

APPENDIX E

Local Transportation Assessment

YUCCA VALLEY DUTCH BROS COFFEE PROJECT

Local Transportation Assessment

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Prepared For

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Executive Summary

Project Description and Setting

Balsa Avenue in the Town of Yucca Valley, California. The shopping center currently consists of a Big 5 Sporting Goods store located to the west of the Project site and a Walgreens located to the east. Access to the shopping center is provided via an existing left-out restricted driveway on 29 Palms Highway and a full-access, stop-controlled driveway along Balsa Avenue.

The Project consists of a 1,025-square-foot building with dual drive-through lanes and 18 parking spaces and will connect to the existing shopping center parking lot with site access provided via the two existing driveways described above.

Project Trip Generation

The trip generation estimates for the Project were developed using average trip rates and pass-by reduction factors from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11th Edition, September 2021).

Based on the ITE Trip Generation Manual and the proposed Project land use, the Project is expected to generate approximately 358 daily trips, including 89 (44-in/45-out) AM peak hour trips and 30 (15-in/15-out) PM peak hour trips. It should be noted that after applying a pass-by (existing trips on the main roadway system) reduction factor, the project would generate 35 net new daily trips, with 8 net new trips in the AM peak hour and 2 net new trips in the PM peak hour on the existing adjacent roadway network. As a conservative approach, pass-by reductions were not applied to the traffic analysis.

Project Study Area

The Town of Yucca Valley does not have traffic analysis guidelines. As a result, traffic analysis criteria and assumptions were based on the San Bernardino County *Transportation Impact Study Guidelines* (TIS Guidelines: July 9, 2019), as well as coordination with Town staff through a traffic scoping process. Per the San Bernardino County TIS Guidelines, the study area was defined using the following criteria:

Intersections in which the Project would add 50 or more trips during any peak hour
Site access driveways

Based on the San Bernardino County TIS Guidelines and the Traffic Scoping Memorandum approved by Town of Yucca Valley staff, the following three (3) intersections were included for analysis:

Intersections

1. Balsa Avenue & 29 Palms Highway (Signalized)
2. Balsa Avenue & Project Driveway/Sonic Driveway (TWSC)
3. Balsa Avenue & Sunnyslope Drive (TWSC)

Note:

TWSC =Two-Way Stop-Controlled

As a conservative approach, the traffic analysis assumes that all Project traffic will enter and exit via the full-access driveway on Balsa Avenue. This location is represented as a worst-case scenario due to the higher number of turning movement conflicts (left turns out of the driveway) at the Balsa Avenue driveway, compared to the 29 Palms Highway driveway.

Intersection Analysis Summary

Table ES.1 displays the intersection level of service (LOS) results under Existing, Opening Year 2027 Cumulative, and Opening Year 2027 Cumulative with Project conditions.

Table ES.1 Intersection LOS Results

			Avg. Delay (Sec.)	LOS	Avg. Delay (Sec.)	LOS	Avg. Delay (Sec.)	LOS
1	Balsa Avenue & 29 Palms Highway	AM	18.8	B	19.1	B	20.0	C
		PM	22.4	C	22.8	C	23.1	C
2	Balsa Avenue & Project Driveway/Sonic Driveway	AM	10.0	B	10.1	B	10.8	B
		PM	11.7	B	12.1	B	12.6	B
3	Balsa Avenue & Sunnyslope Drive	AM	10.1	B	10.2	B	10.5	B
		PM	11.5	B	11.8	B	12.0	B

Source: CR Associates (2026)

LOS Impacts and Improvement Thresholds

Based on the San Bernardino County TIS Guidelines and the analysis presented in this report, the addition of Project traffic would not cause deficiencies nor create adverse effects on traffic operations at the study intersections. Therefore, no traffic-related improvements at the study intersections would be required for the Project.

Drive Through Queueing Analysis Summary

Drive-through queueing data collection was conducted at the following three (3) existing Dutch Bros coffee shop locations, which are comparable to the proposed location in that the existing locations have dual-drive-through lanes and have limited to no indoor seating:

44175 Jefferson Street, La Quinta, CA 92253
34051 Date Palm Drive, Cathedral City, CA 92234
81-776 Highway 111, Indio, CA 92201

Table ES.2 displays the peak queue, as well as the average and 85th percentile queue, for the peak 15-minute interval during the AM and PM peak operation conditions for both weekday and weekend.

Table ES.2 Drive Through Queuing Analysis Results

		TOD	Avg. Queue	85 th Percentile	Peak Queue	TOD	Avg. Queue	85 th Percentile	Peak Queue
44175 Jefferson	AM	8:15	20	22	23	8:15	15	17	17
Stree, La Quinta, CA	PM	3:15	13	15	15	4:30	13	13	13
34051 Date Palm Dr,	AM	8:30	16	18	18	9:00	3	9	9
Cathedral City, CA	PM	2:00	14	16	16	2:15	18	20	20
81-776 Highway	AM	8:15	15	16	16	7:45	9	10	10
111, Indio, CA	PM	4:45	9	10	10	4:45	11	12	12

Source: CR Associates (2026)

Notes:

TOD = Time of Day

Based on the data collection, the peak observed queue was 23 vehicles between 8:15 8:30 AM during the AM peak period on a typical weekday at the existing La Quinta location. The proposed drive-through queuing capacity for the Project would be 23 vehicles. Therefore, the proposed drive-through capacity would accommodate the anticipated peak drive-through demand. It should be noted that if the drive-through queue were to spill out of the drive-through lane, the queue would be able to be accommodated by internal drive aisles and is not expected to spill out into the public right-of-way.

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Appendix B - Signal Timing Sheets

Appendix C - ITE Trip Generation Rates and Reduction Excerpts

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Appendix G - LOS Calculation Worksheets Opening Year 2027 Cumulative with Project Conditions

Appendix H - Drive Through Data Collection Sheets

1.0 Introduction

The purpose of this Local Transportation Assessment (LTA) is to evaluate the traffic-related effects the proposed Dutch Bros Coffee would have on the surrounding transportation network and determine if additional improvements should be provided, as necessary.

Project Description

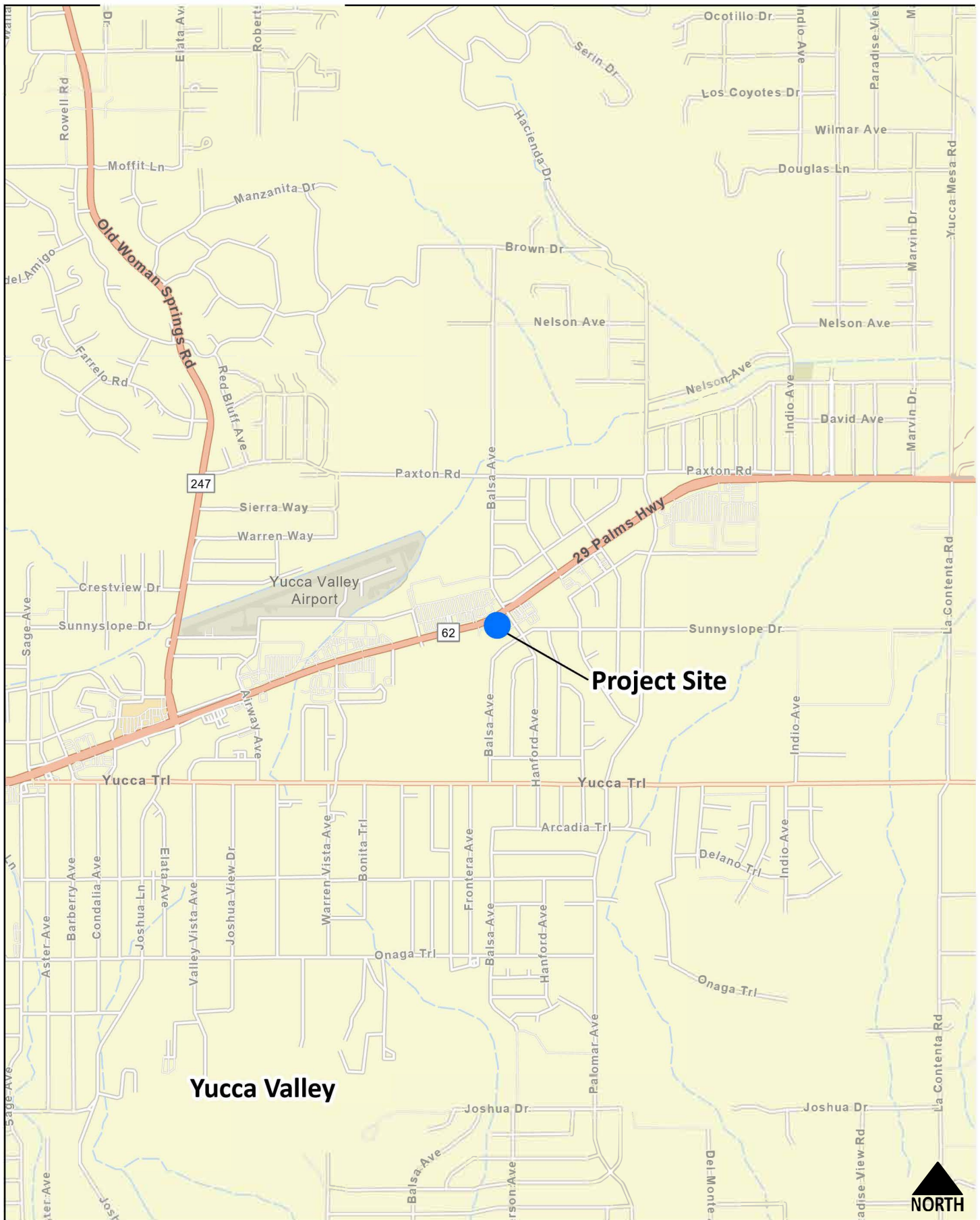
Balsa Avenue in the Town of Yucca Valley, California. The shopping center currently consists of a Big 5 Sporting Goods store located to west of the Project site and a Walgreens located to the east. Access to the shopping center is provided by an existing left-out restricted driveway on 29 Palms Highway and a full-access, stop-controlled driveway along Balsa Avenue.

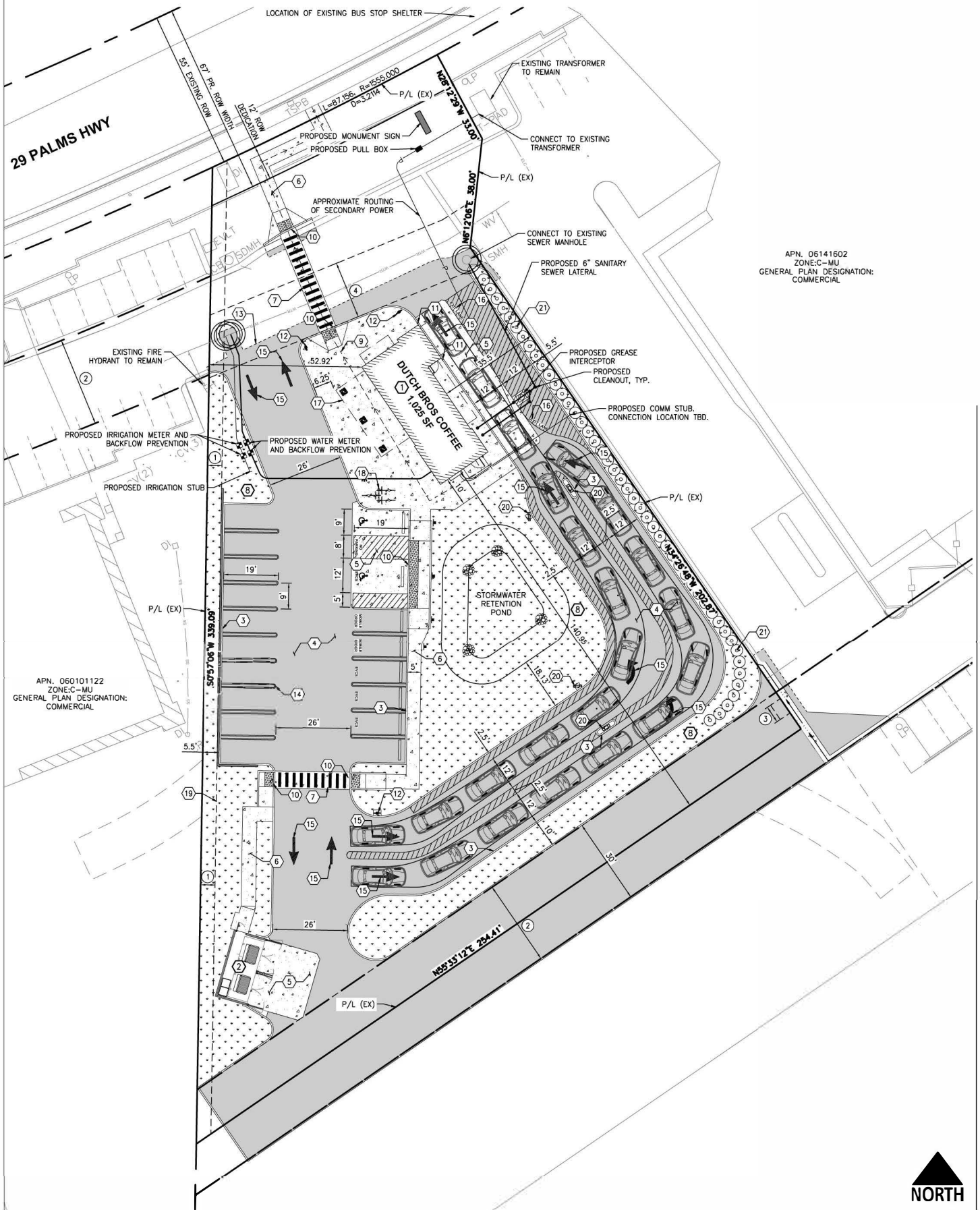
The Project consists of a 1,025-square-foot building with dual drive-through lanes and 18 parking spaces and will connect to the existing shopping center parking lot with site access provided via the two existing driveways described above.

Based on discussions with Town of Yucca Valley staff during the traffic scoping process and as a conservative approach, the traffic analysis assumes that all Project traffic will enter and exit via the full-access driveway on Balsa Avenue. This location is represented as a worst-case scenario due to the higher number of turning movement conflicts (left turns out of the driveway) at the Balsa Avenue driveway, compared to the 29 Palms Highway driveway.

Figure 1.1
Project.

Figure 1.2 displays the site plan for the proposed





Report Organization

Following this introductory chapter, this report is organized into the following chapters:

2. **Analysis Methodology** This chapter reviews the methods utilized to evaluate any potential Town General Plan inconsistencies associated with the implementation of the proposed Project.
3. **Project Traffic** - This chapter describes the p generation. Additional information such as trip distribution patterns and project trip assignment are also included in this chapter, which is used to determine the project study area.
4. **Existing Conditions** This chapter describes and evaluates the existing transportation network. Vehicular operations and LOS analysis results are provided within the study area for existing vehicular traffic conditions.
5. **Opening Year 2027 Cumulative Conditions** This chapter describes and establishes an Opening Year 2027 baseline, incorporating ambient growth and Cumulative Projects in the project vicinity. LOS results are provided for Opening Year 2027 Cumulative conditions, with and without Project traffic, along with improvement recommendations, if necessary.
6. **Site Access & Circulation** This chapter addresses access to the Project site and discusses the functionality of the p
7. **Drive-Through Queue Analysis** This chapter describes and evaluates the queue associated with the drive-through operations of the proposed Project.

2.0 Analysis Methodology

This study was performed in accordance with the standards and requirements in the San Bernardino County TIS Guidelines and approved Traffic Scoping Memorandum for the Project, which is provided in Appendix A.

Level of Service (LOS) Definition

Level of Service (LOS) is a quantitative measure describing operational conditions within a traffic describes these conditions in terms of such factors as delay, speed, travel time, freedom to maneuver, interruptions in traffic flow, queuing, comfort, and convenience. Table 2.1 describes generalized definitions of the various LOS categories (A through F) as applied to roadway and intersection operations.

Table 2.1 - LOS Definitions

A	This LOS represents a completely free-flow condition, where the operation of vehicles is virtually unaffected by the presence of other vehicles and only constrained by the geometric features of the highway and by driver preferences.
B	This LOS represents a relatively free-flow condition, although the presence of other vehicles becomes noticeable. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.
C	At this LOS, the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream is clearly affected by other vehicles.
D	At this LOS, the ability to maneuver is notably restricted due to traffic congestion, and only minor disruptions can be absorbed without extensive queues forming and the service deteriorating.
E	This LOS represents operations at or near capacity. LOS E is an unstable level, with vehicles operating with minimum spacing for maintaining uniform flow. At LOS E, disruptions cannot be dissipated readily thus causing deterioration down to LOS F.
F	At this LOS, forced or breakdown of traffic flow occurs, although operations appear to be at capacity, queues form behind these breakdowns. Operations within queues are highly unstable, with vehicles experiencing brief periods of movement followed by stoppages.

Source: Highway Capacity Manual 7th Edition

Peak Hour Intersection LOS Standards and Thresholds

This section presents the methodologies used to perform peak hour intersection analyses at both signalized and unsignalized intersections within the study area. The following assumptions were utilized in conducting all intersection LOS analyses:

Peak Hour Factor (PHF) Field-collected PHF for all scenarios.

Lane Utilization Factor HCM 7th Edition defaults were used for all scenarios.

Heavy Vehicle Factor A 2% heavy vehicle factor was assumed for all scenarios.

Signal Timing Based on existing signal timing plans provided in Appendix B.

2.2.1 Signalized Intersections

The analysis of signalized intersections utilized the operational analysis procedure as outlined in the Highway Capacity Manual (HCM) 7th Edition signalized (Chapter 19) intersection analysis methodology. This method defines LOS in terms of delay, or more specifically, average stopped delay per vehicle. Delay is a measure of driver and/or passenger discomfort, frustration, fuel consumption and lost travel time. This technique applies a maximum vehicles per hour per lane (VPHPL) as the maximum intersection saturation volume, consistent with adopted saturation flow rates under the San Bernardino County Transportation Authority Congestion Management Program. This saturation volume is adjusted to account for lane width, on street parking, pedestrians, traffic composition (i.e., percentage of trucks) and shared lane movements (i.e., through and right turn movements originating from the same lane). The LOS criteria used for the analysis of signalized intersections are described in Table 2.2, identifying the thresholds of control delays and the associated LOS. The computerized analysis of intersection operations was performed utilizing the Synchro Version 12 traffic analysis software by Trafficware Ltd.

Table 2.2 - Signalized Intersection LOS Operational Analysis Method

<10	LOS A describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
>10 20	LOS B describes operations with generally good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
>20 35	LOS C describes operations with higher delays, which may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
>35 55	LOS D describes operations with high delay, resulting from some combination of unfavorable progression, long cycle lengths, or high volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.
>55 80	LOS E is considered the limit of acceptable delay. Individual cycle failures are frequent occurrences.
>80	LOS F describes a condition of excessively high delay, considered unacceptable to most drivers. This condition often occurs when arrival flow rates exceed the LOS D capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.

Source: Highway Capacity Manual 7th Edition

2.2.2 Unsignalized Intersections

Unsignalized intersections were analyzed using the Highway Capacity 7th Edition side-street stop (Chapter 20) and all-way stop (Chapter 21) intersection analysis methodology. The computerized analysis of intersection operations was performed utilizing the Synchro Version 12 traffic analysis software by Trafficware Ltd.

LOS was determined as follows:

All-way stop intersections: Reported for the entire intersection as an average value

Side-street stop intersections: Reported for the worst-case movement

The LOS thresholds used for the analysis of unsignalized intersections are shown in Table 2.3.

Table 2.3 - LOS Criteria for Stop-Controlled Unsignalized Intersections

0	10	A
>10	15	B
>15	25	C
>25	35	D
>35	50	E
> 50		F

Source: Highway Capacity Manual 7th Edition

Determination of Project Study Area

Per the San Bernardino County TIS Guidelines, the study area was defined using the following criteria:

Intersections in which the Project would add 50 or more trips during any peak hour
Site access driveways

Based on discussions with Town of Yucca Valley staff, a roadway segment analysis was not required, therefore a roadway segment analysis was not included as part of this study.

