 554 554 Eastbook	5 5 0.93 und (I-40 S. Thru	Right 539 571 580 Ramp) Right	Left 0 0 0 Westbo	und (I-40 S. Thru 0 0 0 0 0.93 und (I-40 S. Thru	Right 0 0 0 Ramp) Right	Left 0 0 0 Northbo	878 887 930 0.93 und (Carlisle	Right 254 257 277 277 E Blvd.) Right	Left 187 190 190 Southbo	Thru 873 887 969 0.93 und (Carlisle	Blvd.) Right 0 0 PHF Blvd.) Right
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.)	Left 523 554 554 554 Left 508	5 5 5 0.93 und (I-40 S. Thru	Right 539 571 580 Ramp) Right 477	Left 0 0 0 0 0 Westbo Left 0	0 0 0 0 0.93 und (I-40 S. Thru	Right 0 0 0 Ramp) Right 0	Left 0 0 0 Northbo	und (Carlish Thru 878 887 930 0.93 und (Carlish Thru 1,264	Right 254 257 277 277 e Blvd.) Right 435	187 190 190 Southbo	und (Carlish Thru 873 887 969 0.93 und (Carlish Thru 955	Blvd.) Right 0 0 0 PHF Blvd.) Right 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.)	Left 523 554 554 554 Eastbool Left 508 538 538	5 5 5 0.93 und (I-40 S. Thru 11 12	Right 539 571 580 Ramp) Right 477 506	Left	und (I-40 S. Thru 0 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0	Right 0 0 0 Famp) Right 0 0	Left 0 0 0 Northbo Left 0 0	und (Carlish Thru 878 887 930 0.93 und (Carlish Thru 1,264 1,277 1,356	Right 254 257 277 e Blvd.) Right 435 439	Left 187 190 190 Southbo Left 401 407	und (Carlish Thru 873 887 969 0.93 und (Carlish Thru 955 970 1,074	Right C O PHF Blvd.) Right C O O PHF Blvd.) Right C O O O O O O O O O O O O
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.)	Left 523 554 554 554 Eastbot Left 508 538 538	und (I-40 S. Thru 5 5 5 0.93 und (I-40 S. Thru 11 12 12 0.89	Right 539 571 580 Ramp) Right 477 506 517	Left	und (I-40 S. Thru 0 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Right 0 0 0 Ramp) Right 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Left	und (Carlish Thru 878 887 930 0.93 und (Carlish Thru 1,264 1,277 1,356	Right 254 257 277 277 e Blvd.) Right 435 439 476	Left 187 190 190 Southbo Left 401 407	und (Carlish Thru 873 887 969 0.93 und (Carlish Thru 955 970 1,074	Right C O PHF Blvd.) Right C O PHF Blvd.) Right C O PHF PHF C O PHF
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.)	Left 523 554 554 554 Eastbool Left 508 538 538 S38 Blvd. Eastboone	11 12 0.89 d (Indian Sc	Right 539 571 580 Ramp) Right 477 506 517	Left 0 0 0 Westbo Left 0 0 Westbound	und (I-40 S. Thru 0 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Right 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Left 0 0 0 Northbo Left 0 0 Northbo	und (Carlish Thru 878 887 930 0.93 und (Carlish Thru 1,264 1,277 1,356 0.89 und (Carlish	Right 254 257 277 277 e Blvd.) Right 435 439 476	Left 187 190 190 Southbo Left 401 407 407 Southbo	und (Carlish Thru 873 887 969 0.93 und (Carlish Thru 955 970 1,074 0.89 und (Carlish	Right C O PHF Blvd.)
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.) lndian School Rd. / Carlisle E (4) 3.0% Truck	Left 523 554 554 554 Eastbook Left 508 538 538 Slvd. Eastbook Left	und (I-40 S. Thru 5 5 5 0.93 und (I-40 S. Thru 11 12 12 0.89 d (Indian Sc Thru	Right 539 571 580 Ramp) Right 477 506 517	Left 0 0 0 Westbo Left 0 0 Westboun Left	und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 thru 0 0 thru 0 thru 0 thru 0 thru 0 thru 0 thru	Right 0 0 0 Ramp) Right 0 0 0 Right Right Right Right	Left 0 0 0 Northboo Left 0 0 Northboo Left	und (Carlish Thru 878 887 930 0.93 und (Carlish Thru 1,264 1,277 1,356 0.89 und (Carlish Thru	Right 254 257 277 277 e Blvd.) Right 435 439 476 e Blvd.) Right	Left 187 190 190 Southbo Left 401 407 407 Southbo Left	und (Carlish Thru 873 887 969 0.93 und (Carlish Thru 955 970 1,074 0.89 und (Carlish Thru	Right C O PHF Blvd.) Right C O PHF Blvd.) Right C O PHF Right C Right C Right Right Right Right Right Right
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.) lndian School Rd. / Carlisle E (4) 3.0% Truck Existing (2019)	Left 523 554 554 554 Eastbook Left 508 538 538 Silvd. Eastbook Left 345	und (I-40 S. Thru 5 5 5 0.93 und (I-40 S. Thru 11 12 12 0.89 d (Indian Sc Thru 213	Right 539 571 580 Ramp) Right 477 506 517	Left	und (I-40 S. Thru 0 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1	Right 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Left	und (Carlish Thru 878 887 930 0.93 und (Carlish Thru 1,264 1,277 1,356 0.89 und (Carlish Thru 612	Right 254 257 277 277 e Blvd.) Right 435 439 476 e Blvd.) Right 35 35	Left 187 190 190 Southbo Left 401 407 407 Southbo Left 221	und (Carlish Thru 873 887 969 0.93 und (Carlish Thru 955 970 1,074 0.89 und (Carlish Thru 753	Blvd.) Right C O PHF Blvd.) Right C O PHF Blvd.) Right C O PHF Blvd.) Right S Right S Right C O PHF Blvd.) Right S Right
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.) Indian School Rd. / Carlisle E (4) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.)	Left 523 554 554 554 Eastbound Left 508 538 538 Blvd. Eastbound Left 345 372	10	Right 539 571 580 Ramp) Right 477 506 517 Chool Rd.) Right 42 45	Left	und (I-40 S. Thru 0 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 1 1 286 289	Right 0 0 0 Ramp) Right 0 0 0 Right 127 128	Left	und (Carlish Thru 878 887 930 0.93 und (Carlish Thru 1,264 1,277 1,356 0.89 und (Carlish Thru 612 659	Right 254 257 277 277 e Blvd.) Right 435 439 476 e Blvd.) Right 35 38	Left 187 190 190 Southbo Left 401 407 407 Southbo Left 221 223	und (Carlish Thru 873 887 969 0.93 und (Carlish Thru 955 970 1,074 0.89 und (Carlish Thru 753 761	Blvd.) Right 0 0 0 PHF Blvd.) Right 0 0 PHF Blvd.) Right 0 PHF Blvd.) Right 506 511
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.) lndian School Rd. / Carlisle E (4) 3.0% Truck Existing (2019)	Left 523 554 554 554 Eastbook Left 508 538 538 Silvd. Eastbook Left 345	11 12 0.89 d (Indian Sc Thru 213 230 238	Right 539 571 580 Ramp) Right 477 506 517	Left	und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 089 d (Indian Sc Thru 286 289 295	Right 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Left	und (Carlish Thru 878 887 930 0.93 und (Carlish Thru 1,264 1,277 1,356 0.89 und (Carlish Thru 612 659 742	Right 254 257 277 277 e Blvd.) Right 435 439 476 e Blvd.) Right 35 35	Left 187 190 190 Southbo Left 401 407 407 Southbo Left 221	und (Carlish Thru 873 887 969 0.93 und (Carlish Thru 955 970 1,074 0.89 und (Carlish Thru 753 761 818	e Blvd.) Right 0 0 0 PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 506 511 516
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.) Indian School Rd. / Carlisle E (4) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.)	Left 523 554 554 554 Eastbook Left 508 538 538 Slvd. Eastbound Left 345 372 380	110 112 12 0.89 13 123 123 123 123 123 123 123 123 123	Right 539 571 580 Ramp) Right 477 506 517 Chool Rd.) Right 42 45 45	Left	und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 0 0 0 289 d (Indian So Thru 286 289 295	Right 0 0 0 Ramp) Right 0 0 0 Right 127 128 128	Left	und (Carlish Thru 878 887 930 0.93 und (Carlish Thru 1,264 1,277 1,356 0.89 und (Carlish Thru 612 659 742 0.93	Right 254 257 277 e Blvd.) Right 435 439 476 e Blvd.) Right 35 38 67	Left 187 190 190 Southbo Left 401 407 407 Southbo Left 221 223 223	und (Carlish Thru 873 887 969 0.93 und (Carlish Thru 955 970 1,074 0.89 und (Carlish Thru 753 761 818 0.93	### Blvd.) Right
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.) Indian School Rd. / Carlisle E (4) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.)	Left 523 554 554 554 Eastboom Left 508 538 538 Slvd. Eastbound Left 345 372 380 Eastbound	11 12 12 0.89 d (Indian Sc 238 0.93 d (Indian Sc Cindian Sc Cindia	Right 539 571 580 Ramp) Right 477 506 517 chool Rd.) Right 42 45 45	Left	und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 0.89 d (Indian Sc Thru 286 289 295 0.93 d (Indian Sc	Right 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Northbo	und (Carlish Thru 878 887 930 0.93 und (Carlish Thru 1,264 1,277 1,356 0.89 und (Carlish Thru 612 659 742 0.93 und (Carlish	Right 254 257 277 277 e Blvd.) Right 435 439 476 Blvd.) Right 35 38 67 e Blvd.)	Left 187 190 190 Southbo Left 401 407 407 Southbo Left 221 223 223 Southbo	und (Carlish Thru 873 887 969 0.93 und (Carlish Thru 955 970 1,074 0.89 und (Carlish Thru 753 761 818 0.93 und (Carlish	e Blvd.) Right 0 0 PHF e Blvd.) Right 0 PHF e Blvd.) Right 0 PHF e Blvd.) Right 506 511 516 PHF e Blvd.)
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.) Indian School Rd. / Carlisle E (4) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.)	Left 523 554 554 554 Eastboom Left 508 538 538 Silvd. Eastbound Left 345 372 380 Eastbound Left	und (I-40 S. Thru 5 5 0.93 und (I-40 S. Thru 11 12 12 0.89 d (Indian Sc Thru 213 230 238 0.93 d (Indian Sc Thru	Right 539 571 580 Ramp) Right 477 506 517 Chool Rd.) Right 42 45 45 45 Right	Left	und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Right 0 0 0 Ramp) Right 0 0 0 Right 127 128 128 chool Rd.) Right	Northbo	und (Carlish Thru 878 887 930 0.93 und (Carlish Thru 1,264 1,277 1,356 0.89 und (Carlish Thru 612 659 742 0.93 und (Carlish Thru	Right 254 257 277 277 e Blvd.) Right 435 439 476 8 Blvd.) Right 35 38 67 e Blvd.) Right	Left 187 190 190 Southbo Left 401 407 407 Southbo Left 221 223 223 Southbo Left	und (Carlish Thru 873 887 969 0.93 und (Carlish Thru 955 970 1,074 0.89 und (Carlish Thru 753 761 818 0.93 und (Carlish 0.93 und (Carlish Thru	Blvd.) Right 0 0 0 PHF Blvd.) Right 0 0 PHF Blvd.) Right 506 511 516 PHF Blvd.) Right
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.) Indian School Rd. / Carlisle E (4) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019)	Left 523 554 554 554 Eastboom Left 508 538 538 Slvd. Eastbound Left 345 372 380 Eastbound Left 385	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Right 539 571 580 Ramp) Right 477 506 517 chool Rd.) Right 42 45 45 45 Right 79	Left	und (I-40 S. Thru 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Right 0 0 0 Ramp) Right 0 0 0 Right 127 128 128 128 Chool Rd.) Right 225	Northbo	und (Carlish Thru 878 887 930 0.93 und (Carlish Thru 1,264 1,277 1,356 0.89 und (Carlish Thru 612 659 742 0.93 und (Carlish Thru 945	Right 254 257 277 277 e Blvd.) Right 435 439 476 8 Blvd.) Right 35 38 67 e Blvd.) Right 47	Left 187 190 190 Southbo Left 401 407 407 Southbo Left 221 223 223 Southbo Left 228	und (Carlish Thru 873 887 969 0.93 und (Carlish Thru 955 970 1,074 0.89 und (Carlish Thru 753 761 818 0.93 und (Carlish 818 0.93 und (Carlish 818	e Blvd.) Right 0 0 0 PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 506 511 516 PHF e Blvd.) Right 439
(3) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.) Indian School Rd. / Carlisle E (4) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.)	Left 523 554 554 554 Eastboom Left 508 538 538 Silvd. Eastbound Left 345 372 380 Eastbound Left	und (I-40 S. Thru 5 5 0.93 und (I-40 S. Thru 11 12 12 0.89 d (Indian Sc Thru 213 230 238 0.93 d (Indian Sc Thru	Right 539 571 580 Ramp) Right 477 506 517 Chool Rd.) Right 42 45 45 45 Right	Left	und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Right 0 0 0 Ramp) Right 0 0 0 Right 127 128 128 chool Rd.) Right	Northbo	und (Carlish Thru 878 887 930 0.93 und (Carlish Thru 1,264 1,277 1,356 0.89 und (Carlish Thru 612 659 742 0.93 und (Carlish Thru	Right 254 257 277 277 e Blvd.) Right 435 439 476 8 Blvd.) Right 35 38 67 e Blvd.) Right	Left 187 190 190 Southbo Left 401 407 407 Southbo Left 221 223 223 Southbo Left	und (Carlish Thru 873 887 969 0.93 und (Carlish Thru 955 970 1,074 0.89 und (Carlish Thru 753 761 818 0.93 und (Carlish 0.93 und (Carlish Thru	Blvd.) Right 0 0 PHF Blvd.) Right 0 PHF Blvd.) Right 0 PHF Blvd.) Right 506 511 516 PHF Blvd.)

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.) Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2021) - 100% Development

INTERSECTION: Summary

Indian School Rd. / Washing	ton St.	0.82			0.82			0.82			0.82	PHF
(5)	Eastboun	d (Indian Sc	hool Rd.)	Westboun	d (Indian Sc	hool Rd.)	Northbou	ınd (Washin	aton St.)	Southbou	ınd (Washin	aton St.)
3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	61	215	39	18	228	34	66	166	36	38	119	145
2021 (NO BUILD - A.M.)	62	217	39	18	230	34	67	168	36	38	120	146
2021 (BUILD - A.M.)	63	246	46	18	272	34	78	168	36	38	120	148
LOLI (BOILD A.M.)	- 00	0.93	70		0.93	01	,,,	0.93			0.93	PHF
1	Fasthoun	d (Indian Sc	hool Rd)	Westhoun	d (Indian Sc	hool Rd)	Northbou	ınd (Washin	aton St)	Southbou	ınd (Washin	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	176	475	82	41	294	59	70	266	52	51	261	141
2021 (NO BUILD - P.M.)	178	480	83	41	297	60	71	269	53	52	264	142
2021 (BUILD - P.M.)	180	534	97	41	351	60	85	269	53	52	264	144
2021 (BOILD - F.MI.)	100	004	31	71	301	00	00	203	00	JZ	204	177
Constitution Av. / Carlisle Bl		0.93			0.93			0.93			0.93	PHF
(6)		nd (Constitu			nd (Constitu			und (Carlisl			und (Carlisl	
3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	98	87	14	44	123	67	14	465	20	66	513	203
2021 (NO BUILD - A.M.)	99	88	14	47	130	71	14	470	20	67	518	205
2021 (BUILD - A.M.)	103	88	14	47	130	86	14	562	20	78	582	208
		0.96			0.96			0.96			0.96	PHF
		nd (Constitu			nd (Constitu			und (Carlisl			und (Carlisl	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	213	197	16	62	127	76	18	704	37	75	598	127
2021 (NO BUILD - P.M.)	215	199	16	66	134	80	18	711	37	76	604	128
2021 (BUILD - P.M.)	220	199	16	66	134	100	18	829	37	96	723	133
ZVZ I (DVILD - F.IVI.)	220	133	70	00	134	100	10	023	0,	• •	0	100
EVET (BUILD - F.III.)	220	133	70	00	134	100	10	023	01	•	, 20	100
I-40 EB Ramp / San Mateo Bl		0.94	70	00	0.94	100	-	0.94			0.94	PHF
, ,	<u>vd.</u>		- 1		-		-					PHF
I-40 EB Ramp / San Mateo BI (7) 3.0% Truck	vd. Eastbou Left	0.94 und (I-40 EB Thru	Ramp) Right	Westbor Left	0.94 und (I-40 EB Thru	Ramp) Right	Northbou Left	0.94 nd (San Mat Thru	eo Blvd.) Right	Southbou Left	0.94 nd (San Mat Thru	PHF teo Blvd.) Right
1-40 EB Ramp / San Mateo Bi (7) 3.0% Truck Existing (2019)	vd. Eastbou	0.94 und (I-40 EB Thru	Ramp)	Westbo	0.94 und (I-40 EB Thru	Ramp) Right	Northbou Left	0.94 nd (San Mat	eo Blvd.)	Southbou	0.94 nd (San Mat	PHF teo Blvd.) Right
I-40 EB Ramp / San Mateo BI (7) 3.0% Truck	vd. Eastbou Left	0.94 und (I-40 EB Thru	Ramp) Right	Westbor Left	0.94 und (I-40 EB Thru	Ramp) Right	Northbou Left	0.94 nd (San Mat Thru	eo Blvd.) Right	Southbou Left	0.94 nd (San Mat Thru	PHF teo Blvd.) Right
1-40 EB Ramp / San Mateo Bi (7) 3.0% Truck Existing (2019)	vd. Eastbou Left 441	0.94 und (I-40 EB Thru	Ramp) Right 716	Westboo Left	0.94 und (I-40 EB Thru	Ramp) Right	Northbou Left	0.94 nd (San Mat Thru 1,022	eo Blvd.) Right	Southbou Left	0.94 nd (San Mat Thru 851	PHF teo Blvd.) Right
1-40 EB Ramp / San Mateo Bi (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.)	vd. Eastboo Left 441 465	0.94 und (I-40 EB Thru 1	Ramp) Right 716 755	Westboo Left 0	0.94 und (I-40 EB Thru 0	Ramp) Right 0	Northbou Left 0	0.94 nd (San Mat Thru 1,022 1,032	Right 139	Southbou Left 224 226	0.94 nd (San Mat Thru 851 860	PHF teo Blvd.) Right 0
1-40 EB Ramp / San Mateo Bi (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.)	vd. Eastboo Left 441 465 477	0.94 und (I-40 EB Thru 1 1	Ramp) Right 716 755 755	Westboo Left 0 0	0.94 und (I-40 EB Thru 0 0 0	Right 0 0 0	Northboul Left 0 0	0.94 nd (San Mat Thru 1,022 1,032 1,044	Right 139 140 142	Southbou Left 224 226 226	0.94 nd (San Mat Thru 851 860 880	PHF teo Blvd.) Right 0 0 PHF
1-40 EB Ramp / San Mateo Bi (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.)	vd. Eastboo Left 441 465 477	0.94 und (I-40 EB Thru 1 1 0.93	Ramp) Right 716 755 755	Westboo Left 0 0	0.94 und (I-40 EB Thru 0 0 0	Right 0 0 0	Northboul Left 0 0	0.94 nd (San Mat Thru 1,022 1,032 1,044 0.93	Right 139 140 142	Southbou Left 224 226 226 Southbou Left	0.94 nd (San Mat Thru 851 860 880 0.93	PHF teo Blvd.) Right 0 0 PHF
I-40 EB Ramp / San Mateo Bi (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.)	vd. Eastbook Left 441 465 477 Eastbook	0.94 und (I-40 EB Thru 1 1 1 0.93 und (I-40 EB	Ramp) Right 716 755 755	Westbook Left 0 0 0 Westbook	0.94 und (I-40 EB Thru 0 0 0 0 0.93 und (I-40 EB	Ramp) Right 0 0 0	Northbour Left 0 0 0 Northbour	0.94 nd (San Mat Thru 1,022 1,032 1,044 0.93 nd (San Mat	Right 139 140 142 142	Southbou Left 224 226 226 Southbou Southbou	0.94 nd (San Mat Thru 851 860 880 0.93 nd (San Mat	PHF teo Blvd.) Right 0 0 PHF teo Blvd.)
I-40 EB Ramp / San Mateo Bi (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.)	vd. Eastbook Left 441 465 477 Eastbook Left	0.94 Ind (I-40 EB Thru 1 1 0.93 Ind (I-40 EB Thru	Ramp) Right 716 755 755 Ramp) Right	Westbook Left 0 0 0 Westbook Left	0.94 und (I-40 EB Thru 0 0 0 0.93 und (I-40 EB Thru	Ramp) Right 0 0 0 8 Ramp) Right	Northbour Left 0 0 0 Northbour Left	0.94 nd (San Mat Thru 1,022 1,032 1,044 0.93 nd (San Mat Thru	Right 139 140 142 160 Blvd.) Right	Southbou Left 224 226 226 Southbou Left	0.94 nd (San Mat Thru 851 860 880 0.93 nd (San Mat Thru	PHF teo Blvd.) 0 0 PHF teo Blvd.) Right
I-40 EB Ramp / San Mateo Bi (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.)	vd. Eastboo Left 441 465 477 Eastboo Left 312	0.94 Ind (I-40 EB Thru 1 1 0.93 Ind (I-40 EB Thru 11	Ramp) Right 716 755 755 Ramp) Right 420	Westbor O Westbor Left O Left O O Westbor Left O	0.94 und (I-40 EB Thru 0 0 0 0.93 und (I-40 EB Thru	Ramp) Right 0 0 0 Right Right 0 0 Right 0 0	Northbour Left 0 0 0 Northbour Left 0	0.94 nd (San Mat Thru 1,022 1,032 1,044 0.93 nd (San Mat Thru 1,631	Right 139 140 142 160 Blvd.) Right 365	Southbou Left 224 226 226 Southbou Left 428	0.94 nd (San Mat Thru 851 860 880 0.93 nd (San Mat Thru 946	PHF teo Blvd.) 0 0 PHF teo Blvd.) Right 0 0 Right 0 0 0 PHF
I-40 EB Ramp / San Mateo BI (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.)	vd. Eastbot 441 465 477 Eastbot Left 312 329	0.94 Ind (I-40 EB Thru 1 1 0.93 Ind (I-40 EB Thru 11 12	Ramp) Right 716 755 755 Ramp) Right 420 443	Westbook 0 0 Westbook Left 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.94 und (I-40 EB Thru 0 0 0 0.93 und (I-40 EB Thru 0 0 0.93	Ramp) Right 0 0 0 8 Ramp) Right Right 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Northbour Left 0 0 0 Northbour Left 0 0 0	0.94 nd (San Mat Thru 1,022 1,032 1,044 0.93 nd (San Mat Thru 1,631 1,647	Right 139 140 142 160 Blvd.) Right 365 369	Southbou Left 224 226 226 226 Southbou Left 428 432	0.94 nd (San Mat Thru 851 860 880 0.93 nd (San Mat Thru 946 955	PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
I-40 EB Ramp / San Mateo BI (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.)	vd. Eastbot 441 465 477 Eastbot Left 312 329 352	0.94 und (I-40 EB Thru 1 1 0.93 und (I-40 EB Thru 11 12 12	Ramp) Right 716 755 755 Ramp) Right 420 443	Westbook 0 0 Westbook Left 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.94 und (I-40 EB Thru 0 0 0 0.93 und (I-40 EB Thru 0 0 0	Ramp) Right 0 0 0 8 Ramp) Right Right 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Northbour Left 0 0 0 Northbour Left 0 0 0	0.94 nd (San Mat Thru 1,022 1,032 1,044 0.93 nd (San Mat Thru 1,631 1,647 1,670	Right 139 140 142 160 Blvd.) Right 365 369	Southbou Left 224 226 226 226 Southbou Left 428 432	0.94 nd (San Mat Thru 851 860 880 0.93 nd (San Mat Thru 946 955 981	PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 0 0 PHF 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
I-40 EB Ramp / San Mateo BI (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.)	vd. Eastbot 441 465 477 Eastbot Left 312 329 352	0.94 Ind (I-40 EB Thru 1 1 0.93 Ind (I-40 EB Thru 11 12 12 0.93	Ramp) Right 716 755 755 Ramp) Right 420 443 443	Westbook Left 0 0 0 Westbook Left 0 0 0	0.94 Ind (I-40 EB Thru 0 0 0 0 0.93 Ind (I-40 EB Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ramp) Right 0 0 0 Right Ramp) Right 0 0 0 0 0 0 0 0	Northbour Left 0 0 0 Northbour Left 0 0	0.94 nd (San Mat Thru 1,022 1,032 1,044 0.93 nd (San Mat Thru 1,631 1,647 1,670	eo Blvd.) Right 139 140 142 eo Blvd.) Right 365 369 373	Southbou Left 224 226 226 Southbou Left 428 432 432	0.94 nd (San Mat Thru 851 860 880 0.93 nd (San Mat Thru 946 955 981	PHF teo Blvd.) Right 0 0 0 PHF teo Blvd.) Right 0 0 PHF
I-40 EB Ramp / San Mateo BI (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.)	vd. Eastbot 441 465 477 Eastbot Left 312 329 352	0.94 Ind (I-40 EB Thru 1 1 0.93 Ind (I-40 EB Thru 11 12 12 0.93 Ind (I-40 WE	Ramp) Right 716 755 755 Ramp) Right 420 443 443 443	Westbook Left 0 0 0 Westbook Left 0 0 0	0.94 Ind (I-40 EB Thru 0 0 0 0.93 Ind (I-40 EB Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ramp) Right 0 0 0 Right Ramp) Right 0 0 0 Ramp) Right 0 0 0	Northbour Left 0 0 0 Northbour Left 0 0	0.94 nd (San Mat Thru 1,022 1,032 1,044 0.93 nd (San Mat Thru 1,631 1,647 1,670 0.93 nd (San Mat	eo Blvd.) Right 139 140 142 eo Blvd.) Right 365 369 373	Southbou Left 224 226 226 Southbou Left 428 432 432	0.94 nd (San Mat Thru 851 860 880 0.93 nd (San Mat Thru 946 955 981	PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 0 0 PHF teo Blvd.) PHF teo Blvd.)
I-40 EB Ramp / San Mateo Bi (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.) 1-40 WB Ramp / San Mateo B (8) 3.0% Truck	vd. Eastbot 441 465 477 Eastbot Left 312 329 352 Ivd. Eastbot Left	0.94 Ind (I-40 EB Thru 1 1 0.93 Ind (I-40 EB Thru 11 12 12 0.93 Ind (I-40 WE Thru	Ramp) Right 716 755 755 Ramp) Right 420 443 443 443 Ramp) Right	Westbook Left O O O Westbook Left O O U Left O O Left O O Left	0.94 Ind (I-40 EB Thru 0 0 0 0.93 Ind (I-40 EB Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ramp) Right O O O Ramp) Right O O Ramp) Right O Right Right Right	Northboul Left O O O Northboul Left Northboul Left	0.94 nd (San Mat Thru 1,022 1,032 1,044 0.93 nd (San Mat Thru 1,631 1,647 1,670 0.93 nd (San Mat Thru	eo Blvd.) Right 139 140 142 eo Blvd.) Right 365 369 373	Southbou Left 224 226 226 Southbou Left 428 432 432 Southbou Left	0.94 nd (San Mat Thru 851 860 880 0.93 nd (San Mat Thru 946 955 981 0.93 nd (San Mat	PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 0 PHF teo Blvd.) Right
I-40 EB Ramp / San Mateo Bi (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.) 2021 (BUILD - P.M.) I-40 WB Ramp / San Mateo B (8) 3.0% Truck Existing (2019)	vd. Eastbot 441 465 477 Eastbot Left 312 329 352 Ivd. Eastbot Left 47	0.94 Ind (I-40 EB Thru 1 1 0.93 Ind (I-40 EB Thru 11 12 12 0.93 Ind (I-40 WE Thru 0	Ramp) Right 716 755 755 Ramp) Right 420 443 443 8 Ramp) Right 142	Westbook Left O O O Westbook Left O O O Westbook Left O O O O O O O O O O O O O O O O O O	0.94 Ind (I-40 EB Thru 0 0 0 0.93 Ind (I-40 EB Thru 0 0 0 0 Ind (I-40 EB Thru 129	Ramp) Right 0 0 0 8 Ramp) Right 0 0 8 Ramp) Right 3 Ramp) Right 304	Northbour Left 0 0 Northbour Left 0 Northbour Left 141	0.94 nd (San Mat Thru 1,022 1,032 1,044 0.93 nd (San Mat Thru 1,631 1,647 1,670 0.93 nd (San Mat Thru 919	eo Blvd.) Right 139 140 142 eo Blvd.) Right 365 369 373 eo Blvd.) Right 0	Southbou Left 224 226 226 Southbou Left 428 432 432 Southbou Left 0	0.94 nd (San Mat Thru 851 860 880 0.93 nd (San Mat Thru 946 955 981 0.93 nd (San Mat Thru 1,022	PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 0 PHF teo Blvd.) Right 0 PHF teo Blvd.) Right 10 PHF teo Blvd.) Right 10 PHF teo Blvd.) Right 10 PHF
I-40 EB Ramp / San Mateo Bi (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.) I-40 WB Ramp / San Mateo B (8) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.)	vd. Eastbou Left 441 465 477 Eastbou Left 312 329 352 Ivd. Eastbou Left 47 50	0.94 Ind (I-40 EB Thru 1 1 0.93 Ind (I-40 EB Thru 11 12 12 0.93 Ind (I-40 WE Thru 0 0	Ramp) Right 716 755 755 Ramp) Right 420 443 443 443 Right 142 150	Westbook Left 0	0.94 und (I-40 EB Thru 0 0 0 0.93 und (I-40 EB Thru 0 0 0 0 0 10 11 129 136	Ramp) Right 0 0 0 8 Ramp) Right 0 0 8 Ramp) Right 304 321	Northbour Left 0 0 Northbour Left 0 0 Northbour Left 141 142	0.94 nd (San Mat Thru 1,022 1,032 1,044 0.93 nd (San Mat Thru 1,631 1,647 1,670 0.93 nd (San Mat Thru 919 928	eo Blvd.) Right 139 140 142 eo Blvd.) Right 365 369 373 eo Blvd.) Right 0 0	Southbou Left 224 226 226	0.94 nd (San Mat Thru 851 860 880 0.93 nd (San Mat Thru 946 955 981 0.93 nd (San Mat Thru 1,022 1,032	PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 91 92
I-40 EB Ramp / San Mateo Bi (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.) 2021 (BUILD - P.M.) I-40 WB Ramp / San Mateo B (8) 3.0% Truck Existing (2019)	vd. Eastbot 441 465 477 Eastbot Left 312 329 352 Ivd. Eastbot Left 47	0.94 Ind (I-40 EB Thru 1 1 0.93 Ind (I-40 EB Thru 11 12 12 0.93 Ind (I-40 WE Thru 0 0 0	Ramp) Right 716 755 755 Ramp) Right 420 443 443 8 Ramp) Right 142	Westbook Left O O O Westbook Left O O O Westbook Left O O O O O O O O O O O O O O O O O O	0.94 und (I-40 EB Thru 0 0 0 0.93 und (I-40 EB Thru 0 0 0 0 1.93 und (I-40 WE Thru 129 136 136	Ramp) Right 0 0 0 8 Ramp) Right 0 0 8 Ramp) Right 3 Ramp) Right 304	Northbour Left 0 0 Northbour Left 0 Northbour Left 141	0.94 nd (San Mat Thru 1,022 1,032 1,044 0.93 nd (San Mat Thru 1,631 1,647 1,670 0.93 nd (San Mat Thru 919 928 952	eo Blvd.) Right 139 140 142 eo Blvd.) Right 365 369 373 eo Blvd.) Right 0	Southbou Left 224 226 226 Southbou Left 428 432 432 Southbou Left 0	0.94 nd (San Mat Thru 851 860 880 0.93 nd (San Mat Thru 946 955 981 0.93 nd (San Mat Thru 1,022 1,032 1,050	PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 91 92 110
1-40 EB Ramp / San Mateo Bi	vd. Eastboo Left 441 465 477 Eastboo Left 312 329 352 Ivd. Eastboo Left 47 50 50	0.94 Ind (I-40 EB Thru 1 1 0.93 Ind (I-40 EB Thru 11 12 12 0.93 Ind (I-40 WE Thru 0 0 0 0.94	Ramp) Right 716 755 755 Ramp) Right 420 443 443 8 Ramp) Right 142 150 150	Westbook Left 0	0.94 Ind (I-40 EB Thru 0 0 0.93 Ind (I-40 EB Thru 0 0 0 0.93 Ind (I-40 EB Thru 129 136 136 0.94	Ramp) Right 0 0 0 8 Ramp) Right 0 0 8 Ramp) Right 304 321 321	Northbour Left 0 0 Northbour Left 0 0 Northbour Left 141 142 142	0.94 nd (San Mat Thru 1,022 1,032 1,044 0.93 nd (San Mat Thru 1,631 1,647 1,670 0.93 nd (San Mat Thru 919 928 952 0.94	eo Blvd.) Right 139 140 142 eo Blvd.) Right 365 369 373 eo Blvd.) Right 0 0	Southbou Left 224 226 226 Southbou Left 428 432 432 Southbou Left 0 0 0	0.94 nd (San Mat Thru 851 860 880 0.93 nd (San Mat Thru 946 955 981 0.93 nd (San Mat Thru 1,022 1,032 1,050 0.94	PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 91 92 110 PHF
I-40 EB Ramp / San Mateo Bi (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.) I-40 WB Ramp / San Mateo B (8) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.)	vd. Eastboo Left 441 465 477 Eastboo Left 312 329 352 Ivd. Eastboo Left 47 50 50 Eastboo Eastboo	0.94 und (I-40 EB Thru 1 1 0.93 und (I-40 EB Thru 11 12 12 0.93 und (I-40 WE Thru 0 0 0 0.94 und (I-40 WE	Ramp) Right 716 755 755 Ramp) Right 420 443 443 443 Ramp) Right 142 150 150	Westbook Left O O	0.94 und (I-40 EB Thru 0 0 0 0.93 und (I-40 EB Thru 0 0 0 0 0.93 und (I-40 EB Thru 129 136 136 0.94 und (I-40 WE	Ramp) Right 0 0 0 8 Ramp) Right 0 0 8 Ramp) Right 304 321 321	Northbour Left O O Northbour Left O O Northbour Left 141 142 142 Northbour	0.94 nd (San Mat Thru 1,022 1,032 1,044 0.93 nd (San Mat Thru 1,631 1,647 1,670 0.93 nd (San Mat Thru 919 928 952 0.94 nd (San Mat	eo Blvd.) Right 139 140 142 eo Blvd.) Right 365 369 373 eo Blvd.) Right 0 0 0	Southbou	0.94 nd (San Mat Thru 851 860 880 0.93 nd (San Mat Thru 946 955 981 0.93 nd (San Mat Thru 1,022 1,032 1,050 0.94 nd (San Mat	PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 91 92 110 PHF teo Blvd.)
I-40 EB Ramp / San Mateo Bi (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.) I-40 WB Ramp / San Mateo B (8) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.)	vd. Eastbou Left 441 465 477 Eastbou Left 312 329 352 Ivd. Eastbou Left 47 50 50 Eastbou Left	0.94 Ind (I-40 EB Thru 1 1 0.93 Ind (I-40 EB Thru 11 12 12 0.93 Ind (I-40 WE Thru 0 0 0 0.94 Ind (I-40 WE Thru	Ramp) Right 716 755 755 Ramp) Right 420 443 443 443 Right 142 150 150 Ramp) Right	Westbook Left O	0.94 und (I-40 EB Thru 0 0 0 0.93 und (I-40 EB Thru 0 0 0 0.93 und (I-40 WE Thru 129 136 136 0.94 und (I-40 WE Thru	Ramp) Right 0 0 0 8 Ramp) Right 0 0 8 Ramp) Right 304 321 321 8 Ramp) Right	Northbour Left O O Northbour Left O O Northbour Left 141 142 142 Northbour Left	0.94 nd (San Mat Thru 1,022 1,032 1,044 0.93 nd (San Mat Thru 1,631 1,647 1,670 0.93 nd (San Mat Thru 919 928 952 0.94 nd (San Mat Thru	eo Blvd.) Right 139 140 142 eo Blvd.) Right 365 369 373 eo Blvd.) Right 0 0 0 eo Blvd.) Right	Southbou Left 224 226 226 Southbou Left 428 432 432 Southbou Left 0 0 Southbou Left	0.94 nd (San Mat Thru 851 860 880 0.93 nd (San Mat Thru 946 955 981 0.93 nd (San Mat Thru 1,022 1,032 1,050 0.94 nd (San Mat Thru	PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 91 92 110 PHF teo Blvd.) Right
I-40 EB Ramp / San Mateo Bi (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.) I-40 WB Ramp / San Mateo B (8) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019)	vd. Eastbou Left 441 465 477 Eastbou Left 312 329 352 Ivd. Eastbou Left 47 50 50 Eastbou Left 147	0.94 und (I-40 EB Thru 1 1 0.93 und (I-40 EB Thru 11 12 12 0.93 und (I-40 WE Thru 0 0 0 0.94 und (I-40 WE Thru 0 0	Ramp) Right 716 755 755 Ramp) Right 420 443 443 443 8 Ramp) Right 142 150 150 8 Ramp) Right 396	Westbook Left 0 0 0 Westbook Left 0 0 Westbook Left 256 270 273 Westbook Left 178	0.94 Ind (I-40 EB Thru 0 0 0 0.93 Ind (I-40 EB Thru 0 0 0 0 0 0 193 Ind (I-40 WE Thru 129 136 136 0.94 Ind (I-40 WE Thru 106	Ramp) Right 0 0 0 8 Ramp) Right 0 0 8 Ramp) Right 304 321 321 8 Ramp) Right 236	Northbour Left O O Northbour Left O O Northbour Left 141 142 142 Northbour Left 185	0.94 nd (San Mat Thru 1,022 1,032 1,044 0.93 nd (San Mat Thru 1,631 1,647 1,670 0.93 nd (San Mat Thru 919 928 952 0.94 nd (San Mat Thru 1,242	eo Blvd.) Right 139 140 142 eo Blvd.) Right 365 369 373 eo Blvd.) Right 0 0 0 eo Blvd.) Right	Southbou	0.94 nd (San Mat Thru 851 860 880 0.93 nd (San Mat Thru 946 955 981 0.93 nd (San Mat Thru 1,022 1,032 1,050 0.94 nd (San Mat Thru 1,341	PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 91 92 110 PHF teo Blvd.) Right 111
I-40 EB Ramp / San Mateo Bi (7) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.) Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.) I-40 WB Ramp / San Mateo B (8) 3.0% Truck Existing (2019) 2021 (NO BUILD - A.M.) 2021 (BUILD - A.M.)	vd. Eastbou Left 441 465 477 Eastbou Left 312 329 352 Ivd. Eastbou Left 47 50 50 Eastbou Left	0.94 Ind (I-40 EB Thru 1 1 0.93 Ind (I-40 EB Thru 11 12 12 0.93 Ind (I-40 WE Thru 0 0 0 0.94 Ind (I-40 WE Thru	Ramp) Right 716 755 755 Ramp) Right 420 443 443 443 Right 142 150 150 Ramp) Right	Westbook Left O	0.94 und (I-40 EB Thru 0 0 0 0.93 und (I-40 EB Thru 0 0 0 0.93 und (I-40 WE Thru 129 136 136 0.94 und (I-40 WE Thru	Ramp) Right 0 0 0 8 Ramp) Right 0 0 8 Ramp) Right 304 321 321 8 Ramp) Right	Northbour Left O O Northbour Left O O Northbour Left 141 142 142 Northbour Left	0.94 nd (San Mat Thru 1,022 1,032 1,044 0.93 nd (San Mat Thru 1,631 1,647 1,670 0.93 nd (San Mat Thru 919 928 952 0.94 nd (San Mat Thru	eo Blvd.) Right 139 140 142 eo Blvd.) Right 365 369 373 eo Blvd.) Right 0 0 0 eo Blvd.) Right	Southbou Left 224 226 226 Southbou Left 428 432 432 Southbou Left 0 0 Southbou Left	0.94 nd (San Mat Thru 851 860 880 0.93 nd (San Mat Thru 946 955 981 0.93 nd (San Mat Thru 1,022 1,032 1,050 0.94 nd (San Mat Thru	PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 0 0 PHF teo Blvd.) Right 91 92 110 PHF teo Blvd.) Right

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.) Projected Turning Movements SUMMARY PROPOSED DEVELOPMENT (2021) - 100% Development

INTERSECTION: Summary

			- ,									
Driveway "A" / Carlisle Blvd.		0.89			0.89			0.89			0.89	PHF
(9)	Eastbou	ınd (Drivew	ay "A")	Westbou	ınd (Drivew	ay "A")	Northbo	und (Carlisl	e Blvd.)	Southbo	und (Carlisl	e Blvd.)
3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	0	0	0	0	0	0	0	0	0	0	0	0
2021 (NO BUILD - A.M.)	0	0	0	35	0	35	0	1,159	36	36	1,495	0
2021 (BUILD - A.M.)	0	0	0	97	0	66	0	1,190	69	126	1,495	0
,		0.93			0.93			0.93			0.93	PHF
	Eastbou	ınd (Drivew	ay "A")	Westbou	ınd (Drivew	ay "A")	Northbo	und (Carlisl	e Blvd.)	Southbo	und (Carlisl	e Blvd.)
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	0	0	0	0	0	0	0	0	0	0	0	0
2021 (NO BUILD - P.M.)	0	0	0	28	0	28	0	1,659	30	30	1,544	0
2021 (BUILD - P.M.)	0	0	0	186	0	118	0	1,685	72	187	1,503	0
'												
Driveway "B" / Carlisle Blvd.		0.89			0.89			0.89			0.89	PHF
(10)		ınd (Drivew	av "B")	Westbou	ınd (Drivew	av "B")	Northbo	und (Carlisl	e Blvd.)	Southbo	und (Carlisl	
3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	0	0	0	0	0	0	0	0	0	0	0	0
2021 (NO BUILD - A.M.)	0	0	0	0	0	0	0	1,159	0	0	1,495	0
2021 (BUILD - A.M.)	0	0	0	0	0	31	0	1,192	57	0	1,557	0
		0.93			0.93			0.93			0.93	PHF
	Eastbou	ınd (Drivew	ay "B")	Westbou	ınd (Drivew	ay "B")	Northbo	und (Carlisl	e Blvd.)	Southbo	und (Carlisl	e Blvd.)
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	0	0	0	0	0	0	0	0	0	0	0	0
2021 (NO BUILD - P.M.)	0	0	0	0	0	0	0	1,659	0	0	1,544	0
2021 (BUILD - P.M.)	0	0	0	0	0	58	0	1,669	105	0	1,661	0
Indian School Rd. / Driveway		0.89			0.89			0.89			0.89	PHF
(11)		d (Indian Sc			d (Indian So			und (Drivew			und (Drivev	- /
3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	0	0	0	0	0	0	0	0	0	0	0	0
2021 (NO BUILD - A.M.)	0	491	0	0	469	0	0	0	0	0	0	0
2021 (BUILD - A.M.)	37	491	0	0	469	55	0	0	0	38	0	26
• • • • • • • • • • • • • • • • • • • •	37											
, ,		0.93			0.93			0.93			0.93	PHF
	Eastbound	0.93 d (Indian Sc			d (Indian Sc			und (Drivew			und (Drivev	vay "C")
Estativa (2040)	Eastbound Left	0.93 d (Indian Sc Thru	Right	Left	d (Indian So Thru	Right	Left	ound (Drivew Thru	Right	Left	und (Drivev Thru	vay "C") Right
Existing (2019)	Eastbound Left	0.93 d (Indian Sc Thru	Right 0	Left 0	d (Indian So Thru 0	Right 0	Left 0	Thru	Right 0	Left 0	und (Drivev Thru 0	vay "C") Right
Existing (2019) 2021 (NO BUILD - P.M.) 2021 (BUILD - P.M.)	Eastbound Left	0.93 d (Indian Sc Thru	Right	Left	d (Indian So Thru	Right	Left	ound (Drivew Thru	Right	Left	und (Drivev Thru	vay "C") Right

Projected Turning Movements Worksheet

Indian School Rd. / Girard Ct.

INTERSECTION: E-W Street: Indian School Rd. (1)

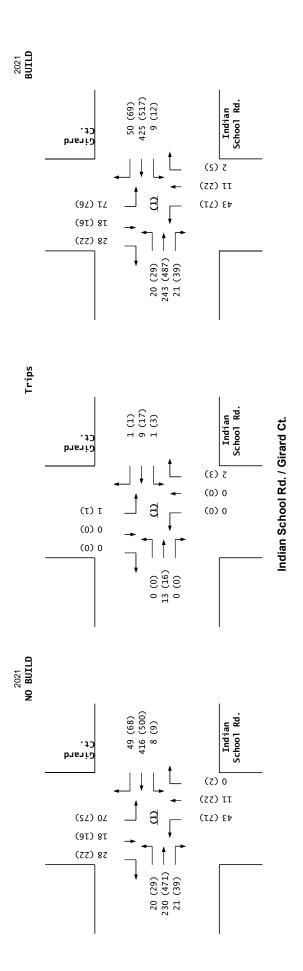
N-S Street: Girard Ct.

Year of Existing Counts 2019 Implementation Year 2021

Growth Rates 0.50% 3.90% 0.50% 0.50% Eastbound (Indian School Rd.) Westbound (Indian School Rd.) Northbound (Girard Ct.) Southbound (Girard Ct.) Right Right Left Thru Right Left **Existing Volumes** 21 28 20 228 386 45 43 11 0 69 18 Background Traffic Growth <u>30</u> 0 0 0 0 Subtotal (NO BUILD - A.M.) 28 20 230 21 8 416 49 43 11 0 70 18 Percent Commercial Trips Generated(Entering) 0.00% 4.67% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.74% 0.37% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.74% 0.37% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 4.67% **Total Trips Generated Total AM Peak Hour BUILD Volumes** 425 28 20 243 21 9 50 43 11 71 18

Eastbound (Indian School Rd.) Westbound (Indian School Rd.) Northbound (Girard Ct.) Southbound (Girard Ct.) Right Left Thru Right Left Thru Left Thru Right Left Thru Right Existing Volumes 39 29 466 8 464 63 70 22 74 16 22 Background Traffic Growth 0 36 0 5 0 0 0 0 Subtotal (NO BUILD - P.M.) 29 471 39 9 500 68 71 22 75 16 22 0.00% 0.00% Percent Commercial Trips Generated(Entering) 4.67% 0.00% 0.00% 0.00% 0.00% 0.00% 0.74% 0.37% 0.00% 0.00% 0.74% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 4.67% 0.37% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% Total Trips Generated 16 17 **Total PM Peak Hour BUILD Volumes** 487 39 12 517 71 22 16

Entering Exiting



Projected Turning Movements Worksheet

I-40 N.Ramp / Carlisle Blvd.

INTERSECTION: E-W Street: I-40 N.Ramp (2)

N-S Street: Carlisle Blvd.

Year of Existing Counts 2019 Implementation Year 2021

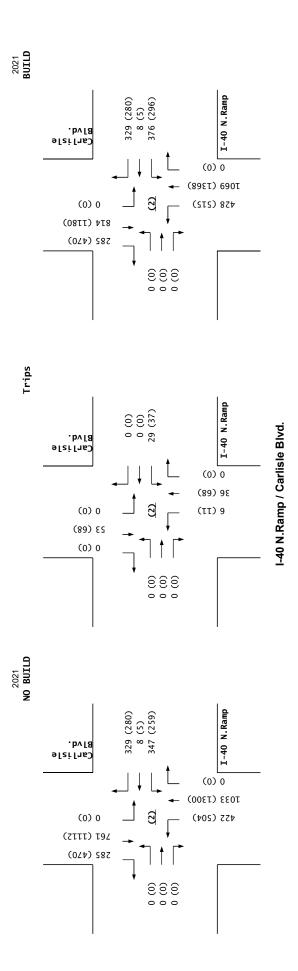
Growth Rates 3.00% 2.70% 0.50% 0.80% Eastbound (I-40 N.Ramp) Westbound (I-40 N.Ramp) Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.) Thru Right Left Thru Right Left Left Right **Existing Volumes** 312 418 281 0 0 329 1.023 0 0 749 Background Traffic Growth 0 0 <u>18</u> 17 <u>10</u> 0 0 12 Subtotal (NO BUILD - A.M.) 347 329 761 0 0 0 8 422 1.033 0 0 285 Percent Commercial Trips Generated(Entering) 0.00% 0.00% 0.00% 10.46% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 19.21% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 3.17% 19.21% 0.00% 0.00% 0.00% 0.00% **Total Trips Generated** 29 36 53 **Total AM Peak Hour BUILD Volumes** 285 0 0 376 329 428 1,069 0 0 814

Eastbound (I-40 N.Ramp) Westbound (I-40 N.Ramp) Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.) Thru Right Right Left Thru Right Left Thru Left Thru Right Left Existing Volumes 0 0 246 266 499 1,287 0 0 1,094 463 Background Traffic Growth 0 14 0 0 0 13 0 5 <u>13</u> 0 18 Subtotal (NO BUILD - P.M.) 0 0 0 259 5 280 504 1,300 0 0 1,112 470 0.00% 0.00% 0.00% 10.46% 0.00% 0.00% 0.00% Percent Commercial Trips Generated(Entering) 0.00% 0.00% 0.00% 19.21% 0.00% 19.21% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 3.17% 0.00% 0.00% 0.00% Total Trips Generated 0 37 68 0 68 **Total PM Peak Hour BUILD Volumes** 1,368 1,180

Entering Exiting

Number of Commercial Trips Generated 275 190 A.M. 100% Commercial Development

275 190 A.M. 352 355 P.M.



Projected Turning Movements Worksheet

I-40 S. Ramp / Carlisle Blvd.

INTERSECTION: E-W Street: I-40 S. Ramp (3)

N-S Street: Carlisle Blvd.

Year of Existing Counts 2019 Implementation Year 2021

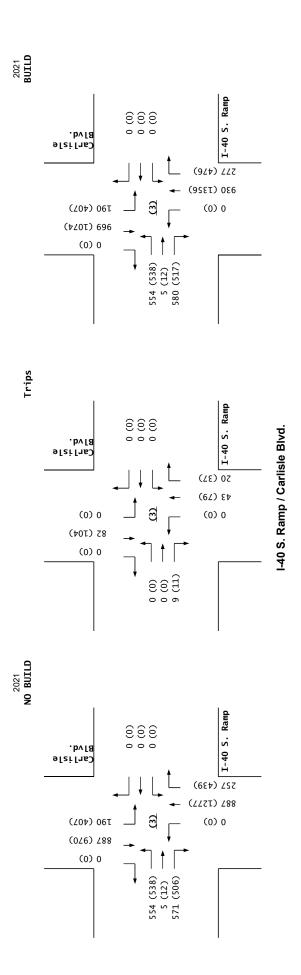
Growth Rates 3.00% 2.70% 0.50% 0.80% Eastbound (I-40 S. Ramp) Westbound (I-40 S. Ramp) Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.) Thru Right Left Thru Right Left Right Left **Existing Volumes** 539 523 0 0 0 878 254 187 873 Background Traffic Growth <u>31</u> 32 0 0 0 <u>14</u> 0 Subtotal (NO BUILD - A.M.) 554 571 0 5 0 0 0 887 257 190 887 0 Percent Commercial Trips Generated(Entering) 0.00% 0.00% 0.00% 0.00% 0.00% 29.67% 0.00% 0.00% 3.17% 0.00% 0.00% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 22.38% 10.46% 0.00% 0.00% 0.00% **Total Trips Generated** 82 20 **Total AM Peak Hour BUILD Volumes** 580 554 5 0 0 0 930 277 190 969 0

Eastbound (I-40 S. Ramp) Westbound (I-40 S. Ramp) Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.) Right Thru Thru Right Left Thru Right Left Thru Right Left Left Existing Volumes 477 508 11 0 0 1,264 435 401 955 Background Traffic Growth 30 29 0 0 0 0 <u>13</u> 6 15 0 Subtotal (NO BUILD - P.M.) 538 12 506 0 0 0 0 1,277 439 407 970 0 0.00% 0.00% 0.00% 0.00% Percent Commercial Trips Generated(Entering) 0.00% 0.00% 3.17% 0.00% 0.00% 0.00% 0.00% 29.67% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 22.38% 10.46% 0.00% 0.00% 0.00% Total Trips Generated 79 37 104 **Total PM Peak Hour BUILD Volumes** 538 12 517 1,356

Entering Exiting

Number of Commercial Trips Generated 275 190 A.M. 100% Commercial Development 352 355 P.M.

WholeFoods TURNS.xlsm - Turns 3



Projected Turning Movements Worksheet

Indian School Rd. / Carlisle Blvd.

INTERSECTION: E-W Street: Indian School Rd. (4)

N-S Street: Carlisle Blvd.

Year of Existing Counts 2019 Implementation Year 2021

0.50% **Growth Rates** 3.90% 0.50% 3.80% Eastbound (Indian School Rd.) Westbound (Indian School Rd.) Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.) Right Left Thru Right Left Right Left Right Existing Volumes 345 42 506 213 51 286 127 66 612 35 221 753 Background Traffic Growth <u>27</u> <u>17</u> <u>47</u> Subtotal (NO BUILD - A.M.) 372 230 128 659 511 45 52 289 71 38 223 761 Percent Commercial Trips Generated(Entering) 3.00% 0.00% 0.00% 0.00% 0.00% 0.00% 30.00% 0.00% 0.00% 2.78% 10.48% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 10.48% 0.00% 0.00% 3.00% 0.00% 0.00% 0.00% 0.00% 30.00% 2.78% 0.00% Total Trips Generated 20 83 29 57 **Total AM Peak Hour BUILD Volumes** 238 45 223 516 380 72 295 128 71 742 67 818

| Left | Thru | 385 | 546 | | Subtotal (NO BUILD - P.M.) | 415 | 589 | | Percent Commercial Trips Generated (Exiting) | Percent Commercial Trips Generated (Exiting) | Total PM Peak Hour BUILD Volumes | 425 | 600 | |

Eastboun	ıd (Indian Sc	:hool Rd.)	Westbour	nd (Indian So	chool Rd.)	Northbo	ound (Carlisl	e Blvd.)	Southbo	Southbound (Carlisle Blvd.)			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
385	546	79	71	330	225	108	945	47	228	862	439		
<u>30</u>	<u>43</u>	<u>6</u>	<u>1</u>	<u>3</u>	2	<u>8</u>	<u>72</u>	<u>4</u>	<u>2</u>	<u>9</u>	<u>4</u>		
415	589	85	72	333	227	116	1,017	51	230	871	443		
2.78%	3.00%	0.00%	0.00%	0.00%	0.00%	0.00%	30.00%	10.48%	0.00%	0.00%	0.00%		
0.00%	0.00%	0.00%	10.48%	3.00%	0.00%	0.00%	0.00%	0.00%	0.00%	30.00%	2.78%		
10	11	0	37	11	0	0	106	37	0	107	10		
425	600	85	109	344	227	116	1,123	88	230	978	453		

Entering Exiting

Projected Turning Movements Worksheet

Indian School Rd. / Washington St.

INTERSECTION: E-W Street: Indian School Rd. (5)

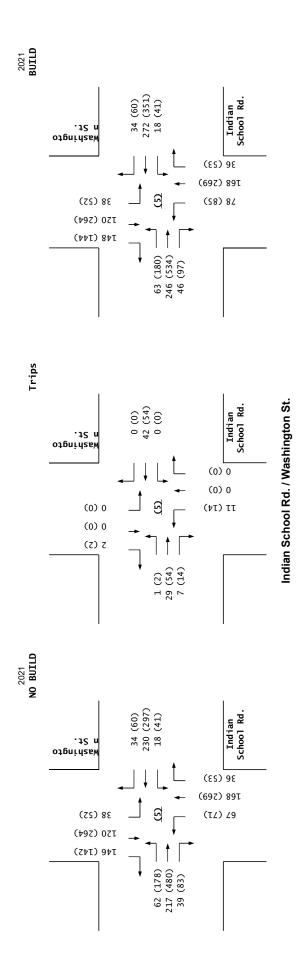
N-S Street: Washington St.

Year of Existing Counts 2019 Implementation Year 2021

Growth Rates		0.50%			0.50%			0.50%			0.50%	
	Eastboun	ıd (Indian Sc	hool Rd.)	Westboun	d (Indian So	hool Rd.)	Northbou	ınd (Washin	gton St.)	Southbou	und (Washin	gton St.)
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	61	215	39	18	228	34	66	166	36	38	119	145
Background Traffic Growth	<u>1</u>	<u>2</u>	<u>0</u>	<u>0</u>	<u>2</u>	<u>0</u>	<u>1</u>	<u>2</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>
Subtotal (NO BUILD - A.M.)	62	217	39	18	230	34	67	168	36	38	120	146
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	15.32%	0.00%	3.85%	0.00%	0.00%	0.00%	0.00%	0.67%
Percent Commercial Trips Generated(Exiting)	0.67%	15.32%	3.85%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	1	29	7	0	42	0	11	0	0	0	0	2
Total AM Peak Hour BUILD Volumes	63	246	46	18	272	34	78	168	36	38	120	148

	Eastboun	Eastbound (Indian School Rd.)			nd (Indian Sc	hool Rd.)	Northbou	ınd (Washin	gton St.)	Southbou	ınd (Washin	gton St.)
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	176	475	82	41	294	59	70	266	52	51	261	141
Background Traffic Growth	2	<u>5</u>	<u>1</u>	<u>0</u>	<u>3</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>1</u>	<u>1</u>	<u>3</u>	<u>1</u>
Subtotal (NO BUILD - P.M.)	178	480	83	41	297	60	71	269	53	52	264	142
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	15.32%	0.00%	3.85%	0.00%	0.00%	0.00%	0.00%	0.67%
Percent Commercial Trips Generated(Exiting)	0.67%	15.32%	3.85%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	2	54	14	0	54	0	14	0	0	0	0	2
Total PM Peak Hour BUILD Volumes	180	534	97	41	351	60	85	269	53	52	264	144

Entering Exiting 275 190 352 355 A.M. P.M. Number of Commercial Trips Generated 100% Commercial Development



Projected Turning Movements Worksheet

Constitution Av. / Carlisle Blvd.

INTERSECTION: E-W Street: Constitution Av. (6)

N-S Street: Carlisle Blvd.

Year of Existing Counts 2019 Implementation Year 2021

0.50% **Growth Rates** 0.50% 2.90% 0.50% Eastbound (Constitution Av.) Westbound (Constitution Av.) Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.) Thru Right Left Right Left Right Left Right Existing Volumes 67 203 98 87 14 44 123 14 465 20 66 513 Background Traffic Growth 0 0 Subtotal (NO BUILD - A.M.) 71 470 67 205 99 88 14 47 130 14 20 518 Percent Commercial Trips Generated(Entering) 0.00% 0.00% 0.00% 0.00% 0.00% 33.53% 0.00% 0.00% 0.00% 1.40% 5.55% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 5.55% 33.53% 1.40% 0.00% Total Trips Generated 92 64 Total AM Peak Hour BUILD Volumes 103 130 208 88 14 47 86 14 562 20 78 582

Existing Volumes
Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

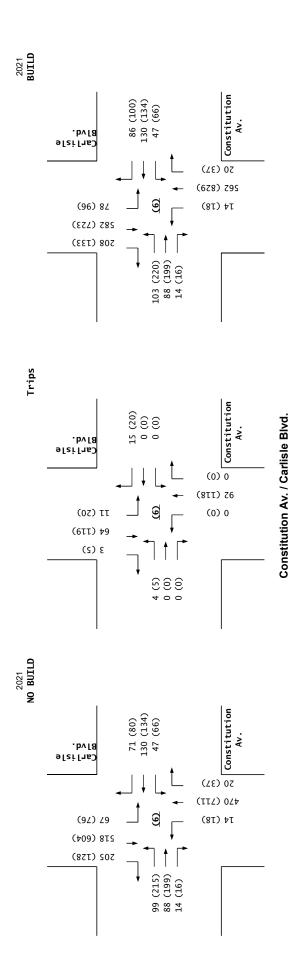
Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

Eastbour	nd (Constitu	tion Av.)	Westbou	nd (Constitu	tion Av.)	Northbo	und (Carlisl	e Blvd.)	Southbo	Southbound (Carlisle Blvd.		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
213	197	16	62	127	76	18	704	37	75	598	127	
<u>2</u>	<u>2</u>	<u>0</u>	<u>4</u>	<u>7</u>	<u>4</u>	<u>0</u>	<u>7</u>	<u>0</u>	<u>1</u>	<u>6</u>	<u>1</u>	
215	199	16	66	134	80	18	711	37	76	604	128	
1.40%	0.00%	0.00%	0.00%	0.00%	5.55%	0.00%	33.53%	0.00%	0.00%	0.00%	0.00%	
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.55%	33.53%	1.40%	
5	0	0	0	0	20	0	118	0	20	119	5	
220	199	16	66	134	100	18	829	37	96	723	133	

Entering Exiting



Projected Turning Movements Worksheet

I-40 EB Ramp / San Mateo Blvd.

INTERSECTION: E-W Street: I-40 EB Ramp (7)

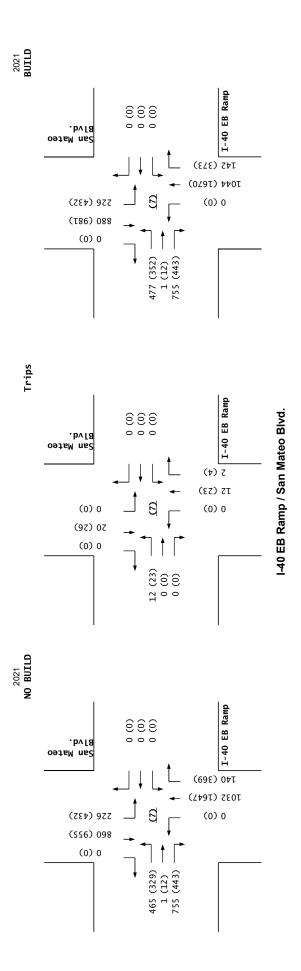
N-S Street: San Mateo Blvd.

Year of Existing Counts 2019 Implementation Year 2021

Growth Rates 2.70% 2.80% 0.50% 0.50% Eastbound (I-40 EB Ramp) Westbound (I-40 EB Ramp) Northbound (San Mateo Blvd.) Southbound (San Mateo Blvd.) Right Left Thru Right Left Left Right **Existing Volumes** 441 716 0 0 0 1,022 139 224 851 Background Traffic Growth <u>24</u> 39 0 0 0 <u>10</u> 0 Subtotal (NO BUILD - A.M.) 465 755 0 1 0 0 0 1.032 140 226 860 0 Percent Commercial Trips Generated(Entering) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 7.40% Percent Commercial Trips Generated(Exiting) 6.41% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 6.40% 1.00% 0.00% 0.00% 0.00% **Total Trips Generated** 20 **Total AM Peak Hour BUILD Volumes** 755 477 0 0 0 0 1,044 142 226 880

Eastbound (I-40 EB Ramp) Westbound (I-40 EB Ramp) Northbound (San Mateo Blvd.) Southbound (San Mateo Blvd.) Right Left Thru Left Thru Right Left Thru Right Left Thru Existing Volumes 312 11 420 0 0 1,631 365 428 946 Background Traffic Growth 17 23 0 0 0 0 <u>16</u> 4 0 Subtotal (NO BUILD - P.M.) 329 12 443 0 0 0 0 1,647 369 432 955 0 0.00% 0.00% 0.00% 0.00% 0.00% Percent Commercial Trips Generated(Entering) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 7.40% 0.00% Percent Commercial Trips Generated(Exiting) 6.41% 0.00% 0.00% 0.00% 0.00% 0.00% 6.40% 1.00% 0.00% 0.00% 0.00% Total Trips Generated 23 n 23 26 0 **Total PM Peak Hour BUILD Volumes** 352 12 443 1,670 432

Entering Exiting



Projected Turning Movements Worksheet

I-40 WB Ramp / San Mateo Blvd.

INTERSECTION: E-W Street: I-40 WB Ramp (8)

N-S Street: San Mateo Blvd.

Year of Existing Counts 2019 Implementation Year 2021

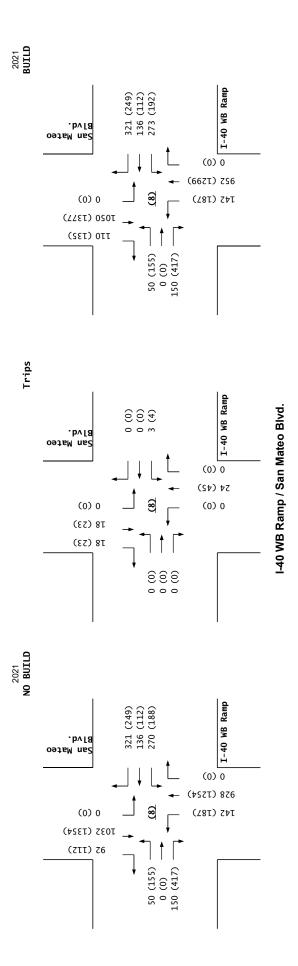
Growth Rates 2.70% 2.80% 0.50% 0.50% Eastbound (I-40 WB Ramp) Westbound (I-40 WB Ramp) Northbound (San Mateo Blvd.) Southbound (San Mateo Blvd.) Thru Right Left Right Left Right Thru **Existing Volumes** 304 91 47 142 256 129 141 919 0 0 1,022 Background Traffic Growth 3 <u>14</u> 17 0 0 Subtotal (NO BUILD - A.M.) 321 1,032 92 50 0 150 270 136 142 928 0 0 Percent Commercial Trips Generated(Entering) 0.00% 0.00% 0.00% 0.00% 0.00% 1.00% 0.00% 0.00% 0.00% 0.00% 6.40% 6.41% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 12.81% **Total Trips Generated** 18 **Total AM Peak Hour BUILD Volumes** 150 1,050 110 50 0 273 136 321 142 952 0 0

Eastbound (I-40 WB Ramp) Westbound (I-40 WB Ramp) Northbound (San Mateo Blvd.) Southbound (San Mateo Blvd.) Right Right Right Right Left Thru Left Left Thru Left Thru Thru Existing Volumes 147 396 178 106 236 185 1,242 0 0 1,341 111 Background Traffic Growth 21 0 8 0 10 6 13 2 12 0 13 Subtotal (NO BUILD - P.M.) 155 0 417 188 112 249 187 1,254 0 0 1,354 112 0.00% 0.00% Percent Commercial Trips Generated(Entering) 0.00% 0.00% 0.00% 1.00% 0.00% 0.00% 0.00% 0.00% 6.40% 6.41% 0.00% 12.81% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% Total Trips Generated 45 23 23 **Total PM Peak Hour BUILD Volumes** 155 417 192 112 1,299 1,377

Entering Exiting

Number of Commercial Trips Generated 275 190 A.M. 100% Commercial Development

352 355 P.M.



Projected Turning Movements Worksheet

Driveway "A" / Carlisle Blvd.

INTERSECTION: E-W Street: Driveway "A" (9)

N-S Street: Carlisle Blvd.

Year of Existing Counts 2019 Implementation Year 2021

0.50% 0.50% 0.50% 0.50% **Growth Rates** Eastbound (Driveway "A") Westbound (Driveway "A") Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.) Thru Right Left Existing Volumes Background Traffic Growth 0 0 0 Subtotal 0 0 0 0 0 0 0 0 0 0 0 0 36 0 0 35 35 0 36 0 Burger King Adjustment 0 0 0 0 36 Subtotal (NO BUILD - A.M.) 0 0 35 0 35 0 1,159 36 1.495 0 0 Percent Commercial Trips Generated(Entering) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 12.00% 32.84% 0.00% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 32.78% 0.00% 16.42% 0.00% 16.42% 0.00% 0.00% 0.00% 0.00% Total Trips Generated 31 31 90 62 33 **Total AM Peak Hour BUILD Volumes** 1,190 69 1,495 0 0 97 66 126

	Eastbou	Eastbound (Driveway "A")		Westbo	und (Drivew	ay "A")	Northbo	und (Carlisl	e Blvd.)	Southbo	und (Carlisle	Blvd.)
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Subtotal	0	0	0	0	0	0	0	0	0	0	0	0
Burger King Adjustment	0	0	0	28	0	28	0	0	30	30	0	0
Subtotal (NO BUILD - P.M.)	0	0	0	28	0	28	0	1,659	30	30	1,544	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.00%	32.84%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	32.78%	0.00%	16.42%	0.00%	16.42%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	116	0	58	0	58	42	116	0	0
Subtotal PM Pk Hr. BUILD Volumes	0	0	0	144	0	86	0	1,717	72	146	1,544	0
Pass-by Trip Adjustments	0	0	0	42	0	32	0	-32	0	41	-41	0
Total PM Peak Hour BUILD Volumes	0	0	0	186	0	118	0	1,685	72	187	1,503	0

Number of Commercial Trips Generated

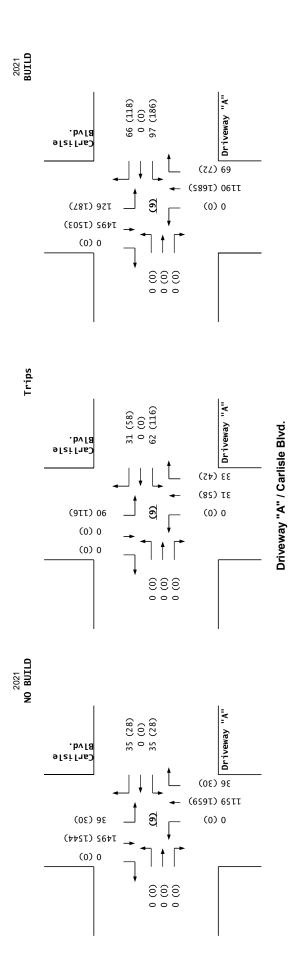
Entering Exiting 275 190 A.M.

355

352

P.M.

100% Commercial Development



Projected Turning Movements Worksheet

Driveway "B" / Carlisle Blvd.

INTERSECTION: E-W Street: Driveway "B"

N-S Street: Carlisle Blvd.

Year of Existing Counts

2019

Implementation Year 2021

Growth Rates		0.50%			0.50%			0.50%			0.50%	
	Eastbo	und (Drivew	ay "B")	Westbo	und (Drivew	ay "B")	Northbo	und (Carlisl	e Blvd.)	Southbo	und (Carlisle	e Blvd.)
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Subtotal (NO BUILD - A.M.)	0	0	0	0	0	0	0	1,159	0	0	1,495	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.00%	20.78%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	16.42%	0.00%	0.00%	0.00%	0.00%	32.78%	0.00%
Total Trips Generated	0	0	0	0	0	31	0	33	57	0	62	0
Total AM Peak Hour BUILD Volumes	0	0	0	0	0	31	0	1.192	57	0	1.557	0

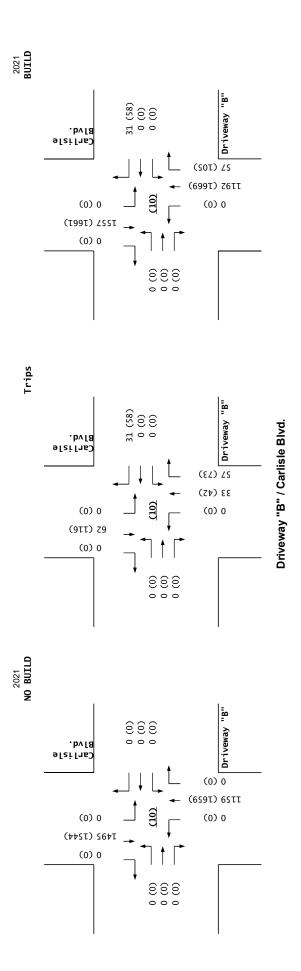
(10)

	Eastbou	Eastbound (Driveway "B")		Westbo	und (Drivew	ay "B")	Northbo	und (Carlisl	e Blvd.)	Southbo	ound (Carlisle	e Blvd.)
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Subtotal (NO BUILD - P.M.)	0	0	0	0	0	0	0	1,659	0	0	1,544	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.00%	20.78%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	16.42%	0.00%	0.00%	0.00%	0.00%	32.78%	0.00%
Total Trips Generated	0	0	0	0	0	58	0	42	73	0	116	0
Subtotal PM Pk Hr. BUILD Volumes	0	0	0	0	0	58	0	1,701	73	0	1,660	0
Pass-by Trip Adjustments	0	0	0	0	0	0	0	-32	32	0	1	0
Total PM Peak Hour BUILD Volumes	0	0	0	0	0	58	0	1 669	105	0	1 661	0

Entering Exiting Number of Commercial Trips Generated

190 A.M. 275 352 355 P.M.

100% Commercial Development



Projected Turning Movements Worksheet

Indian School Rd. / Driveway "C"

INTERSECTION: E-W Street: Indian School Rd. (11)

N-S Street: Driveway "C"

2019

Year of Existing Counts

Implementation Year 2021

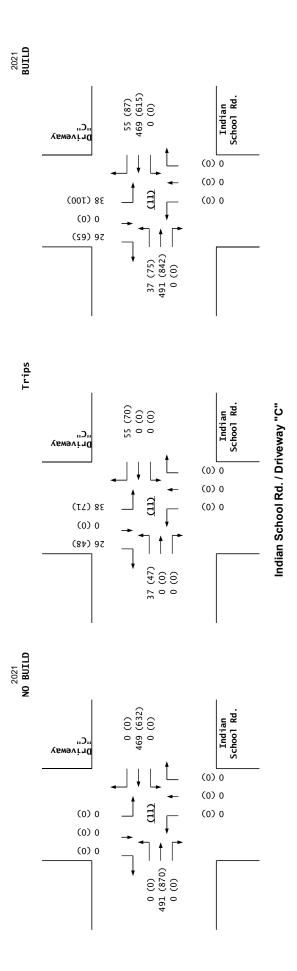
Growth Rates		0.50%			0.50%			0.50%			0.50%	
	Eastboun	d (Indian Sc	hool Rd.)	Westbour	nd (Indian So	hool Rd.)	Northbo	und (Drivew	/ay "C")	Southbo	und (Drivew	ay "C")
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Subtotal (NO BUILD - A.M.)	0	491	0	0	469	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	13.48%	0.00%	0.00%	0.00%	0.00%	19.91%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	19.91%	0.00%	13.48%
Total Trips Generated	37	0	0	0	0	55	0	0	0	38	0	26
Total AM Peak Hour BUILD Volumes	37	491	0	0	469	55	0	0	0	38	0	26

	Eastboun	d (Indian Sc	hool Rd.)	Westbour	ıd (Indian Sc	hool Rd.)	Northbo	und (Drivew	ay "C")	Southbo	und (Drivew	ray "C")
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Subtotal (NO BUILD - P.M.)	0	870	0	0	632	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	13.48%	0.00%	0.00%	0.00%	0.00%	19.91%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	19.91%	0.00%	13.48%
Total Trips Generated	47	0	0	0	0	70	0	0	0	71	0	48
Subtotal PM Pk Hr. BUILD Volumes	47	870	0	0	632	70	0	0	0	71	0	48
Pass-by Trip Adjustments	28	-28	0	0	-17	17	0	0	0	29	0	17
Total PM Peak Hour BUILD Volumes	75	842	0	0	615	87	0	0	0	100	0	65

Number of Commercial Trips Generated Entering Exiting 190 190

275 190 A.M. **352 355** P.M.

100% Commercial Development



Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.) Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2031) - 100% Development

INTERSECTION: Summary

Indian School Rd. / Girard Ct				0.87				0.87		0.87 PHF			
(1)	Eastbound (Indian School Rd.)			Westbound (Indian School Rd.)				ound (Girar		Southbound (Girard Ct.)			
3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2019)	20	228	21	7	386	45	43	11	0	69	18	28	
2031 (NO BUILD - A.M.)	21	242	22	10	567	66	46	12	0	73	19	30	
2031 (BUILD - A.M.)	21	255	22	11	576	67	46	12	2	74	19	30	
-		0.92		0.92 Westbound (Indian School Rd.)				0.92		0.92 PHF Southbound (Girard Ct.)			
	Left Left	d (Indian Sc Thru	Right	Left	d (Indian So Thru		Left	ound (Giran Thru	Right	Left	Thru		
Existing (2019)	29	466	Rigiit 39	Leit 8	464	Right 63	70	22	Rigiil 2	74	11114	Right 22	
Existing (2019) 2031 (NO BUILD - P.M.)	31	494	41	12	681	92	74	23	2	78	17	23	
'													
2031 (BUILD - P.M.)	31	510	41	15	698	93	74	23	5	79	17	23	
I-40 N.Ramp / Carlisle Blvd.	0.89			0.89				0.89		0.89 PHF			
(2)		und (I-40 N.			und (I-40 N			und (Carlisl			und (Carlisl		
3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2019)	0	0	0	329	8	312	418	1,023	0	0	749	281	
2031 (NO BUILD - A.M.)	0	0	0	436	11	413	443	1,084	0	0	821	308	
2031 (BUILD - A.M.)	0	0	0	465	11	413	449	1,120	0	0	874	308	
	Faath a	0.94 und (I-40 N.	Dames)	Waatha	0.94	Damm)	Na atlaba	0.94	· Dl. d \	Caudhha	0.94 und (Carlisl	PHF	
	Left	Thru	Right	Left	und (I-40 N Thru	Right	Left	und (Carlisl Thru	Right	Left	Thru	Right	
Existing (2019)	0	0	0	246	5	266	499	1,287	0	0	1,094	463	
2031 (NO BUILD - P.M.)	0	0	0	326	7	352	529	1,364	0	0	1,199	507	
2031 (BUILD - P.M.)	0	0	0	363	7	352	540	1,432	0	0	1,267	507	
2031 (DOILD - F.MI.)	U	U	v	303	,	332	340	1,432	<u> </u>	•	1,201	307	
, ,	0	-	•	303		332	340	,	•	•	, ,		
I-40 S. Ramp / Carlisle Blvd.	- 1	0.87	-		0.87			0.87			0.87	PHF	
, ,	- 1	-	-					,			, ,	PHF	
I-40 S. Ramp / Carlisle Blvd.	Eastbo	0.87 und (I-40 S.	Ramp)	Westbo	0.87 und (I-40 S.	Ramp)	Northbo	0.87 und (Carlisl	e Blvd.)	Southbo	0.87 und (Carlisl	PHF e Blvd.)	
I-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck	Eastbo Left	0.87 und (I-40 S. Thru	Ramp) Right	Westbo Left	0.87 und (I-40 S. Thru	Ramp) Right	Northbo Left	0.87 und (Carlisl Thru	e Blvd.) Right	Southbo Left	0.87 und (Carlisl Thru	PHF e Blvd.) Right	
I-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck Existing (2019)	Eastbo Left 523	0.87 und (I-40 S. Thru	Ramp) Right	Westbo Left	0.87 und (l-40 S. Thru 0	Ramp) Right	Northbo Left	0.87 und (Carlisl Thru 878	e Blvd.) Right	Southbo Left	0.87 und (Carlisl Thru 873	PHF e Blvd.) Right	
I-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.)	Eastbo Left 523 711	0.87 und (I-40 S. Thru 5	Ramp) Right 539 733	Westbo Left 0	0.87 und (I-40 S. Thru 0 0	Ramp) Right 0 0	Northbo Left 0	0.87 und (Carlisl Thru 878 931	e Blvd.) Right 254 269	Southbo Left 187 205	0.87 und (Carlisl Thru 873 957	PHF e Blvd.) Right 0 0	
I-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.)	Eastbo Left 523 711 711 Eastbo	0.87 und (I-40 S. Thru 5 7 0.93 und (I-40 S.	Ramp) Right 539 733 742 Ramp)	Westbo Left 0 0 Westbo	0.87 und (I-40 S. Thru 0 0 0 0.93 und (I-40 S.	Ramp) Right 0 0 Ramp)	Northbo Left 0 0 0 Northbo	0.87 und (Carlisl Thru 878 931 974 0.93 und (Carlisl	e Blvd.) Right 254 269 289	Southbo Left 187 205 205 Southbo	0.87 und (Carlisl Thru 873 957 1,039 0.93 und (Carlisl	PHF e Blvd.) Right 0 0 0 PHF e Blvd.)	
I-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.)	Eastbo Left 523 711 711 Eastbo Left	0.87 und (I-40 S. Thru 5 7 7 0.93 und (I-40 S.	Ramp) Right 539 733 742 Ramp) Right	Westbo Left 0 0 Westbo	0.87 und (I-40 S. Thru 0 0 0 0.93 und (I-40 S.	Ramp) Right 0 0 0 Ramp) Ramp) Right	Northbo Left 0 0 Northbo Left	0.87 und (Carlisl Thru 878 931 974 0.93 und (Carlisl Thru	e Blvd.) Right 254 269 289 e Blvd.) Right	Southbo Left 187 205 205 Southbo Left	0.87 und (Carlisl Thru 873 957 1,039 0.93 und (Carlisl Thru	PHF e Blvd.) Right 0 0 PHF e Blvd.) Right	
I-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.)	Eastbo Left 523 711 711 Eastbo Left 508	0.87 und (I-40 S. Thru 5 7 0.93 und (I-40 S. Thru 11	Ramp) Right 539 733 742 Ramp) Right 477	Westbo Left 0 0 0 Westbo Left 0	0.87 und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0	Ramp) Right 0 0 0 Famp) Ramp) Right 0	Northbo Left 0 0 Northbo Left Northbo	0.87 und (Carlisl Thru 878 931 974 0.93 und (Carlisl Thru 1,264	e Blvd.) Right 254 269 289 e Blvd.) Right 435	Southbo Left 187 205 205 Southbo Left 401	0.87 und (Carlisl Thru 873 957 1,039 0.93 und (Carlisl Thru 955	PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 0	
I-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.)	Eastbo Left 523 711 711 Eastbo Left 508 691	0.87 und (I-40 S. Thru 5 7 0.93 und (I-40 S. Thru 11 15	Ramp) Right 539 733 742 Ramp) Right 477 649	Westbo Left 0 0 0 Westbo Left 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.87 und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0	Ramp)	Northbo Left 0 0 0 Northbo Left 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.87 und (Carlish Thru 878 931 974 0.93 und (Carlish Thru 1,264 1,340	e Blvd.) Right 254 269 289 e Blvd.) Right 435 461	Southbo Left 187 205 205 Southbo Left 401 439	0.87 und (Carlisl Thru 873 957 1,039 0.93 und (Carlisl Thru 955 1,047	PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 0 0 0 0 0 0 0 0 0 0 0 0 0	
I-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.)	Eastbo Left 523 711 711 Eastbo Left 508	0.87 und (I-40 S. Thru 5 7 0.93 und (I-40 S. Thru 11	Ramp) Right 539 733 742 Ramp) Right 477	Westbo Left 0 0 0 Westbo Left 0	0.87 und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0	Ramp) Right 0 0 0 Famp) Ramp) Right 0	Northbo Left 0 0 Northbo Left Northbo	0.87 und (Carlisl Thru 878 931 974 0.93 und (Carlisl Thru 1,264	e Blvd.) Right 254 269 289 e Blvd.) Right 435	Southbo Left 187 205 205 Southbo Left 401	0.87 und (Carlisl Thru 873 957 1,039 0.93 und (Carlisl Thru 955	PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 0	
I-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.)	Eastbo Left 523 711 711 Eastbo Left 508 691	0.87 und (I-40 S. Thru 5 7 0.93 und (I-40 S. Thru 11 15	Ramp) Right 539 733 742 Ramp) Right 477 649	Westbo Left 0 0 0 Westbo Left 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.87 und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0	Ramp)	Northbo Left 0 0 0 Northbo Left 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.87 und (Carlish Thru 878 931 974 0.93 und (Carlish Thru 1,264 1,340	e Blvd.) Right 254 269 289 e Blvd.) Right 435 461	Southbo Left 187 205 205 Southbo Left 401 439	0.87 und (Carlisl Thru 873 957 1,039 0.93 und (Carlisl Thru 955 1,047	PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 0 0 0 0 0 0 0 0 0 0 0 0 0	
I-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.)	Eastbo Left 523 711 711 Eastbo Left 508 691 691	0.87 und (I-40 S. Thru 5 7 0.93 und (I-40 S. Thru 11 15	Ramp) Right 539 733 742 Ramp) Right 477 649	Westbo Left 0 0 0 Westbo Left 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.87 und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0	Ramp)	Northbo Left 0 0 0 Northbo Left 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.87 und (Carlish Thru 878 931 974 0.93 und (Carlish Thru 1,264 1,340	e Blvd.) Right 254 269 289 e Blvd.) Right 435 461	Southbo Left 187 205 205 Southbo Left 401 439	0.87 und (Carlisl Thru 873 957 1,039 0.93 und (Carlisl Thru 955 1,047	PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 0 0 0 0 0 0 0 0 0 0 0 0 0	
1-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck	Eastbo Left 523 711 711 Eastbo Left 508 691 691 Blvd. Eastboun	0.87 und (I-40 S. Thru 5 7 7 0.93 und (I-40 S. Thru 11 15 15 0.89 d (Indian Sc	Ramp) Right 539 733 742 Ramp) Right 477 649 660	Westbo Left 0 0 0 Westbo Left 0 0 Westboun	0.87 und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ramp) Right 0 0 0 Ramp) Right 0 0 0 Chool Rd.)	Northbo Left 0 0 0 Northbo Left 0 0 Northbo	0.87 und (Carlish Thru 878 931 974 0.93 und (Carlish Thru 1,264 1,340 1,419 0.89 und (Carlish	e Blvd.) Right 254 269 289 e Blvd.) Right 435 461 498	Southbo Left 187 205 205 Southbo Left 401 439 439 Southbo	0.87 und (Carlisl Thru 873 957 1,039 0.93 und (Carlisl Thru 955 1,047 1,151	PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 0 PHF e Blvd.)	
1-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck	Eastbo Left 523 711 711 Eastbo Left 508 691 691 Blvd. Eastboun Left	0.87 und (I-40 S. Thru 5 7 7 0.93 und (I-40 S. Thru 11 15 15 0.89 d (Indian Sc Thru	Ramp) Right 539 733 742 Ramp) Right 477 649 660	Westboo Left 0 0 0 Westboo Left 0 0 Westboo Left	0.87 und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ramp) Right 0 0 0 Ramp) Right 0 0 0 Ramp) Right 0 0 Right Right Right	Northbo Left 0 0 Northbo Left 0 Northbo Left	0.87 und (Carlish Thru 878 931 974 0.93 und (Carlish Thru 1,264 1,340 1,419 0.89 und (Carlish Thru	e Blvd.) Right 254 269 289 e Blvd.) Right 435 461 498 e Blvd.) Right	Southbo Left 187 205 205 Southbo Left 401 439 439 Southbo Left	0.87 und (Carlisl Thru 873 957 1,039 0.93 und (Carlisl Thru 955 1,047 1,151 0.89 und (Carlisl	PHF e Blvd.) Right 0 0 0 PHF e Blvd.) Right 0 0 PHF e Blvd.) Right Right Right	
I-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.) 2031 (BUILD - P.M.) Indian School Rd. / Carlisle E (4) 3.0% Truck Existing (2019)	Eastboo Left 523 711 711 Eastboo Left 508 691 691 Blvd. Eastboun Left 345	0.87 und (I-40 S. Thru 5 7 7 0.93 und (I-40 S. Thru 11 15 15 0.89 d (Indian Sc Thru 213	Ramp) Right 539 733 742 Ramp) Right 477 649 660 Chool Rd.) Right 42	Westbo Left	0.87 und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ramp)	Northbo Left O O Northbo Left O O Northbo Left O O O Northbo	0.87 und (Carlish Thru 878 931 974 0.93 und (Carlish Thru 1,264 1,340 1,419 0.89 und (Carlish Thru 612	e Blvd.) Right 254 269 289 e Blvd.) Right 435 461 498 e Blvd.) Right 35	Southbo Left 187 205 205 Southbo Left 401 439 439 Southbo Left 221	0.87 und (Carlisl Thru 873 957 1,039 0.93 und (Carlisl Thru 955 1,047 1,151 0.89 und (Carlisl Thru 753	PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 7 PHF e Blvd.) Right 506	
1-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck	Eastbo Left 523 711 711 Eastbo Left 508 691 691 Blvd. Eastboun Left 345 506	0.87 und (I-40 S. Thru 5 7 7 0.93 und (I-40 S. Thru 11 15 15 0.89 d (Indian Sc Thru 213 313	Ramp) Right 539 733 742 Ramp) Right 477 649 660 Chool Rd.) Right 42 62	Westboo Left 0 0 0 Westboo Left 0 0 Westboo Left	0.87 und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ramp) Right 0 0 0 Ramp) Right 0 0 Chool Rd.) Right 127 135	Northbo	0.87 und (Carlish Thru 878 931 974 0.93 und (Carlish Thru 1,264 1,340 1,419 0.89 und (Carlish Thru 612 891	e Blvd.) Right 254 269 289 e Blvd.) Right 435 461 498 e Blvd.) Right 35 51	Southbo Left 205 205 Southbo Left 401 439 439 Southbo Left 221 234	0.87 und (Carlisl Thru 873 957 1,039 0.93 und (Carlisl Thru 955 1,047 1,151 0.89 und (Carlisl Thru 753 798	PHF e Blvd.) Right 0 0 0 PHF e Blvd.) Right 0 0 PHF 506 536	
I-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.) 2031 (BUILD - P.M.) Indian School Rd. / Carlisle E (4) 3.0% Truck Existing (2019)	Eastboo Left 523 711 711 Eastboo Left 508 691 691 Blvd. Eastboun Left 345	0.87 und (I-40 S. Thru 5 7 7 0.93 und (I-40 S. Thru 11 15 15 0.89 d (Indian Sc Thru 213	Ramp) Right 539 733 742 Ramp) Right 477 649 660 Chool Rd.) Right 42	Westbo Left	0.87 und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ramp)	Northbo Left O O Northbo Left O O Northbo Left O O O Northbo	0.87 und (Carlish Thru 878 931 974 0.93 und (Carlish Thru 1,264 1,340 1,419 0.89 und (Carlish Thru 612	e Blvd.) Right 254 269 289 e Blvd.) Right 435 461 498 e Blvd.) Right 35	Southbo Left 187 205 205 Southbo Left 401 439 439 Southbo Left 221	0.87 und (Carlisl Thru 873 957 1,039 0.93 und (Carlisl Thru 955 1,047 1,151 0.89 und (Carlisl Thru 753	PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 7 PHF e Blvd.) Right 506	
1-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck	Eastbo Left 523 711 711 Eastbo Left 508 691 691 Blvd. Eastboun Left 345 506 514	0.87 und (I-40 S. Thru 5 7 7 0.93 und (I-40 S. Thru 11 15 15 0.89 d (Indian Sc Thru 213 313 321 0.93	Ramp) Right 539 733 742 Ramp) Right 477 649 660 Chool Rd.) Right 42 62 62	Westbo Left	0.87 und (I-40 S. Thru 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ramp) Right 0 0 0 Ramp) Right 0 0 Right 127 135 135	Northbo	0.87 und (Carlish Thru 878 931 974 0.93 und (Carlish Thru 1,264 1,340 1,419 0.89 und (Carlish Thru 612 891 974 0.93	e Blvd.) Right 254 269 289 e Blvd.) Right 435 461 498 e Blvd.) Right 35 51 80	Southbo Left 187 205 205 Southbo Left 401 439 439 Southbo Left 221 234 234	0.87 und (Carlisl Thru 873 957 1,039 0.93 und (Carlisl Thru 955 1,047 1,151 0.89 und (Carlisl Thru 753 798 855 0.93	PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 506 536 541 PHF	
1-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck	Eastbo Left 523 711 711 Eastbo Left 508 691 691 Blvd. Eastboun Left 345 506 514 Eastboun	0.87 und (I-40 S. Thru 5 7 7 0.93 und (I-40 S. Thru 11 15 15 0.89 d (Indian Sc Thru 213 313 321 0.93 d (Indian Sc	Ramp) Right 539 733 742 Ramp) Right 477 649 660 Chool Rd.) Right 42 62 62 Chool Rd.)	Westboun Left Westboun Left Westboun Left Westboun Left Westboun Left	0.87 und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ramp) Right 0 0 0 Ramp) Right 0 0 Right 127 135 135	Northbo	0.87 und (Carlish Thru 878 931 974 0.93 und (Carlish Thru 1,264 1,340 1,419 0.89 und (Carlish Thru 612 891 974 0.93 und (Carlish Carlish Carlish Carlish Carlish Carlish Carlish Carlish Carlish O.93 und (Carlish	e Blvd.) Right 254 269 289 e Blvd.) Right 435 461 498 e Blvd.) Right 35 51 80	Southbo Left 187 205 205 Southbo Left 401 439 439 Southbo Left 221 234 234 Southbo	0.87 und (Carlisl Thru 873 957 1,039 0.93 und (Carlisl Thru 955 1,047 1,151 0.89 und (Carlisl Thru 753 798 855 0.93 und (Carlisl	PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 506 536 541 PHF e Blvd.)	
I-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.) 2031 (BUILD - P.M.) Indian School Rd. / Carlisle E (4) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.)	Eastbo Left 523 711 711 Eastbo Left 508 691 691 Silvd. Eastboun Left 345 506 514 Eastboun Left	0.87 und (I-40 S. Thru 5 7 7 0.93 und (I-40 S. Thru 11 15 15 0.89 d (Indian Sc Thru 213 313 321 0.93 d (Indian Sc Thru	Ramp) Right 539 733 742 Ramp) Right 477 649 660 Chool Rd.) Right 42 62 62 Chool Rd.) Right	Westboun Left Westboun Left Westboun Left Westboun Left Mestboun Left	0.87 und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ramp) Right 0 0 0 Ramp) Right 0 0 Right 127 135 135 Chool Rd.) Right	Northbo	0.87 und (Carlish Thru 878 931 974 0.93 und (Carlish Thru 1,264 1,340 1,419 0.89 und (Carlish Thru 612 891 974 0.93 und (Carlish Thru 612	e Blvd.) Right 254 269 289 e Blvd.) Right 435 461 498 e Blvd.) Right 35 51 80 e Blvd.) Right	Southbo Left 187 205 205 Southbo Left 401 439 439 Southbo Left 221 234 234 Southbo Left	0.87 und (Carlisl Thru 873 957 1,039 0.93 und (Carlisl Thru 955 1,047 1,151 0.89 und (Carlisl Thru 753 798 855 0.93 und (Carlisl Thru	PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 506 536 541 PHF e Blvd.) Right	
I-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.) 2031 (BUILD - P.M.) Indian School Rd. / Carlisle E (4) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019)	Eastbo Left 523 711 711 Eastbo Left 508 691 691 Blvd. Eastboun Left 345 506 514 Eastboun Left 335	0.87 und (I-40 S. Thru 5 7 7 0.93 und (I-40 S. Thru 11 15 15 0.89 d (Indian Sc Thru 213 313 321 0.93 d (Indian Sc Thru 546	Ramp) Right 539 733 742 Ramp) Right 477 649 660 Chool Rd.) Right 42 62 62 Chool Rd.) Right 79	Westbook Left	0.87 und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ramp) Right 0 0 0 Ramp) Right 0 0 Right 127 135 135 Chool Rd.) Right 225	Northbo	0.87 und (Carlish Thru 878 931 974 0.93 und (Carlish Thru 1,264 1,340 1,419 0.89 und (Carlish Thru 612 891 974 0.93 und (Carlish Thru 612 891 974 0.93 und (Carlish Thru 945	e Blvd.) Right 254 269 289 e Blvd.) Right 435 461 498 e Blvd.) Right 35 51 80 e Blvd.) Right 47	Southbo Left 187 205 205 Southbo Left 401 439 439 Southbo Left 221 234 234 Southbo Left 228	0.87 und (Carlisl Thru 873 957 1,039 0.93 und (Carlisl Thru 955 1,047 1,151 0.89 und (Carlisl Thru 753 798 855 0.93 und (Carlisl Thru 862	PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 506 536 541 PHF e Blvd.) Right 439	
I-40 S. Ramp / Carlisle Blvd. (3) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.) 2031 (BUILD - P.M.) Indian School Rd. / Carlisle E (4) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.)	Eastbo Left 523 711 711 Eastbo Left 508 691 691 Silvd. Eastboun Left 345 506 514 Eastboun Left	0.87 und (I-40 S. Thru 5 7 7 0.93 und (I-40 S. Thru 11 15 15 0.89 d (Indian Sc Thru 213 313 321 0.93 d (Indian Sc Thru	Ramp) Right 539 733 742 Ramp) Right 477 649 660 Chool Rd.) Right 42 62 62 Chool Rd.) Right	Westboun Left Westboun Left Westboun Left Westboun Left Mestboun Left	0.87 und (I-40 S. Thru 0 0 0 0.93 und (I-40 S. Thru 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Ramp) Right 0 0 0 Ramp) Right 0 0 Right 127 135 135 Chool Rd.) Right	Northbo	0.87 und (Carlish Thru 878 931 974 0.93 und (Carlish Thru 1,264 1,340 1,419 0.89 und (Carlish Thru 612 891 974 0.93 und (Carlish Thru 612	e Blvd.) Right 254 269 289 e Blvd.) Right 435 461 498 e Blvd.) Right 35 51 80 e Blvd.) Right	Southbo Left 187 205 205 Southbo Left 401 439 439 Southbo Left 221 234 234 Southbo Left	0.87 und (Carlisl Thru 873 957 1,039 0.93 und (Carlisl Thru 955 1,047 1,151 0.89 und (Carlisl Thru 753 798 855 0.93 und (Carlisl Thru	PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 0 0 PHF e Blvd.) Right 506 536 541 PHF e Blvd.) Right	

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.) Projected Turning Movements SUMMARY

PROPOSED DEVELOPMENT (2031) - 100% Development

INTERSECTION: Summary

Indian School Rd. / Washing	ton St.	0.82			0.82			0.82			0.82	PHF
(5)		d (Indian Sc	hool Rd.)	Westbound (Indian School Rd.)			Northbou	ınd (Washin	aton St.)	Southbound (Washington St.)		
3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	61	215	39	18	228	34	66	166	36	38	119	145
2031 (NO BUILD - A.M.)	65	228	41	19	242	36	70	176	38	40	126	154
2031 (BUILD - A.M.)	66	257	48	19	284	36	81	176	38	40	126	156
2031 (BOILD - A.W.)	00	0.93	70	13	0.93	30	01	0.93	30	70	0.93	PHF
	Faethoun	d (Indian Sc	hool Rd \	Weethoun	d (Indian So	hool Pd \	Northbou	ınd (Washin	aton St \	Southbou	ınd (Washin	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	176	475	82	41	294	59	70	266	52	51	261	141
2031 (NO BUILD - P.M.)	187	504	87	43	312	63	74	282	55	54	277	149
2031 (BUILD - P.M.)	189	558	101	43	366	63	88	282	55	54	277	151
2031 (BUILD - F.W.)	109	330	101	43	300	03	00	202	33	J4	211	131
Constitution Av. / Carlisle Bl		0.93			0.93			0.93			0.93	PHF
(6)		nd (Constitu	,		nd (Constitu			und (Carlisl			und (Carlisl	
3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	98	87	14	44	123	67	14	465	20	66	513	203
2031 (NO BUILD - A.M.)	104	92	15	59	166	90	15	493	21	70	544	215
2031 (BUILD - A.M.)	108	92	15	59	166	105	15	585	21	81	608	218
		0.96			0.96			0.96			0.96	PHF
		nd (Constitu			าd (Constitu			und (Carlisl			und (Carlisl	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing (2019)	213	197	16	62	127	76	18	704	37	75	598	127
2031 (NO BUILD - P.M.)	226	209	17	84	171	102	19	746	39	80	634	135
2031 (BUILD - P.M.)	231	209	17	84	171	122	19	864	39	100	753	140
I-40 EB Ramp / San Mateo Bl	_	0.94			0.94			0.94			0.94	PHF
(7)	Eastbou	ınd (l-40 EB			und (I-40 EE			nd (San Mat			nd (San Mat	eo Blvd.)
(7) 3.0% Truck	Eastbou Left	ı nd (I-40 EB Thru	Right	Left	und (I-40 EE Thru	Right	Left	nd (San Mat Thru	Right	Left	nd (San Mat Thru	eo Blvd.) Right
(7) 3.0% Truck Existing (2019)	Eastbou Left 441	und (I-40 EB Thru 1	Right 716	Left 0	und (I-40 EE Thru 0	Right 0	Left 0	nd (San Mat Thru 1,022	Right 139	Left 224	nd (San Mat Thru 851	reo Blvd.) Right
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.)	Eastbou Left	und (I-40 EB Thru 1 1	Right	Left 0 0	und (I-40 EB Thru 0	Right 0	Left 0 0	nd (San Mat Thru	Right	Left	nd (San Mat Thru 851 902	Right 0
(7) 3.0% Truck Existing (2019)	Eastbou Left 441	und (I-40 EB Thru 1	Right 716	Left 0	und (I-40 EE Thru 0	Right 0	Left 0	nd (San Mat Thru 1,022	Right 139	Left 224	nd (San Mat Thru 851	reo Blvd.) Right
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.)	Eastbox Left 441 584 596	1 1 0.93	Right 716 948 948	0 0 0	0 0 0 0 0.93	Right 0 0 0	Left 0 0 0	1,022 1,083 1,095 0.93	Right 139 147 149	224 237 237	nd (San Mat Thru 851 902 922 0.93	Right 0 0 0 PHF
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.)	Eastbook Left 441 584 596	1 1 1 0.93 und (I-40 EB	Right 716 948 948 8 Ramp)	Left 0 0 0 Westbook	0 0 0 0 0.93 und (I-40 EE	Right 0 0 0 8 Ramp)	Left 0 0 0 Northbou	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat	Right 139 147 149 teo Blvd.)	224 237 237 Southbou	nd (San Mat Thru 851 902 922 0.93 nd (San Mat	eo Blvd.) Right 0 0 PHF 100 Blvd.)
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.)	Eastbou Left 441 584 596	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Right 716 948 948 8 Ramp) Right	Left 0 0 0 Westbor	0 0 0 0 0.93 und (I-40 EE	Right 0 0 0 8 Ramp) Right	Left 0 0 0 Northbou Left	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat	Right 139 147 149 teo Blvd.) Right	Left	nd (San Mat Thru 851 902 922 0.93 nd (San Mat	Right O O PHF Reo Blvd.) Right
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.)	Eastbot	1 1 0.93 Ind (I-40 EB Thru 1 1 1 0.93 Ind (I-40 EB Thru 11	Right 716 948 948 8 Ramp) Right 420	Left 0 0 0 Westbook	0 0 0 0 0.93 und (I-40 EE Thru	Right 0 0 0 Ramp) Right 0	Left 0 0 0 Northbou Left 0	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat Thru 1,631	Right 139 147 149 teo Blvd.) Right 365	224 237 237 237 Southbou Left 428	nd (San Mat Thru 851 902 922 0.93 nd (San Mat Thru	Right 0 0 0 PHF reo Blvd.) Right 0
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.)	Eastbou Left 441 584 596 Eastbou Left 312 413	1 1 0.93 11 11 15 15 15 15 15 15 15 15 15 15 15	Right 716 948 948 948 Ramp) Right 420 556	Left	0 0 0 0 0 0.93 und (I-40 EE Thru	Right 0 0 0 8 Ramp) Right 0 0	Left 0 0 0 Northbou Left 0 0	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat Thru 1,631 1,729	Right 139 147 149 teo Blvd.) Right 365 387	224 237 237 Southbou Left 428 454	nd (San Mat Thru 851 902 922 0.93 nd (San Mat Thru 946 1,003	Right O O PHF Reo Blvd.) Right O O O O O O O O O O O O O
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.)	Eastbot	1 1 0.93 Ind (I-40 EB Thru 1 1 1 0.93 Ind (I-40 EB Thru 11	Right 716 948 948 8 Ramp) Right 420	Left 0 0 0 Westbook	0 0 0 0 0.93 und (I-40 EE Thru	Right 0 0 0 Ramp) Right 0	Left 0 0 0 Northbou Left 0	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat Thru 1,631	Right 139 147 149 teo Blvd.) Right 365	224 237 237 237 Southbou Left 428	nd (San Mat Thru 851 902 922 0.93 nd (San Mat Thru	Right 0 0 0 PHF reo Blvd.) Right 0
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.)	Eastbou Left 441 584 596 Eastbou Left 312 413	1 1 0.93 11 11 15 15 15 15 15 15 15 15 15 15 15	Right 716 948 948 948 Ramp) Right 420 556	Left	0 0 0 0 0 0.93 und (I-40 EE Thru	Right 0 0 0 8 Ramp) Right 0 0	Left 0 0 0 Northbou Left 0 0	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat Thru 1,631 1,729	Right 139 147 149 teo Blvd.) Right 365 387	224 237 237 Southbou Left 428 454	nd (San Mat Thru 851 902 922 0.93 nd (San Mat Thru 946 1,003	Right O O PHF Reo Blvd.) Right O O O O O O O O O O O O O
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.)	Eastbot Left 441 584 596 Eastbot Left 312 413 436	1 1 0.93 and (I-40 EB Thru 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Right 716 948 948 948 Ramp) Right 420 556 556	Left	0 0 0 0 0 0.93 und (I-40 EE Thru	Right 0 0 0 8 Ramp) Right 0 0	Left 0 0 0 Northbou Left 0 0	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat Thru 1,631 1,729	Right 139 147 149 teo Blvd.) Right 365 387	224 237 237 Southbou Left 428 454	nd (San Mat Thru 851 902 922 0.93 nd (San Mat Thru 946 1,003	Right O O PHF Reo Blvd.) Right O O O O O O O O O O O O O
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.) 2031 (BUILD - P.M.)	Eastbot Left 441 584 596 Eastbot Left 312 413 436	nd (I-40 EB Thru 1 1 1 0.93 Ind (I-40 EB Thru 11 15 15	Right 716 948 948 948 Ramp) Right 420 556 556	Left 0 0 0 0	und (I-40 EE Thru 0 0 0 0 0.93 und (I-40 EE Thru 0 0 0 0 0 0 0 0 0 0 0 0	Right 0 0 0 8 Ramp) Right 0 0 0	Left	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat Thru 1,631 1,729 1,752	Right 139 147 149 iee Blvd.) Right 365 387 391	224 237 237 Southbou Left 428 454 454	nd (San Mat Thru 851 902 922 0.93 nd (San Mat Thru 946 1,003 1,029	eo Blvd.) Right 0 0 0 PHF eo Blvd.) Right 0 0 PHF F
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.) 2031 (BUILD - P.M.)	Eastbot Left 441 584 596 Eastbot Left 312 413 436	1 1 0.93 and (I-40 EB Thru 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Right 716 948 948 948 Ramp) Right 420 556 556	Left 0 0 0 0	und (I-40 EE Thru 0 0 0 0 0.93 und (I-40 EE Thru 0 0 0 0 0 0 0 0 0 0 0	Right 0 0 0 8 Ramp) Right 0 0 0	Left	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat Thru 1,631 1,729 1,752	Right 139 147 149 iee Blvd.) Right 365 387 391	224 237 237 Southbou Left 428 454 454	nd (San Mat Thru 851 902 922 0.93 nd (San Mat Thru 946 1,003 1,029	eo Blvd.) Right 0 0 0 PHF eo Blvd.) Right 0 0 PHF F
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.) 2031 (BUILD - P.M.) 2031 (BUILD - P.M.) 1-40 WB Ramp / San Mateo B (8) 3.0% Truck Existing (2019)	Eastbou Left 441 584 596 Eastbou Left 413 436	1 1 1 0.93 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Right 716 948 948 948 8 Ramp) Right 420 556 556 8 Ramp) Right 142	Left	und (I-40 EE Thru 0 0 0 0 0.93 und (I-40 EE Thru 0 0 0 0 0 0 10 11 129	Right 0 0 0 8 Ramp) Right 0 0 Right 3 Ramp) Right 304	Left 0 0 Northbou Left 0 0 Northbou Left 141	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat Thru 1,631 1,729 1,752 0.93 nd (San Mat Thru	Right 139 147 149 160 Blvd.) Right 365 387 391 160 Blvd.) Right 0	224 237 237 Southbou Left 428 454 454 Southbou Left 0	nd (San Mat Thru 851 902 922 0.93 nd (San Mat Thru 946 1,003 1,029	Right O O O PHF Right O O O PHF Right O O O Right O O O PHF Right O O O PHF Right O O O PHF Right O O O O O O O O O O O O O O O O O O
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.) 2031 (BUILD - P.M.) 1-40 WB Ramp / San Mateo B (8) 3.0% Truck	Eastbou Left 441 584 596 Eastbou Left 312 413 436 Blvd. Eastbou Left	nd (I-40 EB Thru 1 1 1 0.93 Ind (I-40 EB Thru 11 15 15 0.93 Ind (I-40 WE Thru	Right 716 948 948 948 Right 420 556 556 8 Ramp) Right	Left 0 0 0 Westbot Left 0 0 Westbot Left Uestbot Left	und (I-40 EE Thru 0 0 0 0 0.93 und (I-40 EE Thru 0 0 0 0 0 0 1 0 0 1 0 1 0 1 0 1 0 1 0	Right 0 0 0 8 Ramp) Right 0 0 0 8 Ramp) Right Right Right Right	Left 0 0 0 Northbou Left 0 0 Northbou Left	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat Thru 1,631 1,729 1,752 0.93 nd (San Mat Thru	Right 139 147 149 ieo Blvd.) Right 365 387 391	224 237 237 Southbou Left 428 454 454 Southbou Left	nd (San Mat Thru 851 902 922 0.93 nd (San Mat Thru 946 1,003 1,029	eo Blvd.) Right 0 0 0 PHF eo Blvd.) Right 0 PHF eo Blvd.) Right Right Right Right
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.) 2031 (BUILD - P.M.) 2031 (BUILD - P.M.) I-40 WB Ramp / San Mateo B (8) 3.0% Truck Existing (2019)	Eastbou Left 312 413 436 Sivd. Eastbou Left 47	1 1 1 0.93 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Right 716 948 948 948 8 Ramp) Right 420 556 556 8 Ramp) Right 142	Left	und (I-40 EE Thru 0 0 0 0 0.93 und (I-40 EE Thru 0 0 0 0 0 0 10 11 129	Right 0 0 0 8 Ramp) Right 0 0 Right 3 Ramp) Right 304	Left 0 0 Northbou Left 0 0 Northbou Left 141	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat Thru 1,631 1,729 1,752 0.93 nd (San Mat Thru	Right 139 147 149 160 Blvd.) Right 365 387 391 160 Blvd.) Right 0	224 237 237 Southbou Left 428 454 454 Southbou Left 0	nd (San Mat Thru 851 902 922 0.93 nd (San Mat Thru 946 1,003 1,029	Right O O O PHF Right O O O PHF Right O O O Right O O O PHF Right O O O PHF Right O O O PHF Right O O O O O O O O O O O O O O O O O O
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.) 2031 (BUILD - P.M.) I-40 WB Ramp / San Mateo B (8) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.)	Eastbou Left 441 584 596 Eastbou Left 312 413 436 Blvd. Eastbou Left 47 62	nd (I-40 EB Thru 1 1 0.93 Ind (I-40 EB Thru 15 15 0.93 Ind (I-40 WE Thru 0 0	Right 716 948 948 948 Ramp) Right 420 556 556 Right 142 188	Left	und (I-40 EE Thru 0 0 0 0 0.93 und (I-40 EE Thru 0 0 0 0 0 0 1093 und (I-40 WE Thru 129 172	Right 0 0 0 8 Ramp) Right 0 0 0 8 Ramp) Right 3 Ramp) Right 304 406	Left	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat Thru 1,631 1,729 1,752 0.93 nd (San Mat Thru 919 974 998	Right 139 147 149 Reo Blvd.) Right 365 387 391 Right 0 0 0	224 237 237 Southbou Left 428 454 454 Southbou Left 0 0	nd (San Mat Thru 851 902 922 0.93 nd (San Mat Thru 946 1,003 1,029 0.93 nd (San Mat Thru 1,022 1,083	eo Blvd.) Right 0 0 PHF eo Blvd.) Right 0 0 PHF eo Blvd.) Right PHF eo Blvd.) Right 91 96
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.) 2031 (BUILD - P.M.) I-40 WB Ramp / San Mateo B (8) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.)	Eastbou Left 441 584 596 Eastbou Left 413 436 Eastbou Left 47 62 62	10 (I-40 EB Thru 1	Right 716 948 948 948 Ramp) Right 420 556 556 Ramp) Right 142 188 188	Uestbook Westbook Left 0 0 0 Westbook Left 256 342 345 Westbook Westbook	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Right 0 0 0 8 Ramp) Right 0 0 8 Ramp) Right 304 406 406 8 Ramp)	Left	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat Thru 1,631 1,729 1,752 0.93 nd (San Mat Thru 919 974	Right 139 147 149 Reo Blvd.) Right 365 387 391 Right 0 0 0 Right	224 237 237 Southbou Left 428 454 454 Southbou Left 0 0 0 Southbou	nd (San Mat Thru 851 902 922 0.93 nd (San Mat Thru 946 1,003 1,029 0.93 nd (San Mat Thru 1,022 1,083 1,101	eo Blvd.) Right 0 0 0 PHF eo Blvd.) Right 0 0 PHF eo Blvd.) Right 9 1 eo Blvd.) Right PHF PHF PHF PHF PHF
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.) 2031 (BUILD - P.M.) 1-40 WB Ramp / San Mateo B (8) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.)	Eastbou Left 441 584 596 Eastbou Left 413 436 Eastbou Left 47 62 62	1 1 1 0.93 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Right 716 948 948 948 8 Ramp) Right 420 556 556 8 Ramp) Right 142 188 188	Uestbook Left 0 0 0 Westbook Left 256 342 345 Westbook Left	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Right 0 0 0 8 Ramp) Right 0 0 8 Ramp) Right 304 406 406	Left	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat Thru 1,631 1,729 1,752 0.93 nd (San Mat Thru 919 974 998 0.94 nd (San Mat Thru	Right 139 147 149 Reo Blvd.) Right 365 387 391 Right 0 0 0	224 237 237 Southbou Left 428 454 454 Southbou Left 0 0 0	nd (San Mat Thru 851 902 922 0.93 nd (San Mat Thru 946 1,003 1,029 0.93 nd (San Mat Thru 1,022 1,083 1,101 0.94	eo Blvd.) Right 0 0 0 PHF eo Blvd.) Right 0 0 PHF eo Blvd.) Right 9 1 eo Blvd.) Right PHF PHF PHF PHF PHF
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.) 2031 (BUILD - P.M.) 1-40 WB Ramp / San Mateo B (8) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019)	Eastbou Left 312 413 436 Eastbou Left 47 62 62 Eastbou Left 147	10 (1-40 EB Thru 1	Right 716 948 948 948 1 Ramp) Right 420 556 556 8 Ramp) Right 142 188 188 8 Ramp) Right 396	Uestbook Left 0 0 0 Westbook Left 256 342 345 Westbook Left 178	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Right 0 0 0 8 Ramp) Right 0 0 8 Ramp) Right 304 406 406 8 Ramp) Right 236	Left	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat Thru 1,631 1,729 1,752 0.93 nd (San Mat Thru 919 974 998 0.94 nd (San Mat Thru 1,242	Right 139 147 149 Reo Blvd.) Right 365 387 391 Right 0 0 0 Right	224 237 237 Southbou Left 428 454 454 Southbou Left 0 0 0 Southbou	nd (San Mat Thru 851 902 922 0.93 nd (San Mat Thru 946 1,003 1,029 0.93 nd (San Mat Thru 1,022 1,083 1,101 0.94 nd (San Mat Thru 1,341	eo Blvd.) Right 0 0 PHF eo Blvd.) Right 0 0 PHF eo Blvd.) Right 91 96 114 PHF eo Blvd.) Right 111
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.) 2031 (BUILD - P.M.) 1-40 WB Ramp / San Mateo B (8) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.)	Eastbou Left	10 (I-40 EB Thru 1	Right 716 948 948 948 Ramp) Right 420 556 556 8 Ramp) Right 142 188 188 188	Uestbook Left 0 0 0 Westbook Left 256 342 345 Westbook Left	und (I-40 EE Thru 0 0 0 0.93 und (I-40 EE Thru 0 0 0 0.93 and (I-40 WE Thru 129 172 172 0.94 and (I-40 WE Thru	Right 0 0 0 8 Ramp) Right 0 0 8 Ramp) Right 304 406 406 8 Ramp) Right	Left	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat Thru 1,631 1,729 1,752 0.93 nd (San Mat Thru 919 974 998 0.94 nd (San Mat Thru	Right 139 147 149 Reo Blvd.) Right 365 387 391 Right 0 0 0 Right Right	224 237 237 Southbou Left 428 454 454 Southbou Left 0 0 Southbou Left	nd (San Mat Thru 851 902 922 0.93 nd (San Mat Thru 946 1,003 1,029 0.93 nd (San Mat Thru 1,022 1,083 1,101 0.94 nd (San Mat Thru	Right O O O PHF Right O O O PHF Right O O O Right O O O PHF Right O O O PHF Right O O PHF Right O O O PHF Right O O O Right O O O Right O O O Right O O O O Right O O O O Right O O O O O O O O O O O O O O O O O O
(7) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019) 2031 (NO BUILD - P.M.) 2031 (BUILD - P.M.) 1-40 WB Ramp / San Mateo B (8) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.) Existing (2019)	Eastbou Left 312 413 436 Eastbou Left 47 62 62 Eastbou Left 147	10 (1-40 EB Thru 1	Right 716 948 948 948 1 Ramp) Right 420 556 556 8 Ramp) Right 142 188 188 8 Ramp) Right 396	Uestbook Left 0 0 0 Westbook Left 256 342 345 Westbook Left 178	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Right 0 0 0 8 Ramp) Right 0 0 8 Ramp) Right 304 406 406 8 Ramp) Right 236	Left	nd (San Mat Thru 1,022 1,083 1,095 0.93 nd (San Mat Thru 1,631 1,729 1,752 0.93 nd (San Mat Thru 919 974 998 0.94 nd (San Mat Thru 1,242	Right 139 147 149 leo Blvd.) Right 365 387 391 leo Blvd.) Right 0 0 Right 0 Right 0 Right 0 Right 0 0 Right 0 0	Left 224 237 237	nd (San Mat Thru 851 902 922 0.93 nd (San Mat Thru 946 1,003 1,029 0.93 nd (San Mat Thru 1,022 1,083 1,101 0.94 nd (San Mat Thru 1,341	eo Blvd.) Right 0 0 PHF eo Blvd.) Right 0 0 PHF eo Blvd.) Right 91 96 114 PHF eo Blvd.) Right 111