LOS Thresholds and Significance Criteria

The San Bernardino County General Plan establishes acceptable LOS criteria for the Desert, Valley, and Mountain regions. The Town of Yucca Valley is located in the Desert region of the County. Consistent with the San Bernardino County TIS Guidelines, LOS for the Desert region should consider the following thresholds and improvement requirements for both signalized and unsignalized intersections:

Signalized Intersections

Any signalized intersection in the Desert region that is operating at an acceptable LOS C or better without project traffic in which the addition of project traffic causes the intersection to degrade to an LOS D, E, or F shall identify improvements to improve operations to at least LOS C.

Any signalized study intersection in the Desert region that is operating at LOS D, E, or F without project traffic where the project increases delay by 5.0 or more seconds shall identify improvements to offset the increase in delay.

Unsignalized Intersections

An improvement would be required if section a) or both sections b) and c) occur:

- a) The addition of Project traffic causes the intersection to degrade from a LOS C or better to an LOS D or worse in the Desert region.*

OR

- b) The Project adds 5.0 seconds or more of delay to an intersection that is already projected to operate without project traffic at an LOS D, E, or F in the Desert region.*

AND

- c) One or both of the following conditions are met:*
 - 1) The Project adds ten (10) or more trips to any minor street approach.*
 - 2) The intersection meets the peak hour traffic signal warrant after the addition of project traffic.*

In the Desert region, improvements should be identified that would achieve LOS C or better for case a) above or to pre-project conditions LOS and delay for case b) above.

3.0 Project Traffic

This chapter describes the estimated trip generation, trip distribution patterns, and trip assignment for the Project.

Project Trip Generation

Trip generation estimates for the Project were developed using average trip rates from the Institute of Transportation Engineer (ITE) *Trip Generation Manual* (11th Edition). Excerpts from the ITE Trip Generation Manual are provided in Appendix C.

Table 3.1 displays the

Table 3.1 - Proposed Project Trip Generation

				Trips	Split (%)	In	Out	Trips	Split (%)	In	Out
Coffee Shop with Drive-Through Window and No Indoor Seating (938)	2 Drive-Through Lanes	179 / Drive-Through Lane	358	89	50:50	44	45	30	50:50	15	15
<i>Pass-By Reductions¹</i>		90%	-323	-81	–	-40	-41	28	–	-14	-14
Total Net			35	8	–	4	4	2	–	1	1

Source: ITE Trip Generation Manual (11th Edition)

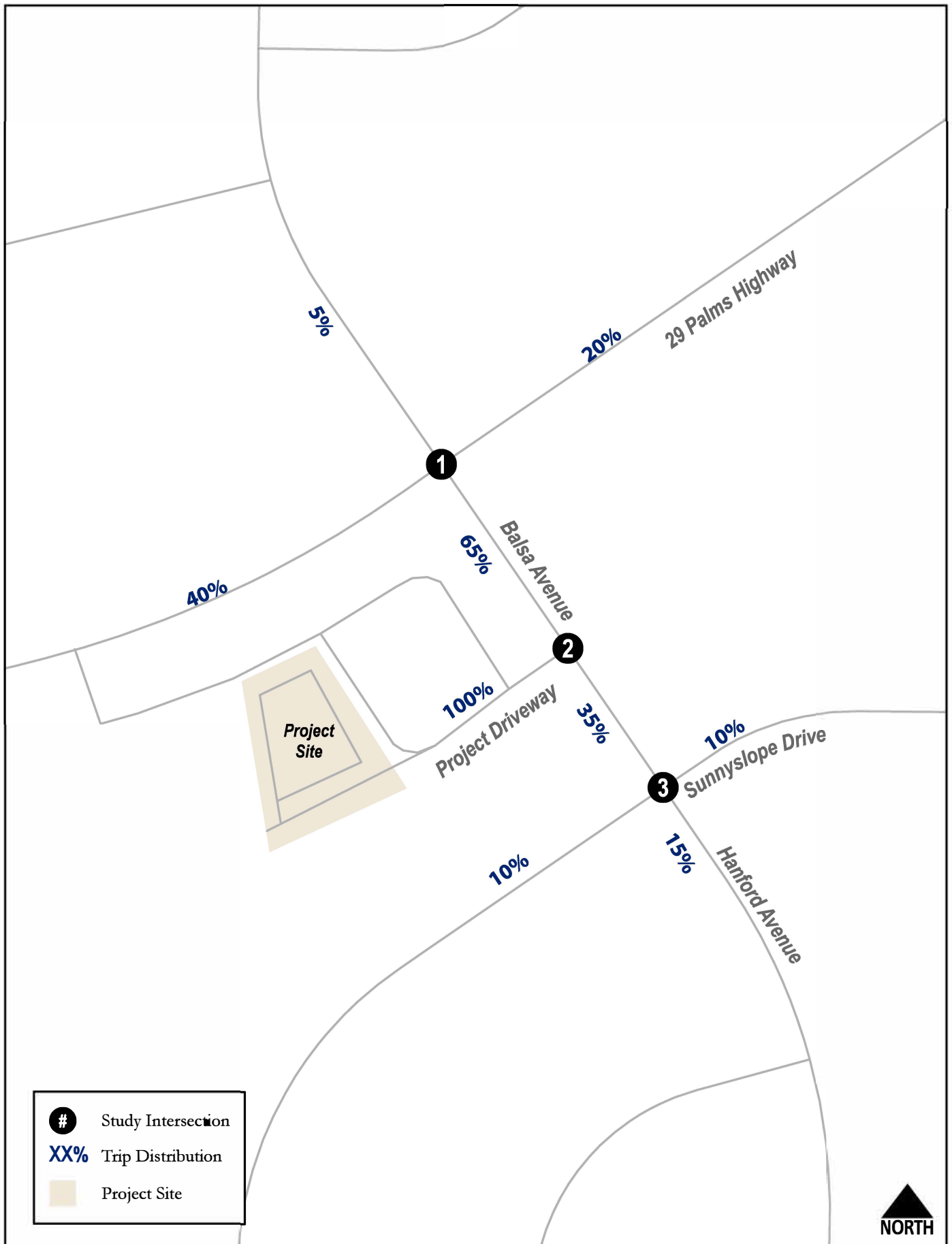
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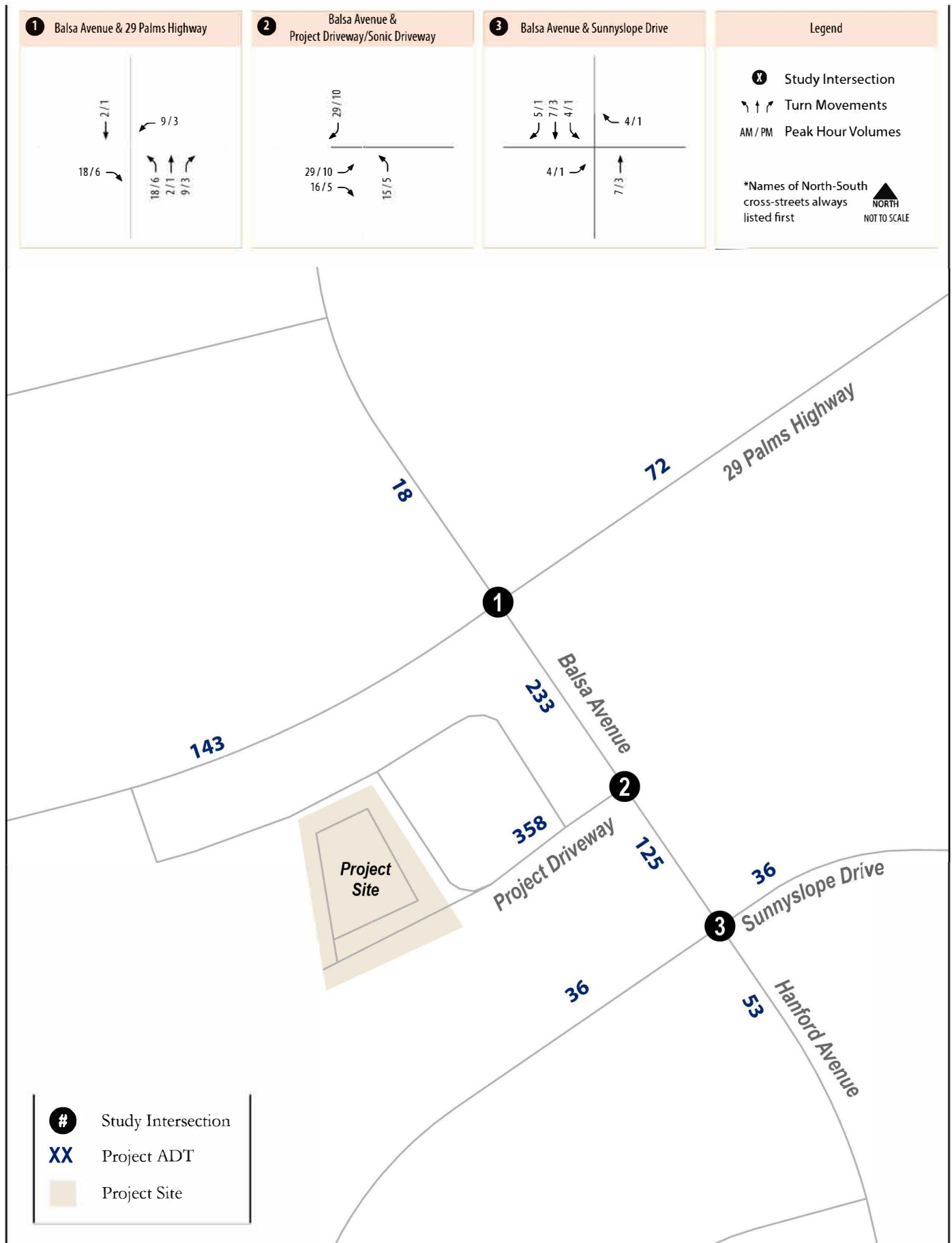
¹ Pass-by reductions were estimated based on the ITE Trip Generation Manual, 11th Edition: Vehicle Pass-By Rates by Land Use.

As shown in Table 3.1, the Project is expected to generate approximately 358 daily trips, including 89 (44-in/45-out) AM peak hour trips and 30 (15-in/15-out) PM peak hour trips. It should be noted that after applying a pass-by (existing trips on the main roadway system) reduction factor, the project would generate 35 net new daily trips, with 8 net new trips in the AM peak hour and 2 net new trips in the PM peak hour on the existing adjacent roadway network. As a conservative approach, pass-by reductions were not applied to the traffic analysis.

Project Trip Distribution and Assignment

The project trip distribution was developed using engineering judgement based upon project land use characteristics, location, and corresponding land uses in the vicinity of the project site. Figure 3.1 displays the regional trip distribution for the Project. Based upon AM/PM peak hour project trip generation and the project trip distribution, project trips were assigned to the study intersections. Figure 3.2





Project Study Area

Based on the criteria previously outlined in Chapter 2.3, and the Traffic Scoping Memorandum approved by Town of Yucca Valley staff, the following three (3) intersections were included for analysis:

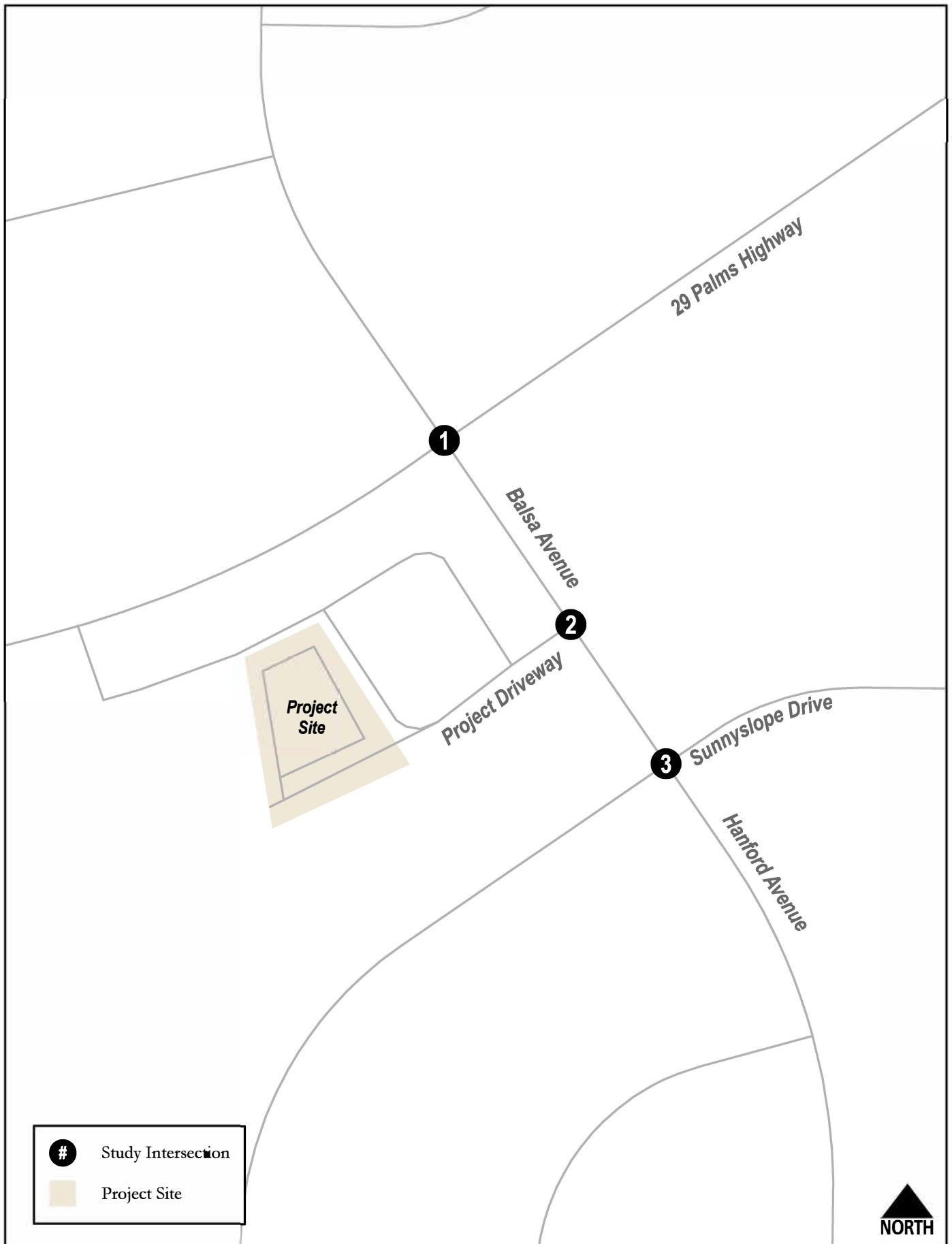
Intersections

4. Balsa Avenue & 29 Palms Highway (Signalized)
5. Balsa Avenue & Project Driveway/Sonic Driveway (TWSC)
6. Balsa Avenue & Sunnyslope Drive (TWSC)

Note:

TWSC =Two-Way Stop-Controlled

Figure 3.3 displays the overall project study area.



4.0 Existing Conditions

This chapter provides a qualitative description of the transportation facilities located in the Project study area. A LOS analysis of the existing operations of the local transportation network facilities is also provided for study intersections.

Existing Transportation Network

Access to the Project from the regional transportation network will be provided via an existing full-movement driveway on Balsa Avenue (near Walgreens drug store) and one existing left-out restricted driveway on 29 Palms Highway (near Big 5 Sporting Goods store). These facilities provide a direct connection to the Project, via project driveways. The existing active transportation facilities are displayed in Figure 4.1. Table 4.1 summarizes the existing physical characteristics of roadways within the study area, while Figure 4.2 displays the study intersection geometrics under Existing conditions.

Table 4.1 - Existing Transportation Network Characteristics

29 Palms Highway	West of Balsa Avenue	5	TWLTL	Contiguous on both sides	Class III	Routes: 1, 7A, 7B, 15, and 21	40 mph
29 Palms Highway	East of Balsa Avenue	4	Raised/TWLTL	South side only	Class III	Routes: 1, 7A, 7B, 15 and 21	40 mph
Balsa Avenue	North of 29 Palms Highway	4	Raised	East side only	None	Routes: 7A and 21	35 mph
Balsa Avenue	Between 29 Palms Highway and Sunnyslope Drive	3	Striped	Contiguous on both sides	None	None	35 mph

Source: CR Associates (2026)

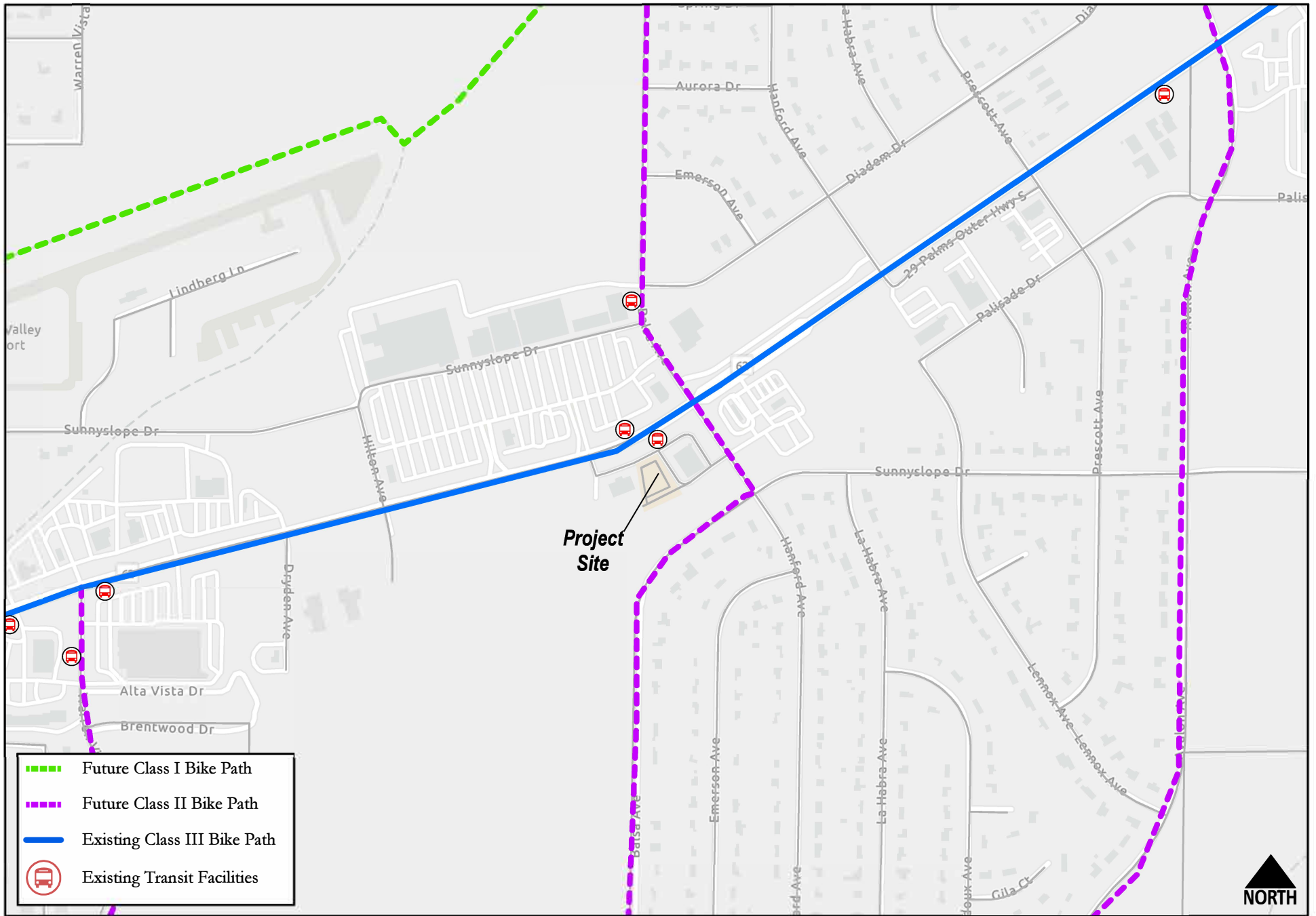
Notes:

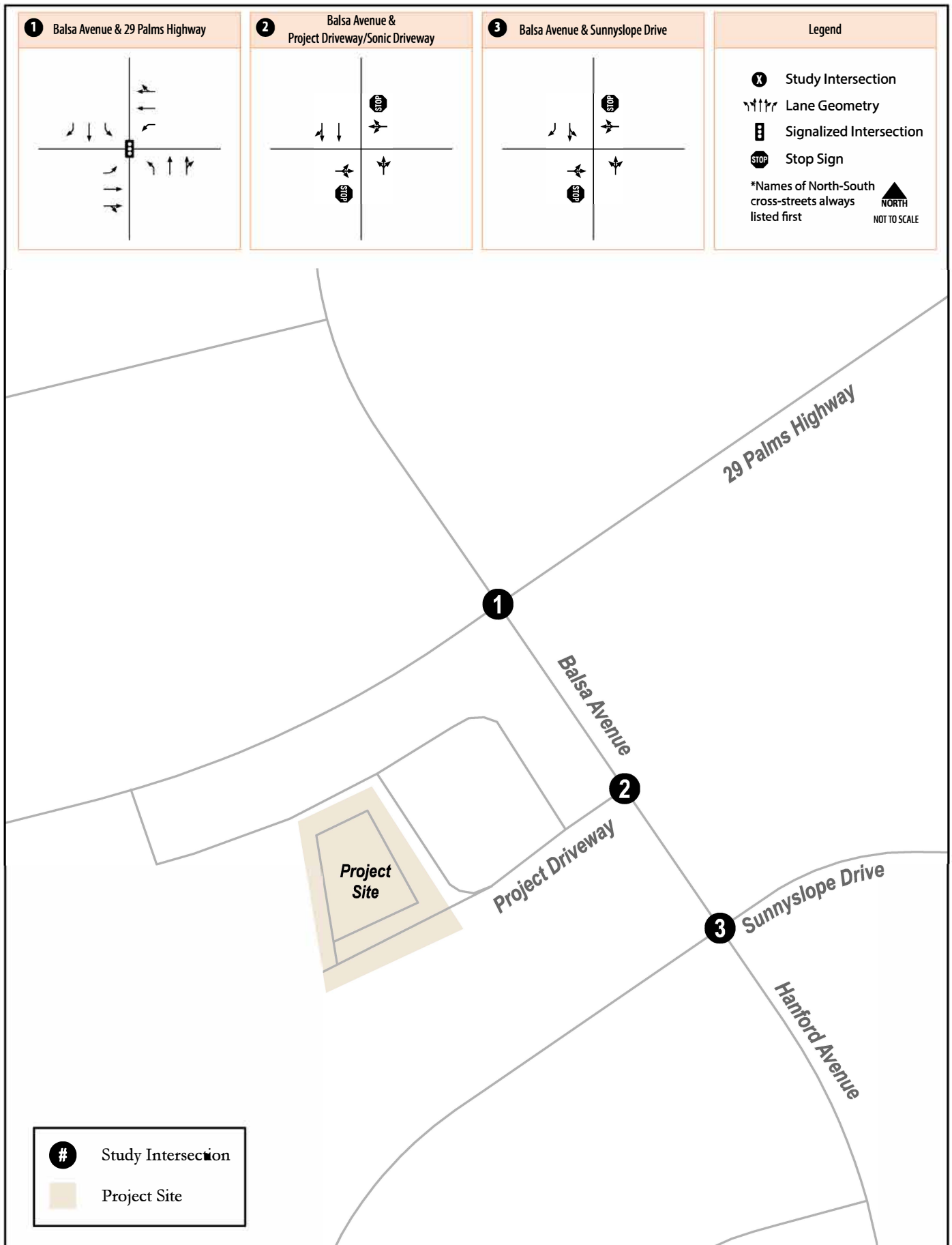
TWLTL = Two-Way Left-Turn Lane

Pedestrian, Bicycle and Transit

4.2.1 Pedestrian

Sidewalks are proposed within the Project site to provide pedestrian connectivity between the Project and existing off-site sidewalks immediately adjacent to the site. Continental crosswalks are provided throughout the Project site to enhance driver awareness within internal roadways and parking lot areas. Based on the proposed and existing features, pedestrian facilities are considered adequate to accommodate project-related pedestrian activity.





4.2.2 Bicycle

An existing Class III bicycle facility runs east/west along 29 Palms Highway, while no designated bicycle facilities currently exist along Balsa Avenue. The Yucca Valley General Plan Circulation Element identifies a future Class II bicycle lane along Balsa Avenue adjacent to the Project site. The proposed Project site plan would allow bicycle access via adjacent roadways and internal drive aisles.

4.2.3 Transit

The nearest bus stop is located on the south side of 29 Palms Highway, approximately 300 feet walking distance from the project site and provides service for the following Basin Transit bus routes:

Route 1 This bus route is serviced along 29 Palms Highway and connects the Yucca Valley Transit Center, Hi-Desert hospital, Indian Cove, and the 29 Palms Transit Center.

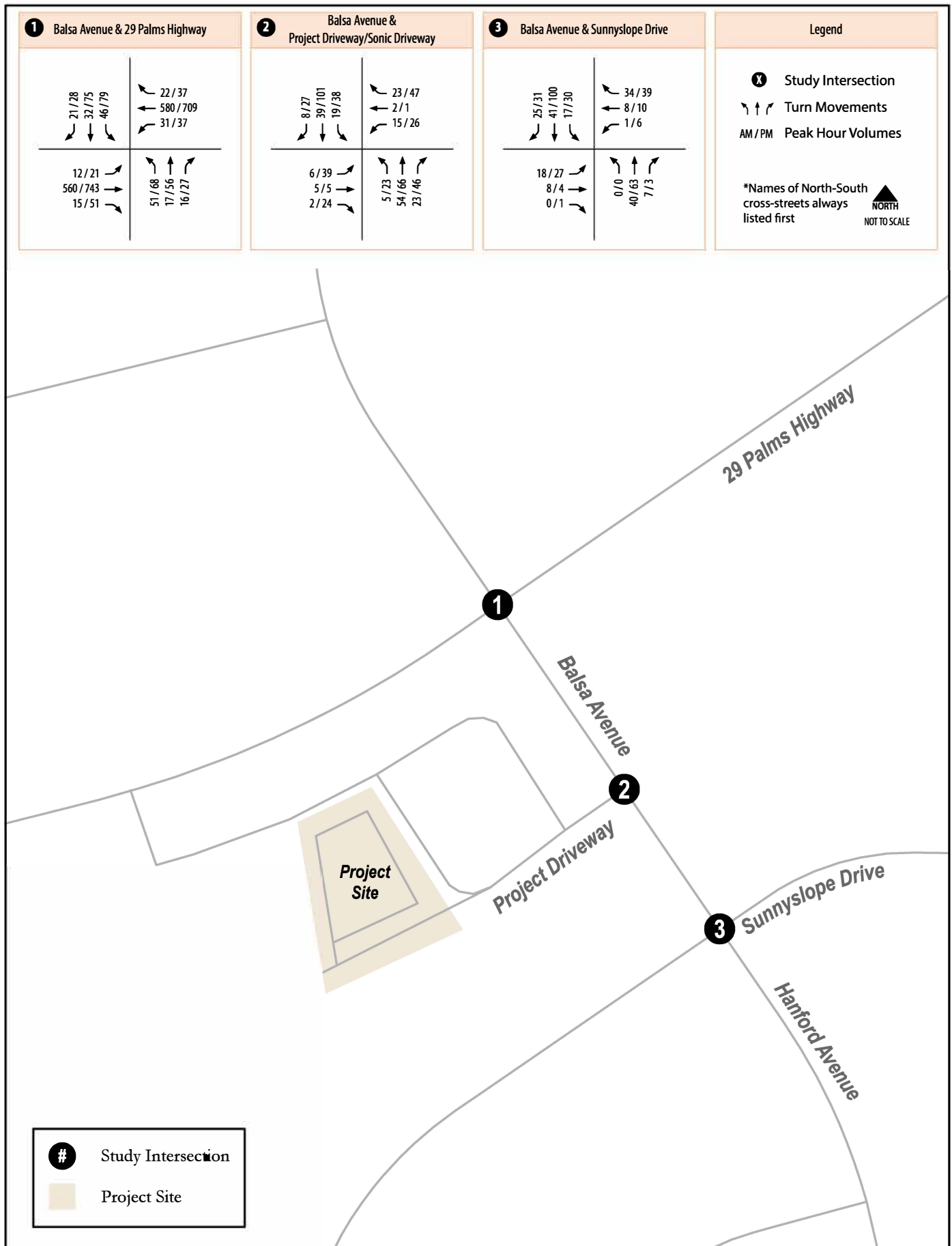
Route 7A This bus route is serviced along 29 Palms Highway and connects the Yucca Valley Transit Center, Walmart Center, and Town Hall.

Route 21 This bus route is serviced along 29 Palms Highway and connects the Yucca

proposed Project would not conflict
with existing or planned transit facilities.

Existing Intersection Volumes

Traffic counts for the study intersections were conducted in June 2025 and November 2025, when schools were in session. Traffic count sheets are provided in Appendix D. Existing AM/PM peak hour intersection turning movements for the study intersections are displayed in Figure 4.3.



Existing Traffic Conditions

LOS analyses under Existing conditions were conducted using the methodologies described in Chapter 2. Intersection LOS analysis results are discussed below.

4.4.1 Intersection Analysis

Table 4.2 displays intersection LOS and average vehicle delay results for the study intersections under Existing conditions. LOS calculation worksheets for Existing conditions are provided in Appendix E.

Table 4.2 - Peak Hour Intersection LOS Results Existing Conditions

			Avg. Delay (Sec.)	LOS	Avg. Delay (Sec.)	LOS
1	Balsa Avenue & 29 Palms Highway	Signal	18.8	B	22.4	C
2	Balsa Avenue & Project Driveway/Sonic Driveway	TWSC	10.0	B	11.7	B
3	Balsa Avenue & Sunnyslope Drive	TWSC	10.1	B	11.5	B

Source: CR Associates (2026)

Note:

TWSC = Two-Way Stop-Controlled. For TWSC, the delay shown is the worst delay experienced by any of the approaches.

As shown in Table 4.2, all study intersections currently operate at an acceptable LOS under Existing conditions.

5.0 Opening Year 2027 Cumulative Conditions

This section provides an analysis of Opening Year 2027 Cumulative conditions, both with and without the proposed Project. The scenarios analyzed in this section include:

- Opening Year 2027 Cumulative
- Opening Year 2027 Cumulative with Project

Opening Year 2027 Cumulative Roadway Network and Traffic Volumes

Intersection geometrics under Opening Year 2027 Cumulative conditions were assumed to be identical to Existing conditions, as previously shown in Figure 4.2.

The Opening Year Cumulative 2027 conditions traffic volumes were derived by using the formula below. For the Opening Year 2027 Cumulative scenario, an ambient annual growth rate of three (3) percent per year was applied over two (2) years for Opening Year 2027.

where

Future Volume = future year projected traffic volume (veh/hr)

Existing Volume = current year traffic volume counts, typically peak hour (veh/hr)

Rate = average yearly growth factor, expressed as a decimal

years = number of years projected out in the future

The Opening Year 2027 growth scenario traffic volumes were developed by applying the total ambient growth factor of 6% to existing traffic volumes. Figure 5.1 displays the resulting growth volumes.

Cumulative Project Traffic

Cumulative Projects that are anticipated to contribute traffic within the Project study area, per the Yucca Valley November 2025 Land Development Update Report, were included as part of the analysis. As a conservative approach, no trip credits were applied to these projects, and their full trip generation was included as Cumulative Project traffic.

The Cumulative Projects traffic was assigned to the project study area as identified within their respective traffic study. The trip generation assumptions for Cumulative Projects without completed traffic studies were developed and assigned to the project study area utilizing the same methodology used for the Project described in Chapter 3. Figure 5.2 displays the location of the Cumulative Projects. Table 5.1 displays the projected trip generation for the ten (10) Cumulative Projects identified.

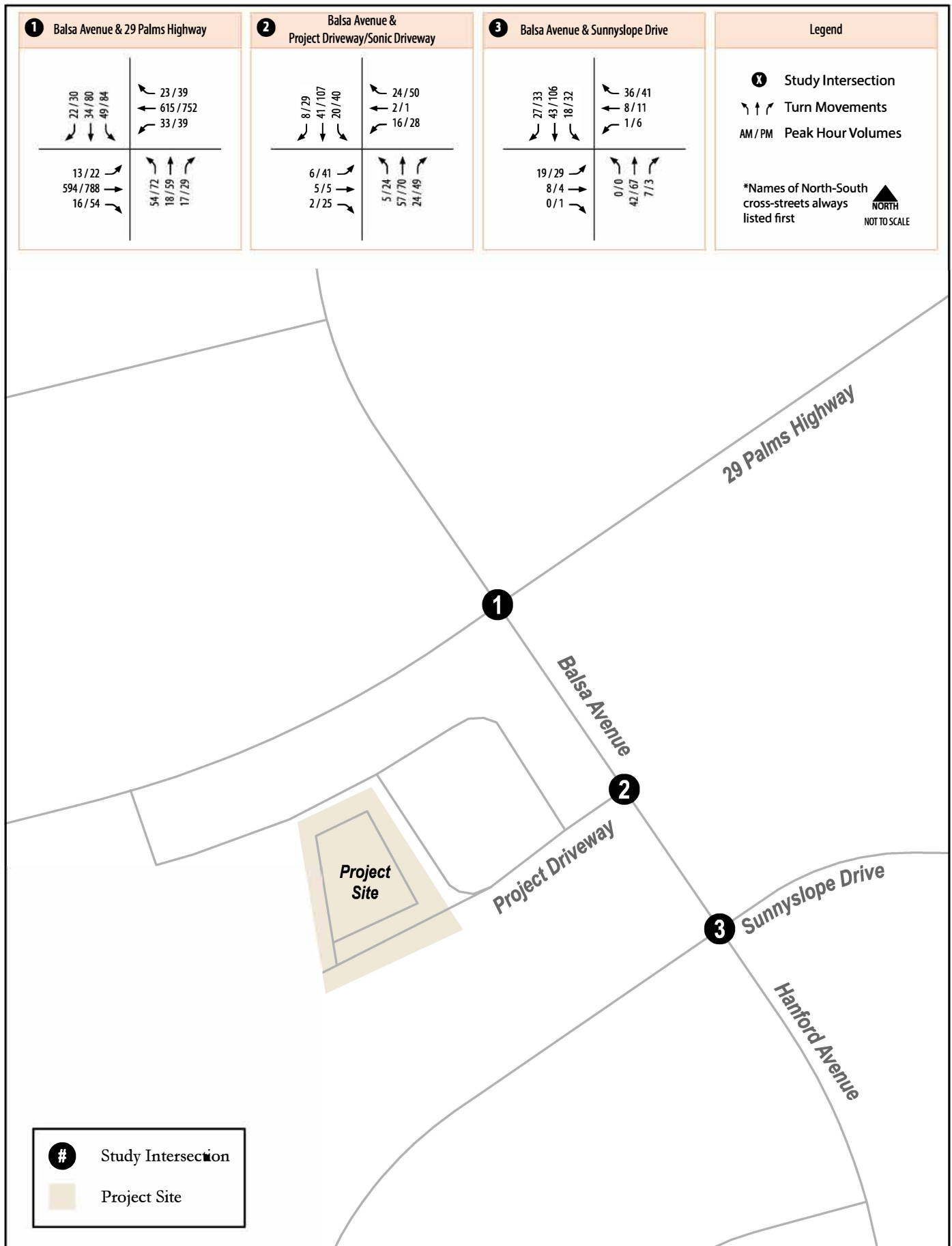




Table 5.1 - Cumulative Project Trip Generation Estimates

1	Wal-Mart Fuel Station (6 Fueling Dispensers)	944 - Gasoline / Service Station	1,032	71	92
2	Circle K Fuel Station (5,200 SF)	945 - Convenience Store/Gas Station	2,639	202	240
3	Lighthouse Church (9,475 SF Church, 1,470 SF Coffee Shop)	560 Church / 938 Coffee/Donut Shop with Drive-Thru Window	244	51	24
4	Tumbleweed Sanctuary ¹	561 Assembly Hall	99	10	20
5	²	934 - Fast-Food Restaurant w/o Drive-through	1,558	113	128
6	Starbucks West ³	937 - Coffee/Donut Shop with Drive-Through Window	840	90	41
7	Time Warner Communications/Charter (1,678 SF)	170 - Utility	21	4	4
8	The Tiny Pony (533 SF)	932 High-Turnover (Sit- Down) Restaurant	56	7	9
9	Nice Dreams Ices (3,936 SF)	932 High-Turnover (Sit- Down) Restaurant	409	10	61
10	7251 Palo Alto 4-Plex (4 Dwelling Units)	220 - Multifamily Housing (Low-Rise)	25	2	3

Source: CR Associates (2026)

Note:

SF = Square Feet

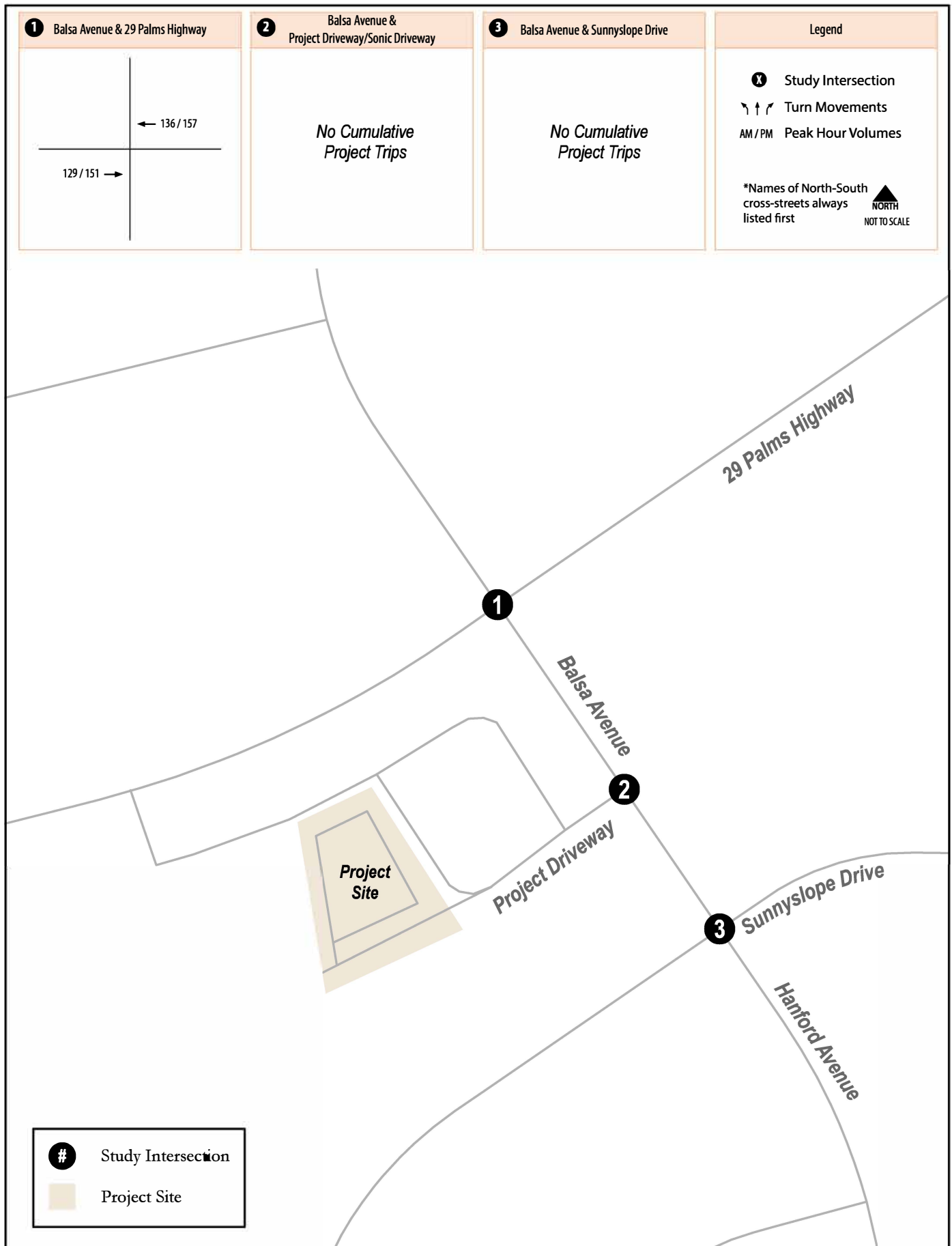
¹Trip generation obtained from the Tumbleweed Sanctuary A.P.N. 0588-016-01, 0588-021-28, 0588-021-21, 0588-021-29 Traffic Impact Analysis prepared by Translutions Inc (October 24, 2025).