Kmart Site Redevelopment Project (Interstate 40 / Carlisle Blvd.) Projected Turning Movements SUMMARY PROPOSED DEVELOPMENT (2031) - 100% Development

INTERSECTION: Summary

Driveway "A" / Carlisle Blvd.	. 0.89			0.89				0.89			0.89	PHF	
(9)	Eastbound (Driveway "A")			Westbound (Driveway "A")			Northbou	and (Carlisle	Blvd.)	Southbound (Carlisle Blvd.)			
3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2019)	0	0	0	0	0	0	0	0	0	0	0	0	
2031 (NO BUILD - A.M.)	0	0	0	35	0	35	0	1,532	36	36	1,568	0	
2031 (BUILD - A.M.)	0	0	0	97	0	66	0	1,563	69	126	1,568	0	
		0.93			0.93			0.93			0.93	PHF	
	Eastbou	ınd (Drivewa	ay "A")	Westbound (Driveway "A")			Northbound (Carlisle Blvd.)			Southbound (Carlisle Blvd.)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2019)	0	0	0	0	0	0	0	0	0	0	0	0	
2031 (NO BUILD - P.M.)	0	0	0	28	0	28	0	2,180	30	30	1,621	0	
2031 (BUILD - P.M.)	0	0	0	186	0	118	0	2,206	72	187	1,580	0	
Driveway "B" / Carlisle Blvd.		0.89			0.89			0.89			0.89	PHF	
(10)	Eastbou	ınd (Drivewa	ay "B")	Westbou	nd (Drivew	ay "B")	Northbou	ınd (Carlisle	Blvd.)	Southbo	und (Carlisl	e Blvd.)	
3.0% Truck	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2019)	0	0	0	0	0	0	0	0	0	0	0	0	
2031 (NO BUILD - A.M.)	0	0	0	0	0	0	0	1,532	0	0	1,568	0	
2031 (BUILD - A.M.)	0	0	0	0	0	31	0	1,565	57	0	1,630	0	
		0.93			0.93			0.93			0.93	PHF	
		ınd (Drivewa		Westbound (Driveway "B")				und (Carlisle		Southbound (Carlisle Blvd.)			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Existing (2019)	0	0					0	0	0	0	0	0	
			0	0	0	0	-	-	-	-			
2031 (NO BUILD - P.M.)	0	0	0	0	0	0	0	2,180	0	0	1,621	0	
2031 (NO BOILD - P.M.)	0 0			-	-		-	-	-			0 0	
2031 (BUILD - P.M.)	0	0 0	0	0	0 0	0	0	2,180 2,190	0	0	1,621 1,738	0	
2031 (BUILD - P.M.)	0 <u>/ "C"</u>	0 0	0 0	0 0	0 0 0.89	<i>0</i> 58	0	2,180 2,190 0.89	0 105	0 0	1,621 1,738	0 PHF	
2031 (BUILD - P.M.) Indian School Rd. / Driveway (11)	0 / "C" Eastbound	0 0 0.89	0 0 hool Rd.)	0 0	0 0 0.89	58 hool Rd.)	0 0 Northbou	2,180 2,190 0.89 und (Drivew	0 105	0 0	1,621 1,738 0.89 und (Drivew	PHF	
2031 (BUILD - P.M.) Indian School Rd. / Driveway (11) 3.0% Truck	0 "C" Eastbound	0 0 0.89 d (Indian Sci	0 0 hool Rd.)	0 0 Westbound	0 0 0.89 I (Indian Sc	58 hool Rd.) Right	0 0 Northbou Left	2,180 2,190 0.89 und (Drivew	0 105 ay "C")	0 0 Southbo	1,621 1,738 0.89 und (Drivew	PHF ray "C") Right	
2031 (BUILD - P.M.) Indian School Rd. / Driveway (11) 3.0% Truck Existing (2019)	0 "C" Eastbound Left 0	0 0 0.89 d (Indian Sci Thru	0 0 hool Rd.) Right	0 0 0 Westbound	0 0 0 0.89 I (Indian Sc Thru	0 58 hool Rd.) Right 0	0 0 0 Northbou	2,180 2,190 0.89 und (Drivew Thru	0 105 ay "C") Right 0	0 0 Southbo	1,621 1,738 0.89 und (Drivew Thru	PHF ray "C") Right 0	
2031 (BUILD - P.M.) Indian School Rd. / Driveway (11) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.)	C"C" Eastbound Left 0 0	0 0 0 0.89 d (Indian Sc) Thru 0 598	0 0 0 hool Rd.) Right 0 0	Westbound Left 0 0 0	0 0 0 0.89 I (Indian So Thru 0 492	0 58 hool Rd.) Right 0 0	0 0 Northboo	2,180 2,190 0.89 und (Drivew Thru 0 0	0 105 ay "C") Right 0	Southbo Left 0 0	1,621 1,738 0.89 und (Drivew Thru 0	PHF ray "C") Right 0 0	
2031 (BUILD - P.M.) Indian School Rd. / Driveway (11) 3.0% Truck Existing (2019)	0 "C" Eastbound Left 0	0 0 0 0 0 0 0 0 1 (Indian Sci Thru 0 598 598	0 0 hool Rd.) Right	0 0 0 Westbound	0 0 0 0.89 1 (Indian Sc Thru 0 492 492	0 58 hool Rd.) Right 0	0 0 0 Northbou	2,180 2,190 0.89 Ind (Drivew Thru 0 0	0 105 ay "C") Right 0	0 0 Southbo	1,621 1,738 0.89 und (Drivew Thru 0 0	PHF ray "C") Right 0 0 26	
2031 (BUILD - P.M.) Indian School Rd. / Driveway (11) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.)	0 	0 0 0 0.89 d (Indian Sc) Thru 0 598 598	0 0 hool Rd.) Right 0 0	Westbound Left 0 0 0	0 0 0 0 0 0.89 1 (Indian Sc Thru 0 492 492 0.93	0 58 hool Rd.) Right 0 0 0 55	0 0 0 Northbox Left 0 0	2,180 2,190 0.89 und (Drivew Thru 0 0 0	0 105 ay "C") Right 0 0	0 0 0 Southbo Left 0 0 38	1,621 1,738 0.89 und (Drivew Thru 0 0 0	PHF ray "C") Right 0 0 26 PHF	
2031 (BUILD - P.M.) Indian School Rd. / Driveway (11) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.)	Eastbound 0 C'C'' Eastbound 0 0 37	0 0 0 0 0 0.89 d (Indian Sci Thru 0 598 598 0.93 d (Indian Sci	hool Rd.) Right 0 0 0 hool Rd.)	Westbound Left 0 0 Westbound	0 0 0 0 1 (Indian Sc Thru 0 492 492 0.93	0 58 hool Rd.) Right 0 0 55	Northbou Left 0 0 Northbou	2,180 2,190 0.89 Ind (Drivew Thru 0 0 0 0.93 und (Drivew)	0 105 ay "C") Right 0 0 0	Southbo Left 0 0 38	1,621 1,738 0.89 und (Drivew Thru 0 0 0 0.93 und (Drivew	PHF ray "C") Right 0 0 26 PHF ray "C")	
2031 (BUILD - P.M.) Indian School Rd. / Driveway (11) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.) 2031 (BUILD - A.M.)	Eastbound 0 C'' Eastbound 0 0 37 Eastbound Left	0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1	hool Rd.) Right 0 0 0 hool Rd.) Right	Westbound Left 0 0 Westbound Left Left U 0 Left U 0 Left	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 58 hool Rd.) Right 0 0 55 hool Rd.)	Northbou Left 0 0 Northbou	2,180 2,190 0.89 Ind (Drivew Thru 0 0 0 0.93 und (Drivew Thru	0 105 ay "C") Right 0 0 0	Southbo Left 0 38 Southbo Left	1,621 1,738 0.89 und (Drivew Thru 0 0 0 0.93 und (Drivew Thru	PHF ray "C") Right 0 26 PHF ray "C") Right	
2031 (BUILD - P.M.) Indian School Rd. / Driveway (11) 3.0% Truck Existing (2019) 2031 (NO BUILD - A.M.)	Eastbound 0 C'C'' Eastbound 0 0 37	0 0 0 0 0 0.89 d (Indian Sci Thru 0 598 598 0.93 d (Indian Sci	hool Rd.) Right 0 0 0 hool Rd.)	Westbound Left 0 0 Westbound	0 0 0 0 1 (Indian Sc Thru 0 492 492 0.93	0 58 hool Rd.) Right 0 0 55	Northbou Left 0 0 Northbou	2,180 2,190 0.89 Ind (Drivew Thru 0 0 0 0.93 und (Drivew)	0 105 ay "C") Right 0 0 0	Southbo Left 0 0 38	1,621 1,738 0.89 und (Drivew Thru 0 0 0 0.93 und (Drivew	PHF ray "C") Right 0 0 26 PHF ray "C")	

Projected Turning Movements Worksheet

Indian School Rd. / Girard Ct.

INTERSECTION: E-W Street: Indian School Rd. (1)

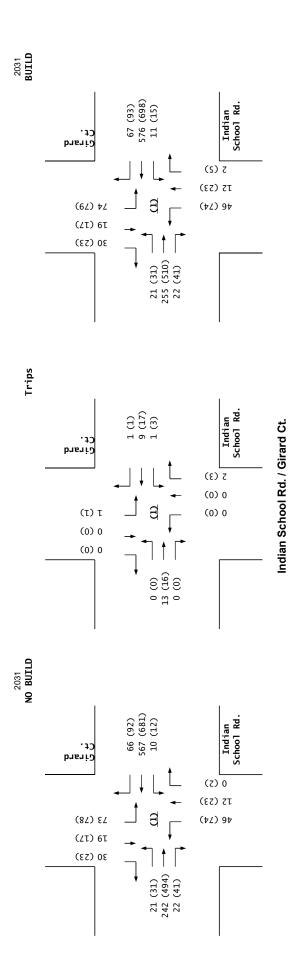
N-S Street: Girard Ct.

Year of Existing Counts 2019 Horizon Year 2031

Growth Rates 0.50% 3.90% 0.50% 0.50% Eastbound (Indian School Rd.) Westbound (Indian School Rd.) Northbound (Girard Ct.) Southbound (Girard Ct.) Right Left Thru Right Left **Existing Volumes** 21 28 20 228 386 45 43 11 0 69 18 Background Traffic Growth <u>14</u> <u>181</u> 21 4 Subtotal (NO BUILD - A.M.) 242 567 30 21 22 10 66 46 12 0 73 19 Percent Commercial Trips Generated(Entering) 0.00% 4.67% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.74% 0.37% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.74% 0.37% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 4.67% Total Trips Generated **Total AM Peak Hour BUILD Volumes** 30 21 255 22 11 576 67 46 12 74 19

Eastbound (Indian School Rd.) Westbound (Indian School Rd.) Northbound (Girard Ct.) Southbound (Girard Ct.) Left Thru Right Left Thru Right Left Thru Right Left Thru Right Existing Volumes 39 29 466 8 464 63 70 22 74 16 22 Background Traffic Growth 28 4 217 29 0 4 4 Subtotal (NO BUILD - P.M.) 31 494 41 12 681 92 74 23 2 17 23 0.00% 0.00% Percent Commercial Trips Generated(Entering) 4.67% 0.00% 0.00% 0.00% 0.00% 0.00% 0.74% 0.37% 0.00% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.74% 4.67% 0.37% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% Total Trips Generated 16 17 **Total PM Peak Hour BUILD Volumes** 31 510 15 698 23 17

Entering Exiting



Projected Turning Movements Worksheet

I-40 N.Ramp / Carlisle Blvd.

INTERSECTION: E-W Street: I-40 N.Ramp (2)

N-S Street: Carlisle Blvd.

Year of Existing Counts 2019 Horizon Year 2031

Growth Rates 3.00% 2.70% 0.50% 0.80% Eastbound (I-40 N.Ramp) Westbound (I-40 N.Ramp) Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.) Thru Right Left Thru Right Left Left **Existing Volumes** 312 418 281 0 0 329 1.023 0 0 749 Background Traffic Growth 0 0 107 101 <u>25</u> <u>61</u> 0 0 <u>72</u> 27 Subtotal (NO BUILD - A.M.) 436 413 443 821 308 0 0 0 11 1.084 0 0 Percent Commercial Trips Generated(Entering) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 19.21% 10.46% 0.00% 0.00% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 3.17% 19.21% 0.00% 0.00% 0.00% 0.00% Total Trips Generated 29 36 53 **Total AM Peak Hour BUILD Volumes** 449 1,120 874 308 0 0 465 11 413 0

Eastbound (I-40 N.Ramp) Westbound (I-40 N.Ramp) Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.) Thru Right Right Left Left Thru Right Left Thru Left Thru Right Existing Volumes 0 0 246 266 499 1,287 0 0 1,094 463 Background Traffic Growth 0 86 30 77 0 44 0 0 80 0 <u>105</u> Subtotal (NO BUILD - P.M.) 0 0 0 326 352 529 1,364 0 0 1,199 507 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% Percent Commercial Trips Generated(Entering) 10.46% 0.00% 0.00% 0.00% 19.21% 0.00% 19.21% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 3.17% 0.00% 0.00% 0.00% Total Trips Generated 0 37 68 0 68 **Total PM Peak Hour BUILD Volumes** 540 1,432

Entering Exiting

Projected Turning Movements Worksheet

I-40 S. Ramp / Carlisle Blvd.

INTERSECTION: E-W Street: I-40 S. Ramp (3)

N-S Street: Carlisle Blvd.

Year of Existing Counts 2019 Horizon Year 2031

Growth Rates 3.00% 2.70% 0.50% 0.80% Eastbound (I-40 S. Ramp) Westbound (I-40 S. Ramp) Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.) Thru Right Left Thru Right Left Right Left **Existing Volumes** 539 523 0 0 0 878 254 187 873 Background Traffic Growth <u>188</u> <u>194</u> 0 0 0 <u>53</u> <u>15</u> <u>18</u> <u>84</u> 0 Subtotal (NO BUILD - A.M.) 711 733 0 269 0 0 0 931 205 957 0 Percent Commercial Trips Generated(Entering) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 3.17% 0.00% 0.00% 0.00% 29.67% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 22.38% 10.46% 0.00% 0.00% 0.00% **Total Trips Generated** 82 20 **Total AM Peak Hour BUILD Volumes** 742 974 1,039 711 0 0 0 289 205

Eastbound (I-40 S. Ramp) Westbound (I-40 S. Ramp) Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.) Right Left Thru Thru Right Left Thru Right Left Thru Right Left Existing Volumes 477 508 11 0 0 1,264 435 401 955 Background Traffic Growth 183 172 26 0 0 0 0 76 38 92 0 Subtotal (NO BUILD - P.M.) 691 15 649 0 0 0 0 1,340 461 439 1,047 0 0.00% 0.00% 0.00% 0.00% 29.67% 0.00% Percent Commercial Trips Generated(Entering) 0.00% 0.00% 3.17% 0.00% 0.00% 0.00% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 22.38% 10.46% 0.00% 0.00% 0.00% Total Trips Generated 79 37 104 **Total PM Peak Hour BUILD Volumes** 691 15 1,419 1,151

Entering Exiting

Projected Turning Movements Worksheet

Indian School Rd. / Carlisle Blvd.

INTERSECTION: E-W Street: Indian School Rd.

N-S Street: Carlisle Blvd.

Year of Existing Counts 2019 Horizon Year 2031

Growth Rates 3.90% 0.50% 3.80% 0.50% Eastbound (Indian School Rd.) Westbound (Indian School Rd.) Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.) Right Left Right Left Right Left **Existing Volumes** 506 345 213 42 51 286 127 66 612 35 221 753 Background Traffic Growth <u>161</u> 100 20 <u>17</u> 30 <u>279</u> <u>16</u> <u>13</u> <u>45</u> 30 Subtotal (NO BUILD - A.M.) 303 506 313 51 536 62 54 135 96 891 234 798 Percent Commercial Trips Generated(Entering) 2.78% 3.00% 0.00% 0.00% 0.00% 0.00% 0.00% 30.00% 10.48% 0.00% 0.00% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 10.48% 3.00% 0.00% 0.00% 0.00% 0.00% 30.00% 2.78% 0.00% Total Trips Generated 83 57 20 **Total AM Peak Hour BUILD Volumes** 135 974 541 514 321 62 74 309 96 80 234 855

(4)

Eastbound (Indian School Rd.) Westbound (Indian School Rd.) Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.) Right Right Left Thru Right Left Thru Left Thru Right Left Thru Existing Volumes 79 47 385 546 330 225 108 945 228 862 439 Background Traffic Growth 180 256 37 49 431 21 20 14 14 52 26 Subtotal (NO BUILD - P.M.) 565 802 116 75 350 239 157 1,376 68 242 914 465 Percent Commercial Trips Generated(Entering) 2.78% 3.00% 0.00% 0.00% 0.00% 0.00% 0.00% 30.00% 10.48% 0.00% 0.00% 0.00% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 10.48% 3.00% 0.00% 0.00% 0.00% 0.00% 0.00% 30.00% 2.78% Total Trips Generated 10 11 37 11 106 37 107 10 **Total PM Peak Hour BUILD Volumes** 575 813 116 112 361 1,482 242

Entering Exiting

Projected Turning Movements Worksheet

Indian School Rd. / Washington St.

INTERSECTION: E-W Street: Indian School Rd. (5)

N-S Street: Washington St.

Year of Existing Counts 2019 Horizon Year 2031

Growth Rates 0.50% 0.50% 0.50% 0.50% Eastbound (Indian School Rd.) Westbound (Indian School Rd.) Northbound (Washington St.) Southbound (Washington St.) Right Left Thru Right Left Right Left Right Existing Volumes 39 34 61 215 18 228 66 166 36 38 119 145 Background Traffic Growth <u>13</u> <u>14</u> <u>10</u> Subtotal (NO BUILD - A.M.) 228 242 176 154 65 41 19 36 70 38 40 126 Percent Commercial Trips Generated(Entering) 0.00% 0.00% 0.00% 0.00% 15.32% 0.00% 0.00% 0.00% 3.85% 0.00% 0.00% 0.67% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.67% 15.32% 3.85% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% Total Trips Generated 42 29 **Total AM Peak Hour BUILD Volumes** 156 66 257 48 19 284 36 81 176 38 40 126

Existing Volumes
Background Traffic Growth

Subtotal (NO BUILD - P.M.)

Percent Commercial Trips Generated(Entering)

Percent Commercial Trips Generated(Exiting)

Total Trips Generated

Total PM Peak Hour BUILD Volumes

Eastboun	ıd (Indian Sc	chool Rd.)	Westbour	nd (Indian So	:hool Rd.)	Northbo	und (Washin	gton St.)	Southbo	und (Washin	gton St.)
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
176	475	82	41	294	59	70	266	52	51	261	141
<u>11</u>	<u>29</u>	<u>5</u>	<u>2</u>	<u>18</u>	4	<u>4</u>	<u>16</u>	<u>3</u>	<u>3</u>	<u>16</u>	<u>8</u>
187	504	87	43	312	63	74	282	55	54	277	149
0.00%	0.00%	0.00%	0.00%	15.32%	0.00%	3.85%	0.00%	0.00%	0.00%	0.00%	0.67%
0.67%	15.32%	3.85%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2	54	14	0	54	0	14	0	0	0	0	2
189	558	101	43	366	63	88	282	55	54	277	151

Entering Exiting

Number of Commercial Trips Generated 275 190 A.M. 100% Commercial Development 352 355 P.M.

Projected Turning Movements Worksheet

Constitution Av. / Carlisle Blvd.

INTERSECTION: E-W Street: Constitution Av. (6)

N-S Street: Carlisle Blvd.

Year of Existing Counts 2019 Horizon Year 2031

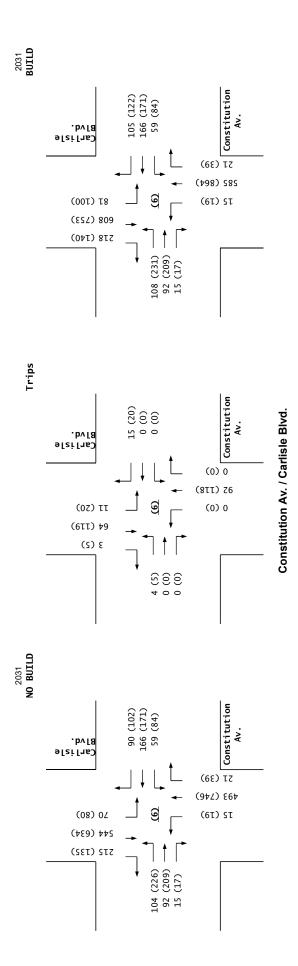
Growth Rates 0.50% 2.90% 0.50% 0.50% Eastbound (Constitution Av.) Westbound (Constitution Av.) Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.) Right Left Left Right Left **Existing Volumes** 67 203 98 14 44 123 14 465 20 66 513 Background Traffic Growth 6 <u>15</u> <u>43</u> <u>23</u> <u>28</u> 4 <u>31</u> 12 Subtotal (NO BUILD - A.M.) 544 215 104 92 15 59 166 90 15 493 21 70 Percent Commercial Trips Generated(Entering) 0.00% 0.00% 1.40% 0.00% 0.00% 0.00% 0.00% 5.55% 33.53% 0.00% 0.00% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 5.55% 33.53% 1.40% 0.00% **Total Trips Generated** 92 64 **Total AM Peak Hour BUILD Volumes** 108 92 105 585 218 15 59 166 15 21 81 608

Eastbound (Constitution Av.) Westbound (Constitution Av.) Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.) Right Left Thru Right Left Thru Left Thru Right Left Thru Right Existing Volumes 76 37 213 197 16 62 127 18 704 75 598 127 Background Traffic Growth 12 44 42 13 22 26 5 <u>36</u> Subtotal (NO BUILD - P.M.) 226 209 17 84 171 102 19 746 39 634 135 0.00% 0.00% Percent Commercial Trips Generated(Entering) 1.40% 0.00% 0.00% 0.00% 5.55% 0.00% 33.53% 0.00% 0.00% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 5.55% 33.53% 1.40% Total Trips Generated 20 118 20 119 **Total PM Peak Hour BUILD Volumes** 231 209 17 171 19

Entering Exiting

Number of Commercial Trips Generated 275 190 A.M. 100% Commercial Development 352 355 P.M.

WholeFoods TURNS-2031.xlsm - Turns 6



Projected Turning Movements Worksheet

I-40 EB Ramp / San Mateo Blvd.

INTERSECTION: E-W Street: I-40 EB Ramp (7)

N-S Street: San Mateo Blvd.

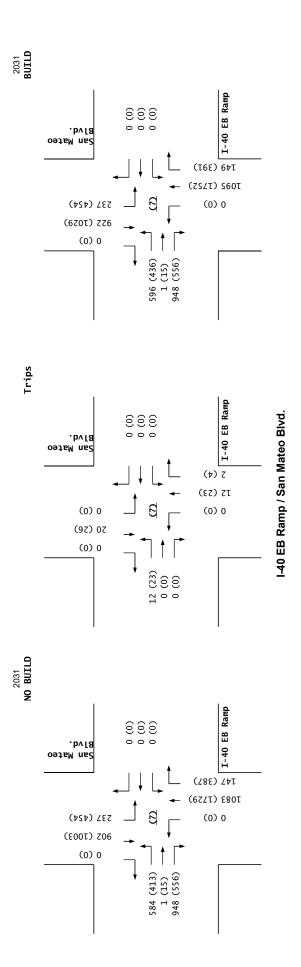
Year of Existing Counts 2019 Horizon Year 2031

Growth Rates 2.70% 2.80% 0.50% 0.50% Eastbound (I-40 EB Ramp) Westbound (I-40 EB Ramp) Northbound (San Mateo Blvd.) Southbound (San Mateo Blvd.) Thru Right Left Thru Right Left Left Right **Existing Volumes** 441 716 0 0 0 1.022 139 224 851 Background Traffic Growth 143 <u>232</u> 0 0 0 <u>61</u> <u>13</u> <u>51</u> 0 Subtotal (NO BUILD - A.M.) 584 948 237 1 0 0 0 0 1.083 147 902 0 Percent Commercial Trips Generated(Entering) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 7.40% Percent Commercial Trips Generated(Exiting) 6.41% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 6.40% 1.00% 0.00% 0.00% 0.00% **Total Trips Generated** 20 **Total AM Peak Hour BUILD Volumes** 948 596 0 0 0 0 1,095 149 237 922

Eastbound (I-40 EB Ramp) Westbound (I-40 EB Ramp) Northbound (San Mateo Blvd.) Southbound (San Mateo Blvd.) Right Right Left Thru Left Thru Right Left Thru Left Thru Existing Volumes 312 11 420 0 0 1,631 365 428 946 Background Traffic Growth 101 136 22 0 0 0 0 98 26 57 0 Subtotal (NO BUILD - P.M.) 413 15 556 0 0 0 0 1,729 387 454 1,003 0 0.00% 0.00% 0.00% 0.00% 0.00% Percent Commercial Trips Generated(Entering) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 7.40% 0.00% Percent Commercial Trips Generated(Exiting) 6.41% 0.00% 0.00% 0.00% 0.00% 0.00% 6.40% 1.00% 0.00% 0.00% 0.00% Total Trips Generated 23 26 0 **Total PM Peak Hour BUILD Volumes** 436 15 1,752

Entering Exiting

Number of Commercial Trips Generated 275 190 A.M. 100% Commercial Development 352 355 P.M.



Projected Turning Movements Worksheet

I-40 WB Ramp / San Mateo Blvd.

INTERSECTION: E-W Street: I-40 WB Ramp

N-S Street: San Mateo Blvd.

Year of Existing Counts 2019 Horizon Year 2031

Growth Rates 2.70% 2.80% 0.50% 0.50% Eastbound (I-40 WB Ramp) Westbound (I-40 WB Ramp) Northbound (San Mateo Blvd.) Southbound (San Mateo Blvd.) . Thru Right Left Right Left Right **Existing Volumes** 304 91 47 142 256 129 141 919 0 1,022 Background Traffic Growth <u>15</u> <u>46</u> 86 <u>43</u> 102 <u>55</u> 0 0 <u>61</u> 5 Subtotal (NO BUILD - A.M.) 188 406 62 0 342 172 149 974 0 0 1.083 96 Percent Commercial Trips Generated(Entering) 0.00% 0.00% 0.00% 0.00% 0.00% 1.00% 0.00% 0.00% 0.00% 0.00% 6.40% 6.41% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 12.81% 0.00% 0.00% 0.00% 0.00% **Total Trips Generated** 18 **Total AM Peak Hour BUILD Volumes** 188 345 406 1,101 114 62 0 172 149 998 0 0

(8)

Eastbound (I-40 WB Ramp) Westbound (I-40 WB Ramp) Northbound (San Mateo Blvd.) Southbound (San Mateo Blvd.) Right Right Right Right Left Thru Left Left Thru Left Thru Thru Existing Volumes 147 396 178 106 236 185 1,242 0 0 1,341 111 Background Traffic Growth 48 128 79 11 0 0 60 36 75 0 80 Subtotal (NO BUILD - P.M.) 195 0 524 238 142 315 196 1,317 0 0 1,421 118 0.00% 0.00% Percent Commercial Trips Generated(Entering) 0.00% 0.00% 1.00% 0.00% 0.00% 0.00% 0.00% 0.00% 6.40% 6.41% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 12.81% 0.00% 0.00% 0.00% Total Trips Generated 45 23 23 **Total PM Peak Hour BUILD Volumes** 195 524 242 142 1,362 1,444

Entering Exiting

Number of Commercial Trips Generated 275 190 A.M. 100% Commercial Development 352 355 P.M.

WholeFoods_TURNS-2031.xlsm - Turns_8

Projected Turning Movements Worksheet

Driveway "A" / Carlisle Blvd.

INTERSECTION: E-W Street: Driveway "A" (9)

N-S Street: Carlisle Blvd.

Year of Existing Counts 2019 Horizon Year 2031

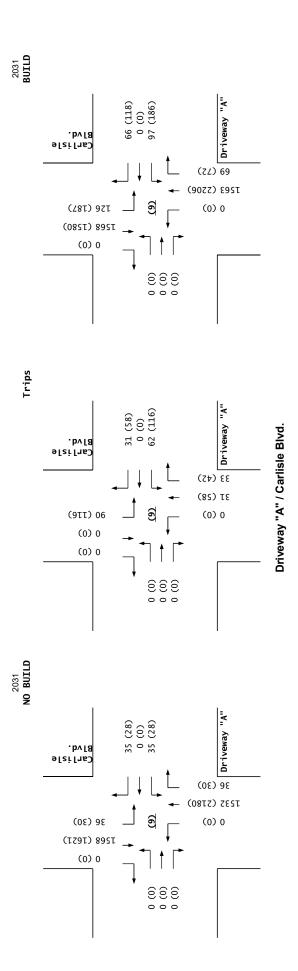
0.50% 0.50% 0.50% 0.50% **Growth Rates** Eastbound (Driveway "A") Westbound (Driveway "A") Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.) Thru Right Left Right Existing Volumes Background Traffic Growth 0 0 0 Subtotal 0 0 0 0 0 0 0 0 0 0 0 0 0 0 35 35 0 36 36 0 Burger King Adjustment 0 0 0 0 Subtotal (NO BUILD - A.M.) 0 0 35 0 35 0 1,532 36 36 1.568 0 0 Percent Commercial Trips Generated(Entering) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 12.00% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 32.78% 0.00% 16.42% 0.00% 16.42% 0.00% 0.00% 0.00% 0.00% Total Trips Generated 62 31 31 90 33 **Total AM Peak Hour BUILD Volumes** 69 1,568 0 0 97 66 1,563 126 0

	Eastbou	und (Drivew	ay "A")	Westbo	und (Drivew	ay "A")	Northbo	und (Carlisl	e Blvd.)	Southbo	und (Carlisle	e Blvd.)
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Subtotal	0	0	0	0	0	0	0	0	0	0	0	0
Burger King Adjustment	0	0	0	28	0	28	0	0	30	30	0	0
Subtotal (NO BUILD - P.M.)	0	0	0	28	0	28	0	2,180	30	30	1,621	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.00%	32.84%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	32.78%	0.00%	16.42%	0.00%	16.42%	0.00%	0.00%	0.00%	0.00%
Total Trips Generated	0	0	0	116	0	58	0	58	42	116	0	0
Subtotal PM Pk Hr. BUILD Volumes	0	0	0	144	0	86	0	2,238	72	146	1,621	0
Pass-by Trip Adjustments	0	0	0	42	0	32	0	-32	0	41	-41	0
Total PM Peak Hour BUILD Volumes	0	0	0	186	0	118	0	2,206	72	187	1,580	0

Exiting Entering Number of Commercial Trips Generated

275 A.M. 190 352 P.M. 355

100% Commercial Development



Projected Turning Movements Worksheet

Driveway "B" / Carlisle Blvd.

INTERSECTION: E-W Street: Driveway "B" (10)

N-S Street: Carlisle Blvd.

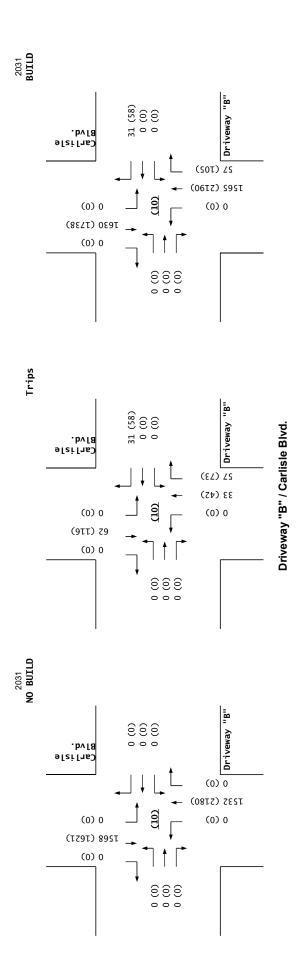
Year of Existing Counts 2019 Horizon Year 2031

Growth Rates 0.50% 0.50% 0.50% 0.50% Eastbound (Driveway "B")
Left Thru Righ Westbound (Driveway "B") Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.) Left Right Left Right Left Left **Existing Volumes** Background Traffic Growth 0 0 0 0 0 0 0 0 0 0 Subtotal (NO BUILD - A.M.) 0 0 0 0 0 0 0 0 1,532 0 1.568 0 Percent Commercial Trips Generated(Entering) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 12.00% 20.78% 0.00% 0.00% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.00% 0.00% 16.42% 0.00% 0.00% 0.00% 32.78% 0.00% Total Trips Generated 31 33 57 62 **Total AM Peak Hour BUILD Volumes** 1,565 1,630 57 0

	Eastbo	una (Drivew	ay "B")	westbo	una (Drivew	ay "B")	Nortnbo	una (Cariisi	e Biva.)	Southbo	ouna (Cariisi	e Biva.)
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Subtotal (NO BUILD - P.M.)	0	0	0	0	0	0	0	2,180	0	0	1,621	0
Percent Commercial Trips Generated(Entering)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.00%	20.78%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	16.42%	0.00%	0.00%	0.00%	0.00%	32.78%	0.00%
Total Trips Generated	0	0	0	0	0	58	0	42	73	0	116	0
Subtotal PM Pk Hr. BUILD Volumes	0	0	0	0	0	58	0	2,222	73	0	1,737	0
Pass-by Trip Adjustments	0	0	0	0	0	0	0	-32	32	0	1	0
Total PM Peak Hour BUILD Volumes	0	0	0	0	0	58	0	2,190	105	0	1,738	0

Number of Commercial Trips Generated Entering Exiting 190 190

275 190 A.M. 352 355 P.M. 100% Commercial Development



Projected Turning Movements Worksheet

Indian School Rd. / Driveway "C"

INTERSECTION: E-W Street: Indian School Rd. (11)

N-S Street: Driveway "C"

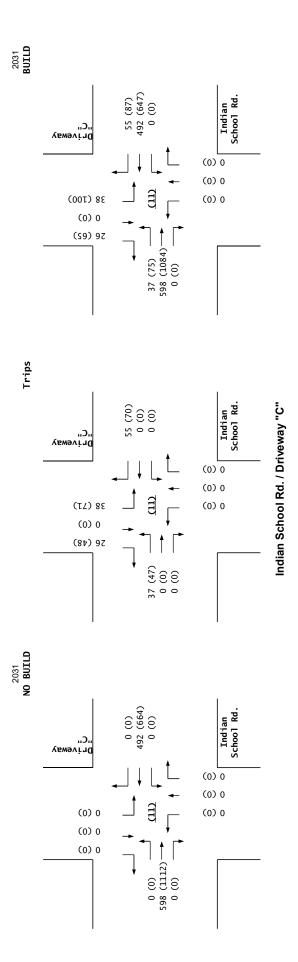
Year of Existing Counts 2019 Horizon Year 2031

Growth Rates 0.50% 0.50% 0.50% 0.50% Eastbound (Indian School Rd.) Westbound (Indian School Rd.) Northbound (Driveway "C") Southbound (Driveway "C") Thru Right Left Right Left Left **Existing Volumes** Background Traffic Growth 0 0 0 0 0 0 0 0 0 0 0 Subtotal (NO BUILD - A.M.) 598 492 0 0 0 0 0 0 0 0 0 0 Percent Commercial Trips Generated(Entering) 13.48% 0.00% 0.00% 0.00% 0.00% 19.91% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% Percent Commercial Trips Generated(Exiting) 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 19.91% 0.00% 13.48% Total Trips Generated 37 0 55 38 26 0 0 **Total AM Peak Hour BUILD Volumes** 37 598 492 55 38 26

	Eastboun	d (Indian Sc	hool Rd.)	Westbour	nd (Indian So	hool Rd.)	Northbo	und (Drivew	ay "C")	Southbo	und (Drivew	ay "C")
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Existing Volumes	0	0	0	0	0	0	0	0	0	0	0	0
Background Traffic Growth	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Subtotal (NO BUILD - P.M.)	0	1,112	0	0	664	0	0	0	0	0	0	0
Percent Commercial Trips Generated(Entering)	13.48%	0.00%	0.00%	0.00%	0.00%	19.91%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Percent Commercial Trips Generated(Exiting)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	19.91%	0.00%	13.48%
Total Trips Generated	47	0	0	0	0	70	0	0	0	71	0	48
Subtotal PM Pk Hr. BUILD Volumes	47	1,112	0	0	664	70	0	0	0	71	0	48
Pass-by Trip Adjustments	28	-28	0	0	-17	17	0	0	0	29	0	17
Total PM Peak Hour BUILD Volumes	75	1,084	0	0	647	87	0	0	0	100	0	65

Number of Commercial Trips Generated Entering Exiting 190 190

275 190 A.M. 352 355 P.M. 100% Commercial Development



Existing Analyses (2019)

HCM 6th Signalized Intersection Summary 1: Girard Ct. & Indian School Rd. Terry O. Brown, PE 06/27/2019

Timings 1: Girard Ct. & Indian School Rd.

Terry O. Brown, PE 06/27/2019

69 8.8

8.8

0 8 8

8.8

8.8

1.00 No 1856 262 0.87

Initial Q (Qb), veh
Ped-Bite Adi(A, pbT)
Parking Bus, Adi
Work Zone On Approach
Adj Sat Flow, vehh/lin
Adj Flow State, vehh/
Peak Hour Fador
Percent Heavy Veh, %

228

Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)

8 8 0 8 8

24 0 0.1 0.00 0.1

1.00 No 1856 21 21 0.87

1.00 No 13 13 0.87

1856 49 0.87

1856 79 0.87

	`	Ť	•	,		_	٠	→	
-ane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
-ane Configurations	*	₹	*	₩.	*	æ,	*	2	
raffic Volume (vph)	20	228	7	386	43	Ξ	69	.8	
Future Volume (vph)	20	228	7	386	43	1	69	18	
urn Type	Perm	≨	Perm	ΑĀ	Perm	ΑN	Perm	N A	
Protected Phases		4		∞		2		9	
Permitted Phases	4		∞		2		9		
Detector Phase	4	4	∞	∞	2	2	9	9	
Switch Phase									
Minimum Initial (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	5.0	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	
otal Split (s)	30.0	30.0	30.0	30.0	25.0	25.0	25.0	25.0	
otal Split (%)	24.5%	54.5%	54.5%	24.5%	45.5%	45.5%	45.5%	45.5%	
rellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1:0	1.0	1:0	1.0	1.0	1.0	1:0	1.0	
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0:0	
otal Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	5.0	
Lead/Lag									
.ead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min	Min	
Act Effct Green (s)	36.4	36.4	36.4	36.4	9.8	9.8	9.8	9.8	
Actuated g/C Ratio	99:0	99.0	99.0	99.0	0.16	0.16	0.16	0.16	
//c Ratio	0.0	0.12	0.01	0.22	0.24	0.05	0.37	0.18	
Control Delay	4.3	3.7	2.3	2.7	21.9	17.8	24.7	12.2	
∆ueue Delay	0.0	0.0	0:0	0.0	0.0	0.0	0.0	0:0	
otal Delay	4.3	3.7	2.3	2.7	21.9	17.8	24.7	12.2	
SO:	∢	∢	∢	⋖	ပ	ш	ပ	В	
pproach Delay		3.8		2.7		21.0		19.7	
pproach LOS		∢		∢		O		В	
ntersection Summary									
ycle Length: 55									
Actuated Cycle Length: 55									
Offset: 17.6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	ced to phas	se 4:EBTI	Land 8:W	BTL, Sta	rt of Gree	_			
Vatural Cycle: 45									
Control Type: Actuated-Coordinated	ordinated								
Maximum v/c Ratio: 0.37									
ntersection Signal Delay: 6.4	4.			드	Intersection LOS: A	LOS: A			
ntersection Capacity Utilization 35.4%	ation 35.4%			⊇	U Level	ICU Level of Service A	⋖		
Analysis Doring (min) 15									

3 00.10 131 14 14 191 00.07 10.07 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10

3 232 0.10 0.10 1.00 0.10 0.04 0.04 0.04 0.10 0.11 1.00 0.11 1.00 0.11 1.00 0.11 1.00 0.11 1.00 0.11 1.00 0.11 1.10 0.11 1.10 0.11 1.10 0.11 1.10 0.11 1.10 0.11 1.10 0.11 1.10 0.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11

Cap, veh/h
Arrive On Green
Sat Flow, veh/h
Gp Volume(v), veh/h
Grp Sat Flow(s), veh/h
Grp Sat Flow(s), veh/h
Grp Carrig_c), s
Cycle Q Clear(g_c), s
Prop in Lane
Lane Grp Cap(c), veh/h

0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

0.19 0.33 0.77 8.4 0.3 0.0 2.1

1258 0.11 1.00 1.00 2.4 0.2 0.0 0.0

Uniform Delay (d), s/veh

Upstream Filter(I)

V/C Ratio(X)
Avail Cap(c_a), veh/h
HCM Platoon Ratio

0.0 132

24.4

22.4 C

0.0

24.9

8.6 A 504 8.6 A

7.2

2.6

2.6 A

4.6

Incr Delay (d2), s/veh Initial Q Delay(d3),s/veh Skile BackOf(g8%),veh/in Unsig. Movement Delay, s/veh LnGrp Delaay(d),s/veh LnGrp LOS

309 2.8 A

Approach Delay, s/veh Approach LOS imer - Assigned Phs

Approach Vol, veh/h

63 C C

44.3 5.0 25.0 8.2 2.5

5.0 5.0 5.4 5.4 0.4

44.3 5.0 25.0 8.8 1.4

5.0 5.0 5.5 5.5 0.1

Change Period (Y+Rc), s Max Green Setting (Gmax), s Max Q Clear Time (g_c+11), s Green Ext Time (p_c), s

HCM 6th Ctrl Delay HCM 6th LOS

Phs Duration (G+Y+Rc), s

0.00

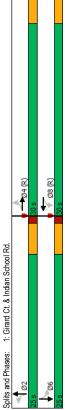
0.0 0.0

3 0.10 663

1.00 No 1856 444 0.87 3 3 2270 0.24 1763 6.1

3 878 0.24 1085

3 2332 0.71 3268 140 1763 1.4



Synchro 10 Report 2019AX.syn

Synchro 10 Report 2019AX.syn

HCM 6th Signalized Intersection Summary 2: Carlisle Blvd. & I-40 WB Ramp

Timings 2: Carlisle Blvd. & I-40 WB Ramp

Terry O. Brown, PE 06/27/2019

(t)		EBT E	CBD		FO.			NBT	aaN	ā	F	
(r) (r) aach			5	WBL	MBI	WBR	펄		אמו	OBL	SBI	SBR
() () ach				r	÷	*	K.	**			**	*-
(r ach	0	0	0	329	∞	312	418	1023	0	0	749	281
nitial Q (Qb), veh Ped-Bike Adj(A_pbT) Parking Bus, Adj Work Zone On Approach Adj Sat Flow, veh.fi/lin	0	0	0	329	∞	312	418	1023	0	0	749	281
Ped-Bike Adj(A_pbT) Parking Bus, Adj Work Zone On Approach Adj Sat Flow, vehh/in				0	0	0	0	0	0	0	0	0
Parking Bus, Adj Work Zone On Approach Adj Sat Flow, veh/h/In				9.		9.	1:00		1.00	1.00		1.0
Nork zone Un Approach Adj Sat Flow, veh/h/In				1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.5	1.00
Adj Sat Flow, ven/h/ln				01.01	2 5	01.01	0107	02 0	•	•	02 0	
9/4011 0040				1856	1856	1856	1856	1856	0 0	0	1856	1856
Auj Flow Rate, Veliiii Deak Hour Eactor				070	080	080	0.470	080	0 80	0 80	047	0 80
Percent Heavy Veh %				9 6	9 6	3	9 6	9 6	9	99	3	3 6
Cap. veh/h				886	0	394	526	3336	0	0	2328	,
Arrive On Green				0.25	0.00	0.25	0.31	1.00	0.00	0.00	0.46	0.00
Sat Flow, veh/h				3534	0	1572	3428	5233	0	0	5233	1572
Grp Volume(v), veh/h				376	0	351	470	1149	0	0	842	0
Grp Sat Flow(s),veh/h/In				1767	0	1572	1714	1689	0	0	1689	1572
വ Serve(g_s), s				9.8	0.0	23.7	14.4	0.0	0.0	0.0	11.9	0.0
Cycle Q Clear(g_c), s				8.6	0.0	23.7	14.4	0.0	0.0	0.0	11.9	0.0
Prop In Lane				9.		9:	1:00		0.00	0.00		1:00
Lane Grp Cap(c), veh/h				988	0 0	38	526	3336	0 8	0	2328	
V/C Katio(X)				1007	0.00	0.89	0.89	9336	0.00	0.00	0.36	
HCM Platoon Ratio				1.00	1.00	9 7	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.90	06.0	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				34.6	0.0	39.8	37.2	0.0	0.0	0.0	19.3	0.0
Incr Delay (d2), s/veh				0.3	0.0	15.9	13.5	0.3	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0:0	0.0	0:0	0.0	0:0	0.0	0.0
%ile BackOfQ(95%),veh/ln				9.7	0.0	16.2	9.7	0.1	0.0	0.0	8.1	0.0
Onsig. Movement Delay, siven				0 1/0	c	7 22	0	0	0	c	107	0
LIGIP Delay(u),s/veii				ا ان ح	5. A	Н	9:9:0	5 ⋖	8.0	9. e	- B	5
Approach Vol. veh/h					727			1619			842	
Approach Delay, s/veh					6.44			14.9			19.7	
Approach LOS					Ω			Ф			മ	
Timer - Assigned Phs		2			2	9		8				
Phs Duration (G+Y+Rc), s	7	77.4			21.9	52.5		32.6				
Change Period (Y+Rc), s		5.0			2.0	2.0		2.0				
Max Green Setting (Gmax), s	9	0.99			19.0	42.0		34.0				
Max Q Clear Time (g_c+l1), s		2.0			16.4	13.9		25.7				
Green Ext Time (p_c), s	<u>~</u>	8.01			0.5	6.4		6:				
Intersection Summary												
HCM 6th Ctrl Delay		2	23.0									
HCM 6th LOS			ပ									
Notes												

5.0 21.0 47.0 4.0 4.0 1.0 0.0 5.0 Lag

5.0 21.0 71.0 64.5%

5.0 10.0 24.0 21.8%

5.0 21.0 39.0 35.5%

5.0 21.0 39.0

5.0 21.0 39.0 35.5%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

329 329 Perm

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase 4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

0.0

C-Max 47.1 0.43 0.37 3.9 0.0 3.9 A

C-Max 70.7 0.64 0.36 14.5 0.1

Min 18.5 0.17 0.82 54.9 0.0 54.9

Min 29.3 0.27 0.84 55.8 0.0 0.0 55.8

Min 29.3 0.27 0.43 35.5 0.0 35.5 D

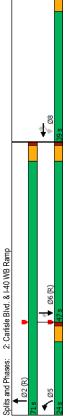
Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 29.3 0.27 0.43 35.4 0.0 0.0 0.0 0.0 45.2

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

C-Max 47.1 0.43 0.39 23.3 0.0 23.3 C C 18.0

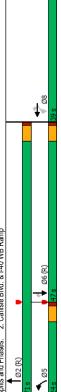


Intersection LOS: C ICU Level of Service A

Intersection Signal Delay: 27.5 Intersection Capacity Utilization 51.1% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.84

Actuated Cycle Length: 110 Offset: 101.2 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 60



2019 AM Peak Existing Conditions - Existing Geometry

Synchro 10 Report 2019AX.syn

2019 AM Peak Existing Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary Terry O. Brown, PE 3: Carlisle Blvd. & I-40 EB Ramp

Timings 3: Carlisle Blvd. & I-40 EB Ramp

†

873 NA

> 187 187 Prot

> > 254 254

539 539 Pem

523 523 Perm

Lane Configurations
Traffic Volume (vph)
Future Volume (vph)
Turn Type
Protected Phases
Protected Phases
Defector Phase

Movement Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)							-					
Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (veh/h) Future Volume (veh/h)	K.	£	N/N					H	*	K.	**	
Future Volume (veh/h)	523	2	539	0	0	0	0	878	254	187	873	J
	523	S	539	0	0	0	0	878	254	187	873	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1:00		1.00				1.00		1.00	1.00		1:00
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		2						2			2	
Adj Sat Flow, veh/h/In	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	901	0	624				0	1009	292	212	1003	0
Peak Hour Factor	0.87	0.87	0.87				0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	က	က	က				0	က	က	က	က	0
Cap, veh/h	746	0 0	995				0 8	4295	833	278	3536	0
Sat Flow veh/h	3534	0.00	4717				0.00	7867	1572	3428	5233	0.00
Gro Volume(v) veh/h	601	0	624				c	1009	262	215	1003	
Grp Sat Flow(s),veh/h/ln	1767	0	1572				0	1503	1572	1714	1689	0
Q Serve(g_s), s	17.8	0.0	13.2				0.0	0.0	0.0	6.7	2.1	0.0
Cycle Q Clear(g_c), s	17.8	0.0	13.2				0.0	0.0	0.0	6.7	2.1	0.0
Prop In Lane	1:00		1.00				0.00		1.00	1.00		0.0
Lane Grp Cap(c), veh/h	746	0	395				0	4295	899	278	3536	0
V/C Ratio(X)	0.81	0.00	0.63				0.00	0.23	0.32	0.77	0.28	0.0
Avail Cap(c_a), veh/h	006	0	1201				0	4295	899	374	3536	0
HCM Platoon Ratio	1.00	9.	1.00				00.	2.00	2.00	1.33	.33	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	9.70	0.76	0.92	0.92	0.00
Uniform Delay (d), s/veh	41.3	0.0	39.5				0.0	0.0	0.0	48.1	ر دن	0.0
Incr Delay (d2), s/veh	4.6	0.0	0.7				0.0	0.1	0.7	6.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOtQ(95%),ven/in	17.8	0.0	8.5				0.0	0.0	0.3	5.4	1.0	
Unsig. Movement Delay, s/ven	45.8	0	40.2				0	5	7 0	24.4	7	0
LnGm LOS	2.5	S 4	2.64				8	5 ⋖	. A	5	. ⋖	3
Approach Vol. veh/h		1225						1301			1218	
Approach Delay, s/veh		43.0						0.2			10.8	
Approach LOS		۵						¥			Ф	
Timer - Assigned Phs	-	2		4		9						
Phs Duration (G+Y+Rc), s	13.9	6.79		28.2		81.8						
Change Period (Y+Rc), s	2.0	2.0		2.0		2.0						
Max Green Setting (Gmax), s	12.0	22.0		28.0		72.0						
Max Q Clear Time (g_c+l1), s	8.7	2.0		19.8		4.1						
Green Ext Time (p_c), s	0.2	10.5		3.4		8.9						
Intersection Summary												
HCM 6th Ctrl Delay			17.7									
HCM 6th LOS			ш									

C-Max 73.6 0.67 0.30 10.0 10.0 B 20.9 C

Min 11.1 0.10 0.63 0.0 0.0 71.5

C-Max 57.5 0.52 0.30 2.7 2.7 2.7

C-Max 57.5 0.52 0.26 12.1 12.1

Min 26.4 0.24 0.61 41.1 41.1

Min 26.4 0.24 0.74 44.5 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 26.4 0.24 0.62 45.5 0.0 0.0 45.5 D D

10.0

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

5.0 21.0 77.0 70.0% 4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

4.0 1.0 0.0 5.0

5.0 10.0 17.0 15.5%

5.0 21.0 60.0 54.5%

5.0 21.0 60.0 54.5%

5.0 21.0 33.0 30.0%

5.0 21.0 33.0 30.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

User approved volume balancing among the lanes for turning movement

eport Synn

2019 AM Peak Existing Conditions - Existing Geometry

Synchro 10 Report 2019AX.syn

₽04

3: Carlisle Blvd. & I-40 EB Ramp

Splits and Phases:

Ø6 (R)

Intersection LOS: C ICU Level of Service A

Intersection Signal Delay: 24.5 Intersection Capacity Utilization 51.1% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.74

Actuated Cycle Length: 110 Offset: 101.2 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 55 2019 AM Peak Existing Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 4: Carlisle Blvd. & Indian School Rd.

Timings 4: Carlisle Blvd. & Indian School Rd.

†

506 506

345

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase

Protected Phases

Terry O. Brown, PE 06/27/2019

Feb. EBr EBr Web. Web Neb Ne		4	†	^	\	ţ	4	•	←	•	٠	→	•
Helical Field Well Well Well Wild Wild Wild Wild Wild Wild Wild Wi		ā	Ė	- 6		H	9	- 5	- 5	- 5	ā	. 6	9
345 213 42 51 286 127 66 612 35 221 753 345 213 42 51 286 127 66 612 35 221 753 345 213 42 51 286 127 66 612 35 221 753 345 213 42 51 286 127 66 612 35 221 753 34 100 100 1.00 1.00 1.00 1.00 1.00 1.00	Movement	EBL	EBI	EBK	WBL	WBI	WBK	NBL	NBI	NBK	SBL	SBI	XX Y
345 213 42 51 286 177 66 612 35 221 753 753 753 754 753 754 755 754 755 755 755 755 755 755 755	Lane Configurations	-	<u>₹</u>		-	*		-	‡		. -	‡	*
345 213 42 51 286 127 66 612 35 221 753 1 100 100 100 100 100 100 100 100 100	Traffic Volume (veh/h)	345	213	45	21	286	127	99	612	32	221	753	506
100	Future Volume (veh/h)	342	213	45	51	786	127	99	612	32	53	753	206
100 100 100 100 100 100 100 100 100 100	Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
100 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		1:00
No	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
1856 1856 1866 1866 1866 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856	Work Zone On Approach		8			S			S			S	
388 239 47 57 321 143 74 688 39 248 846 869 89 0.89 0.89 0.89 0.89 0.89 0.89 0.89	Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.89	Adj Flow Rate, veh/h	388	239	47	24	321	143	74	889	33	248	846	269
434 918 177 326 39 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	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
434 918 177 326 396 173 243 1748 99 423 1466 1362 236 0.32 0.52 0.52 0.52 0.52 0.52 0.52 0.52 0.5	Percent Heavy Veh, %	က	က	က	က	က	က	က	ო	က	က	က	က
1767 2946 570 1767 2388 1042 1767 496 277 1767 3526 570 1767 2388 1042 1767 473 254 248 3526 570 1767 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1	Cap, veh/h	434	918	177	326	396	173	243	1748	66	423	1466	954
1767 2946 570 1767 2388 1042 1767 4906 277 1767 3558	Arrive On Green	0.32	0.52	0.52	0.02	0.17	0.17	0.03	0.24	0.24	0.14	0.55	0.55
celulu 186 141 145 57 235 229 74 473 254 248 846 vehiclin 167 1763 1767 1763 1768 1763 1688 1769 1806 1767 1763 1763 1768 1763 1768 1763 1768 1763 1768 1763 1768 1763 1768 1763 1768 1763 1768 1769 1806 1767 1763 1769 1769 1769 1769 1769 1769 1769 1769	Sat Flow, veh/h	1767	2946	220	1767	2388	1042	1767	4906	277	1767	3526	1572
vehirlin 1767 1763 1753 1767 1763 1668 1767 1869 1806 1767 1763 1753 1767 1763 1668 1767 1869 1806 1767 1763 1753 1767 1763 1668 1767 1869 1806 1767 1763 1.0	Grp Volume(v), veh/h	388	141	145	25	235	229	74	473	254	248	846	269
c), s 20.1 4.9 5.0 2.9 14.1 14.6 2.9 12.9 13.0 9.5 17.3 (1.9), s 20.1 4.9 5.0 2.9 14.1 14.6 2.9 12.9 12.9 13.0 9.5 17.3 (1.9), vehl/h 434 549 546 326 293 277 243 1204 644 423 1466 (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9) (1.9)	Grp Sat Flow(s),veh/h/ln	1767	1763	1753	1767	1763	1668	1767	1689	1806	1767	1763	1572
20.1 4.9 5.0 2.9 14.1 14.6 2.9 12.9 13.0 95 17.3 1.00 0.33 1.00 0.62 1.00 0.15 1.00 0.15 1.00 0.15 1.00 0.15 1.00 0.15 1.00 0.15 1.00 0.15 1.00 0.15 1.00 0.15 1.00 0.15 1.00 0.15 1.00 0.15 1.00 0.15 1.00 0.15 1.00 0.15 1.00 0.15 1.00 0.15 1.00 0.10 0.1	Q Serve(g_s), s	20.1	4.9	2.0	2.9	14.1	14.6	5.9	12.9	13.0	9.2	17.3	23.1
100 0.33 1.00 0.62 1.00 0.15 1.00 0.15 1.00 0.39 0.40 0.43 0.39 0.40 0.43 0.28 0.28 0.28 0.28 0.28 0.28 0.39 0.40 0.39 0.40 0.59 0.80 0.89 0.39 0.40 0.39 0.40 0.59 0.80 0.39 0.39 0.40 0.59 0.39 0.39 0.39 0.39 0.39 0.39 0.39 0.3	Cycle Q Clear(g_c), s	20.1	4.9	2.0	5.9	14.1	14.6	2.9	12.9	13.0	9.5	17.3	23.1
434 549 546 326 293 277 243 1204 644 423 1466 689 0.26 0.26 0.17 0.80 0.83 0.30 0.39 0.40 0.59 0.58 434 549 546 438 401 379 356 1204 644 430 1466 167 167 167 1.00 1.00 0.67 0.67 0.67 133 1.33 248 159 0.39 0.39 0.39 0.39 0.39 0.39 0.40 0.59 0.88 248 167 167 1.00 1.00 1.00 0.67 0.67 0.67 133 1.33 248 173 34 3.5 34 41 44.3 21.5 31.9 31.9 18.2 18.2 200 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Prop In Lane	1.00		0.33	1.00		0.62	1.00		0.15	1.00		9.
0.89 0.26 0.26 0.17 0.80 0.83 0.30 0.39 0.40 0.59 0.88 0.44 0.45 0.46 0.44 4.30 1.46 0.43 0.39 0.40 0.59 0.89 0.99 0.99 0.99 0.99 0.98 0.99 0.98 0.90 0.97 0.97 0.97 0.93 0.93 0.93 0.90 0.90 0.99 0.98 0.98 0.97 0.97 0.97 0.93 0.93 0.93 0.90 0.90 0.90 0.98 0.98 0.97 0.97 0.97 0.93 0.93 0.93 0.90 0.90 0.90 0.90 0.90	Lane Grp Cap(c), veh/h	434	549	246	326	293	277	243	1204	644	423	1466	954
434 549 546 438 401 379 356 1204 644 430 1466 167 167 167 167 160 1.00 0.67 0.67 0.67 0.67 133 1.33 0.99 0.99 0.99 0.99 0.99 0.99 0.99 0	V/C Ratio(X)	0.89	0.26	0.26	0.17	0.80	0.83	0.30	0.39	0.40	0.59	0.58	0.60
167 167 167 167 100 100 067 067 067 133 133 133 139 199 039 039 039 039 039 039 039 039 039 0	Avail Cap(c_a), veh/h	434	246	246	438	401	379	356	1204	644	430	1466	954
0.99 0.99 0.99 0.98 0.98 0.97 0.97 0.97 0.93 0.93 0.93 0.99 0.99 0.98 0.98 0.98 0.97 0.97 0.97 0.93 0.93 0.93 0.99 0.99 0.98 0.98 0.98 0.97 0.97 0.97 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93	HCM Platoon Ratio	1.67	1.67	1.67	9.	1.00	9:	0.67	0.67	0.67	1.33	 83	1.33
24.8 19.3 19.4 35.3 44.1 44.3 21.5 31.9 31.9 182 182 20.4 0.2 0.3 0.2 80 10.2 0.7 0.9 1.8 1.9 15. 20.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Upstream Filter(I)	0.99	0.99	0.99	0.98	0.98	0.98	0.97	0.97	0.97	0.93	0.93	0.93
204 02 03 02 80 102 07 09 18 19 15 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Uniform Delay (d), s/veh	24.8	19.3	19.4	35.3	4	44.3	21.5	31.9	31.9	18.2	18.2	10.0
137 34 3.5 22 10.8 10.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Incr Delay (d2), s/veh	20.4	0.2	0.3	0.2	8.0	10.2	0.7	0.0	. 6	0.6	7.5	2.6
13.7 34 35 22 10.8 10.8 2.2 9.5 10.3 6,7 10.2 s/veh 45.2 196 196 35.6 52.1 54.5 22.2 32.8 33.7 20.1 19.8 67.4 10.2 8.2 10.8 10.8 2.2 32.8 33.7 20.1 19.8 67.4 2.3 10.8 10.8 10.8 10.8 10.8 10.8 10.8 10.8	Initial Q Delay(d3),s/veh	0.0	0:0	0.0	0:0	0.0	0:0	0.0	0.0	0.0	0.0	0:0	0.0
siven 45.2 19.6 19.6 35.6 52.1 54.5 22.2 32.8 33.7 20.1 19.8 67.4 52.1 64.5 22.2 32.8 33.7 20.1 19.8 67.4 52.1 67.4 801 66.3 67.4 52.1 801 66.3 67.4 67.4 52.1 67.4 32.1 17.3 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2 6.2	%ile BackOfQ(95%),veh/ln	13.7	3.4	3.5	2.2	10.8	10.8	2.2	9.5	10.3	2.9	10.2	9.7
10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Unsig. Movement Delay, s/ven	45.0	307	3 01	25.0	52	2 7 2	000	000	7 00	20.4	400	10,
674 521 801 1663 34.3 51.4 32.1 17.3 C D D C B S 165 442 10.0 39.3 10.0 50.7 26.0 23.3 6.0 50 50 50 50 5.0 5.0 6.0 320 12.0 34.0 12.0 32.0 21.0 25.0 1), s 115 150 4.9 7.0 4.9 25.1 22.1 16.6 10 42 0.0 1.5 0.1 4.2 0.0 1.7 28.5	Lingip Delay(u),s/veii Lingip LOS	7.0	9. B	9 9 8	0.00	- C	C.+C	7 0	02.0	3	- C	<u> </u>	8.5 B
34.3 51.4 32.1 C D D C C D S A 5 6 7 8 5 16.5 44.2 10.0 39.3 10.0 50.7 26.0 23.3 6,5 12.0 32.0 12.0 34.0 12.0 32.0 21.0 25.0 1),5 14.5 15.0 4.9 7.0 4.9 25.1 22.1 16.6 1,6 14.2 0.0 1.5 0.1 4.2 0.0 1.7 28.5	Approach Vol. veh/h		674			521			801			1663	
C D C C C C C C C C C C C C C C C C C C	Approach Delay, s/veh		34.3			51.4			32.1			17.3	
1 2 3 4 5 6 7 1 65 442 10.0 39.3 10.0 50.7 26.0 5 0 5 0 5 0 5 0 5 0 5 0 0,s 120 320 12.0 34.0 12.0 32.0 21.0 1),s 11.5 15.0 4.9 7.0 4.9 25.1 22.1 0.0 42 0.0 1.5 0.1 4.2 0.0	Approach LOS		ပ			Ω			O			Ф	
5. 165 442 10.0 39.3 10.0 50.7 26.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 0,8 120 320 12.0 34.0 12.0 32.0 21.0 1),8 11.5 15.0 4.9 7.0 4.9 25.1 22.1 0.0 42 0.0 1.5 0.1 4.2 0.0	Timer - Assigned Phs	_	2	က	4	വ	9	7	∞				
5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Phs Duration (G+Y+Rc), s	16.5	44.2	10.0	39.3	10.0	50.7	26.0	23.3				
(Gmax), s 12.0 32.0 12.0 34.0 12.0 32.0 21.0 g.c+tl), s 11.5 15.0 4.9 7.0 4.9 25.1 22.1 c), s 0.0 4.2 0.0 1.5 0.1 4.2 0.0 1.7 0.1 4.2 0.0 1.7 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1	Change Period (Y+Rc), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
g_c+fl),s 11.5 15.0 4.9 7.0 4.9 25.1 22.1 c),s 0.0 4.2 0.0 1.5 0.1 4.2 0.0 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7	Max Green Setting (Gmax), s	12.0	32.0	12.0	34.0	12.0	32.0	21.0	25.0				
c), s 0.0 4.2 0.0 1.5 0.1 4.2 0.0 iry 28.5	Max Q Clear Time (g_c+I1), s	11.5	15.0	4.9	7.0	4.9	25.1	22.1	16.6				
Įny	Green Ext Time (p_c), s	0.0	4.2	0.0	1.5	0.1	4.2	0.0	1.7				
	Intersection Summary												
	HCM 6th Ctrl Delav			28.5									
	HCM 6th LOS			O									

5.0 10.0 26.0 23.6% 4.0 1.0 0.0 5.0 Lead

5.0 21.0 37.0 33.6%

5.0 10.0 26.0 23.6%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0

1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead Min 68.0 0.62 0.52 14.6 0.0 14.6

Min 54.2 0.49 0.65 23.9 0.0 23.9

Min 0.41 0.28 0.0 0.0 16.8

Min 32.4 0.29 0.28 28.9 0.0 28.9 C C C C D

> Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

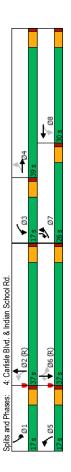
Min 45.0 0.94 0.94 58.6 0.0 58.6

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

C-Max 36.9 0.34 0.43 29.2

C-Max 42.0 0.38 0.63 26.5 0.0 26.5 C C C

0.0



Intersection LOS: C ICU Level of Service C

Intersection Signal Delay: 30.6 Intersection Capacity Utilization 72.7% Analysis Period (min) 15

Control Type: Actuated-Coordinated

Actuated Cycle Length: 110 Offset: 8.8 (8%), Referenced to phase 2.NBTL and 6:SBTL, Start of Green 2019 AM Peak Existing Conditions - Existing Geometry

Synchro 10 Report 2019AX.syn

HCM 6th Signalized Intersection Summary 5: Washington St. & Indian School Rd Terry O. Brown, PE

145 0 1.00 1.00

0 88 88 8.8

36 0 8.8

99 0 00.

¥ 4 0 8 8

ああ 0 9 9

00.1

8.8

166

28 28

Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)

†

1.00 No 1456 0.82 0.82 170 760

1.00 No 1856 202 0.82 3 330 0.22 1476

1.00 No 1856 278 0.82 3 3 1237 0.40 0.40 157 157 4.7

1.00 No No 1856 262 0.82 3 3 11195 1153 1763 4.6

74 0.82

Initial Q (Qb), veh
Ped-Bite Adi(A, pbT)
Parking Bus, Adi
Work Zone On Approach
Adj Sat Flow, vehh/lin
Adj Flow State, vehh/
Peak Hour Fador
Percent Heavy Veh, %

1856 1777 1777 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878 1878

46 46 0.08 3 3 3 46 1.5 1.5 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

80 80 90 3 3 3 3 3 3 3 4 80 100 100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100 1100

9856 411 9.82 3 3 3 4.8 4.8 4.8 4.8 7.71 1.00 1.00 1.5 8 9.0.2 3.4 9.0.3 3.4

Cap, vehinh
Arrive On Green
Sat Flow, vehinh
Grp Volume(v), vehinh
Grp Sat Flow(s), vehinh
Q Serve(g, S), s
Cycle Q Clear(g, C), s
Prop in Lane
Lane Grp Cap(c), vehinh
VIC Ratio(X)
Avail Cap(c, a), vehinh
HCM Platoon Ratio

0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

706 0.22 706 1.00 1.00 15.7 0.7 0.0 3.4

706 706 706 11.00 115.7 0.7 0.0 3.3

0.0 36.9

21.7

29.4 C

0.0

23.5

16.5 B

16.5 B 341 16.2 B

11.8 B. 13

16.5 B

16.4 B

12.3

Incr Delay (d2), siveh Initial Q Delay (d3), siveh Wile BackOfQ(95%), vehAln Unsig. Movement Delay, siveh LnGrp Delay(d), siveh

Uniform Delay (d), s/veh

Upstream Filter(I)

384 15.6 B

Approach Delay, s/veh Approach LOS imer - Assigned Phs

Approach Vol, veh/h

326 28.0 C

37.0 5.0 32.0 6.8 1.7

10.0 11.0 3.9 0.1

22.9 5.0 25.0 16.6

10.0 5.0 7.0 4.7

37.0 5.0 32.0 6.7 1.7

10.0 11.0 2.5 0.0

22.9 5.0 25.0 11.8

0.0 7.0 3.5 0.0

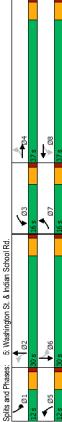
Phs Duration (G+Y+Rc), s Change Period (Y+Rc), s Max Green Setting (Gmax), s Max Q Clear Time (g_c+l1), s Green Ext Time (p_c), s 24.1

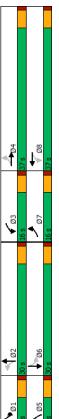
HCM 6th Ctrl Delay HCM 6th LOS

0.00

0.0 0.0

5: Washington St. & Indian School Rd	k Indian	Scho	ol Rd.						Terry O. Brown, PE 06/27/2019
	•	†	/	ţ	•	←	٠	→	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	*	4₽	×	4₽	*	ŧ\$	×	\$	
Traffic Volume (vph)	. 19	215	. 8	228	. 99	166	38	119	
Future Volume (vph)	6	215	9	228	99	166	38	119	
Turn Type	pm+pt	≨	pm+pt	ΑN	pm+pt	Ϋ́	pm+pt	ΑN	
Protected Phases	7	4	က	∞	2	2	-	9	
Permitted Phases	4		∞		7		9		
Detector Phase	7	4	ო	∞	2	2	~	9	
Switch Phase									
Minimum Initial (s)	2.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	
Total Split (s)	16.0	37.0	16.0	37.0	12.0	30.0	12.0	30.0	
Total Split (%)	16.8%	38.9%	16.8%	38.9%	12.6%	31.6%	12.6%	31.6%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1:0	1.0	1.0	1:0	1.0	1.0	1:0	1:0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0:0	
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?									
Recall Mode	<u>W</u>	Max	Ē	Мах	Ē	Ē	Ψi	Ξ	
Act Effct Green (s)	41.0	33.5	38.4	32.2	24.9	18.2	24.5	17.9	
Actuated g/C Ratio	0.49	0.40	0.45	0.38	0.29	0.22	0.29	0.21	
v/c Ratio	0.14	0.23	0.0 8	0.24	0.33	0.62	0.15	0.79	
Control Delay	12.0	17.1	11.7	18.7	22.2	36.1	19.2	39.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	12.0	17.1	11.7	18.7	22.2	36.1	19.2	39.6	
SOT	Ф	В	В	Ф	ပ	□	В	۵	
Approach Delay		16.1		18.2		32.7		37.0	
Approach LOS		മ		Ф		ပ		Ω	
Intersection Summary									
Cycle Length: 95									
Actuated Cycle Length: 84.5									
Natural Cycle: 65									
Control Type: Semi Act-Uncoord	oord								
Maximum v/c Ratio: 0.79									
Intersection Signal Delay: 25.8	α ;			프	Intersection LOS: C	LOS: C			
Intersection Capacity Utilization 47.5%	on 47.5%			2	CU Level of Service A	f Service	4		
Analysis Period (min) 15									





2019 AM Peak Existing Conditions - Existing Geometry

Synchro 10 Report 2019AX.syn

Synchro 10 Report 2019AX.syn

HCM 6th Signalized Intersection Summary 6: Carlisle Blvd. & Constitution Ave. Terry O. Brown, PE 06/27/2019

Timings 6: Carlisle Blvd. & Constitution Ave.

†

HCM 6th Signalized Intersection Summary 6: Carlisle Blvd. & Constitution Ave.	Interse	ection (Summ e.	ary					μ L	erry O.	Terry O. Brown, PE 06/27/2019	own, PE 06/27/2019
	4	†	<i>></i>	\	ļ	✓	•	←	•	۶	→	•
Movement	田	EBT	EB	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	*	*	×	*	*	×	₩		je-	*	*
Traffic Volume (veh/h)	86	87	14	4	123	29	14	465	20	99	513	203
Future Volume (veh/h)	86	87	14	4	123	29	14	465	50	99	513	203
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		2			S			S			8	
Adj Sat Flow, veh/h/In	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	105	94	15	47	132	72	15	200	22	7	225	218
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	က	က	ო	ო	က	က	က	ო	က	ო	ო	က
Cap, veh/h	197	326	276	233	326	276	574	2523	11	999	1361	1153
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.73	0.73	0.73	1.00	1.00	1.00
Sat Flow, veh/h	1169	1856	1572	1274	1856	1572	693	3440	151	873	1856	1572
Grp Volume(v), veh/h	105	94	15	47	132	72	15	256	266	7	552	218
Grp Sat Flow(s), veh/h/ln	1169	1856	1572	1274	1856	1572	693	1763	1828	873	1856	1572
Q Serve(g_s), s	9.6	4.8	6.0	3.7	6.9	4.4	9.0	2.0	5.0	9.0	0.0	0.0
Cycle Q Clear(g_c), s	16.6	4.8	6.0	8.5	6.9	4.4	9.0	2.0	2.0	9.9	0.0	0.0
Prop In Lane	1.00		1.00	9.		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	197	326	276	233	326	276	574	1293	1341	999	1361	1153
V/C Ratio(X)	0.53	0.29	0.05	0.20	0.40	0.26	0.03	0.20	0.20	0.11	0.41	0.19
Avail Cap(c_a), veh/h	342	222	472	392	222	472	574	1293	1341	999	1361	1153
HCM Platoon Ratio	1.00	9.	1.00	9:	0.1	9:	1.00	1.00	0.1	5.00	5.00	2.00
Upstream Filter(I)	1.00	0.1	1.00	9.1	1.00	9.1	1.00	1.00	1.00	9.70	0.76	0.76
Uniform Delay (d), s/veh	47.6	39.4	37.7	43.1	40.2	39.5	4.0	4.6	4.6	0.2	0:0	0.0
Incr Delay (d2), s/veh	2.2	0.5	0.1	0.4	0.8	0.5	0.1	0.3	0.3	0.2	0.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0:0	0.0	0.0	0.0	0.0	0.0	0:0	0:0	0.0
%ile BackOfQ(95%),veh/ln		4.1	9.0	5.1	2.8	3.1	0.2	2.9	3.1	0.1	0.5	0.2
Unsig. Movement Delay, siven		30.8	37 g	13.5	710	30.7	-	0 7	0 1	0	0.7	0
Ingle Local (4), 2011	2	2	2 -	2	2	-	⋖	4	Α	5	5 ⋖	9 A
Approach Vol. veh/h		214	1	1	251			537			841	
Approach Delay, s/veh		44.6			41.1			4.9			9.0	
Approach LOS		۵			۵			⋖			⋖	
Timer - Assigned Phs		6		7		œ		œ				
Sill bollegov built		1 1				2 1		2				
Charge Print (G+1+RC), s		7.00		C.4.2		7.00		24.5				
Man Order Fellou (1+Nc), s		0.0		0.0		0.0		0.0				
Max O'Clear Jime (2, 2, 14)		0.70		10.00		0.70		20.0				
Max & Cleal IIIIle (g_c+III), s		0. 0		0.0		0. 4		0.0				
Green Ext Time (p_c), s		0.0		0.7		5.6		-				
Intersection Summary												
HCM 6th Ctrl Delay			12.5									
HCM 6th LOS			ш									

C-Max 85.0 0.77 0.2 0.0

C-Max 85.0 0.77 0.39 2.1 2.1

C-Max 85.0 0.77 0.11 0.5 0.0

C-Max 85.0 0.77 0.02 4.1 4.1

Min 15.0 0.14 0.26 0.0 0.0

Min 15.0 0.14 0.27 44.4 44.4

Min 15.0 0.14 0.06 13.0 13.0 B

Min 15.0 0.14 0.75 74.7 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 15.0 0.14 0.37 45.8 0.0 0.0 D D D D D

C-Max 85.0 0.77 0.19 3.9 0.0 3.9 A A

Min 15.0 0.14 0.53 50.6 0.0 D D D

A 7.5

5.0 21.0 72.0 65.5% 4.0 1.0 0.0

1.0

0.0 0.0

0.0

1.0

1.0 0.0

1.0

1.0

1.0 0.0

1.0

5.0 21.0 72.0 65.5%

5.0 21.0 72.0 65.5%

5.0 21.0 72.0 65.5%

5.0 21.0 72.0 65.5%

5.0 21.0 38.0 34.5%

5.0 21.0 38.0 34.5%

5.0 21.0 38.0 34.5%

5.0 21.0 38.0 34.5%

5.0 21.0 38.0

5.0 21.0 38.0 34.5%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time Adjust (s)

203

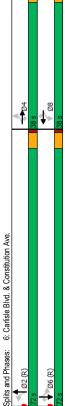
465 AN

¥ 23 ₹

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase Protected Phases

513 NA



Intersection LOS: B ICU Level of Service B

Intersection Signal Delay: 13.7 Intersection Capacity Utilization 59.7% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.75

Natural Cycle: 45

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Actuated Cycle Length: 110 Offset: 63.8 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

2019 AM Peak Existing Conditions - Existing Geometry

Synchro 10 Report 2019AX.syn

2019 AM Peak Existing Conditions - Existing Geometry

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 7: San Mateo Blvd. & I-40 EB Ramp

Timings 7: San Mateo Blvd. & I-40 EB Ramp

†

851 851 NA

224 224 Prot

139 139

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases

Permitted Phases Detector Phase

	\	Ť	/-	•	,	/	~	_	L	•	+	*
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	¥.	£\$	*					**	*	£	**	
Traffic Volume (veh/h)	4	τ-	716	0	0	0	0	1022	139	224	851	_
Future Volume (veh/h)	4	-	716	0	0	0	0	1022	139	224	851	
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	J
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		ટ						8			2	
Adj Sat Flow, veh/h/In	1856	1856	1856				0	1856	1856	1856	1856	J
Adj Flow Rate, veh/h	469	0	763				0	1087	0	238	902	_
Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	က	က	က				0	က	က	က	က	_
Cap, veh/h	006	0	801				0	2637		303	3316	Ŭ
Arrive On Green	0.25	0.00	0.25				0.00	0.52	0.00	90.0	0.44	0.00
Sat Flow, veh/h	3534	0	3145				0	5233	1572	3428	5233	
Grp Volume(v), veh/h	469	0	292				0	1087	0	238	902	
Grp Sat Flow(s), veh/h/ln	1767	0	1572				0	1689	1572	1714	1689	_
Q Serve(g_s), s	12.5	0.0	26.3				0.0	14.4	0.0	7.5	12.5	0.0
Cycle Q Clear(g_c), s	12.5	0.0	26.3				0.0	14.4	0.0	7.5	12.5	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.0
Lane Grp Cap(c), veh/h	006	0	801				0	2637		303	3316	_
V/C Ratio(X)	0.52	0.00	0.95				0.00	0.41		0.78	0.27	0.00
Avail Cap(c_a), veh/h	006	0	801				0	2637		374	3316	_
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	0.67	0.67	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.86	0.86	0.00
Uniform Delay (d), s/veh	35.2	0.0	40.4				0.0	16.1	0.0	20.7	14.2	0.0
Incr Delay (d2), s/veh	0.5	0.0	21.1				0.0	0.5	0.0	7.4	0.2	0.0
Initial Q Delay(d3),s/veh	0:0	0.0	0.0				0.0	0.0	0.0	0.0	0:0	0.0
%ile BackOfQ(95%),veh/ln	9.3	0.0	18.1				0.0	9.4	0.0	6.5	8.8	0.0
Unsig. Movement Delay, s/veh		0	3				0		0			
LnGrp Delay(d),s/veh	35.8	0.0	61.5				0.0	16.6	0.0	58.1	14.4	0.0
Lugh LOS		<	ш				∢	n		ш	n	
Approach Vol, veh/h		1232						1087	∢		1143	
Approach Delay, s/veh		51.7						16.6			23.5	
Approach LOS		٥						Ф			ပ	
Timer - Assigned Phs	1	2		4		9						
Phs Duration (G+Y+Rc), s	14.7	62.3		33.0		77.0						
Change Period (Y+Rc), s	2.0	2.0		2.0		2.0						
Max Green Setting (Gmax), s	12.0	22.0		28.0		72.0						
Max Q Clear Time (g_c+l1), s	9.5	16.4		28.3		14.5						
Green Ext Time (p_c), s	0.2	6.6		0.0		8.1						
Intersection Summary												
HCM 6th Ctrl Delav			31.4									
HCM 6th LOS			ပ									

C-Max 77.0 0.70 0.26 3.8 0.0 3.8 A 13.1

Min 11.6 0.11 0.67 48.7 48.7

C-Max 60.4 0.55 0.16 2.8 2.8 2.8 2.8

Min 23.0 0.21 0.84 38.8 0.0 38.8

Min 23.0 0.21 0.66 44.0 0.0 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

C-Max 60.4 0.55 0.39 15.6 0.0 15.6 15.6

Min 23.0 0.21 0.85 39.1 0.0 0.0 D D D

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

5.0 21.0 77.0 70.0% 4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 ead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

4.0 1.0 0.0 5.0

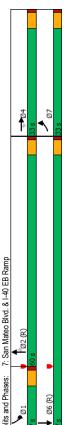
5.0 10.0 17.0 15.5%

5.0 21.0 60.0 54.5%

5.0 21.0 60.0 54.5%

5.0 10.0 33.0 30.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

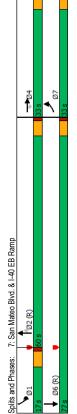


Intersection LOS: C ICU Level of Service A

Intersection Signal Delay: 22.9 Intersection Capacity Utilization 54.3% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.85

Actuated Cycle Length: 110 Offset: 90.2 (82%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 55



2019 AM Peak Existing Conditions - Existing Geometry

Synchro 10 Report 2019AX.syn

2019 AM Peak Existing Conditions - Existing Geometry

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 8: San Mateo Blvd. & I-40 WB Ramp

8: San Mateo Blvd. & I-40 WB Ramp

Timings

1022 1022 NA

304 304 Perm

129 NA

256 256 Prot

142

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase Protected Phases

Secondary Color		4	†	>	/	Ļ	4	•	←	•	٠	→	*
100 142 256 129 304 141 919 0 0 1022 101 102 126 129 304 141 919 0 0 1022 101 100 100 0 0 0 0 0	Movement	田田	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
47 0 142 256 129 304 141 319 0 0 102 47 0 142 256 129 304 141 319 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Lane Configurations	K.		ĸ.	K.	*	¥.	K.	444			***	*
47 0 142 256 129 304 141 919 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Traffic Volume (veh/h)	47	0	142	256	129	304	141	919	0	0	1022	9
100 0 0 0 0 0 0 0 0	Future Volume (veh/h)	47	0	142	256	129	304	141	919	0	0	1022	91
100	Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
100	Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1:00	1.00		1.00	1.00		1:00
No	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
1856 0 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 1858 185	Work Zone On Approach		8			S			8			S	
51 0 153 275 139 327 152 988 0 0 1099 033 033 033 033 033 033 033 033 033 033 033 033 033 033 033 033 0 0 030 033 0 0 033 0 0 0 033 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Adj Sat Flow, veh/h/In	1856	0	1856	1856	1856	1856	1856	1856	0	0	1856	1856
0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.03 0.21 0.21 0.11 1.00 0.00 0.00 0.20 0.21 0.21 0.121 0.13 1.00 0.00 0.00 0.20 0.21 0.21 0.121 0.13 1.00 0.00 0.00 0.50 0.253 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Adj Flow Rate, veh/h	21	0	153	275	139	327	152	888	0	0	1099	86
3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
156	Percent Heavy Veh, %	က	0	က	က	က	က	က	က	0	0	က	က
0.05 0.00 0.00 0.30 0.21 0.21 0.13 1.00 0.00 0.50 0.30 0.3428 51 3428 1856 1572 3428 5233 0 0 0 0.523 0.00 0.50 0.3428 51 52.1 275 1714 1869 0 0 0.00 0.50 0.50 0.00 0.50 0.00 0.50 0.00 0.50 0.00 0.00 0.50 0.00 0.00 0.00 0.30 0.3	Cap, veh/h	156	0	0	1028	388	329	215	3085	0	0	2537	829
75.1 5.7 7.0 2.2 8 4.7 0.0 0.0 0.0 0.533 1.0 0.0 0.533 1.0 0.0 0.533 1.0 0.0 0.533 1.0 0.0 0.533 1.0 0.0 0.533 1.0 0.0 0.533 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Arrive On Green	0.05	0.00	0.00	0:30	0.21	0.21	0.13	1.00	0.00	0.00	0.50	0.50
1714 D	Sat Flow, veh/h	3428	21		3428	1856	1572	3428	5233	0	0	5233	1572
1714 D 1714 1856 1572 714 1689 0 0 1689 7 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689 1688 1688 1689 1689 1688 1689 1689 1689 1689 1689 1689 1689 1689 1689 1689	Grp Volume(v), veh/h	21	52.1		275	139	327	152	988	0	0	1099	86
16 6 67 770 228 4,7 0.0 0.0 152 16 1028 388 329 215 3065 0 0.0 152 100 100 100 100 0.00 0.00 133 027 036 0.99 0.71 0.32 0.00 0.00 100 100 100 1.00 1.00 0.88 0.00 0.00 1.00 100 1.00 1.00 0.08 0.88 0.00 0.00 1.00 100 1.00 1.00 0.08 0.08 0.00 0.00 1.00 100 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.3 50 5.9 19.1 3.6 0.1 0.0 0.0 0.0 1.4 140 1.0 280 1.5 50 50 50 50 50 50 1.6 50 130 130 440 10.0 230 1.7 91.5 60 50 50 1.8 7 67 172 36 248 1.7 91.6 620 130 1197 1.8 6.1 10.0 280 1.9 6.2 130 130 440 10.0 230 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Grp Sat Flow(s),veh/h/ln	1714	۵		1714	1856	1572	1714	1689	0	0	1689	1572
16 67 7.0 22.8 4.7 0.0 0.0 0.0 152 1.00 1.00 1.00 0.00 0.00 156 1.028 388 329 215 3085 0 0 2537 0.33 1028 388 329 215 3085 0 0 0 2537 312 1028 388 329 405 3085 0 0 0.53 1.00 1.00 1.00 2.00 2.00 1.00 1.00 50.9 0.1 0.0 1.00 0.88 0.88 0.00 0.00 1.00 50.9 0.1 0.0 1.00 0.88 0.88 0.00 0.00 1.00 1.00 1.00 1.00 0.08 0.88 0.00 0.00 1.00 1.00 1.00 1.00 0.88 0.88 0.00 0.00 1.00 1.00 1.00 1.00 0.00 0.0 0.0 0.0 0.0 1.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.3 5.0 5.9 19.1 3.6 0.1 0.0 0.0 0.0 1.40 29.4 37.7 91.5 50.9 0.0 0.0 0.0 0.0 1.50 2.0 38.0 11.9 60.1 10.0 28.0 20 8.7 6.7 17.2 3.6 24.8 8.7 0.4 0.2 9.1 0.0 0.0 23.9 23.9 215 0.0 0.0 0.0 250 253 0.0 0.0 0.0 0.0 0.0 0.0 250 253 0.0 0.0 0.0 0.0 0.0 0.0 0.0 250 250 250 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 0.0 0.0 1.00 250 250 250 20 20 20 20 20 20 20 20 20 20 20 20 20	Q Serve(g_s), s	1.6			6.7	7.0	22.8	4.7	0.0	0.0	0.0	15.2	3.3
156 100 100 000 000 000 000 000 000 000 00	Cycle Q Clear(g_c), s	1.6			6.7	7.0	22.8	4.7	0.0	0.0	0.0	15.2	3.3
156 1028 388 329 215 3085 0 0 2537 31	Prop In Lane	1.00			9:		9.	1.00		0.00	0.00		1.00
133 1023 0.27 0.36 0.99 0.71 0.32 0.00 0.43 0.33 0.27 0.36 0.99 0.71 0.32 0.00 0.43 0.30 0.30 0.35 0.30 0.30 0.35 0.30 0.30	Lane Grp Cap(c), veh/h	156			1028	388	329	215	3085	0	0	2537	829
312 1028 388 329 405 3085 0 0 0 2537 100 100 100 100 100 100 100 100 100 10	V/C Ratio(X)	0.33			0.27	0.36	0.99	0.71	0.32	0.00	0.00	0.43	0.11
100 1.00 1.00 1.00 0.88 0.88 0.00 0.00 1.00 1	Avail Cap(c_a), veh/h	312			1028	388	329	405	3085	0 0	0 0	2537	828
100 1.00 1.00 1.00 1.00 1.00 1.00 1.00	HCM Platoon Katio	00.1			9.5	00.1	9.5	2:00	2.00	00.1	00.1	8.5	00.1
29.3 37.2 43.4 47.1 0.0 0.0 0.0 17.5 0.0 0.0 0.0 17.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Upstream Filter(I)	1.00			1.00	1.00	9:5	0.88	0.88	0.00	0.00	0.1	1.00
1.2 0.1 0.6 48.1 3.7 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Uniform Delay (d), s/ven	50.9			29.3	37.75	43.4	1.14	0.0	0.0	0.0	ري د ا	12.1
13 50 59 19.1 3.6 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Incr Delay (dz), s/ven	7.7			 	9.0	1 6	ر د د د	0.2	0.0	0.0	ο Ο Ο	0.3
2.1 294 37.7 91.5 50.9 0.1 0.0 0.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Initial Q Delay(ds),s/ven	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2 3 5 6 7 80 50 62 00 00 180 180 180 180 180 180 180 180 1	Valle BackOlca(33 %), velimili	<u>.</u>			0.0		<u>.</u>	5.0	- 5	9.0	9.	0.0	7.7
D C D F D A A B B 197 1140 1197 1197 1197 1197 1197 1197 1197 119	InGm Delay(d) s/veh	52.1			29.4	37.7	915	50 9	0.0	0	00	18.0	12.3
2 3 6 7 8 720 38.0 11.9 60.1 10.0 28.0 50 50 50 5.0 5.0 5.0 5.0 5.0 620 13.0 13.0 44.0 10.0 23.0 8.7 0.4 0.2 9.1 0.0 0.0	LnGrp LOS	٥			O	۵	ш	٥	<	⋖	⋖	ш	В
88.7 0.4 0.2 9.1 0.0 0.0	Approach Vol, veh/h					741			1140			1197	
2 3 5 6 7 8 720 38.0 11.9 60.1 10.0 28.0 5.0 5.0 5.0 5.0 5.0 5.0 62.0 13.0 13.0 44.0 10.0 23.0 2.0 8.7 6.7 17.2 3.6 24.8 8.7 0.4 0.2 9.1 0.0 0.0 C.	Approach Delay, s/veh					58.4			7.0			17.6	
2 3 5 6 7 720 380 11.9 60.1 10.0 5.0 5.0 5.0 5.0 5.0 620 13.0 13.0 44.0 10.0 2.0 8.7 6.7 17.2 3.6 8.7 0.4 0.2 9.1 0.0 C	Approach LOS					ш			∢			Ф	
72.0 38.0 11.9 60.1 10.0 5.0 5.0 5.0 5.0 5.0 5.0 62.0 13.0 13.0 44.0 10.0 2.0 8.7 6.7 17.2 3.6 8.7 0.4 0.2 9.1 0.0 C	Timer - Assigned Phs		2	က		5	9	7	8				
5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Phs Duration (G+Y+Rc), s		72.0	38.0		11.9	60.1	10.0	28.0				
62.0 13.0 13.0 44.0 10.0 2.0 8.7 6.7 17.2 3.6 8.7 0.4 0.2 9.1 0.0 23.9	Change Period (Y+Rc), s		2.0	2.0		5.0	2.0	5.0	2.0				
2.0 8.7 6.7 17.2 3.6 8.7 0.4 0.2 9.1 0.0 23.9 C	Max Green Setting (Gmax), s		62.0	13.0		13.0	44.0	10.0	23.0				
8.7 0.4 0.2 9.1 0.0 23.9 C	Max Q Clear Time (g_c+I1), s		2.0	8.7		6.7	17.2	3.6	24.8				
lıy	Green Ext Time (p_c), s		8.7	0.4		0.2	9.1	0.0	0.0				
	Intersection Summary												
	HCM 6th Ctrl Delav			23.9									
	HCM 6th LOS			O									

5.0 10.0 15.0 13.6% 4.0 1.0 0.0 5.0 Lead

5.0 10.0 18.0 16.4%

5.0 21.0 28.0 25.5%

5.0 21.0 28.0 25.5%

5.0 21.0 25.0 22.7%

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

5.0 10.0 18.0 16.4% 4.0 1.0 0.0 5.0 Lead

5.0 10.0 15.0 13.6% 4.0 1.0 0.0 5.0 Lead

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

Min 67.2 0.61 0.10 2.8 2.8 2.8

C-Max 70.3 0.64 0.31 14.4 0.0

Min 10.2 0.09 0.48 48.5 0.0 48.5

Min 17.6 0.16 0.83 38.7 38.7

Min 12.4 0.72 58.5 0.0 58.5

Min 12.3 0.11 0.49 0.0 12.1

Min 7.1 0.06 0.23 51.0 0.0 51.0 D

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 17.6 0.16 0.47 45.9 0.0 45.9 D D D D

C-Max 55.1 0.50 0.44 19.6 0.0 19.6 18.3 B

	~ Ø4	25 s	↓	28 s
	€03	18 s	²⁰ ♠	15 s
alid and Hases. O. call Maked Diva: & 1-40 WD Malip	•		₩ ₩ Ø6(R)	49 s
illo alla i llasco.	♠ Ø2 (R)	S /	\$ 05	S

8: San Mateo Blvd, & I-40 WB Ramp

Intersection LOS: C ICU Level of Service A

Intersection Signal Delay: 25.3 Intersection Capacity Utilization 51.6% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.83

Natural Cycle: 65

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Actuated Cycle Length: 110 Offset: 49:5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green

2019 AM Peak Existing Conditions - Existing Geometry Synchro 10 Report 2019AX.syn

HCM 6th Signalized Intersection Summary 1: Girard Ct. & Indian School Rd. Terry O. Brown, PE 06/27/2019

22 0 0.10

4 4 0 0.1 0 0.1 0 0.1

8808

8.8

8.8

466 466

1.00 No 1856 507 0.92

8.8

1.00 No 17 0.92

1.00 No 1856 24 0.92 3 3 191 0.11

1.00 No No 1856 504 0.92 3 2249 11.00 3123 284 284 1763 0.0

1856 9 0.92 3 690 1.00

Timings 1: Girard Ct. & Indian School Rd	n Scho	ol Rd.							Terry O. Brown, PE 06/27/2019	HCM 6th Signalized Interse	rse
	•	†	\	ţ	•	-	٠	→		•	_
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT		Movement EBL	ሖ
Lane Configurations	<u>سيد</u> ج	4₽	ه سيو	4₽		4 2	<u>.</u>	4			<u>, </u>
Fraffic Volume (vph)	₹ 8	466	α α	404	2 8	22 62	4 2	ნ გ		Iraffic Volume (veh/h) 29	62.0
Turn Type	Perm	2 ₹	Perm	ž ¥	Pem	N A	Perm	2 A			. 0
Protected Phases		4		∞				9		(Lq	9
Permitted Phases	4		∞		2		9			Parking Bus, Adj 1.00	0
Detector Phase	4	4	∞	œ	2	2	9	9		ch	
Switch Phase										`	99
Minimum Initial (s)			2.0					2.0		Adj Flow Rate, veh/h 32	22
Minimum Split (s)			21.0					21.0			32
Total Split (s)	36.0	36.0	36.0	36.0	24.0	24.0	24.0	24.0		avy Veh, %	က
Total Split (%)			%0.09					%0:0		Cap, veh/h 720	0
Yellow Time (s)			4.0					4.0			2
All-Red Time (s)			1.0		1:0			1:0		Sat Flow, veh/h 834	<u>*</u>
Lost Time Adjust (s)			0.0		0.0	0.0		0.0		Grp Volume(v), veh/h 32	32
Total Lost Time (s)			2.0		2.0			2.0		Grp Sat Flow(s),veh/h/ln 834	74
Lead/Lag											۲.
Lead-Lag Optimize?										Cycle Q Clear(g_c), s 0.7	7.
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min	Min			8
Act Effct Green (s)	41.1	41.1	41.1	41.1	8.9	8.9	8.9	8.9		(c), veh/h	0
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.15	0.15	0.15	0.15			4
v/c Ratio	90.0	0.23	0.02	0.24	0.38	0.10	0.39	0.15		Avail Cap(c_a), veh/h 720	0
Control Delay	4.2	4.1	4.9	5.2	27.6	20.1	27.9	13.8			8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0:0		Upstream Filter(I) 1.00	0
Total Delay	4.2	4.1	4.9	5.2	27.6	20.1	27.9	13.8		Uniform Delay (d), s/veh 2.4	4
TOS .	A	⋖	⋖	∢	ပ	ပ	ပ	മ			- -
Approach Delay		4.1		5.2		25.7		23.1		4	0
Approach LOS		∢		⋖		ပ		ပ		Į.	Ψ.
Intersection Cummeny										Unsig. Movement Delay, s/veh	
Ciolo I continual y										LnGrp Delay(d),s/veh 2.6	5.6
Cycle Length: bu											⋖
Actuated Cycle Length: 60		i c		č	9					Approach Vol. veh/h	
Offset: 22.2 (3/%), Referenced to phase 4:EBIL and 8:WBIL, Start of Green	ed to phase	e 4:EBIL	and 8:WE	IL, Start	of Green					Approach Delay s/veh	
Natural Cycle: 45										Approach I OS	
Control Type: Actuated-Coordinated	linated									Apploaci FOS	
Maximum v/c Ratio: 0.39										Timer - Assigned Phs	
Intersection Signal Delay: 7.8				Ī	Intersection LOS: A	OS: A				Phs Duration (G+Y+Rc), s	
Intersection Capacity Utilization 42.3%	n 42.3%			⊴	J Level of	Service A				Change Period (Y+Rc), s	
Analysis Period (min) 15										Max Green Setting (Gmax), s	
Splits and Dhasse: 1. Girant Ct & Indian School Dd	8 +C +	o do	20							Max Q Clear Time (g_c+l1), s	
philo and mases Ollan	Q. C. R	lall oction	-	4						Green Ext I Ime (p_c), s	

1486 24 0.092 3 3 3 3 1111 111 0.0111 130 0.059 0.059 0.059 0.059 0.059 0.059 0.059 0.059 0.059 0.059 0.059 0.059 0.059 0.059

2375 0.72 3297 270 270 1763 3.0 3.0

0.00 0.00 0.00 0.00 0.00 0.00

0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

0.22 0.22 0.71 0.0 0.0 0.0 0.0 0.0

8852 0.0 1.00 690 0.01 0.71 0.0 0.0

121

102 26.3 C

48.2 5.0 31.0 5.1 3.4

11.8 5.0 6.1 0.3

48.2 5.0 31.0 5.1

11.8 5.0 19.0 6.6 0.2

9.6

HCM 6th Ctrl Delay HCM 6th LOS

- 04 (R) ₹ Ø8 (R)

26.5 C

24.2 C

0.0 A

27.0 C

0.3 A

0.7

3.2

0.3 PA 1581 A 0.3

581 3.1

0.00

0:0

3 0.11 696



Synchro 10 Report 2019PX.syn

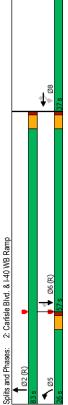
Synchro 10 Report	2019PX.syn
ons - Existing Geometry	
PM Peak Existing Condition	

HCM 6th Signalized Intersection Summary 2: Carlisle Blvd. & I-40 WB Ramp Terry O. Brown, PE

Timings

Terry O. Brown, PE 06/27/2019

	•	Į	4	,	4	_		
	•	,	/		_	+	*	
ane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR	
ane Configurations	<u>~</u>	€	¥.	¥.	444	444	K.	
raffic Volume (vph)	246	2	266	499	1287	1094	463	
Future Volume (vph)	246	S	566	499	1287	1094	463	
urn Type	Perm	≨	Perm	Prot	ΑN	Ϋ́	Perm	
Protected Phases		∞		2	2	9		
Permitted Phases	∞		∞				9	
Detector Phase	œ	∞	∞	2	2	9	9	
Switch Phase								
Minimum Initial (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	21.0	21.0	21.0	10.0	21.0	21.0	21.0	
otal Split (s)	37.0	37.0	37.0	26.0	83.0	57.0	57.0	
Total Split (%)	30.8%	30.8%	30.8%	21.7%	69.2%	47.5%	47.5%	
(ellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
ost Time Adjust (s)	0:0	0.0	0:0	0.0	0:0	0.0	0:0	
otal Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag				Lead		Lag	Lag	
.ead-Lag Optimize?								
Recall Mode	Min	Min	Min	Min	C-Max	C-Max	C-Max	
Act Effct Green (s)	26.5	26.5	26.5	21.8	83.5	26.7	29.7	
Actuated g/C Ratio	0.22	0.22	0.22	0.18	0.70	0.47		
/c Ratio	0.37	0.36	0.82	0.86	0.39	0.49	0	
Sontrol Delay	41.2	41.1	62.8	57.3	9.6	23.5		
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0	
otal Delay	412	41.1	62.8	57.3	9.8	23.5	3.7	
SO	□	□	ш	ш	∢	O	∢	
Approach Delay		52.3			23.1	17.6		
Approach LOS		Ω			O	Ω		
ntersection Summary								
Sycle Length: 120								
Actuated Cycle Length: 120								
Offset: 92 (77%), Referenced to phase 2:NBT and 6:SBT, Start of Green	d to phase	:NBT a	nd 6:SBT,	Start of (Green			
Vatural Cycle: 60								
Control Type: Actuated-Coordinated	rdinated							
Maximum v/c Ratio: 0.86								
ntersection Signal Delay: 24.8	<u>&</u>			드	Intersection LOS: C	n LOS: C		
ntersection Capacity Utilization 65.4%	ion 65.4%			_	level II	CU Level of Service C	C	



0.50 0.50 5233 1164 1689 17.8 0.00 0.0 0.0 0.94 0.00 0.00 0.00 0.00 0.00 0.0 0.0 0.0 8.8 0.0 User approved volume balancing among the lanes for furning movement. Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay. 3614 1.00 1.00 1.369 1.08 0.0 0.0 3614 0.38 3614 2.00 0.0 0.0 0.0 0.0 0.3 1900 16.1 B 29.4 5.0 32.0 23.0 1.4 1.00 No 1856 1369 0.94 1287 26.8 499 0 0 0 0 0 1856 531 0.94 62.6 E 266 266 ... 00 ... 65.4 5.0 52.0 19.8 9.9 0.0 1.00 No 1856 0 0.94 0.00 0.00 0.00 0.0 0.0 0.0 0.0 A 549 25.2 5.0 21.0 19.9 0.3 41.5 0 9 9 22.8 C 90.6 5.0 78.0 2.0 14.6 † Initial Q Delay(d3),s/veh %ile BackOfQ(95%),veh/in Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh Change Period (Y+Rc), s Max Green Setting (Gmax), s Max Q Clear Time (g_c+11), s Green Ext Time (p_c), s Parking Bus, Adi Work Zone On Approach Adj Sat Flow, vehln/In Adj Flow Rate, veh/Ih Peak Hour Factor Percent Heavy Veh, % Phs Duration (G+Y+Rc), s Cap, veh/h
Arrive On Green
Sat Flow, veh/h
Gp Volume(v), veh/h
Grp Sat Flow(s), veh/h
Grp Sat Flow(s), veh/h
Grp Carrig_c), s
Cycle Q Clear(g_c), s
Prop in Lane
Lane Grp Cap(c), veh/h V/C Ratio(X)
Avail Cap(c_a), veh/h
HCM Platoon Ratio Uniform Delay (d), s/veh Approach Delay, s/veh Approach LOS Traffic Volume (veh/h) Future Volume (veh/h) Ped-Bike Adj(A_pbT) Incr Delay (d2), s/veh HCM 6th Ctrl Delay HCM 6th LOS Approach Vol, veh/h Initial Q (Qb), veh Upstream Filter(I)

0.00

19.8 19.8

2552 0.46 2552 1.00 1.00 19.2 0.6 0.0

0.0 0.0 1.00

0.00

1.00 No 1164 0.94

26 09

2021 PM Peak Existing Conditions - Existing Geometry

Synchro 10 Report 2019PX.syn

Synchro 10 Report 2019PX.syn

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 3: Carlisle Blvd. & I-40 EB Ramp

Timings 3: Carlisle Blvd. & I-40 EB Ramp

955 955 855 865 865

Prot 40-4

1264 NA

477 477

508 508 508 Perm

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase 5.0 21.0 82.0 68.3% 4.0 1.0 0.0

5.0 21.0 38.0 31.7%

5.0 21.0 38.0 31.7%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

Intrations of the control of the con	EBR 477 477 477 477 0 1.00 1.00 1.00 1.00 1.00 1.00 1.00	V S O O O O O O O O O O O O O O O O O O	TBW 0 0 0 N N N N N N N N N N N N N N N N	MBR NBL 1.000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Z = 22	NBT NBT	SBL 401 401 401 100 1100 1100 133 83 493 929 0.29	SBT 1.00 No 1126 1027 0.93 3 3563 3	ABS 0 0 0.1.000.1
erehin) 508 h					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			SBT 955 955 955 955 0 0 0 1.00 No 1027 1027 0.93 3 3553	SBR 0 0 1.00 1.00
ons 17	1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0 0	00					955 955 955 0 1.00 No 1027 0.93 3	0 0 0.1
rehnh) 508 h 100 h 208 h 100 l 207 h 100 h	4 5 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	00	00					955 955 955 0 1.00 No 1856 1027 0.93 3	0 0 0.1.
veh(h) 508 h	4 5 9	0	0		<u> </u>			955 0 1.00 No 1856 1027 0.93 3	0 0 0.1
h h 0 100 1100 1100 1100 1100 1100 1100				0.0 0.0 0.0 0.0	, , , , , , , , , , , , , , , , , , , ,			1.00 No 1856 1027 0.93 3	0 00.1
pbT) 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 1	4 5 5			0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	, 770 4. 272			1.00 No 1856 1027 0.93 3	0.1
i 1,00 1 hh/lin 1856 11 hh/lin 546 hr				0.0 0.0 0.0 0.0	, , , , , , , , , , , , , , , , , , , ,			1.00 No 1856 1027 0.93 3 3 3653	0 0
pproach hhrlin 1886 i1 hhrlin 1886 i1 nr 0.93 0 10 0.20 0.20 0.20 0.20 0.20 0.20 0.20 0.2				0.000	5 7 0 4 - 5 5 5			No 1856 1027 0.93 3 3653	0
hh/lin 1856 11 eth/h 546 eth/h 33 (eh, % 691 0.20 0 0.20 0 0.20 0 0.40 0 0.40 0 0.40 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0 0.50 0				0.0				1856 1027 0.93 3 3653	00
ehith 546 or 0,33 feh, % 691 0,20 0,20 0,20 0,20 0,20 0,20 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00 0,00				0.0				1027 0.93 3 3653	_
(eh, % 33 (eh, % 33 (eh, % 33 (eh, % 33 (eh) % 3534 (eh) % 3534 (eh) % (0.0				3653)
(eh, % 3 (eh, % 3) (eh, % 6) (e) (20 0.20 0.20 0.20 0.20 0.20 0.20 0.20				000				3653	0.93
691 020 020 3634 eth/h 546 c), s 17.6 f), veh/hh 691 title 100 f), veh/h 691 title 100 f) f), sheh 972 title 100 f) f), sheh 45,9 f), sheh 30 f), sheh 691 f), sh	7 (0.000				3653	0
920 0 934 934 vehirlin 1767 176 c), s 176 1, vehirl 691 vehirl 972 vehirl 972 sixeh 3.0 9, sixeh 3.0 9, sixeh 0.0 9, sixeh 0.0 9, sixeh 1.0 9, sixeh	4 -			0.0					0
3534 eth/h 546 c), s 176 c), s 1776 176 c), s 1776 100 100 100 100 100 1) 3, siveh 3, siveh 3, siveh 3, siveh 100 3), siveh 45, 9 3, siveh 3, siveh 46, 9 3, siveh 47, 9 3, siveh 48, 9 3, siveh 48, 9				0.0				9:	0.00
veh/h 546 veh/hin 1767 c), s 17.6 c), s 17.6 d, veh/h 691 veh/h 972 dio 1.00 1, sheh 15, sheh 15, sheh 3.0 siveh 3.0 siveh 0.0 siveh 1.0 siveh 1.0 siveh 3.0 siveh 1.0 siveh 4.9				0.0			3428	5233	0
veh/h/ln 1767 (c) s 17.6 (d) s 17.6 (e) h 691 (i) of 100 (ii) of 100 (iii) of 10				0.0				1027	0
C), s 17.6 17.6 17.6 17.6 19.0 19.0 19.0 19.0 19.0 19.0 19.0 19.0				0.0			•	1689	0
C), s 17.6 1.00 1. veh/h 691 1.00 1. veh/h 972 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	, i			0.0				0:0	0.0
100 100 100 100 100 100 100 100 100 100				0.0			14.4	0:0	0.0
hith 691 079 C In 972 100 1 100 1 100 0 Veh 3.0 Veh 0.0 Veh 127 Veh 127 Ve	•								0.0
0.79 C 1.00 1 1.00 0 1.00 0							493	3653	0
M 972 1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (1.00 (0.00				0.28	0.0
1,00 c 1,00 c				,	•			3653	0 ;
1.00 C 45.9 3.0 0.0 12.7 veh				1.00				7.00	9.5
45.9 3.0 0.0 12.7 veh				0.00	S	S		0.87	0.0
3.0 0.0 12.7 veh 48.9	٧.			o l			7	0.0	0.0
0.0 12.7 veh 48.9				0		0.1 1.5		0.2	0.0
12.7 veh 48.9				0				0:0	0.0
48.9	8.3			0	0.0	0.1 0.6	9.3	0.1	0.0
y(d),s/ven 48.9				•				d	
_	4 7. 4			Ö	0.0	υ. 	20.5	7.0	0.0
اد	٥							τ :	1
					1827	.7		1458	
y, s/veh					o	0.5		15.0	
Approach LOS D						A		Ф	
Timer - Assigned Phs 1 2		4		9					
Phs Duration (G+Y+Rc), s 22.3 69.3		28.5	6	91.5					
2.0		2.0		5.0					
23.0 4		33.0	7	77.0					
II),s 16.4		19.6		2.0					
Green Ext Time (p_c), s 0.9 17.3		3.8		9.2					
Intersection Summary									
HCM 6th Ctrl Delay	16.7								
HCM 6th LOS	œ								

C-Max 82.0 0.68 0.30 4.9 0.1 5.0 A 28.0

Min 19.9 0.17 0.77 83.0 0.0 83.0

C-Max 57.1 0.48 0.47 9.1 9.1 A

C-Max 57.1 0.48 0.38 25.8 25.8 25.8

Min 28.0 0.23 0.52 42.5 0.0 42.5

Min 28.0 0.23 0.69 46.3 46.3

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 28.0 0.23 0.52 45.2 45.2 D D D

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

User approved volume balancing among the lanes for turning movement.