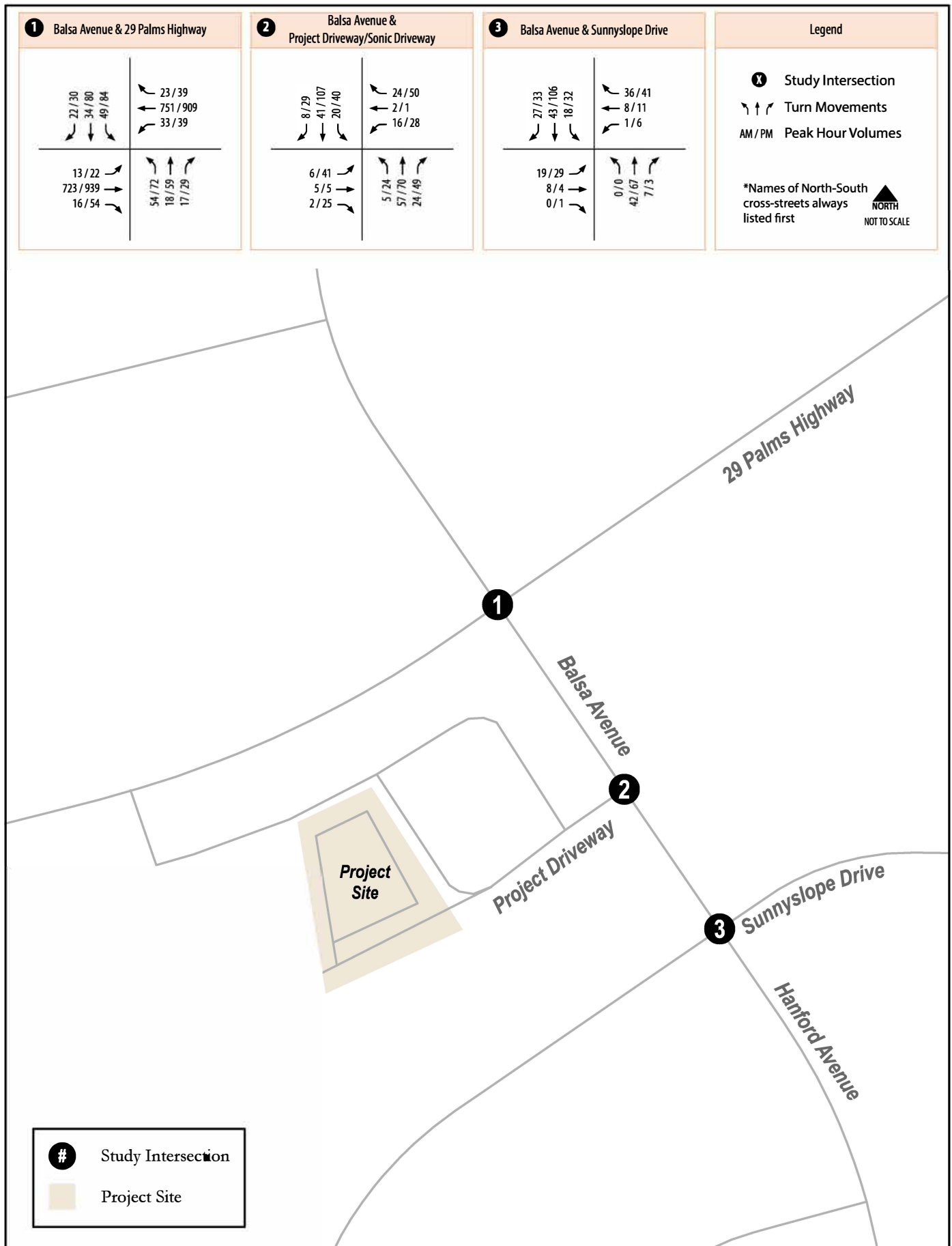
²Trip generation obtained from A.P.N. 0601-402-15 Traffic Impact Analysis prepared by Kimley Horn (June 2, 2020).

³Trip generation obtained from the Starbucks West A.P.N 0595-371-21 Traffic Impact Analysis prepared by Linscott Law & Greenspan Engineers (September 27, 2023).

Figure 5.3 displays the Cumulative Projects trip assignment at the study intersections.

The Opening Year 2027 Cumulative scenario traffic volumes were developed by applying the total ambient growth existing traffic volumes (Figure 5.1) and adding the additional vehicular trips generated by the Cumulative Projects (Figure 5.3) listed above. Figure 5.4 displays intersection volumes under Opening Year 2027 Cumulative conditions for both the AM and PM peak hours.





Opening Year 2027 Cumulative Conditions

LOS analyses under Opening Year 2027 Cumulative conditions were conducted using the methodologies described in Chapter 2. Intersection analysis results are discussed below.

5.3.1 Intersection Analysis

Table 5.2 displays intersection LOS and average vehicle delay results for the study intersections under Opening Year 2027 Cumulative conditions. LOS calculation worksheets for Opening Year 2027 Cumulative conditions are provided in Appendix F.

Table 5.2 - Peak Hour Intersection LOS Results Opening Year 2027 Cumulative Conditions

			Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS
1	Balsa Avenue & 29 Palms Highway	Signal	19.1	B	22.8	C
2	Balsa Avenue & Project Driveway/Sonic Driveway	TWSC	10.1	B	12.1	B
3	Balsa Avenue & Sunnyslope Drive	TWSC	10.2	B	11.8	B

Source: CR Associates (2026)

Notes:

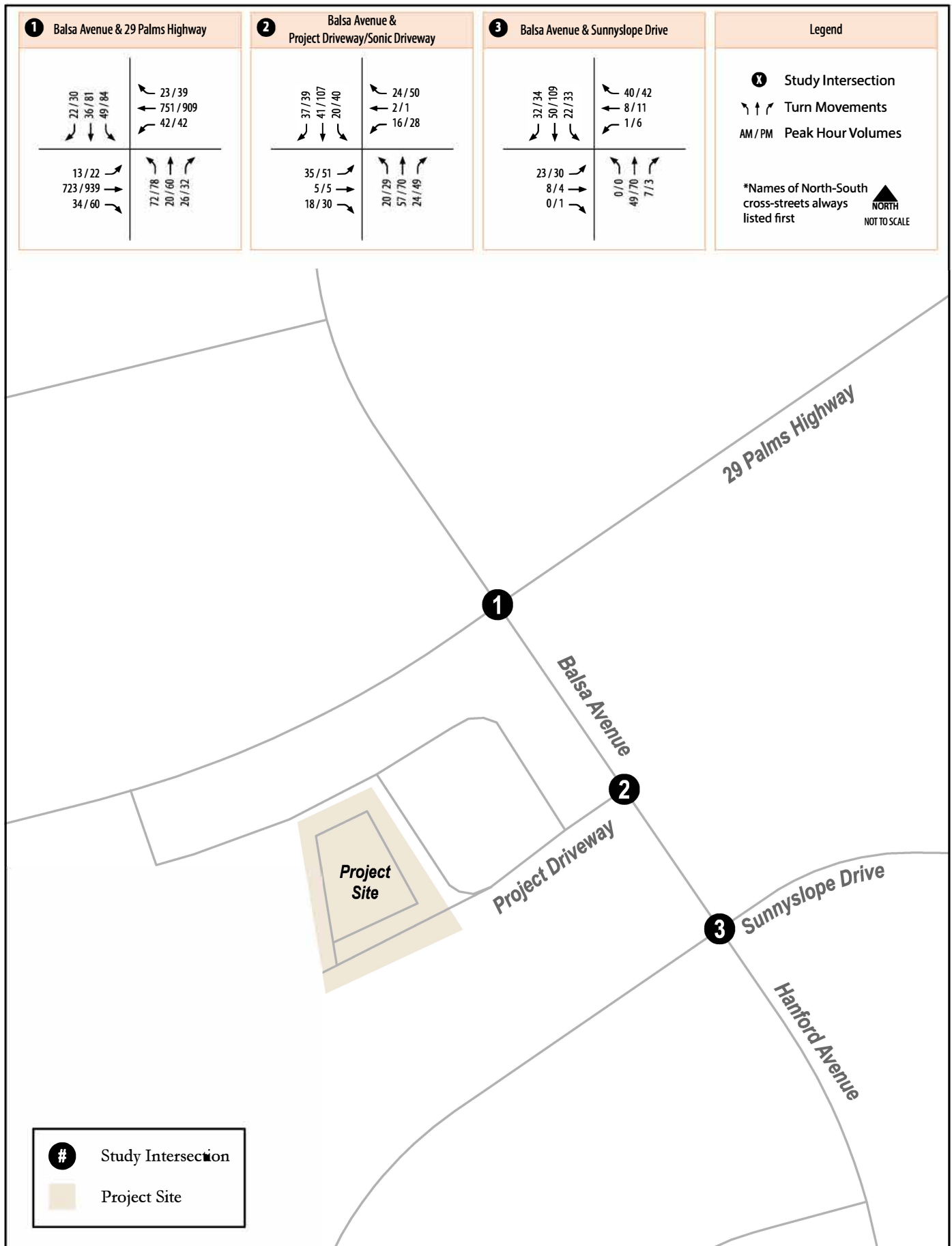
TWSC = Two-Way Stop Controlled. For TWSC intersections, the delay shown is the worst delay experienced by any of the movements.

As shown in Table 5.2, all study intersections currently operate at an acceptable LOS under Opening Year 2027 Cumulative conditions.

Opening Year 2027 Cumulative with Project Roadway Network and Traffic Volumes

Intersection geometrics under the Opening Year 2027 Cumulative with Project conditions were assumed to be identical to the Opening Year 2027 Cumulative conditions geometrics.

Peak hour intersection volumes for the Opening Year 2027 Cumulative with Project conditions were derived by combining the Project trips (as previously shown in Figure 3.2) to the Opening Year 2027 Cumulative traffic volumes (as previously shown in Figure 5.4). Peak hour intersection volumes for this scenario are displayed in Figure 5.5.



Opening Year 2027 Cumulative with Project Traffic Conditions

LOS analyses under Opening Year 2027 Cumulative with Project conditions were conducted using the methodologies described in Chapter 2. Intersection analysis results are discussed below.

5.5.1 Intersection Analysis

Table 5.3 displays intersection LOS and average vehicle delay results for the study intersections under Opening Year 2027 Cumulative with Project conditions. LOS calculation worksheets for Opening Year 2027 Cumulative with Project conditions are provided in Appendix G.

As shown in Table 5.3, all the study intersections would continue to operate at an acceptable LOS during both the AM and PM peak hours under Opening Year 2027 Cumulative with Project conditions.

Determination of the Need for Off-Site Improvements

This section identifies the recommended off-site improvements under Opening Year 2027 Cumulative with Project conditions, consistent with the San Bernardino County TIS Guidelines.

Intersection Improvements

Based on the San Bernardino County TIS Guidelines and the analysis presented in this report, the addition of Project traffic would not trigger improvements at any of the study intersections. Therefore, no intersection improvements are required or recommended.

Table 5.3 - Peak Hour Intersection LOS Results – Opening Year 2027 Cumulative with Project Conditions

#	Intersection	Control Type	AM Peak Hour		PM Peak Hour		Delay w/o Project (AM / PM)	LOS w/o Project (AM / PM)	Δ in Delay (AM / PM)	I?
			Avg. Delay (sec.)	LOS	Avg. Delay (sec.)	LOS				
1	Balsa Avenue & 29 Palms Highway	Signal	20.0	C	23.1	C	19.1 / 22.8	C / C	0.9 / 0.3	N
2	Balsa Avenue & Project Driveway/Sonic Driveway	TWSC	10.8	B	12.6	B	10.1 / 12.1	B / B	0.7 / 0.5	N
3	Balsa Avenue & Sunnyslope Drive	TWSC	10.5	B	12.0	B	10.2 / 11.8	B / B	0.3 / 0.2	N

Source: CR Associates (2026)

Notes:

TWSC = Two-Way Stop Controlled. For TWSC intersections, the delay shown is the worst delay experienced by any of the movements.

I? = Improvement Required?

6.0 Site Access & Circulation

This chapter addresses access to the project site and discusses the functionality of the P internal circulation.

Driveway Access

Project site access will be provided via the existing driveways along 29 Palms Highway and Balsa Avenue. A brief description of each driveway is provided below:

The driveway situated on 29 Palms Highway is located approximately 500 feet west of Balsa Avenue and provides 3/4 access (left-out restricted). This driveway serves as one of the two access points to the retail land uses adjacent to the proposed Project, such as Big 5 Sporting Goods and Walgreens. The intersection analysis focused on access points that provided full access movements to vehicles. Therefore, this intersection was not a part of the analysis; however, the intersection is expected to operate at an acceptable LOS due to the existing left-out restricted access.

The driveway situated on Balsa Avenue is located approximately 225 feet south of 29 Palms Highway and provides full-movement access. This driveway serves as one of the two access points to the retail land uses adjacent to the proposed Project. This driveway was included as part of the intersection analysis and is projected to operate at an acceptable LOS under all analysis scenarios.

Internal Circulation

The Project site allows for two-way traffic circulation, providing connections between the parking areas, the drive-through component of the Project, and the internal roadways that link the site to adjacent land uses.

Access to the drive-through is provided on the south side of the Project site and can be reached via the internal roadways from both the southern and northern portions of the site. The drive-through exit is located on the north side of the Project site and connects to the northern internal roadway.

7.0 Drive-Through Queuing Analysis

This chapter addresses the adequacy of the proposed drive-through lane for the Project.

Proposed Drive-Through Capacity

The Project drive-through operations would include the construction of two entrance drive-through lanes that continue to the dual order boards, and then merges to one lane prior to the pay and pick-up windows. The drive-through queue storage length from the drive-through entrance to the pick-up window is approximately 520 feet. Assuming 22-feet per vehicle, the proposed drive-through lane capacity is approximately 23 vehicles.

Drive-Through Data Collection

Drive-through queuing data collection was conducted at the following three (3) existing Dutch Bros coffee shop locations, which are comparable to the proposed location in that the existing locations have dual-drive-through lanes and have limited to no indoor seating:

44175 Jefferson Street, La Quinta, CA 92253
34051 Date Palm Drive, Cathedral City, CA 92234
81-776 Highway 111, Indio, CA 92201

Data collection occurred on one typical weekday and one typical weekend day at each location. Observations were conducted during the morning (6:00 9:00 AM) and afternoon (2:00 5:00 PM) peak periods, which are representative of the highest customer demand. Queuing data was recorded at 5-minute intervals to capture fluctuations in drive-through demand and to document queue dynamics throughout each period. Table 7.1 notes the peak queue, as well as the average and 85th percentile queue, for the peak 15-minute interval during the AM and PM peak operation conditions for both weekday and weekend. Data collection worksheets are provided in Appendix H.

Table 7.1 - Drive Through Queuing Analysis Results

		TOD	Avg. Queue	85 th Percentile	Peak Queue	TOD	Avg. Queue	85 th Percentile	Peak Queue
44175 Jefferson	AM	8:15	20	22	23	8:15	15	17	17
Stree, La Quinta, CA	PM	3:15	13	15	15	4:30	13	13	13
34051 Date Palm Dr,	AM	8:30	16	18	18	9:00	3	9	9
Cathedral City, CA	PM	2:00	14	16	16	2:15	18	20	20
81-776 Highway	AM	8:15	15	16	16	7:45	9	10	10
111, Indio, CA	PM	4:45	9	10	10	4:45	11	12	12

Source: CR Associates (2026)

Notes:
TOD = Time of Day

As shown in Table 7.1, the peak observed queue was 23 vehicles between 8:15-8:30 AM during the AM peak period on a typical weekday at the existing La Quinta location. As noted previously, the proposed drive-through queuing capacity for the Project would be 23 vehicles. Therefore, the proposed drive-through capacity would accommodate the anticipated peak drive-through demand. It should be noted that if the drive-through queue were to spill out of the drive-through lane, the queue would be able to be accommodated by internal drive aisles and is not expected to spill out into the public right-of-way.

Appendix A - Project Traffic Scoping Memorandum



TO: Jared Jerome, Town of Yucca Valley

FROM: Trevor Briggs, PE; CR Associates

DATE: November 21, 2025

RE: Traffic Scoping Memorandum – Dutch Bros Coffee Project – Town of Yucca Valley

The purpose of this Traffic Scoping Memorandum is to document the trip-generating characteristics, analysis assumptions, and vehicle miles traveled (VMT) screening criteria for the proposed Dutch Bros Coffee project (the “Project”) in the Town of Yucca Valley, California. The Town of Yucca Valley does not have traffic analysis guidelines; therefore, the traffic analysis assumptions and VMT screening criteria for the Project will be based on the San Bernardino County *Transportation Impact Study Guidelines* (TIA Guidelines; July 9, 2019).

Project Description

The Project (APN 060141605) is located near the southwest corner of the intersection of 29 Palms Highway (SR-62) and Balsa Avenue, in the Town of Yucca Valley, California. The Project seeks approval to construct a 1,025 square foot (SF) Dutch Bros coffee shop building, with dual drive-through lanes and 18 parking spaces, on existing vacant land.

Access to the proposed Project would be provided via one existing full-movement driveway on Balsa Avenue (near Walgreens drug store) and one existing left-out restricted driveway on 29 Palms Highway (near Big 5 Sporting Goods store). Based on discussions with Town staff, the traffic analysis will focus on all Project traffic entering and exiting via the full-movement driveway on Balsa Avenue as a worst-case scenario due to the higher number of turning movement conflicts (left turns out of the driveway) at the Balsa Avenue driveway, compared to the 29 Palms Highway driveway.

Figure 1 displays the Project’s regional location. **Figure 2** displays the Project site plan.

Project Trip Generation

The trip generation estimates for the Project were developed using average trip rates and pass-by reduction factors from the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11th Edition, September 2021; see **Attachment 1**). **Table 1** displays the Project’s trip generation estimates for a typical weekday.

Table 1 - Project Trip Generation

Land Use	Units	Trip Rate	ADT	AM Peak Hour				PM Peak Hour			
				Trips	Split (%)	In	Out	Trips	Split (%)	In	Out
Coffee Shop with Drive-Through Window and No Indoor Seating (938)	2 Drive-Through Lanes	179 / Drive-Through Lane	358	89	50:50	44	45	30	50:50	15	15
Pass-By Reductions		90%	-323	-81	–	-40	-41	28	–	-14	-14
Total Net			35	8	–	4	4	2	–	1	1

Source: ITE Trip Generation Manual 11th Edition, CR Associates (2025).



As shown in Table 1, the Project is expected to generate approximately 358 daily trips, including 89 (44-in/45-out) AM peak hour trips and 30 (15-in/15-out) PM peak hour trips. It should be noted that after applying a pass-by (existing trips on the main roadway system) reduction factor, the project would generate 35 net new daily trips, with 8 net new trips in the AM peak hour and 2 net new trips in the PM peak hour on the existing adjacent roadway network. As a conservative approach, pass-by reductions were not applied to the traffic analysis

Project Trip Distribution

The project trip distribution was developed based on a review of existing travel patterns within the project vicinity. **Figure 3** displays the project trip distribution and intersection movement trip distribution.

Project Trip Assignment

Based upon AM/PM peak hour project trip generation and the project trip distribution, project trips were assigned to the adjacent roadway network and study area intersections. **Figure 4** displays the daily project trip assignment and intersection peak hour trip assignment.

Study Area

Based on criteria outlined in the County TIA Guidelines, the following study intersections were selected for analysis and are shown on **Figure 5**:

Intersections

1. Balsa Avenue & 29 Palms Highway (Signalized)
2. Balsa Avenue & Project Driveway/Sonic Driveway (SSSC)
3. Balsa Avenue & Sunnyslope Drive (SSSC)

Note:
SSSC = Side-Street Stop-Controlled

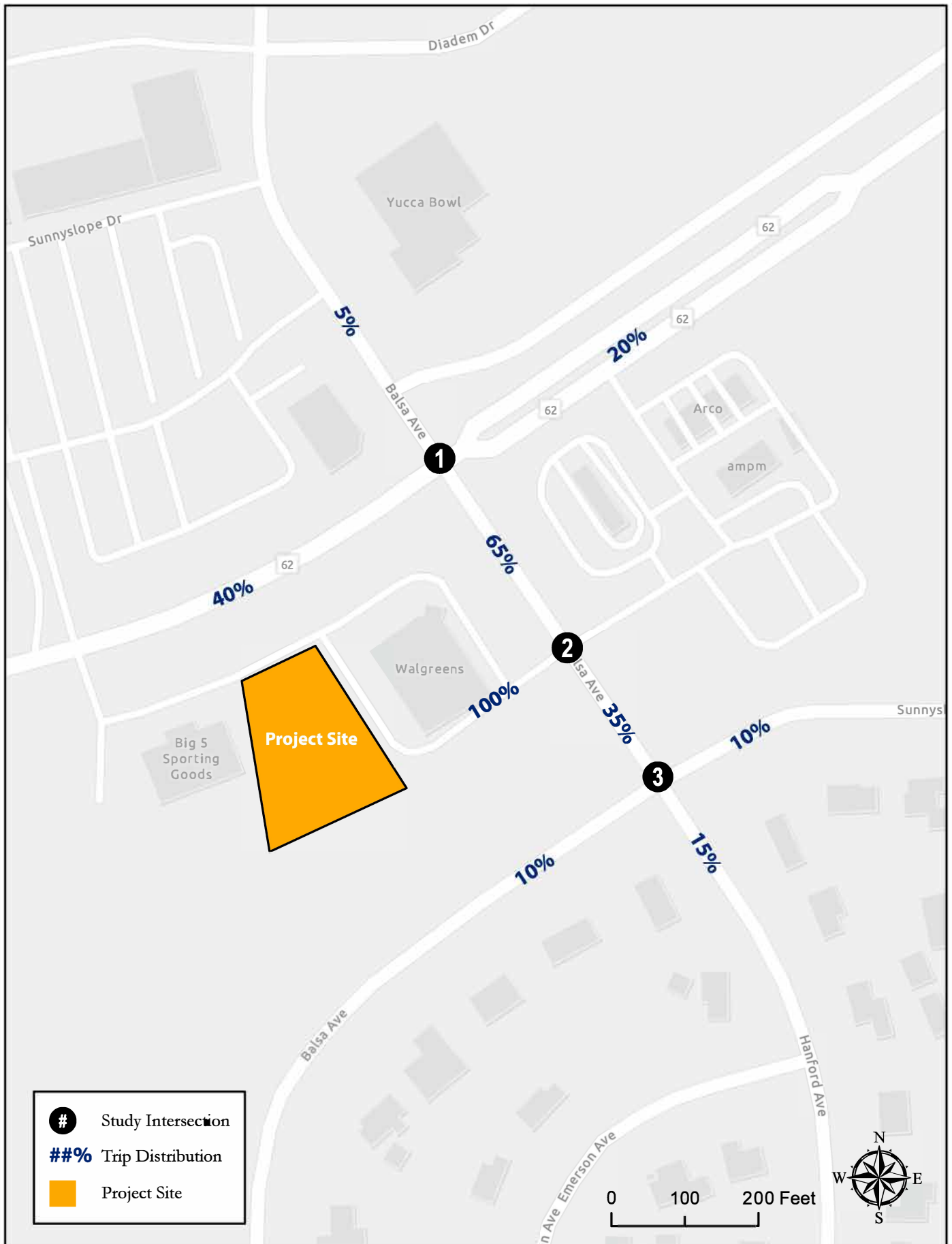
Study Scenarios

The traffic study will provide Level of Service (LOS) analysis for the following scenarios to determine the Project's potential effects on the surrounding transportation network:

- Existing Conditions
- Opening Year Cumulative (Existing + Ambient Growth + Cumulative Projects)
- Opening Year Cumulative Plus Project

Volume Development

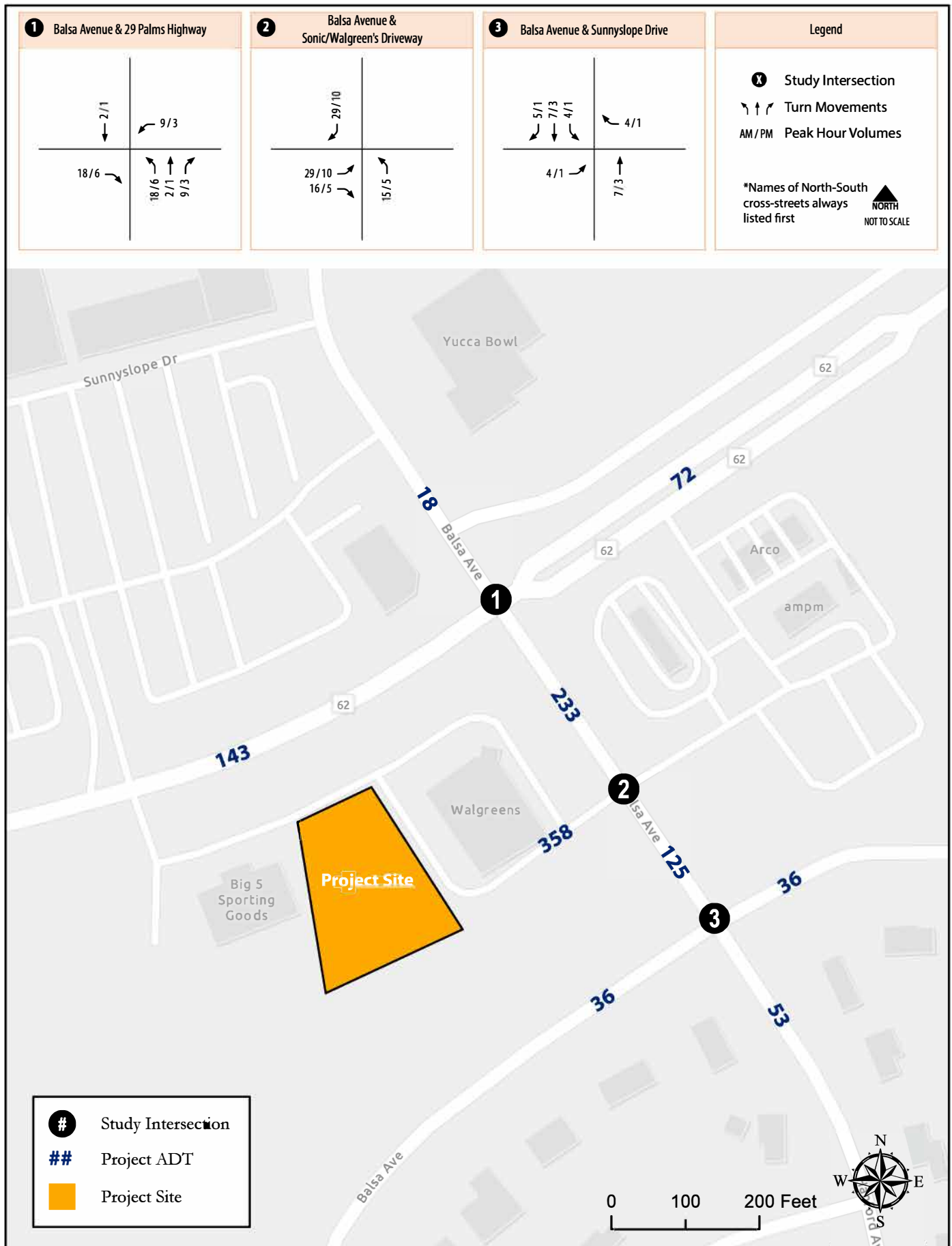
For Opening Year conditions, an annual ambient growth rate of 3% per year will be applied to existing volumes to develop Opening Year Base traffic volumes. Also, traffic volumes from Cumulative Projects will be added to Opening Year Base traffic volumes to develop Opening Year Cumulative traffic volumes. Town staff will provide a list of Cumulative Projects to include in the traffic analysis.

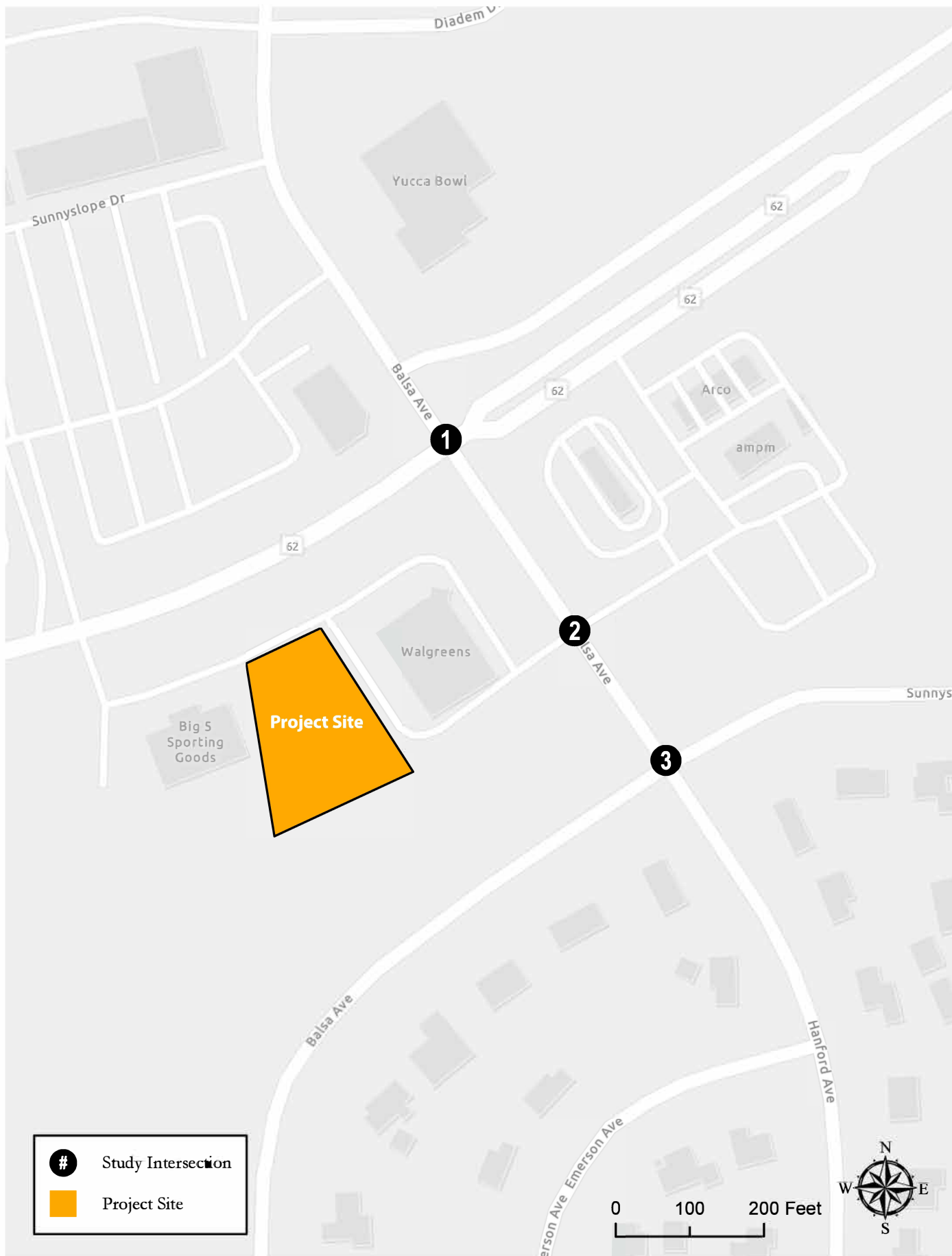


Yucca Valley Dutch Bros Project **Traffic Scoping Memorandum**



Figure 3
Project Trip Distribution





Yucca Valley Dutch Bros Project **Traffic Scoping Memorandum**



Figure 5
Project Study Area

Vehicle Miles Traveled (VMT) Screening

As of July 1, 2020, with the implementation of Senate Bill 743 (SB 743) and for California Environmental Quality Act (CEQA) purposes, the metric for evaluating transportation impacts shifted from Level of Service (LOS) to Vehicle Miles Traveled (VMT). VMT measures the total miles traveled by vehicles associated with a project and better aligns with California's climate, air quality, and public health goals. The shift to VMT supports policies that reduce greenhouse gas emissions, provide land use guidance for local jurisdictions, and encourage more sustainable transportation modes (like walking, biking, and transit) to reduce VMT.

Lead agencies are now required to evaluate whether a project will result in a significant increase in VMT. The San Bernadino County TIA Guidelines provide VMT analysis screening criteria to determine whether a project would be presumed to have a less-than-significant VMT impact without requiring further VMT analysis or modeling.

The following applicable screening criteria were analyzed to determine if the Project would be screened out from conducting a detailed VMT analysis:

- Project Type Screening
- Small Project Screening
- Transit Priority Area (TPA) Screening
- Low VMT Generating Area Screening

An evaluation of the above noted VMT screening criteria for the Project is provided below.

Project Type Screening

Projects which serve the local community and have the potential to reduce VMT should not be required to complete a VMT assessment. These projects are noted below:

- K-12 schools
- Local-serving retail less than 50,000 sq. ft.
- Local parks
- Day care centers
- Local serving gas stations
- Local serving banks
- Student housing projects
- Local serving community colleges that are consistent with the assumptions noted in the
- RTP/SCS

As noted above, the Project is a 1,025 SF coffee shop with a drive-through, which is less than the 50,000 sq. ft. threshold for a local serving retail space. Therefore, the Project Type screening criteria is met for the Project.

Small Project Screening

Based on the County TIA Guidelines, projects that generate less than 110 daily vehicle trips can be presumed to cause a less-than-significant impact and would not require a detailed VMT analysis. As noted previously on Table 1, the proposed Project is expected to generate more than 110 daily vehicle trips. Therefore, the Small Project screening criteria is not met for this Project.

Transit Priority Area Screening

Projects located within a Transit Priority Area (TPA) as determined by the most recent SCAG RTP/SCS can be presumed to cause a less-than-significant impact and would not require a detailed VMT analysis. Based on the SBCTA VMT Screening Tool (see **Attachment B**), the proposed Project is not located within a TPA. Therefore, the Transit Priority Area screening criteria is not met for this Project.

Low VMT Generating Area Screening

Based on the County TIA Guidelines, projects that are located in a low VMT generating area (4% below the County average VMT) can be presumed to have a less-than-significant impact and would not require further VMT analysis. Based on the SBCTA VMT Screening Tool (see Attachment B), the County average VMT per worker is 16.9. The VMT per worker in the Project's TAZ is 12.3, which is 27.2% lower than the County's average. Therefore, the Low VMT Generating Area screening criteria is met for this Project.

VMT Screening Findings and Conclusions

Based on review of the VMT screening criteria noted above, the Project meets the Project Type and Low VMT Generating Area screening criteria. Therefore, the Project would be presumed to have a less-than-significant VMT impact and no further VMT analysis is required for the Project.

Drive-Through Queuing Analysis Methodology

Drive-through queuing data collection will be collected at the following three existing Dutch Bros Coffee locations, which are comparable to the proposed location in that the existing locations have dual-drive-through lanes and have limited to no indoor seating:

- 44175 Jefferson Street, La Quinta, CA 92253
- 34051 Date Palm Drive, Cathedral City, CA 92234
- 81-776 Highway 111, Indio, CA 92201

Data collection will occur on one typical weekday and one typical weekend day at each location. Observations will be conducted during the morning (6:00–9:00 AM) and afternoon (2:00–5:00 PM) peak periods, which are representative of the highest customer demand. Queuing data will be recorded at 5-minute intervals to capture fluctuations in drive-through demand and to document queue dynamics throughout each period. Observers will record the maximum queue lengths observed during each interval.

The collected data will be used to determine the average, 85th-percentile, and maximum queue length for each location and each period to determine whether the proposed on-site queue storage is sufficient to accommodate observed peak demand. Findings will be summarized for each location, with supporting recommendations for operational or geometric improvements, if needed, to mitigate queuing or circulation issues.

Summary of Findings

The proposed Dutch Bros Coffee project is expected to generate approximately 358 daily trips, including 89 (44-in/45-out) AM peak hour trips and 30 (15-in/15-out) PM peak hour trips. As requested by Town staff, an intersection Level of Service (LOS) analysis will be conducted for the proposed Project.

Based on review of the VMT screening criteria in the County TIA Guidelines, the Project meets the Project Type and Low VMT Generating Area screening criteria. Therefore, the Project would be presumed to have a less-than-significant VMT impact and no further VMT analysis is required for the Project.

A drive-through queuing analysis will be conducted for the Project to determine whether the proposed on-site queue storage is sufficient to accommodate observed peak demand. Drive-through queuing data collection will be conducted at three existing Dutch Bros Coffee locations.

Attachment A - Trip Rates and Pass-By Reduction Factors from the ITE Trip Generation Manual (11th Edition)

This land use includes any coffee and donut restaurant that has only drive-through window service. A patron cannot walk into the shop and purchase items. The restaurant sells freshly brewed coffee (along with coffee-related accessories) and a variety of food/drink products such as donuts, bagels, breads, muffins, cakes, sandwiches, wraps, salads, and other hot and cold beverages. The restaurant marketing and sales may emphasize coffee beverages over food (or vice versa).

The coffee/donut shops contained in this land use typically hold long store hours (more than 15 hours) with an early morning opening.

Coffee/donut shop without drive-through window (Land Use 936) and coffee/donut shop with drive-through window (Land Use 937) are related uses.

The sites were surveyed in the 1990s, the 2000s, and the 2010s in Arizona, New Hampshire, Oregon, and Washington.