Synchro 10 Report 2019PX.syn

404

Splits and Phases: 3: Carlisle Blvd. & I-40 EB Ramp

Ø6 (R)

Intersection Signal Delay: 29.4 Intersection Capacity Utilization 65.4% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.77

Intersection LOS: C ICU Level of Service C

Actuated Cycle Length: 120 Offset: 110.4 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 55

2021 PM Peak Existing Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 4: Carlisle Blvd. & Indian School Rd. Terry O. Brown, PE

1.00

8.8

8.8

0 8 9

8.8

8.8

1.00 No 1856 587 0.93

Initial Q (Qb), veh
Ped-Bite Adi(A, pbT)
Parking Bus, Adi
Work Zone On Approach
Adj Sat Flow, vehh/lin
Adj Flow State, vehh/
Peak Hour Fador
Percent Heavy Veh, %

225 225 0 1.00

330

Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)

\$62

228 00.1

1.00 No 1856 927 0.93

1.00 No 1856 1016 0.93

116 0.93

1.00 No 1856 355 0.93 3 399 0.20 2021 309 1763 20.5 20.5

1856 245 3 323 3 323 3 223 1767 1767 10.8 3 323 3 323 3 23 3 24.8 6.9 6.9 6.9

1856 51 3 3 79 00.21 1811 1811 1811 522.5 522.5 522.5 580 0.64 580 0.64 40.9 4.9 0.01

3 230 0.04 116 767 767 5.2 5.2 5.2 5.2 334 0.50 0.67 0.051 27.3

V/C Ratio(X)
Avail Cap(c_a), veh/h
HCM Platoon Ratio

28.8 1644 25.1

31.7

45.8 D

43.5 D

28.9

72.4 E

7.79

35.8 D

14.0 B

13.9 B

48.3

Initial Q Delay(d3),s/veh %ile BackOfQ(95%),veh/in Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh

1183 42.8 D

673

1086 27.0 C

Approach Delay, s/veh Approach LOS

Approach Vol, veh/h

5.0 25.0 23.0 0.7

29.7 5.0 25.0 24.7 0.1

49.2 5.0 37.0 26.7 5.7

12.3 5.0 13.0 7.2 0.1

47.3 5.0 37.0 12.9 4.0

11.1 5.0 13.0 6.1 0.1

43.5 5.0 33.0 24.5 4.3

18.1 5.0 17.0 0.3

Phs Duration (G+Y+Rc), s

Max Q Clear Time (g_c+l1), s Green Ext Time (p_c), s Change Period (Y+Rc), s Max Green Setting (Gmax), s

36.1

HCM 6th Ctrl Delay HCM 6th LOS

1300 0.71 1300 1.33 0.94 25.6 3.2 0.0 0.0

0.067 0.07 0.091 40.8 2.7 0.0 0.0

348 0.89 367 1.00 0.96 46.9 20.8 0.0

622 0.54 622 2.00 0.98 13.0 0.9 0.0

Uniform Delay (d), s/veh

Upstream Filter(I)

Incr Delay (d2), s/veh

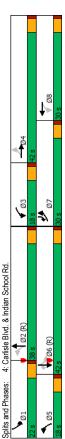
1300 0.49 3526 927 1763 24.7

3 1583 0.21 4940 694 1689 22.5 22.5

334 1763 1763 10.8

Cap, vehih
Arrive On Green
Sast Flow, vehih
Gip Sast Flow(s), vehih
Lane Gip Cap(c), vehih

	4	†	•	ţ	•	←	۶	→	•	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	y -	₩	۳	₩	<u>r</u>	₩ ₽	۳	‡	X _	
Traffic Volume (vph)	382	246	7	330	108	945	228	862	439	
Future Volume (vph)	382	546	7	330	108	945	228	862	439	
Turn Type	pm+pt	≨	pm+pt	¥	pm+pt	¥	pm+pt	Ϋ́	hm+ov	
Protected Phases	7	4	က	∞	2	2	-	9	7	
Permitted Phases	4		∞		2		9		9	
Detector Phase	7	4	က	∞	22	2	~	9	7	
Switch Phase										
Minimum Initial (s)	2.0	2.0	2.0	2.0	2.0	5.0	2.0	2.0	2.0	
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	10.0	
Total Split (s)	30.0	45.0	18.0	30.0	18.0	38.0	22.0	45.0	30.0	
Total Split (%)	25.0%	35.0%	15.0%	25.0%	15.0%	31.7%	18.3%	35.0%	25.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	
Lead-Lag Optimize?										
Recall Mode	Min	Min	Min	Min	Min	С-Мах	Min	C-Max	Min	
Act Effct Green (s)	52.1	38.6	30.6	23.1	47.1	37.1	57.5	42.9	72.9	
Actuated g/C Ratio	0.43	0.32	0.26	0.18	0.39	0.31	0.48	0.36	0.61	
v/c Ratio	0.97	09.0	0.29	0.84	0.49	69.0	0.81	0.74	0.45	
Control Delay	68.5	35.5	24.3	48.3	25.9	37.7	49.8	38.9	9.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	
Total Delay	68.5	35.5	24.3	48.3	25.9	37.7	49.8	38.9	9.9	
SOT	ш	۵	ပ	□	ပ	□	۵	۵	∢	
Approach Delay		48.1		45.6		36.5		31.3		
Approach LOS		٥		٥		۵		O		
Intersection Summary										
Cycle Length: 120										
Actuated Cycle Length: 120 Offset: 9.6 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	to phase 2	::NBTL a	nd 6:SBTI	., Start of	Green					
Natural Cycle: 80										
Control Type: Actuated-Coordinated	linated									
Maximum V/C Natio: 0.9/	-			_5	, cito const	0				
Intersection Signal Delay: 38./	/0C 30/			⊆ ⊆	Intersection LOS: D	LCOS: D	ц			
Analysis Boring (min) 15	00.00			2	ביים ביים ביים	00000	_			



Synchro 10 Report 2019PX.syn

Synchro 10 Report 2019PX.syn

2021 PM Peak Existing Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 5: Washington St. & Indian School Rd Terry O. Brown, PE

00.1

8.8

8.8

52 0

8 8 0 0 0 0 O

0 8 8

8.8

8.0

1.00 No 0.93

Initial Q (Qb), veh
Ped-Bite Adi(A, pbT)
Parking Bus, Adi
Work Zone On Approach
Adj Sat Flow, vehh/lin
Adj Flow State, vehh/
Peak Hour Fador
Percent Heavy Veh, %

0.93

Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h) 1.00 No 0.93

1.00 No 0.93 0.27

1.00 No 0.93 0.36 6.8

0.27

0.93 0.27 21.4 0.35 1.00 1.00 1.00 0.0

0.039

V/C Ratio(X)
Avail Cap(c_a), veh/h
HCM Platoon Ratio

11.0

cap vehin Arrive On Green Sat Flow, vehin Grp Volume(v), vehin Grp Sat Flow(s), vehin Grs Sarve(g. s), s Cycle Q Clear(g. c), s Prop in Lane Lane Grp Cap(c), vehin

0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

0.00 0.00 0.00 0.0 0.0 0.0

0.30 1.00 20.4 1.2 0.0 5.1

0.43 1.00 1.00 1.97 1.9 0.0 8.0

Uniform Delay (d), s/veh

Upstream Filter(I)

0.00

0.0 0.0

32.0 C

21.0 C

20.2 C

> Approach Delay, s/veh Approach LOS Timer - Assigned Phs

Approach Vol, veh/h

37.0 5.0 32.0 9.0 2.0

13.0 5.0 7.9 7.9

28.9 5.0 25.0 23.4 0.4

10.0 5.0 7.0 4.7

40.0 5.0 32.0 13.1 3.3

10.0 11.0 3.3 0.0

28.9 5.0 25.0 17.2

5.0 7.0 3.9 0.0

Phs Duration (G+Y+Rc), s

Change Period (Y+Rc), s Max Green Setting (Gmax), s Max Q Clear Time (g_c+l1), s Green Ext Time (p_c), s 29.8

HCM 6th Ctrl Delay HCM 6th LOS

0.0

22.6

33.6 C

0.0 A

25.0

21.7

21.6

16.0 B

21.7

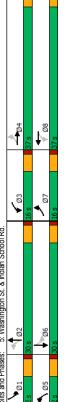
21.6 C

15.8

Incr Delay (d2), s/veh Initial Q Delay(d3), s/veh %ile BackOfQ(95%), veh/ln Unsig. Movement Delay, s/veh LnGrp Delay(d), s/veh

Timings 5: Washington St. & Indian School Rd	& Indian	Scho	ol Rd.						Terry O. Brown, PE 06/27/2019
	•	†	•	ţ	•	←	ၨ	→	
Lane Group	EBL	EBT	WBL	WBT	BE	NBT	SBL	SBT	
Lane Configurations	k	₩	je.	₽ ₽	r	2	r	£	
Traffic Volume (vph)	176	475	4	294	2	266	51	261	
Future Volume (vph)	176	475	4	294	2	566	51	261	
Turn Type	pm+pt	₹	pm+pt	Ϋ́	pm+pt	Ϋ́	pm+pt	A	
Protected Phases	7	4	က	∞	2	7	Ψ-	ဖ	
Permitted Phases	4		∞		2		9		
Detector Phase	7	4	က	∞	S.	2	-	9	
Switch Phase									
Minimum Initial (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	
Total Split (s)	16.0	37.0	16.0	37.0	12.0	30.0	12.0	30.0	
Total Split (%)	16.8%	38.9%	16.8%	38.9%	12.6%	31.6%	12.6%	31.6%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1:0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0:0	0.0	0.0	0.0	0:0	0.0	
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?									
Recall Mode	Min	Max	Min	Max	Min	Min	Min	Min	
Act Effct Green (s)	42.4	35.4	38.8	32.1	30.7	24.0	30.4	23.8	
Actuated g/C Ratio	0.49	0.38	0.42	0.35	0.33	0.26	0.33	0.26	
v/c Ratio	0.38	0.45	0.12	0.32	0.36	0.72	0.21	0.92	
Control Delay	15.4	22.4	13.2	22.1	23.8	40.7	20.5	29.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0.0	
Total Delay	15.4	22.4	13.2	22.1	23.8	40.7	20.5	29.0	
SOT	Ф	ပ	ω	ပ	ပ	□	ပ	ш	
Approach Delay		20.7		21.2		37.6		54.6	
Approach LOS		ပ		ပ		Ω		Ω	
Intersection Summary									
Cycle Length: 95									
Actuated Cycle Length: 92.7	7								
Natural Cycle: 65									
Control Type: Semi Act-Uncoord	poord								
Maximum v/c Ratio: 0.92									
Intersection Signal Delay: 31.9	9:1			프	Intersection LOS: C	LOS: C			
Intersection Capacity Utilization 63.1%	ation 63.1%			2	ICU Level of Service B	f Service	В		
Analysis Period (min) 15									





Synchro 10 Report 2019P.X.syn

2021 PM Peak Existing Conditions - Existing Geometry 2021 PM Peak Existing Conditions - Existing Geometry 2019PX.syn

HCM 6th Signalized Intersection Summary 6: Carlisle Blvd. & Constitution Ave. Terry O. Brown, PE 06/27/2019

Particle		\	Ť	>	•	,	/		_	Ĺ	٠	+	*
1	Movement	H	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
213 197 16 62 127 76 18 704 37 75 598 213 197 16 62 127 76 18 704 37 75 598 1100 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Lane Configurations	k	*	×	k	*	æ	×	*		*	*	•
213 197 16 62 127 76 18 704 37 75 598 100 100 100 100 100 100 100 100 100 10	Traffic Volume (veh/h)	213	197	16	62	127	9/	18	704	37	75	298	127
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Future Volume (veh/h)	213	197	16	62	127	9/	18	704	37	75	298	127
100 100 100 100 100 100 100 100 100 100	Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
100 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		1.00
No N	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
1866 1866 1866 1866 1866 1866 1866 1866	Work Zone On Approach		ž			S			S			8	
222 205 17 65 132 79 19 733 39 78 623 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
0.96 0.96 0.96 0.96 0.96 0.96 0.96 0.96	Adj Flow Rate, veh/h	222	205	17	92	132	79	19	733	33	78	623	132
3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Peak Hour Factor	96.0	96.0	96.0	96:0	96.0	96:0	96.0	96.0	96.0	96.0	96:0	0.96
311 504 427 268 504 427 514 2196 117 439 1197 11 617 135	Percent Heavy Veh, %	က	က	က	က	က	က	က	က	က	က	က	m)
1027 0.27 0.27 0.27 0.27 0.27 0.27 0.27 0	Cap, veh/h	311	204	427	268	204	427	514	2196	117	439	1197	1014
1161 1866 1572 1150 1856 1572 703 3403 161 052 1532 175 153 175 153 175 153 175 153 175 153 175 153 175 153 175 153 175 153 175 153 175 153 175 175 175 175 175 175 175 175 175 175	Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.64	0.64	0.64	1.00	1.00	1.00
1161 1856 1572 103 152 173 183 533 692 1856 11 161 1866 1572 103 173 1823 692 1856 11 161 1866 1572 103 173 1823 692 1856 11 161 1866 1572 103 173 1823 692 1856 11 161 1866 1572 103 173 1823 692 1856 11 161 1866 1573 183 183 183 183 183 183 183 183 183 18	Sat Flow, Vell/III		000	2101	2	1000	2/01	200	3403	101	700	000	420
28.9 10.9 1.0 5.9 6.7 137 177 2.5 0.0 17.0 17.0 17.0 17.0 17.0 17.0 17.0	Grp Volume(V), ven/n	777	202	1575	8 5	1056	8,44	200	37.9	293	0/0	1056	152
289 109 1.0 16.7 6.7 4.6 12 11.7 11.7 14.2 0.0 100 100 100 1.00 1.00 1.00 1.00 1.0	O.Serve(a.s.), verimini	22.2	10.00	10	2 2	9601	46	2 5	117	11.7	250	000	0.0
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Cycle Q Clear(a c). s	28.9	10.9	0.1	16.7	6.7	4.6	12	11.7	11.7	14.2	0.0	0.0
311 504 427 268 504 427 514 1137 1176 439 1197 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
071 041 004 024 026 018 004 033 033 0.18 0.52 C 141 665 563 368 665 563 514 137 1776 439 197 1100 1.00 1.00 1.00 1.00 1.00 1.00 2.00 2	Lane Grp Cap(c), veh/h	311	504	427	268	504	427	514	1137	1176	439	1197	1014
411 665 663 368 665 563 514 1137 1176 439 1197 11 100 100 1.00 1.00 1.00 1.00 1.00 1.	V/C Ratio(X)	0.71	0.41	0.04	0.24	0.26	0.18	0.04	0.33	0.33	0.18	0.52	0.13
100 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Avail Cap(c_a), veh/h	411	999	263	368	999	563	514	1137	1176	439	1197	1014
150 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1	HCM Platoon Ratio	1:00	9.1	1:00	1.00	1.00	1.00	1:00	1.00	1:00	2.00	5.00	2.00
45.6 35.8 32.2 42.6 34.3 33.5 7.8 96 9.6 1.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Upstream Filter(I)	1.00	1.00	1.00	0.1	1.00	1.0	1.00	1.00	1.00	0.64	0.64	0.64
3.9 0.5 0.0 0.5 0.3 0.2 0.1 0.8 0.8 0.6 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Uniform Delay (d), s/veh	45.6	35.8	32.2	45.6	84.3 5.3	33.5	7.8	9.6	9.6	- -	0:0	0.0
8/8	Incr Delay (d2), s/veh	3.9	0.5	0.0	0.5	0.3	0.2	0.1	0.8	0.8	9.0	1:0	0.5
siveh 49.5 36.3 32.2 43.1 5.5 3.2 0.3 7.9 8.1 0.2 0.6 siveh 49.5 36.3 32.2 43.1 34.5 33.7 7.9 10.4 10.4 1.6 1.0 D D C D C C A B B A A A A A A A A A A A A A A A	Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
siven 49.5 36.3 32.2 43.1 34.5 33.7 7.9 10.4 10.4 1.6 1.0 D	%ile BackOfQ(95%),veh/ln	11.0	8.7	0.7	3.1	5.5	3.2	0.3	7.9	8.1	0.2	9.0	0.1
8 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8 24 376 8	Unsig. Movement Delay, s/veh		2	ć	707		1	1			4		ć
8	Liferp Delay(u),s/veri	0.6 C. □	S.05 C.05	32.2 C	- 5	ر بن در	, co	5. ⊲	5 4 8	1.0 4. G	<u>0</u>	<u>.</u>) V Q
8.2 4 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Approach Vol. veh/h	1	444		1	276			79.1	1		833	•
s 82.4 6 8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9	Approach Delay, s/veh		42.7			36.3			10.4			1.0	
s 82.4 37.6 82.4 6 s 82.4 37.6 82.4 5.0 xx,s 67.0 43.0 67.0 11),s 13.7 30.9 16.2 16.2	Approach LOS					Ω			മ			∢	
s 824 376 824 s 50 50 50 xx,s 670 430 670 11),s 137 6.1 16.2	Timer - Assigned Phs		2		4		9		∞				
s 50 50 50 xx), s 67.0 43.0 67.0 4 11), s 13.7 30.9 16.2 1 56 1.7 6.1 16.2	Phs Duration (G+Y+Rc), s		82.4		37.6		82.4		37.6				
xx), s 67.0 43.0 67.0 11), s 13.7 30.9 16.2 5.6 1.7 6.1	Change Period (Y+Rc), s		5.0		5.0		2.0		2.0				
11), s 13.7 30.9 16.2 5.6 1.7 6.1 16.2	Max Green Setting (Gmax), s		67.0		43.0		0.79		43.0				
16.2	Max Q Clear Time (g_c+I1), s		13.7		30.9		16.2		18.7				
Ń.			9		2		- o		7.				
	Intersection Summary												
	HCM 6th Ctrl Delay			16.2									

C-Max 81.9 0.68 0.12 0.5 0.0

C-Max 81.9 0.68 0.32 9.1 9.1

C-Max 81.9 0.68 0.04 9.1 9.1

Min 28.1 0.23 0.19 7.5 0.0 7.5 A

Min 28.1 0.23 0.32 39.4 0.0 0.0 39.4

Min 28.1 0.23 0.04 11.8 0.0 B

Min 28.1 28.1 0.23 0.83 67.8 67.8 67.8 67.8

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 28.1 0.23 0.48 41.8 0.0 0.0 D D D

Min 28.1 28.1 0.23 0.31 37.7 0.0 D D D D C C C

C-Max 81.9 0.68 0.49 7.5 7.5 A A A

2.7 0.0 2.7

5.0 21.0 72.0 60.0% 4.0 1.0 0.0

1.0

0.0 0.0

0.0 0.0

1.0

1.0 0.0

1.0

1.0

1.0 0.0

5.0 21.0 72.0 60.0%

5.0 21.0 72.0 60.0%

5.0 21.0 48.0 40.0%

5.0 21.0 48.0 40.0%

5.0 21.0 48.0 40.0%

5.0 21.0 48.0 40.0%

5.0 21.0 48.0 40.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time Adjust (s)

5.0 21.0 48.0

127

598 NA

₹ \$ \$ **₹**

127 127 NA

197 AM

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase

Timings 6: Carlisle Blvd. & Constitution Ave.

†

	\$04	48 s	80	48 s
Splits and Phases: 6: Carlisle Blvd. & Constitution Ave.				
Splits and Phases:	[♣] Ø2 (R)	72 s	◆ Ø6 (R)	72 s

Intersection LOS: B ICU Level of Service C

Intersection Signal Delay: 18.8 Intersection Capacity Utilization 70.8% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.83

Natural Cycle: 55

Actuated Cycle Length: 120 Offset: 69.6 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Cycle Length: 120

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

2021 PM Peak Existing Conditions - Existing Geometry

Synchro 10 Report 2019PX.syn

Synchro 10 Report 2019PX.syn

HCM 6th Signalized Intersection Summary 7: San Mateo Blvd. & I-40 EB Ramp

Timings 7: San Mateo Blvd. & I-40 EB Ramp

SBT 946 NA

428 428 Prot

420 420

312 312 Prot

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase 5.0 21.0 84.0 70.0% 4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

0.0

1.0

5.0 10.0 18.0 15.0%

5.0 21.0 66.0 55.0%

5.0 21.0 66.0 55.0%

5.0 21.0 36.0 30.0%

5.0 10.0 36.0 30.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

Terry O. Brown, PE 06/27/2019

Movement Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)	į											
Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)	ᇤ	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (veh/h) Future Volume (veh/h)	k.	4	*					444	*-	£	444	
Future Volume (veh/h)	312	Ξ	450	0	0	0	0	1631	365	428	946	0
	312	Ξ	420	0	0	0	0	1631	365	428	946	0
	0 8	0	0 9				0 9	0	0 9	0 0	0	0 ;
(100	00.1		1.00				1.00		00.1	1.00		1.00
Parking Bus, Adj	1.00	0.1 0.2	1.00				1.00	9: S	1.00	1.00	0.1 0.7	1.00
Work Zone On Approach	1056	1056	1056				c	1056	4056	1056	1056	-
Adj Sat Flow, ven/n/In Adi Flow Rate veh/h	335	0 0	460				-	1754	000	460	1017	5 C
	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
h. %	က	က	m				0	က	က	m	က	0
Cap, veh/h	634	0	564				0	2975		37.1	3735	0
	0.18	0.00	0.18				0.00	0.59	0.00	0.04	0.24	0.00
Sat Flow, veh/h	3534	0	3145				0	5233	1572	3428	5233	0
	335	0	460				0	1754	0	460	1017	0
veh/h/ln	1767	0	1572				0	1689	1572	1714	1689	0
	10.3	0.0	16.9				0.0	26.2	0.0	13.0	19.5	0:0
(g_c), s	10.3	0.0	16.9				0.0	26.2	0.0	13.0	19.5	0.0
	1.00		1.00				0.00		1.00	1.00		0.00
p(c), veh/h	634	0	264				0	2975		37.1	3735	
	0.53	0.00	0.82				0.00	0.59		1.24	0.27	0.00
Avail Cap(c_a), ven/n ucM Distess Detis	200	2 5	312				5	100	5	3/1	3/30	0 0
	8.5	8.6	8.5				00.0	9.5	00.0	0.00	0.50	9.0
dev/s	44 6	0.00	47.3				000	15.6	000	57.9	19.3	800
	0.7	0.0	4.3				0.0	000	0.0	122 6	0.0	0
Initial Q Delav(d3).s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.1	0.0	11.2				0.0	15.1	0.0	18.6	12.9	0.0
Unsig. Movement Delay, s/veh												
	45.3	0.0	51.6				0.0	16.5	0.0	180.4	19.4	0.0
LnGrp LOS	۵	A	۵				⋖	В		ш	В	4
Approach Vol, veh/h		795						1754	∢		1477	
Approach Delay, s/veh		49.0						16.5			9.69	
Approach LOS		٥						œ			ш	
Timer - Assigned Phs	-	2		4		9						
	18.0	75.5		26.5		93.5						
	2.0	2.0		2.0		2.0						
	13.0	61.0		31.0		79.0						
Max Q Clear Time (g_c+l1), s	15.0	28.2		18.9		21.5						
			I				I			ı		ı
mersection summary										ı	ı	
HCM 6th Ctrl Delay			42.4									
HCM 6th LOS			۵									
Notes												

C-Max 92.3 0.77 0.26 4.6 0.0 4.6 A 13.9

Min 25.8 0.22 0.63 34.6 0.0 34.6

C-Max 61.5 0.51 0.39 2.8 2.8 2.8 2.8

Min 17.7 0.15 0.68 28.7 0.0 28.7

Min 17.7 0.15 0.67 54.8 0.0 0.0

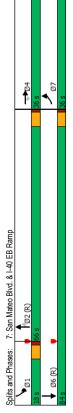
Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

C-Max 61.5 0.51 0.68 23.6 0.0 23.6 C C

Min 17.7 0.15 0.68 28.9 0.0 0.0 C C C C D

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS



Intersection LOS: C ICU Level of Service C

Intersection Signal Delay: 214 Intersection Capacity Utilization 65.5% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.68

Actuated Cycle Length: 120 Offset: 103.2 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 65

Synchro 10 Report 2019PX.syn

2021 PM Peak Existing Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary Terry O. Brown, PE 8: San Mateo Blvd. & 1-40 WB Ramp

8: San Mateo Blvd. & I-40 WB Ramp

Timings

1341 NA

185 185 Prot

> 236 236 Perm

106 T

178 178 Prot

396

147 Prot

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Turn Type
Protected Phases
Permitted Phases
Detector Phase

	•		•	,	Į		,		4			
	١.	Ť	~	•	,	/	•	_	L	•	+	*
Movement	표	EBT	BB	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	44		*	4	+	*	¥.	444			444	-
Traffic Volume (veh/h)	147	0	396	178	106	236	185	1242	0	0	1341	=======================================
Future Volume (veh/h)	147	0	396	178	106	236	185	1242	0	0	1341	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	_
Ped-Bike Adj(A_pbT)	1.00		1.00	1:00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		2			8			2			8	
Adj Sat Flow, veh/h/ln	1856	0	1856	1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h	156	0	421	189	113	251	197	1321	0	0	1427	118
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	9.9	0.94
Percent Heavy Veh, %	က	0	က	က	က	က	က	က	0	0	က	
Cap, veh/h	212	0	0	968	330	280	259	3213	0	0	2619	9
Arrive On Green	90.0	0.00	0.00	0.28	0.18	0.18	0.05	0.42	0.00	0.00	0.52	0.52
Sat Flow, veh/h	3428	156		3428	1856	1572	3428	5233	0	0	5233	157
Grp Volume(v), veh/h	156	59.8		189	113	251	197	1321	0	0	1427	118
Grp Sat Flow(s),veh/h/ln	1714	ш		1714	1856	1572	1714	1689	0	0	1689	1572
Q Serve(g_s), s	5.4			2.0	6.4	18.7	8.9	21.8	0.0	0.0	22.7	4.1
Cycle Q Clear(g_c), s	5.4			2.0	6.4	18.7	8.9	21.8	0.0	0.0	22.7	4.1
Prop In Lane	1.00			1.00		1.00	1.00		0.00	0.00		1:00
Lane Grp Cap(c), veh/h	215			896	330	280	259	3213	0	0	2619	912
V/C Ratio(X)	0.72			0.20	0.34	0:00	0.76	0.41	0.00	0.00	0.54	0.
Avail Cap(c_a), veh/h	343			896	387	328	400	3213	0	0	2619	912
HCM Platoon Ratio	0.1			9:	1.00	9.	0.67	0.67	1.00	1.00	9.	O
Upstream Filter(I)	1.00			1:00	1.00	1.0	0.68	0.68	0.00	0.00	0.1	<u>.</u>
Uniform Delay (d), s/veh	55.2			32.7	43.2	48.3	55.9	18.9	0.0	0.0	19.5	Ξ.
Incr Delay (d2), s/veh	4.6			0.1	9.0	23.6	3.1	0.3	0.0	0.0	0.8	0.3
Initial Q Delay(d3),s/veh	0:0			0:0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	ö
%ile BackOfQ(95%),veh/ln	4.4			3.8	5.4	14.1	5.5	13.3	0.0	0.0	13.7	.7
Unsig. Movement Delay, s/veh						i	1					
LnGrp Delay(d),s/veh	29.8			32.8	43.8	71.9	29.0	19.2	0.0	0.0	20.3	11.7
LnGrp LOS	ш			ပ		ш	ш	m	⋖	⋖	ပ	
Approach Vol, veh/h					223			1518			1545	
Approach Delay, s/veh					27.8			24.3			19.7	
Approach LOS					Ω			O			Ф	
Timer - Assigned Phs		2	3		2	9	7	8				
Phs Duration (G+Y+Rc), s		81.1	38.9		14.1	0.79	12.5	26.3				
Change Period (Y+Rc), s		2.0	2.0		2.0	2.0	5.0	2.0				
Max Green Setting (Gmax), s		0.89	12.0		14.0	49.0	12.0	25.0				
Max Q Clear Time (g_c+I1), s		23.8	7.0		8.8	24.7	7.4	20.7				
Green Ext Time (p_c), s		12.8	0.3		0.3	11.9	0.2	9.0				
Intersection Summary												
HCM 6th Ctrl Delay			000	l	l	l	l	l	l	l		l
			0.07									

5.0 10.0 17.0 14.2 4.0 1.0 0.0 5.0 Lead

5.0 10.0 19.0 15.8%

5.0 21.0 30.0 25.0%

5.0 10.0 17.0 14.2% 4.0 1.0 0.0 5.0 Lag

1.0

4.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 -ead

4.0 0.0 5.0 Lag

5.0 10.0 17.0 14.2% 4.0 1.0 0.0 5.0 Lead

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

Min 71.6 0.60 0.12 3.2 3.2 3.2

C-Max 56.2 0.47 0.61 26.4 0.0

C-Max 73.1 0.61 0.43 10.9 0.0

Min 11.9 0.10 0.58 43.8 43.8 43.8

Min 21.5 0.18 0.68 34.7 34.7 34.7

Min 11.0 0.09 0.60 60.8 0.0 60.8

Min 20.9 0.17 0.92 48.6 0.0 0.0

Min 10.4 0.09 0.53 58.8 0.0 58.8

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 21.5 0.18 0.34 44.8 0.0 0.0 D D D 45.6

 Splits and Phases:
 8: San Mateo Blvd. & I-40 WB Ramp
 \$\sqrt{\circle}\$ 2

 \$\sqrt{\circle}\$ 2 (R)
 \$\sqrt{\circle}\$ 2

Intersection LOS: C ICU Level of Service C

Intersection Signal Delay: 27.7 Intersection Capacity Utilization 68.0% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.92

Natural Cycle: 65

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS Actuated Cycle Length: 120 Offset: 44.4 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Green

2021 PM Peak Existing Conditions - Existing Geometry

Synchro 10 Report 2019PX.syn

2021 PM Peak Existing Conditions - Existing Geometry 2019PX syn

2021 AM Peak Hour NO BUILD Analyses

HCM 6th Signalized Intersection Summary 1: Girard Ct. & Indian School Rd. Ц ۵

28 28 1.00 1.00

1.00 0.1

64 0 0.1 0.00

2 2 0 0.1

initial Q (Qb), veh
Ped-Bike Adj(A_pbT)
Parking Bus, Adj
Work Zone On Approach
Adj Sat How, vehlr/lin
Adj Flow Rate, vehlr/lin
Peak Hour Fador
Percent Heavy Veh, %

230

Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)

8.9

8.8 1856

80 80 90.87 3 3 267 267 27 3.0 3.4 4.100 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.

cap vehin Arrive On Green Sat Flow, vehin Grp Volume(v), vehin Grp Sat Flow(s), vehin Grs Sarve(g. s), s Cycle Q Clear(g. c), s Prop in Lane Lane Grp Cap(c), vehin

0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

257 0.21 257 0.33 0.77 8.6 0.3 0.0

1257 0.11 1.00 1.00 2.5 0.2 0.0 0.0

Uniform Delay (d), s/veh

Upstream Filter(I)

9 9 0.4 1.8 1.0 0.0 1.0 0.0 0.0 0.0 0.0 0.0

V/C Ratio(X)
Avail Cap(c_a), veh/h
HCM Platoon Ratio

133

63 24.3 C

311 2.8 A

Approach Delay, s/veh Approach LOS imer - Assigned Phs

Approach Vol, veh/h

44.2 5.0 25.0 8.7 2.7

10.8 5.0 5.4 5.4 0.4

44.2 5.0 25.0 9.3 1.4

10.8 5.0 5.5 5.5 0.1

Change Period (Y+Rc), s Max Green Setting (Gmax), s Max Q Clear Time (g_c+11), s Green Ext Time (p_c), s

Phs Duration (G+Y+Rc), s

9.9

HCM 6th Ctrl Delay HCM 6th LOS

24.3

22.3 C

0.0

24.8 C

8.9 A

8.9 A 543 8.8

7.3

2.6 A

4.8

Incr Delay (d2), s/veh Initial Q Delay(d3),s/veh Skile BackOf(g8%),veh/in Unsig. Movement Delay, s/veh LnGrp Delaay(d),s/veh LnGrp LOS

0.00

0.0 0.0

0.11

3 0.11 1701

1.00 No 1856 478 0.87 3 2268 0.24 3180 264 1763 6.6

1.00 No No 1856 264 0.87 3 2332 0.71 141 1763 1.4

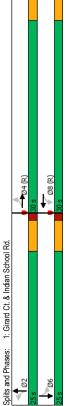
9 0.87 3 875 0.24 1083

1.00 No 1856 21 2.1 0.87

1.00 No 1856 13 0.87

1856 49 0.87

Permittions Permitting Permitted Permitting Permitted Permit		4								
## WBL WBT NBL NBT SBL S 4			†	\	ţ	•	←	٠	→	
yeurations		EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
rine (vph) 20 230 8 416 43 11 70 11		~	₩\$	×	4₽	×	\$	F	£	
ume (vph) 20 230 8 416 43 11 70 Phases 4 8 2 6 6 Phases 4 8 2 6 6 Phases 4 8 8 2 6 6 Phases 4 8 8 2 6 6 Initial (s) 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 <th< td=""><td></td><td>8</td><td>230</td><td>. ∞</td><td>416</td><td>43</td><td>Ξ</td><td>02</td><td>. 60</td><td></td></th<>		8	230	. ∞	416	43	Ξ	02	. 60	
Phrases 4 8 8 2 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		8	230	∞	416	43	Ξ	20	92	
Phrases 4 8 8 2 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6		erm	≨	Perm	Ϋ́	Perm	Ϋ́	Perm	Ϋ́	
Phases 4 4 8 8 2 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	Protected Phases		4		∞		7		9	
Pase	Permitted Phases	4		∞		2		9		
intial (s) 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Detector Phase	4	4	∞	∞	2	7	9	9	
hitial(s) 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	witch Phase									
bitt(s) 210 210 210 210 210 210 210 210 210 210		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
(%) 30.0 30.0 25.0 25.0 25.0 (%) 54.5% 54.5% 54.5% 54.5% 54.5% 54.5% 54.5% 55.0 25.0 25.0 25.0 30.0 30.0 25.0 25.0 25.0 25.0 30.0 30.0 25.0 25.0 25.0 30.0 30.0 30.0 30.0 30.0 30.0 30.0 3		21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	
(%) 54.5% 54.5% 54.5% 45.5% 45.5% 45.5% 45.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46.5% 46				30.0		25.0	25.0	25.0	25.0	
le (s) 40 40 40 40 40 40 40 40 40 40 40 40 40	\$			24.5%		45.5%	45.5%	45.5%	45.5%	
Main Color 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0				4.0		4.0	4.0	4.0	4.0	
Adjust (s) 0.0 0.0 0.0 0.0 0.0 0.0 Time (s) 5.0 5.0 5.0 5.0 5.0 5.0 5.0 Time (s) 5.0 5.0 5.0 5.0 5.0 5.0 Sprinize	II-Red Time (s)	1.0	1.0	1:0		1.0		1.0	1.0	
Time (s) 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	ost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0:0	
Patimize? Patimize? C. Max. C. Max. C. Max. Min. Min. min. men (s) 36.4 36.4 36.4 86.8 8.6 8.6 8.6 (c) C. Ratio. 0.66 0.66 0.16 0.16 0.16 0.16 0.16 0.1	otal Lost Time (s)	2.0	2.0	2.0		2.0		2.0	2.0	
Definities? C-Max C-Max C-Max Min Min Min Min rene(s) 36.4 36.4 36.4 36.8 8.6 8.6 8.6 CRatio 0.06 0.66 0.66 0.66 0.16 0.16 0.16 0.16	ead/Lag									
C-Max C-Max C-Max Min Min Min 384 384 384 886 8.6 8.6 8.6 8.6 8.6 8.6 9.6 9.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0.6 0	ead-Lag Optimize?									
36.4 36.4 36.4 86. 86 86 86 86 86 86 86 86 86 86 86 86 86				C-Max	C-Max	Min	Mii	Min	Min	
0.66 0.66 0.66 0.16 0.16 0.16 0.16 0.16		36.4	36.4	36.4	36.4	9.8	9.8	9.8	9.8	
0.04 0.13 0.01 0.23 0.24 0.05 0.37 (4.3 3.8 2.1 2.7 2.19 17.8 24.8 A A A C B C B C B C B C B C B C B C B C		99.0	99.0	99.0	99.0	0.16	0.16	0.16	0.16	
4.3 3.8 2.1 2.7 21.9 17.8 24.8 (2.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		0.04	0.13	0.01	0.23	0.24	0.05	0.37	0.18	
ay		4.3	3.8	2.1	2.7	21.9	17.8	24.8	12.2	
17.8 24.8 B C 21.0 C C		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	
21.0 C C C C C C C	otal Delay	4.3	3.8	2.1	2.7	21.9	17.8	24.8	12.2	
21.0 C C LOS: A	SO	∢	⋖	∢	∢	ပ	В	O	В	
C C	pproach Delay		3.8		2.7		21.0		19.8	
retrsection Summary yole Length: 55 ctuated Cycle Length: 55 iffset: 17 (612%), Referenced to phase 4/EBTL and 8:WBTL, Start of Green atural Cycle 4.5 ontrol Type. Actuated-Coordinated taximum vic Ratio: 3.7 Intersection Signal Delay: 6.3	pproach LOS		∢		∢		ပ		В	
ycle Length: 55 ccuated Cycle Length: 55 Hister: 17 6 (32%), Referenced to phase 4.EBTL and 8:WB.TL, Start of Green atural Cycle: 45 control Type: Actuated-Coordinated taximum vic Ratio: 37 textsction Signal Delay: 6.3	ntersection Summary									
citualed Cycle Length: 55 //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green //fiset: 17 6 (32%), Referenced to phase 4:EBTL and 8:EBTL and	ycle Length: 55									
Offset: 17.6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green latural Cycle: 45. Control Types Actuated-Coordinated laxmum vic Ratio: 0.37 laxmum vic Ratio: 0.37 laxmum vic Ratio: 0.37	ctuated Cycle Length: 55									
Soordinated : 6.3	Offset: 17.6 (32%), Referenced to	phase	4:EBTL	and 8:WE	3TL, Star	t of Greer				
Soordinated : 6.3	vatural Cycle: 45									
:6.3	Sontrol Type: Actuated-Coordinat	ted								
_	faximum v/c Ratio: 0.37									
	ntersection Signal Delay: 6.3				Ξ	tersection	LOS: A			
ntersection Capacity Utilization 35.5% ICU Level of Service A	ntersection Capacity Utilization 3	2.5%			೦	U Level o	f Service	×		



2021 AM Peak NOBUILD Conditions - Existing Geometry

2021 AM Peak NO

Synchro 10 Report	2021ANX.syn
NOBUILD Conditions - Existing Geometry	

HCM 6th Signalized Intersection Summary 2: Carlisle Rivd & 1-40 WB Ramn Terry O. Brown, PE 06/27/2019

	4	†	<u> </u>	\	ţ	4	•	←	•	٠	→	•
Movement	EBL	EBT	EBR	WBL	WBT	WBR	BE	NBT	NBR	SBL	SBT	SBR
Lane Configurations				*	÷	*	K.	444			444	*-
Traffic Volume (veh/h)	0	0	0	347	ω .	329	422	1033	0	0	761	285
Future Volume (veh/h)	0	0	0	347	∞ -	329	422	1033	0	0	761	285
Initial Q (Qb), veh				0 8	0	0 8	0 9	0	0 8	0 0	0	0 ;
Ped-Bike Adj(A_pb1)				9.5	00	9.5	1.00	9	00.1	00.1	3	1.00
Parking Bus, Adj				3.	0.r	3.	1.00	00.F	1.00	1.00	3.5	1.0
Work Zone On Approach				1056	No	1056	4056	NO	c	c	NO	1056
Adj Sat Flow, ven/n/ln Adi Flow Rate veh/h				30,00	000	370	474	1161	o c	0	855	000
Peak Hour Factor				0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %				က	ო	က	က	က	0	0	က	က
Cap, veh/h				922	0	412	530	3279	0	0	2266	
Arrive On Green				0.26	0.00	0.26	0.31	1.00	0.00	0.00	0.45	0.00
Sat Flow, veh/h				3534	0	1572	3428	5233	0	0	5233	1572
Grp Volume(v), veh/h				396	0	370	474	1161	0	0	822	0
Grp Sat Flow(s),veh/h/ln				1767	0 0	1572	1714	1689	0 0	0 0	1689	1572
Q Serve(g_s), s				70.7	0.0	72.0	74.5	0.0	0.0	0.0	12.3	0.0
Cycle Q Clear(g_c), s				70.7	0.0	72.0	t. 5	0.0	0:0	0.0	12.3	0.0
Prop in Lane				00.0	c	713	530	3270	0.00	0.00	2266	3
V/C Ratio(X)				0.43	0.00	0.90	0.89	0.35	0.00	0.00	0.38	
Avail Cap(c, a), veh/h				1092	0	486	592	3279	0	0	2266	
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.89	0.89	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				33.8	0.0	39.2	37.1	0.0	0:0	0.0	20.2	0.0
Incr Delay (d2), s/veh				0.3	0.0	17.6	13.7	0.3	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOrQ(95%),ven/in	2			Di.	0.0		9.	j.	0:0	0.0	8.4	0.0
Unsig. Movernent Delay, siven	=			34.1	0	8 95	50.8	03	0	0	20.7	0
LnGrp LOS				O	A	ш	٥	<	⋖	<	O	3
Approach Vol, veh/h					992			1635			855	٩
Approach Delay, s/veh					45.0			14.9			20.7	
Approach LOS					_			В			ပ	
Timer - Assigned Phs		2			5	9		8				
Phs Duration (G+Y+Rc), s		76.2			22.0	54.2		33.8				
Change Period (Y+Rc), s		5.0			2.0	2.0		2.0				
Max Green Setting (Gmax), s		0.99			19.0	45.0		34.0				
Max Q Clear Time (g_c+I1), s		2.0			16.5	14.3		27.0				
Green Ext Time (p_c), s		11.0			0.5	6.4		1.8				
Intersection Summary												
HCM 6th Ctrl Delay			23.5									
HCM 6th LOS			ပ									

C-Max 46.3 0.42 0.38 4.0 0.0

C-Max 69.8 0.63 0.36 15.5 15.5

Min 18.5 0.17 0.83 54.6 0.0

Min 30.2 0.27 0.86 57.3 0.0 57.3

Min 30.2 0.27 0.44 35.2 0.0 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 30.2 0.27 0.44 35.2 35.2 0.0 D D D

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

C-Max 46.3 0.42 0.40 23.9 0.0 23.9 C C 18.4

5.0 21.0 47.0 4.0 4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0 0.0

4.0 1.0 0.0 5.0 Lead

1.0

4.0 1.0 0.0 5.0

5.0 21.0 47.0 42.7%

5.0 21.0 71.0 64.5%

5.0 10.0 24.0 21.8%

5.0 21.0 39.0 35.5%

5.0 21.0 39.0 35.5%

5.0 21.0 39.0 35.5%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

1033 NA

422 422 Prot

329 329 Perm

347

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase

Timings 2: Carlisle Blvd. & I-40 WB Ramp

\$Ø Splits and Phases: 2: Carlisle Blvd. & I-40 WB Ramp 🕴 🕴 Ø6 (R) Ø2 (R)

Intersection LOS: C ICU Level of Service A

Intersection Signal Delay: 28.2 Intersection Capacity Utilization 52.0% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.86

Actuated Cycle Length: 110 Offset: 101.2 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 60

2021 AM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2021ANX.syn

Synchro 10 Report 2021ANX.syn

2021 AM Peak NOBUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 3: Carlisle Blvd. & I-40 EB Ramp

Timings 3: Carlisle Blvd. & I-40 EB Ramp

†

887 887 NA

190 Prot 190

257 257 Perm

887 887 NA

554 Perm

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase

Terry O. Brown, PE 06/27/2019

EBL E EBL E 554) 554) 554) 64 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 1	EBT EBR 777 5 5771 6 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	MBL O	WBT WBR 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NBL 1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	NBT 887 887 887 887 887 887 887 887 887 88	NBR 257 257 257 257 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	SBL 190 190 0 1.00 1.00 1.00 3 3 3 3 3 2.81 0.11 0.11 0.11 6.8 6.8 6.8 6.8	SBT 887 887 887 887 887 0 0 1020 1020 1020 1020 1089 2.5 2.5 2.5 2.5 2.5	SBR 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
rotns		00			887 887 0 0 0 1000 1020 1020 1030 1030 1030 103	257 257 257 0 1.00 1.00 1.00 2.95 0.87 3 884 1.00 1.572 2.95 1.572 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	190 190 0 100 1.00 1.00 1.00 3.428 2.81 0.37 3.328 2.81 0.11 3.428 2.81 0.11 0.11 0.11 0.12 0.11 0.11 0.11 0.1	887 887 0 0 1,00 1,00 1,02 1,02 0,92 0,92 1,02 1,02 1,02 1,02 1,02 1,02 1,02 1,0	0.0000000000000000000000000000000000000
verhit) 554 (verhit) 554 (verhit) 554 (verhit) 554 (verhit) 100 (verhit) 637 (verhit) 637 (verhit) 637 (verhit) 637 (verhit) 637 (verhit) 189 (verhit) 189 (verhit) 777 (verhit) 189 (verhit) 777 (verhit) 189 (verhit) 777		0.0			887 887 0 0 1.00 1.00 1.02 1.02 1.02 1.02 1.02	257 257 257 1.00 1.00 1.00 88 3 884 1.00 1.57 295 0.87 1.57 0.00 0.00 0.00	190 190 100 100 100 100 130 13428 13428 1714 6.8 6.8 6.8 100 281	887 887 887 887 1020 1020 1020 5233 3492 525 2.5 2.5	0.0000000000000000000000000000000000000
wehlth) 554 pbT) 1.00 ppT) 1.00 1 Approach hhhlin 637 vehlth 637 vehlth 637 vehlth 188 □C, s 189 □, vehlth 177 1.00 vehlth 637 vehlth 777 18.9		0			887 0 0 0 1000 1856 1020 0.00 0.00 1000 1000 1000 0.00 1000 0.00	257 0 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	190 1.00 1.00 1.00 1.00 2.18 0.87 3.3 3.281 0.11 1.714 6.8 6.8 6.8 1.00 2.81	887 0 0 0 0 0 0 1020 1020 1020 1020 1020 10	0.0000000000000000000000000000000000000
ah 0 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 1				1.00 1.00 0.087 0.00 0.00 0.00 0.00 0.00 0.00	100 100 1856 1020 0.87 3 4223 100 100 100 100 100 100 100 100 100 10	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 218 281 0.87 3.3 3.428 281 1.714 6.8 6.8 6.8 1.00 281	1.00 No	1.00 1.00 0.00 0.00 0.00 0.00 0.00 0.00
pbT) 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 100 1 1				1.00 1.00 0.00 0.00 0.00 0.00 0.00 0.00	1.00 1856 1020 0.87 3 4223 1.00 160 0.0 0.0	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 No No 1020 0.87 3,492 0.92 5233 1020 1689 1689 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	1.00 1.00 0.00 0.00 0.00 0.00 0.00
ij 1,00 1 Approach 1856 ii ihrlin 637 or 087 0 Veh,% 3 777 777 0,22 0 Veh/h 637 Veh/hl 189 LC),\$ 189 C,\$ 189 0,veh/h 777 1,00 0,82 0				0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	1.00 1.00 1.02 1.02 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1856 218 0.87 3 3 281 0.11 3428 218 1714 6.8 6.8 6.8 1.00 281	1.00 No	0.0000000000000000000000000000000000000
Approach 1866 11 elhhin 637 or 0.87 0 Veh.% 3 777 veh/hin 189 LC) s 189 (, veh/hin 777 () veh/h 777 () () () () () () () () () () () () () (0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1856 1020 1020 1020 100 100 1020 1503 0.0	1856 295 295 0.87 1.00 1.00 1572 295 1572 0.0 0.0	1856 218 0.87 3 281 0.11 3428 218 1714 6.8 6.8 6.8	No 1856 1.020 1.020 3.492 5.233 1.020 1.689 1.55 2.5 2.5 2.5 2.5 0.29	000000000000000000000000000000000000000
reth/in 1856 11 or 0.87 or 0.87 or 0.87 or 0.87 or 0.82 or 0.83 or 0.82 or 0.83				0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1856 1020 0.87 3 4223 1.00 7867 1020 1503 0.0	1856 295 0.87 3 884 1.00 1572 295 1572 0.0 0.0	218 218 3 281 0.11 3428 1714 6.8 6.8 6.8	1856 1020 0.87 3 3492 0.92 5233 1020 1689 2.5 2.5 2.5	0.0000000000000000000000000000000000000
or 087 or 082 or 082 or 087 or 087 or 087 or 088 or		ШШ		0.00 0.00 0.00 0.00 0.00 0.00 0.00	1020 0.87 3 4223 1.00 1020 1503 0.0 0.0	295 0.87 3 884 1.00 1572 295 1572 0.0 0.0	218 3 3 3 281 0.11 3428 218 1714 6.8 6.8 1.00 281	1020 0.87 3 3492 0.92 5233 1020 1689 2.5 2.5 2.5 2.5	0.00
veh, % 3 777 1 0.22 0 2854 veh/hln (837 LC), \$ 189 1, veh/h 777 3, veh/h 777 0, veh/h 777 0, veh/h 777 0, seh/h 777				0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.87 3 4223 1.00 7867 1020 1503 0.0 0.0	0.87 3 884 1.00 1572 295 1572 0.0 0.0	3428 281 3428 218 1714 6.8 6.8 1.00 281	0.87 3 3492 0.92 1020 1689 2.5 2.5 2.5 3492 0.29	0.0000000000000000000000000000000000000
Veh, % 3 777 777 0 0.2 0 3834 veh/h 637 veh/h/ln 1767 veh/h/ln 189 Lo), s 1.80 9, veh/h 777 0,82 0				0.00	3 4223 1.00 1020 1503 0.0 0.0	3 884 1.00 1572 295 1572 0.0 0.0	3 281 0.11 3428 218 1714 6.8 6.8 1.00 281	3 3492 0.92 5233 1020 1689 2.5 2.5 2.5 3492 0.29	0.00
777 777 9.22 0.22 0.22 0.22 0.22 0.22 0.23 0.23 0				0.00	4223 1.00 1020 1503 0.0 4223	1.00 1.572 295 1572 0.0 0.0	281 0.11 3428 218 1714 6.8 6.8 1.00 281	3492 0.92 5233 1020 1689 2.5 2.5 3492 0.29	0000
0.22 0 vehi/h 0.37 vehi/hin 1767 LG), s 18.9 l, vehi/h 777 0, vehi/h 777 0, 82 0				0.00	1.00 7867 1020 1503 0.0 0.0	1.00 1572 295 1572 0.0 0.0	0.11 3428 218 1714 6.8 6.8 6.8 1.00 281	0.92 5233 1020 1689 2.5 2.5 3492 0.29	0.00
3554 veh/h , veh/h/ln 1/67 LC), s 18.9 17.7 y, veh/h 777 0,82 0				0.0000000000000000000000000000000000000	1020 1503 0.0 0.0 4223	295 1572 0.0 0.0 1.00	3428 218 1714 6.8 6.8 1.00 281	2.5 2.5 3492 0.29	0.000
637 1767 18.9 18.9 1.00 777				0.0000000000000000000000000000000000000	1503 1503 0.0 0.0	295 1572 0.0 0.0	218 1714 6.8 6.8 1.00 281	1020 1689 2.5 2.5 3492 0.29	0.00
1767 18.9 18.9 1.00 777 0.82 0				0.00	0.0 0.0	0.0 0.0 1.00	6.8 6.8 6.8 1.00 281	2.5 2.5 3492 0.29	0.00
18.9 c), s 18.9 1.00 1, veh/h 777 0.82 0				0.0	0.0 0.0	0.0	6.8 6.8 1.00 281 0.78	2.5 2.5 3492 0.29	0.00
r(g_c), s 18.9 1.00 0(c), veh/h 777 0.82 C				0.00	0.0	1.00	1.00 281 0.78	3492	0.00
1.00 o(c), veh/h 777 0.82				0.00	4223	1.00	1.00 281 0.78	3492	0.0
/h /// 0.82				0.00	4223		0.78	0.29	
0.82				0.00		884	8/	0.29	Ē
				•	0.24	0.33	; ;	00,0	5
900 1,00				- 5	4.223	884	3/4	3492	,
1.00				1.00	2.00	2.00	1.33	 ES:	1.00
1.00	0.00 1.00			0.00	0.70	0.70	0.92	0.92	0.00
	,			0.0	0.0	0.0	48.0	ر. دن	0.0
5.4				0.0	0.1	0.7	9.9	0.2	0.0
0:0				0.0	0.0	0.0	0.0	0:0	
13.6	0.0			0.0	0.0	0.3	5.5	1.7	0.0
ay, s/ven				ć	2	1		,	Č
LnGrp Delay(d),s/ven 46.2	0.0			0.0	- - -))	04.0	- <	0.0
`				c	124	c		1000	1
Approach Vol. ven/n	129/				000			110	
	0.0				7.O				
	۵				5			2	
1	2	4	9						
14.0	8.99	29.2	80.8						
2.0	5.0	2.0	2.0						
12.0	5.0	28.0	72.0						
I1), s 8.8	2.0	20.9	4.5						
Green Ext Time (p_c), s 0.2 1	10.7	3.3	9.1						
Intersection Summary									
HCM 6th Ctrl Delay	18.1								
HCM 6th LOS	ш								
octo.N									

5.0 21.0 77.0 70.0% 4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 ead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

4.0 1.0 0.0 5.0

5.0 10.0 17.0 15.5%

5.0 21.0 60.0 54.5%

5.0 21.0 60.0 54.5%

5.0 21.0 33.0 30.0%

5.0 21.0 33.0 30.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

C-Max 73.1 0.66 0.30 10.3 10.3

Min 11.2 0.10 0.63 71.3 0.0

C-Max 57.0 0.52 0.31 2.7 2.7 2.7

C-Max 57.0 0.52 0.26 12.1 12.1

Min 26.9 0.24 0.63 41.5 0.0

Min 26.9 0.24 0.77 45.4 45.4

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 26.9 0.24 0.63 46.0 0.0 46.0 D

10.0

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

₽04 3: Carlisle Blvd. & I-40 EB Ramp Splits and Phases: Ø6 (R)

Intersection LOS: C ICU Level of Service A

Intersection Signal Delay: 25.1 Intersection Capacity Utilization 52.0% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.77

Actuated Cycle Length: 110 Offset: 101.2 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 55

Synchro 10 Report 2021ANX.syn 2021 AM Peak NOBUILD Conditions - Existing Geometry

2021 AM Peak NOBUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 4: Carlisle Blvd. & Indian School Rd.

Timings 4: Carlisle Blvd. & Indian School Rd.

761 761

289 NA

¥ 230 ₹

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase

Protected Phases

Terry O. Brown, PE 06/27/2019

Particle		^	Ť	~	•	ļ	/		_	Ĺ	•	+	,
ons 1	Movement	EBL	EBT	EBR	WBL	WBT	WBR	BE	NBT	NBR	SBL	SBT	SBR
National State	Lane Configurations	*	₩.		<u>r</u>	₹		*	441		<u>r</u>	ŧ	*
help) 372 230 45 52 289 128 71 659 38 223 761 help) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Traffic Volume (veh/h)	372	230	45	25	289	128	71	629	38	223	761	511
ppT) 100 100 100 100 100 100 100 100 100 10	Future Volume (veh/h)	372	730	42	25	583	128	77	629	38	223	761	51,
pycrach (100 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Initial Q (Qb), ven	0 0	>	9 0	9 0	0	9 6	9 6	0	0 0	100	>	7 0
opgroach Pinn No	Parking Bus. Adi	1.00	1.00	1.00	0.0	1.00	8 6	1.00	1.00	1.00	1.00	1.00	100
highin 1856 1856 1856 1856 1856 1856 1856 1856	Work Zone On Approach		શ			ટ			ટ			શ	
hill 418 258 51 58 325 144 80 740 43 251 855 16h, 85 325 144 80 189 0.89 0.89 0.89 0.89 0.89 0.89 0.89 0.	Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Color Colo	Adj Flow Rate, veh/h	418	258	21	28	325	144	80	740	43	251	822	574
Fig. 1, w	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	0.85
433 921 179 324 400 174 242 1732 100 407 1455 (912) (912) (912) (913) (913) (914) (915) (913) (914) (915) (913) (914) (915) (914) (915) (914) (915) (914) (915) (915) (914) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (915) (9	Percent Heavy Veh, %	က	က	က	က	က	က	က	က	က	က	က	(,,
1767 2943 573 1767 2929 1309 1767 4898 283 1767 3568	Cap, veh/h	433	921	179	324	400	174	242	1732	100	407	1455	8
vehl/h 1767 2843 573 1767 2892 1039 1767 4888 283 1767 352 1767 352 1767 358 238 231 469 1767 1768 1768 1768 1767 1768 1768 1767 1768 1768 1869 1767 1869 1767 1869 1767 1768 1768 1768 1768 1768 1768 1768 1768 1768 1868 261 286 279 274 144 144 97 178 c), sehlh 433 561 548 324 295 279 242 149 638 407 145 enh 433 561 548 324 295 279 242 149 638 407 145 enh 433 561 548 324 295 279 242 149 638 407 145 sito 167	Arrive On Green	0.32	0.52	0.52	0.02	0.17	0.17	0.03	0.24	0.24	0.14	0.55	0.55
reh/h 418 153 156 58 238 231 80 274 251 85 veh/ruln 7767 1763 1752 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1763 1764 684 4163 4163 4163 4173 1744 4173 1744 4174 4174 4174 4174 4174 4174 4174 4174 4174 4174 4174 4174 4174 4174 4174	Sat Flow, veh/h	1767	2943	573	1767	2392	1039	1767	4898	283	1767	3526	1572
vehirlin 1767 1763 1752 1767 1763 1669 1767 1669 1805 1767 1768 1765 1765 1765 1765 1765 1765 1765 1765	Grp Volume(v), veh/h	418	153	156	88	238	231	80	209	274	221	822	574
c), s 21.0 5.3 5.5 2.9 14.3 14.7 3.1 14.1 14.2 9.7 17.8 2.7 1.0 5.3 5.5 2.9 14.3 14.7 3.1 14.1 14.2 9.7 17.8 2.1 1.0 5.3 5.5 2.9 14.3 14.7 3.1 14.1 14.2 9.7 17.8 1.0 1.0 0.2 0.2 0.2 0.0 0.0 0.2 0.0 0.0 0.2 0.0 0.0	Grp Sat Flow(s),veh/h/ln	1767	1763	1752	1767	1763	1669	1767	1689	1805	1767	1763	1572
210 5.3 5.5 2.9 14.3 14.7 3.1 14.1 142 97 178 100 5.3 5.5 2.9 14.3 14.7 3.1 14.0 10.0 433 551 548 3.24 295 279 242 1194 638 407 1455 433 551 548 3.24 295 279 242 1194 638 407 1455 433 551 548 43.6 401 379 362 1194 638 407 1455 167 167 167 160 100 100 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 067 06	Q Serve(g_s), s	21.0	5.3	5.5	5.9	14.3	14.7	 T.	14.1	14.2	9.7	17.8	33.8
130 551 548 324 226 2100 0.16 1.00 0.16 1.00 0.33 1.00 0.28 0.28 0.28 0.28 0.28 0.28 0.28 0	Cycle Q Clear(g_c), s	21.0	5.3	5.5	5.9	14.3	14.7	3.1	14.1	14.2	9.7	17.8	23.
433 551 548 324 295 279 194 638 407 1455 0.96 0.28 0.18 0.34 242 194 638 407 1455 0.96 0.28 0.18 0.18 0.19 0.93 0.43 0.62 0.59 167 1.67 1.00 1.00 0.07 0.67 0.67 133 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1.33 1	Prop In Lane	1.00	į	0.33	1:00		0.62	1.00		0.16	1.00		7.0
0.96 0.28 0.28 0.18 0.81 0.83 0.43 0.43 0.45 0.59 0.99 0.99 0.28 0.28 0.18 0.81 0.83 0.43 0.43 0.43 0.45 0.49 0.99 0.99 0.99 0.99 0.99 0.99 0.99	Lane Grp Cap(c), veh/h	433	551	548	324	295	279	242	1194	638	407	1455	क्र
433 551 548 436 401 379 352 194 638 412 1455 167 167 167 160 100 100 067 067 067 133 133 99 0.99 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 0.97 </td <td>V/C Ratio(X)</td> <td>96.0</td> <td>0.28</td> <td>0.28</td> <td>0.18</td> <td>0.81</td> <td>0.83</td> <td>0.33</td> <td>0.43</td> <td>0.43</td> <td>0.62</td> <td>0.59</td> <td>0.60</td>	V/C Ratio(X)	96.0	0.28	0.28	0.18	0.81	0.83	0.33	0.43	0.43	0.62	0.59	0.60
1567 1567 167 1100 1100 1100 1100 1100 1100 110	Avail Cap(c_a), veh/h	433	551	248	436	401	379	352	1194	638	412	1455	8 3
26.1 9.99 0.99 0.99 0.97 0.97 0.97 0.97 0.97	HCM Platoon Katio	1.6/	1.6/	1.6/	9.1	1.00	9.5	0.67	0.67	0.67	1.33	55.	5.5
261 193 194 352 44,1 44,3 21,8 32,5 32,5 186 186 38,6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Upstream Filter(I)	0.99	0.99	0.99	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92
338 03 03 03 81 103 08 111 2.0 25 16 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 167 37 3.7 2.3 10.9 10.9 2.4 10.2 11.1 6.9 10.4 159 196 196 355 52.2 546 22.5 336 346 21.1 20.2 E B B D D C C C C C C C C C C C C C C C C 14.0 35.4 10.2 50.4 26.0 23.4 15.4 5 6.0 5.0 5.0 5.0 5.0 16.7 38 10.0 39.4 10.2 50.4 26.0 23.4 17.8 16.2 4.9 7.5 5.1 25.8 23.0 16.7 17.1 16.2 4.9 7.5 5.1 25.8 23.0 16.7 18.7 30.7	Uniform Delay (d), s/veh	26.1	19.3	19.4	35.2	4.	44.3	21.8	32.5	32.5	18.6	18.6	9
167 37 37 23 10.9 10.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Incr Delay (d2), s/veh	33.8	0.3	0.3	0.3	8.7	10.3	0.8	-	2.0	2.5	9.	5.6
167 37 37 23 10.9 10.9 2.4 10.2 11.1 6.9 10.4 59.9 196 196 35.5 52.2 54.6 22.5 33.6 34.6 21.1 20.2 E B B D D C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C C	Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
10 10 10 10 10 10 10 10	%ile BackOfQ(95%),veh/ln		3.7	3.7	2.3	10.9	10.9	2.4	10.2	1.7	6.9	10.4	10.0
194 196 355 35.2 34.6 21.1 20.2 32.9 34.6 21.1 20.2 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.9 32.	Unsig. Movement Delay, s/ver.		9	9	L	9		5	ć	3	3	0	Ş
1 2 3 4 5 6 7 863 1 2 3 4 5 6 7 863 167 439 100 394 102 504 260 234 50 50 50 50 50 50 50 11.7 162 49 75 51 258 230 167 0.0 45 0.0 1.7 0.1 3.9 0.0 1.7	LnGrp Delay(d),s/ven	58.6	9.0	9.6	35.5	27.75	24.6	27.2	33.6	34.6	71.7	707	17.
12	Lildip Los	ا	9 1			בן נ		اد	٥	اد	اد	٥	
428 514 523 1 2 3 4 5 6 7 8 167 439 10.0 394 10.2 50.4 26.0 23.4 5.0 5.0 5.0 5.0 5.0 5.0 5.0 11.7 16.2 4.9 7.5 5.1 25.8 23.0 16.7 0.0 4.5 0.0 1.7 0.1 3.9 0.0 1.7	Approach Vol, ven/h		17.7			27.7			803			1680	
1 2 3 4 5 6 7 8 167 439 10,0 394 10,2 50,4 26,0 23,4 150 50 50 50 50 50 50 50 50 11,7 16,2 4,9 7,5 5,1 25,8 23,0 16,7 0.0 4,5 0,0 1,7 0,1 3,9 0,0 1,7	Approach Delay, s/ven		47.8			4. 0			32.9			χ. 2	
167 439 100 394 102 504 260 2 160 50 50 50 50 50 50 50 120 320 120 340 120 320 210 11.7 162 49 75 51 258 23.0 0.0 45 0.0 1,7 0.1 3.9 0.0	Approach LOS		a			a			S			മ	
16.7 43.9 10.0 39.4 10.2 50.4 26.0 2 5.0 5.0 5.0 5.0 5.0 5.0 5.0 11.0 32.0 12.0 34.0 12.0 32.0 21.0 2 0.0 45 0.0 1.7 0.1 3.9 0.0 30.7	Timer - Assigned Phs	1	2	က	4	2	9	7	8				
50 50 50 50 50 50 50 50 50 50 120 320 210 2 11.7 162 49 7.5 51 258 23.0 10 4.5 0.0 1.7 0.1 3.9 0.0	Phs Duration (G+Y+Rc), s	16.7	43.9	10.0	39.4	10.2	50.4	26.0	23.4				
12.0 32.0 12.0 34.0 12.0 32.0 21.0 11.7 162 4.9 7.5 5.1 25.8 23.0 0.0 4.5 0.0 1.7 0.1 3.9 0.0 30.7	Change Period (Y+Rc), s		2.0	2.0	2.0	2.0	2.0	2.0	2.0				
11.7 16.2 4.9 7.5 5.1 25.8 23.0 0.0 4.5 0.0 1.7 0.1 3.9 0.0 30.7	Max Green Setting (Gmax), s		32.0	12.0	34.0	12.0	32.0	21.0	25.0				
Ž'08	Max Q Clear Time (g_c+I1), s Green Ext Time (p c), s		16.2	0.0	7.5	0.1	3.9	23.0	16.7				
, in	Information Cummon												
	Intersection sufficient			20.7									
	HCM off Ctrl Delay			%.√									

5.0 10.0 26.0 23.6% 4.0 1.0 0.0 5.0 Lead

5.0 21.0 37.0 33.6%

5.0 10.0 26.0 23.6%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0

1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

Min 67.5 0.61 0.53 15.8 0.0

Min 53.9 0.49 0.68 27.1 27.1

36.5 0.33 0.47 30.0 30.0

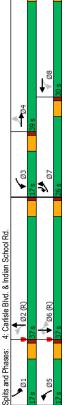
Min 44.8 0.41 0.30 17.4 0.0

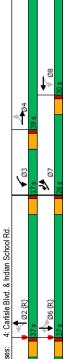
Min 32.6 0.30 0.30 29.1 29.1 29.1

Min 45.2 0.41 1.01 75.4 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

C-Max 41.5 0.38 0.65 27.0 27.0 C 23.2 C





Intersection LOS: C ICU Level of Service D

Intersection Signal Delay: 33.3 Intersection Capacity Utilization 75.3% Analysis Period (min) 15

Control Type: Actuated-Coordinated

Actuated Cycle Length: 110 Offset: 8.8 (8%), Referenced to phase 2.NBTL and 6:SBTL, Start of Green

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

2021 AM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2021ANX.syn

Synchro 10 Report 2021ANX.syn

2021 AM Peak NOBUILD Conditions - Existing Geometry A-120

HCM 6th Signalized Intersection Summary 5: Washington St. & Indian School Rd. Terry O. Brown, PE 06/27/2019

	1	†	<u> </u>	\	ţ	4	•	←	•	۶	→	•
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	₩		×	₽ ₽		*	£,		*	£,	
Traffic Volume (veh/h)	62	217	33	.8	230	ਲ	29	168	36	38	120	146
Future Volume (veh/h)	62	217	33	€ (730	용 '	67	168	36	88	120	146
Initial Q (Qb), veh	- - -	>	0 0	- -	0	S	0 0	0	- - -	0 0	0	0 0
Parking Bus. Adi	00.1	1.00	1.00	8.6	1.00	8.6	1.00	1.00	00.1	1.00	1.00	1.00
Work Zone On Approach		2			2			S			ટ	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	9/	265	48	22	280	41	82	202	44	46	146	178
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	က	က	ო :	m ;	က	m !	က	က	က	က	m :	က
Cap, veh/h	227	1196	214	561	1237	179	243	333	17	313	171	208
Arrive On Green	90:0	0.40	0.40	0.06	0.40	0.40	0.06	0.22	0.22	90:0	0.22	0.22
Sat Flow, veh/h	1/6/	5983	534	1/6/	3090	44/	1/6/	1481	318	1/6/	19/	928
Grp Volume(v), veh/h	9/	132	128	22	128	163	82	0	249	46	0	324
Grp Sat Flow(s),veh/h/ln	1767	1763	1759	1767	1763	1775	1767	0	1798	1767	0	1689
Q Serve(g_s), s	6.	4.6	4.7	0.5	4.7	4.8	5.8	0.0	10.0	5.	0.0	14.7
Cycle Q Clear(g_c), s	1.9	4.6	4.7	0.5	4.7	8.6	2.8	0:0	10.0	1.5	0.0	14.7
Prop In Lane	0.1	705	0.30	9.5	302	0.25	00.1	c	0 - S	0.10	c	0.00
Lane Grp Cap(c), ven/n	20,0	200	0.00	000	000	23 0	243		404	0.15		200
Avail Can(c a) vehih	900	705	704	50.0	705	710	787	0.00	20.02	357	9.0	20.0
HCM Platoon Ratio	1.00	8 6	1.00	100	100	1.00	1.00	1.00	1.00	1.00	00.1	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.2	15.8	15.8	11.8	15.8	15.8	22.8	0.0	27.9	21.5	0.0	29.7
Incr Delay (d2), s/veh	0.1	0.7	0.7	0.0	0.7	8.0	8.0	0.0	1.5	0.2	0.0	9.6
Initial Q Delay(d3),s/veh	0:0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	3.3	3.4	0.4	3.4	3.5	2.1	0.0	7.7	[0.0	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.3	16.5	16.5	11.9 0.1	16.5	16.6	23.6	0.0	29.4	21.7	0.0	39.3
LnGrp LOS	m	m	m	ш	m	ш	ပ	⋖	ပ	ပ	∢	
Approach Vol, veh/h		389			343			331			370	
Approach Delay, s/veh		15.7			16.3			28.0			37.1	
Approach LOS		В			В			ပ			Ω	
Timer - Assigned Phs	~	2	က	4	2	9	7	∞				
Phs Duration (G+Y+Rc), s	10.0	23.0	10.0	37.0	10.0	23.0	10.0	37.0				
Change Period (Y+Rc), s		2.0	2.0	2.0	2.0	2.0	2.0	2.0				
Max Green Setting (Gmax), s		25.0	11.0	32.0	7.0	25.0	11.0	32.0				
Max Q Clear Time (g_c+I1), s		12.0	2.5	6.7	4.8	16.7	3.9	8.9				
Green Ext Time (p_c), s		1:1	0.0	1.7	0.0	1.2	0.1	1.7				
Intersection Summary												
HCM 6th Ctrl Delay			24.2									
HCM 6th LOS			ပ									

5.0 21.0 30.0 31.6% 4.0 1.0 0.0 5.0

5.0 21.0 30.0 31.6%

5.0 10.0 12.0 12.6%

5.0 10.0 16.0

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

¥ 22 24

¥ 168 ¥ ¥

230 230 AA

8 8

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase

Timings 5: Washington St. & Indian School Rd.

†

Min 18.0 0.21 0.79 39.8 0.0 39.8 D D D

Min 0.22 0.63 36.3 36.3 36.3 C C

Max 32.2 0.38 0.24 18.8 0.0 18.8 B 18.3

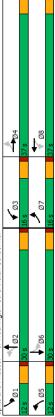
Max 33.6 0.40 0.23 17.2 0.0 17.2 16.2 16.2

Min 24.6 0.29 0.15 19.2 0.0

Min 25.1 0.30 0.34 22.4 22.4 22.4

Min 38.4 0.45 0.04 11.7 11.7

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio



Intersection LOS: C ICU Level of Service A

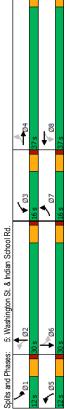
Maximun' vic Ratio: 0.79 Intersection Signal Delay: 26.0 Intersection Capacity Utilization 47.7% Analysis Period (min) 15

Control Type: Semi Act-Uncoord Actuated Cycle Length: 84.7

Natural Cycle: 65

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS



2021 AM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2021ANX.syn

Synchro 10 Report 2021ANX.syn

2021 AM Peak NOBUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 6: Carlisle Blvd. & Constitution Ave.

Timings 6: Carlisle Blvd. & Constitution Ave.

†

205

518 NA

470 A 470 A

¥ 30 ¥

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase

Terry O. Brown, PE 06/27/2019

Movement							-	-			٠	,
II	E	EBT	FBR	WBL	WBT	WBR	NBI	NBT	NBR	SBI	SBT	SBR
Lane Configurations	k	*	æ	k	*	æ	×	4		k	*	*
Traffic Volume (veh/h)	66	88	4	47	130	7	4	470	20	29	518	205
Future Volume (veh/h)	66	88	14	47	130	7	14	470	20	29	518	205
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1:00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		2			2			8			8	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	106	92	15	21	140	9/	15	202	22	72	222	220
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	က	က	က	က	က	က	က	က	က	က	က	က
Cap, veh/h	198	336	285	240	336	285	267	2505	109	657	1351	1145
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.73	0.73	0.73	1.00	1.00	1.00
Sat Flow, veh/h	1156	1856	1572	1273	1856	1572	689	3442	150	869	1856	1572
Grp Volume(v), veh/h	106	92	15	51	140	9/	15	258	569	72	222	220
Grp Sat Flow(s),veh/h/ln	1156	1856	1572	1273	1856	1572	689	1763	1829	698	1856	1572
Q Serve(g_s), s	9.8	4.9	0.9	4.0	7.4	4.6	0.7	5.1	5.2	0.7	0.0	0.0
Cycle Q Clear(g_c), s	17.2	4.9	0.9	8.8	7.4	4.6	0.7	2.1	5.2	2.8	0.0	0.0
Prop In Lane	1:00		1.00	9.		9.	1.00		0.08	1.00		9.
Lane Grp Cap(c), veh/h	198	336	285	240	336	282	267	1283	1331	657	1351	1145
V/C Ratio(X)	0.54	0.28	0.05	0.21	0.42	0.27	0.03	0.20	0.20	0.11	0.41	0.19
Avail Cap(c_a), veh/h	332	22/	472	391	227	472	292	1283	1331	657	1351	1145
HCM Platoon Ratio	1.00	9.	1.00	9.	1.00	9.1	1.00	1.00	00.	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.1	1.00	1:00	1.00	1.00	1.00	1.00	1.00	0.75	0.75	0.75
Uniform Delay (d), s/veh	47.5	38.9	37.2	42.7	33.0	38.7	4.2	8.4	8.4	0.2	0.0	0.0
Incr Delay (d2), s/veh	2.3	0.5	0.1	0.4	0.8	0.5	0.1	0.4	0.3	0.3	0.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0:0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0
%ile BackOfQ(95%),veh/In		4.1	9.0	2.3	6.2	3.3	0.2	3.1	3.2	0.1	0.5	0.2
Unsig. Movement Delay, s/veh		0				0			i		ı	0
LnGrp Delay(d),s/ven	7.64	5.85 5.6	ي د. ح	- 54	7.0	39.5	4.4	_ <		4.0) <	ე ა. <
Lildip LOS		2 8			2 2		<	۲ :	<	۲	τ ς	٦
Approach Vol. ven/n		7.10			707			747			848	
Approach Delay, s/ven		5. t			 c			- o			0.0	
Approach LOS		a			_			∢			∢	
Timer - Assigned Phs		2		4		9		8				
Phs Duration (G+Y+Rc), s		85.1		24.9		85.1		24.9				
Change Period (Y+Rc), s		2.0		2.0		2.0		2.0				
Max Green Setting (Gmax), s		0.79		33.0		0.79		33.0				
Max Q Clear Time (g_c+I1), s		7.2		19.2		7.8		10.8				
Green Ext Time (p_c), s		3.5		0.7		5.5		7:				
Intersection Summary												
HCM 6th Ctrl Delay			12.6									
HCM 6th LOS			α									

C-Max 84.6 0.77 0.18 0.2 0.0

C-Max 84.6 0.77 0.39 2.1 2.1 2.1

C-Max 84.6 0.77 0.11 0.0 0.0

C-Max 84.6 0.77 0.03 4.3 0.0

Min 15.4 0.14 0.27 11.1 0.0

Min 15.4 0.14 0.29 44.5 0.0

Min 15.4 0.06 12.9 0.0 12.9 B

Min 15.4 0.14 0.77 77.1 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio

Min 15.4 0.14 0.37 45.4 45.4 D D D D S8.7

C-Max 84.6 0.77 0.20 4.0 0.0 4.0 A A A

Min 15.4 0.14 0.54 50.9 0.0 0.0 D D D

A 7: A

5.0 21.0 72.0 65.5% 1.0

5.0 21.0 72.0 65.5%

5.0 21.0 72.0 65.5%

5.0 21.0 72.0 65.5%

5.0 21.0 72.0 65.5%

5.0 21.0 38.0 34.5%

5.0 21.0 38.0 34.5%

5.0 21.0 38.0 34.5%

5.0 21.0 38.0 34.5%

5.0 21.0 38.0 34.5%

Switch Phase
Minimum Initial (s)
Minimum Split (s)
Total Split (%)
Total Split (%)
Yellow Time (s)
All-Red Time (s)
Total Time Adjust (s)
Total Lost Time (s)

1.0

0.0 0.0

0.0

1.0

1.0

1.0

1.0

1.0 0.0

1.0

404 \$0 Splits and Phases: 6: Carlisle Blvd. & Constitution Ave. Ø6 (R)

Intersection LOS: B ICU Level of Service B

Intersection Signal Delay: 14.1 Intersection Capacity Utilization 60.4% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.77

Natural Cycle: 45

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Actuated Cycle Length: 110 Offset: 63.8 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

2021 AM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2021ANX.syn

Synchro 10 Report 2021ANX.syn

2021 AM Peak NOBUILD Conditions - Existing Geometry

A-122

HCM 6th Signalized Intersection Summary
7: San Mateo Blvd. & I-40 EB Ramp

Timings 7: San Mateo Blvd. & I-40 EB Ramp

†

860 860 860 80 6

> 226 226 Prot

EBL 465 465 Prot

Lane Configurations
Traffic Volume (vph)
Future Volume (vph)
Turn Type
Protected Phases
Protected Phases
Defector Phase

5.0 21.0 77.0 70.0% 4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 ead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

1.0

5.0 10.0 17.0 15.5%

5.0 21.0 60.0 54.5%

5.0 21.0 60.0 54.5%

5.0 21.0 33.0 30.0%

5.0 10.0 33.0 30.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

Movement EBL EBT EBR WBI Lane Configurations No. N	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	WBR 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		NBT 1032 1032 1032 0.94 1098 0.94 1098 0.55 5523 5635 5635 5635 5635 5635 5635 56	NBR 140 140 0 1.00 1.00 0.094 3 3 0.000 0 1572 0 1572	SBL 226 226 226 0 0 1.00 1.00 1.00 240 0.94 3 3 3.32 0.06 0.06 0.06 0.06 7.66 7.66 7.66 7.66	SBT 860 860 0 0 1.00 1.00 1.00 1.00 1.00 1.00 1.0	SBR 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
465 1 755 465 1 755 465 1 755 60 0 0 0 0 100 1.00 1.00 100 1.00 1.00 495 0 801 495 0 804 495 0 804 495 0 0 801 134 0 0 28 0 134 0 0 28 0 134 0 0 0 0 0 100 0 0 0 0 0 100 0 0 0 0 0 100 0 0 0				1032 1032 1032 1032 1038 1034 3 3 2635 1098 1098 1098 1098 1098 1098	140 140 0 1.00 1.00 1.00 0.04 3 3 0.00 0.00 1572	226 226 226 0 1.00 1.00 1.94 3 305 305 306 3428 240 1714 7.6	860 860 860 860 860 860 860 860 873 873 873 873 873 873 873 873 873 873	0.0000000000000000000000000000000000000
465 1 755 465 1 755 466 1 755 467 1 755 467 1 755 467 1 755 468 1 765 498 1 886 498 1 886 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1 884 498 1				1032 1032 0 0 0 1.00 No 1856 11098 0.94 3 3 2635 6233 14.6 14.6	140 140 140 1.00 1.00 1.00 0.94 3 3 3 1572 0	226 226 0 0 1.00 1.00 1.00 1.00 3 305 0.06 3.428 240 1.714 7.6	860 860 0 0 1,00 No 1856 915 0.94 5233 915 12.7	000.00000000000000000000000000000000000
465 1 755 465 1 755 60 0 0 0 100 1.00 1.00 100 1.00 1.00 495 0 884 495 0 884 696 0 801 6025 0.00 0.25 3834 0 1572 6025 0.00 0.25 6036 0 801 6037 0 1572 6038 0 100 6039 0 801 604 0 0 0 801 605 0.00 1.00 606 0 801 607 0 0 0 801 608 0 0 801 609 0 0 801 609 0 0 801 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 0 609 0 0 0 0 0 0 0 609 0 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 0 609 0 0 0 0 0 0 609 0 0 0 0 0 0 0 60				1032 1032 1032 1034 1098 1052 1052 1052 1068 114.6 114.6	140 0 1.00 1.00 1.00 0.94 3 3 0.00 0.00 0.1572	226 0 1.00 1.00 1.00 240 0.94 3 3 3.305 0.06 240 17.14 7.6	860 0 0 1,00 No 1856 915 0.94 5233 915 12.7	0.0000000000000000000000000000000000000
ch 1866 1856 1 100 1.00 100 1.00 495 104 495 0 025 0.00 025 0.00 134 0.0 134 0.0 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.00 100 0.0				0 1.00 No No 1.00 3 3 2635 1098 114.6 114.6 2635 2635 2633 2633 2633 2633 2633 263	0 1.00 1.00 1.00 0.94 3 3 3 1572 0.00 1572	0 1.00 1.00 1.00 240 0.94 3 3 3.05 0.06 240 17.14 7.6	0 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	0.0.00000000000000000000000000000000000
1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00				1.00 No 11856 11098 0.94 3 2635 0.52 5233 11098 14.6 14.6	1.00 1.00 1.00 0 0.94 3 3 1572 0.00 0.00	1.00 1.00 1.00 1.856 240 0.94 3 305 0.06 3428 240 1714 7.6	1.00 No 1856 915 0.94 3 3316 0.44 5233 915 1689 12.7	0.0000000000000000000000000000000000000
ch 100 100 ch 1856 1856 495 0 694 0.94 3 3 3 900 0 025 0.00 3834 0 134 0.0 134 0.0 134 0.0 100 1.00 100 1.00 100 1.00 100 0.00 100 1.00 100 0.00 100 1.00 100 0.00 100 1.00 100 0.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 100 1.00 10				1.00 No No 1.00 No 1.0	1.00 1856 0.94 3 3 0.00 1572 0	1.00 1856 240 0.94 3 305 0.06 3428 240 1714 7.6	1.00 No 1856 915 0.94 3 3316 0.44 5233 915 1689	0.0000000000000000000000000000000000000
Ch 1856 1856 - 495 0.094 0.94 0.94 0.94 0.94 0.94 0.94 0.9				No 1856 1098 3 3 3 2635 5233 1098 114.6 14.6	1856 0 0.94 3 3 0.00 1572 0	1856 240 0.94 3 305 0.06 3428 240 1714 7.6	No 1856 915 0.94 0.44 0.44 915 12.7	0.0000000000000000000000000000000000000
1856 1856 1856 1856 1856 1856 1856 1856				1856 0.94 3 2635 0.52 6233 1098 14.6 14.6	0.00 0.00 0.00 1572 0	240 0.94 3 305 0.06 3428 240 1714 7.6	1856 915 0.94 3 3316 0.44 0.44 915 12.7	0.00
499 0,0 4 0,94 0,94 0,94 0,94 0,94 0,94				0.94 3 2635 0.52 6233 1098 14.6 14.6	0.04 3 0.00 1572 0	240 0.94 3 305 0.06 3428 240 1714 7.6	915 0.94 3 3316 0.44 5233 915 1689 12.7	0.00
134 0.94 0.94 0.94 0.94 0.94 0.94 0.99 0.00 0.00				2635 0.52 6233 1098 14.6 14.6	0.00 1572 0	305 305 0.06 3428 240 1714 7.6	0.94 0.44 5233 915 12.7 12.7	0.00
900 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				2635 0.52 0.52 5233 1098 14.6 14.6	0.00 1572 0	305 0.06 3428 240 1714 7.6	33.6 0.44 0.44 5233 915 1689 12.7	0.00
Mn 1767 0 Mn 1767 0 Mn 134 0.0 134 0.0 134 0.0 135 0.0 900 0 100 0.00 eh 35,5 0.0 eh 0.7 27 0.0 eh 0.7 28 0.0 A D A D A D A D A E E				0.52 0.52 1098 11689 14.6 14.6	0.00 1572 0	240 1714 7.6	93.16 0.44 5233 915 1689 12.7	0.0000000000000000000000000000000000000
3834 00 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				5233 1098 14.6 14.6 14.6	1572 0 1572	3428 240 1714 7.6 7.6	5233 915 1689 12.7	0.0.0
Mn 1767 0 1 134 0.0 134 0.0 134 0.0 100 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0				1098 1689 14.6 14.6 2635	1572	240 1714 7.6 7.6	915 1689 12.7 12.7	0.00
c), s weh/h/ln 1767 0 c), s 134 0.0 c), s 134 0.0 d. weh/h 900 0 0.05 weh/h 900 0 0.00 dito 1.00 1.00 dito 1.00 1.00 dito 0.00 0.00 dito		0 0 4		1689 14.6 14.6 2635	1572	7.6	1689 12.7 12.7	0.00
c), s 13.4 0.0 13.4 0.0 13.4 0.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0		0 0 +		14.6 14.6 2635		7.6	12.7	0.0
134 0.0 134 0.0 900 0 0.55 0.00 900 0 1.00 1.00 1.00 0.00 h 0.7 0.0 h 0.0 0.0 h/n 9.8 0.0 Y. s/veh 0.0 D A D A D A D A D A D A D A D A D A D A				14.6	0.0	9.7	12.7	0.00
100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 0 4		2635	0.0			0.0
900 0 0.55 0.00 900 0 1.00 1.00 1.00 0.00 hin 9.8 0.0 7.5/wh A. D. D. D. A. D.				2635	1.00	1.00	0	
0.35 0.00 900 0 1.00 1.00 1.00 1.00 1.00 1.0		5 (-		0		305	3316	0
1.00 1.00 1.00 1.00 1.00 0.00 1.00 0.00 0				0.42		0.79	0.28	0.00
h 35.5 0.0 h 0.7 0.0 h/n 9.8 0.0 y, s/veh 36.3 0.0 D A D A 59.5 5.5 5.5 5.5 5.5 5.5 5.5 6.0		_		100	5	97.4	0 67	0 0
h 35.5 0.0 h 0.7 0.0 h/m 9.8 0.0 y, s/veh 36.3 0.0 D A 1299 59.5 5		_	000	8 0	00.0	0.85	0.0	000
0.7 0.0 h/ln 0.0 0.0 h/ln 9.8 0.0 y, s/veh 36.3 0.0 D A 12.99 59.5 E			0.0	16.2	0.0	50.7	14.2	0.0
hin 0.0 0.0 hin 9.8 0.0 y, s/veh 36.3 0.0 D A 12.99 59.5 F F			0.0	0.5	0.0	7.5	0.2	0.0
h/in 9.8 0.0 y, s/veh 36.3 0.0 D A 1299 59.5 F			0.0	0.0	0.0	0.0	0.0	0.
y, s/veh 36.3 0.0 D A 1299 59.5 F			0.0	9.2	0.0	6.5	8.8	0.0
36.3 0.0 D A 1299 59.5			0		0	0		è
1299 59.5			0.0	16.7	0.0	58.2	14.4	0.0
			∢	מ	<	ш	מ ני	1
				16.7	∢		73.5	
				<u>.</u>			S. C.	
Times Accident Dha		Q						
- 148 62	+ -	27.0						
2.20		0.0						
3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0		2.0						
9.6 16.6		14.7						
0.2 10.0		8.2						
Intersection Summary								
HCM 6th LOS								
seton								

C-Max 75.7 0.69 0.26 3.7 0.0 3.7 A 13.3

Min 11.5 0.10 0.68 49.9 0.0 49.9

C-Max 59.2 0.54 0.16 2.9 0.0 2.9 2.9

Min 24.3 0.22 0.86 41.7 0.00 41.7

Min 24.3 0.22 0.66 43.0 0.0 43.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

C-Max 59.2 0.54 0.41 16.3 0.0 16.3 16.3

Min 24.3 0.22 0.87 42.3 0.0 D D D D D D D D D

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS 2021 AM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2021ANX.syn

33 s 07

Intersection LOS: C ICU Level of Service B

Intersection Signal Delay: 24.0 Intersection Capacity Utilization 56.1% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.87

7: San Mateo Blvd. & I-40 EB Ramp

Splits and Phases:

Ø6 (R)

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 90.2 (82%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 55

Synchro 10 Report 2021ANX.syn

2021 AM Peak NOBUILD Conditions - Existing Geometry

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 8: San Mateo Blvd. & I-40 WB Ramp

8: San Mateo Blvd. & I-40 WB Ramp

Timings

Color Colo	o. Jail Mated DIVG. & 1-40 WD Hallip		֭֭֭֭֓֞֝֟֝֟֝֟֝֟֝	1		l	l	l				7/00	00/21/2013
FBL EBT EBR WBL WBT WBR NBL NBT NBR SBL S0		4	†	/	-	ţ	4	•	•	•	۶	→	\searrow
10 10 10 10 10 10 10 10	Movement	田田	EBT	EBR	WBL	WBT	WBR	BE	NBT	NBR	SBL	SBT	SBR
Signo 150 270 136 321 142 928 0 0 100	Lane Configurations	K.		*	F	*	*	£	444			**	*-
50 0 150 270 136 321 142 928 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Traffic Volume (veh/h)	20	0	150	270	136	321	142	928	0	0	1032	92
100	Future Volume (veh/h)	20	0	150	270	136	321	142	928	0	0	1032	92
100 100 100 100 100 100 100 100 100 100	Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
100 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		1.00
No N	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
1856 0 1866 1856 1856 1856 1856 1856 1850 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Work Zone On Approach		S			2			8			2	
54 0 161 290 146 345 153 998 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Adj Sat Flow, veh/h/ln	1856	0	1856	1856	1856	1856	1856	1856	0	0	1856	1856
0.93 0.93 0.93 0.93 0.93 0.93 0.93 0.93	Adj Flow Rate, veh/h	24	0	161	290	146	345	153	866	0	0	1110	66
156 0 0 0 0 0 0 0 0 0	Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
156	Percent Heavy Veh, %	က	0	က	က	က	က	က	က	0	0	က	က
Out	Cap, veh/h	156	0	0	1028	388	329	216	3085	0	0	2536	829
3428 54 3428 1856 1572 3428 5233 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Arrive On Green	0.05	0.00	0.00	0.30	0.21	0.21	0.13	1.00	0.00	0.00	0.50	0.50
54 522 290 146 345 153 998 0 0 0 1714 D 1714 1866 1572 1714 1689 0 0 0 0 1 1.7	Sat Flow, veh/h	3428	24		3428	1856	1572	3428	5233	0	0	5233	1572
1774 D 1774 1856 1572 1714 1689 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Grp Volume(v), veh/h	24	52.2		290	146	345	153	866	0	0	1110	66
1,7 7,1 7,4 23,0 4,7 0,0 0,0 0,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0	Grp Sat Flow(s),veh/h/ln	1714	۵		1714	1856	1572	1714	1689	0	0	1689	1572
1.7 7.1 7.4 23.0 4.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Q Serve(g_s), s	1.7			7.1	7.4	23.0	4.7	0.0	0.0	0.0	15.4	3.4
150 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1	Cycle Q Clear(g_c), s	1.7			7.7	7.4	23.0	4.7	0.0	0.0	0.0	15.4	3.4
156 1028 388 329 216 3085 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Prop In Lane	1.00			1.00	000	1.00	1.00		0.00	0.00	0	1.00
1.32 10.28 38 329 405 3085 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	Lane Grp Cap(c), ven/h	156			1028	388	329	216	3085	0 0	0 0	2536	828
100 1.00 1.00 1.00 1.00 1.00 1.00 1.00	V/C Katio(X)	0.35			0.28	0.38	S. 5	- N	0.32	0.00	0.00	0.44	0.12
100 1.00 1.00 1.00 0.87 0.87 0.00 0.00 0.00 0.00 0.00 0	Avail Cap(c_a), venin	100			100	900	100	200	2000	0 0	100	7030	000
509 509 13 13 14 15 15 15 16 17 18 17 18 18 18 18 18 18 18 18 18 18 18 18 18	Upstream Filter(I)	100			0.0	100	8 8	0.87	0.87	000	000	8.6	100
1.3 0.1 0.6 63.1 3.7 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Uniform Delay (d), s/veh	50.9			29.4	37.3	43.5	47.1	0.0	0.0	0.0	17.6	12.1
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Incr Delay (d2), s/veh	1.3			0.1	9.0	63.1	3.7	0.2	0.0	0.0	9.0	0.3
1.3 5.3 6.2 2.14 3.6 0.1 0.0 0.0 5.2 C D F D A A A A To a second secon	Initial Q Delay(d3),s/veh	0:0			0:0	0.0	0:0	0.0	0:0	0.0	0:0	0:0	0.0
22 29.6 37.9 106.6 50.8 0.2 0.0 0.0 0.0 C D F D A A A A A A A A A A A A A A A A A	%ile BackOfQ(95%),veh/ln	1.3			5.3	6.2	21.4	3.6	0.1	0.0	0.0	6.6	2.2
22 296 37.9 1066 508 0.2 0.0 0.0 C D F D A A A A A A A A A A A A A A A A A A A A A A A B A A B A A B A A B A A B A A B A A B A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B A A B B A B B B B	Unsig. Movement Delay, s/veh												
D C D F D A A A A A A A A A A A A A A A A A	LnGrp Delay(d),s/veh	52.2			29.6	37.9	106.6	20.8	0.5	0.0	0.0	18.1	12.4
781 1151 65.2 7.0 E E A A 720 38.0 11.9 60.1 10.0 28.0 62.0 13.0 13.0 13.0 6.0 5.0 5.0 62.0 9.1 6.7 17.4 3.7 25.0 8.8 0.4 0.2 9.2 0.0 0.0 26.0	LnGrp LOS				ပ		띡		⋖	⋖	⋖	۵	۳
65.2 7.0 E A A 72.0 38.0 11.9 60.1 10.0 28.0 5.0 5.0 5.0 5.0 5.0 5.0 62.0 13.0 13.0 44.0 10.0 28.0 2.0 9.1 6.7 17.4 3.7 25.0 8.8 0.4 0.2 9.2 0.0 0.0	Approach Vol, veh/h					781			1151			1209	
2 3 6 6 7 8 720 380 11.9 60.1 10.0 280 5.0 5.0 5.0 5.0 5.0 620 13.0 13.0 44.0 10.0 23.0 2.0 9.1 6.7 17.4 3.7 25.0 8.8 0.4 0.2 9.2 0.0 0.0	Approach Delay, s/veh					65.2			7.0			17.6	
2 3 5 6 7 7 720 380 11.9 60.1 10.0 5 5 5 5 0 5.0 5.0 5.0 5.0 5.0 5.0 5.	Approach LOS					ш			∢			മ	
72.0 38.0 11.9 60.1 10.0 5 5.0 5.0 5.0 5.0 5.0 5.0 62.0 13.0 13.0 13.0 13.0 2.0 9.1 6.7 17.4 3.7 2 8.8 0.4 0.2 9.2 0.0	Timer - Assigned Phs		2	က		2	9	7	8				
50 50 50 50 50 50 50 50 50 50 50 50 50 5	Phs Duration (G+Y+Rc), s		72.0	38.0		11.9	60.1	10.0	28.0				
62.0 13.0 13.0 44.0 10.0 2.0 9.1 6.7 17.4 3.7 8.8 0.4 0.2 9.2 0.0 26.0	Change Period (Y+Rc), s		2.0	2.0		5.0	2.0	5.0	2.0				
20 91 6.7 17.4 3.7 88 0.4 0.2 9.2 0.0 26.0	Max Green Setting (Gmax), s		62.0	13.0		13.0	44.0	10.0	23.0				
8.8 0.4 0.2 9.2 0.0 26.0	Max Q Clear Time (g_c+I1), s		2.0	9.1		6.7	17.4	3.7	25.0				
ııy	Green Ext Time (p_c), s		8.8	0.4		0.2	9.5	0.0	0.0				
	Intersection Summary												
	HCM 6th Ctrl Delay			26.0									
	HCM 6th LOS			C									

5.0 10.0 15.0 13.6% 4.0 1.0 0.0 5.0 Lead

5.0 10.0 18.0 16.4%

5.0 21.0 28.0 25.5%

5.0 21.0 28.0 25.5%

5.0 10.0 18.0 16.4%

5.0 21.0 25.0 22.7%

4.0 1.0 0.0 5.0 Lag

1.0

4.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

5.0 10.0 15.0 13.6% 4.0 1.0 0.0 5.0 Lead

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

bm+ov

1032 1032 NA

142 142 Prot

321 321 Perm

136 NA

270 270 Prot

150

පූ න න

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase Protected Phases

Min 65.6 0.60 0.10 2.9 2.9 2.9 A

C-Max 68.7 0.62 0.32 14.8 0.0

Min 10.2 0.09 0.48 48.7 48.7

Min 0.17 0.85 0.85 0.0 0.0 D

Min 0.17 0.46 44.1 0.0 44.1

Min 12.6 0.11 0.75 59.9 0.0 59.9

Min 13.7 0.12 0.48 11.2 0.0 B

Min 72 0.07 0.04 51.0 0.0 D

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio

C-Max 53.5 0.49 0.45 20.8 0.0 20.8 C

₹ 44 ⁸ , g 07 \$ Splits and Phases: 8: San Mateo Blvd. & I-40 WB Ramp ◆ Ø6 (R) Ø2 (R) 05

Intersection LOS: C ICU Level of Service A

Intersection Signal Delay: 26.3 Intersection Capacity Utilization 52.8% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.85

Natural Cycle: 65

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Actuated Cycle Length: 110 Offset: 49:5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green

2021 AM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2021ANX.syn

Synchro 10 Report 2021ANX.syn

2021 AM Peak NOBUILD Conditions - Existing Geometry

2021 AM Peak Hour BUILD Analyses

HCM 6th Signalized Intersection Summary 1: Girard Ct. & Indian School Rd. Terry O. Brown, PE 06/27/2019

		L	•	٠			-	-	-		•	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	je.	₩₽		je.	₽ ₽		je.	£,		je.	£,	
Traffic Volume (veh/h)	20	243	21	o	425	20	43	Ξ	7	71	.8	28
Future Volume (veh/h)	20	243	21	ര	425	20	43	=	2	71	9	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		8			2			8			2	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	23	279	54	9	489	24	49	5	2	82	7	32
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	က	က	က	က	က	က	က	က	က	က	က	က
Cap, veh/h	632	2337	200	861	2263	263	235	168	56	569	7	108
Arrive On Green	0.71	0.71	0.71	0.23	0.23	0.23	0.11	0.11	0.11	0.11	0.11	0.1
Sat Flow, veh/h	854	3287	281	1068	3182	370	1341	1570	242	1387	663	101
Grp Volume(v), veh/h	23	149	154	10	270	276	49	0	15	82	0	53
Grp Sat Flow(s),veh/h/ln	854	1763	1805	1068	1763	1789	1341	0	1812	1387	0	1674
Q Serve(g_s), s	9.0	1.5	1.5	0.4	8.9	9.9	1.9	0.0	0.4	3.1	0.0	1.6
Cycle Q Clear(g_c), s	7.5	1.5	1.5	1.9	8.9	8.9	3.5	0:0	0.4	3.5	0.0	1.6
Prop In Lane	1.00		0.16	1.00		0.21	1.00		0.13	1.00		0.60
Lane Grp Cap(c), veh/h	632	1253	1283	861	1253	1272	235	0	194	569	0	179
V/C Ratio(X)	0.04	0.12	0.12	0.01	0.22	0.22	0.21	0.00	0.08	0.30	0.00	0.30
Avail Cap(c_a), veh/h	632	1253	1283	861	1253	1272	579	0	629	625	0	609
HCM Platoon Ratio	1.00	9.	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.0	1.00
Upstream Filter(I)	1.00	1:00	1.00	0.76	0.76	0.76	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.8	2.5	2.5	7.4	8.7	8.7	24.3	0.0	22.1	23.7	0.0	22.6
Incr Delay (d2), s/veh	0.1	0.2	0.2	0.0	0.3	0.3	0.4	0.0	0.2	9.0	0.0	0.0
Initial Q Delay(d3),s/veh	0:0	0.0	0.0	0:0	0.0	0.0	0.0	0:0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/In	0.2	0.4	0.4	0.1	2.5	5.6	1.	0.0	0.3	1.8	0.0	
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.9	2.7	2.7	7.4	9.0	9.0	24.7	0:0	22.3	24.3	0.0	23.5
LnGrp LOS	⋖	⋖	⋖	⋖	⋖	⋖	ပ	⋖	ပ	ပ	⋖	
Approach Vol, veh/h		326			226			22			135	
Approach Delay, s/veh		2.9			9.0			24.1			24.0	
Approach LOS		∢			∢			ပ			ပ	
Timer - Assigned Phs		2		4		9		8				
Phs Duration (G+Y+Rc), s		10.9		44.1		10.9		44.1				
Change Period (Y+Rc), s		2.0		2.0		2.0		2.0				
Max Green Setting (Gmax), s	"	20.0		25.0		20.0		25.0				
Max Q Clear Time (g_c+I1), s	S	5.5		9.5		5.5		89.0				
GIERLI EXLLINE (p_c), s		- -		G		4.		0.7				
Intersection Summary												
HCM 6th Ctd Delay			0									

5.0 25.0 25.0 45.5% 4.0 1.0 0.0 5.0

1.0 0.0 5.0

1.0

0.0

5.0 21.0 30.0 54.5%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

° ¥ ⇔ ⇔

425 425 NA

¥3 543 ¥

20 Perm

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase

1: Girard Ct. & Indian School Rd.