514, 644, 755, 981, 1028

Coffee/Donut Shop with Drive-Through Window and No Indoor Seating (938)

Vehicle Trip Ends vs: Drive-Through Lanes On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 8

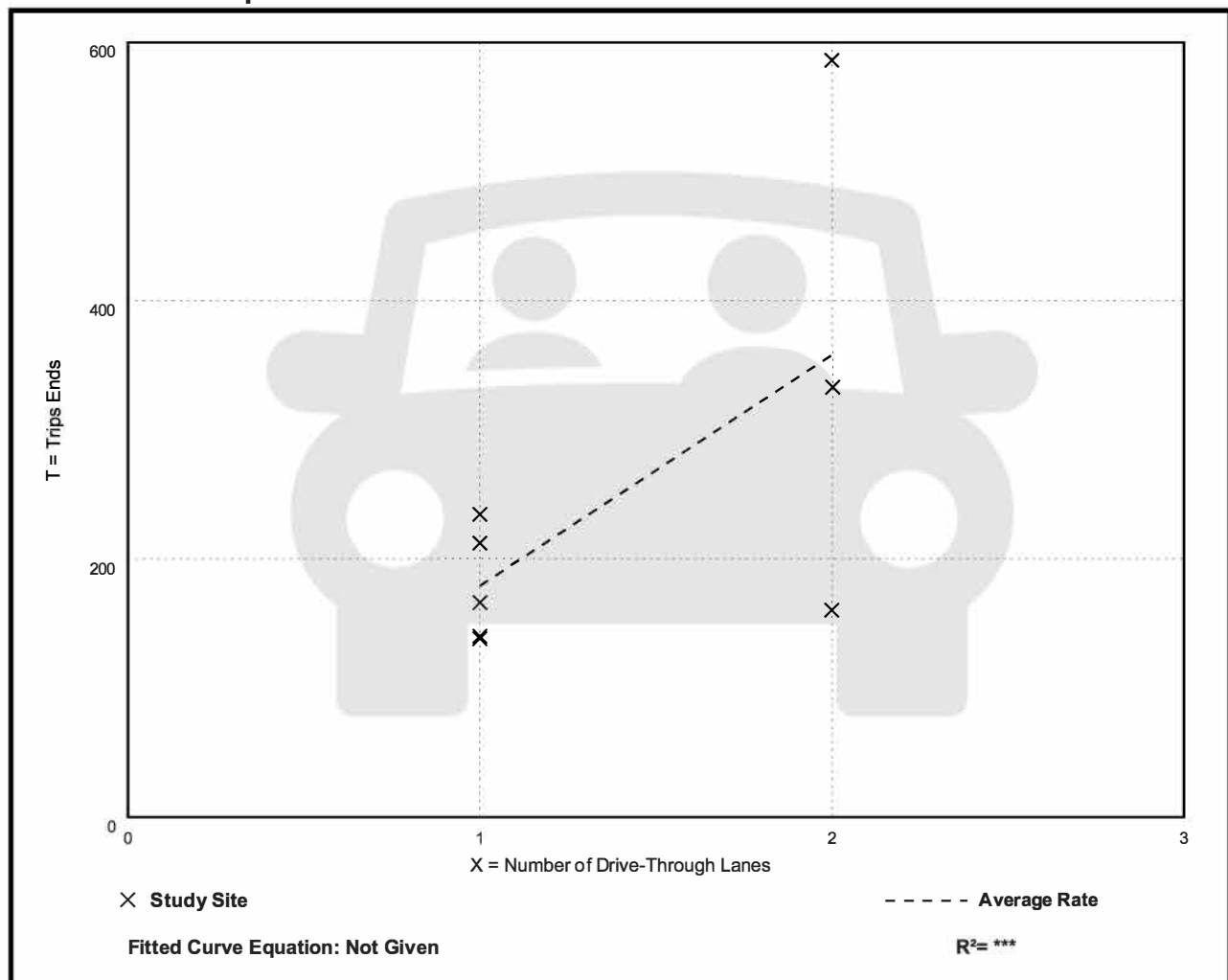
Avg. Num. of Drive-Through Lanes: 1

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Drive-Through Lane

Average Rate	Range of Rates	Standard Deviation
179.00	80.00 - 293.00	74.48

Data Plot and Equation



Coffee/Donut Shop with Drive-Through Window and No Indoor Seating (938)

Vehicle Trip Ends vs: Drive-Through Lanes

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 20

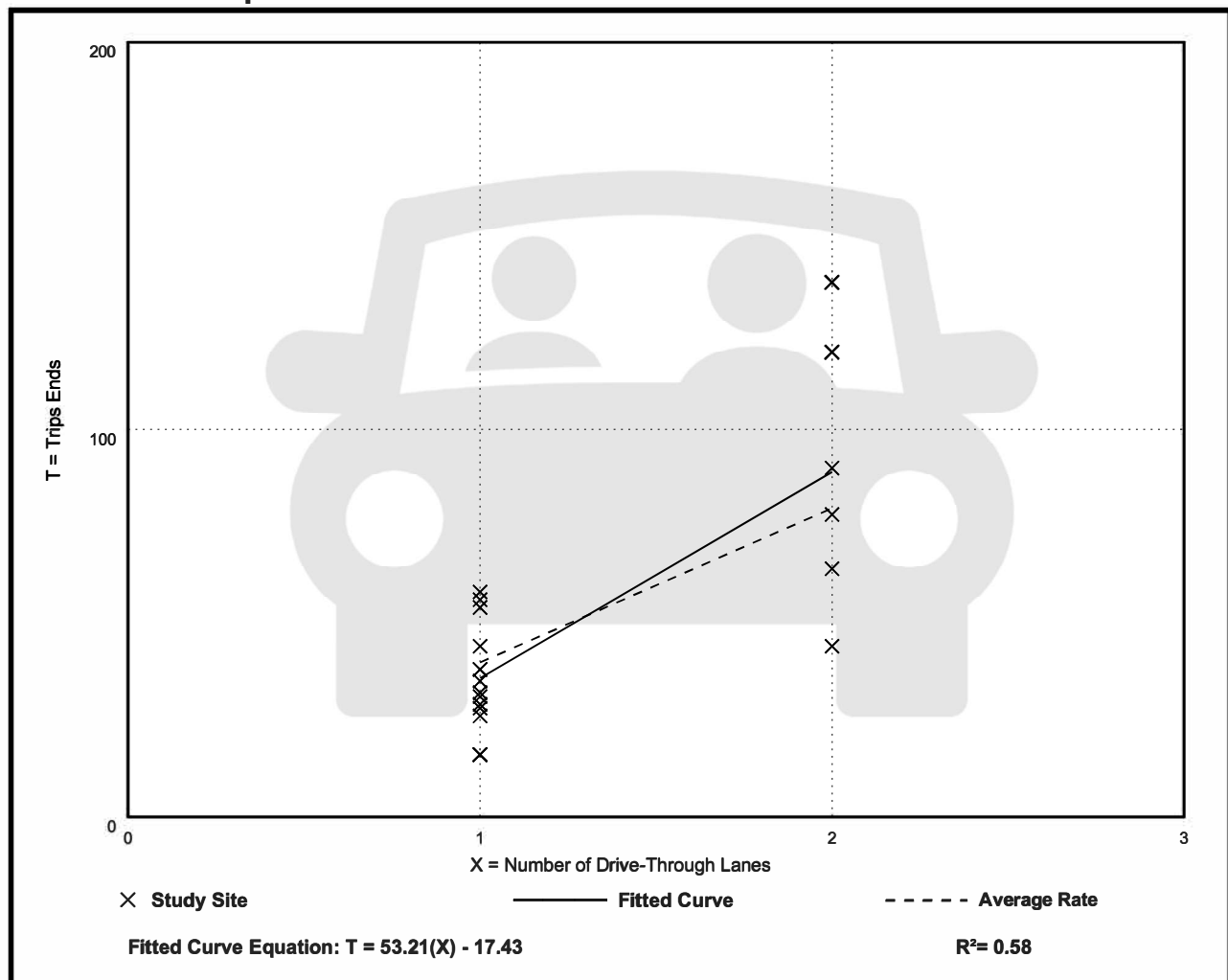
Avg. Num. of Drive-Through Lanes: 1

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Drive-Through Lane

Average Rate	Range of Rates	Standard Deviation
39.81	16.00 - 69.00	15.44

Data Plot and Equation



Coffee/Donut Shop with Drive-Through Window and No Indoor Seating (938)

Vehicle Trip Ends vs: Drive-Through Lanes

On a: **Weekday,**

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 8

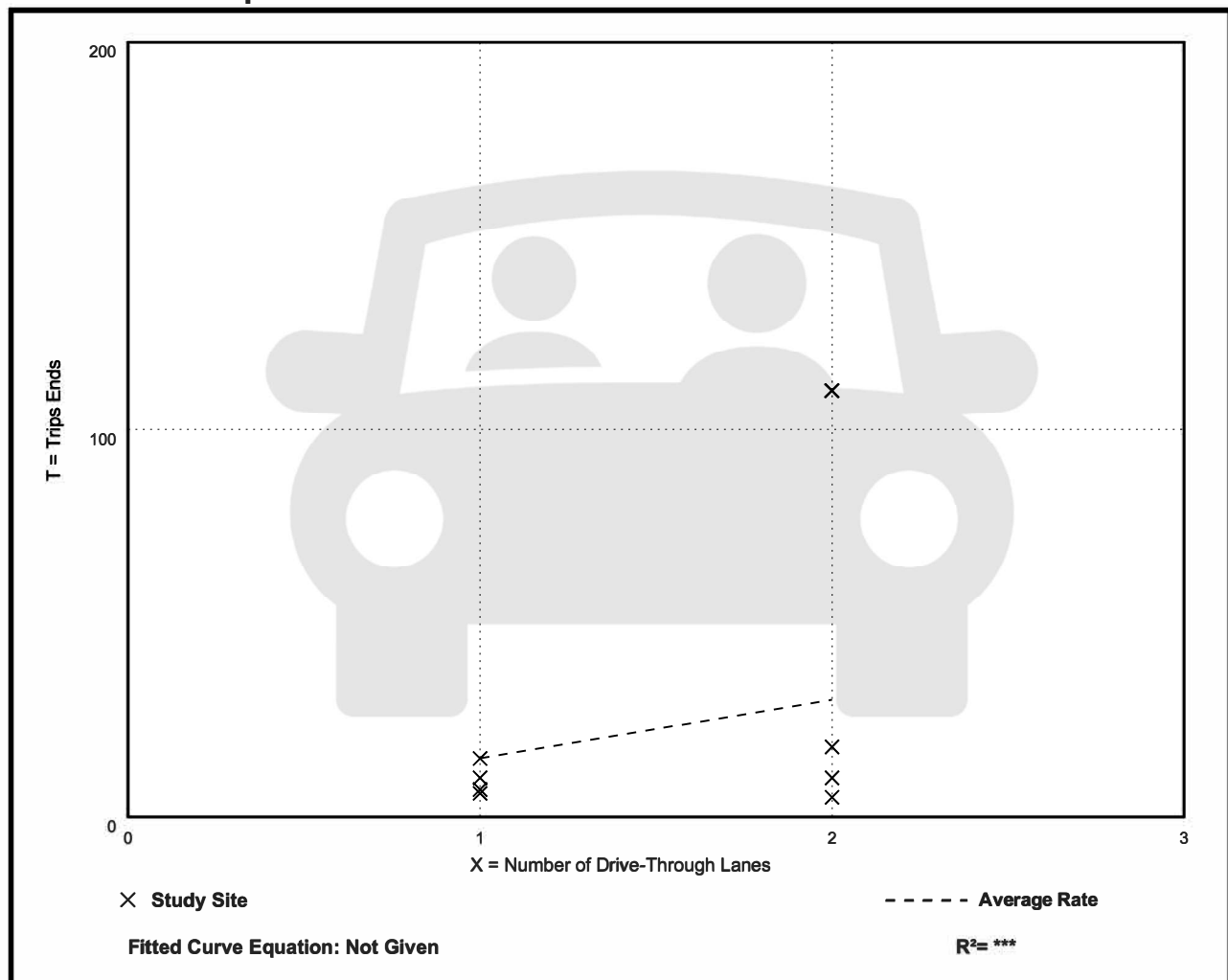
Avg. Num. of Drive-Through Lanes: 2

Directional Distribution: 50% entering, 50% exiting

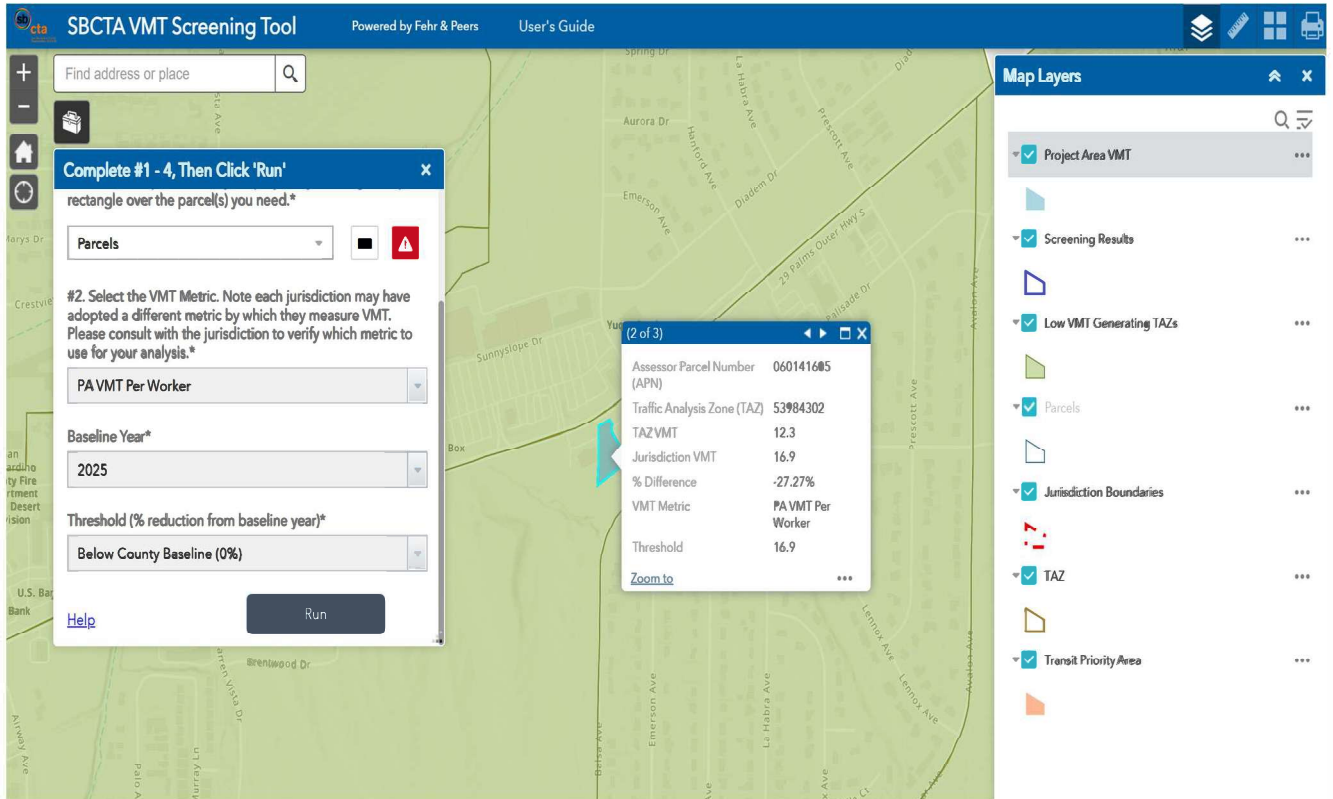
Vehicle Trip Generation per Drive-Through Lane

Average Rate	Range of Rates	Standard Deviation
15.08	2.50 - 55.00	19.41

Data Plot and Equation



Attachment B - SBCTA VMT Screening Tool



SBCTA VMT Screening Tool Powered by Fehr & Peers User's Guide

Find address or place

Complete #1 - 4, Then Click 'Run'

rectangle over the parcel(s) you need.*

Parcels

#2. Select the VMT Metric. Note each jurisdiction may have adopted a different metric by which they measure VMT. Please consult with the jurisdiction to verify which metric to use for your analysis.*

PA VMT Per Worker

Baseline Year*

2025

Threshold (% reduction from baseline year)*

Below County Baseline (0%)

Run

[Help](#)

Map Layers

- ☒ Project Area VMT
- ☒ Screening Results
- ☒ Low VMT Generating TAZs
- ☒ Parcels
- ☒ Jurisdiction Boundaries
- ☒ TAZ
- ☒ Transit Priority Areas

(2 of 3)

Assessor Parcel Number (APN)	060141605
Traffic Analysis Zone (TAZ)	53984302
TAZ VMT	12.3
Jurisdiction VMT	16.9
% Difference	-27.27%
VMT Metric	PA VMT Per Worker
Threshold	16.9

[Zoom to](#)

Appendix B - Signal Timing Sheets

Location: SR62 @ Balsa Ave

System:

District: 08

Designed By:

Installed By: Safwan Sayed

Master At:

I/C:

Service Info:

Timing Change:

12/22/2022

Date Start:

11/24/1992

Date End:

Designed:

Installed:

11/24/1992

Intersection Layout

FLASH

1) SR62 WB Left to Balsa SB

P 2) SR62 EB

H 3)

A 4) Balsa SB

S 5) SR62 EB Left to Balsa NB

E 6) SR62 WB

7)

8) Balsa NB

[R]

[R]

[]

[R]

[R]

[R]

[]

[R]

O A)

V B)

E C)

R D)

L E)

A F)

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Comments and Notes:

Build 002

Implement the LPI for the PED Phases

Add Dummy PED Phase 8 for LPI Purposes

RAM Checksum

Page 2: 1B0E Page 8: 9D96

Page 3: EC04 Page 9: D2FD

Page 4: 2675 Page 10: E0F4

Page 5: 191A Page 11: E559

Page 6: 191A Page 12: D68F

Page 7: 4A14 Page 13: 86F7

Cabinet
332
Configuration
CALTRANS

Phases (2-1-1-1)	
Permitted	1 2 . 4 5 6 . 8
Restricted	.....

Phase Recalls (2-1-1-2)	
Vehicle Min	. 2 . . . 6 . .
Vehicle Max	.....
Pedestrian	.....
Bicycle	.....

Phase Locks (2-1-1-3)	
Red	.....
Yellow	.....
Force/Max	.....

Phase Features (2-1-1-4)	
Double Entry	. . . 4 . . . 8
Rest In Walk	.....
Rest In Red	.....
Walk 2	.....
Max Green 2	.....
Max Green 3	.....

CONFIGURATION PHASE FLAGS

Startup (2-1-1-5)	
First Green Phases	. 2 . . . 6 . .
Yellow Start Phases	.....
Vehicle Calls	1 2 . 4 5 6 . 8
Pedestrian Calls	. 2 . 4 . 6 . 8
Yellow Start Overlaps	.....
Startup All-Red	6.0

Call To Phase (2-1-2-1)		Omit On Green
1	.....	1
2	.....	2
3	.....	3
4	.....	4
5	.....	5
6	.....	6
7	.....	7
8	.....	8

Flashing Colors (2-1-2-2)	
Yellow Flash Phases	.....
Yellow Flash Overlap	.....
Flash In Red Phases	.....
Flash In Red Overlaps	.....

Special Operation (2-1-2-3)	
Single Exit Phase	.....
Driveway Signal Phases	.....
Driveway Signal Overlaps	.....
Leading Ped Phases	. 2 . 4 . 6 . 8

Protected Permissive (2-1-2-4)	
Protected Permissive	.....

Pedestrian (2-1-3)	
P1	.....
P2	. 2
P3	.....
P4	. . . 4
P5	.....
P6	 6 . .
P7	.....
P8	 8

Overlap (2-1-4)			
Overlap	Parent	Omit	No Start
A	.....	.....	.....
B	.....	.....	.....
C	.....	.....	.....
D	.....	.....	.....
E	.....	.....	.....
F	.....	.....	.....

P H A S E T I M I N G

Phase (2-2)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 1 ---	0	4	0	4	0	4	0	0
Flash Don't Walk	0	14	0	23	0	21	0	0
Minimum Green	10	10	0	10	10	10	0	10
Det Limit	0	0	0	0	0	0	0	0
Max Initial	0	0	0	0	0	0	0	0
Max Green 1	20	40	0	25	20	40	0	25
Max Green 2	0	0	0	0	0	0	0	0
Max Green 3	0	0	0	0	0	0	0	0
Extension	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0
Maximum Gap	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0
Minimum Gap	2.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0
Add Per Vehicle	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0
Reduce Gap By	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Reduce Every	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.7	5.0	3.0	4.1	3.7	5.0	3.0	4.1
All-Red	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Ped/Bike (2-3)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 2 ---	0	0	0	0	0	0	0	0
Delay/Early Walk	0	3	0	3	0	3	0	3
Solid Don't Walk	0	0	0	0	0	0	0	0
Bike Green	0	0	0	0	0	0	0	0
Bike All-Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

OVERLAP TIMING

Overlap (2-4)	A	B	C	D	E	F
Green	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	5.0	5.0	5.0	5.0	5.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Red Revert

Red Revert (2-5)	
Time	5.0
All-Red Sec/Min (2-6)	5.0
All-Red Sec/Min:	OFF

Max 2 Extension

Max/Gap Out (2-7)	
Max Cnt	0
Gap Cnt	0

Local Plan 1...9 (7-1) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

	Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 1	Green Factor	100	.....	82			10	43		30	10	43		30
Plan 2	Green Factor	110	1....6..	67			11	50		30	11	52		30
Plan 3	Green Factor	120	.....	4			13	60		30	13	60		30
Plan 4	Green Factor	120	.....	76			13	60		30	13	60		30
Plan 5	Green Factor		.....											
Plan 6	Green Factor		.....											
Plan 7	Green Factor		.....											
Plan 8	Green Factor		.....											
Plan 9	Green Factor	120	1....6..	33			13	58		30	13	60		30

Local Plan 1...9 (7-1) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 1	. 2 . 4 . 6 . 8	. 2 ... 6 ..	.....	.....	.....	.....	.....	.....
Plan 2	1 .. 4 . 6 . 8	. 2 ... 6 ..	.....	.....	.....	.....	.....	.....
Plan 3	. 2 . 4 . 6 . 8	. 2 ... 6 ..	.....	.....	.....	.....	.....	.....
Plan 4	. 2 . 4 . 6 . 8	. 2 ... 6 ..	.....	.....	.....	.....	.....	.....
Plan 5	.....	.....	.....	.....	.....	.....	.....	.....
Plan 6	.....	.....	.....	.....	.....	.....	.....	.....
Plan 7	.....	.....	.....	.....	.....	.....	.....	.....
Plan 8	.....	.....	.....	.....	.....	.....	.....	.....
Plan 9	1 .. 4 . 6 . 8	. 2 ... 6 ..	.....	.....	.....	.....	.....	.....

Master Timer Sync (7-A)	
Enable in Plans	
1-9	.....
11-19	.....
21-29	.....

Master Sub Master	
Input	
Output	

FREE PLAN PHASE FLAGS

(7-E) Free	
Lag	Omit
. 2 . 4 . 6 . 8	.....
Veh Min	Veh Max
. 2 ... 6 ..	.....
Ped	Bike
.....	
Cond	Cond Grn
.....	10

MANUAL COMMANDS

Manual Plan (4-1)		Plan: 1-9	
Plan	Offset	15 or 254 = Flash	
	A	14 or 255 = Free	
		Offset A, B, or C	

Special Function Override (4-2)			
#	Control	#	Control
1	NORMAL	3	NORMAL
2	NORMAL	4	NORMAL
Detector Reset		(4-3)	
Local Manual (4-4)		OFF	

Local Plan 11...19 (7-2) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

	Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 11	Green Factor		.....											
Plan 12	Green Factor		.....											
Plan 13	Green Factor		.....											
Plan 14	Green Factor		.....											
Plan 15	Green Factor		.....											
Plan 16	Green Factor		.....											
Plan 17	Green Factor		.....											
Plan 18	Green Factor		.....											
Plan 19	Green Factor		.....											

Local Plan 11...19 (7-2) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 11								
Plan 12								
Plan 13								
Plan 14								
Plan 15								
Plan 16								
Plan 17								
Plan 18								
Plan 19								

Local Plan 21...29 (7-3) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

	Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 21	Green Factor		.....											
Plan 22	Green Factor		.....											
Plan 23	Green Factor		.....											
Plan 24	Green Factor		.....											
Plan 25	Green Factor		.....											
Plan 26	Green Factor		.....											
Plan 27	Green Factor		.....											
Plan 28	Green Factor		.....											
Plan 29	Green Factor		.....											

Local Plan 21...29 (7-3) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 21								
Plan 22								
Plan 23								
Plan 24								
Plan 25								
Plan 26								
Plan 27								
Plan 28								
Plan 29								

180

Failure Times(5-3)	Minutes	Failure Override (5-4)									
Maximum On Time		Detectors 1-8									
Fail Reset Time		Detectors 9-16									
		Detectors 17-24									
		Detectors 25-32									
		Detectors 33-40									
		Detectors 41-44									

System Detector Assignment (5-5)											
Sys Det	1	2	3	4	5	6	7	8			
Det Num											
Sys Det	9	10	11	12	13	14	15	16			
Det Num											

CIC Operation (5-6-1)	
Enable in Plans	.....

CIC Values (5-6-2)			
Smoothing	0.66	Occupancy	Demand
Multiplier	4.0	0.33	
Exponent	0.50	1.00	

Detector-to-Phase Assignment (5-6-3)								
Sys Det	1	2	3	4	5	6	7	8
Phase								
Sys Det	9	10	11	12	13	14	15	16
Phase								

Input File Port-Bit Assignments

332 Cabinet - For Reference Only

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I-3.2	1.1	4.5	2.1	3.4	1.3	4.7	2.3	3.6	4.1	6.6	5.1	5.2	6.7	
	7.2	1.5	6.2	7.4	7.6	1.7	6.4	7.8	3.8	4.2	2.7	5.3	5.4	6.8
J-3.1	1.2	4.6	2.2	3.3	1.4	4.8	2.4	3.5	4.3	2.8	5.5	5.6	2.5	
	7.1	1.6	6.3	7.3	7.5	1.8	6.5	7.7	3.7	4.4	6.1	5.7	5.8	2.6

Printed: 6/9/2025

TOD SCHEDULE

Table 1 (8-2-1)				Table 2 (8-2-2)				Table 3 (8-2-3)				Table 4 (8-2-4)				Table 5 (8-2-5)				Table 6 (8-2-6)			
Time	Plan	OS		Time	Plan	OS		Time	Plan	OS		Time	Plan	OS		Time	Plan	OS		Time	Plan	OS	
0530	1	A		0900	1	A				A				A				A				A	
0800	2	A		1830	255	A				A				A				A				A	
1100	3	A				A				A				A				A				A	
1600	4	A				A				A				A				A				A	
1830	2	A				A				A				A				A				A	
2000	255	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				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	

WEEKDAY ASSIGNMENT

Weekday Table Assignments (8-2-7)						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	1	1	1	1	2	2

HOLIDAY TABLES

Floating Holiday Table (8-2-8)			
#	Mnth	Week	Table
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Fixed Holiday Table (8-2-9)			
#	Mnth	Day	Table
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Solar Clock Data (8-4)	
North Latitude	34
West Longitude	118
Local Time Zone	8

Sabbatical Clock (8-5)	
Hebrew	Ped Recall
Sabbath	.....
Holiday	.....

Daylight Saving (8-6)	
Enabled	YES

TOD FUNCTIONS

TOD Functions (8-3)			
#	Start	End	DOW
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			

Action Codes:

- 0. None
- 1. Permitted
- 2. Restricted
- 4. Veh Min Recall
- 5. Veh Max Recall
- 6. Ped Recall
- 7. Bike Recall
- 8. Red Lock
- 9. Yellow Lock
- 10. Force/Max Lock
- 11. Double Entry
- 12. Y-Coord C
- 13. Y-Coord D
- 14. Free
- 15. Flashing
- 16. Walk 2
- 17. Max Green 2

Action Codes:

- 18. Max Green 3
- 19. Rest in Walk
- 20. Rest in Red
- 21. Free Lag Phases
- 22. Special Functions
- 23. Truck Preempt
- 24. Conditional Service
- 25. Conditional Service
- 26. Leading Ped
- 27. Traffic Actuated Max 2
- 41. Protected Permissive
- 42. Protected Permissive

Action Code = Phases added to normal setting

100+Action Code = Phases removed

200+Action Code = Phases replaced

COMMUNICATIONS

C2 (6-1-1)						
Address					7	
Protocol				AB3418		
Access Level			0			
Baud			1200			
Parity			NONE			
Data Bits			8			
Stop Bits			1			
RTS On Time			20			
RTS Off Time			20			
Handshaking			NORMAL			

C20 (6-1-2)						
Address				AB3418		
Protocol				AB3418		
Access Level			0			
Baud			1200			
Parity			NONE			
Data Bits			8			
Stop Bits			1			
RTS On Time			20			
RTS Off Time			20			
Handshaking			NORMAL			

C21 (6-1-3)						
Address				AB3418		
Protocol				AB3418		
Access Level			0			
Baud			1200			
Parity			NONE			
Data Bits			8			
Stop Bits			1			
RTS On Time			20			
RTS Off Time			20			
Handshaking			NORMAL			

Access Levels:

- 0-Full Access
- 1-Status Only
- 2-Status, Set Pattern, Time
- 3-Status, Set Pattern, Time, Manual Plan
- 4-Reserved
- 5-Full Access with No Set Pattern
- 6-Full Access with No Set Time
- 7-Full Access with No Set Pattern, Manual Plan
- 8-Full Access with No Set Time, Pattern, Manual Plan

SOFT LOGIC

Soft Logic (6-2)						
#	Data	OP	Data	OP	Data	Data
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

*Refer to User's Manual for Data and OP Codes

CALLBACK NUMBERS

Callback Numbers (6-3...3)						
Line Out						
Local Toll						
Long Distance						
Delay			10			
Area Code						
Phone Number						
Line Out						
Local Toll						
Long Distance						
Delay			10			
Area Code						
Phone Number						
Line Out						
Local Toll						
Long Distance						
Delay			10			
Area Code						
Phone Number						

NETWORK

Network (6-4)						
Address				1		
Protocol				AB3418		
Port				27013		
Type				STATIC		
Central Access				6		
Field Access				7		
IP Address		192		168		0
Netmask		255		255		0
Broadcast		192		168		0
Gateway		192		168		0

RAILROAD PREEMPTION

RR 1	(3-1-1)	Timing	Phase Flags (3-1-2)				Pedestrian Flags (3-1-3)				Overlap Flags (3-1-4)			
	Delay		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash			
	Clear 1	10	. 2 . . 5 . .					. 2 . 4 . 6 . 8						
	Clear 2													
	Clear 3													
	Hold				1 2 3 4 5 6 7 8					A B C D E F				
	Exit		Configuration (3-1-6)											
	Min Grn		Exit Parameters (3-1-5)											
	Ped Clr		Phase Green	Overlap Green	Vehicle Call	Ped Call	Primary Port	Secondary Port	Latching	Power-Up				
					1 2 3 4 5 6 7 8	. 2 . 4 . 6 . 8	2.5	0.0	YES	FLASHING				

RR 2	(3-2-1)	Timing	Phase Flags (3-2-2)				Pedestrian Flags (3-2-3)				Overlap Flags (3-2-4)			
	Delay		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash			
	Clear 1	10	. . . 4 . . 7 .					. 2 . 4 . 6 . 8						
	Clear 2													
	Clear 3													
	Hold		1 2 3 . . 6 . .			. 2 . . . 6 . .		 4 . . . 8						
	Exit													
	Min Grn													
	Ped Clr													
Exit Parameters (3-2-5)														
			Phase Green	Overlap Green	Vehicle Call	Ped Call								
					. . . 4 . . 7 .									
Configuration (3-2-6)														
			Primary Port	Secondary Port	Latching	Power-up								
			2.6	0.0	YES	DARK								

EMERGENCY VEHICLE PREEMPTION

EVA (3-A)	Preempt Timers		Phase Green		Overlap Green	
	Delay	Clear	Max			
		10	45	.2 . . 5 . . .		
	Port	Latching	NO	Phase Termination	ADVANCE	
	5.5					

EVB (3-B)	Preempt Timers		Phase Green		Overlap Green	
	Delay	Clear	Max			
		10	45	. . . 4 . . 7 .		
	Port	Latching	NO	Phase Termination	ADVANCE	
	5.6					

EVC (3-C)	Preempt Timers		Phase Green		Overlap Green	
	Delay	Clear	Max			
		10	45	1 6 . .		
	Port	Latching	NO	Phase Termination	ADVANCE	
	5.7					

EVD (3-D)	Preempt Timers		Phase Green		Overlap Green	
	Delay	Clear	Max			
		10	45	. . . 3 8		
	Port	Latching	NO	Phase Termination	ADVANCE	
	5.8					

INPUTS

7 Wire I/C (2-1-5-1)					
		Input	Port	Input	Port
Enable	NO	R1	3.8	Free	3.6
Max ON		R2	3.5	D2	2.8
Max OFF		R3	3.7	D3	6.1

Cabinet Status (2-1-5-3)	
Input	Port
Flash Bus	
Door Ajar	
Flash Sense	6.7
Stop Time	6.8

Special Function (2-1-5-4)	
Input	Port
1	
2	
3	
4	

Manual Control (2-1-5-2)	
Input	Port
Manual Advance	
Advance Enable	

Battery Backup (2-1-5-5)	
Port	Operation
2.7	FLASHING

Y-Coordination (2-1-5-6)	
Port C	Port D
6.1	2.8

OUTPUTS

Loadswitch Assignments (2-1-6)							+
A	1	2	22	3	4	24	9
B	5	6	26	7	8	28	10
X	13	14	0	11	12	0	0

Loadswitch Codes:

- 0 Unused (no output)
- 1-8 Vehicle 1-8
- 9-14 Overlap A-F
- 21-28 Ped 1-8
- 41-47 Special Functions
- 41 Protected Permissive Flashing Phase 1
- 43 Protected Permissive Flashing Phase 3
- 45 Protected Permissive Flashing Phase 5
- 47 Protected Permissive Flashing Phase 7
- 51-57 Special Functions
- 71-72 Seven Wire I/C
- + middle output of loadswitches 3 and 6
- Channel 9 and 10

TRANSIT PRIORITY

Local Plans (3-E) 1...9 11...19									
Plan 1	Green Factor	Early Green	Green Extend	Inhibit Cycles	Phase 1 Minimum	Phase 2 Minimum	Phase 3 Minimum	Phase 4 Minimum	Phase 5 Minimum
Plan 2	Green Factor								
Plan 3	Green Factor								
Plan 4	Green Factor								
Plan 5	Green Factor								
Plan 6	Green Factor								
Plan 7	Green Factor								
Plan 8	Green Factor								
Plan 9	Green Factor								

Plan 11	Green Factor								
Plan 12	Green Factor								
Plan 13	Green Factor								
Plan 14	Green Factor								
Plan 15	Green Factor								
Plan 16	Green Factor								
Plan 17	Green Factor								
Plan 18	Green Factor								
Plan 19	Green Factor								

Transit Priority Configuration (3-E-A)				Indicator Output		
Enable in Plans	Input	Type	Stop	Go		
Plan 1-9	0.0	OPT	0	0		
Plan 11-19	0.0	OPT	0	0		

Queue Jump (3-E-B)			
Grn Hold	Hold Phase		
			
			

Free Plans (3-E-E)			
Max Grn Hold	Hold Phase		
			

Access Utilities (9-5)	
Password	***
Timeout	30

YELLOW YIELD COORDINATION

Force-Offs											
Y-Coord Plans (7-C,D)		Long Grn	No Grn	Offset	Perm	-1-	-2-	-3-	-4-	-5-	-6-
Plan C											
Plan D											

TRUCK PRIORITY

Truck Priority (3-F)		Passage	CarryOver	Clearance	Next Priority	Phase Green	Det 2 Port	Det 3 Port	Det 4 Port	Sign Output	Slave Input	Slave Output
							0.0	0.0	0.0	0	0.0	0

Appendix C - ITE Trip Generation Rates and Reduction Excerpts

Coffee/Donut Shop with Drive-Through Window and No Indoor Seating (938)

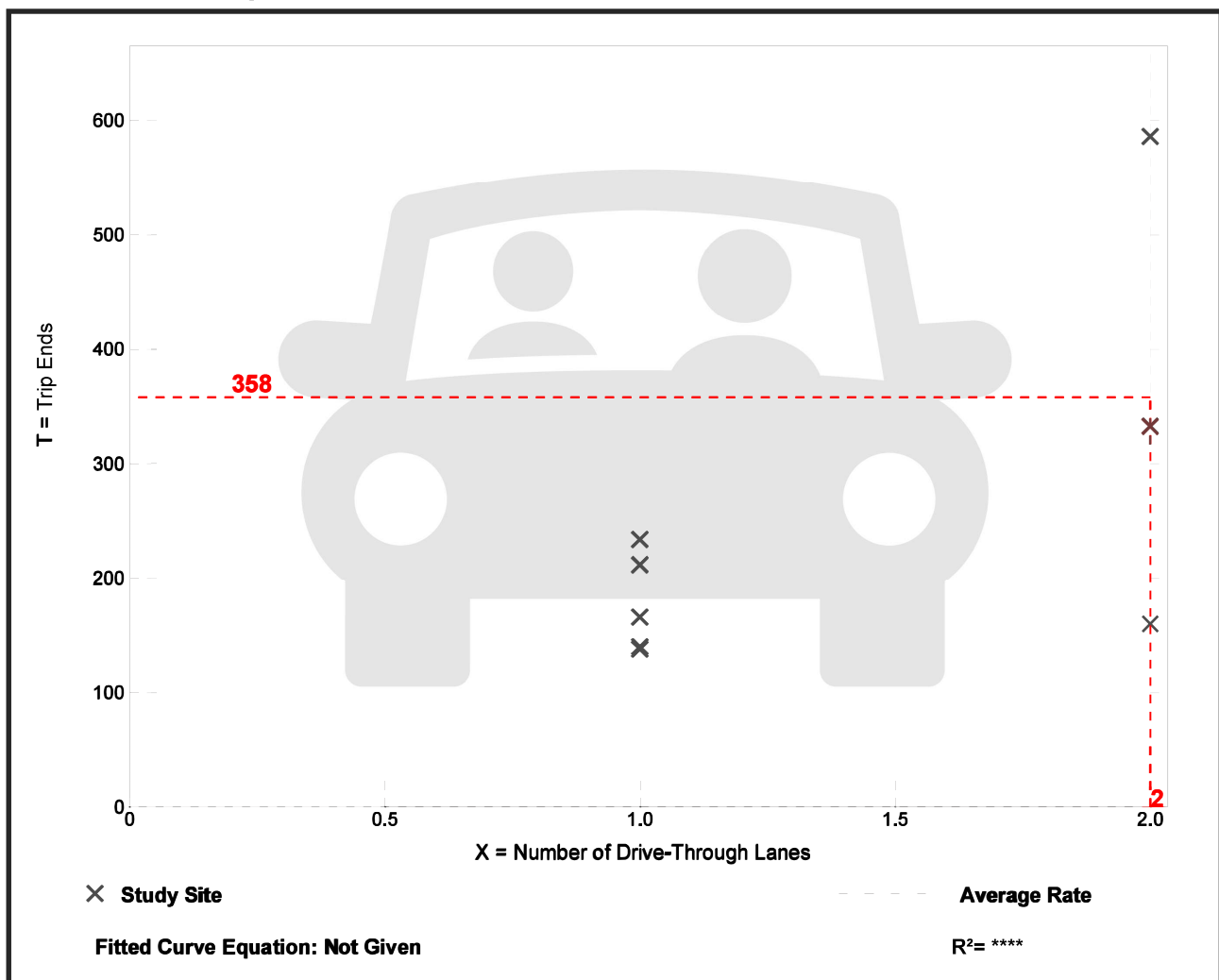
Vehicle Trip Ends vs: Drive-Through Lanes
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 8
Avg. Num. of Drive-Through Lanes: 1
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Drive-Through Lane

Average Rate	Range of Rates	Standard Deviation
179.00	80.00 - 293.00	74.48

Data Plot and Equation



Coffee/Donut Shop with Drive-Through Window and No Indoor Seating (938)

Vehicle Trip Ends vs: Drive-Through Lanes

On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 20

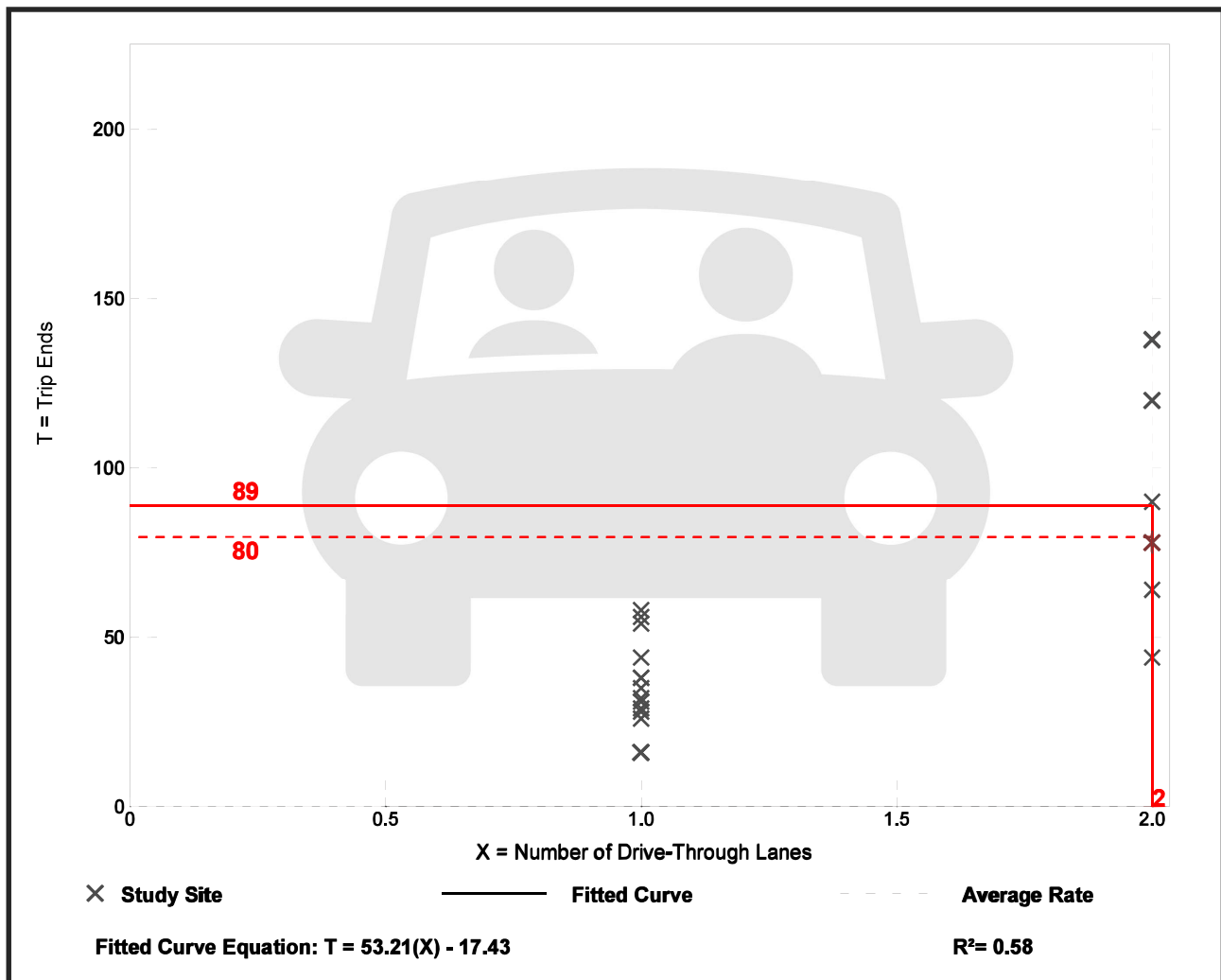
Avg. Num. of Drive-Through Lanes: 1

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Drive-Through Lane

Average Rate	Range of Rates	Standard Deviation
39.81	16.00 - 69.00	15.44

Data Plot and Equation



Coffee/Donut Shop with Drive-Through Window and No Indoor Seating (938)