Timings

Min 8.7 0.16 0.18 12.1 0.0 12.1 B B

Min 8.7 0.16 0.05 17.2 0.0 17.2 B B C

C-Max 36.3 0.66 0.24 2.7 2.7 2.7 A A

Min 8.7 0.16 0.38 24.8 0.0 C

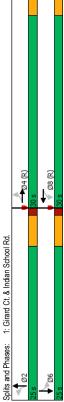
Min 8.7 0.16 0.23 21.7 21.7

C-Max 36.3 0.66 0.01 2.3 0.0

C-Max 36.3 0.66 0.13 3.8 0.0

C-Max 36.3 0.66 0.04 4.5 4.5

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio



Intersection LOS: A ICU Level of Service A

Intersection Signal Delay: 6.3 Intersection Capacity Utilization 35.6% Analysis Period (min) 15

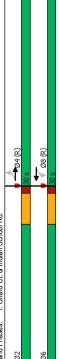
Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.38

Natural Cycle: 45

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Actuated Cycle Length: 55 Office Length: 55 Office do Phase 4:EBTL and 8:WBTL, Start of Green



Synchro 10 Report 2021ABX.syn

2021 AM Peak BUILD Conditions - Existing Geometry

2021 AM Peak BUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary Terry O. Brown, PE 2: Carlisle Blvd. & I-40 WB Ramp 66/27/2019

Timings 2: Carlisle Blvd. & I-40 WB Ramp

Movement EBL EBT EBR Lane Configurations Traffic Volume (veh/h) 0 0 0 Traffic Volume (veh/h) 0 0 0 Traffic Volume (veh/h) 0 0 0 0 Traffic X 200 On Approach Agi X 200 On Ap	WBL 376 376 0 1.00 1.00 1.00 1.00 3 927 1.00 927 1.00 927 1.00 927 1.00 927 1.00 927 1.00 927 1.00 927 1.00 927 1.00 927 1.00 927 1.00 927 928 928 928 928 928 928 928 928 928 928	WBT 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 9 0 0 0.1.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.0	WBR 329 329 0 0 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11	NBL 428 428 428 428 1100 1100 1100 3328 536 603 1474 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 114.7 1	NBT 1069 1069 1069 1009 0.089 3276 1201 1201 1201 1201 1689 0.0 0.0 0.0	NBA 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SBL 0 0 0 1.00 1.00 0 0 0 0 0 0 0 0 0 0 0 0	SBT 814 814 814 0 0 0 No No 156	285 285 285 1.00 1.00 1.856
() 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	376 376 0 1.00 1.00 1.00 1.00 3 927 927 1.00 977 0.46 0.46	8 8 8 8 8 8 8 8 9 0 0.1 No 0.00 0 0.00 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0 0.0 0	329 329 329 0 1.00 1.00 1.00 370 0.26 1572 370 1572 370 1.00 1.00 1.00 4.12	428 428 428 0 1.00 1.00 1.00 1.00 3 3 3 3 3.34 1.17 1.17 1.17 1.10 5.59 5.59 6.09 6.09 6.09 6.09 6.09 6.09 6.09 6.0	1069 1069 1069 0 100 1856 1201 1201 1.00 5233 3.276 0.0 0.0	0.0000000000000000000000000000000000000	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	814 814 814 0 0 1.00 No 1856	285 285 286 1.00 1.00 0.1
() 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	376 0 1.00 1.00 1.00 1.00 3 927 0.28 0.28 0.28 1.02 1.11 1.12 1.00 97 1.00 97 1.00 97 1.00 97 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	329 329 329 1.00 1.00 1.00 370 370 1.89 370 1.672 1.672 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	428 428 1.00 1.00 1.00 1.856 481 0.89 3 3.428 0.31 481 14.7 1.00 536 0.90 536	1069 1069 1069 1069 1009 1009 1009 1009	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	814 814 0 0 No No 1856 1856	285 285 285 1.00 1.00 1.856
ach % % % % % % % % % % % % % % % % % % %	376 0 1.00 1.00 1.00 1.00 3 927 0.28 3.34 4.28 1.00 9.27 1.00 9.27 1.00 9.27 1.00 9.27	8 0 0.00 0.00 0.00 0.00 0.00 0.00 0.00	329 1.00 1.00 1.00 1.00 3.3 3.70 0.26 1.572 3.70 1.572 2.5.0 2.5.0 1.00 4.12 0.90 4.12	428 1.00 1.00 1.00 1856 481 0.89 3 3 536 0.31 14.7 1.00 1.00 592 592	1069 0 0 0 0 1.00 No 1856 1201 0.89 3 3276 1.00 5233 1201 1689 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 1.00 No No 1856	285 0 1.00 1.00 1.856
Initial Q (Qb), veh Ped-Bike Adj(A, pbT) Ped-Bike Adj(A, pbT) Ped-Rike Adj(A, pbT) Ped-Rike Adj(A, pbT) Adj Sat Flow, vehMn Peak Hour Factor Percent Heavy Veh, % Cap, vehMn Adj Flow, vehMn Gip Volume(v), vehMn Gip Sat Flow(s), vehMn Gip Sat Flow(s), vehMn Gip Sat Flow(s), vehMn Care Cacle, vehMn Care Cacle, vehMn HCM Platoon Ratio Usaricem Filte(1) Uniform Delay (d2), s/veh Incr Delay (d2), s/veh	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	0 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	1.00 No 1866 1201 0.89 3.376 1.00 5.233 0.0 0.0	0.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1.00 No 1856	1.00
Ped-Bike Adj(A_pbT) Parking Bus, Adj Work Zone On Approach Adj Sat Flow, Vehl/In Adj Flow Rate, vehl/In Persent Heavy Veh, % Cap, vehl/In Arrive On Green Sat Flow, vehl/In Arrive On Green Sat Flow, vehl/In Gip Sat Flow(s), vehl/In Arrive Gn Geard Co, s Frop In Lane Prop In Lane Hord Placon Ratio Uniform Delay (d), siveh Incr Delay (d), siveh	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 1.00 1.00 1.85 3.70 1.89 3.412 1.572 1.572 1.572 1.572 1.572 1.572 1.572 1.572 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573 1.573	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	1.00 No 1856 1201 0.89 3.3276 1.00 5.233 1.201 1.689 0.0 0.0	0.00	00.1.00	1.00 No 1856	1.00
Parking Bus, Adj Work Zone On Approach Adj Sat Flow, vehn/In Adj Flow Rate, vehn/In Peak Hour Factor Percent Heavy Veh, % Cap, vehn/In Arrive On Green Sat Flow, vehn/In Grp Volume(v), vehn/In Word Flow, vehn/In VIC Ratio(x) Vole Q. Clearig_C, s Frop In Lane Lane Grp Cap(c), vehn/In VIC Ratio(x)	1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	1.00 1.856 3.70 0.89 3.412 0.26 1.572 25.0 25.0 1.00 4.12 0.90 4.12	1.00 1.856 4.81 0.89 0.31 3.428 4.81 17.14 14.7 1.00 5.36 0.90	1.00 No 1856 1201 0.89 3 3276 1.00 5233 1.00 1.00 0.0 0.0	0.00	00.000000000000000000000000000000000000	1.00 No 1856	1.00
Work Zone On Approach Adj Sat Flow, vehMin Adj Flow, vehMin Peak Hour Factor Percent Heavy Veh, " Cap, vehIn Arrive On Green Sat Flows, vehIn Grp Volume(v), vehIn Grp Volume(v), vehIn Grp Sat Flows), vehIn Arrive On Glear(g_c), s Prop In Lane Lane Grp Cap(c), vehIn Lane Grp Cap(c), vehIn HCM Platoon Ratio HCM Platoon	1856 428 0.89 3 927 0.26 3534 428 1767 1112 1102 1.00 1.00 1.00 1.00 1.00 1.00	No.000000000000000000000000000000000000	1856 370 0.89 3 412 0.26 1572 370 1572 25.0 25.0 1.00 412 0.90	1856 481 0.89 3 536 0.31 481 1714 14.7 1.00 536 0.90	No 1856 1201 0.89 3 3276 1.00 5233 1.201 1689 0.0 0.0 0.0	0.00	0.89	No 1856 915	1856
Adj Sat Flow, vehrhin Adj Sat Flow, vehrhin Adj Flow Mate, vehl'n Peach Hour Factor Percent Heavy Veh, % Cap, vehl'n Arrive On Green Sat Flow, vehl'n Gip Sat Flow(s), vehl'n Gip Sat Flow(s), vehl'n Gip Sat Flow(s), vehl'n Gip Sat Flow(s), vehl'n Cycle Q Clear(g_c), s Cycle Q Clear(g_c), s Cycle Q Clear(g_c), vehl'n Horn Platoon Ratio Uniform Delay (d), s/veh Incr Delay (d), s/veh	1856 428 0.89 3 927 0.26 3534 428 1167 1112 1112 11092 0.46	1856 0.89 0.00 0.00 0.0 0.0 0.00 0.00 0.00	1856 370 0.89 3 412 0.26 1572 370 1572 25.0 25.0 1.00 412 0.90	1856 481 0.89 3 536 0.31 481 17.14 14.7 14.7 1.00 536 0.90	1866 1201 0.89 3 3276 1.00 5233 1201 1689 0.0 0.0 0.0	0.00	0.89	1856	1856
Adj Flow Rate, veh/h Peak Hour Fador Peak Hour Fador Cap, veh/h Arrive On Green Sat Flow, veh/h Gip Sat Flow, veh/h Gip Sat Flow, veh/h Gip Sat Flow (S), veh/h C Serve(g_s), s Cycle Q Cleart(g_c), s Frop in Lane Frop in Lane Hord Plactor Avail Capic, e), veh/h V/C Ratio(X) Avail Capic, e), veh/h HOM Plactoron Ratio Uniform Delay (d), s/veh Incr Delay (d), s/veh	428 0.89 3 3 927 0.26 428 1767 1112 11.2 1.00 927 0.46	0.89 0.00 0.00 0.00 0.00 0.00 0.00 0.00	370 0.89 3 412 0.26 1572 370 1572 25.0 25.0 1.00 412 0.90	481 0.89 3 536 0.31 481 1714 14.7 14.7 1.00 536 0.90 592	1201 0.89 3 3276 1.00 5233 1201 1689 0.0 0.0	0.00	0.89	915	0
Peak Hour Factor Percent Heavy Veh, % Cap, veh/h Arrive On Green Sat Flow, veh/h Grp Volume(v), veh/h Grp Volume(v), veh/h Grp Volume(v), veh/h Gro Sat Flow(s) veh/h Gro Calcar(g_c), s Frop Int Lane Lane Grp Cap(c), veh/h V/C Ratio(x) Avail Cap(c_a), veh/h H/CM Platono Ratio Uniform Delay (d), s/veh Incr Delay (d2), s/veh Incr Delay (d2), s/veh Incr Delay (d2), s/veh Mich Back OffOSE%), veh/h Mich Back OffOSE%), veh/h Mich Back OffOSE%), veh/h	0.89 3 927 0.26 3534 428 1767 11.2 1.00 927 0.46 1.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.89 3 412 0.26 11572 370 11572 25.0 25.0 25.0 1.00 412 0.90	0.89 3 536 0.31 481 1714 14.7 14.7 1.00 536 0.90 536	0.89 3.3276 1.00 1.201 1201 1689 0.0 0.0 0.0 0.0	0.00	0.89	2	0
Percent Heavy Veh. "% Cap, vehin Arrive On Green Sat Flow, vehin Gpr Volume(v), vehin Gpr Sat Flow(s), vehin Gpr Seleng, s), s Cycle O. Clear(g, c), s Prop in Lane Lane Gpr Cap(c), vehin Vic Ratio(X) Avail Cap(c, a), vehin HCM Platoon Ratio Upstream Filler(1) Uniform Delay (d2), siveh Incr Delay (d2), siveh Incr Delay (d2), siveh Incr Delay (d3), siveh	3 0.26 0.26 3534 428 1767 11.2 11.00 927 0.46 1.00 1.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	3 412 0.26 1572 370 1572 25.0 25.0 1.00 412 0.90	3 536 0.31 481 1714 14.7 1.00 536 0.90 592	3 3276 1.00 5233 1201 1689 0.0 0.0 3276	0.00	00	0.89	0.89
Cap, vehih Arrive On Green Sat Flow, vehih Gip Volume(v), vehih Gip Sat Flow(s), vehihili Gip Sat Flow(s), vehihili Gip Sat Flow(s), vehihili Gip Sat Flow(s), vehihili Lane Gip Cap(c, s), vehih HCM Platoon Ratio Uniform Delay (d), siveh Incr Delay (d), siveh	927 0.26 3534 428 112 112 110 927 0.46 1092	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	412 0.26 1572 370 11572 25.0 25.0 25.0 412 0.90	536 0.31 3428 481 1714 14.7 1.00 536 0.90	3276 1.00 1201 1201 1689 0.0 0.0 3276	0.00	0	က	က
Arrive On Green Sat Flow, veh/n Grp Volume(y), veh/n Grp Sat Flow(s), veh/n Grp Sat Flow(s), veh/n/n Gro Sarve(g_s), s Cycle Q Clear(g_c), s Frop Int_Lane Grp Cap(c), veh/n V/C Ratio(X) Avail Cap(c, s), veh/n HCM Platoon Ratio Uniform Delay (d), s/veh Incr Delay (d), s/veh Incr Delay (d), s/veh Incr Delay (d), s/veh Sile Back Off (35, s/veh)	0.26 4.28 1767 1112 1100 927 0.46 1.00	0.00 0.00 0.00.00.1	0.26 1572 370 1572 25.0 25.0 1.00 412 0.90	0.31 481 1714 14.7 1.00 536 0.90 592	1.00 5233 1201 1689 0.0 0.0 3276	0.00		2254	
agrinow, variant Gro Sat Flow(s), veh/h Gro Sat Flow(s), veh/hin G Serve(g_s), s Cycle Q Clear(g_c), s Frop In Lane Hord Platoon Ratio V/C Ratio(X) Avail Capic, a), veh/h HCM Platoon Ratio Uniform Delay (d), s/veh Incr Delay (d), s/veh Incr Delay (d), s/veh Michael (3), s/veh	428 1767 112 110 927 0.46 1092	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	370 370 1572 25.0 25.0 1.00 412 0.90	481 1714 14.7 1.00 536 0.90 592	1201 1689 0.0 0.0 3276		0.00	0.45	0.00
or py volumely, van'n Grip Youlmely, van'n Grip Youlmely, van'n Grip Caper(g.c), s Cycle Q. Clear(g.c), s Prop In Lane Lane Grip Cap(c), veh/h V/C Ratio(x) Avail Cap(c. a), veh/h H/CM Placon Ratio Unstream Filer(f) Uniform Delay (d), s/veh Incr Delay (d), s/veh Incr Delay (d), s/veh Incr Delay (d), s/veh Mile Back Cric (35, s/veh	1767 11.2 11.0 927 0.46 1092	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	370 1572 25.0 25.0 1.00 412 0.90 486	17.14 14.7 14.7 1.00 536 0.90 592	1689 0.0 0.0 3276	> 0		0233	7/61
op var (hwey, ventrum Q Serve(g, s), s Gycle Q Clear(g, c), s Prop in Lane Lane Grp Cap(c), veh/h VIC Raio(x) Avail Cap(c, al), veh/h HCM Platon Ratio HCM Platon Ratio Uniform Delay (d2), s/veh Incr Delay (d2), s/veh Incr Delay (d3), s/veh Incr Delay (d3), s/veh Incr Delay (d3), s/veh Mitial Q Delay(d3), s/veh Mitial Q Delay(d3), s/veh	11.2 11.2 1.00 927 0.46 1092	0.0 0.00 0.00 0.00 0.00	25.0 25.0 1.00 412 0.90 486	14.7 14.7 1.00 536 0.90 592	0.0 0.0 3276 0.37	o c	0 0	1680	1577
Cycle Q Clear(g_c), s Prop In Lane Lane Grp Cap(c), veh/h V/C Ratio(X) Avail Cap(c, a), veh/h HCM Platcon Ratio Upstream Filler(I) Uniform Delay (d), s/veh intro Delay (d2), s/veh mittal Q Delay(d3), s/veh site Back Gr(0595%), veh/h	11.2 1.00 927 0.46 1092	0.00 0.00 0.100	25.0 25.0 1.00 412 0.90 486	1.00 1.00 536 0.90 592	0.0 3276 0.37	0	0	13.5	100
Prop in Lane Lane Grp Cap(c), veh/h V/C Ratio(X) Avail Cap(c), avh/h HCM Platoon Ratio Upstream Filter(I) Uniform Delay (d), s/veh inor Delay (d2), s/veh initial C Delay(d3), s/veh witial or Delay(d3), s/veh site Back Grid GSS, veh/h	1.00 927 0.46 1092	0.00	1.00 0.90 486	1.00 1.00 0.90 592	3276	0.0	0.0	13.5	0.0
Lane Grp Cap(c), veh/h V/C Ratio(X) Avail Cap(c, a), veh/h HCM Platcon Ratio Upstream Filer(I) Uniform Delay (d), s/veh Incr Delay (d2), s/veh Incr Delay (d2), s/veh Mile Back Gr(0558), veh/h	927 0.46 1092	0.00	0.90 486	536 0.90 592	3276	0.00	0.00		1.00
V/C Ratio(X) Avail Cap(c. a), veh/h HCM Platoon Ratio Upstream Filter(I) Uniform Delay (d), s/veh Incr Delay (d2), s/veh Incr Delay (d3), s/veh witel a Delay(d3), s/veh sile Baskof(d3), s/veh sile Baskof(d3), s/veh	0.46	0.00	0.90	0.90	0.37	0	0	2254	
Avail Cap(c, a), veh/h HCM Platoon Ratio Upstream Filter(I) Uniform Delay (d), s/veh Incr Delay (d2), s/veh Incr Delay (d2), s/veh Silter (d2), s/veh Silter (d2), s/veh Silter (d2), s/veh Silter (d2), veh/h	1092	0 0.	486	592	!	0.00	0.00	0.41	
HCM Platoon Ratio Upstream Filter(I) Uniform Delay (d), s/veh Inc Delay (d2), s/veh Initial (2 Delay(d3), s/veh %ile Back (701595), vehIn	5	1.00		0	3276	0	0	2254	
Upstream Filter(I) Uniform Delay (d), s/veh Incr Delay (d2), s/veh Initial (2 Delay(33), s/veh %ile Barko(70,558), vehIn	3.		1.00	7.00	2.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh incr Delay (d2), s/veh Inital Q Delay(d3),s/veh %ile BaskCMO(95%), vehln	1.00	0.00	1.00	0.89	0.89	0.00	0.00	1.00	0.00
Incr Delay (d2), s/veh Initial Q Delay(d3),s/veh %ile BackOfO(95%),veh/in	34.1	0.0	39.1	37.0	0.0	0.0	0.0	20.7	0.0
Initial Q Delay(d3),s/veh %ile BackOfQ(95%),veh/ln	0.4	0.0	17.3	14.1	0.3	0.0	0.0	0.5	0.0
%ile BackOfO(95%).veh/In	0.0	0:0	0:0	0.0	0:0	0.0	0:0	0.0	0.0
	8.4	0.0	17.1	6.6	0.2	0.0	0.0	0.6	0.0
Unsig. Movement Delay, s/veh		0		7	d	d	d	3	
LnGrp Delay(d),s/veh	34.4	0.0	56.5	51.1	0.3	0.0	0.0	717	0.0
Lingip LOS	اد	∢ ;	ш	اد	∢ .	∢	<	اد	
Approach Vol, veh/h		798			1682			915	ď
Approach Delay, s/veh		9.4			14.8			212	
Approach LOS		۵			ω			ပ	
Timer - Assigned Phs 2		2	9		8				
Phs Duration (G+Y+Rc), s 76.1		22.2	54.0		33.9				
		2.0	2.0		2.0				
9		19.0	45.0		34.0				
Max Q Clear Time (g_c+l1), s 2.0		16.7	15.5		27.0				
Green Ext Time (p_c), s 11.6		0.5	6.9		1.9				
Intersection Summary									
HCM 6th Ctrl Delay 23.5									
S CONTRACTOR OF THE CONTRACTOR									

C-Max 46.0 0.42 0.38 4.0 0.0

C-Max 46.0 0.42 0.43 24.4 0.0

C-Max 69.5 0.63 0.38 15.8 0.1

Min 18.5 0.17 0.84 56.2 0.0

Min 30.5 0.28 0.85 56.0 0.0 56.0

Min 30.5 0.28 0.47 35.7 35.7

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 30.5 0.28 0.47 35.7 0.0 D D D D

C 19.1

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

5.0 21.0 47.0 4.0 4.0 1.0 0.0 5.0 Lag

5.0 21.0 71.0 64.5%

5.0 10.0 24.0 21.8%

5.0 21.0 39.0 35.5%

5.0 21.0 39.0 35.5%

5.0 21.0 39.0 35.5%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

428 428 Prot

> 329 329 Perm

> 376 376 Perm

Lane Configurations
Traffic Volume (vph)
Future Volume (vph)
Turn Type
Protected Phases
Permitted Phases
Detector Phase

4.0 1.0 0.0 5.0 Lag

1.0 0.0

4.0 1.0 0.0 5.0 Lead

0.0

Intersection LOS: C ICU Level of Service A

Splits and Phases: 2: Carlisle Blvd. & I-40 WB Ramp

Ø2 (R)

Intersection Signal Delay: 28.5 Intersection Capacity Utilization 53.0% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.85

🕴 🕴 Ø6 (R)

Actuated Cycle Length: 110 Offset: 101.2 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 60 2021 AM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2021ABX.syn

2021 AM Peak BUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary Terry O. Brown, PE 2: Carlisle Blvd. & I-40 WB Ramp 06/27/2019

2: Carlisle Blvd. & I-40 WB Ramp

Timings

1069 1069 NA

428 428 Prot

> 329 329

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Turn Type

Protected Phases Permitted Phases Detector Phase

Movement EBI											
	L EBT	. EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			<u>.</u>	4	K _	14	444			444	*
	0 0		376	∞	329	428	1069	0	0	814	285
h/h)	0	0	376	ω	329	458	1069	0	0	814	282
Initial Q (Qb), veh			0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pb1)			9.6	,	00.1	00.1		00.1	00.5	9	3.5
Parking Bus, Adj			1.00	8.5	1.00	3.	00.7	3.	00.1	3.5	9.1
Adi Sat Flow veh/h/n			1856	1856	1856	1856	1856	C	c	1856	1856
Adj Flow Rate, veh/h			541	0	250	481	1201	0	0	915	0
Peak Hour Factor			0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %			က	က	က	က	က	0	0	က	က
Cap, veh/h			688	0	306	236	3618	0	0	2596	
Arrive On Green			0.19	0.00	0.19	0.31	1.00	0.00	0.00	0.51	0.00
Sat Flow, veh/h			3534	0	1572	3428	5233	0	0	5233	1572
Grp Volume(v), veh/h			541	0	250	481	1201	0	0	915	0
Grp Sat Flow(s),veh/h/ln			1767	0	1572	1714	1689	0	0	1689	1572
Q Serve(g_s), s			16.0	0.0	16.7	14.7	0.0	0.0	0.0	11.8	0.0
Cycle Q Clear(g_c), s			16.0	0.0	16.7	14.7	0.0	0.0	0.0	11.8	0.0
Prop In Lane			1.00		1.00	1.00		0.00	0.00		9.
Lane Grp Cap(c), veh/h			688	0	306	536	3618	0	0	2596	
V/C Ratio(X)			0.79	0.00	0.82	0.30	0.33	0.00	0.00	0.35	
HCM Platoon Ratio			1.00	00	100	2.00	2.00	00	1.00	1.00	1.00
Upstream Filter(I)			1.00	0.00	1.00	0.89	0.89	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh			42.1	0.0	45.4	37.0	0.0	0.0	0.0	16.0	0.0
Incr Delay (d2), s/veh			2.0	0.0	5.8	14.1	0.2	0.0	0.0	0.4	0.0
Initial Q Delay(d3),s/veh			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln			11.5	0.0	11.3	6.6	0.1	0.0	0.0	8.0	0.0
Unsig. Movement Delay, s/veh	_										
LnGrp Delay(d),s/veh			44.1	0.0	48.2	51.1	0.5	0.0	0.0	16.3	0.0
LnGrp LOS				⋖			<	⋖	⋖	m	
Approach Vol, veh/h				791			1682			915	⋖
Approach Delay, s/veh				45.4			14.8			16.3	
Approach LOS				a			n			20	
Timer - Assigned Phs	2			5	9		8				
Phs Duration (G+Y+Rc), s	83.6			22.2	61.4		26.4				
Change Period (Y+Rc), s				2.0	2.0		2.0				
Max Green Setting (Gmax), s	9			19.0	45.0		34.0				
Max Q Clear Time (g_c+l1), s				16.7	13.8		18.7				
Green Ext Time (p_c), s	11.6			0.5	7.0		2.7				
Intersection Summary											
HCM 6th Ctrl Delay		22.3									
HCM 6th LOS		ပ									
Notes											

C-Max 49.3 0.45 0.36 3.8 0.0

C-Max 49.3 0.45 0.41 22.4 22.4

C-Max 73.7 0.67 0.36 13.3 0.2

Min 19.4 0.18 0.80 49.9 0.0 49.9

Min 26.3 0.24 0.71 48.6 0.0 0.0

Min 26.3 0.24 0.70 47.1 0.0

v/c Ratio

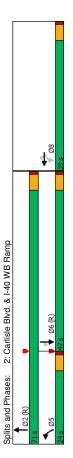
Min 26.3 0.24 0.74 50.4

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio 0.0

Control Delay Queue Delay Total Delay LOS

C 17.6 B

Switch Phase
Minimum Spit (s)
Minimum Spit (s)
Total Spit (s)
Yellow Time (s)
Yellow Time (s)
Lost Time Adjust (s)
Total Lost Time Adjust (s)



Actuated Cycle Length: 110 Offset: 101.2 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 60

Intersection Summary

Approach Delay Approach LOS Intersection LOS: C ICU Level of Service B

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.80 Intersection Signal Delay: 27.1 Intersection Capacity Utilization 56.3% Analysis Period (min) 15

2021 AM Peak BUILD Conditions - Mitigated Conditions

Synchro 10 Report 2021AB_MIT.syn

2021 AM Peak BUILD Conditions - Mitigated Conditions

Synchro 10 Report 2021AB_MIT.syn

HCM 6th Signalized Intersection Summary
3: Carlisle Blvd. & I-40 EB Ramp

Timings 3: Carlisle Blvd. & I-40 EB Ramp

†

190 Prot 190

830 AN

580 580 580

554 554 Perm

Lane Configurations
Traffic Volume (vph)
Future Volume (vph)
Turn Type
Protected Phases
Protected Phases
Defector Phase

	4	†	/	\	ţ	4	•	•	•	۶	→	•
	i	i	- 1				-	- !	- !	i		ě
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	F	æ	R.					≣	*	F	ŧ	
Traffic Volume (veh/h)	224	2	280	0	0	0	0	930	277	190	696	0
Future Volume (veh/h)	224	2	280	0	0	0	0	930	277	190	696	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	J
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		S						8			S	
Adj Sat Flow, veh/h/In	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	637	0	671				0	1069	318	218	1114	0
Peak Hour Factor	0.87	0.87	0.87				0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	က	က	က				0	က	က	က	က	J
Cap, veh/h	777	0	1038				0	4221	883	281	3491	J
Arrive On Green	0.22	0.00	0.22				0.00	1.00	1.00	0.11	0.92	0.00
Sat Flow, veh/h	3534	0	4717				0	1867	1572	3428	5233	٥
Grp Volume(v), veh/h	637	0	671				0	1069	318	218	1114	_
Grp Sat Flow(s),veh/h/In	1767	0	1572				0	1503	1572	1714	1689	J
Q Serve(g_s), s	18.9	0.0	14.2				0.0	0.0	0.0	8.9	5.9	0.0
Cycle Q Clear(g_c), s	18.9	0.0	14.2				0.0	0.0	0.0	8.9	2.9	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.0
Lane Grp Cap(c), veh/h	111	0	1038				0	4221	883	781	3491	S
V/C Ratio(X)	0.82	0.0	0.65				0.00	0.25	0.36	0.78	0.32	0.0
Avail Cap(c_a), veh/h	006	0	1201				0	4221	883	374	3491	0
HCM Platoon Ratio	1.00	9:	0.1				0.1	5.00	5.00	1.33	 	1.0
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	06:0	0.90	0.00
Uniform Delay (d), s/veh	40.8	0.0	33.0				0.0	0.0	0.0	48.0	ر دن	0.0
Incr Delay (d2), s/veh	5.3	0.0	0.0				0.0	0.1	-:	6.5	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0:0	0.0
%ile BackOfQ(95%),veh/ln	13.6	0.0	9.4				0.0	0.1	0.5	2.5	د .	0.0
Unsig. Movement Delay, s/ven	16.0	c	0				c	5	7	245	0	c
Lingip Delay(d),3/veii Lingip LOS	70.7 D	9. A	2.0				8.0	5	_ <	C. +	<u> </u>	5
Approach Vol. veh/h		1308						1387			1332	
Approach Delay, s/veh		43.0						0.4			10.4	
Approach LOS		Ω						∢			В	
Timer - Assigned Phs	1	2		4		9						
Phs Duration (G+Y+Rc), s	14.0	8.99		29.2		80.8						
Change Period (Y+Rc), s	2.0	2.0		2.0		2.0						
Max Green Setting (Gmax), s	12.0	55.0		28.0		72.0						
Max Q Clear Time (g_c+I1), s		2.0		20.9		4.9						
Green Ext Time (p_c), s	0.2	11.6		3.3		10.4						
Intersection Summary												
HCM 6th Ctrl Delay			17.5									
HCM 6th LOS			ш									
OctoN												

C-Max 73.1 0.66 0.33 10.4 10.4

Min 11.2 0.10 0.63 70.6 0.0 70.6

C-Max 57.0 0.52 0.33 2.5 0.0 2.5

Min 26.9 0.24 0.64 41.8 0.0

Min 26.9 0.24 0.77 45.4 45.4

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

C-Max 57.0 0.52 0.28 12.9 0.0 12.9 B B

Min 26.9 0.24 0.65 46.5 0.0 46.5 D D D

> Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

5.0 21.0 77.0 70.0% 4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

4.0 1.0 0.0 5.0

5.0 10.0 17.0 15.5%

5.0 21.0 60.0 54.5%

5.0 21.0 60.0 54.5%

5.0 21.0 33.0 30.0%

5.0 21.0 33.0 30.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

Notes
User approved volume balancing among the lanes for turning movement.

Synchro 10 Report 2021ABX.syn

₽04

3: Carlisle Blvd. & I-40 EB Ramp

Splits and Phases:

Ø6 (R)

Intersection LOS: C ICU Level of Service A

Intersection Signal Delay: 24.7 Intersection Capacity Utilization 53.0% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.77

Actuated Cycle Length: 110 Offset: 101.2 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 55 2021 AM Peak BUILD Conditions - Existing Geometry

port

2021 AM Peak BUILD Conditions - Existing Geometry

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 4: Carlisle Blvd. & Indian School Rd.

Timings 4: Carlisle Blvd. & Indian School Rd.

†

	١,							٠		•		•
	^	†	/	\	Ļ	1	•	—	•	٠	→	*
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	×	₹		*	₹		*	4413		*	‡	_
Traffic Volume (veh/h)	380	238	45	72	295	128	71	742	29	223	818	516
Future Volume (veh/h)	380	238	42	72	292	128	71	742	29	223	818	516
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	J
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		8			8			8			2	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	427	267	21	84	331	144	80	834	75	251	919	280
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, %	က	က	က	က	က	က	က	က	က	က	က	.,
Cap, veh/h	433	006	169	342	404	174	258	1653	148	377	1448	946
Arrive On Green	0.32	0.51	0.51	90.0	0.17	0.17	0.03	0.23	0.23	0.22	0.82	0.8
Sat Flow, veh/h	1767	2961	227	1767	2407	1027	1767	4733	424	1767	3526	1572
Grp Volume(v), veh/h	427	157	161	8	241	234	80	594	315	251	919	280
Grp Sat Flow(s),veh/h/ln	1767	1763	1755	1767	1763	1671	1767	1689	1779	1767	1763	1572
Q Serve(g_s), s	21.0	2.7	5.9	4.1	14.5	14.9	3.1	16.8	16.9	10.0	10.7	₩.
Cycle Q Clear(g_c), s	21.0	2.7	5.9	4.1	14.5	14.9	3.1	16.8	16.9	10.0	10.7	18.7
Prop In Lane	1.00		0.32	1.00		0.61	1.00		0.24	1.00		0:
Lane Grp Cap(c), veh/h	433	236	533	342	298	282	258	1179	621	377	1448	946
V/C Ratio(X)	0.99	0.29	0.30	0.24	0.81	0.83	0.31	0.50	0.51	0.67	0.63	9.0
Avail Cap(c_a), veh/h	433	545	543	436	401	380	367	1179	621	377	1448	ষ্ঠ
HCM Platoon Ratio	1.67	1.67	1.67	1.00	1.00	1.00	0.67	0.67	0.67	2.00	2.00	2.0
Upstream Filter(I)	0.99	0.99	0.99	1.00	1.00	1.00	96.0	96.0	96.0	1.00	1.00	1.0
Uniform Delay (d), s/veh	26.5	20.3	20.3	34.6	4.0	44.2	21.4	33.9	33.9	17.8	6.7	က်
Incr Delay (d2), s/veh	39.1	0.3	0.3	0.4	8.7	10.9	9.0	7.5	2.8	4.4	2.1	3.0
Initial Q Delay(d3),s/ven	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	o •
%ile BackOrQ(95%),ven/in	8.7.	ي ن	4.0	3.2	7.1.	7.1.7	7.4	Σ. Ξ.	177	0.0	δ.	4.
Lington Delay(d) s/veh		20.6	20.6	35.0	52.7	55.1	22.1	35.3	36.7	22.2	68	6.7
LnGrp LOS	ш	O	O	O	۵	ш	O	۵	۵	O	⋖	
Approach Vol, veh/h		745			929			686			1750	
Approach Delay, s/veh		46.4			51.1			34.7			10.1	
Approach LOS					٥			ပ			В	
Timer - Assigned Phs	_	2	က	4	5	9	7	8				
Phs Duration (G+Y+Rc), s	17.0	43.4	11.2	38.4	10.2	50.2	26.0	23.6				
Change Period (Y+Rc), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
Max Green Setting (Gmax), s	12.0	32.0	12.0	34.0	12.0	32.0	21.0	25.0				
Max Q Clear Time (g_c+I1), s		18.9	6.1	7.9	5.1	20.7	23.0	16.9				
Green Ext Time (p_c), s	0.0	4.8	0.1	1.7	0.1	6.4	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay			28.4									
HCM 6th LOS			O									

5.0 10.0 26.0 23.6% 4.0 1.0 0.0 5.0 Lead

5.0 21.0 37.0 33.6%

5.0 10.0 26.0 23.6%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

295 NA

Z38 Z38

380

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase

Protected Phases

1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

Min 67.3 0.61 0.54 14.9 0.0

C-Max 41.3 0.38 0.70 28.4 0.0

Min 53.8 0.49 0.74 34.4 0.0

Min 0.40 0.33 0.0 0.0 18.3

Min 28.0 0.25 0.25 22.2 0.0 22.2 22.2

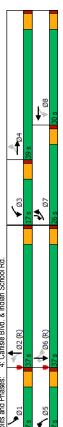
Min 45.4 0.41 1.03 80.9 0.0 80.9

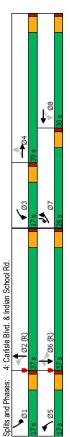
Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio

Min 31.9 0.29 0.32 30.0 30.0 C C C C

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS





Intersection LOS: C ICU Level of Service D

Intersection Signal Delay: 34.8 Intersection Capacity Utilization 78.2% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.03

Actuated Cycle Length: 110 Offset: 8.8 (8%), Referenced to phase 2.NBTL and 6:SBTL, Start of Green

2021 AM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2021ABX.syn

Synchro 10 Report 2021ABX.syn

2021 AM Peak BUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 4: Carlisle Blvd. & Indian School Rd. Terry O. Brown, PE

Timings

Terry O. Brown, PE 06/27/2019

	4										
	١	†	-	ţ	1	•	←	ᄼ	→	•	
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	y -	44		₩	¥.	F	₩₩	F	₩	R.	
Traffic Volume (vph)	380	238		292	128	7	742	223	818	516	
Future Volume (vph)	380	238	72	295	128	7	742	223	818	516	
Turn Type	pm+pt	Ϋ́	pm+pt	Ϋ́	NA pm+ov pm+pt	pm+pt	ž	NA pm+pt	NA	NA pm+ov	
Protected Phases	7	4	က	∞	-	2	7	-	9	7	
Permitted Phases	4		∞		∞	N		9		9	
Detector Phase	7	4	က	∞	-	Ŋ	N	-	9	7	
Switch Phase											
Minimum Initial (s)	2.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	10.0	21.0	10.0	21.0	10.0	
Total Split (s)	28.0	39.0	17.0	28.0	17.0	17.0	37.0	17.0	37.0	28.0	
Total Split (%)	25.5%	35.5%	15.5%	25.5%	15.5%	15.5%	33.6%	15.5%	33.6%	25.5%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	2.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	
Lead-Lag Optimize?											
Recall Mode	Mi	Min		E.	Ā	Min	Min C-Max	Min	Min C-Max	Min	
Act Effct Green (s)	43.5	29.9		15.6	35.7	44.5	36.3	56.4	43.3	71.3	
Actuated g/C Ratio	0.40	0.27	0.22	0.14	0.32	0.40	0.33	0.51	0.39	0.65	
v/c Ratio	0.92	0.34	0.29	0.67	0.24	0.32	0.55	69.0	0.67	0.52	
Control Delay	54.7	31.3	24.6	51.3	7.6	17.8	30.9	28.5	26.2	13.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	54.7	31.3	24.6	51.3	7.6	17.8	30.9	28.5	26.2	13.6	
SOT	Ω	O	O	□	⋖	Ш	O	O	O	В	
Approach Delay		44.7		36.1			29.8		22.4		
Approach LOS							O		O		
Intersection Summary											
Cycle Length: 110											
Actuated Cycle Length: 110	: 110										
Offset: 8.8 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	enced to	phase	2:NBTL	and 6:S	BTL, S	tart of G	reen				
Natural Cycle: 75											
Control Type: Actuated-Coordinated	-Coordin	ated									
Maximum We hallo, 0.92	36										
Intersection Signal Delay: 30.2	ay: 30.2			_	tersect	Intersection LOS: C	O				
Intersection Capacity Utilization 74.1%	Jtilization	74.1%		\leq		ICU Level of Service D	vice D				

160 0.25 424 315 16.5 16.5 0.24 672 0.47 672 0.47 672 0.67 0.96

275 0.03 80 1767 3.0 3.0 3.0 275 0.29 386 0.29 0.67

364 0.13 1572 144 1572 8.5 8.5 8.5 1.00 364 0.40 495 1.00 1.00

0.60 1541 2.00 1.00 4.4

0.47 0.67 0.96 31.7

443 0.75 737 1.00 1.00

488 0.32 545 1.67 0.99 23.1

467 0.91 467 1.67

Lane Grp Cap(c), veh/h V/C Ratio(X) Avail Cap(c_a), veh/h HCM Platoon Ratio

Upstream Filter(I) Uniform Delay (d), s/veh

4.3 4.3 1.00 300 0.27 391 1.00 1.00

1.7 0.0 3.4

2.5 0.0 7.9

0.0

4.0 0.0

Incr Delay (d2), siveh 22.4 Initial O Delay(d3),siveh 0.0 %ile BackOfQ(95%),vehilf 5.8 Unsig. Movement Delay, siveh LnGrp Delay(d),siveh 48.7

0.87 3526 919 1763 7.5

0.25 0.25 4733 594 1689 16.4

9.13 3526 331 1763 10.0

819 0.46 2961 157 1763 6.2 6.2

300 0.06 1767 81

Adj Sat Flow, vehihlin 1856
Adj Flow Rate, vehihlin 427
Perak Hour Factor 0.89
Percent Heavy Veh, % 3
Cap, vehih 1767
Arrive On Green 0.35
Sat Flow, vehih 1767
Grp Sotiume(v), vehihlin 1767
Grp Sat Flow(s), vehihlin 1767
Grevel Q. Sat Grevel (g. s), s. 23.0
Cycle Q. Clear(ig. c), s. 23.0
Prop In Lane

1750

989

18.8 5.0 23.0 12.0 1.9

28.0 23.0 25.0 0.0

53.1 5.0 32.0 14.2 8.4

5.0 5.0 5.0 0.1

35.4 5.0 34.0 8.4

5.0 5.0 6.3 0.1

46.6 5.0 32.0 18.5 4.9

Timer - Assigned Phs 1
Phs Duration (G+Y-Re), s16.6
Change Period (Y-Re), s 5.0
Max Green Setting (Gmax).28
Max Q Clear Time (g_c+If);4.6
Green Ext Time (p_c), s 0.0

24.2 C

6.1

19.7 B

34.0 C

32.9 C

20.0 B

36.5 D

48.9 D 556 44.2

38.9

23.5 C

23.4 C

745 37.9 D

Approach Delay, s/veh

Approach LOS

Approach Vol, veh/h

-nGrp LOS

1856 580 0.89

251 251 0.89

1856 75 0.89

1856 80 0.89

1.00 No 1856 834 0.89

1.00 No 856 331 0.89

1856 81 0.89

1856 51 0.89

1.00 No 1856 267 0.89

1.00 No 1856 919 0.89

0 0.1

1.0

1.00

1.00

1.00

1.00

Parking Bus, Adj Work Zone On Approach

Ped-Bike Adj(A_pbT)

Initial Q (Qb), veh

22 0 0.1

238

380

Future Volume (veh/h) raffic Volume (veh/h)

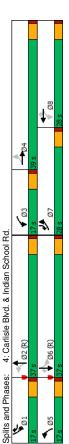
Lane Configurations

ʹ

Ť

223 223

67



HCM 6th Ctrl Delay HCM 6th LOS

2021 AM Peak BUILD Conditions - Mitigated Conditions

Synchro 10 Report 2021AB_MIT.syn

Synchro 10 Report 2021AB_MIT.syn

2021 AM Peak BUILD Conditions - Mitigated Conditions

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 5: Washington St. & Indian School Rd.

Timings 5: Washington St. & Indian School Rd.

ʹ

†

2 2 2 ¥ °

¥ 168 ¥ ¥

246 246 NA

ස ස

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Turn Type
Protected Phases
Permitted Phases
Detector Phase

to to %	EBL 63 63 63 63 63 63 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	1.00 0.82 0.82 0.82 0.82 0.82 0.82 0.82 0	► BB → 6 9 4 9 9 4 9 9 9 9 9 9 9 9 9 9 9 9 9 9	WBL	↓ WBT	√ WBR	√ NBΓ	← NBT	✓ NBN	≯ lig	→ SBT	→ RR
5	EBL 63 63 63 63 00 .00 .00 .00 .32 527 77 77	246 246 246 0 0 1.00 1.00 1.856 300 0.82	46 46	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
5	63 63 63 63 00 00 00 00 00 00 00 00 00 00 00 00 00	246 246 246 0 0 0 0 0 0 0 0 3 3 3 3	46	À	₩.					١	•	
5	63 63 63 00 00 00 177 77 77 77 77	246 246 246 0 1.00 0 1856 300 0.82	46	_	•		<u>r</u>	æ.		×	1	
5	63 0 0 .00 .00 77 77 527 527 767	246 0 1.00 No 1856 300 0.82	46	92	272	æ	78	168	36	38	120	148
5	0 .00 .00 .00 .77 .3 .3 .3 .3 .106 .106	1.00 No 1.00 300 0.82 300 300 300 300 300 300 300 300 300 30	•	9	272	怒	78	168	36	38	120	148
5	.00 .00 .00 .00 .00 .00 .06 .06	1.00 No 1856 300 0.82	0	0	0	0	0	0	0	0	0	0
5	.00 77 77 182 3 527 106 777	1.00 1.00 3.00 3.00 3.00 3.00 3.00	1.00	1:00		1:00	1.00		1.00	1.00		1.00
5	3856 33 527 767	300 300 300 300 300	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	3 3 3 527 1.06 767	300 300 0.82 3			2			2			2	
	77 .3 .3 .527 .06 .767	300	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
	3 3 527 1.06 767	0.82	26	23	332	4	92	202	44	46	146	180
	3 527 1.06 77	e 6	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
	527 1.06 767	00	က	က	ო	က	က	က	က	က	က	က
	06 77	1183	218	534	1258	154	247	339	73	317	171	210
	777	0.40	0.40	90:0	0.40	0.40	0.07	0.23	0.23	90.0	0.23	0.23
	77	2972	248	1767	3161	387	1767	1481	318	1767	756	932
		176	180	23	184	8	92	0	249	46	0	326
veh/h/ln	292	1763	1757	1767	1763	1786	1767	0	1798	1767	0	1688
	5.0	5.4	2.5	0.5	2.6	2.7	3.2	0:0	10.0	7:	0.0	14.9
r(g_c), s	2.0	5.4	5.5	0.5	9.9	2.7	3.2	0.0	10.0	1.5	0.0	14.9
	00.		0.31	9.		0.22	1.00		0.18	1.00		0.55
tp(c), veh/h	527	707	669	534	701	711	247	0	412	317	0 8	× ×
	0.0	0.70	0.20	45.5	0.20	0.27	0.30	0.00	0.00	0.7	0.0	0.0
Avail Cap(c_a), ven/n 6:	200	5 5	100	990	5 5	= 5	700	5	229	. oc.	5	100
	8 8	8 8	90.0	8.5	80.0	8 8	8.6	00.0	9.6	8 6	8.6	5 5
days	2 2	16.0	16.0	10.1	16.3	9. 2	00.0	0.00	7.7.0	21.5	8.0	000
	2.0	0.0	0.0	0.0	0.0	000	0.4	0.0	1.12	0.0	0.0	0.00
ų.	00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	00	00	0.0	0
ų.	<u>5.</u>	3.9	3.9	0.4	4.1	4.2	2.5	0.0	7.7	[0.0	11.2
veh												
	12.6	17.1	17.1	12.1	17.2	17.2	23.8	0:0	29.2	21.8	0.0	39.8
	В	В	Ф	Ф	Ф	Ф	ပ	⋖	ပ	ပ	∢	
Approach Vol, veh/h		433			395			344			372	
Approach Delay, s/veh		16.3			16.9			27.7			37.6	
Approach LOS		В			Ω			O			٥	
Timer - Assigned Phs	-	2	က	4	22	9	7	80				
c), s 1	10.0	23.4	10.0	37.0	10.3	23.1	10.0	37.0				
	5.0	2.0	2.0	2.0	5.0	2.0	5.0	2.0				
	7.0	25.0	11.0	32.0	7.0	25.0	11.0	32.0				
Max Q Clear Time (g_c+I1), s	3.0	12.0	2.5	ر: د: و	2.0	10.9	0.4	7.7				
	0.0	Ξ	0.0	į.	0.0	7:1	-	7.0				
Intersection Summary												
HCM 6th Ctrl Delay			24.1									
HCM 6th LOS			ပ									

5.0 21.0 30.0 31.6% 4.0 1.0 0.0 5.0

5.0 21.0 30.0 31.6%

5.0 10.0 12.0 12.6%

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

5.0 10.0 16.0 16.8 4.0 1.0 0.0 5.0 Lead

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

Min 18.2 0.21 0.79 40.0 0.0 40.0 D D D

D 32.6 C

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Min 24.7 0.29 0.15 19.2 0.0

Min 18.5 0.22 0.62 36.1 36.1

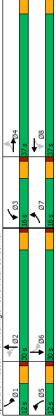
Min 25.3 0.30 0.39 23.5 23.5 23.5

Min 38.3 38.3 0.45 0.04 11.8 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio

Max 32.2 0.38 0.28 19.5 19.5 19.5

Max 33.7 0.40 0.26 17.6 17.6 B B 16.6

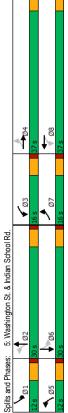


Intersection LOS: C ICU Level of Service A

Maximum vic Ratio: 0.79 Intersection Signal Delay: 25.8 Intersection Capacity Utilization 49.1% Analysis Period (min) 15

Control Type: Semi Act-Uncoord Actuated Cycle Length: 84.9

Natural Cycle: 65



2021 AM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2021ABX.syn

Synchro 10 Report 2021ABX.syn 2021 AM Peak BUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 6: Carlisle Blvd. & Constitution Ave.

Timings 6: Carlisle Blvd. & Constitution Ave.

†

208

582 NA

562 NA

¥ 30 ¥

133

Lane Configurations
Traffic Volume (vph)
Future Volume (vph)
Turn Type
Protected Phases
Permitted Phases
Detector Phase

Terry O. Brown, PE 06/27/2019

			•	•		,	_	_	_		•	,
Movement	EBL	EBT	EBR	WBL	WBT	WBR	R	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	*	*	¥	*	*	*	₽ ₽		*	*	_
Traffic Volume (veh/h)	103	88	4	47	130	88	14	295	20	78	285	208
Future Volume (veh/h)	103	88	14	47	130	98	14	295	50	78	285	208
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	_
Ped-Bike Adj(A_pbT)	0.5		00 !	9:1		0.1	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	9:	1.00	1.00	1.00	1.00	1.00	1:00	1.00	1.00	9:	1.00
Work Zone On Approach	0107	8 5	0.0	0107	o S	0101	01.07	0 S	0107	0107	0 S	200
Adj Sat Flow, ven/n/in	1820	1820	1826	1820	1826	220	1856	909	820	900	909	826
Poak Hour Factor	0 63	0 63	0 63	33	0 43	0 93	0 63	0 93	0 93	0 93	0 93	0.93
Percent Heavy Veh. %	e e	3	9	e e	e e	3	e e	8	e e	e e	e e	3
Cap, veh/h	202	346	293	247	346	293	530	2507	9	592	1341	1136
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.72	0.72	0.72	1.00	1.00	1.00
Sat Flow, veh/h	1139	1856	1572	1273	1856	1572	643	3469	126	793	1856	1572
Grp Volume(v), veh/h	111	92	15	51	140	92	15	307	319	84	929	224
Grp Sat Flow(s),veh/h/ln	1139	1856	1572	1273	1856	1572	643	1763	1833	793	1856	1572
Q Serve(g_s), s	10.4	4.8	0.9	3.9	7.3	2.6	0.7	6.4	6.4	[-	0.0	0.0
Cycle Q Clear(g_c), s	17.8	4.8	0.0	8.8	7.3	5.6	0.7	6.4	6.4	7.5	0.0	0.0
Prop In Lane	1:00		1.00	9.1		9.	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	202	346	293	247	346	293	530	1274	1324	592	1341	1136
V/C Ratio(X)	0.55	0.27	0.05	0.21	0.40	0.31	0.03	0.24	0.24	0.14	0.47	0.20
Avail Cap(c_a), veh/h	332	227	472	391	227	472	230	1274	1324	592	1341	1136
HCM Platoon Katio	00.1	9.5	00.1	9.5	00.1	3.5	00.1	00.1	00.1	2:00	2.00	2:00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.70	0.70	0.70
Uniform Delay (d), s/ven	7.74	38.4	χο. α	47.	4.6	38.7	4. ر د.			O.0	0.0	0.0
Incr Delay (d2), s/veh	2.3	4.0	0.1	4.0	8.0	9.0	0.1	0.4	4.0	0.4	8.0	0.3
Initial Q Delay(d3),s/ven	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unsig Movement Delay slyeh		t 5:	9.0	C.2	- -	ţ.	7.0		1 .	- 5	5.	Š
LnGm Delav(d).s/veh	49.5	38.8	36.8	42.5	40.1	39.3	4.4	5.6	5.6	0.7	8.0	0.3
LnGrp LOS	۵	۵	۵	۵	۵	۵	∢	⋖	⋖	⋖	⋖	_
Approach Vol, veh/h		221			283			641			934	
Approach Delay, s/veh		44.0			40.3			5.5			0.7	
Approach LOS		Ω			Ω			∢			∢	
Timer - Assigned Phs		2		4		9		∞				
Phs Duration (G+Y+Rc), s		84.5		25.5		84.5		25.5				
Change Period (Y+Rc), s		2.0		2.0		2.0		2.0				
Max Green Setting (Gmax), s		0.79		33.0		0.79		33.0				
Max Q Clear Time (g_c+l1), s		8.4		8.6		9.5		10.8				
Green Ext IIme (p_c), s		5.4		0.8		0.5		7.1				
Intersection Summary												
HCM 6th Ctrl Delay			12.2									

C-Max 84.2 0.77 0.18 0.2 0.0

C-Max 84.2 0.77 0.44 3.0 3.0

C-Max 84.2 0.77 0.23 4.4 0.0

C-Max 84.2 0.77 0.03 4.5 4.5

Min 0.14 0.30 0.00 0.0 10.5 B

Min 15.8 0.14 0.28 43.7 43.7

Min 0.14 0.06 12.6 12.6 12.6 B

Min 15.8 0.14 0.78 76.9 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio

Min 15.8 0.14 0.36 44.6 0.0 0.0 D D D D S8.7

Min 15.8 0.14 0.53 49.7 0.0 49.7 D 35.9

0.0

2.1 A

4 4.4

5.0 21.0 72.0 65.5% 4.0 1.0 0.0

5.0 21.0 72.0 65.5%

5.0 21.0 72.0 65.5%

5.0 21.0 72.0 65.5%

5.0 21.0 72.0 65.5%

5.0 21.0 38.0 34.5%

5.0 21.0 38.0 34.5%

5.0 21.0 38.0 34.5%

5.0 21.0 38.0 34.5%

5.0 21.0 38.0 34.5%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time Adjust (s)
Total Lost Time Adjust (s)

1.0

0.0 0.0

0.0

1.0

1.0

1.0

1.0

1.0 0.0

1.0

Intersection LOS: B ICU Level of Service C

Intersection Signal Delay: 13.4 Intersection Capacity Utilization 64.0% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.78

Natural Cycle: 50

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS Actuated Cycle Length: 110 Offset: 63.8 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green 2021 AM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2021ABX.syn

2021 AM Peak BUILD Conditions - Existing Geometry 2021 AM Peak BUILD CONDITION - Existence 2021 AM Peak BUILD - Existence 2021 AM Peak BUILD CONDITION - Existence 2021 AM Peak

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 7: San Mateo Blvd. & I-40 EB Ramp

Timings 7: San Mateo Blvd. & I-40 EB Ramp

†

SB1 880 880 NA

226 226 Prot

142 142 Perm

477 477 Prot

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase

Movement EBI EBT EBR WBI WBT WBR NBI NBT									•	•			
17	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
477 1 755 0 0 1044 477 1 755 0 0 0 1044 0 0 0 0 0 0 1044 100 1.00 1.00 1.00 1.00 1.00 1.00 100 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.11 0 1.00 1.11 0 1.00 1.11 0 1.00 1.11 0 1.00 1.11 0 1.00 1.11 0 1.00 1.11 0 1.00 1.11 0 1.00 1.11 0 1.00 1.11 0 1.00 1.11 0 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1	Lane Configurations	£	÷\$	¥					444	¥C	F	444	
100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100	Traffic Volume (veh/h)	477	τ-	755	0	0	0	0	1044	142	226	880	
100	Future Volume (veh/h)	477	τ-	755	0	0	0	0	1044	142	226	880	
100 100 100 100 100 100 100 100 100 100	Initial Q (Qb), veh	0	0	0				0	0	0	0	0	
100 100 100 100 100 100 100 100 100 100	Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866	Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
1866 1866 1866 0 1866 0 1866 0 1866 0 1866 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0 1867 0	Work Zone On Approach		2						S			S	
507 0 804 0 1111 094 094 094 094 094 3 3 3 0 0 2635 0025 0.00 0.25 0.00 0.523 0 5033 507 0 804 0 1111 0 1111 1767 0 1455 0 0 1148 137 0.0 28.0 0 148 137 0.0 28.0 0 148 100 1.00 1.00 0 148 900 0 801 0 0 148 100 1.00 1.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <td>Adj Sat Flow, veh/h/In</td> <td>1856</td> <td>1856</td> <td>1856</td> <td></td> <td></td> <td></td> <td>0</td> <td>1856</td> <td>1856</td> <td>1856</td> <td>1856</td> <td></td>	Adj Sat Flow, veh/h/In	1856	1856	1856				0	1856	1856	1856	1856	
0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.94 0.95 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Adj Flow Rate, veh/h	202	0	804				0	111	0	240	936	
3 3 3 9 0 0 83 9 0 0 83 9 0 0 83 9 0 0 83 9 0 0 83 9 0 0 83 9 0 0 25 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak Hour Factor	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94	0.94
900 0 801 0 0 255 3534 0 025 3534 0 025 3534 0 0 1711 1767 0 13142 0 148 13.7 0.0 28.0 0 0.0 148 13.7 0.0 28.0 0 0.0 148 13.7 0.0 28.0 0 0.0 148 13.7 0.0 28.0 0 0.0 148 13.7 0.0 28.0 0 0.0 148 13.7 0.0 28.0 0 0.0 148 10.0 0.0 100 100 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Percent Heavy Veh, %	က	က	က				0	က	ო	က	က	
0.25 0.00 0.25 0.00 0.52 C 803 145 0 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717 0 1717	Cap, veh/h	006	0	8				0	2635		302	3316	
3554 0 3145 0 0 5233 1 157 0 804 0 0 1111 157 0 28.0 0 0 1111 157 0 28.0 0 0 14.8 158 0 0 801 0 0 0 14.8 150 0 0 801 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Arrive On Green	0.25	0.00	0.25				0.00	0.52	0.00	90.0	4.0	0.00
857 0 864 0 1111 1767 0 1572 0 01111 13.7 0.0 28.0 0 0.0 14.8 13.7 0.0 28.0 0 0.0 14.8 13.0 0.0 28.0 0 0.0 14.8 10.0 0.0 100 0.0 0.0 0.0 10.0 0.0 100 0.0 0.0 0.0 10.0 0.0 100 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 10.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Sat Flow, veh/h	3534	0	3145				0	5233	1572	3428	5233	_
137 00 280 0 0 1889 1 137 00 280 0 0 148 137 00 280 0 0 148 130 100 280 0 0 148 100 00 100 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Grp Volume(v), veh/h	202	0	804				0	1111	0	240	936	
13.7 0.0 28.0 0.0 14.8 13.7 0.0 28.0 0.0 14.8 13.7 0.0 28.0 0.0 14.8 1.0 0.0 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Grp Sat Flow(s),veh/h/ln	1767	0	1572				0	1689	1572	1714	1689	
137 00 280 00 14.8 100	Q Serve(g_s), s	13.7	0.0	28.0				0.0	14.8	0.0	9.7	13.0	0.0
100 100 000 000 000 000 000 000 000 000	Cycle Q Clear(g_c), s	13.7	0.0	28.0				0.0	14.8	0.0	9.7	13.0	0.0
900 0 801 0 0 2635 900 0 801 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.0
0.56 0.00 1.00 0.00 0.42 900 0 801 0 0.00 0.42 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1	Lane Grp Cap(c), veh/h	006	0	801				0	2635		302	3316	
900 0 801 0 2835 100 1.00 1.00 1.00 1.00 1.00 1.00 1.00 35.7 0.0 41.0 0.00 1.00 1.00 1.00 1.00 0.8 0.0 22.9 0.0 0.0 1.62 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.0 0.0 20.6 0.0 0.0 0.0 0.0 0.0 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.1 11 111 1111 1111 1111 1111 1111 11	V/C Ratio(X)	0.56	0.00	9.				0.00	0.42		0.79	0.28	0.0
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Avail Cap(c_a), veh/h	300	o 6	801				0 6	2635	00	374	3316	,
35.7 0.00 1.00 0.00 1.00 0.00 1.00 0.00 0.	now rigidal Ratio	0.0	8.6	8.6				00.0	9. 6	00.0	0.0	0.0	9.9
Neh 100 00 22:9 00 05 100 00 00 00 00 100 00 20:6 00 00 100 00 20:6 00 00 100 00 00 00 100 00 00 00 101 00 00 00 102 00 00 00 103 00 00 00 104 62 00 73:9 00 105 00 167 107 111 1148 622 33:0 77:0 108 1150 109 00 150 109 00 150 109 00 150 109 00 150 109 00 150 109 00 150 109 00 150 109 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 150 100 00 00 150 100 00 00 150 100 00 00 150 100 00 00 150 100 00 00 150 100 00 00 150 100 00 00 150 100 00 00 150 100	Upstream Filter(II)	35.7	800	41.0				000	16.2	0.00	50.7	14.3	3 0
Neh (100 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Incr Delay (d2), s/veil	80	0.0	30.0				0.0	0.5	0.0	7.4	0.0	<i>-</i>
Neh 36.5 0.0 73.9 0.0 16.7 131.1 1111 131.1 59.4 6.2 14.8 6.22 33.0 77.0 5.0 5.0 5.0 5.0 5.0 1.8 12.0 55.0 28.0 72.0 1.8 12.0 55.0 28.0 72.0 1.8 12.0 55.0 28.0 72.0 1.9 34.5 6.0 8.5 C C	Initial O Delav(d3) s/veh	00	0.0	00				0.0	00	0.0	00	00	0.0
Veh 36.5 0.0 73.9 0.0 16.7 D A F A B 13.11 13.11 14.11 16.7 59.4 E B B 14.8 62.2 33.0 77.0 B 5.0 5.0 5.0 5.0 5.0 1.8 12.0 55.0 5.0 5.0 5. 5.0 5.0 5.0 5.0 7. 5.0 5.0 5.0 5.0 8 30.0 15.0 85 8 6 6 6 8 5 6 6 8 5 6 6 8 5 6 6 8 5 6 6 8 5 6 6 8 5 6 6 8 6 6 6 8 6 6 6 8 6 6 6 8 6 6 6 8 6 6 6 8 6 6 6 8 6 6 6 <tr< td=""><td>%ile BackOfQ(95%),veh/ln</td><td>10.0</td><td>0.0</td><td>20.6</td><td></td><td></td><td></td><td>0.0</td><td>9.6</td><td>0.0</td><td>6.5</td><td>0.6</td><td>0.0</td></tr<>	%ile BackOfQ(95%),veh/ln	10.0	0.0	20.6				0.0	9.6	0.0	6.5	0.6	0.0
365 0.0 73.9 0.0 16.7 D A F A B 1311 1311 1411 148 622 33.0 77.0 1,5 12.0 55.0 5.0 5.0 1,5 9.6 16.8 30.0 15.0 0.2 10.2 0.0 85 C C	Unsig. Movement Delay, s/veh												
1311 A F A B B 1111 1111 1111 1111 1111 11	LnGrp Delay(d),s/veh	36.5	0.0	73.9				0.0	16.7	0.0	58.1	14.5	0.0
1311 1111 1111 1111 1111 1111 1111	LnGrp LOS	۵	⋖	ш				⋖	В		ш	В	
59.4 1 2 4 6 14.8 62.2 33.0 77.0 5.0 5.0 5.0 5.0 1.8 12.0 55.0 2.80 72.0 1.8 12.0 55.0 2.80 72.0 1.9 9.6 16.8 30.0 15.0 34.5 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5	Approach Vol, veh/h		1311						1111	∢		1176	
1 2 4 14.8 622 33.0 5.0 5.0 5.0 5.0 5.0 28.0 5.3 9.6 16.8 30.0 0.2 10.2 0.0	Approach Delay, s/veh		59.4						16.7			23.4	
14.8 622 33.0 14.8 622 33.0 15.0 5.0 5.0 15.12.0 55.0 28.0 16.8 96 16.8 30.0 17.2 10.2 0.0 18.3 96 16.8 30.0 18.4 5 0.0	Approach LOS		ш						മ			O	
14.8 62.2 33.0 5.0 5.0 5.0 1,s 12.0 55.0 28.0),s 96 16.8 30.0 0.2 10.2 0.0 34.5	Timer - Assigned Phs	-	2		4		9						
5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Phs Duration (G+Y+Rc), s	14.8	62.2		33.0		77.0						
(1), s 9.6 16.8 30.0 (1), s 9.6 16.8 30.0 (10.2 10.2 0.0 (10.2 10.2 C.)	Change Period (Y+Rc), s	2.0	2.0		2.0		2.0						
11), s 9.6 16.8 30.0 0.2 10.2 0.0 34.5 C	Max Green Setting (Gmax), s	12.0	22.0		28.0		72.0						
0.2 10.2 0.0 34.5 C	Max Q Clear Time (g_c+I1), s	9.6	16.8		30.0		15.0						
ımmary Jelay	Green Ext Time (p_c), s	0.2	10.2		0.0		8.5						
Jelay	Intersection Summary												
	HCM 6th Ctrl Delay			34.5									
	HCM 6th LOS			ပ									
Notes	Notes												

C-Max 75.4 0.69 0.27 3.7 0.0 3.7 A 13.3

Min 11.4 0.10 0.68 50.8 0.0 50.8

C-Max 59.0 0.54 0.17 2.8 0.0 2.8

C-Max 59.0 0.54 0.41 16.4 16.4

Min 24.6 0.22 0.87 43.0 0.0 43.0

Min 24.6 0.22 0.67 43.1 43.1

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio

Min 24.6 0.22 0.87 43.6 0.0 0.0 0.0 43.6 D

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

5.0 21.0 77.0 70.0% 4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

4.0 1.0 0.0 5.0

5.0 10.0 17.0 15.5%

5.0 21.0 60.0 54.5%

5.0 21.0 60.0 54.5%

5.0 10.0 33.0 30.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

2021 AM Peak BUILD Conditions - Existing Geometry

67 **₽**04

Intersection LOS: C ICU Level of Service B

Intersection Signal Delay: 24.3 Intersection Capacity Utilization 56.5% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.87

7: San Mateo Blvd. & I-40 EB Ramp

Splits and Phases:

Ø6 (R)

Actuated Cycle Length: 110 Offset: 90.2 (82%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 55

Synchro 10 Report 2021ABX.syn

2021 AM Peak BUILD Conditions - Existing Geometry

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 7: San Mateo Blvd. & I-40 EB Ramp

7: San Mateo Blvd. & I-40 EB Ramp

Timings

†

SBT 880 880 NA

226 226 Prot

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Furn Type

Permitted Phases Detector Phase Protected Phases

Switch Phase
Minimum Spit (s)
Minimum Spit (s)
Total Spit (s)
Yellow Time (s)
Yellow Time (s)
Lost Time Adjust (s)
Total Lost Time Adjust (s)

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lag

Movement Lane Configurations Traffic Volume (veh/n) Future Volume (veh/n) Initial Q (Qb), veh Initial Q (Qb), veh Parking Bits Adi											
~ -	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
~ -	K.	£3	¥.					444	¥c.	K.	¥
ē	477		755	0	0	0	0	1044	142	226	880
	477	-	755	0	0	0	0	1044	142	226	880
	0	0	0				0	0	0	0	0
	1.00		1.00				1.00		1.00	1.00	
	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00
Ę,		ž						ž			ž
_	928	1856	1856				0	1856	1856	1856	1856
η/h	202	0	804				0	1111	0	240	936
	0.94	0.94	0.94				0.94	0.94	0.94	0.94	0.94
avy Veh, %	က	က	က				0	က	က	က	က
	975	0	868				0	2523		307	3207
ر	.28	0.00	0.28				0.00	0.50	0.00	0.09	0.63
Sat Flow, veh/h 35	3534	0	3145				0	5233	1572	3428	5233
	202	0	804				0	1111	0	240	936
. veh/h/ln	1767	0	1572				0	1689	1572	1714	1689
	13.3	0.0	27.4				0.0	15.5	0.0	7.5	9.1
r(g_c), s	13.3	0.0	27.4				0.0	15.5	0.0	7.5	9.1
	1.00		1.00				0.00		1.00	1.00	
tp(c), veh/h	975	0	868				0	2523		307	3207
	0.52	0.00	0.93				0.00	0.44		0.78	0.29
Ą	966	0	988				0	2523		436	3207
.0	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00
	1.00	0.00	1.00				0.00	1.00	0.00	0.84	0.84
e G	33.7	0.0	38.7				0.0	17.8	0.0	49.0	9.1
	0.5	0.0	15.3				0.0	9.0	0.0	4.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln 9.7	9.7	0.0	18.0				0.0	10.1	0.0	6.2	5.8
a S	ven	0	2				d	0	ć	0	c
Lingip Delay(u),s/veii s	- C	0.0	5.5				0. d		0.0	6.5.5	ა ა. ⊲
Approach Vol. vob/h		1011						ָּבְּ בְּבָּ	<		1176
Approach Delay slych		16.2						- C	τ		187
Approach LOS		5.0									- m
Č.	١.	C		ľ		•					П
I mer - Assigned Pns	-	N		4		ام					
77	6.4	59.8		35.4		74.6					
Change Period (Y+Rc), s	2.0	2.0		2.0		2.0					
Max Green Setting (Gmax),4s0	480	20.0		31.0		0.69					
Ξ	985	17.5		29.4		11.1					
Green Ext Time (p_c), s	0.3	9.8		1.0		8.5					
Intersection Summary											
HCM 6th Ctrl Delay			28.5								
HCM 6th LOS			O								
Notes											

C-Max 74.0 0.67 0.28 2.1 0.0

0.63 46.6 0.0 46.6

3.3 0.0 3.3 A

Min 26.0 0.24 0.86 42.1 42.1

Min 26.0 0.24 0.86 42.6 0.0

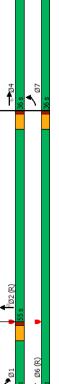
Min 26.0 0.24 0.63 40.8 0.0

v/c Ratio

Min (12.4 0.11

C-Max 56.6 0.51

36 s	
74	



7: San Mateo Blvd. & I-40 EB Ramp

Splits and Phases:

Intersection LOS: C ICU Level of Service B

Intersection Signal Delay: 23.7 Intersection Capacity Utilization 56.5% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.86

Actuated Cycle Length: 110 Offset: 90.2 (82%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 55

Intersection Summary

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

2021 AM Peak BUILD Conditions - Mitigated Conditions

Synchro 10 Report 2021AB_MIT.syn

Synchro 10 Report 2021AB_MIT.syn

2021 AM Peak BUILD Conditions - Mitigated Conditions

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 8: San Mateo Blvd. & I-40 WB Ramp

8: San Mateo Blvd. & I-40 WB Ramp

Timings

1050 1050 NA

142 142 Prot

321 321 Perm

136 NA

273 273 Prot

150

පූ න න

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase Protected Phases

Movement Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h) Initial Q (Qb), veh Ped-Bike Adj(A_pbT) Parking Bus, Adj	•	†	<i>></i>	\	ţ	4	•	←	•	٠	→	•
	B	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
	£		*	K.	*	*	K.	**			**	*-
	20	0	150	273	136	321	142	952	0	0	1050	110
	20	0	150	273	136	321	142	952	0	0	1050	110
	0	0	0	0	0	0	0	0	0	0	0	0
	1.00		1:00	1.00		1:00	1.00		1.00	1.00		1.00
Work Zone On Approach	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
		8			S			8			S	
Adj Sat Flow, veh/h/ln 1	1856	0	1856	1856	1856	1856	1856	1856	0	0	1856	1856
h/h	24	0	161	594	146	345	153	1024	0	0	1129	118
	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
avy Veh, %	က	0	က	က	က	က	က	က	0	0	က	က
Cap, veh/h	156	0	0	1028	388	329	216	3085	0	0	2536	829
_	0.05	0.00	0.00	0.30	0.21	0.21	0.13	1.00	0.00	0.00	0.50	0.50
Sat Flow, veh/h	3428	54		3428	1856	1572	3428	5233	0	0	5233	1572
	54	52.2		294	146	345	153	1024	0	0	1129	118
veh/h/ln	1714	۵		1714	1856	1572	1714	1689	0	0	1689	1572
	1.7			7.2	7.4	23.0	4.7	0:0	0.0	0.0	15.8	4.1
r(g_c), s	1.7			7.2	7.4	23.0	4.7	0.0	0.0	0.0	15.8	4.1
	1.00			1.00		1.00	1.00		0.00	0.00		1.00
tp(c), veh/h	126			1028	388	329	216	3085	0	0	2536	829
	0.35			0.29	0.38	50.5	0.71	0.33	0.00	0.00	0.45	0.14
Ę	312			1028	388	323	405	3085	0 9	0 9	2536	828
0	00.1			9.5	00.1	9.5	2.00	2.00	00.1	00.1	3.5	00.1
	1.00			1.00	1.00	9:1	98.0	0.86	0.00	0.00	0.5	1.00
ue.	50.9			29.5	37.3	43.5	47.1	0.0	0.0	0.0	17.6	12.3
Incr Delay (d2), s/veh	.			0.2	9.0	63.1	3.7	0.2	0.0	0.0	9.0	0.3
Initial Q Delay(d3),s/veh	0.0			0:0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/lin	د .			5.4	6.2	21.4	3.6	0.1	0.0	0.0	10.0	2.7
ay, s/veh	6			0	5	000	ç	d	d	d	9	9
y(d),s/ven	27.7			29.6	8/.9	100.6	20.00 20.00	7.0	0.0	0.0	18.2	0.21
				اد	בן ב	1		۲ إ	<	<		
Approach Vol, ven/h					(82			7/11			124/	
Approach Delay, s/veh					02.0			9.9			17.7	
Approach LOS					ш			∢			œ	
Timer - Assigned Phs		2	က		2	9	7	∞				
Phs Duration (G+Y+Rc), s		72.0	38.0		11.9	60.1	10.0	28.0				
Change Period (Y+Rc), s		2.0	2.0		5.0	2.0	2.0	2.0				
Max Green Setting (Gmax), s		62.0	13.0		13.0	44.0	10.0	23.0				
Max Q Clear Time (g_c+l1), s		2.0	9.5		6.7	17.8	3.7	25.0				
Green Ext Time (p_c), s		9.1	0.4		0.2	9.4	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			25.7									
HCM 6th LOS			C									

5.0 10.0 15.0 13.6% 4.0 1.0 0.0 5.0 Lead

5.0 10.0 18.0 16.4%

5.0 21.0 28.0 25.5%

5.0 21.0 28.0 25.5%

5.0 10.0 18.0 16.4%

5.0 21.0 25.0 22.7%

4.0 1.0 0.0 5.0 Lag

1.0

4.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

5.0 10.0 15.0 13.6% 4.0 1.0 0.0 5.0 Lead

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

Min 65.3 0.59 0.12 2.7 2.7 2.7 2.7

C-Max 53.1 0.48 0.46 21.1 21.1

C-Max 68.4 0.62 0.33 15.1 0.0

Min 10.2 0.09 0.48 48.7 0.0

Min 19.4 0.18 0.85 0.0 0.0 0.0

Min 12.6 0.11 0.76 60.5 0.0 60.5

Min 14.0 0.13 0.47 11.0 11.0 B

Min 72 0.07 0.04 51.0 0.0 D

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio

Min 19.4 0.18 0.0 43.7 0.0 D D D D

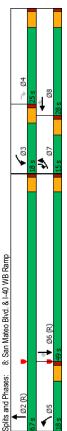
C 19.4

19.4

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS





Intersection LOS: C ICU Level of Service A

Intersection Signal Delay: 26.3 Intersection Capacity Utilization 53.3% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.85

Actuated Cycle Length: 110 Offset: 49.5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 65

2021 AM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2021ABX.syn

Synchro 10 Report 2021ABX.syn

2021 AM Peak BUILD Conditions - Existing Geometry

A-136

HCM 6th Signalized Intersection Summary 8: San Mateo Blvd. & I-40 WB Ramp Terry O. Brown, PE

٠

†

1.00

0 00.

8.8

8.8

1.00

1050 1050

952

321

273 273 0 0 1.00

0 0 1.00

Future Volume (veh/h)

raffic Volume (veh/h)

Lane Configurations

1.00 No 11856 1129 0.93

1.00 No 1856 1024 0.93

1.00 No 1856 146 0.93

0. S o

Parking Bus, Adj Work Zone On Approach

Ped-Bike Adj(A_pbT)

Initial Q (Qb), veh

1.00

294 0.93

1856 161 0.93 3

0.93

1856 153 0.93

0.00 0.0

0.0

368 0.23 1572 345 1572 23.7 23.7 23.7 1.00 368 0.94 372 1.00

3428 0.33 3428 294 1714 7.0 7.0 7.0 1.00 1.100 1.00 1.00 1.00 27.4

2409 0.47 2409 1.00 1.00

2958 0.35 2958 2.00 0.86 0.0

435 0.34 439 1.00 1.00 35.0

1.00 156 0.35 218 1.00 1.00

Lane Grp Cap(c), veh/h V/C Ratio(X) Avail Cap(c_a), veh/h HCM Platoon Ratio

Upstream Filter(I) Uniform Delay (d), s/veh

4.7 4.7 1.00 216 0.71 405 2.00 0.86 47.1

2409 0.48 5233 1129 16.5 16.5

0.93

0.93

0.00

2958 1.00 5233 1024

3 435 0.23 146 146 1856 7.2 7.2

0.00

0.00

Adj Sat Flow, vehinin 1856
Adj Flow Rate, vehin 54
Perak Hour Factor 0.93
Percent Heavy Veh, % 3
Cap, vehin 156
Arrive On Green 0.05
Sat Flow, vehin 3428
Grp Volume(v), vehin 54
Grp Sat Flow(s), vehin 1714
O Serve(g. s), s 1.7
Cycle Q Clear(g. c), s 1.7
Prop In Lane 1.00

20.1

0.0

0.0 A

0.3 A

50.8 D

72.2 E

35.5 D

27.5 C

Incr Delay (d2), siveh 1.3 Initial O Delay(d3),siveh 0.0 %ile BackOfQ(95%),vehln 1.3 Unsig. Movement Delay, siveh LnGrp Delay(d),siveh 52.2

785 48.6

Approach Delay, s/veh

Approach LOS

Approach Vol, veh/h

-nGrp LOS

0.0

0.00 0.00 0.00 0.0

0.00 0.00

1247

1177

30.8 5.0 26.0 25.7 0.1

5.0 7.0 3.7 0.0

57.3 5.0 44.0 18.5 9.3

1.9 5.0 6.7 6.7

40.8 5.0 13.0 9.0 0.4

69.2 5.0 62.0 2.0 9.1

Timer - Assigned Phs
Phs Duration (G+Y-RC), s
Change Period (Y-RC), s
Max Green Setting (Gmax), s
Max Q Clear Time (g_C+II), s

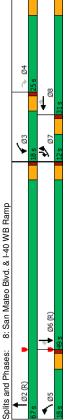
Green Ext Time (p_c), s

22.5 C

HCM 6th Ctrl Delay HCM 6th LOS

В

He WeL WET WBR NBL NBT NBT NBL NBT	NBT SBT SBR MM MM
FBL FBR WBL WBT NBL NBL NBT	∞ + 5 5
\$\text{s}\$ \text{i}\$ \text{f}\$ \text	← 5 5 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
)) 50 150 273 136 321 142 952 73 136 321 142 952 952 952 150 150 150 273 136 321 142 952 952 952 952 952 952 952 952 952 95	5 5 0 4 4
50 150 273 136 321 142 952 7	2 4 4
Prot Perm Prot NA Perm Prot NA 7 4 3 8 8 5 2 2 8 8 5 2 2 8 8 5 2 2 8 8 5 5 2 2 9 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5	2 4 4
7	6 6 5.0 21.0 49.0 44.5% 10
5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	6 5.0 21.0 49.0 44.5% 10
5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 10	5.0 21.0 49.0 44.5% 10
5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	5.0 21.0 49.0 44.5% 10
5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	5.0 21.0 49.0 44.5% 10
10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 25.0 18.0 31.0 31.0 18.0 67.0 10.9% 22.7% 16.4% 28.2% 16.4% 60.9% 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 10.0 10	21.0 49.0 44.5% 10
12.0 25.0 18.0 31.0 31.0 18.0 67.0 10.9% 22.7% 16.4% 28.2% 16.4% 60.9% 4 4.0 4.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	44.5% 10
10.9% 22.7% 16.4% 28.2% 28.2% 16.4% 60.9% 44 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	44.5%
1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	9
1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	4.0 4.0 4.0
9) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	1.0 1.0 1.0
5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	0.0 0.0 0.0
Head Lag Lead Lag Lead Min Min Min Min Min Min C-Max C- 6.6 15.0 12.6 20.9 20.9 10.2 67.5 0.06 0.14 0.11 0.19 0.19 0.09 0.61 0.26 0.45 0.76 0.42 0.86 0.48 0.33 52.6 9.6 60.5 41.5 47.4 48.9 16.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 52.6 9.6 60.5 41.5 47.4 48.9 16.2 D A E D D B B 51.2 D C any gght: 110 Referenced to phase 2:NBT and 6:SBT, Start of Green	5.0 5.0 5.0
7. Min Min Min Min Min Min C-Max C- 6.6 15.0 12.6 20.9 20.9 10.2 67.5 0.06 0.14 0.11 0.19 0.19 0.09 0.61 0.26 0.45 0.76 0.42 0.86 0.48 0.33 52.6 9.6 60.5 41.5 47.4 48.9 16.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Lag Lead
Min Min Min Min Min Min Chax C- 6.6 15.0 12.6 20.9 20.9 10.2 67.5 0.06 0.14 0.11 0.19 0.19 0.09 0.61 0.26 0.45 0.76 0.42 0.86 0.48 0.33 52.6 9.6 60.5 41.5 47.4 48.9 16.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 52.6 9.6 60.5 41.5 47.4 48.9 16.2 D A E D D D B B 51.2 20.5 av ght: 110 Referenced to phase 2:NBT and 6:SBT, Start of Green	
66 15.0 12.6 20.9 20.9 10.2 67.5 0.06 0.14 0.11 0.19 0.19 0.09 0.61 0.26 0.45 0.76 0.42 0.86 0.48 0.33 52.6 9.6 60.5 41.5 47.4 48.9 16.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	-Max C-Max Min
0.26 0.14 0.11 0.19 0.09 0.61 0.26 0.45 0.76 0.42 0.86 0.48 0.33 0.26 0.40 0.00 0.00 0.00 0.00 0.00 0.00 0.0	52.2
0.26 0.45 0.76 0.42 0.86 0.48 0.33 5.26 9.6 60.5 41.5 47.4 48.9 16.2 D A E D D D B E 51.2 C C C C C C C C C C C C C C C C C C C	0.47
52.6 9.6 60.5 41.5 47.4 48.9 16.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.47 0
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	21.7
52.6 9.6 60.5 41.5 47.4 48.9 16.2 D A E D D D B B 51.2 20.5 D C C C C C C C C C C C C C C C C C C C	0.0
D A E D D D B E 51.2 20.5 D D C C C C C C C C C C C C C C C C C	2
51.2 20.5 mmary C Length: 110 Kelerenced to phase 2:NBT and 6:SBT, Start of Green	
Approach LOS Intersection Summary Oycle Length: 110 Actuated Oycle Length: 110 Actuates 49.5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 65	19
Intersection Summary Cycle Length: 110 Actuated Cycle Length: 110 Offset: 49.5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 65	С
Cycle Length: 110 Actuated Cycle Length: 110 Offset: 49.5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 65	
Actuated Cycle Length: 110 Offset: 49.5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 65	
Natural Cycle: 65	CO
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
_	O
Intersection Capacity Utilization 53.3% ICU Level of Service A	ce A



2021 AM Peak BUILD Conditions - Mitigated Conditions

Synchro 10 Report 2021AB_MIT.syn

Synchro 10 Report 2021AB_MIT.syn

2021 AM Peak BUILD Conditions - Mitigated Conditions

Intersection							
Int Delay, s/veh	1.4						
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations	\	أ	↑↑↑	*	106	↑↑↑	
Traffic Vol, veh/h	97	66	1190	69	126	1495	
Future Vol, veh/h	97	66	1190	69	126	1495	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	-	None	-	None	-	None	
Storage Length	30	0	-	115	220	-	
Veh in Median Storage	e,# 0	-	0	-	-	0	
Grade, %	0	-	0	-	-	0	
Peak Hour Factor	89	89	89	89	89	89	
Heavy Vehicles, %	3	3	3	3	3	3	
Mymt Flow	109	74	1337	78	142	1680	
WWW	100	7-7	1001	70	172	1000	
Major/Minor	Minor1	N	Major1	N	Major2		
Conflicting Flow All	2293	669	0	0	1415	0	
Stage 1	1337	-	_	-	-	-	
Stage 2	956	_	_	_	_	_	
Critical Hdwy	5.76	7.16	_	_	5.36	_	
Critical Hdwy Stg 1	6.66	-	_	_	-	_	
Critical Hdwy Stg 2	6.06	_	_	_	_	_	
Follow-up Hdwy	3.83	3.93	_	<u>-</u>	3.13	_	
	*443	*649	-		695		
Pot Cap-1 Maneuver			-	-		-	
Stage 1	*631	-	-		-	-	
Stage 2	*593	-	-	-	-	-	
Platoon blocked, %	1	1	-	-	1	-	
Mov Cap-1 Maneuver		*649	-	-	695	-	
Mov Cap-2 Maneuver	*353	-	-	-	-	-	
Stage 1	*631	-	-	-	-	-	
Stage 2	*472	-	-	-	-	-	
, and the second second							
	14/5		ND		0.0		
Approach	WB		NB		SB		
HCM Control Delay, s			0		0.9		
HCM LOS	С						
Miner Lene/Meier M.	-4	NDT	MDDW	MDI = 4M	VDI 0	CDI	
Minor Lane/Major Mvr	IIL	NBT	NRK	WBLn1V		SBL	
Capacity (veh/h)		-	-	353	649	695	
HCM Lane V/C Ratio		-	-	0.309			
HCM Control Delay (s)	-	-	19.7	11.3	11.5	
HCM Lane LOS		-	-	С	В	В	
HCM 95th %tile Q(veh	1)	-	-	1.3	0.4	0.8	
Notos							Į
Notes ~: Volume exceeds ca		ф. D	la	eeds 30	20-	+: Comp	
		A, 110	INV PYC	eeas 30	IUS ·	+ Comr	j

Intersection								
Int Delay, s/veh	0.1							
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	VVDL	7	ተተኈ	HUIL	ODL	^		
Traffic Vol, veh/h	0	31	1192	57	0	1557		
Future Vol, veh/h	0	31	1192	57	0	1557		
Conflicting Peds, #/hr	0	0	0	0	0	0		
Sign Control	Stop	Stop	Free	Free	Free	Free		
RT Channelized	Olop -	None	-	None	-	None		
Storage Length	_	0	_	-	_	INOTIC		
Veh in Median Storage	e,# 0	-	0	_	_	0		
Grade, %	0	_	0	_		0		
Peak Hour Factor	89	89	89	89	89	89		
	3	3	3	3	3	3		
Heavy Vehicles, % Mvmt Flow	0	35	1339	64	0	1749		
IVIVIIIL FIOW	U	33	1339	04	U	1749		
Major/Minor	Minor1		Major1		/lajor2			
Conflicting Flow All	-	702	0	0	-	-		
Stage 1	-	-	-	-	-	-		
Stage 2	-	-	-	-	-	-		
Critical Hdwy	-	7.16	-	-	-	-		
Critical Hdwy Stg 1	-	-	-	-	-	-		
Critical Hdwy Stg 2	-	-	-	-	-	-		
Follow-up Hdwy	-	3.93	-	-	_	-		
Pot Cap-1 Maneuver	0	*649	_	_	0	-		
Stage 1	0	-	_	-	0	_		
Stage 2	0	_	_	_	0	-		
Platoon blocked, %		1	_	_		-		
Mov Cap-1 Maneuver	-	*649	_	-	-	-		
Mov Cap-2 Maneuver	-	-	_	_	_	_		
Stage 1	-	_	_	_	_	_		
Stage 2	-	-	-	-	_	_		
2.5.50 2								
	\				0.5			
Approach	WB		NB		SB			
HCM Control Delay, s			0		0			
HCM LOS	В							
Minor Lane/Major Mvn	nt	NBT	NBRV	VBLn1	SBT			
Capacity (veh/h)			-	649	-			
HCM Lane V/C Ratio		_		0.054	_			
HCM Control Delay (s)	_	_	10.9	_			
HCM Lane LOS	,	_	_	В	_			
HCM 95th %tile Q(veh	1)	_	_	0.2	-			
	7			7.2				
Notes		Α -			.0			* * * * * * * * * * * * * * * * * * * *
~: Volume exceeds ca	pacity	\$: De	elay exc	eeds 30	10s	+: Comp	outation Not Defined	*: All major volume in platoon

Intersection								
Int Delay, s/veh	1.1							
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	<u>LDL</u>		↑ ↑	W DIX	₩.	אופט		
Traffic Vol, veh/h	37	↑↑ 491	T № 469	55	38	26		
Future Vol, veh/h	37	491	469	55	38	26		
Conflicting Peds, #/hr		0	409	0	0	0		
Sign Control	Free	Free	Free	Free	Stop	Stop		
RT Channelized		None		None	Stop -	None		
	80	None -	-	None -	0	NOHE		
Storage Length Veh in Median Storag		0	0	-	0	-		
Grade, %	e,# - -	0	0	<u>-</u>	0	<u>-</u>		
Peak Hour Factor		89	89	89	89	89		
	89	3	3	3	3	3		
Heavy Vehicles, %				62	43	29		
Mvmt Flow	42	552	527	02	43	29		
Major/Minor	Major1	<u> </u>	Major2	<u> </u>	Minor2			
Conflicting Flow All	589	0	-	0	918	295		
Stage 1	-	-	-	-	558	-		
Stage 2	-	-	-	-	360	-		
Critical Hdwy	4.16	-	-	-	6.86	6.96		
Critical Hdwy Stg 1	-	-	-	-	5.86	-		
Critical Hdwy Stg 2	-	-	-	-	5.86	-		
ollow-up Hdwy	2.23	-	-	-	3.53	3.33		
ot Cap-1 Maneuver	976	-	-	-	*405	698		
Stage 1	-	-	-	-	*534	-		
Stage 2	-	-	-	-	*856	-		
Platoon blocked, %		-	-	-	1			
Mov Cap-1 Maneuver	976	-	-	-	*388	698		
Mov Cap-2 Maneuver		-	-	-	*388	-		
Stage 1	-	-	-	-	*511	-		
Stage 2	-	-	-	-	*856	-		
Approach	EB		WB		SB			
HCM Control Delay, s			0		14			
HCM LOS	0.0		0		В			
I IOW LOO					U			
Minor Long/Major Mar	mt	EDI	EDT	WDT	WDD	CDI 51		
Minor Lane/Major Mvr	IIL	EBL	EBT	WBT	WBR			
Capacity (veh/h)		976	-	-	-	473		
HCM Cantral Dalay (a	.\	0.043	-	-		0.152		
HCM Control Delay (s)	8.9	-	-	-	14		
HCM Lane LOS	٠١	A	-	-	-	В		
HCM 95th %tile Q(veh	1)	0.1		_	-	0.5		
Notes								
~: Volume exceeds ca	apacity	\$: De	lay exc	eeds 30	00s	+: Comp	outation Not Defined	*: All major volume in platoon

2021 PM Peak Hour NO BUILD Analyses

Terry O. Brown, PE HCM 6th Signalized Intersection Summary
0627/2019 1: Girard Ct. & Indian School Rd.

Lane Configurations		NBI				F	
lons		1	R	NBR	SBL	SBI	SBR
veh(h) 29 471 39 9 veh(h) 29 471 39 9 veh(h) 2 471 39 9 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		je.	£,		×	£	
heirly) 29 471 39 9 9 heirly) 29 471 39 9 9 heirly) 20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		71	22	2	75	16	22
hith 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		۲,	22	5	75	9 '	22
pp () 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,0		0 0	0	0 0	0 0	0	0 9
pyproach 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0		00.1	9	0.1	1.00	5	1.00
hybracul 1856 1856 1856 1856 1856 1856 1856 1856		1.00	00.F	1.00	1.00	9.5	1.00
Color Colo	1856	1856	1856	1856	1856	1856	1856
Feh. % 92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0			24	9	8	17	24
Peh, % 3 3 3 3 3 3 3 3 3	0	0	0.92	0.92	0.92	0.92	0.92
(eg) 2374 194 686 2 (eg) 605 2374 194 686 2 (eg) 607 2			ო	က	ო	က	က
veh/h 900 2300 270 848 3 veh/h/lin 800 1763 1807 848 1 0, s 107 31 31 0.1 0, s 107 31 31 0.1 0, s 100 1763 1807 848 1 0, veh/h/lin 695 1268 1300 686 1 veh/h 695 1268 1300 606 1 veh/h 100 100 100 0.0 veh/h 25 28 28 0.1 syveh 25 28 28 0.1 syveh 31 32 0.1 A A A A A A A A A A A A A A A A A A A	44 305		192	16	259	62	112
Section Sect			0.11	0.11	0.11	0.11	0.1
veh/h 32 273 281 10 veh/h 800 1763 1807 848 1 c), s 0.7 3.1 3.1 3.1 c), s 0.7 3.1 3.1 3.1 c), s 0.7 3.1 3.1 3.2 c), veh/h 695 1268 1300 686 1 stio 1.00 1.00 1.00 2.00 1 l) veh/h 695 1268 1300 686 1 stio 1.00 1.00 1.00 2.00 1 l) veh/h 695 1268 1300 686 1 stio 1.00 1.00 1.00 0.70 1 l) sheh 25 2.8 28 0.1 sheh 0.1 0.4 0.4 0.0 0.5%), veh/h 0.1 0.1 0.0 11Delay, sheh 0.1 0.0 0.0 0.2 3, sheh 0.1 0.1 0.1 0.0 11Delay, sheh 0.1 0.1 0.0 12 3.2 3.2 0.1 4. HRO, s 1.1		1355	1689	141	1374	969	983
vehirlin 800 1763 1807 848 1 c) s 0.7 3.1 3.1 0.1 c) s 0.7 3.1 3.1 0.1 i. vehirlin 695 1268 1300 686 100 vehirlin 695 1268 1300 686 100 vehirlin 695 1268 1300 686 100 vehirlin 100 1.00 1.00 0.00 i) siveh 0.1 0.4 0.4 0.4 0.0 i) siveh 0.1 0.4 0.4 0.0 i) siveh 0.2 0.2 0.1 iii 0.3 3.4 0.0 iii 0.4 0.4 0.0 iii 0.5 0.0 iii 0.5 0.0 iii 0.0 ii 0.0 iii 0.0 ii			0	56	82	0	4
C), s 0,7 3,1 3,1 0,1 10,7 3,1 3,1 0,1 10,0 0,7 3,1 3,1 0,1 10,0 0,2,1 3,1 3,1 0,1 10,0 0,2,2 0,22 0,01 (9,1) 1), siveh 2,5 2,8 2,8 0,1 10, 1,0 0,0 0,0 0,0 10, 1,0 0,0 0,0 0,0 11, siveh 0,0 0,0 0,0 0,0 11, siveh 0,0 0,0 0,0 0,0 12, siveh 0,0 0,0 0,0 0,0 13, siveh 0,0 0,0 0,0 0,0 14, siveh 0,0 0,0 0,0 0,0 15, siveh 0,0 0,0 0,0 0,0 16, siveh 0,0 0,0 0,0 0,0 17, siveh 0,0 0,0 0,0 0,0 18, siveh 0,0 0,0 0,0 0,0 0,0 18, siveh 0,0 0,0 0,0 0,0 0,0 18, siveh 0,0 0,0 0,0 0,0 0,0 19, siveh 0,0 0,0 0,0 0,0 0,0 0,0 10, siveh 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0,0 0,	_		0	1830	1374	0	1679
0.7 3.1 3.1 3.2 0.0 0.0 0.1 0.0 0.0 0.1 0.0 0.0 0.0 0.0			0.0	0.8	3.4	0.0	<u>(,</u>
1.00 695 1268 1300 686 11 695 1268 1300 686 11 695 1268 1300 686 11 100 1.00 1.00 1.00 1.00 1.00 1.00 1		4.6	0.0	8.0	4.2	0.0	1.3
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0			•	0.08	1.00	•	0.59
0.05 0.22 0.01 0.00 0.00 0.00 0.00 0.00 0.00			0 0	508	729	0 0	5 5
100 1.00 1.00 0.00 0.10 0.00 0.10 0.00 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.		0.32	0.00	21.0	0.32	0.0	0.27
100 100 100 0.70 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	00 2 00	100	0 0	280	100	9 6	100
25 28 28 0.0 0.1 0.4 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 26 32 3.2 0.1 A A A A A A A A A A A A A A A A A A A		5 6	000	8 6	8.6	8 6	5 5
01 04 0.4 00 00 00 00 00 00 00 00 00 26 32 3.2 0.1 A A A A A A A A A A A A A A A A A A A		26.2	0.0	23.9	25.8	0.0	24.2
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0			0.0	0.3	0.7	0.0	9.0
Neh			0.0	0:0	0.0	0.0	0.0
Veh 26 3.2 3.2 0.1 26 A A A A A 588 (3.1 3.1 A A 482 2 4 11.8 482 50 50 1.8 (9.0 31.0), s 6.6 5.1 3.4	1.2 0.2	1.9	0.0	9.0	2.0	0.0	1.0
26 32 32 0.1 A A A A A A A 586 3.1 A A 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4							
2 4 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	0.3	27.0	0.0	24.2	26.5	0.0	24.7
586 3.1 A A A 11.8 11.8 5.0 5.0 5.0 1.5 6.6 5.1 5.1 6.5 7.0 3.1 7.0 8.1 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2 8.2		١	⋖	ပ	ပ	⋖	
3.1 A A A 4 2 4 118 482 5.0 5.0 5.0 310 5.1 6.6 5.1 7.5 6.6 5.1 7.5 6.6 5.1	27		103			123	
A 11.8 15.0 15.0 15.0 15.0 15.0 15.0 15.0 15.0	.3		26.3			25.9	
2 11.8 5.0 5.0 5.5 6.6 0.2	A		ပ			ပ	
11.8 5.0 5.s 19.0), s 6.6 0.2	9		8				
5.0), s 19.0), s 6.6 0.2	11.8		48.2				
.x), s 19.0 11), s 6.6 0.2	5.0		2.0				
.l), s 6.6 0.2	19.0		31.0				
	6.2		3.7				
Intersection Summary							
	l				ı	ı	
HCM 6th LOS							

5.0 24.0 24.0 40.0% 4.0 1.0 0.0 5.0

5.0 21.0 24.0 40.0%

5.0 21.0 36.0 60.0%

5.0 21.0 36.0 60.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

1.0

1.0

1.0

0.0

1.0

o ¥ 9 4

200 2

Lane Configurations
Traffic Volume (vph)
Future Volume (vph)
Turn Type
Protected Phases
Permitted Phases
Defector Phase

1: Girard Ct. & Indian School Rd.

Timings

Min 9.0 0.15 0.15 13.7 13.7 B B C C

Min 9.0 0.15 0.09 20.0 20.0 25.6 C

C-Max 41.0 0.68 0.26 5.4 0.0 5.4 A A A

Min 9.0 0.15 0.40 28.0 0.0 28.0

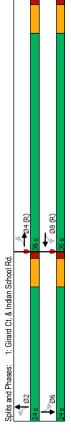
Min 9.0 0.15 0.38 27.5 0.0 27.5

C-Max 41.0 0.68 0.02 5.0 5.0

C-Max 41.0 0.68 0.06 4.3 4.3

C-Max 41.0 0.68 0.23

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio



Intersection LOS: A ICU Level of Service A

Intersection Signal Delay: 7.9 Intersection Capacity Utilization 43.3% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.40

Natural Cycle: 45

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS Actuated Cycle Length: 60 Offset: 22.2 (37%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

2021 PM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2021PNX.syn

2021 PM Peak NOBUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 2: Carlisle Blvd. & I-40 WB Ramp Terry O. Brown, PE 06/27/2019

												١
	4	†	<u> </u>	\	ţ	4	•	←	•	٠	→	•
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				r	₩	*	K.	+++			444	*-
Traffic Volume (veh/h)	0	0	0	259	2	280	204	1300	0	0	1112	470
Future Volume (veh/h)	0	0	0	529	2	280	204	1300	0	0	1112	470
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		9.	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					2			S			2	
Adj Sat Flow, veh/h/In				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				280	0	298	536	1383	0	0	1183	0
Peak Hour Factor				0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %				က	က	က	က	က	0	0	က	က
Cap, veh/h				751	0	334	280	3567	0	0	2499	
Arrive On Green				0.21	0.00	0.21	0.34	1.00	0.00	0.00	0.49	0.00
Sat Flow, veh/h				3534	0	1572	3428	5233	0	0	5233	1572
Grp Volume(v), veh/h				280	0	298	536	1383	0	0	1183	0
Grp Sat Flow(s),veh/h/ln				1767	0	1572	1714	1689	0	0	1689	1572
Q Serve(g_s), s				8.1	0.0	22.1	18.1	0.0	0.0	0.0	18.5	0.0
Cycle Q Clear(g_c), s				8.1	0.0	22.1	18.1	0:0	0.0	0.0	18.5	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				751	0	334	280	3567	0	0	2499	
V/C Ratio(X)				0.37	0.00	0.89	0.92	0.39	0.00	0.00	0.47	
Avail Cap(c_a), veh/h				942	0	419	009	3567	0	0	2499	
HCM Platoon Ratio				0.1	1.00	1.00	5.00	2.00	1.00	1.00	9.	1:0
Upstream Filter(I)				1.00	0.00	1.00	0.87	0.87	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				40.4	0.0	42.9	39.0	0:0	0.0	0.0	20.1	0:0
Incr Delay (d2), s/veh				0.3	0.0	17.8	18.0	0.3	0.0	0.0	9.0	0.0
Initial Q Delay(d3),s/veh				0:0	0.0	0.0	0.0	0:0	0.0	0.0	0:0	0.0
%ile BackOfQ(95%),veh/In				6.5	0.0	15.5	11.8	0.2	0.0	0.0	11.6	0.0
Unsig. Movement Delay, s/veh	_			1	0			0	0	0	1	
LnGrp Delay(d),s/ven				40.7	0.0	63.7	5/.0	0.3	0.0	0.0	707	0.0
Lugip LOS				اد	∀	ш	ш	V S	∢	∢	ر :	
Approach Vol, veh/h					578			1919			1183	⋖
Approach Delay, s/ven					97.p			ا د			7.07	
Approach LOS					_			മ			S	
Timer - Assigned Phs		2			5	9		8				
Phs Duration (G+Y+Rc), s		89.5			25.3	64.2		30.5				
Change Period (Y+Rc), s		5.0			2.0	2.0		2.0				
Max Green Setting (Gmax), s		78.0			21.0	52.0		32.0				
Max Q Clear Time (g_c+I1), s		2.0			20.1	20.5		24.1				
Green Ext Time (p_c), s		14.8			0.2	10.0		1.4				
Intersection Summary												
HCM 6th Ctrl Delay			23.3									
HCM 6th LOS			ပ									
Notes												

C-Max 56.1 0.47 0.50 3.7 3.7 3.7

C-Max 82.8 0.69 0.40 9.4 0.2

Min 21.8 0.18 0.87 57.9 0.0 57.9

Min 27.2 0.23 0.84 64.6 64.6 64.6

Min 27.2 0.23 0.37 41.0 0.0 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio

Min 27.2 0.23 0.37 40.9 0.0 40.9 D D D

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

C-Max 56.1 0.47 0.50 24.0 0.0 24.0 C C 18.0

5.0 21.0 57.0 47.5% 4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

1.0

5.0 21.0 57.0 47.5%

5.0 21.0 37.0 30.8%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

504 504 Prot

280 280

259 259 Perm

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases

Timings 2: Carlisle Blvd. & I-40 WB Ramp

\$6 🕴 🕈 Ø6 (R)

Intersection LOS: C ICU Level of Service C

Intersection Signal Delay: 25.2 Intersection Capacity Utilization 66.6% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.87

Actuated Cycle Length: 120 Offset: 92 (17%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 60

Splits and Phases: 2: Carlisle Blvd. & I-40 WB Ramp Ø2 (R) Synchro 10 Report 2021PNX.syn

2021 PM Peak NOBUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 3: Carlisle Blvd. & I-40 EB Ramp Terry O. Brown, PE

initial Q (Qb), when Ped-Bike Adj(A_bbT)
Parking Bus, Adj
Work Zone On Approach
Adj Sat How, vehluhln
Adj Fow Rate, vehluh
Peak Hour Fador
Percent Heavy Veh, %

Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)

ane Group EBL ane Configurations 11 Traffic Volume (vph) 538	_							
		Ť	<i>></i>	←	•	۶	→	
	8	EBT	EBR	NBT	NBR	SBL	SBT	
	<u>.</u>	æ	N. N.	≣	¥C	F	444	
	8	12	206	1277	439	407	920	
uture Volume (vph) 53	æ	12	206	1277	439	407	920	
urn Type Perm	E	≨	Perm	¥	Perm	Prot	NA	
Protected Phases		4		7		Ψ	9	
Permitted Phases	4		4		2			
Detector Phase	4	4	4	2	2	-	9	
Switch Phase								
Minimum Initial (s) 5	5.0	5.0	2.0	5.0	2.0	2.0	5.0	
Minimum Split (s) 21	21.0	21.0	21.0	21.0	21.0	10.0	21.0	
otal Split (s) 38	38.0	38.0	38.0	54.0	54.0	28.0	82.0	
otal Split (%) 31.7%		31.7%	31.7%	45.0%	45.0%	23.3%	68.3%	
		4.0	4.0	4.0	4.0	4.0	4.0	
	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
ost Time Adjust (s) 0	0.0	0.0	0:0	0.0	0:0	0.0	0.0	
	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
-ead/Lag				Lag	Lag	Lead		
-ead-Lag Optimize?				,	,			
	Min	Ā	Mii	C-Max	C-Max	E M	C-Max	
Act Effet Green (s) 28	28.9	28.9	28.9	56.1	56.1	20.0	81.1	
Actuated g/C Ratio 0.2	24	0.24	0.24	0.47	0.47	0.17	89.0	
	0.71	0.54	0.54	0.39	0.48	0.77	0.31	
,	.3	45.1	42.2	28.3	10.2	82.9	5.2	
>	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
Delay	46.3	45.1	42.2	28.3	10.2	82.9	5.3	
OS	Ω	۵	_	ပ	മ	ш	4	
Approach Delay		8.		23.6			28.3	
pproach LOS				O			ပ	
ntersection Summary								
Cycle Length: 120								
Actualed Cycle Length: 120 Offset: 110.4 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green	phase	2:NBT	and 6:SB	T. Start o	f Green			
Natural Cycle: 55								
Sontrol Type: Actuated-Coordinated	Ъ							
Maximum v/c Ratio: 0.77								
ntersection Signal Delay: 30.6	ò			<u>=</u> <u>c</u>	Intersection LOS: C	COS: C	c	
ntersection Capacity Utilization 66.6%	% Q:			2	ICU Level of Service C	Service	c	

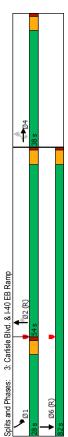
Cap, vehih
Arrive On Green
Sat Flow, vehih
Gip Sat Flow(s), vehih
Gip Sat Flow(s), vehi/h
Gip Sat Flow(s), sehi/h
C Serveig, S), s
Cycle Q Clearig, C), s
Prop in Lane
Lane Grp Cap(c), vehih
VIC Ratio(X)
Avail Cap(c, a), vehih
HCM Platoon Ratio

Uniform Delay (d), s/veh

Upstream Filter(I)

Approach Delay, s/veh Approach LOS

Approach Vol, veh/h



Ø6 (R)

HCM 6th Ctrl Delay HCM 6th LOS

Synchro 10 Report 2021PNX.syn 2021 PM Peak NOBUILD Conditions - Existing Geometry

Terry O. Brown, PE 06/27/2019 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.00 No 1856 1043 0.93 3605 0.29 3605 2.00 0.87 0.0 0.0 0.0 0.2 1481 3605 1.00 1043 1043 0.0 0.0 9.09 8.8 438 0.93 407 407 8.8 د. 439 472 0.93 3 824 11.00 11.00 0.0 0.0 0.0 11.00 824 824 0.57 0.57 0.57 1.30 0.44 0.00 0.44 0.00 0.00 0.00 1.00 No 1856 1373 0.93 3940 1.00 7867 1373 1503 0.0 3940 0.35 3940 2.00 0.44 0.0 0.0 0.0 1845 0.1 1277 0.00 0.00 0.00 0.0 0.00 90.4 5.0 77.0 2.0 9.4 00 WBT User approved volume balancing among the lanes for turning movement 29.6 5.0 33.0 20.7 3.9 43.5 D 16.9 B **506** 0 0.1 1.00 No 1856 0 0.93 0.00 0.0 0.00 0.00 0.00 0.00 0.00 0.00 0:0 1131 46.2 D 67.9 5.0 49.0 2.0 17.6 22.5 5.0 23.0 16.6 0.9 538 538 1.00 1.00 48.8 Timer - Assigned Phs
Phs Duration (G*V+Rc), s
Change Period (Y+Rc), s
Max Green Setting (Gmax), s
Max Q Clear Time (g_c+H), s
Green Ext Time (p_c), s Incr Delay (27), siveh Intrial Q Delay(d2), siveh Intrial Q Delay(d3),siveh Swie BackOf(36%),vehlin Unsig. Movement Delay, siveh LnGrp Delay(d),siveh LnGrp LOS

2021 PM Peak NOBUILD Conditions - Existing Geometry

Terry O. Brown, PE HCM 6th Signalized Intersection Summary 4: Carlisle Blvd. & Indian School Rd.

	4	†	~	-	ţ	1	•	←	•	٠	→	•
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	r	₩		r	₩		r	4413		k	*	*
Traffic Volume (veh/h)	415	289	85	.27	333	227	116	1017	51	230	871	443
Future Volume (veh/h)	415	286	82	72	333	227	116	1017	21	230	871	443
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1:00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		8			2			2			8	
Adj Sat Flow, veh/h/In	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	446	633	91	11	328	244	125	1094	22	247	937	476
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	က	က	က	က	က	က	က	က	က	က	က	က
Cap, veh/h	446	1100	158	295	401	569	252	1549	78	312	1275	896
Arrive On Green	0.42	0.71	0.71	0.02	0.20	0.20	0.04	0.21	0.21	0.23	0.72	0.72
Sat Flow, veh/h	1767	3094	444	1767	2020	1354	1767	4940	248	1767	3526	1572
Grp Volume(v), veh/h	446	360	364	11	312	290	125	748	401	247	937	476
Grp Sat Flow(s),veh/h/ln	1767	1763	1776	1767	1763	1612	1767	1689	1811	1767	1763	1572
Q Serve(g_s), s	25.0	12.0	12.0	4.1	20.6	21.1	2.7	24.6	24.7	11.3	18.8	17.2
Cycle Q Clear(g_c), s	25.0	12.0	12.0	4.1	20.6	21.1	2.7	24.6	24.7	11.3	18.8	17.2
Prop In Lane	1.00		0.25	1.00		0.84	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	446	979	631	295	320	320	252	1059	268	312	1275	896
V/C Ratio(X)	1.00	0.57	0.58	0.26	0.89	0.91	0.50	0.71	0.71	0.79	0.74	0.53
Avail Cap(c_a), veh/h	446	979	631	395	367	336	329	1059	268	363	1275	896
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	0.67	0.67	0.67	2.00	2.00	2.00
Upstream Filter(I)	0.98	0.98	0.98	0.95	0.95	0.95	0.91	0.91	0.91	0.94	0.94	0.94
Uniform Delay (d), s/veh	22.6	12.9	12.9	35.3	46.8	47.0	56.6	45.3	45.3	23.3	13.2	6.4
Incr Delay (d2), s/veh	45.0	 	1.3	0.4	21.2	25.6	1.4	3.6	9.9	9.4	3.6	2.1
Initial Q Delay(d3),s/veh	0.0	0:0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0:0	0.0
%ile BackOfQ(95%),veh/ln	17.5	6.2	6.3	3.2	16.2	15.7	4.5	16.4	18.0	8.0	8.3	5.6
Unsig. Movement Delay, s/veh				1	0	0	0					
LnGrp Delay(d),s/veh	64.6	14.2	74.2	35.7	0.89	97.7	78.0	45.9	48.9	32.7	8.9	8.5
Lugip LOS	ш	e l	n		إ	ш	اد	ا د	اد	اد	20	۹
Approach Vol, ven/h		0,11			6/9			12/4			0991	
Approach Delay, s/veh		33.4			66.3			45.1			16.8	
Approach LOS		ပ			ш			Ω			ш	
Timer - Assigned Phs	_	2	က	4	2	9	7	80				
Phs Duration (G+Y+Rc), s	18.6	42.6	11.2	47.6	12.8	48.4	30.0	28.8				
Change Period (Y+Rc), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
Max Green Setting (Gmax), s	17.0	33.0	13.0	37.0	13.0	37.0	25.0	25.0				
Max Q Clear Time (g_c+l1), s	13.3	26.7	6.1	14.0	7.7	20.8	27.0	23.1				
Green Ext Time (p_c), s	0.2	3.6	0.1	4.3	0.1	9.7	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay			35.4									
HCM 6th LOS			۵									

5.0 10.0 30.0 25.0% 4.0 1.0 0.0 5.0 Lead

> 4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

5.0 10.0 30.0 25.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

333 333 NA

¥283 283 ¥

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase

Protected Phases

Timings 4: Carlisle Blvd. & Indian School Rd. Min 72.4 0.60 0.46 7.6 0.0 7.6 A

Min 57.2 0.48 0.85 58.2 0.0

Min 0.39 0.54 29.4 0.0 29.4

Min 52.4 0.44 1.05 89.1 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio

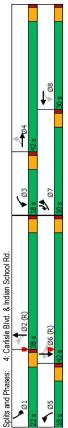
Min 0.19 0.84 48.0 0.0 48.0 45.3 D

C-Max 42.4 0.35 0.76 40.0 40.0 23.4 C

> 39.5 D D D D

> > Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS



Intersection LOS: DICU Level of Service E

Intersection Signal Delay: 42.1 Intersection Capacity Utilization 89.7% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.05

Natural Cycle: 90

Actuated Cycle Length: 120 Offset: 9.6 (8%), Referenced to phase 2.NBTL and 6:SBTL, Start of Green s 42 s 50 s 50 s

2021 PM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2021PNX.syn

Ц ۵ C

HCM 6th Signalized Intersection Summary

5: Washington St. & Indian School Rd

1

142 0 0 1.00

1.00 No 1856 284 0.93 3 3 307 0.27

1.00 No 1856 289 0.93 3 407 0.27

1.00 No 1856 319 0.93 3 1049 0.36 191 191 1763 6.9

26 **26 2**

269

0 22 8.8

8.8 53

8.8

8 8 0 8 8

4 4 0 6 8

178 178 00. 00.

₹8 8

Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)

8.8

1.00 No 1856 516 0.93

Initial Q (Qb), veh
Ped-Bite Adi(A, pbT)
Parking Bus, Adi
Work Zone On Approach
Adj Sat Flow, vehh/lin
Adj Flow State, vehh/
Peak Hour Fador
Percent Heavy Veh, %

1856 191 0.93

76 0.093 3 3 3 2005 0.006 1767 76 1767 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7.7 2.7

1856 89 0.93 3 203 203 517 1763 111.3 0.29 693 693 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.

Cap, vehinh
Arrive On Green
Sat Flow, vehinh
Grp Volume(v), vehinh
Grp Sat Flow(s), vehinh
Q Servel(g, S), s
Cycle Q Cleari(g, c), s
Prop in Lane
Lane Grp Cap(c), vehinh
VIC Ratio(X)
Avail Cap(c, a), vehinh
HCM Platoon Ratio

3009 301 301 112 112

0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

632 0.30 632 1.00 1.00 20.6 1.2 0.0

693 0.43 693 11.00 11.00 19.8 2.0 0.0 8.2

Uniform Delay (d), s/veh

Upstream Filter(I)

0.0 493

22.7

33.8 C

0.0

25.1

21.9

16.2 B

21.8 C

15.9

Incr Delay (d2), siveh Initial Q Delay (d3), siveh Wile BackOfQ(95%), vehAln Unsig. Movement Delay, siveh LnGrp Delay(d), siveh

422 32.3 C

428 21.3 C

796 20.4 C

Approach Delay, s/veh Approach LOS imer - Assigned Phs

Approach Vol, veh/h

37.0 5.0 32.0 9.1 2.1

13.1 5.0 11.0 7.9 0.1

29.1 5.0 25.0 23.7 0.4

10.0 5.0 7.0 4.7

5.0 32.0 33.3 3.3

10.0 11.0 3.3 0.0

29.1 5.0 25.0 17.5

0.0 7.0 7.0 0.0

Phs Duration (G+Y+Rc), s

Max Q Clear Time (g_c+l1), s Green Ext Time (p_c), s Change Period (Y+Rc), s Max Green Setting (Gmax), s

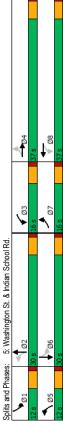
30.1

HCM 6th Ctrl Delay HCM 6th LOS

0.00

0.0 0.0

Timings 5: Washington St. & Indian School Rd.	& Indiar	Scho	ol Rd.						Terry O. Brown, PE 06/27/2019
	1	†	•	ţ	•	-	٠	-	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	*	₩	*	₽	*	£3	je.	£	
Traffic Volume (vph)	178	480	- 14	297	7	269	52	264	
Future Volume (vph)	178	480	4	297	71	269	25	564	
Turn Type	pm+pt	₹	pm+pt	Ϋ́	pm+pt	Ϋ́	pm+pt	ΑN	
Protected Phases	7	4	က	∞	2	2	-	9	
Permitted Phases	4		∞		7		9		
Detector Phase	7	4	က	œ	2	2	-	9	
Switch Phase									
Minimum Initial (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	
Total Split (s)	16.0	37.0	16.0	37.0	12.0	30.0	12.0	30.0	
Total Split (%)	16.8%	38.9%	16.8%	38.9%	12.6%	31.6%	12.6%	31.6%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1:0	1.0	
Lost Time Adjust (s)	0.0	0.0	0:0	0.0	0.0	0.0	0.0	0:0	
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Гag	
Lead-Lag Optimize?									
Recall Mode	Ψ	Max	Wij	Мах	Ψį	E Wije	Ξ	Ε	
Act Effct Green (s)	45.5	35.4	38.8	32.1	30.8	24.1	30.5	24.0	
Actuated g/C Ratio	0.49	0.38	0.42	0.35	0.33	0.26	0.33	0.26	
v/c Ratio	0.39	0.46	0.12	0.32	0.37	0.73	0.21	0.93	
Control Delay	15.5	22.5	13.2	22.1	24.0	41.0	20.5	59.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0.0	
Total Delay	15.5	22.5	13.2	22.1	24.0	41.0	20.5	59.9	
ros	Ω	ပ	ω	ပ	ပ	۵	O	ш	
Approach Delay		20.8		21.2		37.9		55.4	
Approach LOS		ပ		ပ		Ω		ш	
Intersection Summary									
Cycle Length: 95									
Actuated Cycle Length: 92.9	6								
Natural Cycle: 65									
Control Type: Semi Act-Uncoord	coord								
Maximum v/c Ratio: 0.93									
Intersection Signal Delay: 32.2	2.2			≟	Intersection LOS: C	LOS: C			
Intersection Capacity Utilization 63.5%	ation 63.5%			2	CU Level of Service B	f Service	В		
Analysis Period (min) 15									



Synchro 10 Report 2021PNX.syn

Synchro 10 Report 2021PNX.syn 2021 PM Peak NOBUILD Conditions - Existing Geometry

2021 PM Peak NOBUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 6: Carlisle Blvd. & Constitution Ave. Terry O. Brown, PE 06/27/2019 Timings 6: Carlisle Blvd. & Constitution Ave.

					Į		,				
	١	†	~	-	,	/		_	*	*	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	<u>~</u>	*	*-	<u></u>	+	*	<u></u>	₩	<u>~</u>	*	*
Traffic Volume (vph)	215	199	9	99	134	8	18	711	9/	604	128
Future Volume (vph)	215	199	16	99	134	80	18	711	9/	604	128
Turn Type	Perm	≨	Perm	Perm	Ϋ́	Perm	Perm	¥	Perm	Ϋ́	Perm
Protected Phases		4			∞			2		9	
Permitted Phases	4		4	∞		∞	2		9		9
Detector Phase	4	4	4	∞	∞	∞	2	2	9	9	9
Switch Phase											
Minimum Initial (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	48.0	48.0	48.0		48.0	48.0	72.0	72.0	72.0	72.0	72.0
Total Split (%)	40.0%	40.0%	40.0%		40.0%	40.0%	%0.09	%0:09	%0.09	%0.09	%0.09
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1:0	1.0	1.0		1.0	1.0	1.0	1:0	1.0	1:0	1.0
Lost Time Adjust (s)	0.0	0.0	0:0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	Min	E Mi	Mir	Mi	Mi	Mi	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	28.6	28.6	28.6	28.6	28.6	28.6	81.4	81.4	81.4	81.4	81.4
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.68	0.68	0.68	0.68	0.68
v/c Ratio	0.85	0.47	0.04	0.33	0.32	0.19	0.04	0.33	0.19	0.50	0.12
Control Delay	0.69	41.2	11.6	39.3	37.6	7.3	9.3	9.4	3.1	7.7	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	0.69	41.2	11.6	39.3	37.6	7.3	9.3	9.4	3.1	7.7	9.0
TOS	ш	۵	ω	□	□	∢	⋖	∢	⋖	⋖	∢
Approach Delay		54.0			29.4			9.4		6.2	
Approach LOS		٥			O			∢		A	
Intersection Summary											
Cycle Lenath: 120											
Actuated Cycle Length: 120											
Offset: 69.6 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	ced to phas	e 2:NBTI	- and 6:S	BTL, Start	of Greer	_					
Natural Cycle: 55											
Control Type: Actuated-Coordinated	ordinated										
Maximum v/c Ratio: 0.85											
Intersection Signal Delay: 19.1	9.1			≟	Intersection LOS: B	LOS: B					
Intersection Capacity Utilization 71.6%	ation 71.6%			೦	CU Level of Service C	of Service	ပ				
medical capacity contra				•	,		,				

1856 79 0.96 3 3 3 3 3 3 1.00 687 79 687 79 14.7 14.7 11.00 0.018 2.00 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0.062 0

1856 69 0.096 3 3 276 0.028 1148 62 62 62 62 76 0.025 33 33 33 33 33

312 0.28 11149 224 1149 22.7 22.7 22.8 1.00 312 404 404 1.00 11.00 11.00

0.53 0.62 0.062 0.0 0.0 0.0 0.0 0.0

0.34 1125 11.00 11.00 10.0 0.0 8.2

517 0.27 665 665 1.00 1.00 33.8 0.3 0.0

517 0.40 665 665 1.00 1.00 35.2 0.5 0.0

V/C Ratio(X)
Avail Cap(c_a), veh/h
HCM Platoon Ratio

841

38.4 5.0 43.0 1.3

81.6 5.0 67.0 16.7 6.2

38.4 5.0 43.0 31.8

81.6 5.0 67.0 14.1 5.7

Change Period (Y+Rc), s Max Green Setting (Gmax), s Max Q Clear Time (g_c+11), s Green Ext Time (p_c), s

Phs Duration (G+Y+Rc), s

16.4 B

HCM 6th Ctrl Delay HCM 6th LOS

1.7

10.8 B

10.9 B 799 10.8 B

8.2

33.2 C

34.1 292

42.6 D

35.7 D

49.7

Incr Delay (d2), s/veh Initial Q Delay(d3),s/veh %ile BackOfQ(95%),veh/In Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh

Uniform Delay (d), s/veh

Upstream Filter(I)

448 42.5 D

Approach Delay, s/veh Approach LOS imer - Assigned Phs

Approach Vol, veh/h

3 1184 11.00 11.00 629 629 0.0 0.0

32174 0.64 3407 383 383 1763 12.1

3 0.28 1856 207 207 10.9 10.9

Cap, veh/h
Arrive On Green
Sat Flow, veh/h
Gp Volume(v), veh/h
Grp Sat Flow(s), veh/h
Grp Sat Flow(s), veh/h
Grp Carrig_0, s
Cycle Q Clear(g_0), s
Frop in Lane
Lane Grp Cap(c), veh/h

1.00 No No 140 0.96 0.96 0.28 1856 140 7.1

1.00 No 1856 629 0.96

1.00 No 1856 741 0.96

8.8

8.8

8 8 0 0.0 100 0 1

88089

88088

215 215 00 .00

Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)

8.8

1.00 No 1856 207 0.96

Initial Q (Qb), veh
Ped-Bite Adi(A, pbT)
Parking Bus, Adi
Work Zone On Approach
Adj Sat Flow, vehh/lin
Adj Flow State, vehh/
Peak Hour Fador
Percent Heavy Veh, %

224 0.96 3

96 89 89

Splits and Phases: 6: Carlisle Blvd. & Constitution Ave.	
	₩ 294
72 s	48 s
(A) 900 (B)	80 ♣
72.s	48 s

Synchro 10 Report 2021PNX.syn

Synchro 10 Report 2021PNX.syn

2021 PM Peak NOBUILD Conditions - Existing Geometry

2021 PM Peak NOBUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 7: San Mateo Blvd. & I-40 EB Ramp Terry O. Brown, PE 06/27/2019

SBT 955 955 NA 6

432 432 Prot

369 369

443 443 Perm

329 329 Prot Prot

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase

Timings 7: San Mateo Blvd. & I-40 EB Ramp

5.0 21.0 84.0 70.0% 4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

1.0

5.0 10.0 18.0 15.0%

5.0 21.0 66.0 55.0%

5.0 21.0 66.0 55.0%

5.0 21.0 36.0 30.0%

5.0 10.0 36.0 30.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

Terry O. Brown, PE 06/27/2019

Movement EBL Lane Configurations MM Traffic Volume (vehin) 329 Future Volume (vehin) 329 Future Volume (vehin) 329 Future Volume (vehin) 329 Future Volume (vehin) 329 Ped-Bike Adj(A_pbT) 1.00 Parking Bus, Adj 1.00 Work Zone On Approach 1.00	HE TO	FRT	EBR							2		
los t	N. N.	5		WBL	WBT	WBR	NBL	NBT	NBR MBR	SBL	SBT	SBR
ich T	=	42	*					444	*	ř.	₩₩	
- da	329	12	443	0	0	0	0	1647	369	432	922	0
tch,	329	12	443	0	0	0	0	1647	369	432	922	0
년 -	0 8	0	0 0				0 0	0	0 5	0 6	0	0 6
lg.	00.	5	00.1				0.0	5	00.	0.5	5	8.5
	90:	3 2	30.				3.	3 2	00.1	30:	3 S	1.00
	856	1856	1856				C	1856	1856	1856	1856	C
	354	0	485				0	1771	0	465	1027	0
	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
avy Veh, %	က	က	က				0	က	က	က	က	0
	663	0	290				0	2934		37.1	3694	0
	0.19	0.0	0.19				0.00	0.58	0.00	0.04	0.24	0.00
	3534	0	3145				0	5233	1572	3428	5233	0
	354	0	485				0	1771	0	465	1027	0
veh/h/ln 1	767	0	1572				0	1689	1572	1714	1689	0
	0.0	0.0	17.8				0.0	27.1	0.0	13.0	19.8	0.0
r(g_c), s	9.0	0:0	Ø . 6				0.0	71.17	0.0	13.0	9. 20.	0.0
	00.1	c	00.1				0.00	V COC	0.1	1.00	POSC	0.00
Lane Grip Cap(c), ven/n oc	0 53		080				000	0.60		1.05	900	
a), veh/h	913	0	812				0.0	2934		37.1	3694	0
	1.00	1.00	1.00				1.00	1.00	1.00	0.33	0.33	1.00
	1.00	0.00	1.00				0.00	1.00	0.00	0.65	0.65	0.00
eh	44.0	0.0	46.8				0.0	16.3	0.0	57.9	19.9	0.0
	0.7	0.0	4.9				0.0	0.9	0.0	127.3	0.1	0.0
	0.0	0.0	0.0				0.0	0.0	0.0	0:0	0.0	0.0
%ile BackOtQ(95%),veh/ln 8	8.4	0:0	2 0				0.0	15.6	0.0	18.9	12.9	0.0
	44.7	0.0	51.7				0.0	17.3	0.0	185.2	20.0	0.0
	□	⋖	۵				⋖	Ф		ш	Ф	⋖
Approach Vol, veh/h		839						1771	A		1492	
Approach Delay, s/veh		48.8						17.3			71.5	
Approach LOS		Ω						Ф			ш	
	_	2		4		9						
	18.0	74.5		27.5		92.5						
	2.0	2.0		2.0		2.0						
	13.0	61.0		31.0		79.0						
s,(L)	2.0	29.1		19.8		21.8						
so.	0:0	5:		7.7		9.0						
Intersection Summary												
HCM 6th Ctrl Delay			43.4									
HCM 6th LOS			۵									
Notes												

C-Max 91.5 0.76 0.27 4.6 0.0 4.6 A A A

Min 25.4 0.21 0.65 35.4 35.4 35.4

C-Max 61.1 0.51 0.40 2.8 0.0 2.8 2.8

C-Max 61.1 0.51 0.69 24.1 24.1

Min 18.5 0.15 0.70 30.7 30.7 30.7

Min 18.5 0.15 0.70 31.1 31.1

Min 18.5 0.15 0.68 54.1 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio

100 **₩** Splits and Phases: Ø6 (R)

7: San Mateo Blvd. & I-40 EB Ramp

Intersection LOS: C ICU Level of Service C

Intersection Signal Delay: 22.0 Intersection Capacity Utilization 66.4% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.70

Actuated Cycle Length: 120 Offset: 103.2 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 65

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Synchro 10 Report 2021PNX.syn

2021 PM Peak NOBUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 8: San Mateo Blvd. & I-40 WB Ramp Terry O. Brown, PE 06/27/2019

	١	t	•	•		/	•	_	•	•	•	۲
	i		-	-	!	!	- }	- !	- !	į	. !	1
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	E		¥	F	*	¥	F	#			ŧ	
Traffic Volume (veh/h)	155	0	417	188	112	249	187	1254	0	0	1354	112
Future Volume (veh/h)	155	0	417	188	112	249	187	1254	0	0	1354	112
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1:00	1.00
Work Zone On Approach		2			8			ટ			ટ	
Adj Sat Flow, veh/h/In	1856	0	1856	1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h	165	0	444	200	119	265	199	1334	0	0	1440	119
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	က	0	က	က	က	က	က	က	0	0	က	
Cap, veh/h	224	0	0	1005	345	292	263	3159	0	0	2560	868
Arrive On Green	0.07	0.00	0:00	0.29	0.19	0.19	0.03	0.21	0.00	0.00	0.51	0.51
Catt low, velilli	101	202		0000	24.0	200	100	4004			4440	440
Gr Set Flow(s), veli/ii	1714	7.60 L		1714	1856	1673	1714	1680	o c	0	16.00	= [3
O Serveral s), verimini	5.7	ш		- 4 %	6 7	10.8	4 0	27.5			93.6	4.2
Cycle O Clear(a, c) s				5 4	. 6	20.0	0.0	27.5	0.0	0.0	23.6	4.2
Prop In Lane	100			100	š	00.1	100	5.	000	000	20.0	100
Lane Gro Cap(c), veh/h	224			1005	345	292	263	3159	0	0	2560	88
V/C Ratio(X)	0.74			0.20	0.34	0.91	92.0	0.42	00.0	00.0	0.56	0.13
Avail Cap(c_a), veh/h	343			1005	387	328	400	3159	0	0	2560	868
HCM Platoon Ratio	1.00			1.00	1.00	1.00	0.33	0.33	1.00	1.00	1:00	1.0
Upstream Filter(I)	1.00			1.00	1.00	1.00	0.67	0.67	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	55.1			31.8	45.5	47.8	57.4	28.9	0.0	0:0	20.5	7
Incr Delay (d2), s/veh	4.6			0.1	9.0	25.9	3.0	0.3	0.0	0.0	6.0	0.3
Initial Q Delay(d3),s/veh	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.7			4.0	9.9	15.0	9.9	17.2	0.0	0.0	14.2	2
Unsig. Movement Delay, s/veh				0.50	407	707	6	50	c	c	5	ć
Liferp Delay(d),s/veri	7.6C H			ە تا ر	- - - -	į.	ь 4. п	- 67	0.0	0.0	4. C	5.5 a
Annroach Vol. veh/h	ı				584	,	ı	1533	:	:	1559	
Approach Delay, s/veh					53.1			33.2			20.7	
Approach LOS					۵			O			ပ	
Timer - Assigned Phs		2	က		2	9	7	∞				
Phs Duration (G+Y+Rc). s		79.8	40.2		14.2	65.6	12.9	27.3				
Change Period (Y+Rc), s		2.0	2.0		2.0	2.0	2.0	2.0				
Max Green Setting (Gmax), s		0.89	12.0		14.0	49.0	12.0	25.0				
Max Q Clear Time (g_c+I1), s		29.5	7.3		8.9	25.6	7.7	21.8				
Green Ext Time (p_c), s		12.5	0.3		0.3	11.8	0.2	0.5				
Intersection Summary												
HCM 6th Ctrl Delay			30.3									
			5.7									

5.0 10.0 17.0 14.2 4.0 1.0 0.0 5.0 Lead

5.0 10.0 19.0 15.8%

5.0 21.0 30.0 25.0%

5.0 10.0 17.0 14.2%

4.0 1.0 0.0 5.0 Lag

1.0

4.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 -ead

4.0 0.0 5.0 Lag

5.0 10.0 17.0 14.2% 4.0 1.0 0.0 5.0 Lead

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

1354 1354 NA

1254 NA

187 187 Prot

249 249 Perm

F 88 85

155 Tag

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase Protected Phases

8: San Mateo Blvd. & I-40 WB Ramp

Timings

Min 70.0 0.58 0.12 3.3 3.3

Min 12.0 0.10 0.59 43.3 0.0 43.3

Min 23.0 0.19 0.68 35.3 0.0 0.0

Min 11.2 0.09 0.63 61.8 61.8

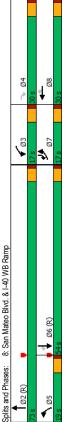
Min 22.4 0.19 0.94 52.8 52.8 0.0 D

Min 10.6 0.09 0.55 59.3 0.0 E

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio

Min 23.0 0.19 0.34 43.9 0.0 43.9 D 46.1

C-Max 54.4 0.45 0.63 27.7 27.7 C C C



Intersection LOS: C ICU Level of Service C

Intersection Signal Delay: 29.0 Intersection Capacity Utilization 69.8% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.94

Natural Cycle: 65

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Actuated Cycle Length: 120 Offset: 44.4 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Green

2021 PM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2021PNX.syn

Synchro 10 Report 2021PNX.syn 2021 PM Peak NOBUILD Conditions - Existing Geometry

2021 PM Peak Hour BUILD Analyses

HCM 6th Signalized Intersection Summary 1: Girard Ct. & Indian School Rd.

1: Girard Ct. & Indian School Rd.

Timings

EBL EBT EBR WBL WBT WBR NBL NBT S		•				,			•		-	-	`
FEL FBT FBR WBL WBT WBR NBL NBT NBT		^	Ť	<u> </u>	-	ļ	1	•	—	•	۶	→	*
N ↑↑ ↑ ↑↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
29 487 39 12 517 69 71 22 29 487 39 12 517 69 71 22 100 100 100 100 100 100 100 100 100 100 100 100 100 100 1856 1856 1856 1856 1856 1856 1856 32 529 42 13 562 75 77 24 092 0.92 0.92 0.92 0.92 0.92 0.92 0.92 077 0.72 0.72 1.00 1.00 1.10 1.10 0.72 0.72 1.00 1.00 1.01 1.00 1.00 0.72 0.72 1.00 1.00 1.01 1.01 1.01 0.72 0.72 1.00 1.00 1.00 1.01 1.01 1.00 0.73 3.2 3.2 0.1<	Lane Configurations	*	₹		r	₩		*	£		×	43	
29 487 39 12 517 69 71 22 0 0 0 0 0 0 0 0 100 100 100 100 100 100 100 100 100 100 100 100 100 100 1866 1866 1866 1866 1866 1866 1866 32 529 42 13 562 75 77 77 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 3 2.38 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Traffic Volume (veh/h)	59	487	33	12	217	69	71	22	2	9/	.9	22
100	Future Volume (veh/h)	58	487	33	12	217	69	71	23	2	9/	16	22
1,00	Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	J
100	Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1:00	1.00		1.00	1.00		1.00
No	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
1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856	Work Zone On Approach		8			S			S			S	
32 529 42 13 562 75 77 24 99 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.14 0.11	Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92	Adj Flow Rate, veh/h	32	529	45	5	295	75	11	75	വ	83	11	24
3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
685 2380 189 676 2249 229 224 170 785 3309 262 834 3127 416 1355 1489 32 281 290 13 316 321 77 0 0.7 32 282 834 1783 1785 0 0 0.7 32 32 0.1 0.0 0.0 3.3 0.0 0.7 32 32 0.1 0.0 0.0 4.6 0.0 0.7 32 32 0.1 0.0 0.0 4.6 0.0 0.7 32 32 0.0 0.0 4.6 0.0 0.8 136 170 1.00 0.0 4.6 0.0 0.8 128 128 128 128 1.00 0.0 0.0 1.00 1.00 0.0 0.0 0.0 0.0 0.0 0.0 0.1	Percent Heavy Veh, %	က	က	က	က	က	က	က	က	က	က	က	(,,
0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.72 0.73 0.00 0.00 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.02 0.02 0.02 0.00 0.02 0.02 0.00 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.02 0.03 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 <td< td=""><td>Cap, veh/h</td><td>685</td><td>2380</td><td>189</td><td>929</td><td>2249</td><td>299</td><td>244</td><td>170</td><td>32</td><td>256</td><td>62</td><td>112</td></td<>	Cap, veh/h	685	2380	189	929	2249	299	244	170	32	256	62	112
785 3309 262 834 3127 416 1355 1489 786 1763 180 18 312 14 100 100 3.3 100 100 3.3 100 100 3.3 100 100 3.3 100 100 3.3 100 100 3.3 100 100 3.3 100 100 3.3 100 100 3.3 100 100 3.3 100 100 3.3 100 100 3.3 100 100 3.3 100 100 3.3 100 100 3.3 100 100 3.0 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 <td>Arrive On Green</td> <td>0.72</td> <td>0.72</td> <td>0.72</td> <td>1.00</td> <td>1.00</td> <td>1.00</td> <td>0.11</td> <td>0.11</td> <td>0.11</td> <td>0.11</td> <td>0.1</td> <td>0.</td>	Arrive On Green	0.72	0.72	0.72	1.00	1.00	1.00	0.11	0.11	0.11	0.11	0.1	0.
32 281 290 13 316 321 77 0 785 1763 1808 834 178 135 0 0.7 3.2 3.2 0.1 0.0 0.3 0 1.00 0.14 0.0 0.0 3.3 0.0 685 1286 1301 6.6 1281 244 0 0.05 0.22 0.22 0.02 0.25 0.25 0.32 0.00 686 1301 6.76 1268 1281 544 0 0 685 1301 6.76 1268 1281 544 0 0 100 1.00 1.00 0.25 0.32 0.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 </td <td>Sat Flow, veh/h</td> <td>785</td> <td>3309</td> <td>262</td> <td>834</td> <td>3127</td> <td>416</td> <td>1355</td> <td>1489</td> <td>310</td> <td>1370</td> <td>969</td> <td>983</td>	Sat Flow, veh/h	785	3309	262	834	3127	416	1355	1489	310	1370	969	983
786 1763 1808 834 1763 1761 1355 0 0.7 3.2 3.2 0.1 0.0 0.0 3.3 0.0 0.7 3.2 3.3 0.0 0.0 4.6 0.0 1.00 0.14 1.00 0.23 1.00 0.0 685 1268 1301 676 1268 1281 244 0 0.05 0.22 0.02 0.25 0.25 0.25 0.00 0.0 1.00 1.00 1.00 2.00 2.00 1.00 1.00 1.00 1.00 1.00 1.00 2.00 2.00 1.00 1.00 1.00 1.00 1.00 0.68 0.68 1.08 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 <td>Grp Volume(v), veh/h</td> <td>32</td> <td>281</td> <td>290</td> <td>13</td> <td>316</td> <td>321</td> <td>77</td> <td>0</td> <td>59</td> <td>83</td> <td>0</td> <td>4</td>	Grp Volume(v), veh/h	32	281	290	13	316	321	77	0	59	83	0	4
0.7 3.2 3.2 0.1 0.0 0.0 3.3 0.0 1.0 0.7 3.2 3.2 3.3 0.0 0.0 4.6 0.0 1.0 0.8 1268 1301 676 1268 1281 244 0 0 0.5 0.2 0.2 0.2 1.00 0.8 1268 1301 676 1268 1281 244 0 0 0.0 0.0 1.00 1.00 0.0 0.0 0.0 0.0 0	Grp Sat Flow(s),veh/h/ln	785	1763	1808	834	1763	1781	1355	0	1800	1370	0	1679
0.7 3.2 3.3 3.0.0 0.0 4.6 0.0 1.0 0.0 0.0 4.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Q Serve(g_s), s	0.7	3.2	3.2	0.7	0.0	0.0	3.3	0.0	0.9	3.5	0.0	
1,00	Cycle Q Clear(g_c), s	0.7	3.2	3.2	3.3	0.0	0.0	4.6	0.0	6.0	4.4	0.0	
685 1268 1301 676 1268 1281 244 0 0 0.05 0.22 0.22 0.02 0.25 0.25 0.25	Prop In Lane	1.00		0.14	1.00		0.23	1.00		0.17	1.00		0.56
0.05 0.22 0.22 0.02 0.25 0.25 0.32 0.00 686 1268 1301 676 1268 1281 519 0 1.00 1.00 1.00 2.00 2.00 1.00 1.00 1.01 1.00 0.06 0.68 0.68 1.00 0.00 0.1 0.4 0.4 0.0 0.3 0.3 0.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.1 1.1 1.1 0.0 0.2 0.2 1.9 0.0 0.1 0.1 0.1 0.1 0.0 0.2 0.2 0.3 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.0 0.2 0.2 0.2 0.1 0.1 0.1 0.1 0.0 0.2 0.2 0.0 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0	Lane Grp Cap(c), veh/h	685	1268	1301	9/9	1268	1281	244	0	202	256	0	191
100 100 100 100 2.00 1200 1200 1000 100 100 100 100 100 10	V/C Ratio(X)	0.05	0.22	0.22	0.02	0.25	0.25	0.32	0.00	0.14	0.32	0.00	0.21
100 100 100 0.08 0.08 0.08 100 100 100 100 100 0.08 0.08	Avail Cap(c_a), veh/h	982	1268	1301	9/9	1268	1281	516	0	270	534	0	232
100 100 100 068 068 068 100 000 001 001 001 001 001 001 001 00	HCM Platoon Ratio	1.00	9 :	0.5	5.00	2.00	2.00	9.5	1.00	0.1	0.1	0.5	1.0
25 28 28 0.1 0.0 0.0 265 0.0 0.0 0.1 0.4 0.4 0.0 0.0 0.0 0.7 0.0 0.0 0.0 0.0 0.0 0.0	Upstream Filter(I)	1.00	0.1	1.00	0.68	0.68	0.68	1.00	0.00	1.00	1.00	0.00	9:
0.1 0.4 0.4 0.0 0.3 0.3 0.7 0.0 0.0 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0	Uniform Delay (d), s/veh	2.5	5.8	5.8	-6	0.0	0.0	26.2	0.0	23.9	25.9	0.0	24.1
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Incr Delay (d2), s/veh	0.1	0.4	0.4	0.0	0.3	0.3	0.7	0.0	0.3	0.7	0.0	9.0
26 32 32 02 03 3270 00 A A A A A A C A 603 603 650 03 270 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Initial Q Delay(d3),s/veh	0:0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26 32 32 02 0.3 0.3 27.0 0.0 A A A A A C A 603 660 660 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 106 <td>%ile BackOfQ(95%),veh/In</td> <td></td> <td></td> <td>--</td> <td>0.0</td> <td>0.2</td> <td>0.2</td> <td><u>0.</u></td> <td>0:0</td> <td>0.7</td> <td>2.0</td> <td>0.0</td> <td>-</td>	%ile BackOfQ(95%),veh/In			- -	0.0	0.2	0.2	<u>0.</u>	0:0	0.7	2.0	0.0	-
A A A A A C C A A C C A A C C A A C C A A C C A A C C A A C C A A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C A C C C A C C C A C C C A C C C C C C C C C C C C C C C C C C C C	InGm Delay(d) s/veh		3.0	3.0	0.0	0.3	0.3	27.0	0	24.2	26.6	0	7 7 7
603 650 106 3.2 0.3 26.2 A A 6 8 11.8 482 11.8 482 5.0 5.0 5.0 5.0 19.0 31.0 19.0 31.0 6.6 5.2 6.4 5.3 0.2 3.6 0.3 3.9	Ingm I OS	Q A	4	4 A	i 4	δ 4	9	i C	8		3	8	,
32 0.3 A A 6 118 482 118 6 50 50 50 190 310 190 6 66 52 64	Approach Vol. veh/h		603			650			106			124	
A A 6 6 6 7 118 18 482 118 5.0 5.0 5.0 5.0 19.0 81.0 19.0 6.6 5.2 6.4 6.4 6.4	Approach Delay, s/veh		3.2			0.3			26.2			26.0	
2 4 6 118 482 118 5.0 5.0 5.0 190 31.0 19.0 66 52 64 02 3.6 0.3	Approach LOS		⋖			<			ပ			O	
118 482 118 50 50 50 190 31,0 19,0 66 52 64 02 3.6 0.3	Timor Assigned Dhe		c		_		ď		α				
118 482 118 50 50 190 310 190 66 52 64 02 36 0.3	IIIII - Assigned Fils		4 ;		+ 0								
5.0 19.0 31.0 6.6 5.2 6.4 0.2 3.6 0.3	Phs Duration (G+Y+Rc), s		11.8		48.2		11.8		48.2				
190 31,0 19,0 6.6 5.2 6.4 0.2 3.6 0.3	Change Period (Y+Rc), s		2.0		2.0		2.0		2.0				
6.6 5.2 6.4 0.2 3.6 0.3	Max Green Setting (Gmax), s		19.0		31.0		19.0		31.0				
0.2 3.6 0.3	Max Q Clear Time (g_c+I1), s	6	9.9		2.5		6.4		5.3				
	Green Ext Time (p_c), s		0.2		3.6		0.3		3.9				
Intersection Summary	Intersection Summary												
HCM 6th Ctrl Delay 5.5	HCM 6th Ctrl Delay			L									
	(500 0000000000000000000000000000000000			0.0									

5.0 24.0 24.0 4.0 4.0 1.0 0.0 5.0

5.0 21.0 24.0 40.0%

5.0 21.0 36.0 60.0%

5.0 21.0 36.0 60.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

1.0

1.0

0.0

o ¥ 9 4

¥87 **₹**

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase Min 9.1 0.15 0.0 13.7 13.7 B B C C

Min 9.1 0.15 0.0 18.7 18.7 18.7 B B 25.0 C

C-Max 40.9 0.68 0.27 5.2 0.0 5.2 A A

9.1 0.15 0.40 28.0 0.0 28.0

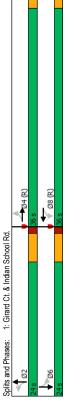
9.1 0.15 0.38 27.4 0.0

C-Max 40.9 0.68 0.02 4.8 4.8

C-Max 40.9 0.68 0.24 4.2 0.0

C-Max 40.9 0.68 0.06 4.4 4.4 4.4

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio



Intersection LOS: A ICU Level of Service A

Intersection Signal Delay: 7.7 Intersection Capacity Utilization 43.3% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.40

Actuated Cycle Length: 60 Offset: 22.2 (37%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green Natural Cycle: 45

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Synchro 10 Report 2021PBX.syn 2021 PM Peak BUILD Conditions - Existing Geometry

2021 PM Peak BUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary Terry O. Brown, PE 2: Carlisle Blvd. & I-40 WB Ramp 66/27/2019

Timings 2: Carlisle Blvd. & I-40 WB Ramp

296 296 Perm

Lane Configurations
Traffic Volume (vph)
Future Volume (vph)
Turn Type
Protected Phases
Permitted Phases
Detector Phase

Movement Lane Configurations Traffic Volume (veh/h) Initial Q (Qb), veh Ped-Bike Adj(A_pbT) Parkind Bus, Adj	EBL											
Lane Configurations Traffic Volume (veh/h) Truture Volume (veh/h) Initial Q (Qb), veh Ped-Bike Adj(A_pbT) Parking Bus, Adj		EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (veh/h) Future Volume (veh/h) Initial Q (Qb), veh Ped-Bike Adj(A_pbT) Parkina Bus. Adj				F	÷	*-	K.	444			444	*-
Future Volume (veh/h) Initial Q (Qb), veh Ped-Bike Adj(A_pbT) Parkina Bus. Adj	0	0	0	296	2	280	515	1368	0	0	1180	470
Initial Q (Qb), veh Ped-Bike Adj(A_pbT) Parking Bus, Adj	0	0	0	296	2	280	515	1368	0	0	1180	470
Ped-Bike Adj(A_pbT) Parking Bus, Adj				0	0	0	0	0	0	0	0	0
Parking Bus, Adj				9.		9.	1.00		1.00	1.00		1.0
-				1.00	1.00	1.00	1.00	00:	1.00	1.00	0: 1:	1.00
Work Zone On Approach				0107	0 S	or or	o Lor	0 S	•	•	02 0	
Adj Sat Flow, veh/h/In				1856	1856	1856	1856	1856	o c	0 0	1856	1856
Auj Flow Kate, Velini Peak Hour Factor				0.0	0 04	0 04	0.40	0 04	0 04	0 04	700	0.94
Percent Heavy Veh. %				m	6	e	6	က	0	0	8	e
Cap, veh/h				754	0	335	589	3563	0	0	2481	
Arrive On Green				0.21	0.00	0.21	0.34	1.00	0.00	0.00	0.49	0.00
Sat Flow, veh/h				3534	0	1572	3428	5233	0	0	5233	1572
Grp Volume(v), veh/h				319	0	298	548	1455	0	0	1255	0
Grp Sat Flow(s),veh/h/In				1767	0	1572	1714	1689	0	0	1689	1572
Q Serve(g_s), s				9.4	0.0	22.1	18.5	0.0	0.0	0.0	20.2	0.0
Cycle Q Clear(g_c), s				9.4	0.0	22.1	18.5	0.0	0.0	0.0	20.2	0.0
Prop In Lane				9.	•	1.00	1.00	0	0.00	0.00		1.00
Lane Grp Cap(c), veh/h				¥ 5	0 0	335	589	3563	0 0	0 0	2481	
Avail Can(c, a) veh/h				942	00.00	419	009	3563	00.0	00.0	2481	
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1:00	1.00	1:00	1.00
Upstream Filter(I)				1.00	0.00	1.00	98.0	98.0	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				40.8	0.0	45.8	38.7	0:0	0.0	0.0	20.8	0.0
Incr Delay (d2), s/veh				0.4	0.0	17.4	18.8	0.3	0.0	0.0	0.7	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/In				7.4	0.0	15.4	12.1	0.2	0.0	0:0	12.5	0.0
Onsig. Movement Delay, siven				412	0	63.0	57 F	0	0	00	21.5	0
Lingip Detay (a), 3/10.11				1 0	S 4	9.	<u>э</u> Э	S <	8	8	2 0	5
Approach Vol. veh/h					617			2003			1255	٩
Approach Delay, s/veh					51.8			15.9			21.5	
Approach LOS					Ω			മ			ပ	
Timer - Assigned Phs		2			2	9		8				
Phs Duration (G+Y+Rc), s		89.4			25.6	63.8		30.6				
Change Period (Y+Rc), s		2.0			2.0	2.0		2.0				
Max Green Setting (Gmax), s		78.0			21.0	52.0		32.0				
Max Q Clear Time (g_c+l1), s		5.0			20.5	22.2		24.1				
Green Ext Time (p_c), s		16.2			0.1	10.6		1.5				
Intersection Summary												
HCM 6th Ctrl Delay			23.5									
HCM 6th LOS			O									
Notes												

C-Max 55.6 0.46 0.50 3.8 0.0

C-Max 82.7 0.69 0.42 9.2 0.2 9.4

Min 22.0 0.18 0.88 59.6 0.0

Min 27.3 27.3 0.23 0.83 63.9 0.0 63.9

Min 27.3 0.23 0.42 42.2 0.0 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

C-Max 55.6 0.46 0.54 24.8 0.0 24.8 C C C B B

5.0 21.0 57.0 47.5% 4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

1.0

5.0 21.0 57.0 47.5%

5.0 21.0 37.0 30.8%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

4€ 00 32 €

Intersection LOS: C ICU Level of Service C

Splits and Phases: 2: Carlisle Blvd. & I-40 WB Ramp

Ø2 (R)

Intersection Signal Delay: 25.6 Intersection Capacity Utilization 68.9% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.88

♦ Ø6 (R)

Actuated Cycle Length: 120 Offset: 92 (17%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 60 Synchro 10 Report 2021PBX.syn

2021 PM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2021PBX.syn

2021 PM Peak BUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 2: Carlisle Blvd. & I-40 WB Ramp Terry O. Brown, PE

1.00

0 0.0

9.0

1.00

1.00

0 8 8

1.00 No 1856

Parking Bus, Adj Work Zone On Approach

Ped-Bike Adj(A_pbT)

Initial Q (Qb), veh

Adj Sat Flow, veh/h/ln Adj Flow Rate, veh/h Peak Hour Factor Percent Heavy Veh, %

1856

0.0 N

1180

1368

280

00

00

Traffic Volume (veh/h) Future Volume (veh/h)

Lane Configurations

EBR

EBL

† EBT 1.00 No 1856 1255 0.94

ane Group WEL WET WER NEL NET SET SER ane Configurations WEL WET WER NEL NET SET SER ane Configurations WEL WET WER NEL NET SET SER and Configurations WEL WET WER NEL NET SET SER beriarch Volume (vph) Berm NA Perm Prof NA NA Perm bermitted Phases 8 8 5 2 6 6 whitch Phases 9 8 8 5 2 6 6 whitch Phases 9 9 70 27.0 27.0 27.0 27.0 27.0 whitch Phases 9 10 21.0 21.0 21.0 21.0 WILL ALI OLD 1.0 1.0 1.0 1.0 WILL ALI OLD 1.0 1.0 1.0 1.0 WILL ALI OLD 1.0 1.0 1.0 WELL ALI OLD 1.0 1.0 1.0 WILL ALI OLD 1.0 1.0 1.0 WILL ALI OLD 1.0 1.0 1.0 WILL ALI OLD 1.0 1.0 WILL ALI OLD 1.0 1.0 WILL ALI OLD 1.0 1.0 WELL ALI OLD 1.0 WE		z. Callisie Divu. a I-40 wo nallip	2	d					06/27/2019
WBL WBT WBT NBL NBT SBT 296 5 280 515 1368 1180 296 5 280 515 1368 1180 296 5 280 515 1368 1180 8 8 8 8 8 8 8 8 8 5 2 6 8 8 8 5 2 6 8 8 8 5 2 6 8 8 8 5 2 6 8 8 8 5 2 6 8 8 8 5 2 6 8 8 8 5 2 6 10 10 210 210 210 210 210 30.8% 30.8% 30.8% 21.7% 69.2% 47.5% 40 10 10 <t< th=""><th></th><th>•</th><th>ţ</th><th>4</th><th>•</th><th>←</th><th>→</th><th>*</th><th></th></t<>		•	ţ	4	•	←	→	*	
s	-ane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR	
(a) 296 5 280 515 1368 1180 (b) 296 5 280 515 1368 1180 (c) 8 8 8 5 2 6 (c) 8 9 1 1 1 1 1 1 1 1 2 0 (c) 8 9 1 1 1 1 1 1 1 2 0 (c) 8 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ane Configurations	<u>r</u>	4	*	ř.	**	**	*	
h) 296 5 280 515 1368 1180 Perm NA Perm Prot NA NA NA S	raffic Volume (vph)	296	2	280	515	1368	1180	470	
Perm NA Perm Prot NA	uture Volume (vph)	296	2	280	515	1368	1180	470	
8 8 5 2 6 8 8 8 6 6 8 8 8 6 6 8 8 8 7 2 6 8 8 8 8 7 2 6 8 8 8 8 7 2 6 8 8 8 8 7 2 6 8 9 8 9 8 7 2 6 8 0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 8 0 37.0 37.0 21.0 21.0 21.0 21.0 8 0 30.8% 30.8% 21.7% 69.2% 47.5% 41.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 8) 0.0 0.0 0.0 0.0 0.0 0.0 1.0 0.19 0.19 0.20 0.73 0.49 0.68 0.72 0.70 0.83 0.49 0.51 0.19 0.19 0.19 0.20 0.73 0.49 0.68 0.72 0.70 0.83 0.40 0.51 0.10 0.10 0.10 0.20 0.73 0.49 0.68 0.72 55.1 58.7 57.5 50.6 8.5 22.8 8 0.0 0.0 0.0 0.0 0.2 0.0 8 55.1 58.7 57.5 50.6 8.5 22.8 8 55.1 58.7 57.5 50.6 8.5 22.8 8 34 any any any Intersection LOS: 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Furn Type	Perm	Ϋ́	Perm	Prot	Ϋ́	Ϋ́	Perm	
8 8 5 2 6 8 9 8 6 5 6 8 10 21.0 21.0 21.0 21.0 21.0 21.0 21.0 2	Protected Phases		∞		2	7	9		
8 8 8 5 2 6 5.0 5.0 5.0 5.0 5.0 5.0 21.0 21.0 21.0 10.0 21.0 21.0 30.8% 30.8% 31.7% 69.2% 47.5% 41.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 Min Min Min Min C-Max C-Max C-Max C-22.8 22.8 22.8 22.8 23.4 87.2 58.8 0.19 0.19 0.19 0.19 0.20 0.73 0.49 0.68 0.72 0.70 0.83 0.40 0.51 55.1 58.7 57.5 50.6 8.2 22.8 0.9 0.0 0.0 0.0 0.2 0.0 55.1 58.7 57.5 50.6 8.2 22.8 20.8 55.1 58.7 57.5 50.6 8.2 22.8 20.9 57.1 58.7 57.5 50.6 8.5 22.8 20.9 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.2 0.0 30.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.0 0.2 0.0 20.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Permitted Phases	∞		ω				9	
5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Detector Phase	∞	∞	∞	2	7	9	9	
5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Switch Phase								
21.0 21.0 21.0 21.0 21.0 21.0 37.0 37.0 37.0 37.0 37.0 37.0 37.0 37	Ainimum Initial (s)	2.0	5.0	2.0	2.0	2.0	2.0	2.0	
37.0 37.0 37.0 26.0 83.0 57.0 30.8% 30.8% 21.7% 69.2% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5% 47.5%	Ainimum Split (s)	21.0	21.0	21.0	10.0	21.0	21.0	21.0	
30.8% 30.8% 21.7% 69.2% 47.5% 47. 47. 40. 4.0 4.0 4.0 4.0 4.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	otal Split (s)	37.0	37.0	37.0	26.0	83.0	57.0	57.0	
4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	otal Split (%)		30.8%				47.5%	47.5%	
1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	(ellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
9) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	II-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
9. Min Min Min C-Max C-M	ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Min Min Min C-Max	otal Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Min Min Min C-Max	ead/Lag				Lead		Lag	Lag	
Min Min Min C-Max C-Max C-Max C-Max C-22.8 22.8 23.4 87.2 58.8 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19	ead-Lag Optimize?								
22.8 22.8 23.4 87.2 58.8 (1.01 co.) 19 0.20 0.73 0.49 0.68 0.72 0.70 0.83 0.49 0.68 0.72 0.73 0.49 0.68 0.72 0.70 0.83 0.49 0.55 1 58.7 57.5 50.6 8.2 22.8 55.1 58.7 57.5 50.6 8.5 22.8 55.1 58.7 57.5 50.6 8.5 22.8 57.1 E E E A C 57.1 B B B any any any any any any any any	tecall Mode	Mi	Ä	Ä	Min	S-Max (C-Max	C-Max	
0.19 0.19 0.20 0.73 0.49 0.68 0.72 0.70 0.83 0.40 0.51 55.1 58.7 5.75 50.6 8.5 22.8 0.0 0.0 0.0 0.0 0.2 0.0 55.1 58.7 57.5 50.6 8.5 22.8 E E D A C 57.1 B B B any any arted-Coordinated 5.0 83 Delay: 24.2 Intersection LOS: 0.83 Delay: 24.2 Intersection CS-riving Tand 6: SBT, Start of Green Coordinated 10.0 83 Delay: 24.2 Intersection CS-riving Tand 6: SBT, Start of Green Coordinated 10.0 83 Delay: 24.2 Intersection CS-riving Tand 6: SBT, Start of Green Coordinated 10.0 83 Delay: 24.2 Intersection CS-riving Tand 6: SBT, Start of Green Coordinated	ct Effct Green (s)	22.8	22.8	22.8	23.4	87.2	58.8	58.8	
0.68 0.72 0.70 0.83 0.40 0.51 55.1 58.1 58.7 57.5 50.6 8.2 22.8 0.0 0.0 0.0 0.0 0.2 0.0 55.1 58.7 57.5 50.6 8.5 22.8 E E D A C C C C C C C C C C C C C C C C C C	ctuated g/C Ratio	0.19	0.19	0.19	0.20	0.73	0.49	0.49	
55.1 58.7 57.5 50.6 8.2 22.8 0.0 0.0 0.0 0.2 0.0 55.1 58.7 57.5 50.6 8.5 22.8 E E D A C S7.1 E E D A C 57.1 E B B ummany e Length: 120 %), Referenced to phase 2:NBT and 6:SBT, Start of Green 60 %), Referenced to phase 2:NBT and 6:SBT, Start of Green 60 signal Delay: 24.2 Intersection LOS: C packing 47 intersection LOS: C packing	/c Ratio	0.68	0.72	0.70	0.83	0.40	0.51	0.49	
20.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	ontrol Delay	55.1	58.7	57.5	9.09	8.2	22.8	3.6	
57.5 50.6 8.5 22.8 E E D A C 1 2.0 17.3 E B B 8 Saland 6:SBT, Start of Green Intersection LOS: C Intersection LOS: C ICU Level of Service	lueue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0	
Se 2:NBT and 6:5	otal Delay	22.1	58.7	57.5	90.9	8.5	22.8	3.6	
.1 se 2:NBT and 6:5	SO	ш	ш	ш	۵	⋖	O	⋖	
se 2:NBT and 6:5	Approach Delay		57.1			20.0	17.3		
se 2:NBT and 6:9	Approach LOS		ш			В	В		
se 2:NBT and 6:5	ntersection Summary								
se 2:NBT and 6:5	Sycle Length: 120								
se 2:NBT and 6:5	Actuated Cycle Length:	120							
%	Offset: 92 (77%), Refer	enced to	phase	2:NBT	and 6:SE	3T, Star	t of Gre	en	
%	Jatural Cycle: 60	-	1						
. 24.2 zation 68.9%	Jonitrol Type: Actuated	-Cooldin	aled						
. 44.2 ization 68.9%	taximam vertages on	0.00			2	*0000	00		
Saudil 90.9 /8	nersection Signal Dela	ay. c4.c	/00		= =	Das iai		ر و و د	
	itel section Capacity O	IIIZallOII	00.0		2	ים רבו	5 5	2	

0.0 0.0 1.00

0.0

0.00

2770 0.55 5233

0.00

0.00

3852 1.00 5233

0.34 3428

246 0.16 1572

0.00

200 1572 14.8 14.8

Cap, veh/h
Arrive On Green
Sat Flow, veh/h
Grp Volume(v), veh/h
Grp Sat Flow(s),veh/h/ln
Q Serve(g_s), s
Cycle Q Clear(g_o), s
Prop In Lane

552 0.16 410 410 1767 13.3 13.3 13.3 17.00 552 0.74 942 1.00 1.00 1.00

0.94

200 200 0.94

1.00 0.00 0.0 0.0 0.0

2770 0.45 2770 1.00 1.00

3852 0.38 3852 2.00 0.86 0.0

18.5 118.5 11.00 589 0.93 600 2.00 0.86 38.7 18.8 0.0

1.00 246 0.81 419 1.00 1.00 48.9

0.00 0.00

Lane Grp Cap(c), veh/h V/C Ratio(X) Avail Cap(c_a), veh/h HCM Platoon Ratio

Upstream Filter(I) Uniform Delay (d), s/veh

0.00

0.00 0.00

0.00

0.00

0.0

0.0

16.9 B

0.0

0.0

0.2 A

57.5 E

55.4

0.0 A

50.3

Incr Delay (d2), siveh Initial O Delay(d3), siveh %ile BackOtQ(95%), veh/In Unsig. Movement Delay, siveh LnGrp Delay(d), siveh

1255

2003 15.9

610 52.0

Approach Delay, s/veh

Approach LOS

Approach Vol, veh/h

-nGrp LOS

23.7 5.0 32.0 16.8

5.0 52.0 19.9 10.9

96.3 5.0 78.0 2.0 16.2

Timer - Assigned Phs
Phs Duration (G+Y-RC), s
Change Period (Y-RC), s
Max Green Setting (Gmax), s
Max Q Clear Time (g_c+H1), s

Green Ext Time (p_c), s

\$Ø **∳** 2: Carlisle Blvd. & I-40 WB Ramp Ø6 (R) + Splits and Phases: <u>0</u>2

Synchro 10 Report 2021PB_MIT.syn

Synchro 10 Report 2021PB_MIT.syn

2021 PM Peak BUILD Conditions - Mitigated Conditions

User approved volume balancing among the lanes for turning movement. Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

21.9 C

HCM 6th Ctrl Delay HCM 6th LOS

2021 PM Peak BUILD Conditions - Mitigated Conditions

Terry O. Brown, PE HCM 6th Signalized Intersection Summary
3: Carlisle Blvd. & I-40 EB Ramp

1074 1074 NA

> 407 407 Prot

1356 1356 NA

538 538 538 Perm

Lane Configurations
Traffic Volume (vph)
Future Volume (vph)
Turn Type
Protected Phases
Protected Phases
Defector Phase

Timings 3: Carlisle Blvd. & I-40 EB Ramp 5.0 21.0 82.0 68.3% 4.0 1.0 0.0

5.0 21.0 38.0 31.7%

5.0 21.0 38.0 31.7%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

4.0 1.0 0.0 5.0 C-Max 81.1 0.68 0.34 5.8 0.1 5.9 A 27.0 C

Min 20.0 0.17 0.77 82.5 0.0 82.5

C-Max 56.1 0.47 0.51 10.3 0.0

C-Max 56.1 0.47 0.42 29.3 0.0

Min 28.9 0.24 0.55 42.5 0.0

Min 28.9 0.24 0.71 46.3 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio

Min 28.9 0.24 0.55 45.5 0.0 0.0 0.0 45.5 D

> Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Terry O. Brown, PE 06/27/2019

	\	t	*	-		,	,-	-	_	٠	+	*
Movement	H	EBT	EBR	WBL	WBT	WBR	R	NBT	NBR	SBL	SBT	SBR
Lane Configurations	K.	ţĵ	MM					Ħ	æ	K	***	į
Traffic Volume (veh/h)	538	12	217	0	0	0	0	1356	476	407	1074	J
Future Volume (veh/h)	538	12	217	0	0	0	0	1356	476	407	1074	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1:00
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		2						2			2	
Adj Sat Flow, veh/h/In	1856	1856	1856				0	1856	1856	1856	1856	0
Adj Flow Rate, veh/h	278	0	265				0	1458	512	438	1155	0
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	က	က	က				0	က	က	ო	က	
Cap, veh/h	726	0	696				0	3937	824	200	3603	J
Arrive On Green	0.21	0.00	0.21				0.00	0.70	0.70	0.29	1.00	0.00
Sat Flow, veh/h	3534	0	4717				0	7867	1572	3428	5233	
Grp Volume(v), veh/h	218	0	265				0	1458	512	438	1155	_
Grp Sat Flow(s),veh/h/In	1767	0	1572				0	1503	1572	1714	1689	_
Q Serve(g_s), s	18.6	0.0	13.0				0.0	9.2	20.9	14.6	0.0	0.0
Cycle Q Clear(g_c), s	18.6	0.0	13.0				0.0	9.5	20.9	14.6	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	726	0	696				0	3937	824	200	3603	Ŭ
V/C Ratio(X)	0.80	0.00	0.58				0.00	0.37	0.62	0.88	0.32	0.00
Avail Cap(c_a), veh/h	972	0	1297				0	3937	824	657	3603	Ŭ
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.33	1.33	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	0.84	0.84	0.00
Uniform Delay (d), s/veh	45.3	0.0	43.0				0.0	10.1	11.8	41.5	0.0	0.0
Incr Delay (d2), s/veh	3.4	0.0	9.0				0.0	0.3	3.5	8.8	0.2	0.0
Initial Q Delay(d3),s/veh	0:0	0:0	0.0				0.0	0.0	0.0	0.0	0:0	0.
%ile BackOfQ(95%),veh/ln	13.3	0.0	8.8				0.0	2.0	10.3	9.4	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	0.0	43.6				0.0	10.4	15.3	50.3	0.2	0.0
LnGrp LOS		⋖					∢	m	m		⋖	
Approach Vol, veh/h		1143						1970			1593	
Approach Delay, s/veh		46.2						11.7			14.0	
Approach LOS		۵						മ			Ф	
Timer - Assigned Phs	-	2		4		9						
Phs Duration (G+Y+Rc), s	22.5	6.79		29.6		90.4						
Change Period (Y+Rc), s	2.0	2.0		2.0		2.0						
Max Green Setting (Gmax), s	23.0	49.0		33.0		0.77						
Max Q Clear Time (g_c+I1), s	16.6	22.9		20.6		2.0						
Green Ext Time (p_c), s	6.0	14.8		4.0		11.0						
Intersection Summary												
HCM 6th Ctrl Delay			20.8									
HCM 6th LOS			O									
Mater												
Notes												

06 (R) ♥

404

Splits and Phases: 3: Carlisle Blvd. & I-40 EB Ramp

Intersection Signal Delay: 30.2 Intersection Capacity Utilization 68.9% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.77

Intersection LOS: C ICU Level of Service C

Actuated Cycle Length: 120 Offset: 110.4 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 60 Synchro 10 Report 2021PBX syn

2021 PM Peak BUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary Terry O. Brown, PE 4: Carlisle Blvd. & Indian School Rd.

Timings 4: Carlisle Blvd. & Indian School Rd. 453

4000 €

425 425

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase

Protected Phases

	١	t	-	*		/		_	•	•	+	۲
Movement	BE	EBT	EBR	WBL	WBT	WBR	BE	NBT	NBR	SB	SBT	SBR
Lane Configurations	k	4		k	4		k	441		k	*	*
Traffic Volume (veh/h)	425	009	82	109	344	227	116	1123	88	230	978	453
Future Volume (veh/h)	425	009	82	109	344	227	116	1123	88	230	978	453
Initial Q (Qb), veh	0 9	0	0 9	0 8	0	0 8	0 9	0	0 9	0 9	0	0 ;
Ped-Bike Adj(A_pb I)	1.00	5	9.5	3.5	00	8.5	9.5	0	8.5	8.5	5	1.00
Work Zone On Approach	90:	8 S	9.	3	8 S	3	8.	8 S	8.	9.	8 S	3
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	457	645	91	117	370	244	125	1208	92	247	1052	487
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	က	က	က	က	က	က	က	က	က	က	က	က
Cap, veh/h	445	1054	149	326	411	267	225	1489	117	290	1266	892
Arrive On Green	0.42	0.68	0.68	1767	0.20	0.20	0.04	0.21	0.21	0.23	35.72	0.72
Gm Volume(v) veh/h	457	366	370	117	318	296	125	852	451	247	1052	487
Gro Sat Flow(s).veh/h/ln	1767	1763	1777	1767	1763	1616	1767	1689	1788	1767	1763	1572
Q Serve(g_s), s	25.0	13.7	13.7	6.2	21.1	21.5	5.7	28.8	28.9	11.4	25.0	18.6
Cycle Q Clear(g_c), s	25.0	13.7	13.7	6.2	21.1	21.5	2.7	28.8	28.9	11.4	25.0	18.6
Prop In Lane	1:00		0.25	9.		0.82	1.00		0.21	1:00		1.0
Lane Grp Cap(c), veh/h	445	299	604	326	354	324	225	1050	556	230	1266	892
V/C Ratio(X)	1.03	0.61	0.61	0.36	0.90	0.91	0.55	0.81	0.81	0.85	0.83	0.55
Avail Cap(c_a), veh/h	445	288	604	392	367	337	302	1050	556	340	1266	892
HCM Platoon Katio	2.00	2.00	2.00	9.5	9.1	3.5	0.67	0.67	0.67	2.00	2.00	2.00
Upstream Filter(I)	75.0	14.0	14.0	34.5	1.00	0.1	0.89	0.89	0.89	24.5	3.1	1.00
Incr Delay (d2), styen	480	, c	<u>τ</u> α	7.0	25.5	27.0	20.0	7 2	11 0	16.4	8	
Initial Q Delav(d3).s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	18.8	7.2	7.2	4.8	16.8	16.4	4.6	19.0	50.9	8.8	10.0	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.3	16.6	16.7	34.9	70.0	74.7	30.2	50.3	55.2	40.7	20.8	9.1
LnGrp LOS	╙┃	۵	۵	ပ	삐	삐	ပ		삐		ပ	⋖
Approach Vol, veh/h		1193			731			1428			1786	
Approach Delay, s/veh		37.6			66.3			20.1			20.4	
Approach LOS					ш			Ω			ပ	
Timer - Assigned Phs	_	2	3	4	5	9	7	8				
Phs Duration (G+Y+Rc), s	18.6	42.3	13.3	45.8	12.8	48.1	30.0	29.1				
Change Period (Y+Rc), s		2.0	2.0	2.0	2.0	2.0	2.0	2.0				
Max Green Setting (Gmax), s	17.0	33.0	13.0	37.0	13.0	37.0	25.0	25.0				
Green Ext Time (p_c), s		1.6	0.1	4.3	0.1	6.1	0.0	9.0				
Intersection Summary												
HCM 6th Ctrl Delay			39.1									

5.0 10.0 30.0 25.0% 4.0 1.0 0.0 5.0 Lead

> 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

5.0 10.0 30.0 25.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

Min 71.9 0.60 0.48 8.6 0.0

Min 56.8 0.47 0.86 59.6 0.0 59.6

Min 0.39 0.60 38.0 0.0 38.0

Min 33.0 0.28 0.44 27.0 0.0 27.0

Min 0.44 1.07 1.07 96.3 96.3

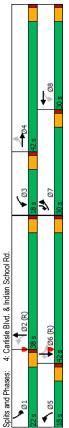
Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio

C-Max 41.9 0.35 0.08 44.7 0.0 44.7 D 36.9

C-Max 36.5 0.30 0.86 43.5 0.0 43.5 D 43.0

Min 22.9 0.19 0.85 49.6 0.0 49.6 D 46.0

Min 37.7 0.31 0.68 38.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0



Intersection LOS: DICU Level of Service F

Intersection Signal Delay: 45.4 Intersection Capacity Utilization 93.4% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.07

Natural Cycle: 90

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS Actuated Cycle Length: 120 Offset: 9.6 (8%), Referenced to phase 2.NBTL and 6:SBTL, Start of Green

Synchro 10 Report 2021 PM Peak BUILD Conditions - Existing Geometry 2021PBX syn

Terry O. Brown, PE 06/27/2019 Timings 4: Carlisle Blvd. & Indian School Rd.

1.00

0 0.1

9.0

8.9

1.00

9.0

9.0

1.00

Parking Bus, Adj Work Zone On Approach

Ped-Bike Adj(A_pbT)

Initial Q (Qb), veh

230

8880

227

009

425

Future Volume (veh/h) raffic Volume (veh/h)

Configurations

ʹ

Ť

HCM 6th Signalized Intersection Summary

4: Carlisle Blvd. & Indian School Rd.

Terry O. Brown, PE 06/27/2019

1856 487 0.93 3

1856 95 0.93

1.00 No 1856 1208 0.93

1.00 No 1856 370 0.93

1.00 No 1856 645 0.93

1856 117 0.93

1856 91 0.93

937 0.60 3103

Adj Sat Flow, vehihlin 1856
Adj Flow Rate, vehihlin 457
Perak Hour Factor 0.93
Percent Heavy Veh, % 3
Cap, vehih 1767
Grp Volume(v), vehih 457
Grp Sat Flow(s), vehihlin 1767
Greve(q__s), s 25.0
Cycle Q Clear(ig__s), s 25.0
Prop In Lane

1.00 No 1856 1052 0.93

953 0.80 1572 1572 13.1 13.1 13.1 13.1 1.00 953 0.51 953 2.00 1.00 4.0

132 0.24 451 1788 27.9 27.9 0.21 629 0.72 629 0.72 629 0.72

252 0.04 1767 125 1.00 252 0.50 334 0.67 0.89 23.8

430 0.17 244 244 1572 16.0 16.0 16.0 430 0.57 498 1.00 1.00 1.00 37.5

132 0.60 370 370 17.7 17.0 17.0 0.25 536 0.69 548 548 548 50.0

366 1763 16.9

247 110.7 11.00 301 0.82 360 2.00 22.0 12.0 0.0 8.0

0.72 11187 0.67 0.89 40.4

582 0.64 734 1.00 1.00

532 0.69 544 2.00 0.97 19.9

482 0.95 482 2.00

Lane Grp Cap(c), veh/h V/C Ratio(X) Avail Cap(c_a), veh/h HCM Platoon Ratio

Upstream Filter(I) Uniform Delay (d), s/veh

6.5 6.5 1.00 301 0.39 366 1.00 1.00

1402 0.75 1402 2.00 1.00 9.3 3.7 0.0

1402 0.80 3526 1052 1763 18.2

1684 0.24 4788 852 1689 27.8 27.8

301 0.22 1767

13.0 B

34.6 C

46.6 D

43.7 D

25.1

38.7

47.9 D

38.3 D

23.4 C

23.4 C

Incr Delay (d2), siveh 27.7 Initial O Delay(d3), siveh 0.0 %ile BackOt(q95%), vehilf 7.0 Unsig. Movement Delay, siveh LnGrp Delay(d), siveh 52.9

1193

34.7

Approach Delay, s/veh

Approach LOS

Approach Vol, veh/h

-nGrp LOS

1786

1428 43.0

731

24.8 5.0 25.0 18.0

30.0 5.0 27.0 0.0

52.7 5.0 37.0 20.2 8.6

12.5 5.0 13.0 7.3 0.1

5.0 5.0 37.0 19.0 4.1

13.6 5.0 13.0 13.0 1.0

Timer - Assigned Phs 1
Phs Duration (G+Y+Rc), s18.0
Change Period (Y+Rc), s 5.0
Max Green Setting (Gmax)750
Max Q Clear Time (g_c+lt)257
Green Ext Time (p_c), s 0.3

HCM 6th Ctrl Delay HCM 6th LOS

MBT MBR NBL NBT SBL SBT MBT MBT NBT SBL SBT MBT NBT NBT NBT NBT NBT NBT NBT NBT NBT N		1	†	>	ţ	4	•	←	۶	→	•
## ## ## ## ## ## ## ## ## ## ## ## ##		EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
25 600 109 344 227 116 1123 230 978 25 600 109 344 227 116 1123 230 978 7 4 3 8 1 5 2 6 6 7 4 3 8 8 2 6 6 7 4 3 8 1 6 6 7 4 3 8 1 6 6 7 4 4 8 8 2 6 6 8 0 10 21.0 10.0 21.0 10.0 21.0 10.0 21.0 9.0 21.0 10.0 21.0 11.0 11.0 11.0 11.0 11	2	<u>r</u>	₩	<u>r</u>	₩	*	<u>, -</u>	444	<u></u>	₩	* _
25	<u> </u>	425	009	109	344	227	116	1123	230	978	453
7 4 9 8 8 5 2 6 6 6 6 6 7 4 8 8 8 8 7 5 2 1 6 6 6 6 6 6 6 6 6 7 7 4 8 8 8 8 7 5 2 1 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6		450 ta: ma		50.00	440	777	2 - 2	2 2	2	0/6	2004
4 8 8 2 6 7 4 3 8 1 5 2 1 6 7 4 3 8 1 5 2 1 6 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0		\ 		<u>წ</u> ო	ω	-		8	-	9	_
7 4 3 8 1 5 2 1 6 6 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0 5 0		4		∞		∞	2		9		9
5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0		7	4	က	∞	-	2	8	-	9	7
5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0											
21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 10.0 21.0 30.0 22.0 18.0 38.0 35.0% 25.0% 18.3% 15.0% 21.0% 18.3% 35.0% 25.0% 18.3% 15.0% 21.0% 10.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
92.0 92.0 18.0 30.0 22.0 18.0 38.0 22.0 42.0 78.6 35.0% 15.0% 25.0% 18.3% 15.0% 31.7% 18.3% 35.0% 15.0% 25.0% 18.3% 15.0% 31.7% 18.3% 35.0% 14.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1		10.0	21.0	10.0	21.0	10.0	10.0	21.0	10.0	21.0	10.0
9% 35.0% 15.0% 25.0% 18.3% 15.0% 31.7% 18.3% 35.0% 25.0% 18.00 21.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4			45.0		30.0	22.0		38.0		45.0	30.0
1.0	.,		32.0%		25.0%	18.3%		31.7%		35.0%	25.0%
1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Min		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
ad Lag Lead Lead Lead Lead Lag Lead Lag Information Min Min Min Min Min C-Max Min C-Ma	<u></u>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ad Lag Lead Lag		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Min Min Min Min Min Min C-Max Min C-Max 88 83.3 29.2 18.8 40.4 49.7 39.6 60.9 46.2 81 0.28 0.24 0.16 0.34 0.41 0.33 0.51 0.38 80 0.76 0.50 0.68 0.41 0.56 0.79 0.82 0.78 80 0.44.1 31.1 53.6 17.3 34.9 38.5 52.4 38.1 80 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 8 44.1 31.1 53.6 17.3 34.9 38.5 52.4 38.1 E D C D B C D D D 54.3 37.9 38.1 31.8 d to phase 2:NBTL and 6:SBTL, Start of Green rdinated 10 0.0 0.0 0.0 0.0 0.0 0.0 11 0.0 0.0 0.0 0.0 12 0.0 0.0 0.0 13 1.1 53.6 17.3 34.9 38.1 14 0.0 0.0 0.0 0.0 0.0 0.0 15 0.0 0.0 0.0 0.0 16 0.0 0.0 0.0 0.0 17 0.0 0.0 0.0 0.0 18 0.0 0.0 0.0 0.0 18 0.0 0.0 0.0 0.0 0.0 18 0.0 0.0 0.0 0.0 0.0 19 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0.0 10 0.0 0.0 0		Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead
lin Min Min Min Min Min C-Max Min C-Max 3.8 33.3 29.2 18.8 40.4 49.7 39.6 60.9 46.2 4.1 0.26 0.24 0.4 49.7 39.6 60.9 46.2 0.0 0.76 0.56 0.4 0.5 0.79 0.82 0.78 0.0 0.76 0.6 0.4 0.5 0.79 0.82 0.78 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	.ي										
3.8 33.3 29.2 18.8 40.4 49.7 39.6 60.9 46.2 41 0.28 0.24 0.16 0.34 0.41 0.33 0.51 0.38 0.0 0.76 0.08 0.41 0.56 0.9 0.82 0.78 0.8 44.1 31.1 53.6 17.3 34.9 38.5 52.4 38.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.8 44.1 31.1 53.6 17.3 34.9 38.5 52.4 38.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		Μij	Ä	Ā	Ξ	Ä	Min	C-Max	Min	C-Max	Min
41 028 024 016 034 041 033 0.51 0.38 00.76 0.50 0.68 0.41 0.56 0.79 0.82 0.78 0.78 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0		48.8	33.3	29.5	18.8	40.4	49.7	39.6	6.09	46.2	76.2
00 0.76 0.50 0.68 0.41 0.56 0.79 0.82 0.78 0.8 44.1 31.1 53.6 17.3 34.9 38.5 52.4 38.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		0.41	0.28	0.24	0.16	0.34	0.41	0.33	0.51	0.38	0.64
2.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		1.00	0.76	0.50	0.68	0.41	0.56	0.79	0.82	0.78	0.46
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0		70.8	44.1	31.1	53.6	17.3	34.9	38.5	52.4	38.1	7.9
2. 2. 38.1		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E D C D B C D D D D D D D D D D D D D D D		70.8	44.1	31.1	53.6	17.3	34.9	38.5	52.4	38.1	7.9
54.3 37.9 38.1 D D D D D d to phase 2:NBTL and 6:SBTL, Start of Green rdinated 3.7 Intersection LOS: D ition 86.1% ICU Level of Service E		ш	□	ပ	□	Ω	O	□	□	□	⋖
D D D d to phase 2:NBTL and 6:SBTL, Start of Green rdinated 3.7 Intersection LOS: D iton 86.1% ICU Level of Service E			54.3		37.9			38.1		31.8	
d to phase 2:NBTL and 6: rdinated 5.7					Ω					O	
d to phase 2:NBTL and 6: rdinated 5.7 iton 86.1%	ar∨										
d to phase 2:NBTL and 6:: rdinated 5.7 iton 86.1%											
d to phase 2:NBTL and 6:3 rdinated 3.7 tion 86.1%	ath: 1	120									
- %	eferer	ot paor	ohase 2	2:NBTL	and 6:S	BTL, S	tart of G	reen			
- %											
39.7 zation 86.1%	ated-(Soording	ated								
: 39.7 Ization 86.1%	1.00										
Ization 86.1%	Delay	7: 39.7	3		= :	ntersect	ion LOS	ا . ۵			
	15 S	IIzation	36.1%		2	CO Leve	of Ser	VICe E			

\$6 **4**► 4 , g 07 * 4: Carlisle Blvd. & Indian School Rd. *\ 02 (R) ₩ Ø6 (R) Splits and Phases:

Synchro 10 Report 2021PB_MIT.syn

Synchro 10 Report 2021PB_MIT.syn

2021 PM Peak BUILD Conditions - Mitigated Conditions

2021 PM Peak BUILD Conditions - Mitigated Conditions

HCM 6th Signalized Intersection Summary 5: Washington St. & Indian School Rd Terry O. Brown, PE

44 00.1 00.1

26 **26 2**

269

85 0 0 0 0 0 0 0

8 8 0 8 8

0 8 9

9.0

0 0 0

Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)

1.00 No 1856 574 0.93

Initial Q (Qb), veh
Ped-Bite Adi(A, pbT)
Parking Bus, Adi
Work Zone On Approach
Adj Sat Flow, vehh/lin
Adj Flow State, vehh/
Peak Hour Fador
Percent Heavy Veh, %

1856 194 0.93

0 22 8.8

8.8 53

1.00 No 1856 284 0.93

1.00 No 1856 289 0.93 3 412 0.27

1.00 No 1856 377 0.93 3 1072 0.36 0.36 219 1763 8.2

305 0.27 1129

1856 57 0.93 3 3 81 81 80.0.27 15.5 115.5 115.5 110.0 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00

Cap, vehinh
Arrive On Green
Sat Flow, vehinh
Grp Volume(v), vehinh
Grp Sat Flow(s), vehinh
Q Servel(g, S), s
Cycle Q Cleari(g, c), s
Prop in Lane
Lane Grp Cap(c), vehinh
VIC Ratio(X)
Avail Cap(c, a), vehinh
HCM Platoon Ratio

339 2382 339 1763 13.0

0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

0.00 0.00 0.00 0.0 0.0 0.0

628 0.35 628 1.00 1.00 21.3 1.5 0.0 6.2

691 0.49 691 1.00 1.00 20.5 2.5 0.0 9.3

0.0 495

22.8

33.6 C

0.0

25.7

22.9 C

22.8 C 486

16.7 B

23.1

23.0 C

16.3

Incr Delay (d2), siveh Initial Q Delay (d3), siveh Wile BackOfQ(95%), vehAln Unsig. Movement Delay, siveh LnGrp Delay(d), siveh

Uniform Delay (d), s/veh

Upstream Filter(I)

872

437 31.9 C

37.0 5.0 32.0 10.4 2.4

13.2 11.0 8.1 0.1

29.3 5.0 25.0 24.0 0.3

5.0 7.0 5.3 0.0

40.2 5.0 32.0 15.1 3.6

10.0 11.0 3.3 0.0

29.6 5.0 25.0 17.5

5.0

Phs Duration (G+Y+Rc), s

Approach Delay, s/veh Approach LOS imer - Assigned Phs

Approach Vol, veh/h

Max Q Clear Time (g_c+l1), s Green Ext Time (p_c), s Change Period (Y+Rc), s Max Green Setting (Gmax), s

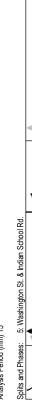
30.3

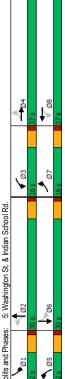
HCM 6th Ctrl Delay HCM 6th LOS

0.00

0.0 0.0

Timings 5: Washington St. & Indian School Rd.	k Indian	Scho	ol Rd.						Terry O. Brown, PE 06/27/2019
	•	†	•	ţ	•	←	۶	→	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SB	SBT	
Lane Configurations	<u>~</u>	4₽	*	4₽	*	æ,	×	æ	
Traffic Volume (vph)	180	534	4	351	82	269	25	564	
Future Volume (vph)	180	534	4	351	82	269	25	797	
Turn Type	pm+pt	₹	pm+pt	Ϋ́	pm+pt	¥	pm+pt	ΑA	
Protected Phases	7	4	က	∞	2	2	-	9	
Permitted Phases	4		∞		7		9		
Detector Phase	7	4	က	œ	22	2	-	9	
Switch Phase									
Minimum Initial (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	
Total Split (s)	16.0	37.0	16.0	37.0	12.0	30.0	12.0	30.0	
Total Split (%)	16.8%	38.9%	16.8%	38.9%	12.6%	31.6%	12.6%	31.6%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1:0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?									
Recall Mode	Wij	Max	Ξ	Max	Ē	Ē	Ξ	Ε	
Act Effct Green (s)	45.6	35.5	38.8	32.1	31.1	24.3	30.6	24.1	
Actuated g/C Ratio	0.49	0.38	0.42	0.34	0.33	0.26	0.33	0.26	
v/c Ratio	0.45	0.51	0.13	0.37	0.44	0.73	0.21	0.93	
Control Delay	16.0	23.4	13.4	23.2	25.8	40.8	20.5	60.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	16.0	23.4	13.4	23.2	25.8	40.8	20.5	60.4	
ros	Ω	ပ	Ω	ပ	ပ	0	ပ	ш	
Approach Delay		21.8		22.3		37.7		55.9	
Approach LOS		ပ		ပ		Ω		ш	
Intersection Summary									
Cycle Length: 95									
Actuated Cycle Length: 93.1									
Natural Cycle: 65									
Control Type: Semi Act-Uncoord	oord								
Maximum v/c Ratio: 0.93									
Intersection Signal Delay: 32.3	e.			프	Intersection LOS: C	LOS: C			
Intersection Capacity Utilization 66.1%	ion 66.1%			೦	CU Level of Service C	f Service	ပ		
Analysis Period (min) 15									





Synchro 10 Report 2021PBX.syn

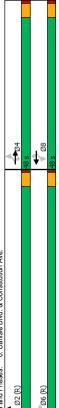
Synchro 10 Report 2021PBX.syn

2021 PM Peak BUILD Conditions - Existing Geometry

2021 PM Peak BUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 6: Carlisle Blvd. & Constitution Ave.

	•	Ť	>	>	ţ	4	•	←	٠	-	*
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NB	NBT	SBL	SBT	SBR
Lane Configurations	*	*	*	*	*	*	*	₹	*	*	¥C.
Traffic Volume (vph)	220	199	16	99	134	100	18	829	66	723	133
Future Volume (vph)	220	199	16	99	134	100	48	829	66	723	133
Turn Type	Perm	₹	Perm	Perm	Ϋ́	Perm	Perm	Α̈́	Perm	Ϋ́	Perm
Protected Phases		4			∞			7		9	
Permitted Phases	4		4	∞		∞	2		9		9
Detector Phase	4	4	4	∞	∞	80	2	2	9	9	9
Switch Phase											
Minimum Initial (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	48.0	48.0	48.0	48.0	48.0	48.0	72.0	72.0	72.0	72.0	72.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	%0.09	%0.09	%0.09	%0:09	%0.09
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1:0	1.0	1.0	1.0	1:0	1.0	1.0	1:0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0:0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	5.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	Win	E M	<u>W</u>	Z.	Ψ	Z Win	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	29.1	29.1	29.1	29.1	29.1	29.1	80.9	80.9	80.9	80.9	6.08
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.67	0.67	0.67	0.67	0.67
v/c Ratio	0.85	0.46	0.04	0.32	0.31	0.23	90.0	0.38	0.30	0.61	0.13
Control Delay	68.5	40.6	11.5	38.7	37.1	6.7	9.8	10.2	9.6	10.2	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.5	40.6	11.5	38.7	37.1	6.7	8.6	10.2	9.6	10.2	9.0
SOT	ш	Ω	മ	□	□	4	⋖	ш	⋖	ш	∢
Approach Delay		53.6			27.4			10.2		8.4	
Approach LOS					ပ			B		∢	
Intersection Summary											
Cycle Length: 120 Actuated Cycle Length: 120											
Offset: 69.6 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green Method Code:	ed to phase	2:NBTI	and 6:Sl	BTL, Starl	of Green	_					
Natural Cycle: 90 Control Type: Actuated-Coordinated	dinated										
Maximum v/c Ratio: 0.85											
Intersection Signal Delay: 18.9	6:			드	tersection	Intersection LOS: B					
Intersection Capacity Utilization 78.1%	70 10			_	1000	C 0011100 Jo 1010 1 1 1	_				



Splits and Phases: 6: Carlisle Blvd. & Constitution Ave.

Synchro 10 Report 2021PBX.syn 2021 PM Peak BUILD Conditions - Existing Geometry

133 11.71 1.00 1856 753 1856 0.0 0.64 1171 2.00 0.47 0.0 0.0 0.0 0.0 د. 995 723 1.00 No 1856 753 0.96 66 6 8.8 2.9 0.0 1.9 B. B. **829** 829 1.00 No No 1856 864 0.96 0.96 3.435 443 14.9 14.9 0.40 1.00 1.00 1.09 1.1 0.0 9.7 12.0 B 922 11.9 B 39.3 5.0 43.0 1.4 8 8 0 0.0 100 0 1 9.8 **-**56006 5.0 67.0 8.4 8.4 33.1 313 1.00 No 1856 140 0.96 3 530 0.29 140 140 7.0 7.0 530 0.26 665 1.00 1.00 33.1 0.3 0.0 5.8 33.4 C 1856 69 0.09 3 3 285 0.29 1148 69 62 62 62 62 62 62 62 63 1100 0.24 1100 0.24 1100 0.24 1100 0.24 1100 0.24 1100 0.24 1100 0.24 1100 0.24 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 1100 0.25 100 0.25 100 0.25 100 0.25 100 0.25 100 0.25 100 0.25 100 100 100 0 8 8 0 8 8 41.7 39.3 5.0 43.0 32.6 1.6 15.8 8.8 34.9 C 453 42.3 D No No No 207 207 3 3 3 3 530 0.29 0.29 207 207 10.8 530 0.39 665 11.00 11.00 34.5 0.5 0.0 8.6 † 229 3 316 229 3 316 229 229 229 236 236 1.00 1.00 1.00 1.00 1.00 49.8 .00 0 00 Incr Delay (d2), s/veh Initial Q Delay(d3), s/veh %ile BackOfQ(95%), veh/In Unsig. Movement Delay, s/veh LnGrp Delay(d), s/veh Max Q Clear Time (g_c+l1), s Green Ext Time (p_c), s Change Period (Y+Rc), s Max Green Setting (Gmax), s Initial Q (Qb), veh
Ped-Bite Adi(A, pbT)
Parking Bus, Adi
Work Zone On Approach
Adj Sat Flow, vehh/lin
Adj Flow State, vehh/
Peak Hour Fador
Percent Heavy Veh, % Cap, vehih
Arrive On Green
Sat Flow, vehih
Gip Sat Flow(s), vehih
Gip Sat Flow(s), vehi/h
Gip Sat Flow(s), sehi/h
C Serveig, S), s
Cycle Q Clearig, C), s
Prop in Lane
Lane Grp Cap(c), vehih
VIC Ratio(X)
Avail Cap(c, a), vehih
HCM Platoon Ratio Phs Duration (G+Y+Rc), s Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h) Uniform Delay (d), s/veh Approach Delay, s/veh Approach LOS imer - Assigned Phs HCM 6th Ctrl Delay HCM 6th LOS Approach Vol, veh/h Upstream Filter(I)

2021 PM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2021PBX.syn

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 7: San Mateo Blvd. & I-40 EB Ramp

Timings 7: San Mateo Blvd. & I-40 EB Ramp

SBT 981 881

432 432 Prot

443 443 Perm

352 352 352 Prot

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase

				٠		,	-				•	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	42	*-					444	*_	K.	444	
Traffic Volume (veh/h)	352	12	443	0	0	0	0	1670	373	432	981	0
Future Volume (veh/h)	352	12	443	0	0	0	0	1670	373	432	984	ی
Initial Q (Qb), veh	0 9	0	0 0				0 0	0	0 9	0 9	0	,
Ped-Bike Adj(A_pb1)	00.1		00.1				00.1		00.1	00.1		00.1
Parking Bus, Adj	1.00	0.1	1.00				1.00	1.00	1.00	1.00	0.1	1.00
Work Zone On Approach	0101	ON OF	0101				c	0 20	0107	010	0 20	•
Adj Sat Flow, ven/n/in Adi Flow Rate _veh/h	378	00281	1856				-	1796	0281	1856	1055	ے ر
Peak Hour Factor	0.93	0.93	0.93				0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh. %	က	က	က				0	က	က	က	m	0
Cap, veh/h	999	0	591				0	2931		371	3691	0
Arrive On Green	0.19	0.00	0.19				0.00	0.58	0.00	0.04	0.24	0.0
Sat Flow, veh/h	3534	0	3145				0	5233	1572	3428	5233	0
Grp Volume(v), veh/h	378	0	485				0	1796	0	465	1055	0
Grp Sat Flow(s),veh/h/In	1767	0	1572				0	1689	1572	1714	1689	0
Q Serve(g_s), s	11.7	0.0	17.8				0.0	27.8	0.0	13.0	20.4	0.0
Cycle Q Clear(g_c), s	11.7	0.0	17.8				0.0	27.8	0.0	13.0	20.4	0.0
Prop In Lane	1.00		1.00				0.0		1.00	1.00		0.0
Lane Grp Cap(c), veh/h	999	0	291				0	2931		371	3691	
V/C Ratio(X)	0.57	0.00	0.82				0.00	0.61		1.25	0.29	0.0
Avail Cap(c_a), veh/h	913	o 6	100				9 6	2931	6	371	3691	0 0
HOM FIGURIA	0.0	8.6	0.0				00.0	00.0	00.0	0.00	0.50	8.0
Upstream Filter(i)	44.3	000	46.8				000	16.5	0.0	57.9	20.4	0.00
Incr Delay (d2), s/veh	0.8	0.0	4.8				0.0	1.0	0.0	127.1	0.1	0.0
Initial Q Delay(d3).s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.9	0:0	11.8				0.0	15.9	0.0	18.8	13.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.1	0.0	51.6				0.0	17.5	0.0	185.0	20.2	0.0
LnGrp LOS		∢					∢	۵		띡	ပ	
Approach Vol, veh/h		863						1796	∢		1520	
Approach Delay, s/veh		48.7						17.5			9.07	
Approach LOS		۵						Ф			ш	
Timer - Assigned Phs	-	2		4		9						
Phs Duration (G+Y+Rc), s	18.0	74.4		27.6		92.4						
Change Period (Y+Rc), s	2.0	2.0		2.0		2.0						
Max Green Setting (Gmax), s	13.0	61.0		31.0		79.0						
Max Q Clear Time (g_c+l1), s	15.0	29.8		19.8		22.4						
Green Ext Time (p_c), s	0.0	18.0		2.8		10.0						
Intersection Summary												
HCM 6th Ctrl Delay			43.3									
HCM 6th LOS			۵									

C-Max 90.8 0.76 0.28 4.9 0.0 4.9 A 14.5

Min 0.21 0.66 0.66 0.0 36.4 36.4

C-Max 61.0 0.51 0.40 2.8 0.0 2.8 2.8

C-Max 61.0 0.51 0.70 24.4 0.0

Min 19.2 0.16 0.70 31.6 0.0

Min 19.2 0.16 0.70 32.1 32.1

Min 19.2 0.16 0.69 54.1 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

5.0 21.0 84.0 70.0% 4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

1.0

5.0 10.0 18.0 15.0%

5.0 21.0 66.0 55.0%

5.0 21.0 66.0 55.0%

5.0 21.0 36.0 30.0%

5.0 10.0 36.0 30.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

2021 PM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2021PBX.syn

100 **₩**

Intersection LOS: C ICU Level of Service C

Intersection Signal Delay: 22.5 Intersection Capacity Utilization 67.1% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.70

7: San Mateo Blvd. & I-40 EB Ramp

Splits and Phases:

Ø6 (R)

Actuated Cycle Length: 120 Offset: 103.2 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 65

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Synchro 10 Report 2021PBX.syn

HCM 6th Signalized Intersection Summary Terry O. Brown, PE

Timings

Future Volume (veh/h) raffic Volume (veh/h) Initial Q (Qb), veh Ped-Bike Adj(A_pbT)

Lane Configurations

7: San Mateo Blvd. & I-40 EB Ramp	. & I-40	EB R	amp					06/27/2019
	1	†	<i>></i>	•	•	۶	→	
Lane Group	EBL	EBT	EBR	NBT	NBR	SBL	SBT	
Lane Configurations	*	\$	*-	***	¥L.	£	444	
Traffic Volume (vph)	352	12	443	1670	373	432	981	
Future Volume (vph)	352	12	443	1670	373	432	981	
Turn Type	Prot	Ϋ́	Perm	Ž	Perm	Prot	Ν A	
Protected Phases	7	4		N		-	9	
Permitted Phases			4		7			
Detector Phase	7	4	4	7	7	-	9	
Switch Phase								
Minimum Initial (s)	2.0	5.0	2.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	10.0	21.0	21.0	21.0	21.0	10.0	21.0	
Total Split (s)	32.0	32.0	32.0	54.0	54.0	34.0	88.0	
Total Split (%)	26.7% 26.7%	26.7%	26.7%	45.0%	45.0%	28.3%	73.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag				Lag	Lag	Lead		
Lead-Lag Optimize?								
Recall Mode	Min	Ξ	Ä	Min C-Max C-Max	C-Max	Min	Min C-Max	
Act Effct Green (s)	19.0	19.0	19.0	64.4	64.4	21.6	91.0	
Actuated g/C Ratio	0.16	0.16	0.16	0.54	0.54	0.18	92.0	
v/c Ratio	0.70	0.68	0.68	99.0	0.39	0.76	0.28	
Control Delay	54.9	28.7	28.2	22.8		44.9	1.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	54.9	28.7	28.2	22.8		44.9	1.9	
FOS	_	ပ	O	ပ	<	□	∢	
Approach Delay		40.0		19.2			15.0	
Approach LOS				В			В	
Intersection Summary								
Cycle Length: 120								
Actuated Cycle Length: 120	1: 120	40	IIV.C CO.) Pag L	Tao.) to to to	200	
Natural Cycle: 65		2	350 E.IVI	מומ	, , , , ,	אמונ סו א		
Control Type: Actuated-Coordinated	d-Coordin	ated						
Maximum v/c Ratio: 0.76	92							
Intersection Signal Delay: 21.8	lay: 21.8			_	Intersection LOS: C	on LOS	0	
Intersection Capacity Utilization 67.1%	Jilization	67.1%		_	ICU Level of Service C	of Ser	vice C	
Analysis Period (min) 15	15							

07 **₽**04 7: San Mateo Blvd. & I-40 EB Ramp Splits and Phases: Ø6 (R)

HCM 6th Ctrl Delay HCM 6th LOS

2021 PM Peak BUILD Conditions - Mitigated Conditions

Synchro 10 Report 2021PB_MIT.syn

1.00 0.93 0.0 0.00 0.00 0.0 0.0 Terry O. Brown, PE 06/27/2019 1.00 No 1856 1055 0.93 3713 0.73 5233 0.28 3713 1.00 0.62 5.4 0.1 0.0 1520 6.6 В 981 User approved volume balancing among the lanes for turning movement. Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay. 1714 15.8 1.00 548 0.85 829 1.00 0.62 49.0 52.4 D 0 0.1 1856 465 0.93 0.0 1.0 1856 0.00 0.0 0.0 1.00 0.00 0.0 2693 0.67 2693 1.00 1.00 20.4 1.00 2693 0.53 5233 1689 30.9 21.7 1796 0.00 0.0 0 8 8 0.0 0.00 0.00 00 WBR 93.0 5.0 83.0 10.4 WBT 00 00 27.0 5.0 27.0 19.9 2.2 27.0 C 1.00 54.8 D 443 43 1856 485 0.93 3 7: San Mateo Blvd. & I-40 EB Ramp 0.00 0.0 A 1.00 No 1856 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0. 0.0 863 50.7 † 0.00 Upstream Filter(1) 1.00
Uniform Delay (d), s/veh 44.8
Incr Delay (d2), s/veh 0.8
Initial Q Delay(d3), s/veh 0.0
Sile BackOfQ(95%), vehin 9.0
Unsig. Movement Delay, s/veh Timer - Assigned Phs 1
Phs Duration (G+Y+Rb), £24.2
Change Period (Y+Rc), s 5.0
Max Green Setting (Gmax,258)
Max Q Clear Time (g_c+Ht)78 Adj Sat Flow, vehihlin 1856
Adj Flow Rate, vehihlin 378
Persent Heavy Veh, % 3
Cap, vehih 0.18
Sat Flow, vehih 3534
Grp Volume(v), vehih 378
Grp Sat Flow(s), vehihlin 1767
Grp Sat Flow(s), vehihlin 1767
O Serve(g. s), s
11.7
Cycle Q Clear(g. c), s
11.7
Prop In Lane 1.00 Green Ext Time (p_c), s 1.3 Lane Grp Cap(c), veh/h V/C Ratio(X) Avail Cap(c_a), veh/h HCM Platoon Ratio Parking Bus, Adj Work Zone On Approach Approach Delay, s/veh

Approach Vol, veh/h

-nGrp LOS

Approach LOS

2021 PM Peak BUILD Conditions - Mitigated Conditions

Synchro 10 Report 2021PB_MIT.syn

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 8: San Mateo Blvd. & I-40 WB Ramp

8: San Mateo Blvd. & I-40 WB Ramp

Timings

135 135

\$ 299 AN

187 187 Prot

249 249 Perm

192 Prot

155 Tag

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase Protected Phases

¥

		t	•	•		/	•	_	_		•	٠
	i	i	- 1				-	- !	- !	i	- !	3
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	E		*_	F	+	*-	F	‡			ŧ	
Traffic Volume (veh/h)	155	0	417	192	112	249	187	1299	0	0	1377	135
Future Volume (veh/h)	155	0	417	192	112	249	187	1299	0	0	1377	÷
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1:00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1:00	1.00	1.00	1.00	1.00	1:00	1.00
Work Zone On Approach		8			ટ			8			ટ	
Adj Sat Flow, veh/h/In	1856	0	1856	1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h	165	0	444	204	119	265	199	1382	0	0	1465	144
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	က	0	က	က	က	က	က	က	0	0	က	
Cap, veh/h	224	0	0	1005	345	292	263	3159	0	0	2560	868
Arrive On Green	0.07	0.00	0.00	0.29	0.19	0.19	0.03	0.21	0.00	0.00	0.51	0.51
Sat Flow, Velilli	3450	3 5		07450	9 6	210	2450	4200			4405	444
Gip Volume(v), venim	202	7.6C		1714	1010	207	1744	1500	0	0	204	- 4
O Serve(a), verimin	5.7	ш		4 4	000	10.8	4 0	6001			24.2	2 "
Cycle O Clearing of a				1. 4.	. 6	10.8	0.00	28.6	0.0	0.0	24.2	, ц
Prop In Lane	100			00,1	ò	00.	100	0.07	000	000	7:1-7	100
Lane Grp Cap(c), veh/h	224			1005	345	292	263	3159	0	0	2560	00
V/C Ratio(X)	0.74			0.20	0.34	0.91	0.76	0.44	00.0	00:0	0.57	0.16
Avail Cap(c_a), veh/h	343			1005	387	328	400	3159	0	0	2560	868
HCM Platoon Ratio	1.00			1.00	1:00	1.00	0.33	0.33	1.00	1.00	1.0	-
Upstream Filter(I)	1.00			1.00	1.00	1.00	0.65	0.65	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	55.1			31.9	45.5	47.8	57.4	29.3	0.0	0.0	20.7	52
Incr Delay (d2), s/veh	4.6			0.1	9.0	25.9	2.9	0.3	0.0	0.0	6.0	0.4
Initial Q Delay(d3),s/veh	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	4.7			4.1	2.6	15.0	2.6	17.7	0.0	0.0	14.5	3.4
Unsig. Movement Delay, s/veh				0	3	1	6	0	d	d	3	,
LnGrp Delay(d),s/ven).6C			32.0 O	- S	/3./ II	г. П	0.87	0.0	0.0	o: v	0.2 D
Annroach Vol. veh/h	,				788	,	,	1581	:	:	1609	
Approach Delay, s/veh					53.0			33.4			20.8	
Approach LOS					Ω			ပ			O	
Timer - Assigned Phs		2	က		Ŋ	9	7	∞				
Phs Duration (G+Y+Rc) s		79.8	40.2		14.2	65.6	12.9	27.3				
Change Period (Y+Rc), s		5.0	5.0		2.0	2.0	2.0	5.0				
Max Green Setting (Gmax), s		0.89	12.0		14.0	49.0	12.0	25.0				
Max Q Clear Time (g_c+I1), s		30.6	7.4		8.9	26.2	7.7	21.8				
Green Ext Time (p_c), s		13.1	0.3		0.3	12.0	0.2	0.5				
Intersection Summary												
HCM 6th Ctrl Delay			20.3									
(500 000			5.40									

5.0 10.0 17.0 14.2% 4.0 1.0 0.0 5.0 Lead

5.0 10.0 19.0 15.8%

5.0 21.0 30.0 25.0%

5.0 10.0 17.0 14.2%

4.0 1.0 0.0 5.0 Lag

1.0

4.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 -ead

4.0 0.0 5.0 Lag

5.0 10.0 17.0 14.2% 4.0 1.0 0.0 5.0 Lead

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

Min 69.9 0.58 0.15 3.2 0.0

Min 12.0 0.10 0.59 43.6 0.0 43.6

Min 0.19 0.68 35.1 35.1 35.1

Min 11.2 0.09 0.64 62.1 62.1

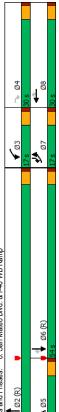
Min 22.5 0.19 0.94 53.1 53.1

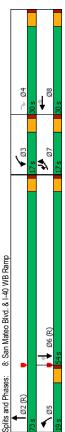
Min 10.6 0.09 0.55 59.3 0.0 E

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 23.1 0.19 0.34 43.8 0.0 43.8 D 46.2

C-Max 54.3 0.45 0.64 28.0 0.0 28.0 C C C





Intersection LOS: C ICU Level of Service C

Intersection Signal Delay: 28.9 Intersection Capacity Utilization 70.4% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.94

Natural Cycle: 65

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Actuated Cycle Length: 120 Offset: 44.4 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Green

2021 PM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2021PBX.syn

Synchro 10 Report 2021PBX.syn

A-161

HCM 6th Signalized Intersection Summary 8: San Mateo Blvd. & I-40 WB Ramp Terry O. Brown, PE 06/27/2019 8: San Mateo Blvd. & I-40 WB Ramp

	1	<i>></i>	-	ţ	4	•	•	→	•	
Lane Group	EBL	EBR	WBL	WBT	WBR	NBL	NBT	SBT	SBR	
Lane Configurations	1	ĸ.	1	+	*	1	444	444	*	
Traffic Volume (vph)	155	417	192	112	249	187	1299	1377	135	
Future Volume (vph)	155	417	192	112	249	187	1299	1377	135	
Turn Type	Prot	Perm	Prot	Z	Perm	Prot	Ϋ́	A V	NA pm+ov	
Protected Phases	7		က	∞		2	7	9	7	
Permitted Phases		4			ω				9	
Detector Phase	7	4	က	∞	∞	2	0	9	7	
Switch Phase										
Minimum Initial (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	10.0	21.0	10.0	21.0	21.0	10.0	21.0	21.0	10.0	
Total Split (s)	16.0	40.0	15.0	39.0	39.0			50.0	16.0	
Total Split (%)	13.3%	33.3%	12.5%	32.5%	32.5%	12.5%	54.2%	41.7%	13.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead		Lag	Lead	
Lead-Lag Optimize?										
Recall Mode	Min	Ψij	Ā	<u>M</u>	Ξ	Ä	Min C-Max C-Max	C-Max	Z.	
Act Effct Green (s)	10.2	27.2	9.8	26.9	26.9	10.8	67.9	52.1	67.3	
Actuated g/C Ratio	0.08	0.23	0.08	0.22	0.22	0.09	0.57	0.43	0.56	
v/c Ratio	0.57	0.90	0.73	0.29	0.61	0.65	0.48	0.67	0.15	
Control Delay	6.09	48.5	8.69	38.7	29.5	49.6	21.9	30.3	4.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.09	48.5	8.69	38.7	29.5	49.6	21.9	30.3	4.5	
SOT	ш	Ω	Ш	□	O	Ω	O	ပ	⋖	
Approach Delay				45.2			25.4	28.0		
Approach LOS							O	O		
Intersection Summary										
Cycle Length: 120										
Actuated Cycle Length: 120	: 120									
Offset: 44.4 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Green	ferenced	to phas	e 2:NB	Fand 6	SBT, S1	art of G	ireen			
Natural Cycle: 65										
Control Type: Actuated-Coordinated	d-Coordin	ated								
Maximum v/c Ratio: 0.90	06									
Intersection Signal Delay: 32.7	lay: 32.7			=	Intersection LOS: C	ion LOS	0			
Intersection Capacity Utilization 70.4%	Jtilization	70.4%		_	ICU Level of Service C	el of Ser	vice C			
Analysis Period (min) 15	15									

893 0.50 1572 144 1572 5.2 5.2 1.00 1.00 1.00 1.30 0.4 0.4 0.4 0.4 0.4 3.4

0.00 0.0

> 0.00 00.0

2548 0.57 2548 1.00 1.00 20.9

0.69 0.69

6.8 6.8 6.8 1.00 254 0.78 286 1.33 0.69 53.2 8.6 0.0

355 0.34 526 1.00 1.00

265 19.7 19.7 11.00 301 0.88 446 11.00 11.00

5.7 1.00 223 0.74 314 1.00 1.00

Lane Grp Cap(c), veh/h V/C Ratio(X) Avail Cap(c_a), veh/h HCM Platoon Ratio

Upstream Filter(I) Uniform Delay (d), s/veh

1022 0.30 204 1714 5.3 5.3 1.00 1.00 1.00 1.00 31.4

0.00 0.00 0.00 0.0

0.0

13.0

Incr Delay (d2), siveh 6.5 Initial O Delay(d3), siveh 0.0 %ile BackOlQ(95%), vehln 4.7 Unsig. Movement Delay, siveh LnGrp Delay(d), siveh 60.6

0.00

12.7 B

21.8 C

0.0

0.0 A

5.2 A 1581 12.3

61.7 E

60.3 E

42.5 D

31.5 C

588

46.7

Approach Delay, s/veh

Approach LOS

Approach Vol, veh/h

nGrp LOS

1609 21.0

5.0 5.0 34.0 21.7 1.3

5.0 7.7 7.7 0.1

65.4 5.0 45.0 26.3

3.9 5.0 8.8 0.1

40.8 5.0 7.3 0.2

5.0 5.0 60.0 11.1 14.0

Timer - Assigned Phs
Phs Duration (G+Y-RC), s
Change Period (Y-RC), s
Max Green Setting (Gmax), s
Max Q Clear Time (g_c+H1), s

Green Ext Time (p_c), s

23.0 C

HCM 6th Ctrl Delay HCM 6th LOS

1.00

0 0 0 0 0 0

8.8

8.8

1.00

8.8

8.8

00.0

8.8 8

Parking Bus, Adj Work Zone On Approach

Ped-Bike Adj(A_pbT)

Initial Q (Qb), veh

Future Volume (veh/h)

raffic Volume (veh/h)

Lane Configurations

1299 1299

1.00 No 1856 1465 0.94

1.00 No 1856 1382 0.94

1856 265 0.94

1856 444 0.94 3

0.94

Adj Sat Flow, veh/h/ln Adj Flow Rate, veh/h Peak Hour Factor Percent Heavy Veh, %

1.00 No 856 119 0.94

2548 0.50 5233

0.00

0.00

0.10 3428

301 0.19

0.00

0.00 165 60.6

Cap, vehih 3228
Arrive On Green 0.07
Sat Flow, vehih 3428
Grp Volume(v), vehih 165
Grp Sat Flow(s), vehih 165
Oscre(g_s), s 5.7
Cycle Q Clear(g_c), s 5.7
Prop In Lane 1.00

0.94

1465 1689 24.3

0.0

Terry O. Brown, PE 06/27/2019

٠

†

₽ 83 07 \$ 8: San Mateo Blvd. & I-40 WB Ramp ₩ ₩ Ø6 (R) Splits and Phases: 05

Synchro 10 Report 2021PB_MIT.syn

Synchro 10 Report 2021PB_MIT.syn

2021 PM Peak BUILD Conditions - Mitigated Conditions

A-162

2021 PM Peak BUILD Conditions - Mitigated Conditions

Intersection								
Int Delay, s/veh	2.4							
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	ች	7	ተተተ	7	ች	^ ^		
Traffic Vol, veh/h	186	118	1685	72	187	1503		
uture Vol, veh/h	186	118	1685	72	187	1503		
Conflicting Peds, #/hr	0	0	0	0	0	0		
Sign Control	Stop	Stop	Free	Free	Free	Free		
RT Channelized	-	None	-	None	-	None		
Storage Length	30	0	-	115	220	-		
eh in Median Storage	e, # 2	-	0	-	-	0		
Grade, %	0	-	0	-	-	0		
Peak Hour Factor	93	93	93	93	93	93		
Heavy Vehicles, %	3	3	3	3	3	3		
Nvmt Flow	200	127	1812	77	201	1616		
Major/Minor	Minor1		Major1	<u> </u>	Major2			
Conflicting Flow All	2860	906	0	0	1889	0		
Stage 1	1812	-	-	-	-	-		
Stage 2	1048	-	-	-	-	-		
Critical Hdwy	5.76	7.16	-	-	5.36	-		
ritical Hdwy Stg 1	6.66	-	-	-	-	-		
ritical Hdwy Stg 2	6.06	-	-	-	-	-		
ollow-up Hdwy	3.83	3.93	-	-	3.13	-		
ot Cap-1 Maneuver	*337	*520	-	-	*653	-		
Stage 1	*533	-	-	-	-	-		
Stage 2	*578	-	-	-	-	-		
Platoon blocked, %	1	1	-	-	1	-		
Nov Cap-1 Maneuver	*233	*520	-	-	*653	-		
Nov Cap-2 Maneuver	*353	-	-	-	-	-		
Stage 1	*533	-	-	-	-	-		
Stage 2	*400	-	-	-	-	-		
Approach	WB		NB		SB			
HCM Control Delay, s	22.4		0		1.4			
HCM LOS	С							
Minor Lane/Major Mvm	nt _	NBT	NBRV	VBLn1V	VBLn2	SBL	SBT	
Capacity (veh/h)		-	-	353	520	* 653	-	
ICM Lane V/C Ratio		-	-	0.567			-	
HCM Control Delay (s)		-	-	27.7	14.1	12.9	-	
HCM Lane LOS		-	-	D	В	В	-	
HCM 95th %tile Q(veh))	-	-	3.3	0.9	1.3	-	
Notes								
-: Volume exceeds cap	nacity	\$· De	lav exc	eeds 30)0s	+· Comr	outation Not Defined	*: All major volume in platoon
. Foldino oxocodo od	paoity	ψ. D0	ay ono	2040 00		. Comp	addition not boilliou	. 7 th major volumo in platoon

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	VVDL		<u>↑</u>	אטא	ODL	†††
Traffic Vol, veh/h	Λ		1669	105	٥	TTT 1661
	0	58				
Future Vol, veh/h	0	58	1669	105	0	1661
Conflicting Peds, #/hr	0	0	0	_ 0	_ 0	_ 0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-		-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage	e, # 0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	62	1795	113	0	1786
		- 02	1.00	. 10		1.00
Major/Minor	Minor1	ı	Major1	N	/lajor2	
Conflicting Flow All	-	954	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.16	-	-	_	_
Critical Hdwy Stg 1	_	_	_	_	_	_
Critical Hdwy Stg 2	_	_	_	_	_	_
Follow-up Hdwy	_	3.93	_	_	_	_
Pot Cap-1 Maneuver	0	*520			0	
•			-	-		-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		1	-	-		-
Mov Cap-1 Maneuver	-	*520	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
G -						
Approach	WB		NB		SB	
HCM Control Delay, s	12.9		0		0	
HCM LOS	В					
NA: 1 (NA : NA		NDT	NDDV	VDL 4	ODT	
Minor Lane/Major Mvm	nt	NBT	NRKA	VBLn1	SBT	
Capacity (veh/h)		-	-	520	-	
HCM Lane V/C Ratio		-	-	0.12	-	
HCM Control Delay (s))	-	-	12.9	-	
HCM Lane LOS		-	-	В	-	
HCM 95th %tile Q(veh	1)	-	-	0.4	-	
·						
Notes						
~: Volume exceeds ca	pacity	\$: De	lay exc	eeds 30	00s	+: Comp

### BBL BBT WBR WBR SBL SBR ### Configurations To To To To ### Configurations To To To To ### Configurations To To To To ### Configurations To ### Configurations To To ### Configurations To ### Configurati	ntersection								
Configurations To To Sequence To S	nt Delay, s/veh	2.7							
Configurations The property Th	Movement	FRI	FRT	WRT	WRR	SRI	SRR		
lic Vol, veh/h 75 842 615 87 100 65 re Vol, veh/h 75 842 615 87 100 65 licitiding Peds, #hr 0 0 0 0 0 0 Control Free Page Free Phanelized Free Phanelized Free Phanelized None None None age Length 80 - - 0 0 - 0 - le, % - 0 0 - 0 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -					וטייי		ODIX		
re Vol, veh/h 75 842 615 87 100 65 flicting Peds, #hr 0 0 0 0 0 0 0 Control Free Free Free Free Stop Channelized - None - None age Length 80 - 0 0 0 - 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 - 0 0 - 0 In Median Storage, # 0 0 0 0 0 0 0 0 In Median Storage, # 0 0 0 0 0 0 0 0 In Median Storage, # 0 0 0 0 0 0 0 0 In Median Storage, # 0 0 0 0 0 0 0 0 In Median Storage, # 0 0 0 0 0 0 0 0 0 In Median Storage, # 0 0 0 0 0 0 0 0 0 In Median Storage, # 0 0 0 0 0 0 0 0 0 0 In Median Storage, # 0 0 0 0 0 0 0 0 0 0 In Median Storage, # 0 0 0 0 0 0 0 0 0 0 0 0 0 In Median Storage, # 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0					97		65		
Control Free Free Free Free Stop Stop									
Control Free Free Free Free Free Stop Stop									
Channelized									
age Length 80 0 0 - in Median Storage, # - 0 0 0 - 0 lete, % - 0 0 0 - 0 0 - lete, % - 0 0 0 - 0 0 - lete, % - 0 0 0 - 0 0 - lete, % - 0 0 0 - 0 0 - lete, % - 0 0 0 - 0 0 - lete, % - 0 0 0 - 0 0 - lete, % - 0 0 0 - 0 0 - lete, % - 0 0 0 - 0 0 - lete, % - 0 0 0 - 0 0 - lete, % - 0 0 0 0 - lete, % - 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0						•			
in Median Storage, # - 0 0 - 0 - 0 - 6							None		
Ide, %							-		
Chour Factor 93 93 93 93 93 93 93 9									
Major Major Major Major Minor	Grade, %			-					
Major Major Major Major Minor									
### Additional Proof of the Pro									
Stage 1	VIII(FIOW	81	905	001	94	108	70		
Stage 1									
Stage 1	ajor/Minor M	/lajor1	<u> </u>	Major2	<u> </u>	Minor2			
Stage 1	onflicting Flow All	755	0	-	0	1323	378		
Stage 2 - - - 615 - cal Hdwy 4.16 - - 6.86 6.96 cal Hdwy Stg 1 - - - 5.86 - cal Hdwy Stg 2 - - - 5.86 - cal Hdwy Stg 2 - - - 5.86 - cal Hdwy Stg 2 - - - 5.86 - cal Hdwy Stg 2 - - - 5.86 - cal Hdwy Stg 2 - - - 5.86 - cal Hdwy Stg 2 - - - 5.86 - cal Hdwy Stg 2 - - - 5.86 - cal Hdwy Stg 2 - - - 5.86 - cal Hdwy Stg 2 - - - 3.53 3.33 cal Hdwy Stg 2 - - - *447 - Stage 1 - - - *281 617 Cap-1 Maneuver 845 - - *281 - Stage 1 - - - *404 - Stage 2 - - - *702 -		-	-	-	-	708	-		
cal Hdwy 4.16 - - 6.86 6.96 cal Hdwy Stg 1 - - - 5.86 - cal Hdwy Stg 2 - - - 5.86 - ww-up Hdwy 2.23 - - 3.53 3.33 Cap-1 Maneuver 845 - - *447 - Stage 1 - - - *702 - Don blocked, % - - 1 - - *281 617 Cap-2 Maneuver - - - *281 - - *281 - - *362 - *404 - - *362 - *404 - - *404 - - *404 - *3702 - - *404 - - *404 - *3702 - - *404 - *358 *4 *4 *4 *4 *4 *4 *4 *4 *4 *4 *4 *4 *4 *4 *4 *4 *4 <		-	-	-	-	615	-		
cal Hdwy Stg 1 5.86 - cal Hdwy Stg 2 3.53 3.33 Cap-1 Maneuver 845 *311 617 Stage 1 *447 - Stage 2 *702 - cap blocked, % 1 Cap-1 Maneuver 845 *281 617 Cap-2 Maneuver *281 - *281 - Stage 1 *404 - Stage 2 *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 - *702 -	ritical Hdwy	4.16	-	-	-	6.86	6.96		
cal Hdwy Stg 2 5.86 5.86	ritical Hdwy Stg 1		-	-	-				
Description of the second seco	ritical Hdwy Stg 2	-	-	-	-		-		
Cap-1 Maneuver 845 - - *311 617 Stage 1 - - - *447 - Stage 2 - - - *702 - con blocked, % - - 1 - Cap-1 Maneuver 845 - - *281 - Cap-2 Maneuver - - - *281 - Stage 1 - - - *404 - Stage 2 - - - *702 - Toach EB WB SB I Control Delay, s 0.8 0 24.5 I LOS C Or Lane/Major Mvmt EBL EBT WBT WBR SBLn1 acity (veh/h) 845 - - 358 I Lane V/C Ratio 0.095 - - 0.496 I Lane V/C Ratio 0.095 - - - 24.5 I Lane LOS A - - C I Sth %tile Q(veh) 0.3 - - 2.6	ollow-up Hdwy	2.23	-	-	-		3.33		
Stage 1 - - - *447 - Stage 2 - - - *702 - con blocked, % - - - 1 Cap-1 Maneuver 845 - - *281 617 Cap-2 Maneuver - - - *281 - Stage 1 - - - *404 - Stage 2 - - - *702 - To Control Delay, s On East WB WB SB Control Delay, s On East WBT WBR SBLn1 Sacity (veh/h) 845 On East WBT WBR SBLn1 Sacity (veh/h) 845 On East WBT WBR SBLn1 Sacity (veh/h) On East WBT WBR SBLn1 Sacity (veh/h) On East WBT Stage 2 On East WBT WBR SBLn1 Sacity (veh/h) On East WBT Stage 2 On East WBT St	ot Cap-1 Maneuver		-	-	-				
Stage 2 *702 - con blocked, % 1 Cap-1 Maneuver 845 *281 617 Cap-2 Maneuver *281 - Stage 1 *404 - Stage 2 *702 - **To2 -	•	-	-	-	-				
Cap-1 Maneuver		-	-	-	-		-		
Cap-1 Maneuver 845 - - *281 617 Cap-2 Maneuver - - - *281 - Stage 1 - - - *404 - Stage 2 - - - *702 - Toach EB WB SB M Control Delay, s 0.8 0 24.5 M LOS C For Lane/Major Mvmt EBL EBT WBT WBR SBLn1 Bacity (veh/h) 845 - - 358 M Lane V/C Ratio 0.095 - - 0.496 M Lane LOS A - - - 24.5 M Lane LOS A - - - C M SSB - - - - - 24.5 M Lane LOS A - - - - - - - - - - - - - - - - - - - - <td>latoon blocked, %</td> <td></td> <td>-</td> <td>-</td> <td>-</td> <td></td> <td></td> <td></td> <td></td>	latoon blocked, %		-	-	-				
Cap-2 Maneuver - - *281 - Stage 1 - - - *404 - Stage 2 - - - *702 - To ach Stage 2	Nov Cap-1 Maneuver	845	-	-	-	*281	617		
Stage 1 - - - *404 - Stage 2 - - - *702 - Toach EB WB SB M Control Delay, s 0.8 0 24.5 M LOS C Or Lane/Major Mvmt EBL EBT WBT WBR SBLn1 Pacity (veh/h) 845 - - 358 M Lane V/C Ratio 0.095 - - 0.496 M Lane LOS A - - 24.5 M Lane LOS A - - C M 95th %tile Q(veh) 0.3 - - 2.6	Nov Cap-2 Maneuver		-	-	-		-		
Stage 2 *702 - Toach EB WB SB If Control Delay, s 0.8 0 24.5 ILOS C To Lane/Major Mvmt EBL EBT WBT WBR SBLn1 acity (veh/h) 845 358 IL Lane V/C Ratio 0.095 0.496 If Control Delay (s) 9.7 - 24.5 IL Lane LOS A C Il 95th %tile Q(veh) 0.3 2.6		-	-	-	-		-		
Coach		-	-	-	-		-		
M Control Delay, s 0.8 0 24.5 M LOS C Or Lane/Major Mvmt EBL EBT WBT WBR SBLn1 acity (veh/h) 845 358 M Lane V/C Ratio 0.095 0.496 M Control Delay (s) 9.7 - 24.5 M Lane LOS A C M 95th %tile Q(veh) 0.3 2.6	<u> </u>								
M Control Delay, s 0.8 0 24.5 M LOS C Or Lane/Major Mvmt EBL EBT WBT WBR SBLn1 acity (veh/h) 845 358 M Lane V/C Ratio 0.095 0.496 M Control Delay (s) 9.7 24.5 M Lane LOS A C M 95th %tile Q(veh) 0.3 2.6	onroach	ED		\\/D		QD.			
TLane/Major Mvmt									
or Lane/Major Mvmt EBL EBT WBT WBR SBLn1 acity (veh/h) 845 358 M Lane V/C Ratio 0.095 0.496 M Control Delay (s) 9.7 24.5 M Lane LOS A C M 95th %tile Q(veh) 0.3 2.6		U.ŏ		U					
acity (veh/h) 845 358 M Lane V/C Ratio 0.095 0.496 M Control Delay (s) 9.7 24.5 M Lane LOS A C M 95th %tile Q(veh) 0.3 2.6	CIVI LUS					Ü			
acity (veh/h) 845 358 M Lane V/C Ratio 0.095 0.496 M Control Delay (s) 9.7 24.5 M Lane LOS A C M 95th %tile Q(veh) 0.3 2.6									
M Lane V/C Ratio 0.095 0.496 M Control Delay (s) 9.7 24.5 M Lane LOS A C M 195th %tile Q(veh) 0.3 2.6	linor Lane/Major Mvmt	l l		EBT	WBT	WBR			
1 Control Delay (s) 9.7 24.5 1 Lane LOS A C 1 95th %tile Q(veh) 0.3 2.6	apacity (veh/h)			-	-				
M Lane LOS A C 1 95th %tile Q(veh) 0.3 2.6	CM Lane V/C Ratio			-	-	-			
1 95th %tile Q(veh) 0.3 2.6	CM Control Delay (s)			-	-	-			
is a second of the second of t	CM Lane LOS			-	-	-			
	ICM 95th %tile Q(veh)		0.3	-	-	-	2.6		
	lotes								
The state of the s		acity	\$: De	lay exc	eeds 30)0s	+: Comr	outation Not Defined	*: All major volume in platoon
			Ţ. D 0	. J. Ono					

2031 AM Peak Hour NO BUILD Analyses

HCM 6th Signalized Intersection Summary 1: Girard Ct. & Indian School Rd. Terry O. Brown, PE

00.00

73 00.1

46 0 1.00 1.00

8 8 0 6 6

5608

22 0 0.1

22088

Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)

8.8 1856

1.00 No No 21 21 3 3 3 650 650

1.00 No 1856 13 0.92 3 178 0.10

1.00 No 1856 616 0.92 3 2270 0.24 341 1763 8.7

1.00 No No 263 263 0.92 3263 0.71 141 1763 1.44

23 0.92 3

Initial Q (Qb), veh
Ped-Bite Adi(A, pbT)
Parking Bus, Adi
Work Zone On Approach
Adj Sat Flow, vehh/lin
Adj Flow State, vehh/
Peak Hour Fador
Percent Heavy Veh, %

1: Girard Ct. & Indian School Rd	ari ocirc			l			l		010211200
	•	†	/	ţ	•	•	٠	→	
-ane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	*	4₽	_	₩	×	4	×	¢\$	
Traffic Volume (vph)	77	242	9	292	4	12	73	6	
Future Volume (vph)	71	242	9	267	46	12	73	19	
Turn Type	Perm	≨	Perm	Ϋ́	Perm	Ϋ́	Perm	Ϋ́	
Protected Phases		4		∞		2		9	
Permitted Phases	4		∞		2		9		
Detector Phase	4	4	∞	∞	2	2	9	9	
Switch Phase									
Minimum Initial (s)	2.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	
Fotal Split (s)	30.0	30.0	30.0	30.0	25.0	25.0	25.0	25.0	
Fotal Split (%)	54.5%	54.5%	54.5%	54.5%	45.5%	45.5%	45.5%	45.5%	
rellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0:0	0.0	0:0	0.0	
otal Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
-ead/Lag									
.ead-Lag Optimize?									
Recall Mode	C-Max	С-Мах	C-Max	C-Max	Min	Min	Min	Min	
Act Effct Green (s)	36.4	36.4	36.4	36.4	9.6	9.8	9.6	9.8	
Actuated g/C Ratio	99.0	99.0	99.0	99.0	0.16	0.16	0.16	0.16	
v/c Ratio	0.02	0.13	0.02	0.30	0.24	0.02	0.37	0.19	
Control Delay	4.5	3.7	2.4	5.9	22.0	17.8	24.7	12.1	
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
otal Delay	4.5	3.7	2.4	5.9	22.0	17.8	24.7	12.1	
SO:	⋖	∢	∢	⋖	ပ	В	ပ	В	
Approach Delay		3.8		2.9		21.1		19.6	
Approach LOS		∢		∢		O		Ф	
ntersection Summary									
Sycle Length: 55 Actuated Cycle Length: 55									
Offset: 17.6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	ced to phas	e 4:EBT	L and 8:W	BTL, Star	t of Gree	_			
Sontrol Type: Actuated-Coordinated	rdinated								
Maximum v/c Ratio: 0.37									
ntersection Signal Delay: 6.0	0.			프	tersection	Intersection LOS: A			
700 SC notion Concept, Hillington 26 00/	/00 00 :::			2		V	<		

50 50 50 3 3 3 231 0.10 0.10 1339 2.0 2.0 2.0 2.0 2.0 2.0 2.0 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

cap vehin Arrive On Green Sat Flow, vehin Grp Volume(v), vehin Grp Sat Flow(s), vehin Grs Sarve(g. s), s Cycle Q Clear(g. c), s Prop in Lane Lane Grp Cap(c), vehin

V/C Ratio(X)
Avail Cap(c_a), veh/h
HCM Platoon Ratio

0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

0.00 0.00 0.00 0.0 0.0 0.0

0.27 0.33 0.33 0.75 9.3 0.4 0.0 3.8

1258 0.11 1.00 1.00 2.5 0.2 0.0 0.0

Uniform Delay (d), s/veh

Upstream Filter(I)

133

24.4 C

44.3 5.0 25.0 10.7 3.5

5.0 5.0 5.4 5.4 0.4

5.0 5.0 11.5 1.3

5.0 5.0 5.6 5.6 0.1

Change Period (Y+Rc), s Max Green Setting (Gmax), s Max Q Clear Time (g_c+11), s Green Ext Time (p_c), s

Phs Duration (G+Y+Rc), s

10.3

HCM 6th Ctrl Delay HCM 6th LOS

24.4 C

22.4 C

0.0

24.9 C

9.7

9.7 A 9.7

7.3

2.6

2.6 A

5.8

Incr Delay (d2), s/veh Initial Q Delay(d3),s/veh %ile BackOfQ(95%),veh/ln Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh

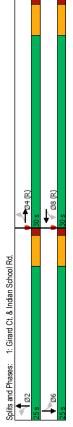
310 2.9 A

Approach Delay, s/veh Approach LOS imer - Assigned Phs

Approach Vol, veh/h

0.00

0.0 0.0



Synchro 10 Report 2031ANX.syn

Synchro 10 Report 2031ANX.syn

2031 AM Peak NOBUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 2: Carlisle Blvd. & I-40 WB Ramp Terry O. Brown, PE

Timings

Terry O. Brown, PE 06/27/2019

1.00

1.00

8.8

0 0 0 0 0

8.8

\$21

1084 ± 1084

443 443

436 436 9.8

Traffic Volume (veh/h) Future Volume (veh/h) Ped-Bike Adj(A_pbT)

Initial Q (Qb), veh

†

1.00 No 1856 892 0.92

1.00 No 1856 1178 0.92

1.00 No 1856 0 0.92

Parking Bus, Adi Work Zone On Approach Adj Sat Flow, vehln/In Adj Flow Rate, veh/Ih Peak Hour Factor Percent Heavy Veh, %

1856 482 0.92

0.00

0.00

0.92

2050 0.40 0.40 892 1689 14.0

3074 1.00 5233 1178 1689 0.0

0.00

0.0 0.0 1.00

0.00000

1856 449 0.02 3 3 475 0.03 11572 1449 1449 30.7 475 0.04 475 0.09 475 0.09 476 0.09 1.00 37.5 27.2 27.2

1856 3 3 3 3 3 1069 0.30 0.30 0.30 1767 1777 1700 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 1009 100

0.00

cap vehin Arrive On Green Sat Flow, vehin Grp Volume(v), vehin Grp Sat Flow(s), vehin Grs Sarve(g. s), s Cycle Q Clear(g. c), s Prop in Lane Lane Grp Cap(c), vehin

V/C Ratio(X)
Avail Cap(c_a), veh/h
HCM Platoon Ratio

Uniform Delay (d), s/veh

Upstream Filter(I)

Incr Delay (d2), s/veh

	>	ţ	4	•	←	→	•	
ane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR	
Lane Configurations	<u>r</u>	₩	K _	¥.	444	444	K	
raffic Volume (vph)	436	Ξ	413	443	1084	821	308	
Future Volume (vph)	436	Ξ	413	443	1084	821	308	
urn Type	Perm	≨	Perm	Prot	¥	Ϋ́	Perm	
Protected Phases		∞		22	7	9		
Permitted Phases	∞		∞				9	
Detector Phase	∞	œ	∞	2	2	9	9	
Switch Phase								
Minimum Initial (s)	2.0	5.0	2.0	5.0	2.0	2.0	2.0	
Minimum Split (s)	21.0	21.0	21.0	10.0	21.0	21.0	21.0	
Total Split (s)	39.0	39.0	39.0	24.0	71.0	47.0	47.0	
otal Split (%)	35.5%	35.5%	35.5%	21.8%	64.5%	42.7%	42.7%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1:0	1.0	1:0	1.0	1.0	1.0	1.0	
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0:0	
otal Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag				Lead		Lag	Lag	
-ead-Lag Optimize?								
Recall Mode	Min	Min	Z Wij	Min	C-Max	C-Max	C-Max	
Act Effct Green (s)	33.3	33.3	33.3	18.4	2.99	43.3	43.3	
Actuated g/C Ratio	0.30	0.30	0.30	0.17	0.61	0.39	0.39	
//c Ratio	0.48	0.48	0.95	0.85	0.39	0.45	0.41	
Control Delay	34.9	34.9	68.4	7 .	17.0	25.8	4.1	
Queue Delay	0:0	0.0	0.0	0.0	0.2	0.0	0:0	
otal Delay	34.9	34.9	68.4	5 7.	17.2	25.8	4.1	
SO:	ပ	ပ	ш	۵	В	O	∢	
Approach Delay		51.0			28.0	19.9		
Approach LOS					O	Ω		
ntersection Summary								
Sycle Length: 110								
Actuated Cycle Length: 110	cha of boo	TGIN-C 02	JO: 8 Puc	T Ctort	- CO.			
Natural Cycle: 60	00000	20 2:10	a a a a a a a a a a a a a a a a a a a), Otal C	B 5			
Control Type: Actuated-Coordinated	dinated							
Maximum v/c Ratio: 0.95								
ntersection Signal Delay: 31.0	0.			Ξ	tersection	Intersection LOS: C		
ntersection Capacity Utilization 56.6%	on 56.6%			2	ll evel	CU Level of Service B	æ	
	0,000,00			2	1	200	_	

0.00

2050 0.44 2050 1.00 1.00 23.7 0.7 0.0 9.4

0.00 0.00 0.00 0.0 0.0 0.0

3074 0.38 3074 2.00 0.0 0.0 0.0 0.0

0.00 0.00 0.0 0.0 0.0

5537 0.31 482 1714 14.8 14.8 537 0.90 592 592 592 593 36.9 0.0 0.8 36.9

892 24.3

38.3 5.0 34.0 32.7 0.6

49.5 5.0 42.0 16.0 6.7

5.0 5.0 19.0 16.8

5.0 5.0 66.0 2.0 11.3

Change Period (Y+Rc), s Max Green Setting (Gmax), s Max Q Clear Time (g_c+11), s Green Ext Time (p_c), s

Phs Duration (G+Y+Rc), s

imer - Assigned Phs

Approach Delay, s/veh Approach LOS

Approach Vol, veh/h

24.3

0.0

0.0

0.3 1660

50.4

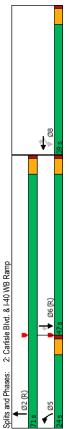
64.6 E

0.0 A

31.3

Initial Q Delay(d3),s/veh %ile BackOfQ(95%),veh/in Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh

932 47.4 D



2031 AM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2031ANX.syn

Synchro 10 Report 2031ANX.syn 2031 AM Peak NOBUILD Conditions - Existing Geometry

User approved volume balancing among the lanes for furning movement. Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

26.0

HCM 6th Ctrl Delay HCM 6th LOS

Terry O. Brown, PE HCM 6th Signalized Intersection Summary
3: Carlisle Blvd. & I-40 EB Ramp

												l
	1	Ť	<u> </u>	\	ţ	4	•	←	•	۶	→	•
Movement	田田	EBT	EB	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	K.	2,	R.R.					Ħ	æ	K.	444	
Traffic Volume (veh/h)	711	۲.	733	0	0	0	0	931	269	205	957	0
Future Volume (veh/h)	711	7	733	0	0	0	0	931	569	202	957	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1:00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1:00	9. 5	1.00				1.00	1.00	1.00	1.00	0.1	1.00
Work Zone On Approach Adi Sat Flow veh/h/ln	1856	NO 4856	1856				-	1856 1856	1856	1856	NO 1856	
Adj Flow Rate, veh/h	773	0	802				0	1012	292	223	1040	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	က	က	က				0	က	က	က	က	0
Cap, veh/h	698	0	1160				0	4016	840	286	3359	0
Arrive On Green	0.25	0.00	0.25				0.00	1.00	1.00	0.11	0.88	0.00
Sat Flow, veh/h	3534	0	4717				0	1867	1572	3428	5233	0
Grp Volume(v), veh/h	773	0	802				0	1012	292	223	1040	0
Grp Sat Flow(s), veh/h/ln	1767	0	1572				0	1503	1572	1714	1689	0
Q Serve(g_s), s	23.2	0.0	17.0				0.0	0:0	0.0	7.0	3.7	0.0
Cycle Q Clear(g_c), s	23.2	0:0	17.0				0.0	0.0	0.0	7.0	3.7	0.0
Prop In Lane	00		1.00				0.00		0 :	1.00		0.00
Lane Grp Cap(c), veh/h	698	0	1160				0	4016	840	286	3359	0
V/C Ratio(X)	0.89	0.00	69.0				0.00	0.25	0.35	0.78	0.31	0.00
Avail Cap(c_a), veh/h	300	0 6	1201				0 0	4016	840	374	3329	0 0
HCM Platoon Katio	00.	9.5	00.1				00.1	2.00	2.00	25.1	ار ال	0.1
Upstream Filter(I)	00.1	0.0	1.00				0.00	0.33	0.33	0.89	 	0.0
Uniform Delay (d), s/ven	40.0	0.0	3/./				0.0	0.0	0.0	9.74 9.7	4.4	0.0
Incr Delay (dz), s/ven	7.0	0.0	<u> </u>				0.0	0.0	4.0	ο ο ο	7.0	0.0
Initial Q Delay(d3),s/ven	0.0	0.0	0.0				0.0	0:0	0.0	0.0	0.0	0.0
%ile BackOrQ(95%),ven/in	10.8	0:0	6.0				0.0	0.0	7.0	2.7	χ. 	0.0
Unsig. Movement Delay, s/ven	100	ć	000				c	c	Š	247	ď	c
Liferp Delay(u),s/veri	20.7	0. Q	ე ე				0.0 4	0.0 4	5. d	7.4.	0.2 A	0.0 A
Annroach Vol. veh/h		1575	١				:	1304	:		1263	
Approach Delay, s/veh		44.9						0.1			11.8	
Approach LOS		۵						⋖			Ф	
Timer - Assigned Phs	-	2		4		9						
Phs Duration (G+Y+Rc), s	14.2	63.8		32.1		77.9						
Change Period (Y+Rc), s	2.0	2.0		2.0		2.0						
Max Green Setting (Gmax), s	12.0	22.0		28.0		72.0						
Max Q Clear Time (g_c+l1), s	9.0	2.0		25.2		2.7						
Green Ext Time (p_c), s	0.2	10.6		1.8		9.4						
Intersection Summary												
HCM 6th Ctrl Delay			20.7									
HCM 6th LOS			ပ									
Notes												

C-Max 72.0 0.65 0.32 11.3 0.1 11.4 E 21.6

Min 11.2 0.10 0.64 69.0 0.0 69.0

C-Max 55.8 0.51 0.31 3.4 0.0

C-Max 55.8 0.51 0.27 14.7 14.7

Min 28.0 0.25 0.74 44.6 0.0

Min 28.0 0.25 0.89 53.7 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 28.0 0.25 0.74 51.6 0.0 51.6 D D D

> Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

5.0 21.0 77.0 70.0% 4.0 1.0 0.0 5.0

> 4.0 1.0 0.0 5.0 ead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

4.0 1.0 0.0 5.0

5.0 10.0 17.0 15.5%

5.0 21.0 60.0 54.5%

5.0 21.0 60.0 54.5%

5.0 21.0 33.0 30.0%

5.0 21.0 33.0 30.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

957 NA

> 205 205 Prot

> > 269 269 Perm

931 NA

733 733 Pem

11 7 11 12 EB

Lane Configurations
Traffic Volume (vph)
Future Volume (vph)
Turn Type
Protected Phases
Permitted Phases
Defector Phase

Timings 3: Carlisle Blvd. & I-40 EB Ramp

†

Notes
User approved volume balancing among the lanes for turning movement.

2031 AM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2031ANX.syn

₽04

3: Carlisle Blvd. & I-40 EB Ramp

Splits and Phases:

Ø6 (R)

Intersection LOS: C ICU Level of Service B

Intersection Signal Delay: 29.5 Intersection Capacity Utilization 56.6% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.89

Actuated Cycle Length: 110 Offset: 101.2 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 55 2031 AM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2031ANX.syn

HCM 6th Signalized Intersection Summary 4: Carlisle Blvd. & Indian School Rd.

Timings 4: Carlisle Blvd. & Indian School Rd.

†

536

891 891 A

¥ 303 2

506

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase

Protected Phases

	•		/	`	ļ	*	1	+	4	ز	_	٦
	١	Ť	>	*		/		_	L	•	+	•
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u>r</u>	4₽		¥-	4₽		*	444		*	44	~
Traffic Volume (veh/h)	206	313	62	ß	303	135	96	891	21	234	798	536
Future Volume (veh/h)	206	313	62	25	303	135	96	891	21	234	798	236
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	Ŭ
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		%			8			S			8	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	220	340	/9	200	329	147	104	896	22	524	867	3
Peak nour radol	26.0	0.92	0.92	0.92	0.92	0.92	0.92	26.0	26.0	26.0	26.0	0.92
Can veh/h	433	925	180	۲۲ د	404	, t	249	2 717	٥ ک	360	1416	933
Arrive On Green	032	0.53	0.53	50	0.17	0 17	0.06	0.35	0.35	0.14	0 23	0.53
Sat Flow, veh/h	1767	2942	573	1767	2385	1045	1767	4904	278	1767	3526	1572
Gro Volume(v). veh/h	220	202	205	29	241	235	104	999	357	254	867	583
Grp Sat Flow(s),veh/h/ln	1767	1763	1752	1767	1763	1667	1767	1689	1805	1767	1763	1572
Q Serve(g_s), s	21.0	7.4	9.7	3.0	14.5	15.0	4.1	17.6	17.6	8.6	18.7	25.5
Cycle Q Clear(g_c), s	21.0	7.4	9.7	3.0	14.5	15.0	4.1	17.6	17.6	8.6	18.7	25.5
Prop In Lane	1.00		0.33	1.00		0.63	1.00		0.15	1.00		1:00
Lane Grp Cap(c), veh/h	433	222	221	311	299	282	249	1183	632	360	1416	932
V/C Ratio(X)	1.27	0.36	0.37	0.19	0.81	0.83	0.42	0.56	0.56	0.71	0.61	0.63
Avail Cap(c_a), veh/h	433	222	221	423	401	379	343	1183	632	362	1416	932
HCM Platoon Ratio	1.67	1.67	1.67	9:	1.00	8.	1:00	0.1	1.00	1.33	3	1.33
Upstream Filter(I)	0.99	0.99	0.99	0.98	0.98	0.98	0.96	96.0	96.0	0.89	0.89	0.89
Uniform Delay (d), Siven	138.2	7.6	7.0	20.	0.4	44.Z	1.17	1 9	2.0.3	20.0	. c	- 0
Initial O Delay(d3) s/veh	0.0	00	0	0.0	0.0	00	0 0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%).veh/ln	36.3	4.9	5.0	2.3	1.7	11.1	3.1	11.6	12.6	7.3	10.9	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	165.1	20.0	20.1	35.3	52.5	22.0	22.7	30.8	32.4	25.5	21.5	14.0
LnGrp LOS	ш	ပ	ပ	۵	۵	۵	O	ပ	ပ	ပ	ပ	٦
Approach Vol, veh/h		957			535			1127			1704	
Approach Delay, s/veh		103.4			51.7			30.6			19.5	
Approach LOS		ட						O			В	
Timer - Assigned Phs	_	2	က	4	5	9	7	8				
Phs Duration (G+Y+Rc), s	16.8	43.5	10.0	39.6	11.2	49.2	26.0	23.6				
Change Period (Y+Rc), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
Max Green Setting (Gmax), s		32.0	12.0	34.0	12.0	32.0	21.0	25.0				
Max Q Clear Time (g_c+I1), s	_	19.6	2.0	9.6	6.1	27.5	23.0	17.0				
Green Ext Time (p_c), s	0.0	5.2	0.0	2.2	0.1	3.0	0.0	1.7				
Intersection Summary												
HCM 6th Ctrl Delay			44.9									
001-701101			c									

5.0 10.0 26.0 23.6% 4.0 1.0 0.0 5.0 Lead

5.0 21.0 37.0 33.6%

5.0 10.0 26.0 23.6%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

Min 66.5 0.60 0.55 19.2 19.2

Min 53.5 0.49 0.77 39.0 0.0

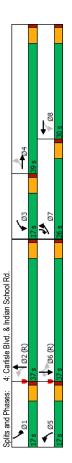
Min 0.39 0.39 0.0 0.0 19.4

Min 27.1 0.25 0.20 0.20 0.0 21.5 C.0 C.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 32.8 0.30 0.39 30.6 0.0 C C C

C-Max 40.5 0.37 0.67 29.0 0.0 29.0 C C



Intersection LOS: DICU Level of Service E

Intersection Signal Delay: 51.7 Intersection Capacity Utilization 88.7% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.33

Actuated Cycle Length: 110 Offset: 8.8 (8%), Referenced to phase 2.NBTL and 6:SBTL, Start of Green

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

2031 AM Peak NOBUILD Conditions - Existing Geometry

2031 AM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2031ANX.syn

Synchro 10 Report 2031ANX.syn

HCM 6th Signalized Intersection Summary

5: Washington St. & Indian School Rd

†

228 228 228

Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)

1.00 No 1856 191 0.92 3 317 0.21 1481

1.00 No 1856 263 0.92 3 3 1252 0.41 149 1763 4.3

8 8 0 0 0

0 8 8

8.8

8.8

1.00 No 248 0.92

initial Q (Qb), veh
Ped-Bike Adj(A_pbT)
Parking Bus, Adj
Work Zone On Approach
Adj Sat How, vehlr/lin
Adj Flow Rate, vehlr/lin
Peak Hour Fador
Percent Heavy Veh, %

1856 71 0.92

0.0 0.0

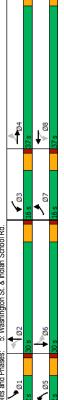
577 71 71 71 1.8 1.8 1.00 577 711 1.00 1.00

Cap, vehinh
Arrive On Green
Sat Flow, vehinh
Grp Volume(v), vehinh
Grp Sat Flow(s), vehinh
Q Servel(g, S), s
Cycle Q Cleari(g, c), s
Prop in Lane
Lane Grp Cap(c), vehinh
VIC Ratio(X)
Avail Cap(c, a), vehinh
HCM Platoon Ratio

3 1212 0.41 2988 145 1763 4.2

5: Washington St. & Indian School Rd.	& Indiar	Scho	ol Rd.						1 erry O. Brown, PE 06/27/2019
	•	†	•	ţ	•	←	۶	→	
Lane Group	EB	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	*	4₽	×	4₽	×	æ,	*	¢	
Traffic Volume (vph)	65	228	19	242	2	176	40	126	
Future Volume (vph)	92	228	19	242	2	176	40	126	
Turn Type	pm+pt	≨	pm+pt	¥	pm+pt	ΑN	pm+pt	¥	
Protected Phases	7	4	က	∞	2	2	-	9	
Permitted Phases	4		∞		2		9		
Detector Phase	7	4	က	∞	2	7	-	9	
Switch Phase									
Minimum Initial (s)	2.0	5.0	2.0	5.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	
Total Split (s)	16.0	37.0	16.0	37.0	12.0	30.0	12.0	30.0	
Total Split (%)	16.8%	38.9%	16.8%	38.9%	12.6%	31.6%	12.6%	31.6%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1:0	1.0	
Lost Time Adjust (s)	0:0	0.0	0.0	0.0	0:0	0.0	0:0	0.0	
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?									
Recall Mode	Ξ	Max	Ξ	Max	Mi	Ē	Ψį	Ψį	
Act Effct Green (s)	40.8	33.5	38.3	32.2	24.2	17.4	23.6	17.1	
Actuated g/C Ratio	0.49	0.40	0.46	0.39	0.29	0.21	0.28	0.20	
v/c Ratio	0.13	0.21	0.04	0.23	0.30	0.61	0.14	0.77	
Control Delay	11.7	16.6	11.5	18.0	21.7	35.6	19.1	37.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	11.7	16.6	11.5	18.0	21.7	35.6	19.1	37.9	
ros	Ω	ω	ш	ш	ပ	۵	ω	۵	
Approach Delay		15.6		17.6		32.2		35.6	
Approach LOS		В		В		O		٥	
Intersection Summary									
Cycle Length: 95									
Actuated Cycle Length: 83.6									
Natural Cycle: 65									
Control Type: Semi Act-Uncoord	oord								
Maximum v/c Ratio: 0.77									
Intersection Signal Delay: 25.1	5.1			☱	Intersection LOS: C	LOS: C			
Intersection Capacity Utilization 48.9%	tion 48.9%			೦	CU Level of Service A	f Service	⋖		
Analysis Period (min) 15									





2031 AM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2031ANX.syn

2031 AM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2031ANX.syn

154 0 1.00 1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0 347 28 28 1.00 No 1856 137 0.92 3 3 163 0.21 761 5 4 ° 8.8 43 43 31 31 31 43 31 44 43 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 1 88 80 00 00 29.5 C

715 0.21 1.00 1.00 15.2 0.7 0.0 3.1

715 0.20 715 1.00 1.00 152 0.6 0.0

0.0

23.5

15.9 B

15.9 B 323 15.6 B

11.4 B

15.9 B

15.8 B

11.8

Incr Delay (d2), siveh Initial Q Delay (d3), siveh Wile BackOfQ(95%), vehAln Unsig. Movement Delay, siveh LnGrp Delay(d), siveh

Uniform Delay (d), s/veh

Upstream Filter(I)

364 15.0 B

Approach Delay, s/veh Approach LOS imer - Assigned Phs

Approach Vol, veh/h

308 28.0 C

37.0 5.0 32.0 6.4 1.6

10.0 11.0 3.8 0.1

21.9 5.0 25.0 15.6 1.2

10.0 5.0 7.0 4.6 0.0

37.0 5.0 32.0 6.3 1.6

10.0 11.0 2.5 0.0

21.9 5.0 25.0 11.2

0.0 7.0 3.4 0.0

Phs Duration (G+Y+Rc), s Change Period (Y+Rc), s Max Green Setting (Gmax), s Max Q Clear Time (g_c+l1), s Green Ext Time (p_c), s 23.5

HCM 6th Ctrl Delay HCM 6th LOS

HCM 6th Signalized Intersection Summary 6: Carlisle Blvd. & Constitution Ave. Terry O. Brown, PE 06/27/2019

6: Carlisle Blvd. & Constitution Ave.	Constitu	tion A	ve.								06/27/2019
	•	†	<i>></i>	>	ţ	4	•	←	٠	→	•
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	*	+	*	<u>.</u>	+	*-	<u></u>	₩	<u>~</u>	*	¥
Traffic Volume (vph)	\$	92	12	29	166	6	15	493	20	544	215
Future Volume (vph)	\$	92	15	29	166	6	15	493	70	544	215
Turn Type	Perm	≨	Perm	Perm	Ϋ́	Perm	Perm	ΑN	Perm	Ϋ́	Perm
Protected Phases		4			80			2		9	
Permitted Phases	4		4	∞		∞	2		9		9
Detector Phase	4	4	4	œ	∞	∞	7	7	9	9	9
Switch Phase											
Minimum Initial (s)	2.0	2.0	2.0	2.0	2.0	5.0	2.0	2.0	5.0	2.0	5.0
Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
Total Split (s)	38.0	38.0	38.0		38.0	38.0	72.0	72.0	72.0	72.0	72.0
Total Split (%)	34.5%	34.5%	34.5%		34.5%	34.5%	65.5%	65.5%	65.5%	65.5%	65.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0:0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	5.0	5.0	2.0	5.0
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	Min	Ē	Ξ	Mi	Ē	Ē	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	17.4	17.4	17.4	17.4	17.4	17.4	82.6	82.6	82.6	82.6	82.6
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.16	0.75	0.75	0.75	0.75	0.75
v/c Ratio	0.87	0.34	90:0	0.33	0.62	0:30	0.03	0.21	0.12	0.43	0.19
Control Delay	94.3	45.8	12.5	43.5	51.6	6.6	2.0	4.7	0.7	2.8	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0
Total Delay	94.3	45.8	12.5	43.5	51.6	6.6	2.0	4.7	0.7	2.8	0.3
SOT	ш	_	മ	□	۵	∢	∢	⋖	⋖	∢	∢
Approach Delay		96.1			38.2			4.8		2.0	
Approach LOS		ш			۵			∢		∢	
Intersection Summary											
Cycle Lenath: 110											
Actuated Cycle Length: 110											
Offset: 63.8 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	ced to phas	e 2:NBTL	and 6:SE	3TL, Start	of Green						
Natural Cycle: 45											
Control Type: Actuated-Coordinated	ordinated										
Maximum v/c Ratio: 0.87											
Intersection Signal Delay: 16.0	0.9			Ĭ	Intersection LOS: B	LOS: B					
Intersection Capacity Utilization 64.0%	ition 64.0%			☲	CU Level of Service B	f Service	<u>a</u>				

98 98 98 33 331 90.21 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11

203 0.21 113 113 11.1 11.1 20.4 1.00 203 0.56 301 1.00 1.00

Cap, veh/h
Arrive On Green
Sat Flow, veh/h
Gp Volume(v), veh/h
Grp Sat Flow(s), veh/h
Grp Sat Flow(s), veh/h
Grp Carrig_0, s
Cycle Q Clear(g_0), s
Frop in Lane
Lane Grp Cap(c), veh/h

1296 0.46 1296 2.00 0.72 0.0 0.0 0.0 0.0

0.22 0.22 1.33 1.00 5.9 0.4 0.0 3.8

390 0.46 557 1.00 1.00 38.0 0.8 0.0 7.7

390 0.26 557 1.00 1.00 36.2 0.3 0.0

Uniform Delay (d), s/veh

Upstream Filter(I)

V/C Ratio(X)
Avail Cap(c_a), veh/h
HCM Platoon Ratio

901

6.3 A

28.1 5.0 33.0 11.8

81.9 5.0 67.0 9.0 6.0

5.0 5.0 33.0 22.4 0.7

81.9 5.0 67.0 8.1 3.8

Max Q Clear Time (g_c+l1), s Green Ext Time (p_c), s Change Period (Y+Rc), s Max Green Setting (Gmax), s

Phs Duration (G+Y+Rc), s

13.3

HCM 6th Ctrl Delay HCM 6th LOS

9.0

6.3

6.3

5.2

37.1

38.8 D 342

40.8 D

34.7 C

36.6 D

49.3

Incr Delay (d2), s/veh Initial Q Delay(d3),s/veh %ile BackOfQ(95%),veh/ln Unsig. Movement Delay, s/veh LnGrp Delay(d),s/veh

229 42.7 D

Approach Delay, s/veh Approach LOS imer - Assigned Phs

Approach Vol, veh/h

1296 11.00 1856 591 0.0 0.0

1.00 No No 1856 536 0.92 3 22406 0.70 0.70 274 274 274 1763 6.1

1.00 No 100 100 3390 0.21 100 100 4.9 4.9

113 0.92 3

Ped-Bike Adj(A_bbT)
Parking Bus, Adj
Work Zone On Approach
Adj Sat Flow, vehh/lin
Peak Hour Fador
Percent Heavy Veh, %

1.00 No 1856 591 0.92

8.8

8.8

21 0 0.1 100 0.1

.6 6 0 0 <u>0</u> 0

401 0 0.10 0 0.10

Initial Q (Qb), veh

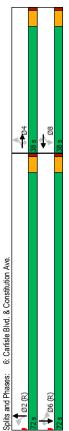
Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)

†

9.0

5 4 4

493



Synchro 10 Report 2031ANX.syn

Synchro 10 Report 2031ANX.syn 2031 AM Peak NOBUILD Conditions

í.		
ig Georgie		
IS - EXISIII		
g		
Z 100 A 101 F		

HCM 6th Signalized Intersection Summary
7: San Mateo Blvd. & I-40 EB Ramp

Timings 7: San Mateo Blvd. & I-40 EB Ramp

†

902 902 803

> 237 237 Prot

1083 NA

Pro 584 7 EB

Lane Configurations
Traffic Volume (vph)
Future Volume (vph)
Turn Type
Protected Phases
Protected Phases
Defector Phase

5.0 21.0 77.0 70.0% 4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 ead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

4.0 1.0 0.0 5.0

5.0 10.0 17.0 15.5%

5.0 21.0 60.0 54.5%

5.0 21.0 60.0 54.5%

5.0 10.0 33.0 30.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

Movement Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)												
Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)	EB	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (veh/h) Future Volume (veh/h)	k.	£,	*					444	*	K.	+++	
Future Volume (veh/h)	584	_	848	0	0	0	0	1083	147	237	905	0
	284	-	848	0	0	0	0	1083	147	237	905	0
	0 9	0	0 5				0 0	0	0 9	0 0	0	0 5
(100	00.1		1.00				1.00		1.00	00.1		1.00
Parking Bus, Adj Mork Zone On Approach	1.00	S. 5	1.00				1:00	9: S	1.00	1.00	S: 5	1.00
Adi Sat Flow weh/h/ln	1856	1856	1856				_	1856	1856	1856	1856	_
Adj Flow Rate, veh/h	635	0	1031				0	1177	0	258	086	0
	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	က	က	က				0	က	က	က	က	0
	006	0	801				0	2609		322	3316	0
_	0.25	0.00	0.25				0.00	0.52	0.00	90:0	4.0	0.00
	3534	0	3145				0	5233	1572	3428	5233	0
	635	0	1031				0	1177	0	258	086	0
veh/h/ln	1767	0	1572				0	1689	1572	1714	1689	0
	18.0	0.0	28.0				0.0	16.1	0.0	8.5	13.7	0.0
r(g_c), s	18.0	0.0	28.0				0.0	16.1	0.0	8.2	13.7	0.0
	1:00		1.00				0.00		1.00	1:00		0.00
p(c), veh/h	000	0	80.1				0	2609		322	3316	0
	0.71	0.00	1.29				0.00	0.45		0.80	0.30	0.00
Avail Cap(c_a), ven/n ucM Distess Detis	900	5 5					5	700	6	3/4	33.10	0 0
	8.6	8.8	8.5				00.0	0.0	00.0	0.07	70.0	9.0
dev/s	37.3	000	41.0				000	16.8	0.00	50.5	14.5	000
	2.5	0.0	138.9				0.0	90	0.0	80	0.0	0.0
Initial Q Delav(d3).s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/In	12.6	0.0	39.4				0.0	10.3	0.0	6.8	9.2	0.0
Unsig. Movement Delay, s/veh												
y(d),s/veh	39.8	0.0	179.9				0.0	17.4	0.0	58.5	14.7	0.0
LnGrp LOS	۵	٨	ш				⋖	В		ш	В	٩
Approach Vol, veh/h		1666						1177	4		1238	
Approach Delay, s/veh		126.5						17.4			23.8	
Approach LOS		ш						മ			ပ	
Timer - Assigned Phs	-	2		4		9						
	15.3	61.7		33.0		77.0						
	2.0	2.0		2.0		2.0						
	12.0	55.0		28.0		72.0						
Max Q Clear Time (g_c+l1), s Green Ext Time (p_c). s	10.2	18.1		30.0		15.7						
Intersection Summan												
Intersection Summary			0 00									
HOM 6th Ctfl Delay			9.20 P. T									
HCM 6m LOS			ш									
Notes												

C-Max 72.0 0.65 0.30 2.5 0.0 2.5 A 12.8 B

Min 11.6 0.11 0.72 52.0 0.0 52.0

C-Max 55.4 0.50 0.18 2.8 2.8 2.8 2.8

Min 28.0 28.0 0.25 1.05 82.5 82.5 82.5

Min 28.0 0.25 1.05 83.1 0.0 83.1

Min 28.0 0.25 0.73 43.5 0.0 0.0 0.0 D

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

C-Max 55.4 0.50 0.46 18.5 0.0 18.5 18.5 33.5

± 04 83 s 07

Intersection LOS: DICU Level of Service C

Intersection Signal Delay: 35.6 Intersection Capacity Utilization 64.9% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.05

7: San Mateo Blvd. & I-40 EB Ramp

Splits and Phases:

Ø6 (R)

Actuated Cycle Length: 110 Offset: 90.2 (82%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 55 Synchro 10 Report 2031ANX.syn

2031 AM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2031ANX.syn

2031 AM Peak NOBUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary Terry O. Brown, PE 8: San Mateo Blvd. & I-40 WB Ramp 66/27/2019

8: San Mateo Blvd. & I-40 WB Ramp

Timings

Movement Lane Configurations Traffic Volume (veh/h)		ŀ	•	•			-	-			•	,
Movement Lane Configurations Traffic Volume (veh/h)						•	-					
Lane Configurations Traffic Volume (veh/h)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (veh/h)	K.		*	K.	+	*-	K.	444			444	*-
Eisturo Volume (veh/h)	62	0	188	345	172	406	149	974	0	0	1083	96
Luture voiume (vervir)	62	0	188	342	172	406	149	974	0	0	1083	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		8			S			2			8	
Adj Sat Flow, veh/h/ln	1856	0	1856	1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h	29	0	504	372	187	441	162	1059	0	0	1177	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	က	0	က	က	က	က	က	က	0	0	က	က
Cap, veh/h	156	0	0	1028	388	329	227	3085	0	0	2520	854
Arrive On Green	0.05	0.00	0.00	0:30	0.21	0.21	0.09	0.81	0.00	0.00	0.50	0.50
Sat Flow, veh/h	3428	29		3428	1856	1572	3428	5233	0	0	5233	1572
Grp Volume(v), veh/h	29	53.0		372	187	441	162	1059	0	0	1177	104
Grp Sat Flow(s),veh/h/ln	1714	Ω		1714	1856	1572	1714	1689	0	0	1689	1572
Q Serve(g_s), s	2.1			9.4	8.6	23.0	5.1	0.9	0.0	0.0	16.7	3.6
Cycle Q Clear(g_c), s	2.1			9.4	9.8	23.0	2.1	0.9	0.0	0.0	16.7	3.6
Prop In Lane	1.00			9.		1:00	1.00		0.00	0.00		9.
Lane Grp Cap(c), veh/h	156			1028	388	329	227	3085	0	0	2520	854
V/C Ratio(X)	0.43			0.36	0.48	۲. کخ	0.71	0.34	0.00	0.00	0.47	0.12
Avail Cap(c_a), veh/h	312			1028	388	329	405	3085	0	0	2520	824
HCM Platoon Ratio	00.			9.	0.0	9:	1.33	1.33	1.00	1.00	9.	9.5
Upstream Filter(I)	1.00			9.	1.00	9:	0.81	0.81	0.00	0.00	0.1	1.00
Uniform Delay (d), s/veh	51.1			30.2	38.3	43.5	49.1	4.7	0.0	0:0	18.	12.3
Incr Delay (d2), s/veh	6.			0.2	6.0	172.7	3.4	0.2	0.0	0.0	9.0	0.3
Initial Q Delay(d3),s/veh	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0:0	0:0	0:
%ile BackOfQ(95%),veh/ln	1.7			7.0	8.0	37.7	4.0	3.2	0.0	0.0	10.6	2.3
Unsig. Movement Delay, s/veh					;		1					
LnGrp Delay(d),s/ven	53.0			30.4	39.5	216.2	52.5	9.4 9.4	0.0	0.0	18./	12.6
Lugib LOS				د	٥	-		∢	∢	⋖	20	_
Approach Vol, veh/h					1000			1221			1281	
Approach Delay, s/veh					114.0			11.2			18.2	
Approach LOS					ш			В			В	
Timer - Assigned Phs		2	က		22	9	7	80				
Phs Duration (G+Y+Rc), s		72.0	38.0		12.3	59.7	10.0	28.0				
Change Period (Y+Rc), s		2.0	2.0		5.0	2.0	5.0	2.0				
Max Green Setting (Gmax), s		62.0	13.0		13.0	44.0	10.0	23.0				
Max Q Clear Time (g_c+I1), s		8.0	11.4		7.1	18.7	4.1	25.0				
Green Ext Time (p_c), s		9.5	0.2		0.2	9.6	0.1	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			43.3									
HCM 6th LOS			۵									

5.0 10.0 15.0 13.6% 4.0 1.0 0.0 5.0 Lead

5.0 10.0 18.0 16.4%

5.0 21.0 28.0 25.5%

5.0 21.0 28.0 25.5%

5.0 10.0 18.0 16.4%

5.0 21.0 25.0 22.7% 4.0 1.0 0.0 5.0 Lag

1.0

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 ead

4.0 1.0 0.0 5.0 Lag

5.0 10.0 15.0 13.6% 4.0 1.0 0.0 5.0 Lead

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

bm+ov

1083 1083

> 149 149 Prot

> > 406 406

342 342 Pot

88 88

5 8 8 구

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Turn Type
Protected Phases
Permitted Phases
Detector Phase

Min 59.1 0.54 0.12 2.8 2.8 2.8 A

C-Max 62.0 0.56 0.37 16.1 16.1

Min 10.5 0.10 0.50 50.0 0.0 50.0

Min 25.4 0.23 0.94 58.8 0.0 58.8 E

Min 13.0 0.12 0.93 78.7 78.7

Min 20.0 0.18 0.45 8.9 8.9 8.9 8.9 A

Min 7.6 0.07 0.29 51.3 0.0 D

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 25.4 0.23 0.44 40.5 0.0 40.5 D 62.8

C-Max 46.5 0.42 0.55 25.4 0.0 25.4 C C

Intersection LOS: C ICU Level of Service B

Intersection Signal Delay: 32.7 Intersection Capacity Utilization 59.0% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.94

Natural Cycle: 65

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS Actuated Cycle Length: 110 Offset: 49:5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green Synctro 10 Report 2031ANX.syn

2031 AM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2031ANX.syn

2031 AM Peak Hour BUILD Analyses

Terry O. Brown, PE HCM 6th Signalized Intersection Summary 0627/2019 1: Girard Ct. & Indian School Rd.

00.00

8.8

1.00

46 0 1.00 1.00

67 0 0 0.1 0.00 1.00

0 8 8

22009

22088

Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)

initial Q (Qb), veh
Ped-Bike Adj(A_pbT)
Parking Bus, Adj
Work Zone On Approach
Adj Sat How, vehlr/lin
Adj Flow Rate, vehlr/lin
Peak Hour Fador
Percent Heavy Veh, %

1.00 No No 21 21 3 3 69 69 0.11 650

1.00 No 13 13 0.92 3 166 0.11

1.00 No 1856 626 0.92 3 2266 0.24 3181 346 1763 8.8

1.00 No No 277 2.37 0.92 3.2340 0.71 148 1763 1.44

Lane Group Lane Configurations The Configura										
Min		1	†	/	ţ	•	←	٠	→	
12 74 12 14 18 18 18 18 18 18 18 18 18 18 18 18 18	Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
12 74 12 74 12 74 12 74 12 74 12 74 12 74 13 25.0 5.0 2 14.0 25.0 25.0 2 15.0 5.0 2 10 0.0 0.0 17.3 24.8 1 17.3 24.8 1 17.3 24.8 1 17.3 24.8 1 17.3 24.8 1 17.3 24.8 1 17.5 C.5 0	Lane Configurations	*	₩.	*	₩	*	43	×	£\$	
12 74 NA Perm 2 6 6 2 6 6 2 6 6 50 50 21.0 2 25.0 25.0 25.0 25.0 25.0 25.0 25.0	Traffic Volume (vph)	21	255	Ξ	929	46	12	74	19	
NA Perm 2 6 6 2 6 6 5.0 5.0 21.0 2 2.0 21.0 2 2.0 25.0 25.0 25.0 25.0 25.0 25.0 2	Future Volume (vph)	21	255	Ħ	9/9	46	12	74	19	
2 6 6 50 50 50 50 50 50 50 50 50 50 50 50 50	Turn Type	Perm	≨	Perm	ΑN	Perm	Ϋ́	Perm	ΑĀ	
210 210 210 210 210 210 210 210 210 210	Protected Phases		4		∞		2		9	
2 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Permitted Phases	4		80		2		9		
5.0 5.0 21.0 21.0 25.0 25.0 4.0 4.0 1.0 1.0 1.0 0.0 0.0 0.0 5.0 5.0 8.6 8.6 0.16 0.16 0.05 0.37 17.3 24.8 B C 20.9 C C	Detector Phase	4	4	∞	∞	2	2	9	9	
5.0 5.0 25.0 25.0 25.0 25.0 4.0 40.0 1.0 0.0 5.0 5.0 5.0 6.0 6.0 17.3 24.8 8 6 0.0 0.0 17.3 24.8 0.0 0.0 0.0 0.0	Switch Phase									
210 210 25.0 250 45.% 45.% 45.% 45.% 10 10 0.0 0.0 5.0 5.0 6.0 6.0 17.3 24.8 8 8 0.0 0.0 17.3 24.8 C 20.9 C C	Minimum Initial (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
25.0 25.0 45.5% 45.5% 45.5% 45.5% 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Minimum Split (s)	21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0	
45.% 455.% 455.% 455.% 455.% 455.% 455.% 450.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Total Split (s)	30.0	30.0	30.0	30.0	25.0		25.0	25.0	
4.0 4.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	Total Split (%)	54.5%	24.5%	24.5%	54.5%	45.5%		45.5%	45.5%	
1.0 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
0.0 0.0 5.0 5.0 6.0 6.0 0.16 0.16 0.16 0.05 0.37 17.3 24.8 0.0 0.0 17.3 24.8 C 20.9 C 20.9 C 20.9	All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
5.0 5.0 Min Min 8.6 8.6 0.0 0.16 0.05 0.37 17.3 24.8 0.0 0.0 17.3 24.8 C 20.9 C C C C C Service A Service A Service A	Lost Time Adjust (s)	0.0	0.0	0:0	0.0	0.0	0.0	0.0	0:0	
Min Min Min 8.6 8.6 8.6 0.16 0.16 0.15 0.37 17.3 24.8 0.0 0.0 17.3 24.8 C C C C C C Service A Service A	Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Min Min 8.6 8.6 0.16 0.16 0.15 0.05 0.37 17.3 24.8 0.0 17.3 24.8 E C 20.9 C C	Lead/Lag									
Min Min 8.6 8.6 0.16 0.16 0.05 0.37 17.3 24.8 17.3 24.8 B C 20.9 C C C	Lead-Lag Optimize?									
8.6 8.6 0.06 0.16 0.05 0.37 17.3 24.8 0.0 0.0 17.3 24.8 C C C C C C C C C C C C C C C C C C C	Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min	Min	Min	
0.16 0.16 0.05 0.37 17.3 24.8 0.0 0.0 17.3 24.8 E C 20.9 C C	Act Effct Green (s)	36.4	36.4	36.4	36.4	9.6	9.8	9.8	9.6	
0.05 0.37 17.3 24.8 0.0 20.9 20.9 C C C C C Service A	Actuated g/C Ratio	99.0	99.0	99.0	99.0	0.16	0.16	0.16	0.16	
17.3 24.8 0.0 0.0 17.3 24.8 18 C 20.9 C C C C C Service A	v/c Ratio	0.05	0.13	0.02	0.31	0.24	0.05	0.37	0.19	
0.0 0.0 17.3 24.8 B C 20.9 C C C C Service A Service A	Control Delay	4.5	3.8	2.4	2.9	22.0	17.3	24.8	12.1	
17.3 24.8 B C 20.9 C C C C	Queue Delay	0.0	0.0	0:0	0.0	0.0	0.0	0.0	0:0	
20.9 C C C C C C C Service A	Total Delay	4.5	3.8	2.4	2.9	22.0	17.3	24.8	12.1	
20.9 C C C C C Service A	SOT	∢	⋖	⋖	⋖	O	ш	ပ	В	
C Sonvice A	Approach Delay		3.8		5.9		20.9		19.7	
Intersection Summary Cycle Length: 55 Actuated Cycle: Length: 55 Offset 17.6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green Natural Cycle: 45 Control Type: Actuated-Coordinated Maximum Vic Ratio: 0.37 Intersection Status Intersection 10.37 Intersection (2011 Peak) ICUI Level of Service A	Approach LOS		∢		∢		ပ		В	
Cycle Length: 55 Actuated Cycle Length: 55 Offset 17.6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green Natural Cycle: 45 Control Type: Actuated-Coordinated Maximum Vic Ratio: 0.37 Intersection Start Delay: 5.9 Intersection (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (2017) (201	Intersection Summary									
Actuated Cycle Length: 55 Offset T76 (22%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green Natural Cycle: 45 Control Type: Actuated-Coordinated Maximum Vic Ratio: 0.37 Intersection Start Delay: 62 Intersection LOS: A Intersection Canacht Utilization 37.2% ICUI level of Service A	Cycle Length: 55									
Offset: 17.6 (32%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green Natural Cycle: 45 Control Type: Actualed-Coordinated Maximum Vic Ratural Coordinated Intersection Signal Delay: 5.9 Intersection Canach Utilization 37.2% ICLI Level of Service A	Actuated Cycle Length: 55									
- - -	Offset: 17.6 (32%), Referent Natural Cycle: 45	sed to phas	e 4:EBTL	and 8:W	BTL, Star	t of Greer	_			
: 5.9 ization 37.2%	Control Type: Actuated-Coo	rdinated								
	Maximum v/c Ratio: 0.3/									
	Intersection Signal Delay: 5.	6			드	tersection	LOS: A			
	Intersection Capacity Utilizat	tion 37 2%			_	ava	f Sprvice	٨		

73 73 73 73 70.92 70.24 8.9 8.9 8.9 8.9 8.9 0.21 1274 1274 9.4 9.4 4.0

Cap, vehinh
Arrive On Green
Sat Flow, vehinh
Grp Volume(v), vehinh
Grp Sat Flow(s), vehinh
Q Servel(g, S), s
Cycle Q Cleari(g, c), s
Prop in Lane
Lane Grp Cap(c), vehinh
VIC Ratio(X)
Avail Cap(c, a), vehinh
HCM Platoon Ratio

0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

0.28 0.28 0.33 0.74 9.4 0.0 4.0

1256 0.12 1.00 1.00 2.5 0.2 0.0 0.4

Uniform Delay (d), s/veh

Upstream Filter(I)

134

65 24.3 C

44.2 5.0 25.0 10.9 3.5

10.8 5.0 5.4 5.4

5.0 5.0 25.0 11.7

10.8 5.0 20.0 5.6 0.1

> Change Period (Y+Rc), s Max Green Setting (Gmax), s Max Q Clear Time (g_c+I1), s Green Ext Time (p_c), s

Phs Duration (G+Y+Rc), s

Approach Delay, s/veh Approach LOS Timer - Assigned Phs

Approach Vol, veh/h

10.3

HCM 6th Ctrl Delay HCM 6th LOS

24.3

22.3 C

0.0

24.8 C

9.8 4 117 9.8 A

7.4

2.7

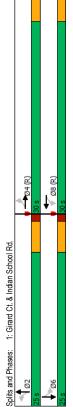
2.7 A 324 2.9 A A

5.9

Incr Delay (d2), s/veh Initial Q Delay(d3),s/veh Skile BackOf(g8%),veh/in Unsig. Movement Delay, s/veh LnGrp Delaay(d),s/veh LnGrp LOS

0.00

0.0 0.0



2031 AM Peak BUILD Conditions - Existing Geometry

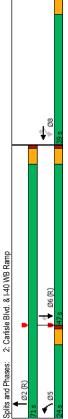
2031 AM F

Synchro 10 Report 2031ABX.syn

2031 AM Peak BUILD Conditions - Existing Geometry 2031 AM Peak BUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 2: Carlisle Blvd. & I-40 WB Ramp Terry O. Brown, PE 06/27/2019

	>	ţ	4	•	←	→	*	
Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR	
Lane Configurations	¥-	4	¥.	1	444	444	W.	
Traffic Volume (vph)	465	Ξ	413	449	1120	874	308	
Future Volume (vph)	465	7	413	449	1120	874	308	
Furn Type	Perm	₹	Perm	Prot	Ϋ́	Ϋ́	Perm	
Protected Phases		∞		S.	2	9		
Permitted Phases	∞		∞				9	
Detector Phase	œ	∞	∞	S.	2	9	9	
Switch Phase								
Minimum Initial (s)	2.0	2.0	2.0	2.0	2.0	2.0	5.0	
Minimum Split (s)	21.0	21.0	21.0	10.0	21.0	21.0	21.0	
Fotal Split (s)	39.0	39.0	39.0	24.0	71.0	47.0	47.0	
Fotal Split (%)	35.5%	35.5%	35.5%	21.8%	64.5%	42.7%	42.7%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
ost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Fotal Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	5.0	
-ead/Lag				Lead		Lag	Lag	
ead-Lag Optimize?								
Recall Mode	Min	E Mi	Min	E Mi	C-Max	C-Max	C-Max	
Act Effct Green (s)	33.3	33.3	33.3	18.5	2.99	43.2	43.2	
Actuated g/C Ratio	0.30	0.30	0.30	0.17	0.61	0.39	0.39	
//c Ratio	0.51	0.51	0.95	0.86	0.40	0.48	0.41	
Sontrol Delay	35.7	35.7	68.4	22.8	16.6	26.3	4.1	
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0	
Fotal Delay	35.7	35.7	68.4	22.8	16.8	26.3	4.1	
SO ⁻	_	0	ш	ш	ш	ပ	∢	
Approach Delay		20.9			27.9	20.5		
Approach LOS		۵			ပ	O		
ntersection Summary								
Cycle Length: 110 Actuated Cycle Length: 110								
Offset: 101.2 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green	ed to pha	se 2:NBT	and 6:SE	T, Start	of Green			
Natural Cycle: 60 Sontrol Type: Actuated-Coordinated	nated							
Maximum v/c Ratio: 0.95								
ntersection Signal Delay: 31.1				드	Intersection LOS: C	LOS: C		
ntersection Capacity Utilization 57.5%	n 57.5%			_	DILL pyol of Convice D	Convious	٥	



2031 AM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2031ABX.syn

0.00 1.00 0.00 0.0 0.0 1.00 2042 0.47 2042 1.00 1.00 24.1 0.8 0.0 24.9 950 1.00 No 1856 950 0.92 2042 0.40 950 950 1689 15.2 0.00 0.0 0.0 0.92 0.00 0.00 0.00 0.00 0.0 0.0 0.0 8.8 0.0 User approved volume balancing among the lanes for furning movement. Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay. 1.00 No 1856 1217 0.92 3073 1.00 1.217 1217 1689 0.0 3073 0.40 3073 2.00 0.0 0.0 0.0 0.0 0.3 1705 38.3 5.0 34.0 32.7 0.6 120 120 9.09 449 449 8.8 1856 488 0.92 64.5 E 8.8 8856 449 0.02 3 3 1572 1572 1572 100 0.04 476 0.09 448 0.09 448 0.09 11.00 0.09 476 0.09 476 0.09 11.00 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 0.09 49.3 5.0 42.0 17.2 7.1 963 47.0 D 0.00 0.00 5.0 5.0 19.0 17.0 0.4 1.00 No 1856 0 0.92 0.00 0.00 0.0 0.0 0.0 0.0 A 1069 0.30 3534 514 113.1 113.1 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 31.7 465 465 0 8 8 26.0 5.0 5.0 66.0 2.0 11.8 † Incr Delay (d2), siveh Initial Q Delay(d3),siveh %ile BackOfQ(95%),veh/lin Unsig. Movement Delay, siveh LnGrp Delay(d),siveh Change Period (Y+Rc), s Max Green Setting (Gmax), s Max Q Clear Time (g_c+11), s Green Ext Time (p_c), s Parking Bus, Adi Work Zone On Approach Adj Sat Flow, vehln/In Adj Flow Rate, veh/Ih Peak Hour Factor Percent Heavy Veh, % Phs Duration (G+Y+Rc), s cap vehin Arrive On Green Sat Flow, vehin Grp Volume(v), vehin Grp Sat Flow(s), vehin Grs Sarve(g. s), s Cycle Q Clear(g. c), s Prop in Lane Lane Grp Cap(c), vehin V/C Ratio(X)
Avail Cap(c_a), veh/h
HCM Platoon Ratio Uniform Delay (d), s/veh Approach Delay, s/veh Approach LOS Traffic Volume (veh/h) Future Volume (veh/h) Ped-Bike Adj(A_pbT) HCM 6th Ctrl Delay HCM 6th LOS Approach Vol, veh/h imer - Assigned Phs Initial Q (Qb), veh Upstream Filter(I)

HCM 6th Signalized Intersection Summary 2: Carlisle Blvd. & I-40 WB Ramp

Timings 2: Carlisle Blvd. & I-40 WB Ramp

Terry O. Brown, PE 06/28/2019

Movement Lane Configurations Traffic Volume (veh/h)												
Lane Configurations Traffic Volume (veh/h)	EB	EBT	EBR	WBL	WBT	WBR	R	NBT	NBR	SBL	SBT	SBR
Traffic Volume (veh/h)				×	4	*	¥.	444			444	*
	0	0	0	465	Ξ	413	449	1120	0	0	874	308
Future Volume (veh/h)	0	0	0	465	11	413	449	1120	0	0	874	308
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				9.		9.1	1:00		1:00	1.00		1:0
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	9:	1.00
Work Zone On Approach				o Lor	02 5	01.01	o Lor	02 0	•	c	2 5	
Adj Sat Flow, veh/h/ln				1856	1856	1856	1856	1856	0 0	0	1856	1856
Auj Flow Kale, venini Peak Hour Factor				060	0 0	202	000	121	0 00	0 00	066	0 0
Percent Heavy Veh. %				3.5	3 8	3 6	3 8	3 8	0.02	0.02	3 6	
Cap, veh/h				811	0	361	542	3443	0	0	2412	
Arrive On Green				0.23	0.00	0.23	0.32	1.00	0.00	0.00	0.48	0.00
Sat Flow, veh/h				3534	0	1572	3428	5233	0	0	5233	1572
Grp Volume(v), veh/h				650	0	303	488	1217	0	0	920	
Grp Sat Flow(s),veh/h/ln				1767	0	1572	1714	1689	0	0	1689	1572
Q Serve(g_s), s				19.1	0.0	20.2	15.0	0.0	0.0	0.0	13.3	0.0
Cycle Q Clear(g_c), s				19.1	0.0	20.2	15.0	0.0	0.0	0.0	13.3	0.0
Prop in Lane				9.5	c	36.1	00.1	2442	0.00	0.00	2412	3
Lane Glp Cap(y), venini V/C Ratio(X)				080	000	28	0.90	0.35	000	000	0.39	
Avail Cap(c a), veh/h				1092	0	486	592	3443	0	0	2412	
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.83	0.83	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				40.0	0.0	40.4	36.8	0:0	0.0	0.0	18.6	0.0
Incr Delay (d2), s/veh				3.2	0.0	9.5	13.8	0.2	0.0	0.0	0.5	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				13.4	0.0	13.5	8.6	0.1	0.0	0.0	8.9	0.0
Unsig. Movement Delay, s/ven				42.0	c	400	3 03	c	c	c	707	0
Lingip Delay(u),s/veii Lingim I OS				7.5	9. A	6.6 C	8.0	y A	S 4	9. A	<u>.</u> a	5
Approach Vol. veh/h					953	1	1	1705			950	٦
Approach Delay, s/veh					45.3			14.6			19.1	•
Approach LOS					۵			Ф			മ	
Timer - Assigned Phs		2			2	9		∞				
Phs Duration (G+Y+Rc), s		79.8			22.4	57.4		30.2				
Change Period (Y+Rc), s		2.0			2.0	2.0		2.0				
Max Green Setting (Gmax), s		0.99			19.0	45.0		34.0				
Max Q Clear Time (g_c+I1), s		5.0			17.0	15.3		22.2				
Green Ext I ime (p_c), s		11.8			4.0	7.7		3.0				
Intersection Summary												
HCM 6th Ctrl Delay			23.9									
HCM 6th LOS			O									
Notes												

C-Max 46.5 0.42 0.39 4.0 0.0

C-Max 46.5 0.42 0.45 24.4 0.0

C-Max 70.5 0.64 0.38 14.5 0.2

Min 18.9 0.17 0.83 51.2 0.0 51.2

Min 29.5 0.27 0.76 49.6 0.0 0.0 D

Min 29.5 0.27 0.75 47.1 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

C 19.1

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

5.0 21.0 47.0 4.0 4.0 1.0 0.0 5.0 Lag

5.0 21.0 71.0 64.5%

5.0 10.0 24.0 21.8%

5.0 21.0 39.0 35.5%

5.0 21.0 39.0

5.0 21.0 39.0 35.5%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

449 Prot

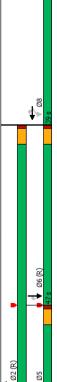
465 465

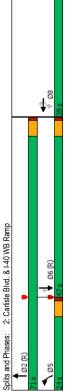
Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase 4.0 1.0 0.0 5.0 Lag

1.0 0.0

4.0 1.0 0.0 5.0 Lead

0.0





Intersection LOS: C ICU Level of Service B

Intersection Signal Delay: 29.1 Intersection Capacity Utilization 61.7% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.83

Actuated Cycle Length: 110 Offset: 101.2 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 60

2031 AM Peak BUILD Conditions - Mitigated Conditions

Synchro 10 Report 2031AB_Mit.syn

2031 AM Peak BUILD Conditions - Mitigated Conditions

Synchro 10 Report 2031AB_Mit.syn

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 3: Carlisle Blvd. & I-40 EB Ramp

Timings 3: Carlisle Blvd. & I-40 EB Ramp

†

SBT 1039 NA NA 6

205 205 Prot

289 289 Perm

11 7 11 12 EB

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase

Tafic Volume (vehin)	1	<i>></i>	\	ţ	4	•	←	•	۶	→	•
HEL EBI WBL WBL WILL WILL WILL WILL WILL WILL		. :		H					ā	. 6	Č
711 7 7 742 0 0 0 771 7 7 742 0 0 0 0 1 771 7 7 7 7 7 7 7 7 7 7 7 7 7		EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
711 7 742 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	4	K.					≣	*-	E	ŧ	
711 7 742 0 0 0 1 100 100 1100 1100 1100 1100 1	711 7	742	0	0	0	0	974	289	202	1039	0
100 0 0 0 1 100 1100 1100 1100 1100 11	711 7	742	0	0	0	0	974	289	202	1039	0
100 1.00 1.00 1.00	0 0					0	0	0	0	0	0
100 1,00 1,00 1,00 1,00 1,00 1,00 1,00						1.00		1.00	1.00		1.00
1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1854 1854 1854 1854 1854 1854 1854 1854 1854 1854 1854 1854 1854 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856 1856	_					1.00	1.00	1.00	1.00	1.00	1.00
1866 1856 1856 1856 1859 1859 1859 1859 1859 1859 1859 1859							2			ટ	
773 0 812 3 3 3 3 869 0 1160 025 0.00 0.25 3634 0 1772 773 0 812 773 0 1772 23.2 0.0 17.2 23.2 0.0 17.2 23.2 0.0 17.2 100 0.0 0.70 900 0 1201 100 0.0 17.0 100 0.0 0.70 900 0 1201 100 0.0 0.70 900 0 1201 100 0.0 0.0 100 0.0 0.0 100 0.0 18 100 0.0 0.0 100 0.0 0.0 100 0.0 18 101 0.0 0.0 0.0 102 0.0 0.0 103.8 11 2 4 1 2 4 1 2 50 50 50 50 50 20 1 32.1 1 4.2 63.8 32.1 20.2 25.2 1 4 1.8		Ì				0	1856	1856	1856	1856	0
922 0.92 0.92 889 0.92 889 0.92 889 0.95 889 0.95 889 0.95 889 0.95 8834 0.977 872 889 0.970 889 0.970 889 0.970 889 0.970 889 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990 0.970 990						0	1059	314	223	1129	0
3 3 3 3 3 3 6 6 6 6 6 6 6 6 6 6 6 6 6 6						0.92	0.92	0.92	0.92	0.92	0.92
889 0 1160 025 000 0.25 3834 0 4717 773 0 812 23.2 0.0 17.2 23.2 0.0 17.2 23.2 0.0 17.2 1.00 1.00 0.89 0.0 0.70 900 0 1201 1.00 1.00 1.00 1.00 1.00 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 0.0 1.00 0.0 0.0 0.0 1.00 0.0 0.0 0.0 1.00 0.0 0.0 0.0 1.00 0.0 0.0 0.0 1.00 0.0 0.0 0.0 1.00 0.0 0.0 0.0 1.00 0.0 0.0 0.0 1.00 0.0 0.0 0.0 0.0 1.00 0.0 0.0 0.0 0.0 1.00 0.0 0.0 0.0 0.0 1.00 0.0 0.0 0.0 0.0 1.00 0.0 0.0 0.0 0.0 1.00 0.0 0.0 0.0 0.0 0.0 1.00 0.0 0.0 0.0 0.0 0.0 0.0 1.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0						0	က	က	က	က	0
0.25 0.00 0.25 0.25 0.00 0.25 773 0 812 23.2 0.0 17.2 23.2 0.0 17.2 1.00 0.00 0.70 900 0 0.70 900 0 0.70 1.00 1.00 1.00 1.00 0.00 0.70 4.00 0.00 0.70 1.00 1.00 1.20 1.00 0.00 0.70 1.00 0.70 1.						0	4015	840	286	3329	0
3834 0 4777 773 0 812 773 0 1872 232 0.0 17.2 232 0.0 17.2 232 0.0 17.2 1.00 1.00 869 0.0 17.0 900 0.70 900 0.0 1.00 1.00 0.0 0.0 1.00 0.0 0.0 1.00 0.0 0.0 1.8 0.0 0.0 0.0 1.8 0.0 0.0 0.0 1.8 0.0 0.0 0.0 1.8 0.0 0.0 0.0 1.8 0.0 0.0 0.0 1.8 0.0 0.0 0.0 1.8 0.0 0.0 0.0 1.8 0.0 0.0 0.0 1.8 0.0 0.0 0.0 1.8 0.0 0.0 0.0 1.9 0.0 0.0 0.0 1.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0						0.00	1.00	1.00	0:1	88.	0.00
773 0 812 232 00 172 232 00 172 232 00 172 100 100 869 0.0 170 900 0 120 100 0.0 0.0 400 0.0 1.00 400 0.0 37.8 107 0.0 1.8 107 0.0 1.8 107 0.0 1.8 107 0.0 1.8 107 0.0 1.8 107 0.0 37.8 107 0.0 1.8 108 0.0 1.0 10 0.0 0.0 10 0.0 0.0 11 0.0 0.0 12 0.0 0.0 14 0.0 0.0 15 0.0 0.0 168 0.0 11.0 168 0.0 11.0 1 45 0 1 50 50 28.0 1 50 50 25.2 1 14 12 63.8 1 14 2 63.8 1 15 50 50 28.0 1 1 1 1 2 2 28.0 1 1 2 2 28.0 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		4				0	1867	1572	3428	5233	0
1767 0 1572 23.2 0.0 17.2 23.2 0.0 17.2 23.2 0.0 17.2 1.00 0.89 0.00 0.70 900 0 1201 1.00 0.00 1.00 4.00 0.0 37.8 10.7 0.0 37.8 10.7 0.0 37.8 10.7 0.0 39.5 D A D A D A D A D A D A D A D A D A D A						0	1059	314	223	1129	0
23.2 0.0 17.2 23.2 0.0 17.2 1.00 889 0 1460 889 0 1460 900 0.70 900 0.0 0.70 1.00 1.00 1.00 1.00 1.00 1.00 4.00 0.0 37.8 107 0.0 37.8 107 0.0 37.8 108 0.0 11.0 8/MB 0.0 11.0 1 18 0.0 11.0 1 10 39.5 1 14.2 63.8 32.1 2 4 1 2 4 1 2 4 2 0 20 1 3.1 1 2 2 4 2 0 20 1 3.1 2 0 20 2 0 20 1 3 2.1 2 0 20 2 0 20 1 3 2.1 2 0 20 2 0 20						0	1503	1572	1714	1689	0
23.2 0.0 17.2 100 889 0 1600 889 0.0 0.70 900 0 0.70 100 0.00 1.00 100 0.00 1.00 100 0.00 1.8 10.7 0.0 0.0 10.8 0.0 11.8 10.7 0.0 39.5 11.8 0.0 11.0 12.8 0.0 11.0 13.8 0.0 11.0 14.0 39.5 15.8 0.0 11.0 15.8 0.0 11.0 16.8 0.0 11.0 17.8 0.0 11.0 18.8 0.0 11.0 19.9 5.0 5.0 19.9 5.0 5.0 19.9 5.0 5.0 19.9 5.0 5.0 19.9 5.0 5.0 19.9 5.0 5.0 5.0 19.9 5.0 5.0 5.0 19.9 5.0 5.0 5.0 5.0 19.9 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0						0.0	0.0	0.0	7.0	4.1	0.0
100 869 0.89 0.00 100 100 100 100 100 100 10						0.0	0.0	0.0	7.0	4.1	0.0
889 0 1160 0.89 0.00 0.70 900 0 1201 1.00 1.00 1.00 4.0.0 0.0 37.8 10.7 0.0 37.8 10.7 0.0 37.8 10.7 0.0 1.8 0.0 0.0 0.0 0.0 0.0 1.0 1.8 0.0 11.0 1.8 0.0 11.0 1.8 0.0 11.0 1.8 0.0 11.0 1.8 0.0 1.0 1.8 0.0 1.0 1.8 0.0 1.0 1.8 0.0 1.0 1.8 0.0 1.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0 20.0 1.8 0.0						0.00		1.00	1.00		0.0
0.89 0.00 0.70 900 1201 1.00 1.00 1.00 400 0.00 1.00 107 0.0 1.8 107 0.0 1.8 108 0.0 11.0 0.0 0.0 0.0 0.0 0.0 0.0 1.68 0.0 11.0 0.0 0.0 0.0 1.68 0.0 11.0 0.0 1.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 1.685 45.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0						0	4015	840	286	3329	0
900 100 1201 100 1.00 1.00 40.0 0.00 1.00 40.0 0.0 1.8 10.7 0.0 1.8 10.7 0.0 0.0 10.0 0.0						0.00	0.26	0.37	0.78	0.3 \$	0.00
100 100 100 100 400 100 0.00 400 0.00 1.00 400 0.00 1.00 400 0.00 1.8 0.0 1.0 0.00 0.00 0.00 0.00		•				0	4015	840	374	3329	0
100 000 100 400 000 37.8 10.7 0.0 1.8 0.0 0.0 0.0 11.0 18.8 0.0 11.0 18.8 0.7 0.0 39.5 0.0 39.5 0.0 4 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10 0.0 1.10						1.00	5.00	5.00	1.33	.33	1.0
400 00 37.8 400 00 1.8 00 00 00 16.8 0.0 11.0 A D A D 15.8 45.0 14.2 63.8 32.1 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 2.0 0.3 11.4 1.8 20.2 20.2	0					0.00	1.00	1.00	0.87	0.87	0.00
10.7 0.0 1.8 10.0 0.0 0.0 10.0 0.0 0.0 10.0 0.0 0.0 10.0 0.0 0.0 15.8 0.0 11.0 15.8 0.0 0.0 14.2 63.8 32.1 14.2 63.8 32.1 15.9 5.0 28.0 15.9 9.0 2.0 25.2 17.9 9.0 2.0 25.2 17.9 9.0 2.0 25.2 17.9 9.0 2.0 25.2 17.9 9.0 2.0 25.2 17.9 9.0 2.0 25.2 17.9 9.0 2.0 25.2 17.9 9.0 2.0 25.2 17.9 9.0 2.0 25.2 17.9 9.0 2.0 25.2 17.9 9.0 2.0 25.2 17.9 9.0 2.0 25.2 17.9 9.0 2.0 25.2 17.9 9.0 2.0 25.2 17.9 9.0 2.0 25.2 17.9 9.0 2.0 25.2 17.9 9.0 2.0 25.2 17.9 9.0 2.0 25.2						0.0	0.0	0.0	47.9	2.4	0.0
1 168 0.0 11.0 1 168 0.0 11.0 1 10 39.5 1 1885 1 1885 1 142 63.8 32.1 1 1 2 4 1 1 2 2 4 1 1 2 2 8.0 1 1 2 2 8.0 1 1 2 2 8.0 1 2 5.0 2 1 1 4 18 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2						0.0	0.2	 	6.7	0.2	0.0
New 11.0 New 10.0 New 10						0.0	0:0	0.0	0:0	0.0	0.0
Neh 50.7 0.0 39.5 158.5 158.5 145.0 158.5 142.63.8 32.1 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	16.8					0.0	0.1	0.5	2.7	2.0	0.0
50.7 0.0 39.5 1585 45.0 1 12 4 1 1 2 4 1 142 63.8 32.1 5.0 5.0 5.0 5.0 3.5 12.0 55.0 28.0 3.5 12.0 55.0 28.0 3.6 20.2 25.2 3.7 20.2 20.2											
1585 1585 1585 1585 160 170 170 170 170 170 170 170 170 170 17						0.0	0.2	 	54.6	2.7	0.0
1585 45.0 1 2 4 1 42 63.8 32.1 50 50 50 50 50 50 20 28.0 7.5 9.0 20 25.2 0.2 11.4 1.8						⋖	⋖	⋖		⋖	٩
450 D 450 1 2 4 14.2 638 32.1 5.0 5.0 5.0 5.0 5.0 28.0 1), s 9.0 2.0 25.2 1), s 9.0 2.0 25.2 20.2 20.2	1585						1373			1352	
1 2 4 1 142 638 32.1 50 5.0 5.0 5.0 1,5 120 550 28.0 1,5 9.0 2.0 25.2 20.2 11.4 1.8	45.0						0.4			11.2	
1 2 4 14.2 638 32.1 50 50 50 50 50 280 1),s 90 20 25.2 0.2 114 1.8	Δ						⋖			М	
14.2 63.8 32.1 5.0 5.0 5.0 5.0 5.0 28.0 7.5 9.0 2.0 25.2 0.2 11.4 1.8 C	1 2		4		9						
5.0 5.0 5.0 5.0 3,s 12.0 55.0 28.0 1),s 9.0 2.0 25.2 0.2 11.4 1.8			32.1		77.9						
12.0 55.0 28.0 9.0 2.0 25.2 0.2 11.4 1.8 20.2 C			2.0		2.0						
90 20 252 02 114 18 18 7	12.0		28.0		72.0						
0.2 11.4 1.8 20.2	9.0		25.2		6.1						
ıy	0.2		1.8		10.6						
		20.2									
		O									

5.0 21.0 77.0 70.0% 4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

4.0 1.0 0.0 5.0

5.0 10.0 17.0 15.5%

5.0 21.0 60.0 54.5%

5.0 21.0 60.0 54.5%

5.0 21.0 33.0 30.0%

5.0 21.0 33.0 30.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

C-Max 72.0 0.65 0.34 11.4 0.1 11.4 C C

Min 11.2 0.10 0.64 68.5 0.0 68.5

C-Max 55.8 0.51 0.33 4.1 4.1

C-Max 55.8 0.51 0.28 16.4 0.0

Min 28.0 0.25 0.75 45.0 0.0 45.0

Min 28.0 0.25 0.89 53.7 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Notes
User approved volume balancing among the lanes for turning movement

2031 AM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2031ABX.syn

Synchro 10 Report 2031ABX.syn

₽04

3: Carlisle Blvd. & I-40 EB Ramp

Splits and Phases:

Ø6 (R)

Intersection LOS: C ICU Level of Service B

Intersection Signal Delay: 29.4 Intersection Capacity Utilization 57.5% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.89

Actuated Cycle Length: 110 Offset: 101.2 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 55

2031 AM Peak BUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 4: Carlisle Blvd. & Indian School Rd. Terry O. Brown, PE 06/27/2019

Movement			•			,	_	_			•	,
MOVOTION	쯢	표	EE	MA	WRT	WRR	N N	NRT	ARN	80	ZRT	SAR
l ana Configurations	4	¥	á		¥		4	AAT	į	<u>,</u>	*	5
Traffic Volume (veh/h)	514	321	62	74	308	135	96	974	80	234	855	72
Future Volume (veh/h)	514	321	62	74	308	135	96	974	8	234	855	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1:00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		8			8			S			8	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	229	349	29	8	336	147	104	1059	87	254	929	288
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	က	က	က	က	ო :	ო	က	က	m !	က	m i	က
Cap, veh/h	433	906	172	328	411	177	263	1655	136	336	1409	929
Arnve On Green	1767	0.51	0.51	0.06	0.17	1034	0.06	0.35	30.35	1767	35.96	0.80
Gm Volume(v) veh/h	559	207	508	8	245	238	104	749	397	254	626	588
Gro Sat Flow(s).veh/h/ln	1767	1763	1754	1767	1763	1670	1767	1689	1785	1767	1763	1572
Q Serve(g_s), s	21.0	7.8	8.0	4.0	14.7	15.2	4.1	20.5	20.5	10.2	12.3	22.3
Cycle Q Clear(g_c), s	21.0	7.8	8.0	4.0	14.7	15.2	4.1	20.5	20.5	10.2	12.3	22.3
Prop In Lane	1.00		0.32	1:00		0.62	1.00		0.22	1.00		1.00
Lane Grp Cap(c), veh/h	433	541	538	328	302	286	263	1172	619	336	1409	929
V/C Ratio(X)	1.29	0.38	0.39	0.24	0.81	0.83	0.39	0.64	0.64	9.70	99.0	0.63
Avail Cap(c_a), veh/h	433	242	245	423	401	380	357	1172	619	336	1409	929
HCM Platoon Ratio	1.67	1.67	1.67	9:	0.0	9.	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.99	0.99	0.99	9:10	1.00	8.	0.95	0.95	0.95	1.00	0.1	1.00
Uniform Delay (d), s/veh	7.97	20.5	50.6	34.5	43.9	44.1	21.1	30.1	30.5	19.4	25.	9.4
Incr Delay (d2), s/veh	147.1	0.4	0.5	4.0	9. 1.	11.3	6.0	2.5	8.6	4.0	2.4	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0.0
%ile BackOtQ(95%),veh/ln	37.8	2.5	5.3	3.1	11.3	11.3	3.1	13.2	14.3	7.5	5.5	5.2
Unsig. Movement Delay, s/ven	173 g	040	24.0	37.8	50 0	55.4	22.0	30.7	340	8 80	10.3	7 0
LnGrp LOS	-	2 O	2 0	50	5 C	ш	9 0	, O	50	0	2 0	? ⋖
Approach Vol, veh/h		975			563			1250			1771	
Approach Delay, s/veh		108.6			51.4			32.5			12.2	
Approach LOS		ட						O			Ф	
Timer - Assigned Phs	_	2	က	4	2	9	7	8				
Phs Duration (G+Y+Rc), s	17.0	43.2	11.1	38.7	11.2	49.0	26.0	23.8				
Change Period (Y+Rc), s		5.0	2.0	2.0	5.0	2.0	5.0	2.0				
Max Green Setting (Gmax), s		32.0	12.0	34.0	12.0	32.0	21.0	25.0				
Nax Q clear Time (g_c+11), s Green Ext Time (p_c), s	0.0	4.9	0.0	2.3	0.0	4.8	0.0	1.7				
Interception Summan												
HCM 6th Ctrl Delay			43.2									
TOW 6# LOS			1									

5.0 10.0 26.0 23.6% 4.0 1.0 0.0 5.0 Lead

5.0 21.0 37.0 33.6%

5.0 10.0 26.0 23.6%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

¥ 308 ₹

₹321

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase

Protected Phases

Timings 4: Carlisle Blvd. & Indian School Rd.

†

1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

Min 66.3 0.60 0.56 18.4 18.4

Min 53.2 0.48 0.80 44.9 0.0

Min 42.6 0.39 0.43 20.7 20.7

Min 28.1 0.26 0.26 22.3 22.3

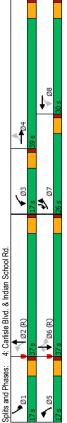
Min 45.6 0.41 1.36 201.7 0.0

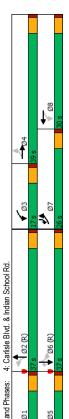
Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 32.1 0.29 0.41 31.5 0.0 31.5 C

C-Max 40.3 0.72 30.3 0.0 C C C C

C-Max 33.5 0.30 0.75 36.9 0.0 36.9 D 35.5





Intersection LOS: DICU Level of Service F

Intersection Signal Delay: 53.5 Intersection Capacity Utilization 91.6% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.36

Actuated Cycle Length: 110 Offset: 8.8 (8%), Referenced to phase 2.NBTL and 6:SBTL, Start of Green

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

2031 AM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2031ABX.syn

Synchro 10 Report 2031ABX.syn

2031 AM Peak BUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary
4: Carlisle Blvd. & Indian School Rd.

Timings 4: Carlisle Blvd. & Indian School Rd.

†

855 NA

135

\$ 30 80 ₹

¥ 321 ¥ 321

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase

Protected Phases

	4	†	<u> </u>	\	ţ	4	•	←	•	۶	→	•
Movement	EBL	EBT	EB	WBL	WBT	WBR	R	NBT	NBR	SB	SBT	SBR
Lane Configurations	je-	₩		×	‡	*	*	4413		×	‡	×.
Traffic Volume (veh/h)	514	321	62	74	309	135	96	974	80	234	855	<u>5</u> 4
Future Volume (veh/h)	514	321	62	74	300	132	96	974	8	234	822	72
Initial Q (Qb), veh	0 9	0	0 0	0 9	0	0 9	0 9	0	0 9	0 0	0	0 0
Ped-Bike Adj(A_pb1)	0.1	5	9.5	9.5	100	3.5	9.5	00	0.1	00.1	5	9.5
Work Zone On Approach	9.	8 S	8.	3	S S	3	9.	8 S	9.	9.	8 S	9.
Adi Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	559	349	29	8	336	147	104	1059	87	254	926	588
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	က	က	က	က	က	က	က	က	က	က	က	က
Cap, veh/h	467	824	157	289	448	368	280	1788	147	320	1506	1000
Arrive On Green	0.35	0.47	0.47	90:0	0.13	0.13	0.05	0.37	0.37	0.21	0.85	0.85
Sat Flow, veh/h	1767	2956	261	1767	3526	1572	1767	4771	391	1767	3526	1572
Grp Volume(v), veh/h	229	207	509	8	336	147	104	749	397	254	929	288
Grp Sat Flow(s),veh/h/ln	1767	1763	1754	1767	1763	1572	1767	1689	1785	1767	1763	1572
Q Serve(g_s), s	23.0	9.8	8.8	4.3	10.1	8.7	3.9	19.6	19.7	8.6	8 6.9	12.1
Cycle Q Clear(g_c), s	23.0	8.6	8.8	4.3	10.1	8.7	3.9	19.6	19.7	9.8	8.9	12.1
Prop In Lane	1.00	001	0.32	1.00		1.00	1.00	0007	0.22	1.00	0	1.00
Lane Grp Cap(c), veh/h	467	492	489	583	448	368	780	1266	699	320	1506	1000
V/C Katio(X)	1.20	0.42	0.43	0.28	0.75	0.40	0.37	0.59	0.59	0.73	0.62	0.59
Avail Cap(c_a), venin	167	1 67	247 167	00 1	100	100	3/0	100	100	200	0000	200
Instream Filter(I)	000	000	000	8 6	00.1	8.5	0 95	0.05	0 95	100	50.1	100
Uniform Delay (d). s/veh	28.2	23.5	23.5	38.3	46.3	35.6	19.1	27.6	27.6	17.7	5.2	2.6
Incr Delay (d2), s/veh	107.9	9.0	9.0	0.5	2.5	0.7	0.8	1.9	3.7	7.2	1.9	2.5
Initial Q Delay(d3),s/veh	0:0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0.0	0.0
%ile BackOfQ(95%),veh/ln	33.7	2.8	5.9	3.3	8.0	0.9	5.9	12.6	13.6	8.9	4.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	136.1	24.0	24.1	38.8	48.8	36.3	19.9	29.6	31.3	24.9	7.1	5.1
Lugip LOS	-	اد	S		اد			اد	د	S	∢	۷
Approach Vol, veh/h		9/5			563			1250			1//1	
Approach Delay, s/ven		88.3			4 1			29.3			9.0	
Approach LOS		_			Ω			ပ			∢	
Timer - Assigned Phs	_	2	3	4	5	9	7	8				
Phs Duration (G+Y+Rc), s	16.8	46.2	11.3	35.7	11.0	52.0	28.0	19.0				
Change Period (Y+Rc), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
Max Green Setting (Gmax), s	12.0	32.0	12.0	34.0	12.0	32.0	23.0	23.0				
Max Q Clear Time (g_c+I1), s		21.7	6.3	10.8	5.9	17.1	25.0	12.1				
Green Ext Time (p_c), s	0.0	5.2	0.1	2.3	0.1	7.7	0.0	1.9				
Intersection Summary												
HCM 6th Ctrl Delay			35.9									
HCM 6th LOS			۵									

Min 70.2 0.64 0.54 16.9 0.0 16.9

Min 55.8 0.51 0.74 37.4 37.4

Min 42.9 0.39 0.41 20.0 20.0 20.0

Min 38.2 0.35 0.24 7.6 0.0 7.6 A

Min 24.4 0.22 0.29 24.6 0.0 24.6

Min 30.2 0.27 0.44 33.1 33.1

Min 43.8 0.40 1.21 140.0 140.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

C-Max 42.2 0.38 0.69 27.9 0.0 27.9 C C C

C-Max 33.8 0.31 0.74 36.5 0.0 36.5 36.5 D

5.0 10.0 28.0 25.5% 4.0 1.0 0.0 5.0 Lead

5.0 10.0 17.0 15.5%

5.0 10.0 28.0 25.5%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

4.0 1.0 0.0 5.0 Lag

1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lead

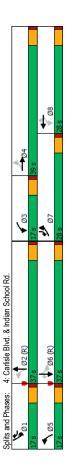
4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead



Intersection LOS: DICU Level of Service E

Intersection Signal Delay: 44.2 Intersection Capacity Utilization 87.2% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.21

Natural Cycle: 90

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS Actuated Cycle Length: 110 Offset: 8.8 (8%), Referenced to phase 2.NBTL and 6:SBTL, Start of Green Synchro 10 Report 2031AB_Mitsyn

2031 AM Peak BUILD Conditions - Mitigated Conditions

Synchro 10 Report 2031AB_Mit.syn

2031 AM Peak BUILD Conditions - Mitigated Conditions

HCM 6th Signalized Intersection Summary 5: Washington St. & Indian School Rd

156 156 1.00 1.00

1.00 No 137 0.92 3 162 0.22 753

1.00 No 1856 191 0.92 3 319 0.22 1481

1.00 No 1856 309 0.92 3 3 3 1276 0.40 172 172 5.1

28 2

5 4 ° 8.8

8.8

8.8

8 8 0 0 0

€ 6 0 0 <u>0</u> 0

00.1 00.1 00.1

Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)

8.8

1.00 No 1856 279 0.92

initial Q (Qb), veh
Ped-Bike Adj(A_pbT)
Parking Bus, Adj
Work Zone On Approach
Adj Sat How, vehlr/lin
Adj Flow Rate, vehlr/lin
Peak Hour Fador
Percent Heavy Veh, %

1856 72 0.92

170 0.92 3 201 0.22 307 13.8 13.8 13.8 13.8 13.8 13.8 14.0 10.0 10.0 10.0

43 43 316 60.02 767 7767 1.44 1.44 1.40 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00

551 72 72 72 1.8 1.8 1.00 551 0.13 685 1.00 1.00

Cap, vehinh
Arrive On Green
Sat Flow, vehinh
Grp Volume(v), vehinh
Grp Sat Flow(s), vehinh
Q Servel(g, S), s
Cycle Q Cleari(g, c), s
Prop in Lane
Lane Grp Cap(c), vehinh
VIC Ratio(X)
Avail Cap(c, a), vehinh
HCM Platoon Ratio

3 1203 0.40 2973 164 1763 4.8

0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

713 0.24 713 1.00 1.00 15.5 0.8 0.0 3.6

713 0.23 713 713 1.00 1.00 15.4 0.8 0.0

0.0 350

29.4 C

0.0

23.8

16.3 B

16.3 B 369

11.5 B

16.3 B

16.2 B

12.0

Incr Delay (d2), siveh Initial Q Delay (d3), siveh Wile BackOfQ(95%), vehAln Unsig. Movement Delay, siveh LnGrp Delay(d), siveh

Uniform Delay (d), s/veh

Upstream Filter(I)

403 15.5 B

Approach Delay, s/veh Approach LOS imer - Assigned Phs

Approach Vol, veh/h

320 27.9 C

37.0 5.0 32.0 7.2 1.9

10.0 11.0 3.8 0.1

22.0 5.0 25.0 15.8

10.0 5.0 5.0 5.0

37.0 5.0 32.0 6.9 1.8

10.0 11.0 2.5 0.0

22.1 5.0 25.0 11.2

0.0 7.0 3.4 0.0

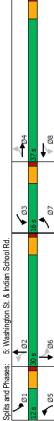
Phs Duration (G+Y+Rc), s Change Period (Y+Rc), s Max Green Setting (Gmax), s Max Q Clear Time (g_c+l1), s Green Ext Time (p_c), s 23.3

HCM 6th Ctrl Delay HCM 6th LOS

0.00

0.0 0.0

	1	†	-	ţ	•	←	۶	→	
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
Lane Configurations	<u>.</u>	4₽	<u></u>	₩	<u></u>	æ	<u>r</u>	.	
Traffic Volume (vph)	99	257	19	284	8	176	40	126	
Future Volume (vph)	99	257	19	284	<u>8</u>	176	40	126	
Turn Type	pm+pt	₹	pm+pt	¥	pm+pt	Ϋ́	pm+pt	ΑĀ	
Protected Phases	7	4	က	∞	2	2	~	9	
Permitted Phases	4		∞		2		9		
Detector Phase	7	4	က	∞	2	2	-	9	
Switch Phase									
Minimum Initial (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	
Total Split (s)	16.0	37.0	16.0	37.0	12.0	30.0	12.0	30.0	
Total Split (%)	16.8%	38.9%	16.8%	38.9%	12.6%	31.6%	12.6%	31.6%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1:0	
Lost Time Adjust (s)	0:0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	
Total Lost Time (s)	2.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Lead-Lag Optimize?									
Recall Mode	Min	Max	Min	Max	Min	Win	Min	Min	
Act Effct Green (s)	40.8	33.5	38.3	32.2	24.4	17.6	23.7	17.3	
Actuated g/C Ratio	0.49	0.40	0.46	0.38	0.29	0.21	0.28	0.21	
//c Ratio	0.14	0.24	0.04	0.26	0.35	09:0	0.14	0.77	
Control Delay	11.8	17.0	11.5	18.8	22.6	35.4	19.1	38.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	
Total Delay	11.8	17.0	11.5	18.8	22.6	35.4	19.1	38.1	
TOS	В	ш	В	ω	ပ	۵	ш	۵	
Approach Delay		16.1		18.4		31.9		35.8	
Approach LOS		Ω		В		ပ		٥	
Intersection Summary									
Cycle Length: 95									
Actuated Cycle Length: 83.8									
Natural Cycle: 65									
Control Type: Semi Act-Uncoord	pood								
Maximum v/c Ratio: 0.77									
Intersection Signal Delay: 24.9	6:			드	Intersection LOS: C	LOS: C			
Intersection Capacity Utilization 50.5%	ion 50.5%			\subseteq	CU Level of Service A	of Service	⋖		
Analysis Period (min) 15									





2031 AM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2031ABX.syn

Synchro 10 Report 2031ABX.syn

2031 AM Peak BUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 6: Carlisle Blvd. & Constitution Ave. Terry O. Brown, PE 06/27/2019

		& constitution Ave.									200	
	1	†	<i>></i>	>	ţ	4	•	←	•	٠	→	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	BE	NBT	NBR	SBL	SBT	
Lane Configurations	*	*	¥C.	je.	*	*	*	₽ ₽		je-	*	
Traffic Volume (veh/h)	108	95	12	29	166	105	15	585	21	8.	909	
Future Volume (veh/h)	108	92	15	29	166	105	15	282	51	8	909	
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		
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		8			8			8			8	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	
Adj Flow Rate, veh/h	117	9	16	8	180	114	16	636	23	88	99	
	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Percent Heavy Veh, %	က	က	က	က	က	က	က	က	က	က	က	
Cap, veh/h	206	336	338	281	366	338	492	2409	87	246	1288	
Arrive On Green	0.22	0.22	0.22	0.22	0.22	0.22	69.0	69.0	69.0	1.00	1.00	
Sat Flow, veh/h	1077	1856	1572	1266	1856	1572	615	3470	125	692	1856	
Grp Volume(v), veh/h	117	100	16	64	180	114	16	323	336	88	199	
Grp Sat Flow(s),veh/h/ln	1077	1856	1572	1266	1856	1572	615	1763	1833	692	1856	
Q Serve(g_s), s	11.7	4.9	6.0	4.9	9.3	6.7	6.0	7.5	9.7	1.5	0.0	
Cycle Q Clear(g_c), s	50.9	4.9	0.9	8.6	9.3	6.7	6.0	7.5	9.7	9.1	0.0	
Prop In Lane	1.00		1.00	1.00		9.	1.00		0.07	1.00		
Lane Grp Cap(c), veh/h	206	336	338	281	366	338	492	1223	1272	246	1288	
V/C Ratio(X)	0.57	0.25	0.05	0.23	0.45	0.3 \$	0.03	0.26	0.26	0.16	0.51	
Avail Cap(c_a), veh/h	298	227	472	380	222	472	492	1223	1272	246	1288	
HCM Platoon Ratio	1.00	1.0	1.00	9.	1.00	1:00	1.00	1.00	1.00	2.00	2.00	
Upstream Filter(I)	1.00	1:00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	
Uniform Delay (d), s/veh	46.6	35.8	34.2	39.9	37.5	36.5	5.3	6.3	6.3	0.4	0:0	
Incr Delay (d2), s/veh	2.4	0.3	0.1	0.4	0.8	9.0	0.1	0.5	0.5	0.4	1:0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0:0	0.0	0:0	0.0	0.0	0.0	0:0	0:0	
%ile BackOfQ(95%),veh/ln	2.9	4.1	9.0	2.8	7.7	4.8	0.2	4.8	4.9	0.1	9.0	
Unsig. Movement Delay, s/ven		7 96	C PC	007	000	1 70	7 3	0	0	c	4	
Liferp Delay(u),s/veri		- 6	ر خ د	5.04 C. C.	ر د. د	- 2	t. <	0.0	0.0	ກ <	<u> </u>	
Approach Vol. voh/h		233	٥		35.8	اد	τ	A 75	τ .	τ	280	
Approach Polovickop		12.5			2000			5 4			g α	
Applicacii Delay, siveli		5.4 C.4			3 5						o <	
Approach LOS		_			a			<			<	
Timer - Assigned Phs		2		4		9		∞				
Phs Duration (G+Y+Rc), s		81.3		28.7		81.3		28.7				
Change Period (Y+Rc), s		2.0		2.0		2.0		2.0				
Max Green Setting (Gmax), s		0.79		33.0		0.79		33.0				
Max Q Clear Time (g_c+11), s	s	9.6		22.9		11.1		11.8				
Green Ext Time (p_c), s		4.6		0.7		7.1		1.6				
Intersection Summary												
HCM 6th Ctrl Delay			12.9									

C-Max 82.3 0.75 0.19 0.3 0.3

C-Max 82.3 0.75 0.48 3.8 0.0

C-Max 82.3 0.75 0.25 5.1 5.1

C-Max 82.3 0.75 0.03 5.2 5.2 6.0

Min 0.16 0.33 9.5 9.5 9.5

Min 17.7 0.16 0.32 42.9 0.0 42.9

Min 17.7 0.16 0.06 12.4 12.4

Min 17.7 0.16 0.87 93.4 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio

Min 17.7 0.16 0.34 42.3 0.0 0.0 D D 05.9

Control Delay Queue Delay Total Delay

Min 17.7 0.16 0.61 50.7 0.0 50.7 D 36.2

0.0

C-Max 82.3 0.75 0.16

A 2.7

5.0 21.0 72.0 65.5% 4.0 1.0 0.0

1.0

0.0 0.0

0.0

1.0

1.0

1.0

1.0

1.0 0.0

5.0 21.0 72.0 65.5%

5.0 21.0 72.0 65.5%

5.0 21.0 72.0 65.5%

5.0 21.0 38.0 34.5%

5.0 21.0 38.0 34.5%

5.0 21.0 38.0 34.5%

5.0 21.0 38.0 34.5%

5.0 21.0 38.0 34.5%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time Adjust (s)

808 NA

585 585 NA

N 4 166

8 8

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Protected Phases

6: Carlisle Blvd. & Constitution Ave.

Timings

982	388	plits and Phases: 6:	pilits and Phases: 6. Carlisle Blvd. & Constitution Ave. 102 (R) 2s	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
		(1)		38.

Intersection LOS: B ICU Level of Service C

Intersection Signal Delay: 15.3 Intersection Capacity Utilization 67.6% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.87

Vatural Cycle: 50

Approach Delay Approach LOS

Actuated Cycle Length: 110 Offset: 63.8 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

2031 AM Peak BUILD Conditions - Existing Geometry

2031 AM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2031ABX.syn

Synchro 10 Report 2031ABX.syn

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 7: San Mateo Blvd. & I-40 EB Ramp

Timings 7: San Mateo Blvd. & I-40 EB Ramp

†

922 922 082

237 237 Prot

1095 NA

596 596 Prot

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase 5.0 21.0 77.0 70.0% 4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

1.0

5.0 10.0 17.0 15.5%

5.0 21.0 60.0 54.5%

5.0 21.0 60.0 54.5%

5.0 21.0 33.0 30.0%

5.0 10.0 33.0 30.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

Movement EBL Lane Configurations YN Traffic Volume (vehIn) 596 Future Volume (vehIn) 596 Future Volume (vehIn) 596 Future Volume (vehIn) 596 Ped-Bike Adj (A.pbT) 1.00 Ped-Bike Adj Fow Rade, vehIn 648 Adj Fow Rade, vehIn 648 Persent Heavy Veh, % 3 Cap, vehIn 900 Cap, vehIn 900 Cap, vehIn 900	1.00 1.00 N.N.N.N.N.N.N.N.N.N.N.N.N.N.N.N.N.N.	EBR 948 948 048 041.00 1.00 1.00 1.00 1.00 1.00 1.00 1.	WBL 0 0	WBT	WBR	NBL o	NBT	NBR.	SBL	SBT	SBR
% ach		948 948 948 0 1.00 1.00 1.00 1.00 3	0 0	00			444	*-	£	444	
% agh	7 5 0 0	948 948 948 1.00 1.00 1.00 1.03 1.03 1.03	00	00		•					
% 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	_ = 0 0	948 0 1.00 1.00 1.00 1.00 1.03 1.03 1.03 1.03	0	c	0	0	1095	149	237	922	J
, act		1.00 1.00 1.00 1.00 1.03 1.03 1.03 1.03		>	0	0	1095	149	237	922	0
, , , ,	_ = 0 0	1.00 1.00 1.00 1.03 1.03 1.03 1.03 1.03				0	0	0	0	0	0
, ach	- -	1.00 1856 1031 0.92 3				9:1		0.1	0.1		1.0
acu %	2 0 0	1856 1031 0.92 3				1.00	1.00	1.00	1.00	0.5	1.00
- %		1856 1031 0.92 3				ď	0 S	o Lor	o Lor	9 S	•
%	0 0	0.92				0	1856	1856	1856	1856	0 0
eh, %		3 3 3				0 0	1190	0 0	728	Z00Z	ء د
ğ., '9		2				0.92	0.92	0.92	0.92	0.92	0.92
		200				0	2609	2	322	3316	0
		0.25				0.00	0.52	0.00	90.0	0.44	0.00
Sat Flow, veh/h 3534		3145				0	5233	1572	3428	5233	O
veh/h		1031				0	1190	0	258	1002	
veh/h/ln 1		1572				0	1689	1572	1714	1689	0
		28.0				0:0	16.4	0.0	8.2	14.1	0.0
r(g_c), s		28.0				0.0	16.4	0.0	8.5	14.1	0.0
	c	1.00				0.00	0000	1.00	1.00	2046	0.00
Laile Gip Cap(c), verilli 900 V/C Ratio(X) 072	Č	1 29				000	0.46		0.80	030	000
a) veh/h		208				000	2609		374	33.16	5
ľ	Ë	1.00				1.00	1.00	1.00	0.67	0.67	1.00
		1.00				0.00	1.00	0.00	0.74	0.74	0.00
eh 3		41.0				0.0	16.9	0.0	50.5	14.6	0.0
		138.9				0.0	9.0	0.0	7.9	0.2	0.0
		0.0				0.0	0.0	0.0	0:0	0:0	0.
%ile BackOfQ(95%),veh/ln 12.9	0:0	39.4				0.0	10.5	0.0	6.7	6.3	0.0
ay, s/ven		0 0 0 0				ć	1	c	2		2
LnGrp Delay(d),s/ven 40.3	0:0	6.67				0.0	ς; α	0.0	20.4 L	<u>4</u> ю п	0.0
d/dov. lo	1679	-				τ .	1100	٨	ال	1260	
Approach Delay, s/veh	126.0						17.5	•		23.7	
Approach LOS	ш						Ф			ပ	
Timer - Assigned Phs 1	2		4		9						
	"		33.0		77.0						
			5.0		5.0						
			28.0		72.0						
Max Q Clear Time (g_c+r1), s 10.2 Green Ext Time (p_c), s 0.2	18.4		30.0		 6.3						
Intersection Summary											
HOM 6th Ctrl Delay		63.5									ı
HCM 6th LOS		Э Ш									
seton											

C-Max 72.0 0.65 0.30 2.5 0.0 2.5 A 12.7 B

Min 11.6 0.11 0.72 52.3 0.0 52.3

C-Max 55.4 0.50 0.19 2.8 0.0 2.8 2.8

Min 28.0 0.25 1.06 86.3 0.0

Min 28.0 0.25 0.75 44.1 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

C-Max 55.4 0.50 0.47 18.6 0.0 18.6 B

Min 28.0 0.25 1.06 87.0 0.0 87.0 F F 70.2 E

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

67 **₽**04 7: San Mateo Blvd. & I-40 EB Ramp Splits and Phases: Ø6 (R)

Intersection LOS: DICU Level of Service C

Intersection Signal Delay: 36.5 Intersection Capacity Utilization 65.3% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.06

Actuated Cycle Length: 110 Offset: 90.2 (82%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 55

Synchro 10 Report 2031ABX.syn

2031 AM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2031ABX.syn

Terry O. Brown, PE 06/28/2019 HCM 6th Signalized Intersection Summary 7: San Mateo Blvd. & I-40 EB Ramp

Timings 7: San Mateo Blvd. & I-40 EB Ramp

†

922 922 082

237 237 Prot

1095 NA

596 596 Prot

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Turn Type Protected Phases

5.0 21.0 74.0 67.3% 4.0 1.0 0.0 5.0

5.0 21.0 55.0 50.0%

5.0 21.0 36.0 32.7%

5.0 10.0 36.0 32.7%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

4.0 1.0 0.0 5.0 ead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

reint EBL EBT EBR WBI WBI MBI NBI NBI WBI WBI </th <th></th> <th>١</th> <th>†</th> <th>></th> <th>/</th> <th>ļ</th> <th>1</th> <th>•</th> <th>—</th> <th>•</th> <th>۶</th> <th>→</th> <th>*</th>		١	†	>	/	ļ	1	•	—	•	۶	→	*
10 10 10 10 10 10 10 10	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
1	Lane Configurations	K.	2,	¥.					444	¥c.	K.	444	
596	Traffic Volume (veh/h)	296		948	0	0	0	0	1095	149	237	922	_
100	Future Volume (veh/h)	296	τ-	948	0	0	0	0	1095	149	237	922	
100 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Initial Q (Qb), veh	0	0	0				0	0	0	0	0	Ŭ
100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100	Ped-Bike Adj(A_pbT)	1.00		1.00				1:00		1.00	1.00		1:00
1856 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866	Parking Bus, Adj	1.00	9:	1.00				1.00	1.00	1.00	1.00	9:	1.00
1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866	Work Zone On Approach		2						2			2	
648 0 1031 0 0 1490 0 258 1002 6 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	
6 92 0.82 0.82 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.9	Adj Flow Rate, veh/h	648	0	1031				0	1190	0	528	1002	
6 996 0 896 0 245 32 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
10	Percent Heavy Veh, %	က	က	က				0	e 1	က	က	e 6	
128 0.00 0.28 0.00 0.09 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0	Cap, veh/h	986	0 8	988				0 8	2467		325	31/8	•
1787 1787 1787 1787 1787 1787 1787 1787 1788 1787 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788 1788	Arrive On Green	0.28	0.00	0.28				0.00	0.49	0.00	0.09	0.63	0.00
In 768 0 1131 0 1189 102 100 In 177 0 310 0 0 17.3 0.0 258 100 177 0.0 310 0 0 17.3 0.0 81 101 177 0.0 310 0 0 17.3 0.0 81 101 100 100 0 17.3 0 81 101 101 100 100 0 17.3 0 81 101 101 100 100 0 0 17.3 0 81 101 100 100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Sat Flow, ven/n	3534	٥	3145				0	5233	7/61	3428	5233	
vehiciful 1767 0 1572 0 1689 1572 174 1689 c), s 17.7 0.0 31.0 0 0 17.3 0.0 81 10.1 c), s 17.7 0.0 31.0 0 0 17.3 0.0 81 10.1 1, o 100 0 0 2467 32.8 37.8 10.1 0 eehh 996 0 886 0 0.0 0.467 436 31.78 0 32.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 31.8 <td>Grp Volume(v), veh/h</td> <td>848</td> <td>0</td> <td>1031</td> <td></td> <td></td> <td></td> <td>0</td> <td>1190</td> <td>0</td> <td>728</td> <td>1002</td> <td></td>	Grp Volume(v), veh/h	848	0	1031				0	1190	0	728	1002	
17.7 0.0 31.0 0.0 17.3 0.0 81 10.1 10.1 10.1 10.1 10.1 10.1 10	Grp Sat Flow(s),veh/h/ln	1767	0	1572				0	1689	1572	1714	1689	
Classification Summary 177 0.00 31.0 0.00 173 0.0 81 10.1 Classified Construction Support 1.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	Q Serve(g_s), s	17.7	0:0	31.0				0.0	17.3	0.0	χ. -	10.1	0.0
Lane 1,00 1,00 2,467 3,26 3178 organism color 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00	Cycle Q Clear(g_c), s	17.7	0.0	31.0				0.0	17.3	0.0	χ. -	10.1	0.0
sip Cap(c), weh/h 996 0 886 0 2467 325 3178 sip Cap(c), weh/h 965 0 116 0 0 2467 436 3178 sip Cap(c), weh/h 996 0 886 0 0 2467 436 3178 sip Cap (a), weh/h 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100	Prop In Lane	1.00	ı	1.00				0.00		1.00	1.00		0.0
anoly(X) 0.65 0.00 1.16 0.00 0.48 0.79 0.32 0.32 0.32 0.32 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.34 0.37 0.33 0.34 0.37 0.33 0.34 0.37 0.33 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34 0.34	Lane Grp Cap(c), veh/h	966	0	988				0	2467		325	3178	
Japice a), vehich age 0 886 0 0 886 0 0 2467 436 3778 140con Ratio 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	V/C Ratio(X)	0.65	0.00	1.16				0.00	0.48		0.79	0.32	0.0
Absigned Phs 1 2 4 6 6 6 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 <t< td=""><td>Avail Cap(c_a), veh/h</td><td>966</td><td>0 8</td><td>988</td><td></td><td></td><td></td><td>0 9</td><td>2467</td><td></td><td>436</td><td>3178</td><td></td></t<>	Avail Cap(c_a), veh/h	966	0 8	988				0 9	2467		436	3178	
and high (s), size (s), si	HCM Platoon Katio	00.1	0.1	1.00				00.1	1.00	1.00	1.00	3.5 1.00	1.00
Movement Delay, siveh 15 0.0 35.9 0.0 48.7 9.5 Abay (d.3), siveh 1.5 0.0 85.8 0.0 0.0 0.0 48.7 9.5 Abay (d.3), siveh 0.0 32.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	0.00	0.74	0.74	0.00
abay (dd.); siveh 15 0.00 85.8 0.00 0.7 0.0 54 0.2 2.9 alay (dd.); siveh 15 0.00 85.8 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Uniform Delay (d), s/veh	34.7	0:0	39.5				0.0	18.9	0.0	48.7	9. C. C	0.0
Ackor(AgeNa, Nathraniana) 2. Delay(d3)s/s/eh 2. Delay(d3)s/s/eh 2. Delay(d3)s/s/eh 3. Delay(d3)s/s/eh 3. Delay(d3)s/eh 3. Delay(d3)s	Incr Delay (d2), s/veh	5.	0.0	82.8				0.0	0.7	0.0	5.4	0.2	0.0
ack/Of(35%),veh/hn 12.3 0.0 32.8 0.0 11.1 0.0 6.4 6.3 Movement Delay, siveh 36.2 0.0 125.3 0.0 196 0.0 54.1 9.7 LOS Delay(0),siveh 36.2 0.0 125.3 0.0 196 0.0 54.1 9.7 LOS Delay(0),siveh 31.0 16.79	Initial Q Delay(d3),s/veh	0.0	0:0	0.0				0.0	0.0	0.0	0.0	0.0	ö
Movement Delay, siveh 36.2 0.0 125.3 0.0 19.6 0.0 54.1 9.7 LOS Delay(d), siveh 36.2 0.0 125.3 0.0 19.6 0.0 54.1 9.7 A B D A P D A P D A P D A P D A Delay(d), siveh 31.0 Ext Time (g_C+11), s 10.1 19.3 33.0 12.1 Ext Time (g_C+11), s 10.5 0.0 9.3	%ile BackOfQ(95%),veh/ln	12.3	0.0	32.8				0.0	11.1	0.0	6.4	6.3	0.0
Delay(d),s/veh 362 0.0 125.3 0.0 196 0.0 54.1 9.7 A P A F A F A Bah Valvehh Ach Delay, s/veh 1679 A H 1190 A H 1260 B B H 1260 B H 1260<	Unsig. Movement Delay, s/veh												
LOS	LnGrp Delay(d),s/veh	36.2	0.0	125.3				0.0	19.6	0.0	54.1	9.7	0.0
ach Vol. vehin 1679 1190 A 20 belay, siveh 910 F F B 196 A 20 belay, siveh 910 F F B B 196 A 20 belay, siveh 910 F F B B 196 A 20 belay siveh 910 A 2 4 6 B B 20 belay siveh 1 2 4 6 B 20 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	LnGrp LOS		⋖	ш				∢	ш			⋖	
bach LOS bach LOS F F 6 B 740 F 7	Approach Vol, veh/h		1679						1190	∢		1260	
Assigned Phs 1 2 4 Assigned Phs 1 2 4 Ination (G+Y+Rc), s 15.4 58.6 36.0 Be Period (Yak), s 5.0 5.0 5.0 Clear Time (g_c+H), s 10.1 19.3 33.0 Ext Time (g_c+H), s 10.1 19.3 33.0 Ction Summary A84 The LOS The Assigned Phs 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Approach Delay, s/veh		91.0						19.6			18.8	
Assigned Phs 1 2 4 arration (G+V+Rc), s 154 586 36.0 e Period (V+Rc), s 5.0 5.0 5.0 reen Setting (Gmax), s 14.0 50.0 31.0 Clear Time (g_c+lf), s 10.1 19.3 33.0 Ext Time (p_c), s 0.3 10.5 0.0 ction Summary 48.4 D inh LOS D D	Approach LOS		ш						മ			ш	
ration (G+Y+Rc), s 15.4 58.6 36.0 e Period (Y+Rc), s 5.0 5.0 5.0 reen Setting (Gmax), s 14.0 50.0 31.0 Clear Time (g_c+tf), s 10.1 19.3 33.0 Ext Time (p_c), s 0.3 10.5 0.0 ction Summary in Ctrl Delay the LOS D	Timer - Assigned Phs	-	2		4		9						
e Period (Y+Rc), s 5.0 5.0 5.0 reen Setting (Gmax), s 14.0 50.0 31.0 Clear Time (g_c-ftf), s 10.1 19.3 33.0 Ext Time (g_c-ftf), s 0.3 10.5 0.0 cition Summary 48.4 bit LOS	Phs Duration (G+Y+Rc), s	15.4	58.6		36.0		74.0						
reen Setting (Gmax), s 14,0 50,0 31,0 Clear Time (g_c+ff), s 10,1 19,3 33,0 Ext Time (p_c), s 0,3 10,5 0,0 cition Summary Aft Ctrl Delay 48,4 The LOS D	Change Period (Y+Rc), s	2.0	2.0		2.0		2.0						
Clear Time (g_C+lf), s 10.1 19.3 33.0 1 Ext Time (p_C), s 0.3 10.5 0.0 ction Summary 48.4 in Cdr Delay D	Max Green Setting (Gmax), s	14.0	20.0		31.0		0.69						
Ext Time (p_c), s 0.3 10.5 0.0 ction Summary 48.4 bb LOS D	Max Q Clear Time (g_c+l1), s	10.1	19.3		33.0		12.1						
ction Summary th Ctrl Delay oth LOS	Green Ext Time (p_c), s	0.3	10.5		0:0		9.3						
oth Ctrl Delay oth LOS	Intersection Summary												
th LOS	HCM 6th Ctrl Delay			48.4									
Notice	HCM 6th LOS			۵									
	Seton												

C-Max 69.0 0.63 0.32 2.4 2.4 0.0 2.4 A 11.8

Min 12.7 0.12 0.66 48.3 0.0 48.3

C-Max 51.3 0.47 0.20 3.3 0.0 3.3 A

C-Max 51.3 0.47 0.51 21.7 21.7

Min 31.0 0.28 1.00 70.0 0.0 70.0

Min 31.0 0.28 0.68 39.3 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 31.0 0.28 1.00 70.5 0.0 70.5 E E E E E

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

₽04

7: San Mateo Blvd. & I-40 EB Ramp

Splits and Phases:

Ø2 (R)

Ø6 (R)

Intersection LOS: C ICU Level of Service C

Intersection Signal Delay: 32.4 Intersection Capacity Utilization 65.3% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.00

Actuated Cycle Length: 110 Offset: 90.2 (82%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 55

Synchro 10 Report 2031AB_Mit.syn

2031 AM Peak BUILD Conditions - Mitigated Conditions

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 8: San Mateo Blvd. & I-40 WB Ramp

8: San Mateo Blvd. & I-40 WB Ramp

Timings

1101 1101 NA

149 149 Prot

406 406

345 345 Pot

88 88

₽ 8 82 2

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Turn Type Protected Phases Permitted Phases Detector Phase

	4		/	١	ļ	4	,	4	4	_	_	
		t	-	•		/		_	Ĺ	*	+	*
Movement	EBL	EBT	EB	WBL	WBT	WBR	BE	NBT	NBR	SBL	SBT	SBR
Lane Configurations	£		¥.	¥.	*	*	K.	**			**	~
Traffic Volume (veh/h)	62	0	188	345	172	406	149	866	0	0	1101	114
Future Volume (veh/h)	62	0	188	345	172	406	149	866	0	0	1101	114
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	Ŭ
Ped-Bike Adj(A_pbT)	1.00		1.00	1:00		1.00	1:00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		2			2			8			2	
Adj Sat Flow, veh/h/In	1856	0	1856	1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h	29	0	204	375	187	441	162	1085	0	0	1197	124
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	က	0	က	က	က	က	က	က	0	0	က	.,
Cap, veh/h	156	0	0	1028	388	329	227	3085	0	0	2520	854
Arrive On Green	0.05	0.00	0.00	0:30	0.21	0.21	0.09	0.81	0.00	0.00	0.50	0.50
Sat Flow, veh/h	3428	29		3428	1856	1572	3428	5233	0	0	5233	1572
Grp Volume(v), veh/h	29	53.0		375	187	441	162	1085	0	0	1197	124
Grp Sat Flow(s),veh/h/ln	1714	۵		1714	1856	1572	1714	1689	0	0	1689	1572
Q Serve(g_s), s	2.1			9.2	9.8	23.0	5.1	6.3	0.0	0.0	17.1	4
Cycle Q Clear(g_c), s	2.1			9.2	9.8	23.0	5.1	6.3	0.0	0:0	17.1	4.3
Prop In Lane	1.00			1.00		1.00	1:00		0.00	0.00		0.
Lane Grp Cap(c), veh/h	156			1028	388	329	227	3085	0	0	2520	854
V/C Ratio(X)	0.43			0.36	0.48	왕.	0.71	0.35	0.00	0.00	0.48	0.15
Avail Cap(c_a), veh/h	312			1028	388	329	405	3085	0	0	2520	824
HCM Platoon Ratio	1.00			9.1	1.00	9.1	1.33	1.33	1.00	1.00	9.	9
Upstream Filter(I)	1.00			9.	1.00	9.	0.80	0.80	0.00	0.00	9.	1.00
Uniform Delay (d), s/veh	51.1			30.3	38.3	43.5	49.1	4.7	0.0	0.0	18.2	12.
Incr Delay (d2), s/veh	1.9			0.2	6.0	172.7	3.3	0.3	0.0	0.0	9.0	0.4
Initial Q Delay(d3),s/veh	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	ö,
%ile BackOfQ(95%),veh/ln	1.7			7:1	8.0	37.7	4.0	3.2	0.0	0.0	10.7	2.
Unsig. Movement Delay, s/veh					5	0.70	5	•	ć	ć	0	5
LnGrp Delay(d),s/ven	33.0			30.5	39.2	71017	0.20	4. 5. <))	0.0	0 0 0	Z. 0
A TOTAL TOTAL OF THE PARTY OF T	٥			>	200	-	٥	7 780	c	c	2007	
Approach Polos: of soh					1120			7 7 7			10.0	
Approach Delay, s/ver					0. 2.							
Approach LOS					_			מ			α	
Timer - Assigned Phs		2	3		5	9	7	8				
Phs Duration (G+Y+Rc), s		72.0	38.0		12.3	28.7	10.0	28.0				
Change Period (Y+Rc), s		2.0	2.0		5.0	2.0	2.0	2.0				
Max Green Setting (Gmax), s		62.0	13.0		13.0	44.0	10.0	23.0				
Max Q Clear Time (g_c+I1), s		8.3	11.5		7.1	19.1	4.1	25.0				
Green Ext Time (p_c), s		8.6	0.2		0.2	6.6	0.1	0:0				
Intersection Summary												
HCM 6th Ctrl Delay			42.8	l	l	l	l					l

5.0 10.0 15.0 13.6% 4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

1.0

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

5.0 10.0 18.0 16.4% 4.0 1.0 0.0 5.0 Lead

5.0 10.0 15.0 13.6% 4.0 1.0 0.0 5.0 Lead

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

5.0 21.0 49.0 44.5%

5.0 10.0 18.0 16.4%

5.0 21.0 28.0 25.5%

5.0 21.0 28.0 25.5%

5.0 21.0 25.0 22.7%

Min 59.1 0.54 0.14 2.7 2.7 2.7

C-Max 62.0 0.56 0.38 16.1 16.1

Min 10.5 0.10 0.50 0.0 50.0 50.0

Min 25.4 0.23 0.95 60.5 60.5 E

Min 25.4 0.23 0.44 40.5 0.0 0.0 D 64.1

Min 13.0 0.12 0.94 80.0 0.0 80.0

Min 20.0 0.18 0.45 8.9 8.9 8.9 8.9 A

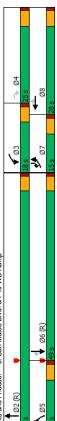
Min 7.6 0.07 0.29 51.3 0.0 D

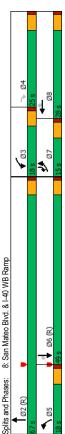
Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

C-Max 46.5 0.42 0.56 25.6 0.0 25.6 C 23.4





Intersection LOS: C ICU Level of Service B

Intersection Signal Delay: 32.8 Intersection Capacity Utilization 59.4% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.95

Actuated Cycle Length: 110 Offset: 49.5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 65

2031 AM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2031ABX.syn

Synchro 10 Report 2031ABX.syn

2031 AM Peak BUILD Conditions - Existing Geometry

Terry O. Brown, PE 06/28/2019 HCM 6th Signalized Intersection Summary 8: San Mateo Blvd. & I-40 WB Ramp

8: San Mateo Blvd. & I-40 WB Ramp

Timings

1101 1101 NA

149 149 Prot

406 406

345 345 Pot

88 88

5 8 8 구

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase Protected Phases

7 2 2 0 0 8	BL EBT 62 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		<u></u> ₩	,	ţ	4	•	←	•	. ▶ 8	→ SBT	•
4 5 0 0 0 0			22		1			H	2	00	SBT	
7 7 7 0 0 8	₽ 0 0 0 0		í	WBL	WBT	WBR	뜅	NBT	NBK	SBL		SBR
7 7 7 0 . 0%	. 2 2 0 0		*	K.	*	*	F	444			**	*-
0 · 0 · 0	200		188	345	172	406	149	866	0	0	1101	114
	0 0		88	345	172	406	149	866	0	0	1101	114
	Q	0	0	0	0	0	0	0	0	0	0	0
, , ,			1.00	1:00		9.	1.00		1.00	1.00		1:00
_ 0 %	—		1.00	1.00	1.00	1:00	1.00	1:00	1.00	1.00	1.00	1.00
8 0 0					ટ			2			2	
3,000	ဖွ	0 18	826	1856	1856	1856	1856	1856	0	0	1856	1856
3 0 8			204	375	187	441	162	1085	0	0	1197	124
9 %	2 0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
3 0			က	က	က	က	က	က	0	0	က	က
			0	1122	439	372	227	2947	0	0	2381	81
	0		0.00	0.33	0.24	0.24	0.09	0.77	0.00	0.00	0.47	0.47
		29		3428	1856	1572	3428	5233	0	0	5233	1572
		53.0		375	187	441	162	1085	0	0	1197	124
veh/h/ln 17		۵		1714	1856	1572	1714	1689	0	0	1689	1572
	_			9.1	9.4	26.0	5.1	7.5	0.0	0.0	18.0	4.6
r(g_c), s	_			9.1	9.4	26.0	2.1	7.5	0.0	0:0	18.0	4.6
`	0			1:00		9.	1.00		0.00	0.00		1:00
p(c), veh/h	ي و			1122	439	372	227	2947	0	0	2381	81,
	က္၊			0.33	0.43	1.19	0.71	0.37	0.00	0.00	0.50	0.15
Ę.	∞ (1122	439	372	405	2947	0 0	0 9	2381	817
0	0			0.5	1.00	9.5	1.33	1.33	1.00	1.00	9.5	9.5
Upstream Filter(I) 1.00	٥.			1.00	1.00	9.5	0.80	0.80	0.00	0.00	1.00	1.00
en				6.72	35.7	42.0	1.6	0.0	0.0	0.0	70.7	0.4
Incr Delay (d2), s/veh	<u>ت</u> و			0.5	0.7	107.9	3.3	0.3	0.0	0.0	8:0	0.4
	0 1			0:0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0.0
%ile BackOtQ(95%),veh/ln 1.7				2.9	1.7	31.4	4.0	4.0	0.0	0:0	11.3	3.0
ay, s/veh	c					0	5	ć	c	ć	2	;
LnGrp Delay(d),s/ven				- 20.1	ي د.م	9.84 D	0.2C	o.o .c	0.0	0.0	0.12	4. D
المراب امر					2 5	-		1047	c	c	1001	
Applicacii voi, veli/ii					2002			123			20.4	
Applicacii Delay, s/veii					2.50			5.7			t: 07	
Apploacii LOS					L			۵			٥	
Timer - Assigned Phs			က		2	9	7	80				
Phs Duration (G+Y+Rc), s	69	7	41.0		12.3	26.7	10.0	31.0				
Change Period (Y+Rc), s	2		2.0		2.0	2.0	2.0	2.0				
Max Green Setting (Gmax), s	62.0		13.0		13.0	44.0	7.0	26.0				
Max Q Clear Time (g_c+l1), s	S	9.5	_		7.7	50.0	4.1	28.0				
Green Ext Time (p_c), s	о		.3		0.2	9.7	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay		38	5.5									
HCM 6th LOS			۵									

5.0 10.0 12.0 10.9% 4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

1.0

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

4.0 0.0 5.0 Lag

5.0 21.0 49.0 44.5%

5.0 10.0 18.0 16.4%

5.0 21.0 25.0 22.7%

28.2%

5.0 10.0 18.0 16.4% 4.0 1.0 0.0 5.0 Lead

5.0 10.0 12.0 10.9% 4.0 1.0 0.0 5.0 Lead

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

Min 58.9 0.54 0.14 2.9 2.9 2.9 A

C-Max 62.7 0.57 0.38 17.1 0.0

Min 10.5 0.10 0.50 0.50 0.0 49.5 49.5

Min 25.6 0.23 0.97 66.0 0.0 66.0

Min 13.0 0.12 0.94 80.0 0.0 80.0

Min 19.3 0.18 0.46 9.1 9.1

Min 6.7 0.06 0.32 53.7 0.0 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 25.6 0.23 0.44 39.6 0.0 0.0 D 66.3

C-Max 47.2 0.43 0.55 25.2 0.0 25.2 C 23.1

№ 04 **4** , g 07 \$ Splits and Phases: 8: San Mateo Blvd. & I-40 WB Ramp ◆ Ø6 (R) Ø2 (R) 05

Intersection LOS: C ICU Level of Service B

Intersection Signal Delay: 33.6 Intersection Capacity Utilization 59.4% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.97

Natural Cycle: 65

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Actuated Cycle Length: 110 Offset: 49:5 (45%), Referenced to phase 2:NBT and 6:SBT, Start of Green

2031 AM Peak BUILD Conditions - Mitigated Conditions

2031 AM Peak BUILD Conditions - Mitigated Conditions

Synchro 10 Report 2031AB_Mit.syn

Synchro 10 Report 2031AB_Mit.syn

Intersection								
Int Delay, s/veh	1.3							
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	ች	7	ተተተ	7	*			
Traffic Vol, veh/h	97	66	1563	69	126	1568		
Future Vol, veh/h	97	66	1563	69	126	1568		
Conflicting Peds, #/hr	0	0	0	0	0	0		
Sign Control	Stop	Stop	Free	Free	Free	Free		
RT Channelized	-	None	-	None	-	None		
Storage Length	30	0	-	115	220	-		
Veh in Median Storage	, # 0	-	0	-	-	0		
Grade, %	0	-	0	-	-	0		
Peak Hour Factor	92	92	92	92	92	92		
Heavy Vehicles, %	3	3	3	3	3	3		
Mvmt Flow	105	72	1699	75	137	1704		
Major/Minor I	Minor1	ı	Major1		Major2			
Conflicting Flow All	2655	850	0	0	1774	0		
Stage 1	1699	-	-	-	-	-		
Stage 2	956	_	-	-	_	-		
Critical Hdwy	5.76	7.16	-	-	5.36	_		
Critical Hdwy Stg 1	6.66	-	_	_	-	-		
Critical Hdwy Stg 2	6.06	_	_	-	-	_		
Follow-up Hdwy	3.83	3.93	_	-	3.13	-		
Pot Cap-1 Maneuver	*368	*555	-	-	695	_		
Stage 1	*569	-	-	-	-	-		
Stage 2	*569	-	-	-	-	-		
Platoon blocked, %	1	1	-	-	1	-		
Mov Cap-1 Maneuver	*296	*555	-	-	695	-		
Mov Cap-2 Maneuver	*296	-	-	-	-	-		
Stage 1	*569	-	-	-	-	-		
Stage 2	*457	-	-	-	-	-		
<u> </u>								
Approach	WB		NB		SB			
HCM Control Delay, s	19.1		0		0.9			
HCM LOS	C				0.0			
Minor Long/Major M		NDT	NDD	MDL 41	VDL0	CDI	CDT	
Minor Lane/Major Mvm	IL	NBT		VBLn1V		SBL	SBT	
Capacity (veh/h)		-	-	296	555	695	-	
HCM Cartral Dalay (a)		-	-	0.356			-	
HCM Control Delay (s)		-	-	23.7	12.4	11.4	-	
HCM Lane LOS	\	-	-	C	В	B	-	
HCM 95th %tile Q(veh)		-	-	1.6	0.4	0.7	-	
Votes			_					
~: Volume exceeds cap	oacity	\$: De	lay exc	eeds 30	00s	+: Comp	outation Not Defined	*: All major volume in platoon

Intersection									
Int Delay, s/veh	0.1								
Movement	WBL	WBR	NBT	NBR	SBL	SBT			
Lane Configurations		7	ተተኈ			^			
Traffic Vol, veh/h	0	31	1565	57	0	1630			
Future Vol, veh/h	0	31	1565	57	0	1630			
Conflicting Peds, #/hr	0	0	0	0	0	0			
Sign Control	Stop	Stop	Free	Free	Free	Free			
RT Channelized	-	None	-	None	-	None			
Storage Length	_	0	_	-	_	-			
Veh in Median Storage,	,# 0	-	0	_	-	0			
Grade, %	0	-		_	_	0			
Peak Hour Factor	92	92	92	92	92	92			
Heavy Vehicles, %	3	3	3	3	3	3			
Mvmt Flow	0	34	1701	62	0	1772			
NA - i /NAi	En . 4		M-:-4		A-:- C				
	/linor1		Major1		/lajor2				
Conflicting Flow All	-	882	0	0	-	-			
Stage 1	-	-	-	-	-	-			
Stage 2	-	7.40	-	-	-	-			
Critical Hdwy	-	7.16	-	-	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-			
Critical Hdwy Stg 2	-	-	-	-	-	-			
Follow-up Hdwy	-	3.93	-	-	-	-			
Pot Cap-1 Maneuver	0	*555	-	-	0	-			
Stage 1	0	-	-	-	0	-			
Stage 2	0	-	-	-	0	-			
Platoon blocked, %		1 *EEE	-	-		-			
Mov Cap-1 Maneuver	-	*555	-	-	-	-			
Mov Cap-2 Maneuver	-	-	-	-	-	-			
Stage 1	-	-	-	-	-	-			
Stage 2	-	-	-	-	-	-			
Approach	WB		NB		SB				
HCM Control Delay, s	11.9		0		0				
HCM LOS	В								
Minor Lane/Major Mvmt	+	NBT	NDDV	VBLn1	SBT				
		INDI	INDIX						
Capacity (veh/h) HCM Lane V/C Ratio		-	-	555 0.061	-				
HCM Control Delay (s)		-		11.9	-				
HCM Lane LOS		-	-	11.9 B	-				
HCM 95th %tile Q(veh)		-	-	0.2	-				
		-	•	U.Z	•				
Notes									
~: Volume exceeds cap	acity	\$: De	elay exc	eeds 30	0s	+: Comp	outation Not Defined	*: All major volume in platoor	1

Intersection								
Int Delay, s/veh	0.9							
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations	ሻ	^	†		W			
Traffic Vol, veh/h	37	598	492	55	38	26		
Future Vol, veh/h	37	598	492	55	38	26		
Conflicting Peds, #/hr	0	0	0	0	0	0		
Sign Control	Free	Free	Free	Free	Stop	Stop		
RT Channelized	-	None	-	None	-	None		
Storage Length	80	-	_	-	0	-		
Veh in Median Storage		0	0	-	0	-		
Grade, %	-	0	0	_	0	_		
Peak Hour Factor	92	92	92	92	92	92		
Heavy Vehicles, %	3	3	3	3	3	3		
Mvmt Flow	40	650	535	60	41	28		
Major/Minor	Major1		/loior?		/lines?			
	Major1		Major2		Minor2	000		
Conflicting Flow All	595	0	-	0	970	298		
Stage 1	-	-	-	-	565	-		
Stage 2	4 16	-	-	-	405	- 6.06		
Critical Hdwy	4.16	-	-	-	6.86	6.96		
Critical Hdwy Stg 1	-	-	-	-	5.86	-		
Critical Hdwy Stg 2	2.23	-	-	-	5.86 3.53	3.33		
Follow-up Hdwy	970	-	-	-	*436	695		
Pot Cap-1 Maneuver Stage 1	970	-	-	-	*530	090		
Stage 1	-	-	-		*804	-		
Platoon blocked, %		-	-	-	1	_		
Mov Cap-1 Maneuver	970	-	-	-	*418	695		
Mov Cap-1 Maneuver	310	_			*418	- 095		
Stage 1		_		_	*508			
Stage 2	_	_	_	_	*804	_		
Olugo Z					JU-1			
Approach	EB		WB		SB			
HCM Control Delay, s	0.5		0		13.4			
HCM LOS					В			
Minor Lane/Major Mvm	nt	EBL	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)		970	-	-	-	499		
HCM Lane V/C Ratio		0.041	-	-	_	0.139		
HCM Control Delay (s)		8.9	_	-	-	13.4		
HCM Lane LOS		A	-	-	-	В		
HCM 95th %tile Q(veh))	0.1	-	-	-	0.5		
Notes	oooit.	¢. D.	lov ove	oods 20	100	u Camir	outotion Not Defined	*: All major valuma in plate as
~: Volume exceeds cap	pacity	⊅: D6	iay exc	eeds 30	JUS	+: Comp	outation Not Defined	*: All major volume in platoon

2031 PM Peak Hour NO BUILD Analyses

HCM 6th Signalized Intersection Summary 1: Girard Ct. & Indian School Rd.

1: Girard Ct. & Indian School Rd.

Timings

HCM 6th Signalized Intersection Summary 1: Girard Ct. & Indian School Rd.	nalized Intersection & Indian School Rd	ction ol Rd.	Summ	ary					Te Te	rry O.	Terry O. Brown, PE 06/27/2019	own, PE 06/27/2019
	•	†	/	\	ļ	4	•	•	•	٠	→	•
Movement	EB	EBT	BB	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	₩.		×	₩		je-	£,		×	£	
Traffic Volume (veh/h)	31	494	4	12	681	35	74	23	2	78	17	23
Future Volume (veh/h)	31	494	41	12	681	35	74	23	7	78	17	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		2			2			2			8	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	34	537	42	5	740	9	8	22	2	82	8	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	က	က	က	က	က	က	က	က	က	က	က	က
Cap, veh/h	574	2359	197	999	2235	302	247	199	16	263	85	114
Arrive On Green	0.72	0.72	0.72	0.95	0.95	0.95	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	020	3293	275	826	3121	422	1353	1695	136	1372	703	977
Grp Volume(v), veh/h	34	287	295	13	418	422	80	0	27	85	0	43
Grp Sat Flow(s),veh/h/ln	029	1763	1806	826	1763	1780	1353	0	1831	1372	0	1680
Q Serve(g_s), s	1:0	3.3	3.3	0.1	1.0	1.0	3.4	0.0	8.0	3.5	0:0	4.
Cycle Q Clear(g_c), s	2.0	3.3	3.3	3.4	1.0	1.0	4.8	0:0	8.0	4.3	0.0	1.4
Prop In Lane	1.00		0.15	1.00		0.24	1.00		0.07	1.00		0.58
Lane Grp Cap(c), veh/h	574	1262	1293	999	1262	1274	247	0	215	263	0	197
V/C Ratio(X)	90:0	0.23	0.23	0.02	0.33	0.33	0.32	0.00	0.13	0.32	0.0	0.22
Avail Cap(c_a), veh/h	574	1262	1293	999	1262	1274	217	0	280	236	0	532
HCM Platoon Ratio	1.00	9:	1.00	 S	1.33	 8.	0.1	0.1	0.1	1.00	0.1	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.63	0.63	0.63	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	2.9	5.9	2.9	0.7	0.4	0.4	26.2	0:0	23.7	25.7	0.0	24.0
Incr Delay (d2), s/veh	0.7	0.4	0.4	0.0	0.4	0.4	0.8	0:0	0.3	0.7	0.0	9.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2		1.2	0.0	0.5	0.5	2.0	0.0	9.0	2.1	0:0	1.0
Unsig. Movement Delay, s/veh				į								
LnGrp Delay(d),s/veh	3.1	3.3	3.3	0.7	6.0	6.0	26.9	0.0	24.0	26.4	0:0	24.5
LnGrp LOS	∢	∢	∢	⋖	∢	∢	د	∢	د	د	∢	اد
Approach Vol, veh/h		919			823			107			128	
Approach Delay, s/veh		3.3			6.0			26.2			25.8	
Approach LOS		∢			∢			ပ			ပ	
Timer - Assigned Phs		2		4		9		8				
Phs Duration (G+Y+Rc) s		12.0		48.0		120		48.0				
Change Period (Y+Rc), s		2.0		5.0		2.0		2.0				
Max Green Setting (Gmax), s	"	19.0		31.0		19.0		31.0				
Max Q Clear Time (g c+l1), s	s	6.8		5.3		6.3		5.4				
Green Ext Time (p_c), s		0.2		3.7		0.3		5.4				
Intersection Summary												
HCM 6th Ctrl Dolay			5.2									
HOM 64 LOC			4.0									
TOW OUT LOS			τ									

5.0 24.0 24.0 4.0 4.0 1.0 0.0 5.0

5.0 21.0 24.0 40.0%

5.0 21.0 36.0 60.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

1.0

1.0

0.0

¥ 4

681 NA

¥94 **4**94 **4**

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase Min 9.1 0.15 0.0 13.6 13.6 B B C

Min 9.1 0.15 0.10 19.9 0.0 19.9 B 25.7 C

C-Max 40.9 0.68 0.36 6.0 6.0 6.0 A A

Min 9.1 0.41 28.1 28.1

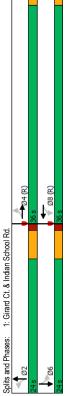
Min 9.1 0.15 0.39 27.6 0.0 27.6

C-Max 40.9 0.68 0.02 4.4 4.4

C-Max 40.9 0.68 0.25 4.2 0.0

C-Max 40.9 0.68 0.08 4.7 4.7

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio



Intersection LOS: A ICU Level of Service A

Intersection Signal Delay: 7.9 Intersection Capacity Utilization 45.1% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.41

Actuated Cycle Length: 60 Offset: 22.2 (37%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green Natural Cycle: 45

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Synchro 10 Report 2031PNX.syn

2031 PM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2031PNX.syn

HCM 6th Signalized Intersection Summary Terry O. Brown, PE 2: Carlisle Blvd. & I-40 WB Ramp

Timings 2: Carlisle Blvd. & I-40 WB Ramp

	\	t	~	-	ļ	1	•	—	•	٠	→	*
Movement	EBE	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		1		r	4	æ	£	***			***	•
Traffic Volume (veh/h)	0	0	0	326	7	352	529	1364	0	0	1199	204
Future Volume (veh/h)	0	0	0	326	7	352	529	1364	0	0	1199	204
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				0.7		0.5	1.00	9	1.00	1.00	9	1.00
Mork Zone On Approach				3.	S. 5	3.5	1.00	S: 8	1.00	1:00	3.5	1.00
Adi Sat Flow veh/h/ln				1856	1856	1856	1856	1856	C	C	1856	1856
Adi Flow Rate, veh/h				360	0	383	575	1483	0	0	1303	90
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				က	က	က	က	က	0	0	က	က
Cap, veh/h				916	0	408	009	3331	0	0	2233	
Arrive On Green				0.26	0.00	0.26	0.35	1.00	0.00	0.00	45.0	0.00
Sat Flow, veri/n				\$000 0000		7/01	075	2523	0	0	2533	7/61
Grip Volunte(V), Veriviti				1767	0	1577	1714	1689	0	0	1689	1572
Q Serve(a s). s				10.1	0.0	28.6	19.7	0.0	0.0	0.0	23.2	0.0
Cycle Q Clear(g_c), s				10.1	0.0	28.6	19.7	0.0	0.0	0.0	23.2	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				916	0	408	009	3331	0	0	2233	
V/C Ratio(X)				0.39	0.00	9. 8.	96.0	0.45	0.00	0.00	0.58	
Avail Cap(c_a), veh/h				945	0 6	419	009	3331	0 6	0 0	2233	5
HCM Platoon Ratio				8.5	8.6	8.5	2.00	2.00	00.0	00.0	8.5	9.9
Uniform Delay (d), s/veh				36.7	0.0	43.5	38.6	0.0	0.0	0.0	25.3	0.0
Incr Delay (d2), s/veh				0.3	0.0	28.8	22.9	0.3	0.0	0.0	[:	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0:0	0.0
%ile BackOfQ(95%),veh/ln				7.8	0.0	20.5	12.9	0.2	0.0	0.0	14.3	0.0
Unsig. Movement Delay, s/ven				0 96	c	107	2	c	c	ć	7 30	
LnGrp Delay(u),s/veri LnGrp LOS				8.05 C	9. A	4.21 E	<u>е</u> Б	5. A	9. A	0.0 V	40.4 C	5
Approach Vol. veh/h					743			2058			1303	4
Approach Delay, s/veh					55.2			17.4			26.4	
Approach LOS					ш			മ			O	
Timer - Assigned Phs		2			2	9		∞				
Phs Duration (G+Y+Rc), s		83.9			26.0	6.73		36.1				
Change Period (Y+Rc), s		2.0			2.0	2.0		2.0				
Max Green Setting (Gmax), s		78.0			21.0	52.0		32.0				
Green Ext Time (p. c+11), s		16.8			0.0	10.7		0.5				
Intersection Summary												
HCM 6th Ctrl Delay			27.1									
HCM 6th LOS			ပ									

C-Max 52.6 0.44 0.55 4.1 4.1

C-Max 78.9 0.66 0.45 9.8 0.3

Min 21.3 0.18 0.95 67.1 67.1

Min 31.1 0.26 0.94 76.7 0.0

Min 31.1 0.26 0.42 40.1 40.1

Min 31.1 0.26 0.42 40.2 0.0 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio Б.58.9

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

C-Max 52.6 0.44 0.59 27.0 0.0 27.0 C C C

5.0 21.0 57.0 47.5% 4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

1.0

5.0 21.0 57.0 47.5%

5.0 21.0 37.0 30.8%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

529 529 Frot

> 352 352 Perm

> 326 326 Perm

Lane Configurations
Traffic Volume (vph)
Future Volume (vph)
Turn Type
Protected Phases

2031 PM Peak NOBUILD Conditions - Existing Geometry

\$6

🕴 🕈 Ø6 (R)

Intersection LOS: C ICU Level of Service D

Splits and Phases: 2: Carlisle Blvd. & I-40 WB Ramp

Ø2 (R)

Intersection Signal Delay: 29.0 Intersection Capacity Utilization 73.3% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.95

Actuated Cycle Length: 120 Offset: 92 (17%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 65 Synchro 10 Report 2031PNX.syn

2031 PM Peak NOBUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 3: Carlisle Blvd. & I-40 EB Ramp Terry O. Brown, PE 06/27/2019

FBL FBT FBR WBL WBT WBR NBL WBT WBT NBL WBT WBT WBT WBT MBT		۸	†	~	\	ţ	✓	•	←	•	۶	→	•
10 10 10 10 10 10 10 10	Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
691 15 649 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Lane Configurations	K.	43	N. W						¥.	¥.	444	
691 15 649 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Traffic Volume (veh/h)	691	15	649	0	0	0	0	1340	461	439	1047	0
100	Future Volume (veh/h)	691	15	649	0	0	0	0	1340	461	439	1047	0
100 100 100 100 100 100 100 100 100 100	Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
1856 1856 1856 1867 100 100 100 100 100 100 100 100 100 10	Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866 1866	Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
1856 1856 1856 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850 1850	Work Zone On Approach		8						2			2	
751 0 716 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	0
992 0.92 0.92 0.92 879 0 173 0 0.92 879 0 1773 0 0.00 870 0 25 0.00 0.25 871 0 776 0 0.00 871 0 1772 0 0.00 872 0 16.1 0 0.00 873 0.0 16.1 0 0.00 874 0 1773 0 0.00 875 0.00 0.01 876 0.00 0.01 877 0 0.00 1.00 878 0.00 0.00 878 0.00 0.00 879 0.00 0.00 879 0 0.00 889 0.00 0.00 889 0.00 0.00 889 0.00 0.00 889 0.00 0.00 889 0.00 0.00 889 0.00 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00 890 0.00	Adj Flow Rate, veh/h	751	0	716				0	1457	501	477	1138	0
8 3 3 3 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
879 0 1773 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Percent Heavy Veh, %	က	က	က				0	က	က	က	က	0
925 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.25 0.00 0.24 0.00 16.1 0.00 0.00 0.00 0.00 0.00 0.00	Cap, veh/h	879	0	1173				0	3532	739	536	3383	0
3834 0 4777 0 0 7 1751 0 776 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0.25	0.00	0.25				0.00	0.63	0.63	0.31	1.00	0.00
751 0 716 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		3534	0	4717				0	1867	1572	3428	5233	0
1767 0 1572 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Grp Volume(v), veh/h	751	0	716				0	1457	501	477	1138	0
24.3 0.0 16.1 0.0 24.3 0.0 16.1 0.0 24.3 0.0 16.1 0.0 24.3 0.0 16.1 0.0 20.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 0.0 0.0 0.0 20.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Grp Sat Flow(s),veh/h/In	1767	0	1572				0	1503	1572	1714	1689	0
243 0.0 16.1 0.0 0.0 16.1 0.0 0.0 16.1 0.0 0.0 17.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Q Serve(g_s), s	24.3	0.0	16.1				0.0	1.8	24.9	15.9	0.0	0.0
100 100 000 000 000 000 000 000 000 000	Cycle Q Clear(g_c), s	24.3	0.0	16.1				0.0	11.8	24.9	15.9	0.0	0.0
879 0 1173 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
85 0.00 0.61 0.00 0.00 0.00 0.00 0.00 0.00	Lane Grp Cap(c), veh/h	879	0	1173				0	3532	739	536	3383	0
972 0 1297 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	V/C Ratio(X)	0.85	0.00	0.61				0.00	0.41	0.68	0.89	0.34	0.00
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00	Avail Cap(c_a), veh/h	972	0	1297				0	3532	739	657	3383	0
100 0.00 1.00 0.00 0.00 0.00 0.00 0.00	HCM Platoon Ratio	1.00	9.	00.				1.00	1.33	1.33	2.00	2.00	1.00
43.0 0.0 39.9 0.0 7.0 0.0 0.7 0.0 8/veh 5.0 0.0 0.0 0.0 5.0 0.0 40.6 0.0 D A D A D A 1467 45.4 5 23.8 614 34.8 85.2 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5 5.0 5.0 5.0 5.0 5 5.0 5.0 5.0 5.0 5 5.0 5.0 5.0 5.0 5 5.0 5.0 5.0 5.0 5 5.0 5.0 5.0 5.0 5 5.0 5.0 5.0 5.0 5 5.0 5.0 5.0 5.0 5 5.0 5.0 5.0 5.0 5.0 5 5.0 5.0 5.0 5.0 5.0 5 5.0 5.0 5.0 5.0 5.0 5 5.0 5.0 5.0 5.0 5.0 5.0 5 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.	Upstream Filter(I)	1.00	0.00	1.00				0.00	0.09	0.09	0.80	0.80	0.00
7.0 0.0 0.7 0.0 8/veh 17.0 0.0 10.4 0.0 8/veh 50.0 0.0 40.6 0.0 1467 1467 1 2 4 6 1 454 1 2 4 6 1 5.0 5.0 5.0 1 1,5 17.9 26.9 26.3 2.0	Uniform Delay (d), s/veh	43.0	0.0	39.9				0.0	14.1	16.6	40.3	0.0	0.0
s/veh (17) 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Incr Delay (d2), s/veh	7.0	0.0	0.7				0.0	0.0	0.5	10.3	0.2	0.0
siveh 50.0 10.4 0.0 0.0 siveh 50.0 40.6 0.0 0.0 40.6 0.0 40.6 0.0 40.6 0.0 40.6 0.0 45.4 0.0 45.4 0.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
siveh 50.0 0.0 40.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	%ile BackOfQ(95%),veh/In	17.0	0.0	10.4				0.0	4.4	8.7	9.9	0.1	0.0
50.0 0.0 40.6 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 1467 0.0 146	Unsig. Movement Delay, s/veh												
1467 A D A D A A 1467 454 55 50 50 50 50 50 50 50 50 50 50 50 50	LnGrp Delay(d),s/veh	20.0	0.0	9.04				0.0	14.2	17.0	50.5	0.2	0.0
1467 45.4 D 4 6 s 23.8 61.4 34.8 85.2 s 5.0 5.0 5.0 xx), s 23.0 49.0 33.0 77.0 11), s 17,9 26.9 26.3 2.0	LnGrp LOS	۵	∢	۵				⋖	В	Ф	۵	⋖	۷
1 2 4 6 6 6 8 2 8 614 34.8 85.2 8 614 34.8 85.2 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Approach Vol, veh/h		1467						1958			1615	
1 2 4 6 85.2 8 61.4 34.8 85.2 5.0 5.0 5.0 5.0 5.0 5.0 11), s 77.0 77.0 11), s 77.9 26.9 26.3 2.0	Approach Delay, s/veh		45.4						14.9			15.1	
s 23.8 61.4 34.8 6 s 5.0 5.0 5.0 5.0 5.0 11), s 17.9 26.9 26.3	Approach LOS		Ω						മ			Ф	
s 23.8 61.4 34.8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9 9 9	Timer - Assigned Phs	_	2		4		9						
s 5.0 5.0 5.0 5.0 sxt,s 23.0 49.0 33.0 7.1 (11),s 77.9 26.9 26.3	Phs Duration (G+Y+Rc), s	23.8	61.4		34.8		85.2						
xx), s 23.0 49.0 33.0 (1), s 17.9 26.9 26.3	Change Period (Y+Rc), s	5.0	5.0		2.0		2.0						
11), s 17.9 26.9 26.3	Max Green Setting (Gmax), s	23.0	49.0		33.0		77.0						
007	Max Q Clear Time (g_c+l1), s	17.9	26.9		26.3		2.0						
0.9 13.3 3.5	Green Ext Time (p_c), s	6.0	13.3		3.5		10.8						

C-Max 77.8 0.65 0.35 6.7 6.8 A 28.9 C

Min 20.9 0.17 0.81 81.6 0.0 81.6

C-Max 51.9 0.43 0.52 11.9 0.0 11.9 B

Min 32.2 0.27 0.63 42.6 0.0 42.6

Min 32.2 0.27 0.82 49.7 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

C-Max 51.9 0.43 0.45 34.6 0.0 34.6 C C C

32.2 0.27 0.62 46.5 0.0 0.0 D D D

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

5.0 21.0 82.0 68.3% 4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

4.0 0.0 5.0

1.0 0.0

5.0 10.0 28.0 23.3%

5.0 21.0 54.0 45.0%

5.0 21.0 54.0 45.0%

5.0 21.0 38.0 31.7%

5.0 21.0 38.0 31.7%

5.0 21.0 38.0 31.7%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

1047 NA

439 439 Prot

461

649 649 Perm

691 691 Perm

Lane Configurations Traffic Volume (vph) Future Volume (vph)

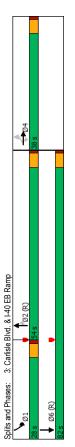
Permitted Phases Detector Phase Protected Phases

3: Carlisle Blvd. & I-40 EB Ramp

Timings

User approved volume balancing among the lanes for turning movement. HCM 6th Ctrl Delay HCM 6th LOS

23.8



Intersection LOS: C ICU Level of Service D

Intersection Signal Delay: 34.1 Intersection Capacity Utilization 73.3% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.82

Natural Cycle: 60

Actuated Cycle Length: 120 Offset: 110.4 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Synchro 10 Report 2031PNX.syn

2031 PM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2031PNX.syn

HCM 6th Signalized Intersection Summary
4: Carlisle Blvd. & Indian School Rd.

Timings 4: Carlisle Blvd. & Indian School Rd. 465

350 350 A

₹888

565 565

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase

Protected Phases

	4				,	•		4		-	-	
	^	Ť	<u> </u>	/	ļ	1	•	-	•	٠	→	٠
Movement	EBL	EBT	EB	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	<u>r</u>	4₽		¥	4₽		×	441		<u>r</u>	44	
Traffic Volume (veh/h)	265	802	116	75	320	239	157	1376	89	242	914	465
Future Volume (veh/h)	265	802	116	75	320	239	157	1376	89	242	914	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		8			8			S			8	
Adj Sat Flow, veh/h/In	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	614	872	126	82	380	260	171	1496	74	263	993	505
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	က	က	က	က	က	က	က	ო	ო	က	က	
Cap, veh/h	442	1116	161	256	415	280	251	141	71	285	1179	853
Arrive On Green	0.42	0.72	0.72	0.05	0.21	0.21	0.08	0.29	0.29	0.25	0.67	0.67
Sat Flow, veh/h	1767	3091	447	1767	2014	1359	1767	4944	245	1767	3526	1572
Grp Volume(v), veh/h	614	497	501	82	332	308	171	1022	548	263	993	505
Grp Sat Flow(s),veh/h/ln	1767	1763	1775	1767	1763	1611	1767	1689	1812	1767	1763	1572
Q Serve(g_s), s	25.0	21.6	21.6	4.3	22.1	22.5	8.0	35.0	35.0	13.1	25.6	7
Cycle Q Clear(g_c), s	25.0	21.6	21.6	4.3	22.1	22.5	8.0	35.0	35.0	13.1	25.6	7
Prop In Lane	1.00		0.25	1.00		0.84	1.00		0.13	1.00		_
Lane Grp Cap(c), veh/h	442	929	641	226	363	332	251	984	228	285	1179	853
V/C Ratio(X)	1.39	0.78	0.78	0.32	0.91	0.93	0.68	1.04	1.04	0.92	0.84	0
Avail Cap(c_a), veh/h	442	929	<u>8</u>	353	367	336	293	984	528	310	1179	853
HCM Platoon Ratio	2.00	2.00	2.00	1:00	1.00	1:00	1.00	1.00	1.00	2.00	2.00	7
Upstream Filter(I)	0.97	0.97	0.97	0.94	0.94	0.94	0.88	0.88	0.88	0.90	0.90	0
Uniform Delay (d), s/veh	21.9	13.7	13.7	34.6	46.6	46.8	29.5	45.5	42.5	27.0	17.5	
Incr Delay (d2), s/veh	187.6	6.1	0.9	0.7	25.4	29.8	4.5	37.3	47.0	28.3	6.7	
Initial Q Delay(d3),s/veh	0:0	0:0	0.0	0.0	0.0	0:0	0.0	0.0	0.0	0:0	0:0	
%ile BackOfQ(95%),veh/ln	44.7	9.3	9.3	3.4	17.5	17.0	9.9	26.8	30.2	10.6	10.6	
Unsig. Movement Delay, s/veh					1		1	i				
LnGrp Delay(d),s/veh	209.4	19.7	19.7	35.2	72.0	9.9/	33.7	79.8	89.5	55.2	24.2	11.7
Lugp LOS	-	m	20		ш	ш	د	-	-	ш	2	
Approach Vol, veh/h		1612			722			1741			1761	
Approach Delay, s/veh		92.0			8.69			78.3			72.5	
Approach LOS		ш			ш			ш			ပ	
Timer - Assigned Phs	_	2	က	4	2	9	7	∞				
Phs Duration (G+Y+Rc), s	20.3	40.0	11.4	48.3	15.1	45.1	30.0	29.7				
Change Period (Y+Rc), s	2.0	2.0	2.0	2.0	2.0	2.0	5.0	2.0				
Max Green Setting (Gmax), s		33.0	13.0	37.0	13.0	37.0	25.0	25.0				
Max Q Clear Time (g_c+I1), s	15.1	37.0	6.3	23.6	10.0	27.6	27.0	24.5				
Green Ext Time (p_c), s	0.1	0.0	0.1	5.1	0.1	2.7	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay	l	l	65.0	l						l	l	L
			2									

5.0 10.0 30.0 25.0% 4.0 1.0 0.0 5.0 Lead

> 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

5.0 10.0 30.0 25.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

Min 70.2 0.58 0.52 13.6 0.0 13.6 B

Min 56.1 0.47 0.89 62.6 0.0 62.6

Min 47.2 0.39 0.74 49.8 0.0

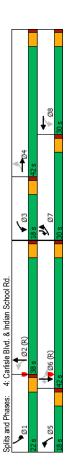
Min 31.9 0.27 0.44 28.9 0.0 28.9

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 23.2 0.19 0.87 50.3 0.0 50.3 D D D

Min 39.5 0.33 0.88 47.0 0.0 47.0 D D

C-Max 40.2 0.34 0.85 45.1 0.0 45.1 D



Intersection LOS: EICU Level of Service G

Intersection Signal Delay: 73.3 Intersection Capacity Utilization 106.8% Analysis Period (min) 15

Control Type: Actuated-Coordinated

Actuated Cycle Length: 120 Offset: 9.6 (8%), Referenced to phase 2.NBTL and 6:SBTL, Start of Green

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS Synchro 10 Report 2031 PNX:syn

2031 PM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2031PNX.syn

HCM 6th Signalized Intersection Summary 5: Washington St. & Indian School Rd Ц ۵ C

0 1.00 1.00

54 0 0.00

00.00

8808

1

8.8

8.0

Lane Configurations Traffic Volume (veh/h) Future Volume (veh/h)

282

1.00 No 1856 301 0.92 33 313 0.28

1.00 No 1856 307 0.92 3 416 0.28 1508

1.00 No No 339 0.92 3 1036 0.35 202 202 7.6 7.6

1.00 No 1856 548 0.92 3 1180 0.39 3006 321 1763 12.2

203 0.92 3

Initial Q (Qb), veh
Ped-Bite Adi(A, pbT)
Parking Bus, Adi
Work Zone On Approach
Adj Sat Flow, vehh/lin
Adj Flow State, vehh/
Peak Hour Fador
Percent Heavy Veh, %

Cap, vehinh
Arrive On Green
Sat Flow, vehinh
Grp Volume(v), vehinh
Grp Sat Flow(s), vehinh
Q Servel(g, S), s
Cycle Q Cleari(g, c), s
Prop in Lane
Lane Grp Cap(c), vehinh
VIC Ratio(X)
Avail Cap(c, a), vehinh
HCM Platoon Ratio

0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.

623 0.32 623 1.00 1.00 21.4 1.4 0.0

692 0.46 692 1.00 1.00 20.4 2.2 0.0 8.8

Uniform Delay (d), s/veh

Upstream Filter(I)

0.0 522 58.8

23.0

35.5 D

0.0

26.0

22.9 C

22.8 C 454

16.9 B

22.7

22.6 C 846 21.1 C

16.2

Incr Delay (d2), siveh Initial Q Delay (d3), siveh Wile BackOfQ(95%), vehAln Unsig. Movement Delay, siveh LnGrp Delay(d), siveh

447 33.8 C

37.0 5.0 32.0 9.8 2.2

13.6 11.0 8.4 0.1

30.0 5.0 25.0 25.7 0.0

10.0 5.0 7.0 4.9 0.0

40.6 5.0 32.0 14.3 3.5

10.0 11.0 3.5 0.0

30.0 5.0 25.0 18.8

5.0 7.0 7.0 0.0

Phs Duration (G+Y+Rc), s

Approach Delay, s/veh Approach LOS imer - Assigned Phs

Approach Vol, veh/h

Max Q Clear Time (g_c+l1), s Green Ext Time (p_c), s Change Period (Y+Rc), s Max Green Setting (Gmax), s

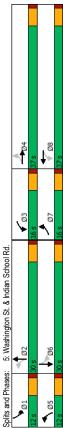
32.5

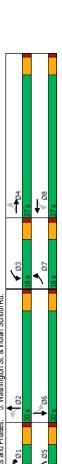
HCM 6th Ctrl Delay HCM 6th LOS

0.00

0.0 0.0

Lane Group Lane Configurations Lane Configuration	o. Madimigran or. A markin conson na									
tions		1	†	•	ţ	•	←	٠	→	
titions	Lane Group	EB	EBT	WBL	WBT	NBL	NBT	SBL	SBT	
(vph) 187 504 43 312 74 282 54 (vph) 187 504 43 312 74 282 54 (vph) 187 504 43 312 74 282 54 54 55 50 50 74 282 54 54 55 50 50 74 50 50 50 50 50 50 50 50 50 50 50 50 50	Lane Configurations	*	4₽	×	4₽	*	\$	*	£	
(vph) 187 504 43 312 74 282 54 es	Traffic Volume (vph)	187	204	43	312	74	282	54	277	
es 7 4 3 8 5 2 1 fe 8 5 2 1 fe 9 5 5 6 5 6 5 6 5 6 fe 9 1 100 210 100 210 100 fe 8 2 8 5 2 1 fe 9 1 100 210 100 210 100 fe 8 389% 168% 389% 126% 316% 126% 31 fe 9 1 10 10 1 10 10 10 10 fe 9 1 10 10 1 10 10 10 fe 9 1 10 10 10 10 10 fe 9 1 10 10 fe 9 10 10	Future Volume (vph)	187	204	43	312	74	282	24	277	
ess 7 4 3 8 5 2 1 ess 7 4 3 8 5 2 2 1 fees 7 4 3 8 5 2 2 1 fees 7 4 3 8 5 5 2 6 fees 7 4 3 8 5 5 2 1 fees 7 4 3 8 5 5 2 1 fees 8 38.9% 16.0 5.0 5.0 5.0 5.0 5.0 fees 8 38.9% 16.8% 38.9% 12.6% 31.6% 12.6% 3.0 fees 8 38.9% 16.8% 38.9% 12.6% 31.6% 12.6% 3.0 fees 8 38.9% 16.8% 38.9% 12.6% 31.6% 12.6% 3.0 fees 9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 fees 9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 fees 9 0.0 0.0 0.0 0.0 0.0 0.0 fees 9 0.0 0.0 0.0 0.0 0.0 0.0 fees 9 0.0 0.0 0.0 0.0 0.0 fees 9 0.0 0.0 0.0 0.0 0.0 fees 9 0.0 0.0	Turn Type	pm+pt	≨	pm+pt	Ϋ́	pm+pt	Ϋ́	pm+pt	Ϋ́	
(s) 5.0 5.0 5.0 5.0 5.0 5.0 5.0 (s) 1.0 (s) 1.0 21.0 10.0 10.0 21.0 10.0 10.0 21.0 10.0 12.0 12	Protected Phases	7	4	က	∞	22	7	-	9	
(s) 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Permitted Phases	4		∞		2		9		
(s) 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Detector Phase	7	4	က	∞	22	7	-	9	
(s) 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Switch Phase									
(s) 100 210 100 210 100 210 100 100 100 100	Minimum Initial (s)	5.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
160 37.0 16.0 37.0 12.0 30.0 12.0 12.0 16.8% 38.9% 16.8% 38.9% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 31.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.6% 12.	Minimum Split (s)	10.0	21.0	10.0	21.0	10.0	21.0	10.0	21.0	
(s) \$16.8% 38.9% 16.8% 31.6% 31.6% 12.6% 31.6% 14.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	Total Split (s)	16.0	37.0	16.0	37.0	12.0	30.0	12.0	30.0	
1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0 1,0	Total Split (%)	16.8%	38.9%	16.8%	38.9%	12.6%	31.6%	12.6%	31.6%	
10 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0 1	Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	All-Red Time (s)	1:0	1.0	1:0	1.0	1.0	1:0	1:0	1.0	
5.0 5.0 5.0 5.0 5.0 5.0 5.0 Lead Lag Lead Lag Lead Lag Lead Min Max Min Max Min Min 45.8 35.5 38.8 32.0 31.8 25.1 31.5 0.49 0.38 0.41 0.34 0.34 0.27 0.49 0.34 0.34 0.34 0.34 0.40 0.09 0.0 0.0 0.0 16.1 23.3 13.4 22.7 24.6 42.5 20.9 16.1 23.3 13.4 22.7 24.6 42.5 20.9 16.1 23.3 13.4 22.7 24.6 42.5 20.9 16.2 23.3 23.4 22.7 24.6 22.5 16.3 23.3 23.4 23.7 24.6 23.5 16.4 23.3 23.4 22.7 24.6 22.5 16.5 23.5 23.8 23.8 16.1 23.3 23.4 23.3 17.6 21.8 39.3 18.1 23.3 23.4 23.8 18.2 23.4 23.4 23.8 18.3 23.4 23.8 23.8 18.3 23.4 23.8 23.8 18.3 23.4 23.8 23.8 18.3 23.4 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 23.8 18.3 23.8 23.8 18.3 23.8 23.8 18.3 23.8 23.8 18.3 23.8 23.8 18.3 23.8 23.8 18.3 23.8 23.8 18.3 23.8 23.8 18.3 23.8 23.8 18.3 23.8 18.3 23.8 23.8 18.3 23.8 23.8 18.3 23.8 23.8 18.3 23.8 23.8 18.3 23.8 23.8 18.3 23.8 23.8 18.3 23.8 23.8 18.3 23.8 23.8 18.3 23.8 23.8 18.3 23.8 23.8 18.3 23.8 23.8	Lost Time Adjust (s)	0:0	0.0	0.0	0.0	0.0	0.0	0:0	0.0	
Lead Lag Lead Lag Lead Lag Lead Min Max Min Max Min Min Min Min 45.8 35.5 38.8 32.0 31.8 25.1 31.5 0.49 0.38 0.41 0.34 0.34 0.27 0.34 0.42 0.42 0.42 0.42 0.40 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Total Lost Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Min Max Min Max Min Min Min 45.8 35.5 38.8 32.0 31.8 25.1 31.5 0.49 0.38 0.41 0.34 0.34 0.27 0.34 0.42 0.49 0.14 0.34 0.39 0.76 0.23 16.1 23.3 13.4 22.7 24.6 42.5 20.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	
Min Max Min Max Min Min Min Min Max Min Min Min Max Min	Lead-Lag Optimize?									
458 355 388 32.0 318 25.1 315 0.49 0.38 0.41 0.34 0.34 0.27 0.34 0.42 0.49 0.44 0.34 0.34 0.37 0.23 16.1 23.3 13.4 22.7 24.6 42.5 20.9 16.1 23.3 13.4 22.7 24.6 42.5 20.9 16.1 23.3 13.4 22.7 24.6 42.5 20.9 16.1 23.3 13.4 22.7 24.6 42.5 20.9 16.2 21.6 2.7 24.6 39.3 21.6 21.8 39.3 22.6 C D C 23.6 39.3 24.0 Intersection LOS: C ation 65.5% IOU Level of Service C	Recall Mode	Min	Max	Min	Max	Min	E Wi	Min	Min	
0.49 0.38 0.41 0.34 0.34 0.27 0.34 0.42 0.42 0.49 0.14 0.34 0.39 0.76 0.23 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Act Effct Green (s)	45.8	35.5	38.8	32.0	31.8	25.1	31.5	24.9	
0.42 0.49 0.14 0.34 0.39 0.76 0.23	Actuated g/C Ratio	0.49	0.38	0.41	0.34	0.34	0.27	0.34	0.26	
16.1 23.3 13.4 22.7 24.6 42.5 20.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	v/c Ratio	0.42	0.49	0.14	0.34	0.39	0.76	0.23	96:0	
0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Control Delay	16.1	23.3	13.4	22.7	24.6	42.5	20.9	65.5	
16.1 23.3 13.4 22.7 24.6 42.5 20.9 B C B C C D C C C D C C C D C A C C D C C C D C C C D C C C D C C D C C C D C C D C C D C C D C C D C C D C C D C C D C C D C C D C C D C C D C C D C C D C C D C C D C C D C C D C C C D C C D C C C D C C D C C C D C C C D C C C C	Queue Delay	0:0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
B C B C C D C 21.6 21.8 39.3 C C D C C D C A.0 Intersection LOS: C atton 65.5% IOU Level of Service C	Total Delay	16.1	23.3	13.4	22.7	24.6	42.5	20.9	65.5	
21.6 21.8 39.3 C C D C C D Coord Intersection LOS: C alion 65.5% IOU Level of Service C	SOT	മ	O	В	ပ	ပ	Ω	ပ	ш	
C C C C C C C C C C C C C C C C C C C	Approach Delay		21.6		21.8		39.3		60.5	
coord 44.0 atton 65.5%	Approach LOS		ပ		ပ		Ω		ш	
coord 4.0 ation 65.5%	Intersection Summary									
coord 44.0 ation 65.5%	Cycle Length: 95									
55.5%	Actuated Cycle Length: 94									
- -	Natural Cycle: 65									
1.65.5%	Control Type: Semi Act-Un	lcoord								
1 65.5%	Maximum v/c Ratio: 0.96									
_	Intersection Signal Delay:	34.0			드	tersection	LOS: C			
	Intersection Capacity Utiliza	ation 65.5%			2	U Level o	f Service	ပ		





2031 PM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2031PNX.syn

Synchro 10 Report 2031PNX.syn

HCM 6th Signalized Intersection Summary 6: Carlisle Blvd. & Constitution Ave.

Timings 6: Carlisle Blvd. & Constitution Ave.

†

135

634 AA

102

S S ₹

226 226 Perm

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase Protected Phases

Terry O. Brown, PE 06/27/2019

		Ì	•	٠			-	-			-	
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	r	*	*	k	*	¥c.	r	₽ ₽		r	*	*
Traffic Volume (veh/h)	526	500	17	8	171	102	19	746	33	8	634	135
Future Volume (veh/h)	226	509	17	\$	171	102	19	746	33	80	634	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	9.		9:	1.00		1.0	1.00		1.0
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		2			욷			2			ટ	
Adj Sat Flow, veh/h/In	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	246	227	9	9	186	1	51	811	42	87	689	147
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	က	က	က	က	က	က	က	က	က	က	က	က
Cap, veh/h	328	603	511	320	603	511	446	2018	105	358	1098	931
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.59	0.59	0.59	1.00	1.00	1.00
Sat Flow, veh/h	1074	1856	1572	1126	1856	1572	652	3410	177	642	1856	1572
Grp Volume(v), veh/h	246	227	18	91	186	111	21	419	434	87	689	147
Grp Sat Flow(s),veh/h/ln	1074	1856	1572	1126	1856	1572	652	1763	1824	642	1856	1572
Q Serve(g_s), s	26.8	11.3	6.0	8.1	9.0	6.2	1.6	15.3	15.3	4.5	0.0	0.0
Cycle Q Clear(g_c), s	35.8	11.3	6.0	19.4	9.0	6.2	1.6	15.3	15.3	19.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		9.
Lane Grp Cap(c), veh/h	328	603	211	320	603	511	446	1043	1079	328	1098	931
V/C Ratio(X)	0.75	0.38	0.04	0.28	0.31	0.22	0.05	0.40	0.40	0.24	0.63	0.16
Avail Cap(c_a), veh/h	364	999	263	357	999	563	446	1043	1079	358	1098	931
HCM Platoon Ratio	1.00	1.00	1.00	1:00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.47	0.47	0.47
Uniform Delay (d), s/veh	43.8	31.2	27.7	38.6	30.4	29.4	10.3	13.1	13.1	5.1	0.0	0.0
Incr Delay (d2), s/veh	9.7	0.4	0.0	0.5	0.3	0.5	0.2	1.2		0.8	1.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.3	8.9	0.7	4.1	7.4	4.3	0.5	10.1	10.4	0.5	0.7	0.1
Unsig. Movement Delay, s/veh			į		;		1			:		
LnGrp Delay(d),s/veh	51.4	31.6	27.7	39.1	30.7	29.6	10.5	14.3	14.2	2.9	د .	0.2
LnGrp LOS		ပ	ပ	۵	ပ	ပ	м	m	ш	⋖	⋖	
Approach Vol, veh/h		491			388			874			923	
Approach Delay, s/veh		41.4			32.4			14.2			د .	
Approach LOS		٥			O			В			∢	
Timer - Assigned Phs		2		4		9		∞				
Phs Duration (G+Y+Rc), s		76.0		44.0		76.0		44.0				
Change Period (Y+Rc), s		2.0		2.0		2.0		2.0				
Max Green Setting (Gmax), s		0.79		43.0		0.79		43.0				
Max Q Clear Time (g_c+l1), s		17.3		37.8		21.8		21.4				
Green Ext Time (p_c), s		6.5		1.2		7.2		1.7				
Intersection Summary												
TOM 6# Ctd Doloss	l		71.0	l	l	l	l	l	l			l
			ر د									

C-Max 77.1 0.64 0.14 1.0 0.0

C-Max 77.1 0.64 0.58 12.1 12.1

C-Max 77.1 0.64 0.25 6.7 6.7

C-Max 77.1 0.64 0.06 11.3 0.0

Min 0.27 0.22 6.8 6.8 6.8

Min 32.9 0.27 0.38 37.7 0.0 37.7

Min 32.9 0.27 0.04 10.9 0.0 B

Min 32.9 0.27 0.90 74.6 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 32.9 0.27 0.45 37.4 0.0 37.4 D D

C-Max 77.1 0.64 0.38 11.8 0.0 11.8 B

Min 32.9 0.27 0.37 35.6 0.0 35.6 D D C

9.8

5.0 21.0 72.0 60.0% 4.0 1.0 0.0

1.0

0.0 0.0

0.0

1.0

1.0

1.0

1.0

1.0 0.0

5.0 21.0 72.0 60.0%

5.0 21.0 72.0 60.0%

5.0 21.0 48.0 40.0%

5.0 21.0 48.0 40.0%

5.0 21.0 48.0 40.0%

5.0 21.0 48.0 40.0%

5.0 21.0 48.0 40.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

5.0 21.0 48.0

₽04 \$00 Splits and Phases: 6: Carlisle Blvd. & Constitution Ave. Ø6 (R)

Intersection LOS: C ICU Level of Service D

Intersection Signal Delay: 21.4 Intersection Capacity Utilization 75.7% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.90

Natural Cycle: 55

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Actuated Cycle Length: 120 Offset: 69.6 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

2031 PM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2031PNX.syn

Synchro 10 Report 2031PNX.syn 2031 PM Peak NOBUILD Conditions - Existing Geometry

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 7: San Mateo Blvd. & I-40 EB Ramp

Timings 7: San Mateo Blvd. & I-40 EB Ramp

†

1003 1003 NA

454 454 Prot

387

556 556 Pem

413 413 Prot

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase 5.0 21.0 84.0 70.0% 4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 ead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

1.0

5.0 10.0 18.0 15.0%

5.0 21.0 66.0 55.0%

5.0 21.0 66.0 55.0%

5.0 21.0 36.0 30.0%

5.0 10.0 36.0 30.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

EBL E e (verlin) 413 e (verlin) 413 e (verlin) 413 e (verlin) 0 1 e (verlin) 100 1 43 e e e e e e e e e e e e e e e e e e	EBT EBR 15 556 15 556 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	V T8W 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	WBR 0 0	NBL 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NBT 1729	387	SBL 454	\$BT 1003	SBR
413 413 413 61 61 61 61 61 61 61 61 61 61 61 61 61		00	00	00	0 0 00:1:	444 1729	387 387	454	1003	
413 413 0 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00		90	0 0	00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1729	387	454	1003	
413 0 1 00 1 1,00 1 1,00 1 1866 18 449 0,32 0 0,32 0 0,32 0 1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,		0	0	0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		387	111		_
100 100 100 100 100 100 100 100 100 100					0 0 0 0 0 0 0 0 0	1729	;	454	1003	
1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00	- (4)				00.1.00	0	0	0	0	Ŭ
100 1 186 16 449 0.92 0 3 799 0 135 1 135 1 100 799 0					0 0 0 0		1.00	1.00		1.00
1856 18 449 0.92 0 3 739 0.23 0 1767 1155 11.00 1.00					0 0 0	1.00	1.00	1.00	1.00	1.00
1856 449 0.92 3 3 0.23 3534 449 0 1.05 1.00 1.00 1.00					0 0	S			S	
449 0.92 3 3.023 3.023 3.023 449 0.135 1.35 1.00 7.99					0	1856	1856	1856	1856	J
0.92 3 799 0.23 3634 449 1767 1.00 1.00 7.99					000	1879	0	493	1090	
3 023 023 3534 449 1767 13.5 100 100					0.92	0.92	0.92	0.92	0.92	0.92
799 0.23 3834 449 /ln 1767 13.5 13.5 10.0 /h 799					0	က	က	က	က	
0.23 3534 449 70 1767 13.5 13.5 100 100					0	2739		371	3499	_
3534 449 70 13.5 13.5 100 70 799	, -				0.00	0.54	0.00	0.04	0.23	0.00
449 //n 1767 13.5 13.5 1.00 //n 799	7				۰	5233	7/01	3428	5233	
veh/hin 1767 13.5 c), s 13.5 1.00 1, veh/h 7.99					0	1879	0	493	1090	
13.5 _c), s 13.5 1.00 1, veh/h 799					0	1689	1572	1714	1689	
13.5 1.00 1.00 7.99					0.0	32.5	0.0	13.0	21.5	0.0
1.00 5(c), veh/h 799					0.0	32.5	0.0	13.0	21.5	0.0
p(c), veh/h 799					0.00		1.00	1:00		0.0
(1)					0	2739		371	3499	
0.50					0.00	69.0		1.33	0.31	0.0
/h 913					0	2739		371	3499	
1.00					00.	0.0	1.00	0.33	0.33	9.
1.00	0.00 1.00				0.00	1.00	0.00	0.44	4.0	0.00
eh 41.2	1				0.0	20.1	0.0	57.9	22.6	ö
9:0	0.0				0.0	1.4	0.0	155.5	0.1	<u></u>
0:0					0.0	0:0	0.0	0:0	0:0	ö
10.0	0.0 14.7				0.0	18.6	0.0	20.3	13.1	0.0
ay, s/veh										
y(d),s/veh 41.8	0.0 53.5				0.0	21.5	0.0	213.4	22.7	0.0
٥	١				∢	ပ		ш	ပ	
,	1064					1879	⋖		1583	
y, s/veh	48.6					21.5			82.1	
Approach LOS	۵					ပ			ш	
Timer - Assigned Phs	2	4		9						
c), s 18.0	6.69	32.1		87.9						
2.0	5.0	5.0		5.0						
13.0	61.0	31.0		79.0						
II), s 15.0	34.5	24.6		23.5						
0.0	17.1	2.5		10.5						
Intersection Summary										
HCM 6th Ctrl Delay	49.1									
HCM 6th LOS	۵									
Selon										

C-Max 86.8 0.72 0.30 5.2 0.0 5.2 A 18.0

Min 20.8 0.17 0.84 46.4 46.4

C-Max 61.0 0.51 0.42 2.9 0.0 2.9 2.9

C-Max 61.0 0.51 0.73 25.3 0.0

Min 23.2 0.19 0.80 42.4 42.4

Min 23.2 0.19 0.68 49.8 0.0 49.8

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 23.2 0.19 0.80 0.0 42.9 D D D D

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

67 **₽**04 7: San Mateo Blvd. & I-40 EB Ramp Splits and Phases:

Ø6 (R)

Intersection LOS: C ICU Level of Service C

Intersection Signal Delay: 25.5 Intersection Capacity Utilization 71.1% Analysis Period (min) 15

Actuated Cycle Length: 120 Offset: 103.2 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 70

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.84 Synchro 10 Report 2031PNX.syn

2031 PM Peak NOBUILD Conditions - Existing Geometry

Synchro 10 Report 2031PNX.syn

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 8: San Mateo Blvd. & I-40 WB Ramp

8: San Mateo Blvd. & I-40 WB Ramp

Timings

1421 1421 NA

196 196 Prot

238 238 Pot

524 524 Perm

195 7

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Turn Type Protected Phases Permitted Phases Detector Phase

. O	•	†	<i>></i>	\	ţ	4	•	←	•	٠	→	•
5											٠	
5	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
5	£		*	£	*	*	£	444			444	*-
ੂ ਦ	195	0	524	238	142	315	196	1317	0	0	1421	118
ach	195	0	524	238	142	315	196	1317	0	0	1421	118
ach	0	0	0	0	0	0	0	0	0	0	0	0
	9.		1.00	1.0		1.0	1.00		1.00	1.00		1:00
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
		2			ટ			ટ			ટ	
_	1856	0	1856	1856	1856	1856	1856	1856	0	0	1856	1856
	212	0	220	259	154	342	213	1432	0	0	1545	128
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	ო	0	က	က	ო	ო	က	က	0	0	က	က
Cap, veh/h	270	0	0	1127	387	328	277	2978	0	0	2358	856
_	80.0	0.00	0.00	0.33	0.21	0.21	0.03	0.19	0.00	0.00	0.47	0.47
Sat Flow, veh/h	3428	212		3428	1856	1572	3428	5233	0	0	5233	1572
	212	63.2		259	154	342	213	1432	0	0	1545	128
,veh/h/ln	1714	ш		1714	1856	1572	1714	1689	0	0	1689	1572
	7.3			9.9	9.6	25.0	7.4	30.2	0.0	0.0	28.2	4.8
Cycle Q Clear(g_c), s	7.3			9.9	9.8	25.0	7.4	30.2	0.0	0.0	28.2	4.8
Prop In Lane	1.00			1.00		1.00	1.00		0.00	0.00		1.0
Lane Grp Cap(c), veh/h	270			1127	387	328	277	2978	0	0	2358	826
V/C Ratio(X)	0.78			0.23	0.40	4 2	0.77	0.48	0.00	0.00	99.0	0.15
Avail Cap(c_a), veh/h	343			1127	387	328	400	2978	0 0	0 8	2358	856
HCM Platoon Katio	00.1			3.5	1.00	3.5	0.33	0.33	0.1	1.00	3.5	9.5
Upstream Filter(I)	1.00			1.00	1.00	0.1	0.62	0.62	0.00	0.00	0.1	1.00
Uniform Delay (d), s/veh	54.3			29.2	41.0	47.5	57.3	32.1	0.0	0.0	24.7	13.6
Incr Delay (d2), s/veh	8.9			0.1	0.7	9.19	3.5	0.3	0.0	0.0	1.4	0.4
Initial Q Delay(d3),s/veh	0.0			0.0	0.0	0:0	0.0	0:0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.3			4.9	7.2	22.3	5.9	18.5	0.0	0.0	16.7	3.2
ay, s/veh												
y(d),s/veh	63.2			29.3	41.7	109.1	8.09	32.4	0.0	0.0	26.1	13.9
	ш			ပ		_	ш	ပ	⋖	⋖	ပ	۳
Approach Vol, veh/h					755			1645			1673	
Approach Delay, s/veh					0.89			36.1			25.2	
Approach LOS					ш			Ω			ပ	
Timer - Assigned Phs		2	က		22	9	7	8				
Phs Duration (G+Y+Rc), s		75.5	44.5		14.7	6.09	14.5	30.0				
Change Period (Y+Rc), s		2.0	2.0		5.0	2.0	2.0	2.0				
Max Green Setting (Gmax), s		0.89	12.0		14.0	49.0	12.0	25.0				
Max Q Clear Time (g_c+l1), s		32.2	9.8		9.4	30.2	9.3	27.0				
Green Ext Time (p_c), s		13.5	0.3		0.3	11.2	0.2	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			38.8									
HCM 6th LOS			_									

5.0 10.0 17.0 14.2 4.0 1.0 0.0 5.0 Lead

5.0 10.0 19.0 15.8%

5.0 21.0 30.0 25.0%

5.0 10.0 17.0 14.2%

4.0 1.0 0.0 5.0 Lag

1.0

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 -ead

4.0 1.0 0.0 5.0 Lag

5.0 10.0 17.0 14.2% 4.0 1.0 0.0 5.0 Lead

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

Min 67.0 0.56 0.14 3.7 3.7 3.7

C-Max 68.0 0.57 0.50 12.9 0.0

Min 12.3 0.10 0.61 44.3 0.0

Min 25.7 0.21 0.81 46.8 46.8

Min 11.8 0.10 0.78 69.4 0.0 69.4

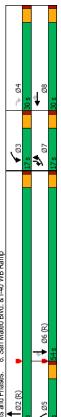
Min 25.2 0.21 1.14 114.4 0.0

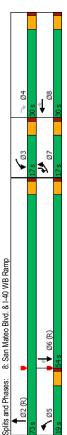
Min 11.3 0.09 0.66 62.9 0.0 62.9 E

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 25.7 0.21 0.39 44.2 0.0 44.2 D 54.0

C-Max 50.7 0.42 0.73 31.6 0.0 31.6 C C





Intersection LOS: DICU Level of Service D

Intersection Signal Delay: 40.5 Intersection Capacity Utilization 79.2%

Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.14

Natural Cycle: 90

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Actuated Cycle Length: 120 Offset: 44.4 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Synchro 10 Report 2031PNX.syn

Synchro 10 Report 2031PNX.syn

2031 PM Peak NOBUILD Conditions - Existing Geometry

2031 PM Peak Hour BUILD Analyses

HCM 6th Signalized Intersection Summary Terry O. Brown, PE 1: Girard Ct. & Indian School Rd.

1: Girard Ct. & Indian School Rd.

Timings

		t	•	•		,	_	-	_		•	7
Movement	盟	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	×	₩		r	₹		je-	2		je-	£	
Traffic Volume (veh/h)	31	510	4	15	869	8	74	23	2	79	1	
Future Volume (veh/h)	31	510	4	15	869	8	74	23	2	79	17	23
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		S			8			8			S	
Adj Sat Flow, veh/h/In	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	34	224	42	9	759	10	8	22	വ	98	80	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	က	က	က	က	က	က	က	က	က	က	က	
Cap, veh/h	265	2364	192	655	2239	298	247	176	32	260	8	15
Arrive On Green	0.72	0.72	0.72	0.95	0.95	0.95	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	637	3302	268	813	3127	416	1353	1501	300	1369	703	977
Grp Volume(v), veh/h	34	295	304	16	428	432	8	0	30	98	0	43
Grp Sat Flow(s),veh/h/ln	637	1763	1807	813	1763	1781	1353	0	1801	1369	0	1680
Q Serve(g_s), s	1.0	3.4	3.4	0.2	1:0	1:0	3.4	0:0	0.9	3.6	0.0	4.
Cycle Q Clear(g_c), s	2.0	3.4	3.4	3.6	1.0	1.0	4.8	0.0	6.0	4.5	0.0	4.
Prop In Lane	1.00		0.15	1.00		0.23	1.00		0.17	1.00		0.58
Lane Grp Cap(c), veh/h	265	1262	1294	655	1262	1275	247	0	211	260	0	197
V/C Ratio(X)	90.0	0.23	0.23	0.02	0.34	0.34	0.32	0.00	0.14	0.33	0.00	0.22
Avail Cap(c_a), veh/h	265	1262	1294	655	1262	1275	217	0	220	533	0	532
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	.33 83	1.00	1.00	1.00	1.00	9.	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.62	0.62	0.62	1.00	0.00	1.00	1.00	0.00	1:00
Uniform Delay (d), s/veh	5.9	2.9	2.9	0.7	0.4	0.4	26.2	0.0	23.8	25.8	0.0	72
Incr Delay (d2), s/veh	0.2	0.4	0.4	0.0	0.5	0.4	0.7	0.0	0.3	0.7	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0:0	0.0	0:0	0.0	0:0	0.0	0
%ile BackOfQ(95%),veh/ln	0.2	1.2	1.2	0:0	0.5	0.5	2.0	0.0	0.7	2.1	0.0	_
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	3.1	3.3	3.3	8:0	6.0	6.0	26.9	0.0	24.1	26.5	0.0	24.5
LnGrp LOS	∢	⋖	⋖	⋖	⋖	∢	ပ	⋖	ပ	ပ	⋖	
Approach Vol, veh/h		633			876			110			129	
Approach Delay, s/veh		3.3			6.0			26.1			25.9	
Approach LOS		⋖			⋖			ပ			ပ	
Timer - Assigned Phs		2		4		9		∞				
Phs Duration (G+Y+Rc), s		12.0		48.0		12.0		48.0				
Change Period (Y+Rc), s		2.0		2.0		2.0		2.0				
Max Green Setting (Gmax), s		19.0		31.0		19.0		31.0				
Max Q Clear Time (g_c+l1), s		8.9		5.4		6.5		2.6				
Green Ext Time (p_c), s		0.2		3.8		0.3		2.6				
Intersection Summary												
HOM 6th Otal Delet			C									
			7.0									

5.0 24.0 24.0 4.0 4.0 1.0 0.0 5.0

1.0

0.0

5.0 21.0 24.0 40.0%

5.0 21.0 36.0 60.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

¥ 4

869 888 VA

¥ 210 €

Lane Configurations
Traffic Volume (vph)
Future Volume (vph)
Turn Type
Protected Phases
Permitted Phases
Defector Phase

Min 922 0.15 0.15 0.0 13.6 13.6 C

Min 9.2 0.15 0.11 18.7 18.7 18.7 C

C-Max 40.8 0.68 0.37 5.9 0.0 5.9 A A A

Min 9.2 0.15 0.42 28.2 0.0 28.2

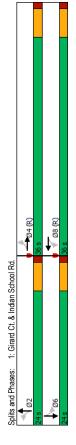
Min 9.2 0.15 0.39 27.5 0.0 27.5

C-Max 40.8 0.68 0.03 4.3 4.3

C-Max 40.8 0.68 0.25 4.3 0.0

C-Max 40.8 0.09 0.09 4.8 4.8

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio



Intersection LOS: A ICU Level of Service A

Intersection Signal Delay: 7.8 Intersection Capacity Utilization 45.1% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.42

Natural Cycle: 45

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS Actuated Cycle Length: 60 Offset: 22.2 (37%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

2031 PM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2031PBX.syn

2031 PM Peak BUILD Conditions - Existing Geometry 2031 PM Peak BUILD Conditions - Existing Geometry 2031PBX syn

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 2: Carlisle Blvd. & I-40 WB Ramp

Timings 2: Carlisle Blvd. & I-40 WB Ramp

Particular color		\	t	/	•	,	/	•	_	L	•	+	*
ons ons one of the control of the co	Movement	<u> </u>	EH	88	WBI	WBT	WBR	R	NBT	NBR	80.	TRS:	SAR
wethin) 0 0 0 363 7 352 540 1432 0 0 1267 wethin) 0 0 0 383 7 352 540 1432 0 0 1267 pbT) 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.0	l ane Configurations	1	1	i	k	ŧ	*	K	***	į	9	***	•
worth) 0 0 0 363 7 352 540 1432 0 0 1267 1407 100 100 100 100 100 100 100 100 100 1	Traffic Volume (veh/h)	C	C	C	363	<u>-</u>	352	540	1432	C	C	1267	507
h h , y bbT) 100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Future Volume (veh/h)	0	0	0	363		352	540	1432	0	0	1267	207
December 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100	Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
1.00	Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
yproach HS6 1856 1856 1856 1856 1869 No hhlul hill hill hill hill hill hill hil	Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
The color of the	Work Zone On Approach					2			2			2	
hethin 401 0 383 587 1557 0 0 1377 string a control of the contro	Adj Sat Flow, veh/h/In				1856	1856	1856	1856	1856	0	0	1856	1856
left, % 3 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Adj Flow Rate, veh/h				401	0	383	287	1557	0	0	1377	0
Color Colo	Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
917 0 408 600 3330 0 0 2222 vehl/h vehl/hin 1767 0 1572 3428 5233 0 0 0 2232 vehl/h 114 0.0 286 20.3 0.0 0.0 0.0 5232 c), sehl/h 115 0.0 286 20.3 0.0 0.0 0.0 251 114 0.0 286 20.3 0.0 0.0 0.0 251 114 0.0 286 20.3 0.0 0.0 0.0 251 114 0.0 286 20.3 0.0 0.0 0.0 251 115 0.0 286 20.3 0.0 0.0 0.0 251 110 0 1.0 0 0.0 0.0 0.0 251 110 0 1.0 0 0.0 0.0 0.0 0.0 0.0 251 110 0 1.0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Percent Heavy Veh, %				ო	က	က	က	က	0	0	က	۳,
1,000,000,000,000,000,000,000,000,000,0	Cap, veh/h				917	0 0	408	009	3330	0	0 8	2232	
wehlin 1767 1714 1889 18233 10 0 5233 17 1714 1889 18 1717 1714 1889 10 0 1889 1717 1714 1889 10 0 1889 1717 1714 1889 10 0 1 1889 1717 1714 1889 10 0 1 1889 1717 1714 1889 10 0 1 1889 1718 1717 1714 1889 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Arrive On Green				0.26	0.00	0.26	0.35	1.00	0.00	0.00	0.4	0.0
wethful 401 0 383 587 1557 0 1377 veh/n/In 114 0.0 28.6 20.3 0.0 0.0 0.0 25.1 c), s 114 0.0 28.6 20.3 0.0 0.0 0.0 25.1 1, seh/h 917 0.0 28.6 20.3 0.0 0.0 25.1 veh/h 917 0.0 0.98 0.0 0.0 0.0 25.1 veh/h 917 0.0 0.98 0.47 0.0 0.0 0.0 25.2 veh/h 100 0.94 0.98 0.47 0.0 0.0 0.0 22.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	Sat Flow, veh/h				3534	0	1572	3428	5233	0	0	5233	1572
vehirlin 1767 0 1572 1714 1889 0 0 1689 1 c), s 114 0.0 286 20.3 0.0 0.0 0.0 25.1 114 0.0 286 20.3 0.0 0.0 0.0 25.1 114 0.0 286 20.3 0.0 0.0 0.0 25.1 110 0.0 1.0 1.0 0.0 0.0 0.0 25.1 110 0.0 0.9 0.9 0.9 0.0 0.0 0.0 25.1 110 0.0 0.9 0.9 0.9 0.0 0.0 0.0 0.0 0.0 0.	Grp Volume(v), veh/h				401	0	383	287	1557	0	0	1377	0
114 0.0 28.6 20.3 0.0 0.0 25.1 114 0.0 28.6 20.3 0.0 0.0 0.0 25.1 114 0.0 28.6 20.3 0.0 0.0 0.0 25.1 114 0.0 28.6 20.3 0.0 0.0 0.0 25.1 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Grp Sat Flow(s),veh/h/ln				1767	0	1572	1714	1689	0	0	1689	1572
He with the control of the control o	Q Serve(g_s), s				11.4	0.0	28.6	20.3	0.0	0.0	0.0	25.1	0.0
1(g), veh/h 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0) 1(0)	Cycle Q Clear(g_c), s				11.4	0.0	28.6	20.3	0.0	0.0	0.0	25.1	0.0
an Eriber(i) weh/h 917 0 408 6600 3330 0 0 2332 and 20(2), weh/h 942 0 44 0.00 0.94 0.98 0.47 0.00 0.00 0.52 0.44 0.00 0.94 0.98 0.47 0.00 0.00 0.52 0.232 0.40 0.40 0.99 0.47 0.00 0.00 0.00 0.02 0.00 0.00 0.00 0.0	Prop In Lane				1.00		1.00	1.00		0.00	0.00		7.0
lable (24), well-h labora Ratio Page (26), well-h labora Ratio Page (27), well-h labora Rati	Lane Grp Cap(c), veh/h				917	0	408	009	3330	0	0	2232	
Jack et al. (2), with the page of the principle of the pr	V/C Ratio(X)				4.	0.0	9. 8.	0.98	0.47	0.00	0.00	0.62	
lation Ratio	Avail Cap(c_a), veh/h				942	0	419	009	3330	0	0	2232	
an Filler(I) To all of (I) To all	HCM Platoon Ratio				1.0	1.00	1.00	2.00	2.00	1.00	1.00	1:00	-00
m Delay (d.) s/veh 37.1 0.0 43.5 38.8 0.0 0.0 25.8 alay (d.) s/veh 0.3 0.0 28.7 27.1 0.4 0.0 0.1 1.3 alay (d.) s/veh 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	Upstream Filter(I)				0.1	0.00	0.1	0.78	0.78	0.00	0.00	1.00	0.00
aby (d2), siveh 2 Delay(d2), siveh 3 Delay(d2), siveh 4 Delay(d2), siveh 5 Delay(d2), siveh 6 Delay(d2), siveh 7 Delay(d	Uniform Delay (d), s/veh				37.1	0.0	43.5	89.8	0.0	0.0	0.0	25.8	0.0
ackCrig(x3),s/veh 00 00 00 00 00 00 00 00 00 00 00 00 00	Incr Delay (d2), s/veh				0.3	0.0	28.7	27.1	0.4	0.0	0.0	1.3	0.0
ack/tit(95%),veh/In Movement Delay, siveh Delay(j),sveh LOS A Re B A A A A C C B A B C C C C C C C C C C	Initial Q Delay(d3),s/veh				0.0	0.0	0:0	0.0	0.0	0.0	0.0	0.0	0.0
Movement Delay, s/eh Delay(d),s/eh Delay(d),s/eh Delay(d),s/eh Delay(d),s/eh Delay(d),s/eh Delay(d),s/eh Delay(d),s/eh Delay(d),s/eh Delay(d),s/eh Delay, s/eh Del	%ile BackOfQ(95%),veh/ln				9.8	0.0	20.5	13.5	0.2	0.0	0:0	15.3	0.0
Delay(d),s/veh 375 0.0 722 658 0.4 0.0 0.0 27.1 C 5.8 0.4 0.0 0.0 27.1 C 5.8 0.4 0.0 0.0 27.1 C 5.8 0.4 0.0 0.0 27.1 C 5.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	Unsig. Movement Delay, s/veh												
LLOS LASigned Phs Lasion (G+Y+Rc), s Lasion (G+Y+Rc), s Le Period (Y+Rc), s Lettine (g_c+I), s Lettine (p_c), s Lettine (p_c), s LLOS L	LnGrp Delay(d),s/veh				37.5	0.0	72.2	65.8	0.4	0.0	0.0	27.1	0.0
ach Vol, veh/h 784 2144 133 ach Delay, s/veh 54.4 18.3 27.7 ach Delay, s/veh 2 6 8 ach Delay, s/veh 2 6 8 8 ach Delay, s/veh 2 6 8 8 27.7 Assigned Phs 2 5 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 9 6 8 8 8 9 6 8 8 9 6 8 9 6 9 9 6 8 9 6 8 9 6 8 9 6 8 9 9 9 1	LnGrp LOS					⋖	삐	ш	⋖	⋖	⋖	ပ	
ach Delay, siveh 54.4 18.3 27 ach LOS B B B 27 Assigned Phs 2 6 8 8 Assigned Phs 83.9 26.0 57.9 36.1 a Period (Y+Ro), s 5.0 5.0 5.0 5.0 rean Setting (Gmax), s 78.0 27.0 52.0 32.0 rean Setting (Gmax), s 78.0 27.1 30.6 27.1 30.6 Ext Time (p_c), s 18.4 0.0 11.1 0.5 32.0 cidion Summary 27.7 27.7 27.7 27.7 27.7 sh LOS C C C C C C	Approach Vol, veh/h					784			2144			1377	1
Assigned Phs 2 6 6 8 Assigned Phs 2 6 6 8 Assigned Phs 2 6 6 8 Barbard (*HRc), s 50 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0	Approach Delay, s/veh					54.4			18.3			27.1	
Assigned Phs 2 6 6 -Assigned Phs 83.9 26.0 57.9 3 te Period (Y+RC), s 5.0 5.0 5.0 reen Setting (Gmax), s 78.0 27.1 5.0 Ext Time (p_c), s 18.4 0.0 11.1 ction Summary 27.7 Chart Today Chart Char	Approach LOS					۵			Ф			O	
nration (G+Y+Rc), s 83.9 26.0 57.9 6 Period (Y+Rc), s 5.0 5.0 5.0 5.0 reen Setting (Gmax), s 78.0 21.0 52.0 2.1 62.0 Ext Time (p_c), s 18.4 0.0 11.1 ctorin Summary 27.7 C	Timer - Assigned Phs		2			2	9		8				
ree Period (Y+Rc), s 5.0 5.0 5.0 ree Period (Y+Rc), s 5.0 5.0 5.0 reen Setting (Gmax), s 78.0 21.0 52.0 2.0 22.3 27.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2.1 2	Phs Duration (G+Y+Rc), s		83.9			26.0	57.9		36.1				
reen Setting (Gmax), s 78,0 21,0 52,0 Clear Time (g_c+t1), s 2,0 22,3 27,1 Ext Time (p_c), s 18,4 0,0 11.1 cition Summary 27,7 C	Change Period (Y+Rc), s		2.0			2.0	2.0		2.0				
Clear Time (g_c+tf), s 2.0 22.3 27.1 Ext Time (g_c-0), s 18.4 0.0 11.1 ciction Summary 27.7 C C C C C C C C C C C C C C C C C C C	Max Green Setting (Gmax), s		0.87			21.0	52.0		32.0				
Ext Time (p_c), s 18.4 0.0 11.1 oction Summary 27.7 C oth LOS C C	Max Q Clear Time (g_c+l1), s		2.0			22.3	27.1		30.6				
ction Summary sh Ctrl Delay sh LOS	Green Ext Time (p_c), s		18.4			0.0	11.1		0.5				
öth Cirl Delay öth LOS	Intersection Summary												
sh Los	HCM 6th Ctrl Delay			27.7									
SELON	HCM 6th LOS			O									
	Notes												

C-Max 52.2 0.44 0.55 4.1 4.1

Min 21.7 0.18 0.95 67.9 0.0 67.9

Min 31.1 0.26 0.94 76.7 0.0

Min 31.1 0.26 0.47 41.3 0.0 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

C-Max 52.2 0.44 0.63 28.0 0.0 28.0 C C C

C-Max 78.9 0.66 0.47 9.6 9.8 9.9 A A 25.8

Min 31.1 0.26 0.47 41.3 0.0 41.3 D D D D D E E E

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

5.0 21.0 57.0 47.5% 4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0 0.0

4.0 1.0 0.0 5.0 Lead

1.0

5.0 21.0 57.0 47.5%

5.0 10.0 26.0 21.7%

5.0 21.0 37.0 30.8%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

1432 NA

540 540 Prot

363 363 Perm

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase

\$6 Splits and Phases: 2: Carlisle Blvd. & I-40 WB Ramp 🕴 🕈 Ø6 (R)

Intersection LOS: C ICU Level of Service D

Intersection Signal Delay: 29.2 Intersection Capacity Utilization 75.6% Analysis Period (min) 15

Ø2 (R)

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.95

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 92 (77%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 70

Synchro 10 Report 2031PBX.syn

2031 PM Peak BUILD Conditions - Existing Geometry

Terry O. Brown, PE 06/28/2019 HCM 6th Signalized Intersection Summary 2: Carlisle Blvd. & I-40 WB Ramp

Timings 2: Carlisle Blvd. & I-40 WB Ramp

Movement												
WOVEHIGHT	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				×	4	¥C	F	444			444	*
Traffic Volume (veh/h)	0	0	0	363	7	352	240	1432	0	0	1267	207
Future Volume (veh/h)	0	0	0	363	7	352	240	1432	0	0	1267	204
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				9.		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					2			2			2	
Adj Sat Flow, veh/h/In				1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h				517	0	528	287	1557	0	0	1377	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				က	က	က	ო	က	0	0	ო	က
Cap, veh/h				989	0	302	009	3660	0	0	2563	
Arrive On Green				0.19	0.00	0.19	0.35	1.00	0.00	0.00	0.51	0.00
Sat Flow, veh/h				3534	0	1572	3428	5233	0	0	5233	1572
Grp Volume(v), veh/h				517	0	258	287	1557	0	0	1377	0
Grp Sat Flow(s),veh/h/ln				1767	0	1572	1714	1689	0	0	1689	1572
Q Serve(g_s), s				16.6	0.0	19.0	20.3	0.0	0.0	0:0	22.1	0.0
Cycle Q Clear(g_c), s				16.6	0.0	19.0	20.3	0.0	0.0	0.0	22.1	0.0
Prop In Lane				0.0	d	0.1	1.00	0000	0.00	0.00	00.0	1.0
Lane Grp Cap(c), ven/n				9 2	0	302	009	3660	-	0	2563	
Wo Rallo(A) Avail Can(c a) veh/h				0.73	0.00	410	0.30	3660	0.00	0.00	2563	
HCM Platoon Ratio				1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	1.00	0.78	0.78	00.0	0.00	1.00	0.00
Uniform Delay (d), s/veh				45.6	0.0	46.6	38.8	0.0	0.0	0.0	20.1	0.0
Incr Delay (d2), s/veh				2.3	0.0	11.0	27.1	0.3	0.0	0.0	0.8	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0:0	0.0	0.0	0.0	0.0	0:0	0:0
%ile BackOfQ(95%),veh/ln				12.0	0.0	13.1	13.5	0.2	0.0	0.0	13.4	0.0
Unsig. Movement Delay, s/veh				1	ć	2	i.	ć	ć	ć	ć	
LnGrp Delay(d),s/ven				9. √	0.0 V	о./с п	8 х: п	0.3 ∆	0.0 A	0.0 A	50.9 C	0.0
Annroach Vol. veh/h				١	775	ı	ı	2144	:	:	1377	A
Approach Delay, s/veh					51.2			18.2			20.9	
Approach LOS					Ω			Ω			ပ	
Timer - Assigned Phs		2			S	9		∞				
Phs Duration (G+Y+Rc), s		91.7			26.0	65.7		28.3				
Change Period (Y+Rc), s		2.0			2.0	2.0		2.0				
Max Green Setting (Gmax), s		78.0			21.0	52.0		32.0				
Max Q Clear Time (g_c+l1), s		2.0			22.3	24.1		21.0				
Green Ext Time (p_c), s		18.4			0.0	11.6		2.3				
Intersection Summary												
HCM 6th Ctrl Delay			25.0									
HCM 6th LOS			ပ									
Notes												

5.0 21.0 57.0 47.5% 4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0 0.0

4.0 1.0 0.0 5.0 Lead

0.0

5.0 21.0 57.0 47.5%

5.0 21.0 37.0 30.8%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

1432 NA

540 540 Prot

363 363 Perm

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase C-Max 54.6 0.46 0.54 4.0 0.0 4.0

C-Max 54.6 0.46 0.60 26.4 0.0

C-Max 83.2 0.69 0.45 7.8 0.3 8.1

Min 23.6 0.20 0.88 0.88 0.0

Min 26.8 0.22 0.75 57.2 0.0 57.2

Min 26.8 0.22 0.74 0.0 0.0 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 26.8 0.22 0.78 59.5 0.0 59.5 E E E 57.2

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

\$6 Splits and Phases: 2: Carlisle Blvd. & I-40 WB Ramp ♦ Ø6 (R) Ø2 (R)

Intersection LOS: C ICU Level of Service D

Intersection Signal Delay: 26.3 Intersection Capacity Utilization 75.6% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.88

Actuated Cycle Length: 120 Offset: 92 (17%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 60

2031 PM Peak BUILD Conditions - Mitigated Conditions

Synchro 10 Report 2031PB_MIT.syn

2031 PM Peak BUILD Conditions - Mitigated Conditions

Synchro 10 Report 2031PB_MIT.syn

HCM 6th Signalized Intersection Summary Terry O. Brown, PE 3: Carlisle Blvd. & I-40 EB Ramp 66/27/2019

Timings 3: Carlisle Blvd. & I-40 EB Ramp 1151 1151 NA

> 439 Prot

> > 498 498

EBR 660 660 Pem

691 691 Perm

Lane Configurations
Traffic Volume (vph)
Future Volume (vph)
Turn Type
Protected Phases
Protected Phases
Defector Phase

5.0 21.0 82.0 68.3% 4.0 1.0 0.0 5.0

5.0 21.0 38.0 31.7%

5.0 21.0 38.0 31.7%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

4.0 1.0 0.0 5.0 C-Max 77.8 0.65 0.38 7.1 7.1 7.3 A A 27.6 C

Min 20.9 0.17 0.81 80.8 80.8 80.8

C-Max 51.9 0.43 0.55 11.3 0.0 11.3

Min 32.2 0.27 0.64 43.0 0.0 43.0

Min 32.2 0.27 0.82 49.7 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

C-Max 51.9 0.43 0.48 34.9 0.0 34.9 C C C

Min 32.2 0.27 0.63 46.8 0.0 46.8 D D D

> Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

	١	t	<u> </u>	\	ļ	1	•	—	•	٠	→	¥
	i	i				0		- !	. !	i		i
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	F	æ	K.					≣	*_	F	‡	
Traffic Volume (veh/h)	691	15	099	0	0	0	0	1419	498	439	1151	0
Future Volume (veh/h)	691	15	099	0	0	0	0	1419	498	439	1151	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	J
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		S						S			S	
Adj Sat Flow, veh/h/ln	1856	1856	1856				0	1856	1856	1856	1856	J
Adj Flow Rate, veh/h	751	0	728				0	1542	541	477	1251	
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	က	က	က				0	က	က	က	က	٥
Cap, veh/h	880	0	1174				0	3530	739	536	3383	J
Arrive On Green	0.25	0.00	0.25				0.00	0.47	0.47	0.31	1.00	0.00
Sat Flow, veh/h	3534	0	4717				0	1867	1572	3428	5233	
Grp Volume(v), veh/h	751	0	728				0	1542	541	477	1251	_
Grp Sat Flow(s),veh/h/ln	1767	0	1572				0	1503	1572	1714	1689	J
Q Serve(g_s), s	24.3	0.0	16.4				0.0	16.4	33.4	15.9	0.0	0.0
Cycle Q Clear(g_c), s	24.3	0.0	16.4				0.0	16.4	33.4	15.9	0.0	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	880	0	1174				0	3530	739	536	3383	Ŭ
V/C Ratio(X)	0.85	0.00	0.62				0.00	0.44	0.73	0.89	0.37	0.00
Avail Cap(c_a), veh/h	972	0	1297				0	3530	739	657	3383	J
HCM Platoon Ratio	1:00	1.00	1.00				1.00	1.00	1.00	2.00	2.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	92.0	0.76	0.00
Uniform Delay (d), s/veh	43.0	0:0	40.0				0.0	21.2	25.7	40.3	0:0	0.0
Incr Delay (d2), s/veh	6.9	0.0	0.8				0.0	0.4	6.3	9.8	0.2	<u>Ö</u>
Initial Q Delay(d3),s/veh	0.0	0:0	0.0				0.0	0:0	0.0	0:0	0:0	<u>ö</u>
%ile BackOfQ(95%),veh/ln	17.0	0:0	10.6				0.0	9.7	19.3	8.6	0.1	0.0
Unsig. Movement Delay, s/veh	9	d	9				0				d	Č
LnGrp Delay(d),s/ven	49.9	0:0	40.8				0.0	21.6	32.1	50.1	0.7	0.0
LnGrp LOS		∢					⋖	ပ	ပ		∢ !	
Approach Vol, veh/h		1479						2083			1/28	
Approach Delay, s/ven		42.4						24.3			0.47	
Approach LOS		Ω						ပ			n	
Timer - Assigned Phs	1	2		4		9						
Phs Duration (G+Y+Rc), s	23.8	61.4		34.9		85.1						
Change Period (Y+Rc), s	2.0	2.0		2.0		2.0						
Max Green Setting (Gmax), s	23.0	49.0		33.0		0.77						
Max Q Clear Time (g_c+l1), s	17.9	35.4		26.3		5.0						
Green Ext Time (p_c), s	6.0	10.0		3.6		12.5						
Intersection Summary												
HCM 6th Ctrl Delay			26.9									
HCM 6th LOS			0									
Mater												

Notes
User approved volume balancing among the lanes for turning movement

2031 PM Peak BUILD Conditions - Existing Geometry

404

Splits and Phases: 3: Carlisle Blvd. & I-40 EB Ramp

Ø6 (R)

Intersection Signal Delay: 33.5 Intersection Capacity Utilization 75.6% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.82

Intersection LOS: C ICU Level of Service D

Actuated Cycle Length: 120 Offset: 110.4 (92%), Referenced to phase 2:NBT and 6:SBT, Start of Green Natural Cycle: 60 Synchro 10 Report 2031PBX.syn

2031 PM Peak BUILD Conditions - Existing Geometry

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 4: Carlisle Blvd. & Indian School Rd.

Timings 4: Carlisle Blvd. & Indian School Rd.

†

361 361 NA

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase

Protected Phases

	\	Ť	>	•	,	/		_	Ĺ	•	+	•
Movement	EBL	EBT	EBR	WBL	WBT	WBR	BE	NBT	NBR	SBL	SBT	SBR
Lane Configurations	*	₩		¥	₹		×	4413		je-	‡	
Traffic Volume (veh/h)	2/2	813	116	112	361	239	157	1482	105	242	1021	475
Future Volume (veh/h)	275	813	116	112	361	239	157	1482	105	242	1021	475
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)	1.00		1.00	9:		9:	99		1.00	0.5		1.00
Parking Bus, Adj	1.00	9:	1.00	9.	1.00	1.00	1.00	1:00	1.00	1.00	0:1	1.00
Work Zone On Approach		2			2			2			2	
Adj Sat Flow, veh/h/In	1856	1856	1856	1856	1856	1856	1856	1856	1856	1826	1856	1856
Adj Flow Rate, veh/h	625	884	126	122	392	260	171	1611	114	263	1110	216
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	က	က	က	က	က	က	က	က	က	က	က	
Cap, veh/h	4	1070	152	263	425	278	224	1398	66	285	1171	820
Arrive On Green	0.42	0.69	0.69	0.07	0.21	0.21	0.08	0.29	0.29	0.25	99.0	0.66
Sat Flow, veh/h	1/6/	3097	441	1/6/	2041	133/	1/6/	4830	342	1/6/	32526	15/2
Grp Volume(v), veh/h	625	203	202	122	338	314	171	1126	299	263	1110	216
Grp Sat Flow(s),veh/h/ln	1767	1763	1776	1767	1763	1615	1767	1689	1794	1767	1763	1572
Q Serve(g_s), s	25.0	24.7	24.7	6.4	22.5	22.9	8.0	34.7	34.7	13.1	34.2	92
Cycle Q Clear(g_c), s	25.0	24.7	24.7	6.4	22.5	22.9	8.0	34.7	34.7	13.1	34.2	26.4
Prop In Lane	90		0.25	9.		0.83	1.00		0.19	1.00	į	-0.
Lane Grp Cap(c), veh/h	4 :	609	613	263	367	336	224	928	519	285	1171	820
V/C Ratio(X)	1.42	0.83	0.83	0.46	0.92	0.93	0.76	1.15	1.15	0.92	0.95	0.61
Avail Cap(c_a), veh/h	4	609	613	329	367	336	266	978	519	310	1171	820
HCM Platoon Ratio	2.00	5.00	2.00	9:	1.00	9.	9.	1.00	9.	2.00	5.00	2.0
Upstream Filter(I)	0.97	0.97	0.97	1:00	1.00	1.0	0.85	0.85	0.85	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.6	16.0	16.0	33.9	46.6	46.7	30.8	45.6	42.6	56.9	19.2	တ်
Incr Delay (d2), s/veh	200.0	8.9	8.9	ل ن	28.1	32.6	8.9	78.7	9.98	30.4	16.4	က်
Initial Q Delay(d3),s/veh	0.0	0:0	0.0	0:0	0.0	0.0	0.0	0.0	0.0	0:0	0:0	o
%ile BackOfQ(95%),veh/In	46.9	10.7	10.8	2.0	18.3	17.7	6.9	35.3	38.7	11.1	15.3	8.0
Unsig. Movement Delay, s/veh		3	3	i	i	0	5	2	000	1	C	Ş
LnGrp Delay(d),s/ven	77.1.7	24.9	24.8		0.47 D	79.3). (35)	721.3	729.7	5/.3	35.6	12.6
Anaroga Valuable	-	76.26	٥	١	77.4	ال		1006	-	u	1000	
Approach Delay, clych		1001			70.3			116.4			303	
Approach LOS		- 1			<u>5</u> ц			<u>г</u> ц			5 5 C	
	ı		l	ı	,	ı	ı		ı	ı	•	П
Timer - Assigned Phs	_	2	3	4	2	9	7	∞				
Phs Duration (G+Y+Rc), s	20.3	39.7	13.5	46.4	15.2	44.9	30.0	30.0				
Change Period (Y+Rc), s		2.0	2.0	2.0	2.0	2.0	2.0	2.0				
Max Green Setting (Gmax), s		33.0	13.0	37.0	13.0	37.0	25.0	25.0				
Max Q Clear Time (g_c+I1), s	_	36.7	8.4	26.7	10.0	36.2	27.0	24.9				
Green Ext Time (p_c), s	0.1	0.0	0.1	4.4	0.1	9.0	0.0	0.0				
Intersection Summary												
			100								l	l
			2									

5.0 10.0 30.0 25.0% 4.0 1.0 0.0 5.0 Lead

1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

5.0 10.0 30.0 25.0%

Switch Phase
Minimum Initial (s)
Minimum Split (s)
Total Split (%)
Total Split (%)
Yellow Time (s)
All-Red Time (s)
Total Time Adjust (s)
Total Lost Time (s)

Min 69.5 0.58 0.53 14.1 14.1

Min 55.5 0.46 0.89 62.3 0.0

Min 46.7 0.39 0.74 50.2 0.0

Min 34.1 0.28 0.58 34.2 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

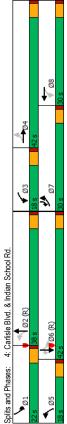
Min 38.6 0.32 0.91 50.9 0.0 50.9 D

C-Max 39.5 0.3 0.96 57.4 0.0 57.4 E 46.2

117.6 F 124.3

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS



Intersection LOS: FICU Level of Service H

Intersection Signal Delay: 89.8 Intersection Capacity Utilization 110.5% Analysis Period (min) 15

Control Type: Actuated-Coordinated

Actuated Cycle Length: 120 Offset: 9.6 (8%), Referenced to phase 2.NBTL and 6:SBTL, Start of Green

Synchro 10 Report 2031PBX.syn

2031 PM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2031PBX.syn

A-205

HCM 6th Signalized Intersection Summary Terry O. Brown, PE 4: Carlisle Blvd. & Indian School Rd.

Timings 4: Carlisle Blvd. & Indian School Rd.

†

1021 NA

1482 1482 NA

239

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase

Protected Phases

Movement EBL Lane Configurations Traffic Volume (veh/h) 575 Future Volume (veh/h) 575 Future Volume (veh/h) 575 Future Volume (veh/h) 575 Future Volume (veh/h) 1,00 Parking Bus, Adj 1,00 Parking Bus	EBT 813 813 813 813 813 813 813 813 813 813	116 116 1100 1.00 1.00 1.00 1.00 1.00 3 3 3 1.35 0.61 441 441 507 507 507 503 503 503 503 503 503 503 503 503 503	WBL 112 112 110 0 0 1.00 1.00 1.00 1.00 1.0	WBT 361 361 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	WBR	- NBL	- NBT	- 88 RB	BS ►	SBT	SBR
ons h h h h h h h h h h h h h h h h h h h	100 1.00 1.00 1.00 1.00 1.00 1.00 1.00	116 116 0 11.00 11.00 126 0.92 3 3 135 0.61 441 441 507 1776 507 507 507 507 507 507 507 507 507 507	MBL 112 112 110 1.00 1.00 1.00 1.20 1.22 0.92 3 3 3	361 361 361	WBK	HE N	I NBI	NBK NBK	Jag 🛌	88	SE SE
ons vehi/h) h h pbT) h pproach hh/in teh/h	813 813 813 813 813 884 884 884 986 986 987 1763 310 310 310 310 310 310 310 310 310 31	116 116 1.00 1.00 1.00 1.26 0.92 3 135 0.61 441 441 507 1776 31.0 31.0 31.0 507 507 507 507 507 507 507 507 507 50	112 112 1.00 1.00 1.00 1.22 0.92 3	361	*_	×	•		<u>r</u>	*	π.
veh/h) pbT) i pbT) i i pptT) i i pptTable i i i i i i i i i i i i i i i i i i i	813 813 100 100 100 884 884 884 986 884 100 3 3 3 3 3 3 3 3 10 3 3 10 3 3 3 3 3	116 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1	112 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1	361		-	₩			F	
vehith) h pptroach hh/lin th/lin th/lin th/lin th/lin th/lin tehith tehith tehith to), s to, weh/lin th/lin	813 0 1.00 No No 1856 884 0.92 3 3 3 46 0.61 3097 503 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0 31.0	116 0 1.00 1.00 1.00 1.00 0.92 0.92 0.92 0.61 1.35 0.61 1.76 31.0 31.0 31.0 0.25 543	112 1.00 1.00 1.00 1.00 1.22 0.92 3	361	239	157	1482	105	242	1021	475
pbT) ppT) ppT) ppT) ppT) pptnacd reh/h veh/h veh/h tito	0 0 1.00 No	0 1.00 1.00 1.00 1.26 0.92 3 1.35 0.61 441 441 507 31.0 31.0 0.25 543	1.00 1.00 1.00 1.22 1.22 0.92 3	0	239	157	1482	105	242	1021	475
pbT) ppT) pproach hh/lin th/lin th/lin teh/h teh/h teh/h teh/h tyeh/hin tio (b) (c), s (c), s (d) (l) (l) (l) (l) (l) (l) (l) (l) (l) (l	1.00 No No 1856 884 0.92 3 3 946 0.61 503 11.63 31.0 539 539 539 539 544	1.00 1.00 1.00 126 0.92 3 135 0.61 441 507 1776 31.0 31.0	1.00 1.00 1856 122 0.92 3		0	0	0	0	0	0	0
i hhviin 1 hhviin 1 hhviin 1 hhviin 1 hhviin 1 hriin 1 hill 1 hil	1.00 No	1.00 1856 126 0.92 3 3 135 0.61 441 507 1776 31.0 31.0	1.00 1856 122 0.92 3 3		1.00	1.00		1.00	1.00		1.00
opproach hhilin thehlin tr feh, % feh, % ch, seh/hin thehlin to, seh/h sveh/hin thehlin thehlin thehlin thehlin sveh thehlin thehlin thehlin sveh	No 1856 884 0.92 3 3 946 0.61 1763 31.0 31.0 31.0	1856 126 0.92 3 135 0.61 441 441 507 1776 31.0 31.0	1856 122 0.92 3	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
teh, % feh, % feh, % feh, % ceh/h ty veh/h	1856 884 884 984 0.92 3 397 503 31.0 31.0 31.0 31.0	1856 126 0.92 3 135 0.61 441 507 1776 31.0 31.0	1856 122 0.92 3 3	8			8			8	
eh/h (eh, % (eh, % veh/h 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	884 0.92 3 3097 503 1763 1763 31.0 31.0 539 6.93 6.93	126 0.92 3 135 0.61 441 507 1776 31.0 31.0	122 0.92 3 216	1856	1856	1856	1856	1856	1856	1856	1856
(eh, % (eh, % (c) S (c) S (d)	0.92 3 946 0.61 503 1763 31.0 31.0 31.0 539 0.93 544	0.92 3 135 0.61 441 607 1776 31.0 31.0	0.92	392	260	171	1611	114	263	1110	516
(eh, % ceh/h veh/hin 11 veh/h i, veh/h i, veh/h itio (2 i), siveh siveh (2 i), siveh (1 ii), siveh (1 iii), siveh (1 iiii),	3 946 0.61 503 1763 31.0 31.0 31.0 639 6.93 6.93	3 135 0.61 441 507 1776 31.0 31.0 0.25 543	3 216	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
veh/h ve	946 0.61 3097 503 1763 31.0 31.0 539 0.93 544	135 0.61 441 507 1776 31.0 31.0 0.25 543	216	က	က	က	က	ო	က	က	က
veh/h veh/hh ., veh/h , veh/h), s/veh 1), s/veh 1), s/veh 11), s/veh 11) 13/s/veh 13/s/veh 14) 15/s/veh 15/s/veh 16/s/veh 17/s/veh 18/s/veh 18/veh 18/veh	3097 503 1763 31.0 31.0 539 0.93 544	0.61 441 507 1776 31.0 31.0 0.25 543		602	469	252	1579	112	285	1315	914
co, s co, s co, s veh/h veh/h veh/h veh/h siveh 1), siveh 3%, veh/h siveh 11 Dalay, siveh 11 Dalay, siveh 11 Siveh	3097 503 11.0 31.0 31.0 539 0.93 544	507 1776 31.0 31.0 0.25 543	0.07	0.17	0.17	0.08	0.33	0.33	0.25	0.75	0.75
veh/h veh/hin 1 c), s i, veh/h i, veh/h itio (i)	503 31.0 31.0 31.0 539 0.93 544	507 1776 31.0 31.0 0.25 543	1767	3526	1572	1767	4830	342	1767	3526	1572
c), seh/hin 1 i, veh/h ttio j), sveh 1 tti Dalay, sveh 1 tti Dalay, sveh 1 sveh 1 sveh 1 sveh 1	31.0 31.0 31.0 539 0.93 544	1776 31.0 31.0 0.25 543	122	392	260	171	1126	299	263	1110	516
c), s -c), s veh/h veh/h titio 1), s/veh 1), s/veh 1), s/veh 1), s/veh 1) s/veh 1 blay, s/veh 1 blay, s/veh 1 s/veh	31.0 31.0 539 0.93 544	31.0 31.0 0.25 543	1767	1763	1572	1767	1689	1794	1767	1763	1572
veh 1	31.0 539 0.93 544	31.0 0.25 543	6.7	12.4	16.7	9.7	39.2	39.2	13.1	25.9	19.4
Weh the second s	539 0.93 544	0.25	2.9	12.4	16.7	9.7	39.2	39.2	13.1	25.9	19.4
weh 11 12 12 12 12 12 12 12 12 12 12 12 12	0.93 544 500	543	1.00		9.	1.00		0.19	1.00		1.0
de d	0.93 544 0.00		216	602	469	252	1104	286	285	1315	914
weh 15 (1)	25 C	0.93	0.57	0.65	0.55	0.68	1.02	1.02	0.92	9.8	0.56
veh 4 17 17 17 17 17 17 17 17 17 17 17 17 17	2	248	277	734	278	300	1104	286	310	1315	914
0 2 15 15 15 17 17 17 17 17 17 17 17 17 17 17 17 17	3	2.00	1.00	1.00	9.	1.00	1.00	1.00	2.00	5.00	2.00
4 4 7T	0.97	0.97	1.00	1.00	1.00	0.85	0.85	0.85	1.00	1.00	1.00
15 4 4 17 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	22.2	22.2	38.0	46.4	35.4	27.0	40.4	40.4	27.9	12.8	5.0
4 17	22.9	22.8	2.3	7:5	1.0	4.1	30.2	39.8	30.4	6.7	2.5
ve ve	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
y, s/veh	16.1	16.2	5.4	9.3	10.5	6.2	27.7	31.1	7.	8.6	5.7
	45.0	45.4	000	410	V 90	5	302	700	000	904	0
	777	- - -	2.0	? C	t. O	- 5	5.	- L	Э. Ш	<u> </u>	5
Approach Delay, s/veh	1635			774			1896			1889	
	95.3			42.9			70.0			21.9	
Approach LOS	ш			Ω			ш			ပ	
Timer - Assigned Phs 1	2	က	4	2	9	7	∞				
Phs Duration (G+Y+Rc), s 20.3	44.2	13.8	41.7	14.7	49.8	30.0	25.5				
	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
	33.0	13.0	37.0	13.0	37.0	25.0	25.0				
11),s 1	41.2	8.7	33.0	9.6	27.9	27.0	18.7				
Green Ext Time (p_c), s 0.1	0:0	0.1	2.2	0.1	0.9	0.0	1.8				
Intersection Summary											
HCM 6th Ctrl Delay		58.6									
HCM 6th LOS		ш									

Min 69.7 0.58 0.53 14.7 14.7

C-Max 35.2 0.29 1.18 122.1

Min 46.8 0.39 0.74 50.5 50.5

Min 44.8 0.37 0.40 16.9 16.9

Min 33.9 0.28 0.58 34.0 34.0

Min 53.7 0.45 1.27 160.7 0.0

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 23.7 0.20 0.57 46.8 0.0 46.8 D

Min 38.4 0.32 0.91 51.4 0.0 D 93.2

C-Max 39.7 0.33 0.96 56.8 56.8 56.8 56.8 46.0

0.0

122.1 F 115.6

> Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

5.0 10.0 30.0 25.0% 4.0 1.0 0.0 5.0 Lead

5.0 10.0 18.0 15.0%

5.0 10.0 30.0 25.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time Adjust (s)

1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead Splits and Phases: 4: Carlisle Blvd. & Indian School Rd.

22.5

22.5

33.5

33.5

33.5

33.5

30.5

30.5

30.5

Intersection LOS: EICU Level of Service G

Intersection Signal Delay: 78.3 Intersection Capacity Utilization 102.9% Analysis Period (min) 15

Control Type: Actuated-Coordinated

Actuated Cycle Length: 120 Offset: 9.6 (8%), Referenced to phase 2.NBTL and 6:SBTL, Start of Green 2031 PM Peak BUILD Conditions - Mitigated Conditions 2031 PB_MIT.syn 2031 PB_MIT.syn

2031 PM Peak BUILD Conditions - Mitigated Conditions

Synchro 10 Report 2031PB_MIT.syn

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 5: Washington St. & Indian School Rd.

Timings 5: Washington St. & Indian School Rd.

†

277 277 NA

282 282 NA

366 7

¥ 228 ₹

8 8

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Turn Type
Protected Phases
Permitted Phases
Detector Phase

J. Washington St. &	Ø IIGIBII	001100	2								7/00	2012
	•	†	<i>></i>	>	↓	4	•	←	•	٠	→	•
Movement	盟	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	×	₩.		×	₩.		×	2		je-	£	
Traffic Volume (veh/h)	189	228	101	43	366	83	88	282	22	24	277	151
Future Volume (veh/h)	189	228	101	43	366	63	88	282	22	24	277	121
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1:00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		2			2			2			ટ	
Adj Sat Flow, veh/h/In	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	202	209	110	47	398	89	96	307	09	29	301	164
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	က	က	ო	က	က	က	က	က	က	က	က	က
Cap, veh/h	478	1167	211	347	1058	179	195	422	82	272	310	169
Arrive On Green	0.10	0.39	0.39	0.05	0.35	0.35	90.0	0.28	0.28	0.05	0.27	0.27
Sat Flow, veh/h	1767	2982	539	1767	3015	511	1767	1508	295	1767	1129	615
Grp Volume(v), veh/h	205	358	328	47	231	235	96	0	367	29	0	465
Grp Sat Flow(s),veh/h/ln	1767	1763	1758	1767	1763	1764	1767	0	1802	1767	0	1745
Q Serve(g_s), s	6.5	14.2	14.2	7.	8.9	9.1	3.5	0:0	16.8	2.1	0.0	24.0
Cycle Q Clear(g_c), s	6.5	14.2	14.2	7.	8.9	9.1	3.5	0.0	16.8	2.1	0.0	24.0
Prop In Lane	1.00		0.31	9.1		0.29	1.00		0.16	00.		0.35
Lane Grp Cap(c), veh/h	478	069	889	347	619	619	195	0	204	272	0	478
V/C Ratio(X)	0.43	0.52	0.52	0.14	0.37	8.3	0.49	0.00	0.73	0.22	0.0	0.97
Avail Cap(c_a), veh/h	523	069	889	464	619	619	224	0	504	341	0	478
HCM Platoon Ratio	1.00	9.1	1.00	9.	1.00	9.1	1.00	1.00	1.00	1.00	9.	1.00
Upstream Filter(I)	1.00	9:	1.00	9.	1.00	9:	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.1	21.2	21.2	17.2	22.1	22.2	24.7	0.0	29.7	22.8	0.0	32.7
Incr Delay (d2), s/veh	9.0	2.8	2.8	0.2	1.7	. 0	6.	0.0	5.2	0.4	0.0	33.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.5	10.0	10.0	1.0	8.9	6.9	2.7	0.0	12.4	1.6	0.0	20.5
Unsig. Movement Delay, s/veh		3	3	į	6	0	6	d	3	d	d	6
LnGrp Delay(d),s/ven	. o.	24.0	24.0	4: 0	23.8	23.9	70.0	0.0	24. V. C	73.7	0.0	90. 0. F
Lucip LUS	n	٥	اد	n	٥	اد	اد	₹ 5	اد	اد	₹ 2	٦
Approach Vol, ven/h		325			513			463			524	
Approach Delay, s/ven		77.7			23.3			33.2			/. Lq	
Approach LOS		ပ			ပ			ပ			ш	
Timer - Assigned Phs	-	2	3	4	5	9	7	8				
Phs Duration (G+Y+Rc), s	10.0	30.5	10.0	40.7	10.5	30.0	13.7	37.0				
Change Period (Y+Rc), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
Max Green Setting (Gmax), s	0.7	25.0	11.0	32.0	7.0	25.0	11.0	32.0				
Max Q Clear Time (g_c+l1), s	4. c	18.8	3.5	16.2	2.5	76.0	x c	11.1				
Gleen Ext I IIIe (p_c), s	0.0	-	0.0	0.0	0.0	0.0	- -	C.7				
Intersection Summary												
HCM 6th Ctrl Delay			33.2									
HCM 6th LOS			ပ									

5.0 5.0 10.0 21.0 12.6% 31.6% 4.0 4.0 1.0 0.0 5.0 5.0 Lead Lag

4.0 1.0 0.0 5.0 Lag

4.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lead

5.0 21.0 30.0 31.6%

5.0 10.0 12.0 12.6%

5.0 10.0 16.0

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

Min 25.0 0.27 0.96 66.1 0.0 66.1

Min 31.6 0.34 0.23 20.9 0.0 C

Min 32.1 0.34 0.47 26.7 26.7 26.7

Min 38.8 0.41 0.15 13.6 0.0

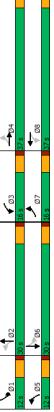
Min 45.8 0.49 0.46 16.8 16.8

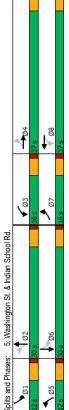
Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio v/c Ratio

Min 25.2 0.27 0.75 42.2 0.0 D D D

Max 32.0 0.34 0.40 23.9 0.0 23.9 C C C C C

Max 35.5 0.38 0.55 24.3 0.0 C C C C





Intersection LOS: C ICU Level of Service C

Maximum vic Ratio: 0.96 Intersection Signal Delay: 34.1 Intersection Capacity Utilization 68.1% Analysis Period (min) 15

Splits and Phases:

Control Type: Semi Act-Uncoord Actuated Cycle Length: 94.2

Natural Cycle: 65

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

2031 PM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2031PBX.syn

2031 PM Peak BUILD Conditions - Existing Geometry

HCM 6th Signalized Intersection Summary 6: Carlisle Blvd. & Constitution Ave.

Timings 6: Carlisle Blvd. & Constitution Ave.

†

5 4

753 NA

9 9

8647

122

209 AM

231 231 Perm

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase Protected Phases

Terry O. Brown, PE 06/27/2019

	1	†	/	\	ţ	4	•	←	•	٠	→	•
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ĸ	*	¥.	r	*	R.	r	₩		r	*	•
Traffic Volume (veh/h)	231	509	17	8	171	122	19	864	39	100	753	140
Future Volume (veh/h)	231	509	17	8	171	122	19	864	39	100	753	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1:00		1.00	1.00		9:	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	9:1	1.00	1.00	1.00	1:00	1.00	1.00	1.00	1.00	9:	1.00
Work Zone On Approach		2			2			2			2	į
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856	1856
Adj Flow Rate, veh/h	251	227	8 9	<u>ه</u>	186	3	5 5	626	45	109	818	152
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	en ;	m (က	က	en 5	e 5	e 6	e 6	က	en :	e 16	e 6
Cap, ven/n	اگار در در	010	275	328	010	275	390	2009	000	304	1089	919
Sat Flow veh/h	1052	1856	1572	11.35	1856	1572	0.30 575	3/37	154	00.1	1856	1572
Gm Volume(v) veh/h	251	200	120	2 2	186	133	5 5	482	100	100	818	152
Gm Sat Flow(s) veh/h/ln	1052	1856	1572	1126	1856	1572	575	1763	1828	569	1856	1572
Q Serve(a s). s	27.9	11.2	6.0	8.0	6.8	7.4	6.	18.7	18.7	9.1	0.0	0.0
Cycle Q Clear(g_c), s	36.8	11.2	6.0	19.2	8.9	7.4	1.9	18.7	18.7	27.9	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.08	1.00		1.00
Lane Grp Cap(c), veh/h	331	616	522	329	616	522	396	1030	1069	304	1085	919
V/C Ratio(X)	9.70	0.37	0.03	0.28	0.30	0.25	0.05	0.47	0.47	0.36	0.75	0.17
Avail Cap(c_a), veh/h	329	999	263	328	999	563	396	1030	1069	304	1085	919
HCM Platoon Ratio	1.00	9.	1.00	1.00	1.00	9:	1.00	1.00	1.00	2.00	5.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1:00	1.00	1.00	1.00	0.26	0.26	0.26
Uniform Delay (d), s/veh	43.4	30.5	27.1	37.8	29.7	29.5	10.7	14.2	14.2	3.7	0.0	0.0
Incr Delay (d2), s/veh	8.4	0.4	0.0	0.5	0.3	0.3	0.3	7.5	3.	0.0	د. د.	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0:0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOrd(95%),ven/in	0.21	Ø.0	0.0	4.	ر. د:	 	0.5	17.1	12.4	7.7	7.0	0.0
Unsig. Movement Detay, siven Inch. Detay, siven		30.9	27.1	383	30.0	29.5	110	25.8	15.7	46	<u>د</u>	0
LnGrp LOS	٥	O	O		O	O	В	В	В	A	<	< <
Approach Vol, veh/h		496			410			1002			1079	
Approach Delay, s/veh		41.3			31.7			15.6			1.5	
Approach LOS		Ω			O			Ω			∢	
Timer - Assigned Phs		2		4		9		∞				
Phs Duration (G+Y+Rc), s		75.2		44.8		75.2		44.8				
Change Period (Y+Rc), s		2.0		2.0		2.0		2.0				
Max Green Setting (Gmax), s		0.79		43.0		0.79		43.0				
Max Q Clear Time (g_c+I1), s		20.7		38.8		29.9		21.2				
Green Ext Time (p_c), s		7.9		1:0		9.4		1.8				
Intersection Summary												
HCM 6th Ctrl Delay			17.0									
HCM 6th LOS			œ									

C-Max 76.7 0.64 0.14 1.0 0.0

C-Max 76.7 0.64 0.38 10.4 0.0

C-Max 76.7 0.64 0.44 12.7 12.7

C-Max 76.7 0.64 0.08 12.1 0.0

Min 0.28 0.26 7.7 7.7

Min 33.3 0.28 0.36 35.2 0.0 0.0 D D C

Min 33.3 33.3 0.28 0.37 37.2 0.0 0.0 0.0 0.0

Min 0.28 0.04 10.8 10.8 B

Min 33.3 0.28 0.90 74.9 74.9

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 33.3 0.28 0.44 37.1 37.1 D D D E E

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

C-Max 76.7 0.64 0.69 15.2 0.0 15.2 B

B 12.7

5.0 21.0 72.0 60.0% 4.0 1.0 0.0

1.0

0.0 0.0

0.0

1.0

1.0

1.0

1.0

1.0 0.0

5.0 21.0 72.0 60.0%

5.0 21.0 72.0 60.0%

5.0 21.0 48.0 40.0%

5.0 21.0 48.0 40.0%

5.0 21.0 48.0 40.0%

5.0 21.0 48.0 40.0%

5.0 21.0 48.0 40.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time Adjust (s)
Total Lost Time Adjust (s)

5.0 21.0 48.0

→ 04	48 s	80	48 s	
	72 s	(R) Ø6 (R)	72 s	

Splits and Phases: 6: Carlisle Blvd. & Constitution Ave.

Intersection LOS: C ICU Level of Service E

Intersection Signal Delay: 21.7 Intersection Capacity Utilization 82.3% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.90

Natural Cycle: 60

Actuated Cycle Length: 120 Offset: 69.6 (58%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

2031 PM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2031PBX.syn

2031 PM Peak BUILD Conditions - Existing Geometry

Terry O. Brown, PE 06/27/2019 HCM 6th Signalized Intersection Summary 7: San Mateo Blvd. & I-40 EB Ramp

Timings 7: San Mateo Blvd. & I-40 EB Ramp

1029 NA

454 454 Prot

391

556 556 Perm

436 436 Prot

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase 5.0 21.0 84.0 70.0% 4.0 1.0 0.0 5.0

4.0 1.0 0.0 5.0 Lead

4.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

1.0

5.0 10.0 18.0 15.0%

5.0 21.0 66.0 55.0%

5.0 21.0 66.0 55.0%

5.0 21.0 36.0 30.0%

5.0 10.0 36.0 30.0%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)

EBL E 436 100 100 100 100 100 100 100 1		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0	WBR 0	NBL 0 0 0	NBT ↑↑↑ 1752	391	SBL 454	3BT 1029	SBR
436 436 436 100 1.00 1.00 1.00 1.00 1.00 1.00 1.00		00	0 0	0	0 0 0	1752	391	454	1029	
436 436 100 100 100 100 474 692 803 803 803 474 474 474		90	00	00	0 0 0	1752	391	424	1029	
436 0 100 1.00 1 1.00 1 474 0.92 0 3 800 0.23 0 23 2834 474 1167		0	0	0	0 0 9	7750	201	7	4000	
1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00					0 0	1/27	- 20	424	6701	J
1,00 1,00 1,00 1,00 1,00 1,00 1,00 1,00					2	0	0	0	0	J
1,00 1 1856 18 474 0,92 0 3 800 0,23 0 3354 474 1167					1.00		1.00	1.00		1.0
1856 18 474 474 0.92 0 3 800 0.23 0 1767 1767					1.00	1.00	1.00	1.00	1.00	1.00
1856 - 474 - 0.92 - 3 800 0.23 3534 474 1767 14.4						ટ			2	
474 0.92 3 800 0.23 3534 474 1767					0	1856	1856	1856	1856	0
0.92 3 800 0.23 3534 474 1767					0	1904	0	493	1118	٥
3 800 0.23 3534 474 1767					0.92	0.92	0.92	0.92	0.92	0.92
800 0.23 0.0 3534 474 1767 14.4 0					0	က	က	ო	က	
0.23 0.C 3534 474 1767					0	2737		371	3497	J
3534 474 1767 14.4 0					0.00	0.54	0.00	0.04	0.23	0.00
474 1767 14.4 0					0	5233	1572	3428	5233	
1767 14.4 0					0	1904	0	493	1118	U
14.4					0	1689	1572	1714	1689	Ŭ
					0.0	33.2	0.0	13.0	22.1	0.0
					0.0	33.2	0.0	13.0	22.1	0.0
					0.00		1.00	1.00		0.0
p(c), veh/h 800					0	2737		371	3497	J
					0.00	0.70		1.33	0.32	0.0
M 913					0	2737		37.1	3497	_
1.00					1.00	1.00	9 5	0.33	0.33	1.00
1.00					0.00	1.00	0.00	0.43	0.43	0.00
c. 4	1				0.0	20.3	0.0	97.3	6.22	5 6
8.0 0.0	0.0				0.0	<u>.</u>	0.0	20.0	- c	0.0
0.0	•				0.0	0.0	0.0	0.0	0.0	0.0
wile backOrd(95%),ven/in 10.5 U.	0.0				0:0	0.0	0.0	7.07	4.0	3
423	0.0 53.4				0 0	218	0 0	213.2	23.0	0 0
۵					⋖	O		ш	O	_
Approach Vol, veh/h 1089	6					1904	∢		1611	
Approach Delay, s/veh 48.5	ις.					21.8			81.2	
Approach LOS	۵					ပ			ш	
imer - Assigned Phs 1	2	4		9						
Phs Duration (G+Y+Rc), s 18.0 69.8	8	32.2		87.8						
5.0	5.0	2.0		2.0						
	0	31.0		79.0						
15.0	2	24.6		24.1						
Green Ext Time (p_c), s 0.0 17.0	0	5.6		10.9						
ntersection Summary										
HCM 6th Ctrl Delay	48.9									
HCM 6th LOS	۵									
Notes										

C-Max 86.3 0.72 0.31 5.4 0.0 5.4 A 18.5 B

Min 20.3 0.17 0.86 0.86 0.0 48.1

C-Max 61.0 0.51 0.42 2.9 0.0 2.9 2.9

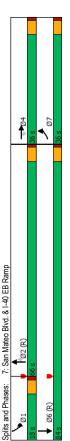
C-Max 61.0 0.51 0.74 25.6 0.0 25.6

Min 23.7 0.20 0.80 43.0 0.0

Min 23.7 0.20 0.71 50.3 0.0 0.0 50.3

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 0.20 0.80 0.80 0.0 0.0 0.0 0.0 43.4 D D



Intersection LOS: C ICU Level of Service C

Intersection Signal Delay: 25.9 Intersection Capacity Utilization 71.7% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.86

Natural Cycle: 75

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Actuated Cycle Length: 120 Offset: 103.2 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Green

7: San Mateo Blvd. & I-40 EB Ramp

Synchro 10 Report 2031PBX.syn

2031 PM Peak BUILD Conditions - Existing Geometry

Terry O. Brown, PE 06/28/2019 HCM 6th Signalized Intersection Summary 7: San Mateo Blvd. & I-40 EB Ramp

Timings 7: San Mateo Blvd. & I-40 EB Ramp

†

1029 1029 NA 6

454 454 Prot

391

556 556 Perm

436 436 Prot

Lane Configurations Traffic Volume (vph) Future Volume (vph) Turn Type Protected Phases Permitted Phases Detector Phase

Movement Lane Configurations Traffic Volume (veh/h)			•	•		,	-	-	_		٠	,
Lane Configurations Traffic Volume (veh/h)	EB	FBT	FBR	WBL	WBT	WBR	NBI	NBT	NBR	SB	SBT	SBR
Traffic Volume (veh/h)	K	4	*	:			1	444	*	K	444	j
	436	5	226	0	0	0	0	1752	391	454	1029	0
Future Volume (veh/h)	436	15	929	0	0	0	0	1752	391	454	1029	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1:00		1.00				1.00		1.00	1:00		1.00
Mork Zone On Approach	1:00	3.5	1.00				1.00	B: 5	1.00	1:00	9 S	1.00
Adi Sat Flow veh/h/ln	1856	1856	1856				_	1856	1856	1856	1856	_
Adi Flow Rate, veh/h	474	0	615				0	1904	0	493	1118	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	က	ო	ო				0	က	က	က	က	0
Cap, veh/h	764	0	089				0	2487		929	3548	0
	0.22	0.0	0.22				0.00	0.49	0.00	0.17	0.70	0.00
Cm Volume(v) vich/h	4274	0	0.40 645				0	1004	7/61	3420	1110	
Gran Sat Flow(s) veh(h)	1767	0 0	1572				0 0	1680	1572	1714	1689	0
O Serve(a.s). s	14.6	0.0	22.9				0.0	36.8	0.0	16.8	10.2	0.0
Cycle Q Clear(g_c), s	14.6	0.0	22.9				0.0	36.8	0.0	16.8	10.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	764	0	089				0	2487		9/9	3548	0
V/C Ratio(X)	0.62	0.0	0.00				0.00	0.77		0.86	0.32	0.0
Avail Cap(c_a), veh/h	792	0 5	9 5				0 5	2487	00	828	3548	0 5
HCM Platoon Ratio	00:1	8 8	9.6				00.0	00.1	00.1	0.1	00.1	00.1
Uniform Delay (d). s/veh	42.6	0.0	45.8				0.0	24.9	0.0	48.5	6.9	0.0
Incr Delay (d2), s/veh	1.4	0:0	14.8				0.0	2.3	0.0	2.4	0.1	0.0
Initial Q Delay(d3),s/veh	0:0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.7	0:0	15.5				0.0	21.2	0.0	10.0	5.2	0.0
Unsig. Movement Delay, s/veh			;					į			i	
LnGrp Delay(d),s/veh	44.0	0.0	60.7				0.0	27.2	0.0	50.9	7.0	0.0
Lugip LOS		4	ш				∢	2	<		A 17.7	4
Approach Vol, ven/h		1089						1904	∢		101	
Approach LOS		t: 🗅						71.7 C			t. 0	
Times Acciond Dho	,	c				Q						
Phe Duration (G+V+Bc) e	25.2	63.0		30.0		80 1						
Change Period (Y+Rc), s	5.0	5.0		5.0		5.0						
Max Green Setting (Gmax), s	29.0	49.0		27.0		83.0						
Max Q Clear Time (g_c+l1), s	18.8	38.8		24.9		12.2						
Green Ext Time (p_c), s	1.4	8.2		1.1		1.1						
Intersection Summary												
HCM 6th Ctrl Delay			31.0									
HCM 6th LOS			ပ									
Notes												

C-Max 87.5 0.73 0.30 2.2 0.0 2.2 A 16.0

Min 22.6 0.19 0.77 47.2 0.0 47.2

C-Max 60.0 0.50 0.43 3.5 3.5 0.0 3.5 A

C-Max 60.0 0.50 0.76 28.1 28.1

Min 22.5 0.19 0.80 42.7 42.7 42.7

Min 22.5 0.19 0.75 53.3 0.0 53.3

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 22.5 0.19 0.81 43.2 0.0 0.0 D D D

5.0 21.0 88.0 73.3% 4.0 1.0 0.0

4.0 1.0 0.0 5.0 Lead

1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

1.0

1.0

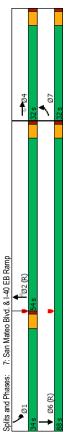
5.0 10.0 34.0 28.3%

5.0 21.0 54.0 45.0%

5.0 21.0 32.0 26.7%

5.0 10.0 32.0 26.7%

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Total Spit (%)
Total Spit (%)
Yellow Time (s)
Al-Red Time (s)
Total Lost Time (s)



Intersection LOS: C ICU Level of Service C

Intersection Signal Delay: 26.3 Intersection Capacity Utilization 71.7% Analysis Period (min) 15

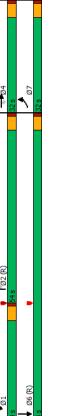
Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.81

Natural Cycle: 75

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Actuated Cycle Length: 120 Offset: 103.2 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Green



2031 PM Peak BUILD Conditions - Mitigated Conditions

Synchro 10 Report 2031PB_MIT.syn

Synchro 10 Report 2031PB_MIT.syn

2031 PM Peak BUILD Conditions - Mitigated Conditions

HCM 6th Signalized Intersection Summary Terry O. Brown, PE 8: San Mateo Blvd. & I-40 WB Ramp 6/27/2019

8: San Mateo Blvd. & I-40 WB Ramp

Timings

1444 NA 1444

> 196 196 Prot

242 242 Pot

> 524 524 Perm

Pot 195

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Turn Type
Protected Phases
Permitted Phases
Detector Phase

Movement Lane Configurations				٠			-		-		•	,
Lane Configurations	EBL	EBT	EBR	WBL	WBT	WBR	BE	NBT	NBR	SBL	SBT	SBR
111111111111111111111111111111111111111	£		*	K.	*	¥c_	£	**			**	*
Traffic Volume (veh/h)	195	0	524	242	142	315	196	1362	0	0	1444	141
Future Volume (veh/h)	195	0	524	242	142	315	196	1362	0	0	1444	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.1		1.00	1.0		9.	1.00		1.00	1.00		1.0
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		S			S			2			2	
Adj Sat Flow, veh/h/ln	1856	0	1856	1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h	212	0	220	263	154	342	213	1480	0	0	1570	153
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	က	0	က	က	က	က	က	က	0	0	က	e,
Cap, veh/h	270	0	0	1127	387	328	277	2978	0	0	2358	856
Arrive On Green	0.08	0.00	0.00	0.33	0.21	0.21	0.03	0.19	0.00	0.00	0.47	0.47
Sat Flow, veh/h	3428	212		3428	1856	1572	3428	5233	0	0	5233	1572
Grp Volume(v), veh/h	212	63.2		263	154	342	213	1480	0	0	1570	153
Grp Sat Flow(s),veh/h/ln	1714	ш		1714	1856	1572	1714	1689	0	0	1689	1572
Q Serve(g_s), s	7.3			6.7	9.8	25.0	7.4	31.3	0.0	0:0	28.8	5.5
Cycle Q Clear(g_c), s	7.3			6.7	9.8	25.0	7.4	31.3	0.0	0.0	28.8	5.9
Prop In Lane	0.			9.		9.	1.00		0.00	0.00		7.0
Lane Grp Cap(c), veh/h	270			1127	387	328	277	2978	0	0	2358	826
V/C Ratio(X)	0.78			0.23	0.40	<u>4</u>	0.77	0.50	0.00	0.00	0.67	0.18
Avail Cap(c_a), veh/h	343			1127	387	328	400	2978	0	0	2358	826
HCM Platoon Ratio	1.00			9.	1.00	9.	0.33	0.33	1.00	1.00	9.	5
Upstream Filter(I)	1:00			9.	1.00	9:	09:0	09.0	0.00	0.00	9:	1.00
Uniform Delay (d), s/veh	54.3			29.3	41.0	47.5	5/.3	32.5	0.0	0.0	24.8	13.0
Incr Delay (d2), s/veh	8.0			0.1	0.7	61.6	3.4	0.4	0.0	0.0	7.	0.5
Initial Q Delay(d3),s/veh	0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.3			2.0	7.2	22.3	2.8	19.0	0.0	0:0	17.1	3.0
Unsig. Movement Delay, s/veh				3	1	7007	1	ć	c	ć	3	,
Lingip Delay(u),s/ven	2.00			4.67	- C	- i	7.00	6.20	0.0	0.0	4.02 C	5. C
cilgip cos	ш			د	r i		ш	2 6	τ	τ	2 5	
Approach Vol. ven/n					139			5692			57.1	
Approach Delay, s/ven					۵. /۵ ا			30.4			72.3	
Approach LOS					ш			۵			ပ	
Timer - Assigned Phs		2	3		2	9	7	8				
Phs Duration (G+Y+Rc), s		75.5	44.5		14.7	6.09	14.5	30.0				
Change Period (Y+Rc), s		2.0	2.0		5.0	2.0	2.0	2.0				
Max Green Setting (Gmax), s		0.89	12.0		14.0	49.0	12.0	25.0				
Max Q Clear Time (g_c+l1), s		33.3	8.7		9.4	30.8	9.3	27.0				
Green Ext Time (p_c), s		14.0	0.3		0.3	11.2	0.2	0:0				
Intersection Summary												
HCM 6th Ctrl Delay			38.8									
HCM 6th LOS			_									

5.0 10.0 17.0 14.2 4.0 1.0 0.0 5.0 Lead

5.0 10.0 19.0 15.8%

5.0 21.0 30.0 25.0%

5.0 10.0 17.0 14.2% 4.0 1.0 0.0 5.0 Lag

1.0

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 -ead

4.0 0.0 5.0 Lag

5.0 10.0 17.0 14.2% 4.0 1.0 0.0 5.0 Lead

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

Min 67.0 0.56 0.16 3.7 3.7

C-Max 68.0 0.57 0.52 12.9 0.0

Min 25.7 0.21 0.81 46.8 46.8

Min 11.8 0.10 0.79 70.2 0.0 70.2

Min 25.2 0.21 1.15 115.5 0.0

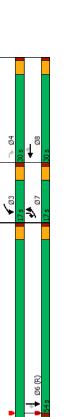
Min 11.3 0.09 0.06 62.9 0.0 62.9

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

Min 25.7 0.21 0.39 44.2 0.0 44.2 D 54.4 D

Min 12.3 0.10 0.61 44.7 0.0

C-Max 50.7 0.42 0.74 31.9 0.0 31.9 C C



Intersection LOS: DICU Level of Service D

Splits and Phases: 8: San Mateo Blvd. & I-40 WB Ramp

Ø2 (R)

05

Intersection Signal Delay: 40.3 Intersection Capacity Utilization 79.7% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 1.15

Natural Cycle: 80

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS Actuated Cycle Length: 120 Offset: 44.4 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Green

2031 PM Peak BUILD Conditions - Existing Geometry

2031 PM Peak BUILD Conditions - Existing Geometry

Synchro 10 Report 2031PBX.syn

Terry O. Brown, PE 06/28/2019 HCM 6th Signalized Intersection Summary 8: San Mateo Blvd. & I-40 WB Ramp

8: San Mateo Blvd. & I-40 WB Ramp

Timings

4 4 4 A A

196 196 Prot

142 A

242 242 Pot

524 524 Perm

Pot 195

Lane Configurations Traffic Volume (vph) Future Volume (vph)

Permitted Phases Detector Phase Protected Phases

Movement Lane Configurations Traffic Volume (veh/h) Ithinial Q (QD), veh Ped-Bise Adj (A, pbT) Parking Bus, Adj Work Zone On Approach						•	-	-				
	EB	EBT	EBR	WBL	WBT	WBR	BE	NBT	NBR	SBL	SBT	SBR
	l		*	K.	*	¥.	K.	***			***	*
	195	0	254	242	142	315	196	1362	0	0	1444	14
	195	0	524	242	142	315	196	1362	0	0	1444	141
	0	0	0	0	0	0	0	0	0	0	0	0
			1.00	1.00		1:00	1.00		1.00	1.00		1.00
Work Zone On Approach	1.00	8.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
		2			8			S			S	
Adj Sat Flow, veh/h/ln 18	1856	0	1856	1856	1856	1856	1856	1856	0	0	1856	1856
Adj Flow Rate, veh/h 2		0	220	263	154	342	213	1480	0	0	1570	153
Peak Hour Factor 0.9	0.92 0	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
avy Veh, %	က	0	က	က	က	က	က	က	0	0	က	e,
Cap, veh/h		0	0	1229	443	375	268	2827	0	0	2220	813
_		0.00	0.00	0.36	0.24	0.24	0.08	0.56	0.00	0.00	0.44	0.47
Sat Flow, veh/h 34;		212		3428	1856	1572	3428	5233	0	0	5233	1572
	212 6	65.3		263	154	342	213	1480	0	0	1570	153
. veh/h/ln	74	ш		1714	1856	1572	1714	1689	0	0	1689	1572
	7.3			6.4	8.3	25.4	7.3	21.9	0.0	0.0	30.3	.;
_c), s	7.3			6.4	8.3	25.4	7.3	21.9	0.0	0.0	30.3	6;;
	1.00			1.00		1.00	1.00		0.00	0.00		, 0.
tp(c), veh/h	569			1229	443	375	268	2827	0	0	2220	8
	.79			0.21	0.35	0.91	0.80	0.52	0.00	0.00	0.71	0.15
Ę	314			1229	526	446	286	2827	0	0	2220	813
. 0	1.00			1.00	1.00	1.0	1.00	1.00	1.00	1:00	1.00	7.0
	1.00			1.00	1.00	1.00	0.57	0.57	0.00	0.00	1.00	1.00
-He	4.3			26.7	37.9	44.5	54. 4.	16.6	0.0	0.0	27.4	15.5
_	11.0			0.1	0.5	20.7	8.2	0.4	0.0	0.0	0; e	0.5
	0.0			0.0	0.0	0.0	0.0	0.0	0:0	0.0	0:0	
	6.4			8.	6.9	17.7	2.7	11.7	0.0	0.0	18.0	4
Unsig. Movement Delay, s/ven	65.3			26.8	38.4	65.2	9 69	16.9	0	0	20.4	4
	з ш			0	2	і ш	В	2	} ≪	8	O	2
Approach Vol. veh/h					759			1693			1723	
Approach Delay, s/veh					46.5			22.7			28.2	
Approach LOS					□			ပ			ပ	
Timer - Assigned Phs		2	c		rc.	မ	7	∞				
Phs Duration (G+Y+Rc), s	7	72.0	48.0		14.4	57.6	14.4	33.6				
Change Period (Y+Rc), s		2.0	2.0		2.0	2.0	2.0	2.0				
Max Green Setting (Gmax), s	9	0.09	10.0		10.0	45.0	11.0	34.0				
Max Q Clear Time (g_c+I1), s	2	3.9	8.4		9.3	32.3	9.3	27.4				
Green Ext Time (p_c), s		4.2	0.2		0.0	8.7	0.1	1.2				
Intersection Summary												
HCM 6th Ctrl Delay			31.0									
HCM 6th LOS			ပ									

5.0 10.0 16.0 13.3% 4.0 1.0 0.0 5.0 Lead

5.0 10.0 15.0 12.5%

5.0 21.0 39.0 32.5%

5.0 21.0 39.0 32.5%

5.0 10.0 15.0 12.5%

5.0 21.0 40.0

4.0 1.0 0.0 5.0 Lag

1.0

4.0 1.0 0.0 5.0 Lead

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 Lag

4.0 1.0 0.0 5.0 ead

4.0 1.0 0.0 5.0 Lag

5.0 10.0 16.0 13.3% 4.0 1.0 0.0 5.0 Lead

Switch Phase
Minimum Initial (s)
Minimum Spit (s)
Minimum Spit (s)
Total Spit (%)
Yellow Time (s)
All-Red Time (s)
Total Lost Time (s)
Total Lost Time (s)

Min 60.7 0.51 0.18 5.1 5.1

C-Max 60.0 0.50 0.59 24.1 24.1

Min 9.9 0.08 0.76 55.8 55.8

Min 34.3 0.29 0.65 31.8 31.8 C

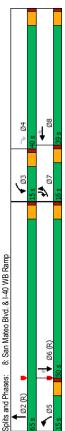
Min 10.0 0.08 0.93 93.0 0.0 93.0

Min 35.0 0.29 63.8 63.8 63.8 63.8

Min 10.7 0.09 0.70 66.3 0.0 66.3

Lead/Lag Lead-Lag Optimize? Recall Mode Act Effct Green (s) Actuated g/C Ratio

C-Max 45.1 0.38 0.83 38.7 0.0 38.7 D 35.7



Intersection LOS: D ICU Level of Service D

Intersection Signal Delay: 40.4 Intersection Capacity Utilization 79.7% Analysis Period (min) 15

Control Type: Actuated-Coordinated Maximum v/c Ratio: 0.98

Natural Cycle: 80

Approach Delay Approach LOS

Control Delay Queue Delay Total Delay LOS

Actuated Cycle Length: 120 Offset: 44.4 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Green

2031 PM Peak BUILD Conditions - Mitigated Conditions

Synchro 10 Report 2031PB_MIT.syn

Synchro 10 Report 2031PB_MIT.syn

2031 PM Peak BUILD Conditions - Mitigated Conditions

Intersection								
Int Delay, s/veh	3.6							
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations	ሻ	7	ተተተ	7	ሻ	ተተተ		
Traffic Vol, veh/h	186	118	2206	72	187	1580		
Future Vol, veh/h	186	118	2206	72	187	1580		
Conflicting Peds, #/hr	0	0	0	0	0	0		
Sign Control	Stop	Stop	Free	Free	Free	Free		
RT Channelized	-	None	-	None	-	None		
Storage Length	30	0	-	115	220	-		
Veh in Median Storage		-	0	-	-	0		
Grade, %	0	-	0	-	-	0		
Peak Hour Factor	92	92	92	92	92	92		
Heavy Vehicles, %	3	3	3	3	3	3		
Mvmt Flow	202	128	2398	78	203	1717		
Major/Minor	Minor1		Major1		Major2			
Conflicting Flow All	3491	1199	0	0	2476	0		
Stage 1	2398	-	-	-	-	-		
Stage 2	1093	-	-	-	-	-		
Critical Hdwy	5.76	7.16	-	-	5.36	-		
Critical Hdwy Stg 1	6.66	-	-	-	-	-		
Critical Hdwy Stg 2	6.06	-	-	-	-	-		
Follow-up Hdwy	3.83	3.93	-	-	3.13	-		
Pot Cap-1 Maneuver	*203	*390	-	-	*489	-		
Stage 1	*400	-	-	-	-	-		
Stage 2	*555	-	-	-	-	-		
Platoon blocked, %	1	1	-	-	1	-		
Mov Cap-1 Maneuver		*390	-	-	*489	-		
Mov Cap-2 Maneuver	*262	-	-	-	-	-		
Stage 1	*400	-	-	-	-	-		
Stage 2	*325	-	-	-	-	-		
Approach	WB		NB		SB			
HCM Control Delay, s	40		0		1.9			
HCM LOS	Е							
Minor Lane/Major Mvm	nt	NBT	NBRV	VBLn1V	VBLn2	SBL	SBT	
Capacity (veh/h)		-	-	262	390	* 489	-	
HCM Lane V/C Ratio		-	_	0.772		0.416	-	
HCM Control Delay (s)		_	-		18.7	17.5	-	
HCM Lane LOS		-	-	F	С	С	-	
HCM 95th %tile Q(veh))	-	-	5.7	1.4	2	-	
Notes								
~: Volume exceeds cap	nacity	\$· De	lav exc	eeds 30)0s	+· Comr	outation Not Defined	*: All major volume in platoor
. Volumo exceeds ca	pacity	ψ. De	nay GAU	ocus ol	,00	· . Ουπμ	diation Not Delined	. All major volume in platoor

Movement WBL WBR NBT NBR SBL SBT	Intersection								
Lane Configurations Traffic Vol, veirh 0 58 2190 105 0 1738 Future Vol, veirh 0 58 2190 105 0 1738 Conflicting Peds, #hr 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Int Delay, s/veh	0.2							
Lane Configurations Traffic Vol, veirh 0 58 2190 105 0 1738 Future Vol, veirh 0 58 2190 105 0 1738 Conflicting Peds, #hr 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Traffic Vol, veh/h									
Future Vol, veh/h Conflicting Peds, #hr Conflicting Flow All Stage 1 Conflicting Flow All Stage 2 Conflicting Howy Stg 1 Conflicting Howy Stg 2 Conf		0			105	0			
Conflicting Peds, #hr									
Sign Control Stop RT Channelized Stop None Free Processing Free Processing Free Processing Free Processing Free Processing	<u> </u>								
RT Channelized									
Storage Length									
Veh in Median Storage, # 0 - 0 - 0 - 0 Grade, % 0 - 0 - 0 - 0 Grade, % 0 - 0 - 0 - 0 Grade, % 0 - 0 - 0 - 0 Grade, % 0 - 0 - 0 - 0 Grade, % 0 - 0 - 0 - 0 Grade, % 0 - 0 - 0 Grade, % 0 - 0 - 0 Grade, % 0 - 0 Grade, % 0 - 0 - 0 Grade, % 0 Grade, % 0 - 0 Grade, % 0 Gr		_		_	-		-		
Grade, % 0 - 0 - 0 - 0 - 0 Peak Hour Factor 92 92 92 92 92 92 92 92 92 92 92 92 92		# n		n	_		n		
Peak Hour Factor 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92 92	•								
Heavy Vehicles, % 3 3 3 3 3 3 3 3 3 3 Mvmt Flow									
Mynt Flow 0 63 2380 114 0 1889 Major/Minor Minor1 Major1 Major2 Conflicting Flow All - 1247 0 0 - - Stage 1 - - - - - - - Stage 2 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -									
Major/Minor Minor1 Major1 Major2 Conflicting Flow All - 1247 0 0 Stage 1									
Conflicting Flow All - 1247 0 0 Stage 1	IVIVITIL FIOW	U	03	2300	114	U	1009		
Conflicting Flow All - 1247 0 0 Stage 1									
Stage 1		Minor1		Major1		/lajor2			
Stage 2	Conflicting Flow All	-	1247	0	0	-	-		
Critical Hdwy - 7.16	<u> </u>	-	-	-	-	-	-		
Critical Hdwy Stg 1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -		-		-	-	-	-		
Critical Hdwy Stg 2 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	Critical Hdwy	-	7.16	-	-	-	-		
Follow-up Hdwy - 3.93	Critical Hdwy Stg 1	-	-	-	-	-	-		
Pot Cap-1 Maneuver 0 *411	Critical Hdwy Stg 2	-	-	-	-	-	-		
Stage 1 0 - - 0 - Stage 2 0 - - 0 - Platoon blocked, % 1 - - - Mov Cap-1 Maneuver - *411 - - - Mov Cap-2 Maneuver - - - - - Stage 1 - - - - - Stage 2 - - - - - Approach WB NB SB HCM Control Delay, s 15.3 0 0 HCM LOS C Minor Lane/Major Mvmt NBT NBRWBLn1 SBT Capacity (veh/h) 411 - HCM Lane V/C Ratio 0.153 - HCM Control Delay (s) 15.3 - HCM Control Delay (s) 15.3 - HCM Lane LOS C - HCM 95th %tile Q(veh) 0.5 - Notes Notes Notes NBM NB SB NB	Follow-up Hdwy	-		-	-	-	-		
Stage 2 0 - - 0 - Platoon blocked, % 1 - - - Mov Cap-1 Maneuver - *411 - - - Mov Cap-2 Maneuver - - - - - Stage 1 - - - - - Stage 2 - - - - - Approach WB NB SB HCM Control Delay, s 15.3 0 0 HCM LOS C Minor Lane/Major Mvmt NBT NBRWBLn1 SBT Capacity (veh/h) 411 - HCM Lane V/C Ratio 0.153 - HCM Lane V/C Ratio 0.153 - HCM Control Delay (s) 15.3 - HCM Lane LOS C - HCM 95th %tile Q(veh) 0.5 - Notes Notes NBRWBLn1 SBT Notes NBRWBLn2 SB NB SB	Pot Cap-1 Maneuver	0	*411	-	-	0	-		
Platoon blocked, % 1 - - - Mov Cap-1 Maneuver - *411 - - - Mov Cap-2 Maneuver - - - - - Stage 1 - - - - - Stage 2 - - - - - Approach WB NB SB HCM Control Delay, s 15.3 0 0 HCM LOS C Minor Lane/Major Mvmt NBT NBRWBLn1 SBT Capacity (veh/h) 411 - HCM Lane V/C Ratio 0.153 - HCM Lane V/C Ratio 0.153 - HCM Control Delay (s) 15.3 - HCM Lane LOS C - HCM 95th %tile Q(veh) 0.5 - Notes		0	-	-	-		-		
Mov Cap-1 Maneuver - *411	Stage 2	0	-	-	-	0	-		
Mov Cap-2 Maneuver - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	Platoon blocked, %		•	-	-		-		
Stage 1 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - </td <td>Mov Cap-1 Maneuver</td> <td>-</td> <td>*411</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td></td> <td></td>	Mov Cap-1 Maneuver	-	*411	-	-	-	-		
Stage 2 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - </td <td>Mov Cap-2 Maneuver</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td></td> <td></td>	Mov Cap-2 Maneuver	-	-	-	-	-	-		
Approach WB NB SB HCM Control Delay, s 15.3 0 0 HCM LOS C C Minor Lane/Major Mvmt NBT NBRWBLn1 SBT Capacity (veh/h) - - 411 - HCM Lane V/C Ratio - - 0.153 - HCM Control Delay (s) - - 15.3 - HCM Lane LOS - - C - HCM 95th %tile Q(veh) - - 0.5 - Notes	Stage 1	-	-	-	-	-	-		
HCM Control Delay, s 15.3 0 0 HCM LOS C Minor Lane/Major Mvmt NBT NBRWBLn1 SBT Capacity (veh/h) - 411 - HCM Lane V/C Ratio - 0.153 - HCM Control Delay (s) - 15.3 - HCM Lane LOS - C - HCM 95th %tile Q(veh) - 0.5 -	Stage 2	-	-	-	-	-	-		
HCM Control Delay, s 15.3 0 0 HCM LOS C Minor Lane/Major Mvmt NBT NBRWBLn1 SBT Capacity (veh/h) - 411 - HCM Lane V/C Ratio - 0.153 - HCM Control Delay (s) - 15.3 - HCM Lane LOS - C - HCM 95th %tile Q(veh) - 0.5 -									
HCM Control Delay, s 15.3 0 0 HCM LOS C Minor Lane/Major Mvmt NBT NBRWBLn1 SBT Capacity (veh/h) - 411 - HCM Lane V/C Ratio - 0.153 - HCM Control Delay (s) - 15.3 - HCM Lane LOS - C - HCM 95th %tile Q(veh) - 0.5 -	Annroach	W/B		NR		SB			
Minor Lane/Major Mvmt NBT NBRWBLn1 SBT Capacity (veh/h) - - 411 - HCM Lane V/C Ratio - - 0.153 - HCM Control Delay (s) - - 15.3 - HCM Lane LOS - - C - HCM 95th %tile Q(veh) - 0.5 - Notes									
Minor Lane/Major Mvmt NBT NBRWBLn1 SBT Capacity (veh/h) - - 411 - HCM Lane V/C Ratio - - 0.153 - HCM Control Delay (s) - - 15.3 - HCM Lane LOS - - C - HCM 95th %tile Q(veh) - 0.5 - Notes				U		U			
Capacity (veh/h) - - 411 - HCM Lane V/C Ratio - - 0.153 - HCM Control Delay (s) - - 15.3 - HCM Lane LOS - - C - HCM 95th %tile Q(veh) - - 0.5 - Notes	I IOIVI LOO	U							
Capacity (veh/h) - - 411 - HCM Lane V/C Ratio - - 0.153 - HCM Control Delay (s) - - 15.3 - HCM Lane LOS - - C - HCM 95th %tile Q(veh) - - 0.5 - Notes									
HCM Lane V/C Ratio - - 0.153 - HCM Control Delay (s) - - 15.3 - HCM Lane LOS - - C - HCM 95th %tile Q(veh) - 0.5 - Notes		t	NBT						
HCM Control Delay (s) 15.3 - HCM Lane LOS C - HCM 95th %tile Q(veh) 0.5 - Notes			-						
HCM Lane LOS - - C - HCM 95th %tile Q(veh) - - 0.5 - Notes - - - -			-	-		-			
HCM 95th %tile Q(veh) 0.5 - Notes			-	-		-			
Notes			-	-		-			
	HCM 95th %tile Q(veh)		-	-	0.5	-			
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon	Notes								
		acity	\$: De	elay exc	eeds 30	00s	+: Comp	outation Not Defined	*: All major volume in platoon

Intersection								
Int Delay, s/veh	2.4							
Movement	EBL	EDT	WBT	WBR	SBL	SBR		
		EBT		WBK		SBK		
Lane Configurations	<u>ነ</u>	^	↑ }	07	100	C.F.		
Traffic Vol, veh/h	75 75	1084	647 647	87	100	65 65		
Future Vol, veh/h	75 0	1084	047	87 0	100	00		
Conflicting Peds, #/hr		Free	Free	Free				
Sign Control RT Channelized	Free -	None		None	Stop	Stop None		
	80	None -	-			None -		
Storage Length Veh in Median Storag		0	_	-	0			
Grade, %	e,# - -		0	-	0	-		
	92	0	92	- 02	92	92		
Peak Hour Factor	3	92	3	92	3	3		
Heavy Vehicles, %								
Mvmt Flow	82	1178	703	95	109	71		
Major/Minor	Major1	ı	Major2		Minor2			
Conflicting Flow All	798	0	-	0	1504	399		
Stage 1	-	-	-	-	751	-		
Stage 2	-	-	-	-	753	-		
Critical Hdwy	4.16	-	-	-	6.86	6.96		
Critical Hdwy Stg 1	-	-	-	-	5.86	-		
Critical Hdwy Stg 2	-	-	-	-	5.86	-		
Follow-up Hdwy	2.23	-	-	-	3.53	3.33		
Pot Cap-1 Maneuver	814	-	-	-	*303	598		
Stage 1	-	-	-	-	*424	-		
Stage 2	-	-	-	-	*606	-		
Platoon blocked, %		-	-	-	1			
Mov Cap-1 Maneuver	814	-	-	-	*272	598		
Mov Cap-2 Maneuver		-	-	-	*272	-		
Stage 1	-	-	-	-	*381	-		
Stage 2	-	-	-	-	*606	-		
Approach	EB		WB		SB			
HCM Control Delay, s			0		26.1			
HCM LOS	0.0		U		20.1 D			
I IOWI LOS					U			
Minor Lane/Major Mvr	nt	EBL	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)		814	-	-	-	346		
HCM Lane V/C Ratio		0.1	-	-	-	0.518		
HCM Control Delay (s	5)	9.9	-	-	-	26.1		
HCM Lane LOS		Α	-	-	-	D		
HCM 95th %tile Q(veh	n)	0.3	-	-	-	2.8		
Notes								
~: Volume exceeds ca	apacity	\$: De	lay exc	eeds 30	00s	+: Comp	utation Not Defined	*: All major volume in
								,

2019			E-W Street: N-S Street:		Indian Sc Girard Ct.	ndian School Rd. Sirard Ct.		Signalized			Spee	Speed Limit (Indian School Rd.)= Speed Limit (Girard Ct.)=	an School Girard Ct.)	Rd.)=)=	40 30 6/5/19	MPH MPH
Eastbound (Indian School Rd.)	ound (Indian School Rd.)	ian School Rd.)	Rd.)		West	Westbound (Indian	S	I Rd.)		Northbound (Girard Ct.	Girard Ct.		S	Southbound (Girard Ct.	d (Girard C	(;)
L T R Pedestrians I	T R Pedestrians I	R Pedestrians L	Pedestrians	Γ	Γ.	_	~	Pedestrians	_	_	宏	Pedestrians	7	_	~	Pedestrians
7:15 AM \Rightarrow θ θ θ θ	θ θ	θ		θ		19	9	θ	ੳ	ਣ	+	θ	6	θ	θ	θ
7:30 AM 4 32 2 0 0 0	<i>θ ₹</i>	θ		θ		69	07	в	6	6	θ	θ	+4	9	9	θ
7:45 AM 7 53 2 0 1	2		0 1	1		111	6	0	7	4	0	0	17	4	4	0
2	10		0 1	1		127	6	0	10	3	0	0	17	9	2	0
3 29	4 0	0		2		28	13	0	6	4	0	0	23	4	11	0
8 55 5 0	2 0	0		3		20	14	0	17	0	0	0	12	4	9	0
8:45 AM 3 55 5 0 0	9	θ		θ		98	t	в	10	9	θ	θ	+13	θ	9	θ
9:00 AM 3 48 6 9 5	θ θ	θ		9		84	88	+	6	<i>t+</i>	+	θ	54	9	6	θ
20 228 21 0 7	21 0	0		7		386	45	0	43	11	0	0	69	18	28	0
2.3% 26.0% 2.4% 0.8%	2.4%		%8.0	0.8%		44.1%	5.1%		4.9%	1.3%	%0:0		7.9%	2.1%	3.2%	
30.7%	30.7%					%0.03	_	Intersection		6.2%				13.1%		
0.92	0.92					0.80		0.87		0.79				0.76		
Eastbound (Indian School Rd.) We				We	St	Westbound (Indian School Rd.)	ian Schoo	l Rd.)		Northbound (Girard Ct.	Girard Ct.		S	Southbound (Girard	d (Girard Ct.	(7
strians	strians	strians	strians	_	Т	⊢	œ	Pedestrians	_	—	~	Pedestrians	_	<u></u>	~	Pedestrians
4:15 PM 6 83 5 0 1	<i>θ 9</i>	θ		+		<i>tt</i>	Op.	†	#	ማ	C#	θ	45	9	ረው	θ
θ 8 $\pm \theta t$	<i>t t t t t t t t t t</i>	θ		E		101	91	θ	53	7	θ	θ	9+	6	ළ	θ
4:45 PM 3 106 8 0 2	<i>t t t t t t t t t t</i>	θ		42		80	81-	в	56	4	θ	θ	+4	ርච	4	9
91 10 0	10 0	0		2		120	12	1	13	9	1	0	19	4	2	0
5:15 PM 6 146 10 0 1	10		0 1	1		26	50	0	24	2	0	2	20	2	7	0
5:30 PM 9 116 5 0 4	0 2	0		4		104	91	0	22	2	- 1	0	15	4	3	0
5:45 PM 9 113 14 0 1	14 0	0		1		143	15	0	11	9	0	4	20	9	2	0
98	<i>θ 9</i>	θ		ማ		138	01	θ	#	ማ	θ	θ	+13	ጣ	<i>t</i>	C#
0 68	39 0	0	,	ω	1	464	63	-	20	22	2	9	74	16	22	0
2.3% 36.4% 3.0% 0.6%	3.0%		69.0	0.6%	.0	36.2%	4.9%		2.5%	1.7%	0.5%		2.8%	1.2%	1.7%	
41.7%	41.7%					41.8%		Intersection		7.3%				8.7%		
0.82	0.82					0.84		0.92		0.81				0.85		

Traffic Count Data Sheet (Demand Adjusted)

															1		
Year Counts Taken:	ken:	2019		E-W Street:	د د	I-40 N. Ramp	amb					Sp	Speed Limit (I-40 N. Ramp)=	40 N. Ram⊧	=(c	30	MPH
				N-S Street:		Carlisle Blvd	Blvd.					S	Speed Limit (Carlisle Blvd.)=	arlisle Blvd	<u>=</u> (-	32	MPH
								Sign	Signalized	1						5/19/19	
Begin	End	Щ) punoqtse	Eastbound (I-40 N. Ramp)	(dı	Ň	Westbound (I-40 N. Ramp	1-40 N. Ran	(du	N	Northbound (Carlisle Blvd.	Sarlisle Blv	d.)	Sou	Southbound (Carlisle Blvd.	Carlisle Bly	vd.)
Time	Time	7	_	Z.	Pedestrians	_	_	~	Pedestrians	_	 	~	Pedestrians	_	_	~	Pedestrian
7:00 AM	7:15 AM	θ	θ	θ	θ	69	+	79	θ	62/	164	θ	θ	θ	159	89	9
7:15 AM	7:30 AM	θ	θ	θ	θ	8/	θ	86	t	62	554	θ	θ	θ	158	89	ぴ
7:30 AM	7:45 AM	θ	θ	θ	θ	96	CH	705	θ	81	553	θ	θ	θ	£ <u>77</u>	28	ŧ
7:45 AM	8:00 AM	0	0	0	0	84	2	92	0	118	296	0	-	0	218	62	0
8:00 AM	8:15 AM	0	0	0	0	74	1	7.1	1	103	268	0	1	0	176	82	2
8:15 AM	8:30 AM	0	0	0	0	69	2	89	0	68	230	0	0	0	179	09	0
8:30 AM	8:45 AM	0	0	0	0	102	0	82	0	108	229	0	0	0	176	22	2
8:45 AM	9:00 AM	θ	θ	θ	θ	86	C _{II}	18	θ	105	582	θ	θ	θ	163	99	†
AM Peak Hour Volumes	Volumes	0	0	0	0	329	8	312	-	418	1023	0	2	0	749	281	4
Percer	Percent Approach					%2'09	1.2%	48.1%		29.0%	71.0%	%0:0		%0:0	72.7%	27.3%	
									Intersection								
AM Peak Hour Factor	octor						0.88		0.89		0.87				0.92		
Dogin	- Pud	ù) ballodtor	Eactholind // 40 N Dame	141	IM	Weethound // 40 N Damp	AO N Dam	lac	N	Northbound (Carliela Blyd	"adiala Div	(70	100	Southbound (Carliel Blyd)	Carlielo Di	(10
- F	2 I	í -	dataounu (140 N. Nall	-	-	-	10 N. IVAII	<u>.</u>	-	T TIMOOUIN	Callisic Div		-	†	Callisia Ca	
I Ime	11me	7	_ 0	۷ (Pedestrians	7	- 0	۲ ۲	Pedestrians	167	064	۲ (Pedestrians	7	040		Pedestrians
4.00 PINI	4. I D P IVI	A	Φ (P	Φ (4	Þ	‡ :	+ '	†	† 0	Φ (P (Þ	21,7	R71	+ (
4:15 PM	4:30 PM	9	θ	в	θ	21	Ch1	98	с⁄II	104	287	θ	θ	в	259	129	C/I
4:30 PM	4:45 PM	д	θ	θ	д	64	Э	22	д	144	284	θ	д	д	243	405	θ
4:45 PM	5:00 PM	0	0	0	0	78	0	99	0	91	332	0	0	0	270	111	4
5:00 PM	5:15 PM	0	0	0	0	47	2	09	0	142	309	0	0	0	291	130	3
5:15 PM	5:30 PM	0	0	0	0	28	1	73	0	113	349	0	0	0	307	122	2
5:30 PM	5:45 PM	0	0	0	0	63	2	29	0	153	297	0	0	0	226	100	0
5:45 PM	6:00 PM	θ	θ	θ	θ	18	+	79	д	98	530	θ	θ	θ	555	96	C#
PM Peak Hour Volumes	Volumes	0	0	0	0	246	2	566	0	499	1287	0	0	0	1094	463	6
Percer	Percent Approach					47.6%	1.0%	51.5%		27.9%	72.1%	%0:0		%0:0	70.3%	29.7%	
PM Peak Hour Factor	ıctor						0.90		Intersection 0.94		0.97				0.91		

281 0% 463 0%

749 0% 1094 0%

0 × 0 ×

0 × 0 ×

1014 1% 1278 1%

414 1% 495 1%

313 0% 270 -1%

% %

330 0% 249 -1%

0 × 0 ×

0 × 0 ×

AM Peak Hour Raw Count 0
% Change
AM Peak Hour Raw Count 0
% Change

Traffic Count Data Sheet (Demand Adjusted)

Cartiel Birdholm Cartiel Birdholm Signalized Cartiel Birdholm Signalized Cartiel Birdholm Signalized Cartiel Birdholm Cartiel Bi	T 0,000	: 0 10	0700		+00m+0/W =		70 0 07						Č	/ 	000	١	o c	חמא
Signalized Sig	rear counts I	aken:	6107		E-w street: N-S Street:		-40 S. R. Sarlisle E	amp 3Ivd.					පු ශු	seed Limit (I- seed Limit (C	40 S. Kam arlisle Blvo	lp)= 1.)=	35 8	MPH MPH
Court Cour									Signa								5/21/19	
Court Cour	Begin	End	ŭ	astbound (1-40 S. Ram	(dı	We	Stbound (I-	-40 S. Ram			orthbound (C	arlisle Blv	d.)	So	uthbound ((Carlisle Bly	(d.)
SAM 1422 3 4149 4 9 9 9 9 9 4 9 9	Time	Time	Γ	⊥	Я	Pedestrians	7	⊥	R	Pedestrians	Τ	⊥	R	Pedestrians	T	⊥	R	Pedestrians
10 Miles 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142 142	7:00 AM	7:15 AM	155	දි	118	+	θ	θ	θ	θ	θ	130	67	θ	37	150	θ	ਣ
Court 1.56 0 1.424 0 0 0 0 0 0 0 0 0	7:15 AM	7:30 AM	142	+	156	+	θ	θ	θ	θ	θ	+73	43	C#	34	181	θ	7
153 1 163 0 0 0 0 0 0 0 0 0	7:30 AM	7:45 AM	156	θ	138	θ	θ	θ	θ	O	0	181	<i>09</i>	θ	35	877	0	7
5 AM 156 1 99 90 0 0 0 0 0 0 197 69 61 10 44 216 0 0 0 0 0 198 51 1 44 219 0 0 0 0 0 198 51 1 1 44 219 0 0 0 0 0 198 51 1 1 44 219 0 0 0 0 0 0 0 0 0	7:45 AM	8:00 AM	153	1	163	0	0	0	0	0	0	257	73	2	52	239	0	1
1	8:00 AM	8:15 AM	136	1	142	0	0	0	0	0	0	217	69	0	41	216	0	1
1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	8:15 AM	8:30 AM	111	1	66	0	0	0	0	0	0	195	51	1	44	219	0	0
Lange Lang	8:30 AM	8:45 AM	123	2	135	4	0	0	0	0	0	209	61	0	20	199	0	2
Image 523 5 539 4 0 0 0 0 0 68 8 554 3 187 873 0 9 9 9 9 9 9 9 9 9	8:45 AM	9:00 AM	157	†	142	đ	θ	θ	θ	ð	θ	<i>†97</i>	69	θ	42	554	д	θ
Propert 49 0% 0.5% 50.5% Propert 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0% 1.0%	AM Peak Hou	r Volumes	523	2	539	4	0	0	0	0	0	878	254	3	187	873	0	4
The color The	Perc	ent Approach	49.0%	0.5%	20.5%						%0:0	%9.77	22.4%		17.6%	82.4%	%0:0	
Court 50.84 Court Co									_	ntersection								
Court State Stat	AM Peak Hour F	-actor		0.84						0.87		98.0				0.91		
The color Court		-	L		0 0 07		147		0 0			9	-	1		10	-	11-
The color The	pegin	p I	ŭ	astbound	(I-40 S. Kan	(du	M	estpound (I	-40 S. Kam	(du	ž	orrnbound (C	ariisie biv	a.)	00	ntnbound (cariisie biv	/a.)
Solution 1.25 5.5 PM 1.25 5.2 1.44 9 9 9 9 9 9 9 9 9	Time	Lime	_	_		Pedestrians	_			Pedestrians	_	⊢	<u>د</u> [Pedestrians	_	-		Pedestrians
13 14 14 15 15 12 12 12 12 12 12	4:00 PM	4:15 PM	155	c/II	144	д	θ	д	д	д	д	304	2	д	96	199	д	c/li
15	4:15 PM	4:30 PM	137	Jħ.	123	f	А	Э	Э	f	Э	797	#	ħ	*	822	Э	+
11	4:30 PM	4:45 PM	128	7	128	0	0	0	0	0	0	292	102	4	84	230	0	-
15 PM 110 0 102 14 0 0 0 0 0 322 121 1 125 225 0 0 0 0 0 0 0 330 113 1 109 252 0 0 0 0 0 0 0 0 0	4:45 PM	5:00 PM	117	4	119	0	0	0	0	0	0	320	66	-	83	248	0	က
1	5:00 PM	5:15 PM	110	0	102	14	0	0	0	0	0	322	121	-	125	225	0	7
45 PM 424 22 4147 0 0 0 0 0 0 1264 435 73 25 63 235 0 0 0 0 0 0 0 0 0 1264 435 77 401 955 0 0 0 0 0 0 0 0 1264 435 7 401 955 0 0 0 0 0 0 0 0 1264 435 7 401 955 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5:15 PM	5:30 PM	153	2	128	0	0	0	0	0	0	330	113	-	109	252	0	-
OO PM 93 3 131 4 9 9 9 9 9 9 248 73 23 235 9 9 9 9 9 9 9 9 1264 435 7 401 955 0 0 0 0 1264 435 7 401 955 0 0 0 0 0 0 1264 435 7 401 955 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5:30 PM	5:45 PM	121	C/II	447	θ	θ	θ	θ	д	θ	586	100	θ	06	217	θ	θ
rumes 508 11 477 14 0 0 0 0 1264 435 7 401 955 proach 51.0% 1.1% 47.9% 1.1% 47.9% 7 401 955 Count 5.87 2.56% 7.44% 25.6% 70.4% 70.4% Count 5.87 47.9% 0.96 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 <t< td=""><td>5:45 PM</td><td>6:00 PM</td><td>83</td><td>ማ</td><td>131</td><td>+</td><td>θ</td><td>θ</td><td>θ</td><td>θ</td><td>θ</td><td>248</td><td>73</td><td>Сħ</td><td>63</td><td>235</td><td>θ</td><td>3</td></t<>	5:45 PM	6:00 PM	83	ማ	131	+	θ	θ	θ	θ	θ	248	73	Сħ	63	235	θ	3
proach 51.0% 1.1% 47.9% Proach 74.4% 25.6% 29.6% 70.4% Count 5.87 0.37 0.96 0.96 0.96 0.94 0.94 Count 525 5 40 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PM Peak Hou	r Volumes	208	11	477	14	0	0	0	0	0	1264	435	7	401	922	0	7
Count 510 11 480 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	Perc	ent Approach	51.0%	1.1%	47.9%						%0:0	74.4%	72.6%		%9:62	70.4%	%0:0	
Count 525 5 540 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0									=	ntersection								
lour Raw Count 525 5 540 0 0 0 0 878 254 187 875 Inchest 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%<	PM Peak Hour F	-actor		0.87						0.93		96'0				0.94		
0% 0% 0% N/A N/A N/A N/A 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% <th< td=""><td>AM Peak Hour</td><td>· Raw Count</td><td>525</td><td>2</td><td>540</td><td></td><td>0</td><td>0</td><td>0</td><td></td><td>0</td><td>878</td><td>254</td><td></td><td>187</td><td>875</td><td>0</td><td></td></th<>	AM Peak Hour	· Raw Count	525	2	540		0	0	0		0	878	254		187	875	0	
tour Raw Count 510 11 480 0 0 0 0 1251 431 401 955 00 0 0 0 0 1251 1 431 101 955 00 00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	% Change		%0	%0	%0		N/A	N/A	N/A		N/A	%0	%0		%0	%0	N/A	
0% 0% -1% N/A N/A N/A 1% 1% 0% 0%	AM Peak Hour	Raw Count	510	11	480		0	0	0		0	1251	431		401	922	0	
	% Change		%0	%0	-1%		N/A	N/A	N/A		N/A	1%	1%		%0	%0	N/A	

Speed Limit (Indian School Rd.)= 40 MPH Speed Limit (Carlisle Blvd.)= 35 MPH 5/14/19	Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.)	T R Pedestrians L T R Pedestrians	3 30 137 66	11 1 47 174 90	4 48 187 194	13 1 61 202 145	4 1 51 201 136	180	141 9 0 56 170 123 3	- 516	612 35 2 221 753 506 8	18.8% 1.1% 6.8% 23.1% 15.5%	21.9%	0.90	Northbound (Carlisle Blvd.) Southbound (Carlisle Blvd.)	T R Pedestrians L T R Pedestrians	3 99t 89 0 8	E 96 577 09 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	θ 96 202 99 t 8t 86t	232 19 1 49 214 113 2	4 1 60	12 1 55	12 0 64	θ 196 44 θ 64 204 101 θ	945 47 3 228	22.1% 1.1% 5.3% 20.2% 10.3%		
ol Rd.)= vd.)=	outhbound (⊢	137	174	187	202	201	180	170	516	753	23.1%	45.4%	0.91	Southbound (_	166	5552	202	214	195	252	201	204	862	20.2%	35.8%	000
lian Scho Carlisle Bl	5	_	08	47	48	61	51	53	99	79	221	6.8%			0,	_	89	09	99	49	09	22	64	24	228	5.3%		
ed Limit (Ind peed Limit (0	vd.)	Pedestrians	сф	0 1	+ +	-	-	0	0	+	2				vd.)	Pedestrians	θ	Сħ	+	1	1	1	0	θ	3			
Spe	arlisle Bl	∝	9	11	7	13	4	6	6	74	32	1.1%			arlisle Bly	~	43	33	8+	19	4	12	12	77	47	1.1%		
	orthbound (C	_	101	132	137	172	149	150	141	154	612	18.8%	21.9%	0.90	orthbound (C	⊢	213	550	188	232	224	275	214	961-	945	22.1%	25.8%	000
	Ž	_	57	10	14	14	16	20	16	7 4	99	2.0%			Ž	_	53	35	40	22	31	22	33	22	108	2.5%		
Signalized	l Rd.)	Pedestrians	ch	7	7	0	0	2	-	θ	3		Intersection	0.89	I Rd.)	Pedestrians	θ	Сħ	θ	0	0	2	1	θ	3		Intersection	0 03
Sign	an Schoo	~	58	96	28	30	36	59	32	23	127	3.9%			ian Schoo	~	25	46	69	26	28	49	42	34	225	5.3%		
Indian School Rd. Carlisle Blvd.	Westbound (Indian School Rd.	, 	23	89	29	86	29	29	62	89	286	8.8%	14.2%	0.83	Westbound (Indian School Rd.	_	18	09	99	09	102	80	88	02	330	7.7%	14.7%	0.77
ndian S Zarlisle	West	_	11	12	13	11	16	13	11	9+	51	1.6%			West	٦	55	##	+3	18	22	13	18	++	71	1.7%		
	Rd.)	Pedestrians	ርቲ	o 01	7	0	-	0	0	+	1				Rd.)	Pedestrians	+	+	₹	0	0	0	0	θ	0			
E-W Street: N-S Street:	an School	~	40	15	10	11	7	14	10	0+	42	1.3%			an School	ĸ	53	01-	+3	22	17	17	23	ਰਿ	62	1.9%		
	Eastbound (Indian School Rd.)	, -	34	50	99	29	44	43	29	64	213	6.5%	18.4%	0.89	Eastbound (Indian School Rd.)	_	418	105	2113	104	157	152	133	98	546	12.8%	23.7%	70 0
2019	Eastl	_	25	67	70	06	78	80	26	86	345	10.6%			East	_	88	86	+03	104	85	101	92	06	385	%0.6		
aken:	End	Time	7:15 AM	7:30 AM	7.45 AM	8:00 AM	8:15 AM	8:30 AM	8:45 AM	9:00 AM	r Volumes			-actor	End	Time	4:15 PM	4:30 PM	4:45 PM	5:00 PM	5:15 PM	5:30 PM	5:45 PM	6:00 PM	· Volumes			,040,
Year Counts Taken:	Begin	Time	7:00 AM	7.15 AM	7.30 AM	7:45 AM	8:00 AM	8:15 AM	8:30 AM	8:45 AM	AM Peak Hour Volumes	% of Total Traffic	% Directional	AM Peak Hour Factor	Begin	Time	4:00 PM	4:15 PM	4:30 PM	4:45 PM	5:00 PM	5:15 PM	5:30 PM	5:45 PM	PM Peak Hour Volumes	% of Total Traffic	% Directional	Soften Tool Mo

MPH MPH	າ St.)	Pedestrians	+	C [‡]	0	3	0	0	73	θ	က			
40 30 5/22/19	Southbound (Washington St.)	R	77	87	53	42	32	68	61	18	145	12.4%		
₹d.)= t:)=	thbound (V	⊢	57	67	27	28	33	31	34	98	119	10.2%	25.9%	0.93
an School F ashington S	Sout	7	Сħ	4	6	10	13	9	6	9	38	3.3%		
Speed Limit (Indian School Rd.)= Speed Limit (Washington St.)=	St.)	Pedestrians	θ	₽	0	0	0	0	θ	θ	0			
Spe Spe	ashington	R	7	ਿ	8	11	2	10	8	8	36	3.1%		
	Northbound (Washington St.)	⊢	<i>2</i> 7	53	31	45	45	45	23	44	166	14.2%	22.9%	0.88
	Nor	٦	- 14	<i>2</i> +	12	20	17	17	+3	18	99	2.7%	_	
Signalized	Rd.)	Pedestrians	θ	EP	0	0	1	0	θ	θ	-		Intersection	0.82
	lian Schoo	R	9	9	7	14	2	6	9	7	34	2.9%	_	
Indian School Rd. Washington St.	Westbound (Indian School Rd.)	T	78	<i>2</i> 7	45	6	37	24	79	88	228	19.5%	24.0%	0.65
Indian School F Washington St.	West	7	₹	ਿ	3	7	7	6	9	9	18	1.5%		
٠: تــــــــــــــــــــــــــــــــــــ	l Rd.)	Pedestrians	+	θ	0	2	0	0	θ	θ	2			
E-W Street: N-S Street:	lian Schoo	æ	8+	07	14	9	2	12	9	б	33	3.3%		
	Eastbound (Indian School Rd.)	⊢	77	19	64	63	25	36	99	/9	215	18.4%	27.0%	0.83
2019	Eas	7	#	07	41	21	6	14	77	9+	61	5.2%		
aken:	End	Time	7:15 AM	7:30 AM	7:45 AM	8:00 AM	8:15 AM	8:30 AM	8:45 AM	9:00 AM	r Volumes			actor
Year Counts Taken:	Begin	Time	7:00 AM	7:15 AM	7:30 AM	7:45 AM	8:00 AM	8:15 AM	8:30 AM	8:45 AM	AM Peak Hour Volumes	% of Total Traffic	% Directional	AM Peak Hour Factor

Begin	End	East	pul) punoq	Eastbound (Indian School Rd.	Rd.)	West	Westbound (Indian School Rd.)	an School	l Rd.)	Nor	Northbound (Washington St.)	ashington	St.)	Sout	thbound (V	Southbound (Washington St.	St.)
Time	Time	7	L	Я	Pedestrians	7		R	Pedestrians	7	T	Я	Pedestrians	7	1	R	Pedestrians
4:00 PM	4:15 PM	44	<i>tt</i>	#	θ	9	89	C#	в	ੳ	64	t	<i>†</i>	75	29	18	θ
4:15 PM	4:30 PM	19	801	07	+	9	69	2	в	213	23	t	θ	ੳ	79	8E	C#
4:30 PM	4:45 PM	39	106	14	0	15	63	11	0	18	69	6	0	8	64	50	0
4:45 PM	5:00 PM	22	126	41	0	2	73	15	0	15	61	11	0	17	29	43	-
5:00 PM	5:15 PM	41	117	56	0	15	87	18	0	17	62	16	0	14	74	14	0
5:15 PM	5:30 PM	41	126	52	0	4	71	15	0	20	74	16	0	12	64	28	0
5:30 PM	5:45 PM	46	08	<i>77</i>	θ	ਰਿ	99	9+	θ	91	69	8	θ	9	/9	18	θ
5:45 PM	6:00 PM	35	79	87	θ	89	99	+13	в	54	19	9	θ	75	29	97	θ
PM Peak Hour Volumes	Volumes	176	475	82	0	41	294	29	0	20	566	25	0	51	261	141	1
% of Total Traffic		8.9%	24.1%	4.2%		2.1%	14.9%	3.0%		3.6%	13.5%	7.6%		7.6%	13.3%	7.2%	
% Directional			37.2%				20.0%	_	Intersection		19.7%				23.0%		
PM Peak Hour Factor	ctor		0.93				0.82		0.93		0.88				0.88		

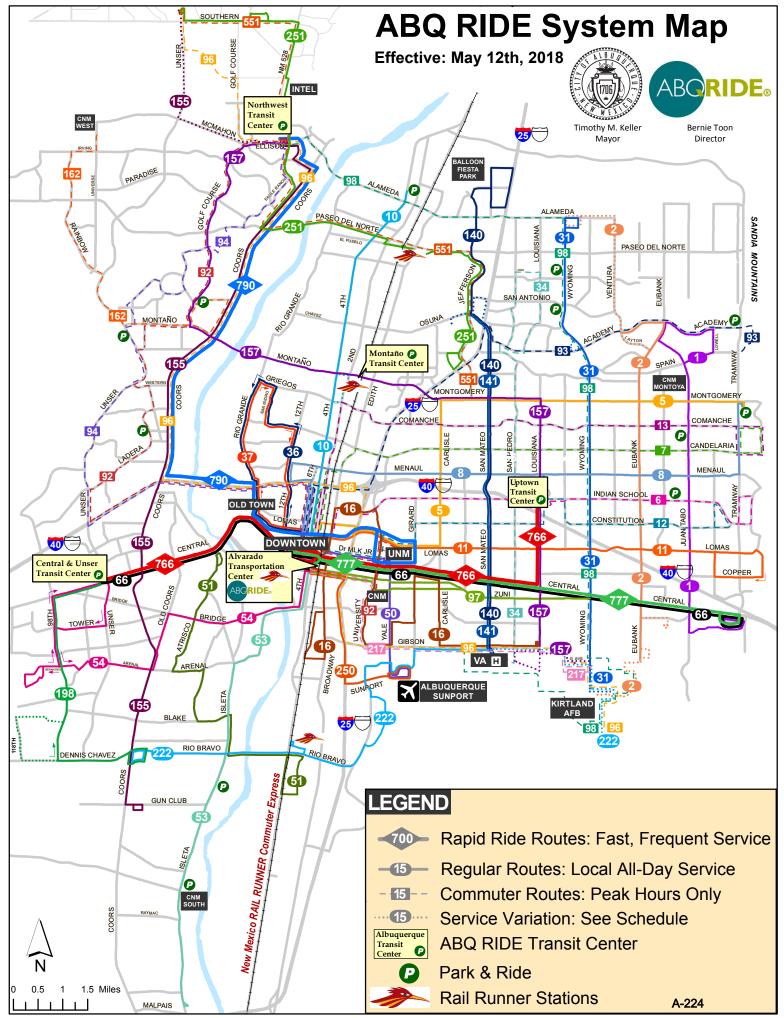
ΪΪ		Pedestrians	+	θ	C/I	0	0	0	-	+	_						Pedestrians	θ	θ	-	0	0	0	θ	θ	-			
30 MPH 35 MPH 5/16/19	isle Blvd.)	R Pec	81	68	45	92	54	22	29	67	203	11.8%				Southbound (Carlisle Blvd.)	R Pec	34	24	34	56	38	59	30	87	127	2.6%		
5/	Southbound (Carlisle Blvd.	_	16	109	153	112	137	123		141	513	29.8%	45.5%	0.95		ound (Carl		146	118	160	122	169	147	122	147	. 869	26.4%	35.4%	0.90
nn Ave.)= Blvd.)=	Southbo		6										45	0.8		Southbo		+	+		1;			7+				35	0.8
constitutio (Carlisle I		J L	11	θt	9+	18	15	14	19	61	99	3.8%			-		J PL	51	17	16	31	14	14	17	71	75	3.3%		
Speed Limit (Constitution Ave.)= Speed Limit (Carlisle Blvd.)=	d.)	Pedestrian	7	θ	θ	1	0	1	0	θ	7					d.)	Pedestrian	C#	†	0	3	0	0	†	7	3			
Spe Sp	arlisle Blv	~	<i>t</i>	4	4	11	2	4	0	7	20	1.2%				arlisle Blv	R	15	44	6	10	8	10	01-	В	37	1.6%		
	Northbound (Carlisle Blvd.	_	79	16	114	139	109	105	112	112	465	27.0%	29.0%	0.80		Northbound (Carlisle Blvd.	1	181	180	185	161	184	174	12 6	150	704	31.1%	33.6%	0.95
	N	_	Сħ	Сħ	сħ	9	2	2	4	9	14	%8:0				No	٦	2	9	1	9	8	3	9	c p	18	%8.0		
lized	Ave.)	Pedestrians	+	Сħ	4	2	2	0	-	сh	2		ntersection	0.93		Ave.)	Pedestrians	в	C/II	0	1	0	1	†	в	2		ntersection	96.0
Signalized	stitution /	~	13	10	15	18	15	15	19	46	29	3.9%	_			stitution /	Я	55	<i>+</i> +	16	31	14	15	54	44	92	3.4%	_	
ion Ave.	Westbound (Constitution Ave.	_	44	9+	98	37	36	28	22	54	123	7.2%	13.6%	0.89		Westbound (Constitution Ave.		22	25	32	39	21	32	38	77	127	2.6%	11.7%	0.71
Constitution Ave. Carlisle Blvd.	West	_	9	4	Ф	10	15	10	6	44	44	2.6%				West		++	55	8	23	13	18	18	17	62	2.7%		
	.ve.)	Pedestrians	θ	θ	42	0	0	1	-	θ	2					.ve.)	Pedestrians	ਣ	+	9	2	0	1	+	4	12			
E-W Street: N-S Street:	Eastbound (Constitution Ave.	~	+	ਣ	රූ	4	3	-	9	ማ	14	%8:0				Eastbound (Constitution Ave.)	R	9	8	2	0	9	2	රූ	Ź	16	%2.0		
	onnd (Cor	⊢	01	75	<i>t</i> +	23	56	14	24	18	87	5.1%	11.6%	0.84		onnd (Cor	Τ	23	98	45	41	49	62	19	57	197	8.7%	18.8%	0.89
2019	Eastb	_	ੳ	61	53	19	23	27	59	58	86	2.7%				Eastb	7	32	58	25	40	64	52	97	97	213	9.4%		
ken:	End	Time	7:15 AM	7:30 AM	7:45 AM	8:00 AM	8:15 AM	8:30 AM	8:45 AM	9:00 AM	Volumes			ctor		End	Time	4:15 PM	4:30 PM	4:45 PM	5:00 PM	5:15 PM	5:30 PM	5:45 PM	6:00 PM	Volumes			ector
Year Counts Taken:	Begin	Time	7:00 AM	7:15 AM	7:30 AM	7:45 AM	8:00 AM	8:15 AM	8:30 AM	8:45 AM	AM Peak Hour Volumes	% of Total Traffic	% Directional	AM Peak Hour Factor		Begin	Time	4:00 PM	4:15 PM	4:30 PM	4:45 PM	5:00 PM	5:15 PM	5:30 PM	5:45 PM	PM Peak Hour Volumes	% of Total Traffic	% Directional	PM Peak Hour Factor

Traffic Count Data Sheet (Demand Adjusted)

Year Counts Taken:	ken:	2019		E-W Street: N-S Street:		I-40 S. Ramp San Mateo Blvd.	amp ₃o Blvd.					Spec	Speed Limit (I-40 S. Ramp)= Speed Limit (San Mateo Blvd.)=	40 S. Ramμ η Mateo Blv	c)= rd.)=	30	MPH MPH
								Signs	Signalized	1		-				6	
Begin	End	Ea	stbound (Eastbound (I-40 S. Ramp)	(dı	Ň	Westbound (I-40 S. Ramp	-40 S. Ram	(dı	Nor	Northbound (San Mateo Blvd.	n Mateo Bl	vd.)	Sout	Southbound (San Mateo Blvd.	ın Mateo B	vd.)
Time	Time	Γ	⊥	Я	Pedestrians		⊥	R	Pedestrians	Γ	_		Pedestrians	7	T		Pedestrians
7:00 AM	7:15 AM	29	ੳ	181	θ	θ	θ	θ	θ	θ	181	54	θ	23	141	θ	θ
7:15 AM	7:30 AM	121	0	191	1	0	0	0	0	0	211	26	0	27	204	0	3
7:30 AM	7:45 AM	115	1	183	0	0	0	0	0	0	277	28	0	26	196	0	0
7:45 AM	8:00 AM	113	0	180	0	0	0	0	0	0	255	36	0	72	251	0	0
8:00 AM	8:15 AM	92	0	162	0	0	0	0	0	0	279	49	0	69	200	0	1
8:15 AM	8:30 AM	94	θ	136	θ	θ	θ	θ	θ	θ	238	23	θ	48	183	в	+
8:30 AM	8:45 AM	98	θ	182	θ	θ	θ	д	θ	θ	228	40	7	48	502	θ	+
8:45 AM	9:00 AM	134	θ	17.1	ŧ	θ	θ	θ	θ	θ	254	34	†	40	552	θ	+
AM Peak Hour Volumes	Volumes	441	-	716	-	0	0	0	0	0	1022	139	0	224	851	0	4
Percent	Percent Approach	38.1%	0.1%	61.8%		#DIV/0i	#DIV/0i	#DIV/0i		%0:0	88.0%	12.0%		20.8%	79.2%	%0.0	
								=	Intersection								
AM Peak Hour Factor	ctor		0.93				#DIV/0!		0.94		0.88				0.83		
Begin	End	Ea	stbound (i	Eastbound (I-40 S. Ramp)	(dı	We	Westbound (I-40 S. Ramp)	-40 S. Ram	(dı	Nor	Northbound (San Mateo Blvd.)	n Mateo Bl	vd.)	Sout	Southbound (San Mateo Blvd.)	in Mateo B	vd.)
Time	Time	_	⊢	α	Pedestrians	_	_	~	Pedestrians	_	_	Z.	Pedestrians	_	_	~	Pedestrians
4:00 PM	4:15 PM	86	7	141	θ	θ	θ	θ	θ	θ	460	82'	θ	7.7	977	θ	θ
4:15 PM	4:30 PM	106	θ	145	в	θ	в	θ	θ	θ	401	23	в	06	5 5	в	θ
4:30 PM	4:45 PM	81	7	122	0	0	0	0	0	0	445	74	0	93	224	0	0
4:45 PM	5:00 PM	101	-	92	0	0	0	0	0	0	364	93	0	121	233	0	1
5:00 PM	5:15 PM	64	-	92	0	0	0	0	0	0	463	119	ဗ	114	254	0	2
5:15 PM	5:30 PM	99	2	108	0	0	0	0	0	0	359	26	4	100	235	0	0
5:30 PM	5:45 PM	83	θ	121	θ	θ	θ	θ	θ	θ	387	74	θ	108	563	θ	+
5:45 PM	6:00 PM	84	θ	133	θ	θ	θ	θ	θ	Э	281	54	ርቅ	101	241	д	θ
PM Peak Hour Volumes	Volumes	312	Ξ	420	0	0	0	0	0	0	1631	365	7	428	946	0	က
Percent	Percent Approach	42.0%	1.5%	26.5%		#DIV/0i	#DIV/0i	#DIV/0i		%0:0	81.7%	18.3%		31.1%	%6:89	%0.0	
									Intersection								
PM Peak Hour Factor	ctor		0.88				#DIV/0!		0.93		98.0				0.93		
AM Peak Hour Raw Count	Raw Count	443	_	719		0	0	0		0	1027	140		223	849	0	
% Change		%0	%0	%0		N/A	N/A	N/A		N/A	%0	-1%		%0	%0	N/A	
AM Peak Hour Raw Count	Raw Count	315	Ξ	424		0	0	0		0	1631	365		430	920	0	
% Change		-1%	%0	-1%		N/A	N/A	N/A		N/A	%0	%0		%0	%0	N/A	

Traffic Count Data Sheet (Demand Adjusted)

Year Counts Taken:		2019		E-W Street:		I-40 N. Ramp	amp					Sp	Speed Limit (I-40 N. Ramp)=	40 N. Raml	=(d	30	MPH
								Signalized	lized			2	מק ביייוני (סק		(r)	5/23/19	
Begin	End	Ea	stbound (Eastbound (I-40 N. Ramp)	(dı	We	stbound (Westbound (I-40 N. Ramp	(d.	Nor	Northbound (San Mateo Blvd.	n Mateo Bl	lvd.)	Sout	Southbound (San	Mateo	Blvd.)
Time Tin	Time	7	⊥	Я	Pedestrians	7	⊥		Pedestrians	Γ	T	Я	Pedestrians	7	Τ	R	Pedestrians
7:00 AM 7:1	7:15 AM	CH2	θ	88	θ	32	54	19	+	6+	143	θ	θ	θ	7.25	<i>t</i>	θ
7:15 AM 7:3	7:30 AM	4	θ	28	θ	79	53	45	EP-	42	184	θ	θ	θ	607	2 +	θ
	7:45 AM	2	0	39	0	51	28	69	7	38	245	0	0	0	237	56	0
	00 AM	14	0	38	1	22	41	29	0	40	211	0	0	0	328	22	0
	8:15 AM	14	0	31	0	92	23	63	1	32	240	0	0	0	260	19	2
8:15 AM 8:3	8:30 AM	14	0	34	0	72	37	105	0	31	223	0	0	0	197	19	2
	8:45 AM	10	θ	48	θ	74	30	96	†	33	77	θ	θ	θ	212	9†	θ
8:45 AM 9:0	9:00 AM	213	θ	28	θ	25	32	201-	4	33	57.4	θ	†	θ	515	81	θ
AM Peak Hour Volumes	nmes	47	0	142	-	256	129	304	8	141	919	0	0	0	1022	91	4
Percent Approach	proach	24.9%	%0:0	75.1%		37.2%	18.7%	44.1%		13.3%	%2'98	%0.0		%0.0	91.8%	8.2%	
								_	ntersection								
AM Peak Hour Factor			0.91				0.80		0.93		0.94				0.78		
Begin	End	Ea	stbound (Eastbound (I-40 N. Ramp)	(di	We	stbound (Westbound (I-40 N. Ramp)	(a	Nor	Northbound (San Mateo Blvd.)	n Mateo Bl	vd.)	Sout	Southbound (San Mateo Blvd.)	an Mateo E	lvd.)
	Time		⊢	~	Pedestrians	_	⊢	~	Pedestrians		⊢	~	Pedestrians	_	⊢	œ	Pedestrians
4:00 PM 4:1	4:15 PM	55	θ	#8	θ	46	4		сħ	99	<i>908</i>	θ	θ	θ	323	233	θ
	4:30 PM	35	0	73	0	39	22	47	2	48	313	0	0	0	329	32	0
	4:45 PM	31	0	92	0	54	22	09	0	48	321	0	0	0	299	21	0
	5:00 PM	29	0	104	1	51	29	22	2	45	288	0	0	0	340	59	1
	5:15 PM	52	0	127	0	34	33	72	1	44	320	0	3	0	343	56	0
	5:30 PM	58	θ	74	θ	42	24	62	7	37	587	θ	+	θ	386	55	+
	5:45 PM	50	θ	688	θ	48	36	19	4	36	292	θ	θ	θ	342	52	+
5:45 PM 6:(00 PM	58	θ	85	θ	44	27	43	ج	35	233	θ	θ	θ	354	56	θ
PM Peak Hour Volumes	nmes	147	0	396	-	178	106	236	8	185	1242	0	က	0	1341	111	1
Percent Approach	proach	27.1%	%0.0	72.9%		34.2%	20.4%	45.4%		13.0%	82.0%	%0:0		%0:0	92.4%	%9'.	
								_	Intersection								
PM Peak Hour Factor			0.76				0.94		0.94		0.97				0.92		
AM Peak Hour Raw Count	Count	47	0	143		255	129	303		141	919	0		0	1022	91	
% Change		%0	N/A	-1%		%0	%0	%0		%0	%0	N/A		N/A	%0	%0	
PM Peak Hour Raw Count	Count	131	0	394		172	120	248		162	1189	0		0	1418	103	
% Change		12%	N/A	1%		3%	-12%	-2%		14%	4%	N/A		N/A	-2%	8%	



For more detailed information visit www.myabqride.com or call 243-7433 (243-RIDE)

SCOPE OF TRAFFIC IMPACT STUDY (TIS)

TO:	Terry Brown	
MEET	ING DATE:	May 13, 2019
ATTE	NDEES:	Consultant Team; COA Transportation Development Review; NMDOT
PROJ	ECT: Old K-	Mart Site Carlisle and I-40, H-16,17
REQU	IESTED CITY A	ACTION: Zone Change X Site Development Plan
	_ Subdivision	Building Permit Sector Plan Sector Plan Amendment
	_ Curb Cut Per	mit Conditional Use Annexation Site Plan Amendment
		ICATION: Proposed redevelopment to include supermarket, fast food oping center for total 123,405 sf of building space.
The Ti		: udy should follow the standard report format, which is outlined in the DPM. mental information is provided for the preparation of this specific study.
1.	Local	on - Use Trip Generation Manual, 10th Edition. data may be used for certain land use types as determined by staff. Itant to provide.
2.	b. San M c. Indian d. Washi e. Carlish Unsignalized	ersections; e and both I-40 ramps ateo and both I-40 ramps School and Carlisle ngton and Indian School e and Constitution
	Driveway Inte	rsections: all site drives.
3.	Study Tim	rrning movement counts e – 7-9 a.m. peak hour, 4-6 p.m. peak hour t to provide for all intersections listed above.
Ty sta tak	pe III arrival typ aff). Unless oth cen directly fron	ection progression and factors to be used. be (see "2016 Highway Capacity Manual" or equivalent as approved by erwise justified, peak hour factors and % heavy commercial should be in the MRCOG turning movement data provided or as calculated from a by consultant.

5. Boundaries of area to be used for trip distribution.

City Wide - residential, office or industrial;

Page 1 of 3 A-225

3 mile radius – commercial; Interstate or to be determined by consultant - motel/hotel APS district boundary mapping for each school and bus routes

6. Basis for trip distribution.

Residential – Use inverse relationship based upon distance and employment. Use employment data from 2040 Socioeconomic Forecasts, MRCOG – See MRCOG website for most current data.

Office/Industrial - Use inverse relationship based upon distance and population. Use population data from 2040 Socioeconomic Forecasts, MRCOG — See MRCOG website for most current data.

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

Residential - Ts = (Tt) (Se/D) / (Se/D)

Ts = Development to Individual Subarea Trips

Tt = Total Trips

Se = Subarea Employment

D = Distance from Development to Subarea

Office/Industrial - Ts = (Tt) (Sp / D) / (Sp / D)

Ts = Development to Individual Subarea Trips

Tt = Total Trips

Sp = Subarea Population

D = Distance from Development to Subarea

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. Projects in the area include:
 - a. None
- Method of intersection capacity analysis planning or operational (see "2016 Highway Capacity Manual" 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: 2021
- 10. Traffic conditions for analysis:
 - a. Existing analysis X yes _ no year (xxxx);
 - b. Phase implementation year(s) without proposed development 2021
 - c. Phase implementation year(s) with proposed development 2021
 - d. Project completion year without proposed development 2031
 - e. Project completion year with proposed development 2031
 - f. Other -

Page 2 of 3 A-226

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. Project Location (Implementation Year)
- 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. Analysis Method:
 - c. Arterial LOS analysis;
 - d. Recommended street, intersection and signal improvements. Show existing signal timing
 - e. Site design features such as turning lanes, median cuts, queuing requirements and site circulation, including driveway signalization and visibility.
 - f. Transportation system impacts.
 - g. Other mitigating measures.
 - h. Accident analyses X yes no; Location(s):Intersections in study
 - i. Weaving analyses ___ yes ___ no; Location(s):
- 14. Other: Discuss truck traffic location and flows

SUBMITTAL REQUIREMENTS:

1. Number of copies of report required

TIS Task Force Attendees, file

- a. 1 paper copy
- b. 1 digital copy

C:

2. Submittal Fee – \$1300 for up to 3 reviews

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 924-3633.

	May 15, 2019	
Ernest Armijo, P.E. Senior Engineer for Transportation Development Section	Date	
via: email		

Page 3 of 3 A-227