Vehicle Trip Ends vs: Drive-Through Lanes

On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 8

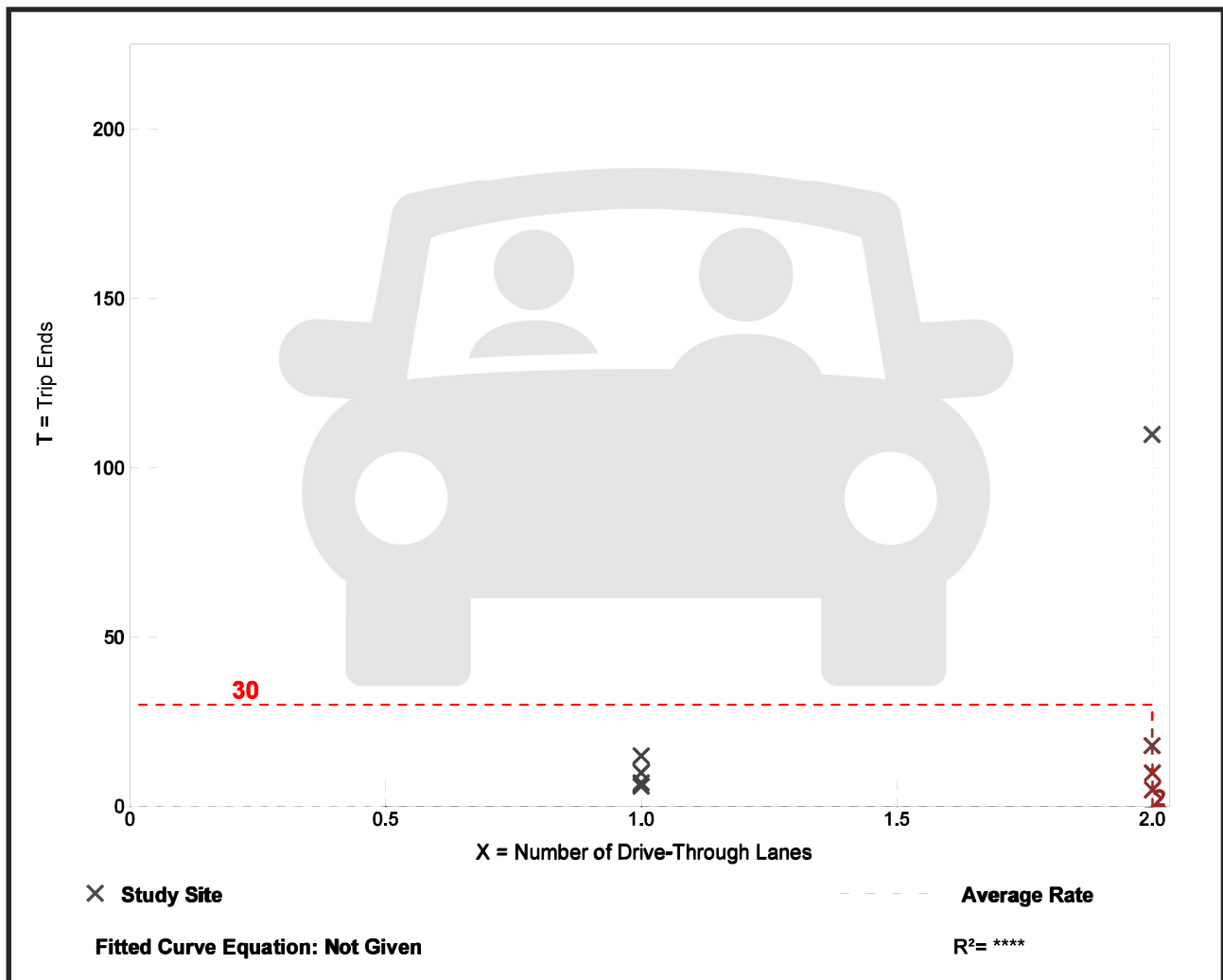
Avg. Num. of Drive-Through Lanes: 2

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Drive-Through Lane

Average Rate	Range of Rates	Standard Deviation
15.08	2.50 - 55.00	19.41

Data Plot and Equation



Vehicle Pass-By Rates by Land Use

Source: ITE *Trip Generation Manual*, 11th Edition

[illegible]

Appendix D - Existing Counts

National Data & Surveying Services

Intersection Turning Movement Count

Location: Balsa Ave & 29 Palms Hwy/SR 62
City: Yucca Valley
Control: Signalized

Project ID: 25-030031-001
Date: 6/10/2025

		Data - Total																	
NS/EW Streets:		Balsa Ave				Balsa Ave				29 Palms Hwy/SR 62				29 Palms Hwy/SR 62					
AM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
		1 NL	2 NT	0 NR	0 NU	1 SL	1 ST	1 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU		
	7:00 AM	16	0	1	0	4	8	7	0	1	92	2	0	0	116	1	2	250	
	7:15 AM	7	4	0	0	7	2	4	0	0	140	0	0	3	99	3	1	270	
	7:30 AM	9	2	2	0	5	5	1	0	0	135	1	0	3	130	0	3	296	
	7:45 AM	16	10	4	0	5	7	5	0	2	143	6	0	7	146	6	3	360	
	8:00 AM	11	3	4	0	11	12	4	0	3	160	4	0	4	161	5	2	384	
	8:15 AM	11	4	3	0	13	6	4	0	2	116	4	0	6	126	4	4	303	
	8:30 AM	16	4	5	0	10	6	3	0	3	139	0	0	3	157	3	3	352	
	8:45 AM	13	6	4	0	12	8	10	0	4	145	7	0	5	136	10	4	364	
TOTAL VOLUMES :		NL 99	NT 33	NR 23	NU 0	SL 67	ST 54	SR 38	SU 0	EL 15	ET 1070	ER 24	EU 0	WL 31	WT 1071	WR 32	WU 22	TOTAL 2579	
APPROACH %'s :		63.87%	21.29%	14.84%	0.00%	42.14%	33.96%	23.90%	0.00%	1.35%	96.48%	2.16%	0.00%	2.68%	92.65%	2.77%	1.90%		
PEAK HR :		08:00 AM - 09:00 AM																TOTAL	
PEAK HR VOL :		51	17	16	0	46	32	21	0	12	560	15	0	18	580	22	13	1403	
PEAK HR FACTOR :		0.797	0.708	0.800	0.000	0.885	0.667	0.525	0.000	0.750	0.875	0.536	0.000	0.750	0.901	0.550	0.813	0.913	
		0.840				0.825				0.879				0.920					
PM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
		1 NL	2 NT	0 NR	0 NU	1 SL	1 ST	1 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU		
	4:00 PM	22	7	8	0	22	21	6	0	10	142	11	0	6	194	17	4	470	
	4:15 PM	11	16	10	0	11	20	15	0	4	159	18	0	11	170	13	4	462	
	4:30 PM	25	14	6	0	25	24	6	0	5	176	10	0	9	186	6	0	492	
	4:45 PM	13	10	6	0	23	16	6	0	4	189	19	0	6	183	13	2	490	
	5:00 PM	18	16	6	0	13	15	7	0	8	177	12	0	6	174	9	5	466	
	5:15 PM	12	16	9	0	18	20	9	0	4	201	10	0	6	166	9	3	483	
	5:30 PM	18	15	5	0	23	20	8	0	3	179	11	0	6	142	9	3	442	
	5:45 PM	20	17	4	0	11	16	2	0	3	155	11	0	10	162	10	1	422	
TOTAL VOLUMES :		NL 139	NT 111	NR 54	NU 0	SL 146	ST 152	SR 59	SU 0	EL 41	ET 1378	ER 102	EU 0	WL 60	WT 1377	WR 86	WU 22	TOTAL 3727	
APPROACH %'s :		45.72%	36.51%	17.76%	0.00%	40.90%	42.58%	16.53%	0.00%	2.70%	90.60%	6.71%	0.00%	3.88%	89.13%	5.57%	1.42%		
PEAK HR :		04:30 PM - 05:30 PM																TOTAL	
PEAK HR VOL :		68	56	27	0	79	75	28	0	21	743	51	0	27	709	37	10	1931	
PEAK HR FACTOR :		0.680	0.875	0.750	0.000	0.790	0.781	0.778	0.000	0.656	0.924	0.671	0.000	0.750	0.953	0.712	0.500	0.981	
		0.839				0.827				0.948				0.960					

National Data & Surveying Services

Intersection Turning Movement Count

Location: Balsa Ave & Walgreens/Sonic Drive-In Dwy
City: Yucca Valley
Control: 1-Way Stop(WB)

Project ID: 25-030031-002
Date: 6/10/2025

Data - Total

NS/EW Streets:	Balsa Ave				Balsa Ave				Walgreens/Sonic Drive-In Dwy				Walgreens/Sonic Drive-In Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	2 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
7:00 AM	1	9	6	0	1	9	0	0	0	1	0	0	4	0	7	0	38
7:15 AM	0	8	10	0	1	2	1	0	0	0	1	0	2	0	4	0	29
7:30 AM	1	8	13	0	5	5	0	0	0	0	0	0	5	0	6	0	43
7:45 AM	0	14	4	0	6	11	2	0	0	0	0	0	2	0	15	0	54
8:00 AM	1	10	9	0	6	13	1	0	1	2	0	0	1	1	6	0	51
8:15 AM	1	14	1	0	3	11	1	0	0	1	0	0	4	1	6	0	44
8:30 AM	1	16	8	0	2	5	3	0	3	2	1	0	6	0	5	0	52
8:45 AM	2	14	5	0	8	10	3	0	2	0	0	0	4	0	6	0	54
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	7	93	56	0	32	66	11	0	6	6	3	0	28	2	55	0	365
	4.49%	59.62%	35.90%	0.00%	29.36%	60.55%	10.09%	0.00%	40.00%	40.00%	20.00%	0.00%	32.94%	2.35%	64.71%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	5	54	23	0	19	39	8	0	6	5	2	0	15	2	23	0	201
PEAK HR FACTOR :	0.625	0.844	0.639	0.000	0.594	0.750	0.667	0.000	0.500	0.625	0.500	0.000	0.625	0.500	0.958	0.000	0.931
	0.820				0.786				0.542				0.909				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	1 NT	0 NR	0 NU	0 SL	2 ST	0 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	1 WT	0 WR	0 WU	
4:00 PM	3	14	1	0	12	18	8	0	8	0	6	0	8	1	13	0	92
4:15 PM	7	17	8	0	11	25	12	0	10	1	3	0	2	0	15	0	111
4:30 PM	6	20	13	0	11	27	6	0	13	2	7	0	8	0	8	1	122
4:45 PM	7	12	10	0	9	25	6	0	10	2	10	0	8	1	6	0	106
5:00 PM	3	17	15	0	7	24	3	0	6	0	4	0	7	0	18	0	104
5:15 PM	6	16	10	0	5	23	8	0	8	2	6	0	9	1	16	0	110
5:30 PM	5	16	8	0	9	25	3	0	13	0	5	0	5	0	7	0	96
5:45 PM	2	17	7	0	8	19	7	0	9	0	4	0	4	0	13	0	90
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	39	129	72	0	72	186	53	0	77	7	45	0	51	3	96	1	831
	16.25%	53.75%	30.00%	0.00%	23.15%	59.81%	17.04%	0.00%	59.69%	5.43%	34.88%	0.00%	33.77%	1.99%	63.58%	0.66%	
PEAK HR :	04:15 PM - 05:15 PM																TOTAL
PEAK HR VOL :	23	66	46	0	38	101	27	0	39	5	24	0	25	1	47	1	443
PEAK HR FACTOR :	0.821	0.825	0.767	0.000	0.864	0.935	0.563	0.000	0.750	0.625	0.600	0.000	0.781	0.250	0.653	0.250	0.908
	0.865				0.865				0.773				0.740				

City of Yucca Valley
N/S: Balsa Avenue/Hanford Avenue
E/W: Balsa Avenue/Sunnyslope Drive
Weather: Clear

File Name : YCV_Bal_Han AM
Site Code : 251098
Start Date : 11/13/2025
Page No : 1

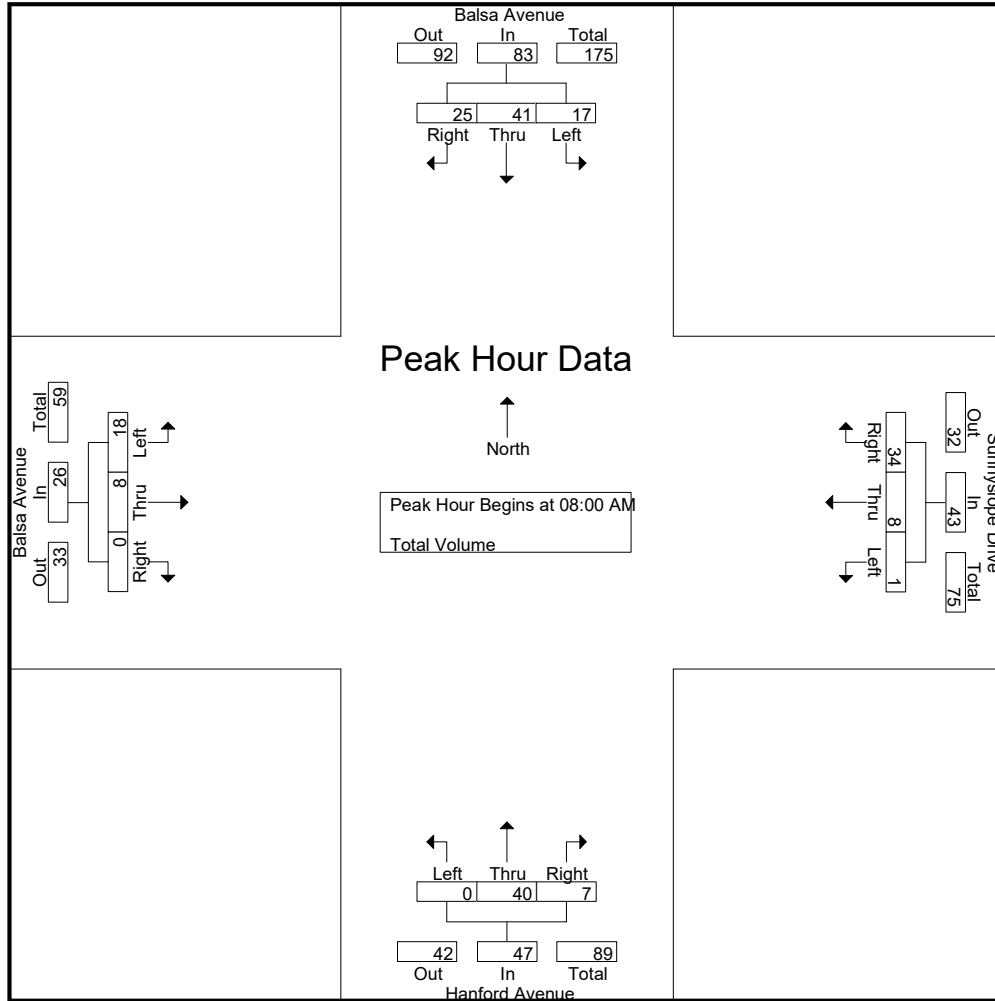
Groups Printed- Total Volume

	Balsa Avenue Southbound				Sunnyslope Drive Westbound				Hanford Avenue Northbound				Balsa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	3	5	2	10	1	1	10	12	0	8	1	9	4	0	0	4	35
07:15 AM	4	8	2	14	1	3	6	10	0	11	0	11	1	1	0	2	37
07:30 AM	1	13	1	15	0	1	4	5	1	11	0	12	4	1	0	5	37
07:45 AM	3	11	3	17	1	2	5	8	0	12	2	14	2	1	1	4	43
Total	11	37	8	56	3	7	25	35	1	42	3	46	11	3	1	15	152
08:00 AM	2	11	3	16	0	0	4	4	0	7	1	8	6	2	0	8	36
08:15 AM	5	10	10	25	0	3	10	13	0	6	1	7	2	1	0	3	48
08:30 AM	4	9	8	21	0	2	9	11	0	13	2	15	8	2	0	10	57
08:45 AM	6	11	4	21	1	3	11	15	0	14	3	17	2	3	0	5	58
Total	17	41	25	83	1	8	34	43	0	40	7	47	18	8	0	26	199
Grand Total	28	78	33	139	4	15	59	78	1	82	10	93	29	11	1	41	351
Apprch %	20.1	56.1	23.7		5.1	19.2	75.6		1.1	88.2	10.8		70.7	26.8	2.4		
Total %	8	22.2	9.4	39.6	1.1	4.3	16.8	22.2	0.3	23.4	2.8	26.5	8.3	3.1	0.3	11.7	

	Balsa Avenue Southbound				Sunnyslope Drive Westbound				Hanford Avenue Northbound				Balsa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	2	11	3	16	0	0	4	4	0	7	1	8	6	2	0	8	36
08:15 AM	5	10	10	25	0	3	10	13	0	6	1	7	2	1	0	3	48
08:30 AM	4	9	8	21	0	2	9	11	0	13	2	15	8	2	0	10	57
08:45 AM	6	11	4	21	1	3	11	15	0	14	3	17	2	3	0	5	58
Total Volume	17	41	25	83	1	8	34	43	0	40	7	47	18	8	0	26	199
% App. Total	20.5	49.4	30.1		2.3	18.6	79.1		0	85.1	14.9		69.2	30.8	0		
PHF	.708	.932	.625	.830	.250	.667	.773	.717	.000	.714	.583	.691	.563	.667	.000	.650	.858

City of Yucca Valley
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Weather: Clear

File Name : YCV_Bal_Han AM
Site Code : 251098
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				08:00 AM				08:00 AM				08:00 AM			
+0 mins.	2	11	3	16	0	0	4	4	0	7	1	8	6	2	0	8
+15 mins.	5	10	10	25	0	3	10	13	0	6	1	7	2	1	0	3
+30 mins.	4	9	8	21	0	2	9	11	0	13	2	15	8	2	0	10
+45 mins.	6	11	4	21	1	3	11	15	0	14	3	17	2	3	0	5
Total Volume	17	41	25	83	1	8	34	43	0	40	7	47	18	8	0	26
% App. Total	20.5	49.4	30.1		2.3	18.6	79.1		0	85.1	14.9		69.2	30.8	0	
PHF	.708	.932	.625	.830	.250	.667	.773	.717	.000	.714	.583	.691	.563	.667	.000	.650

City of Yucca Valley
N/S: Balsa Avenue/Hanford Avenue
E/W: Balsa Avenue/Sunnyslope Drive
Weather: Clear

File Name : YCV_Bal_Han PM
Site Code : 251098
Start Date : 11/13/2025
Page No : 1

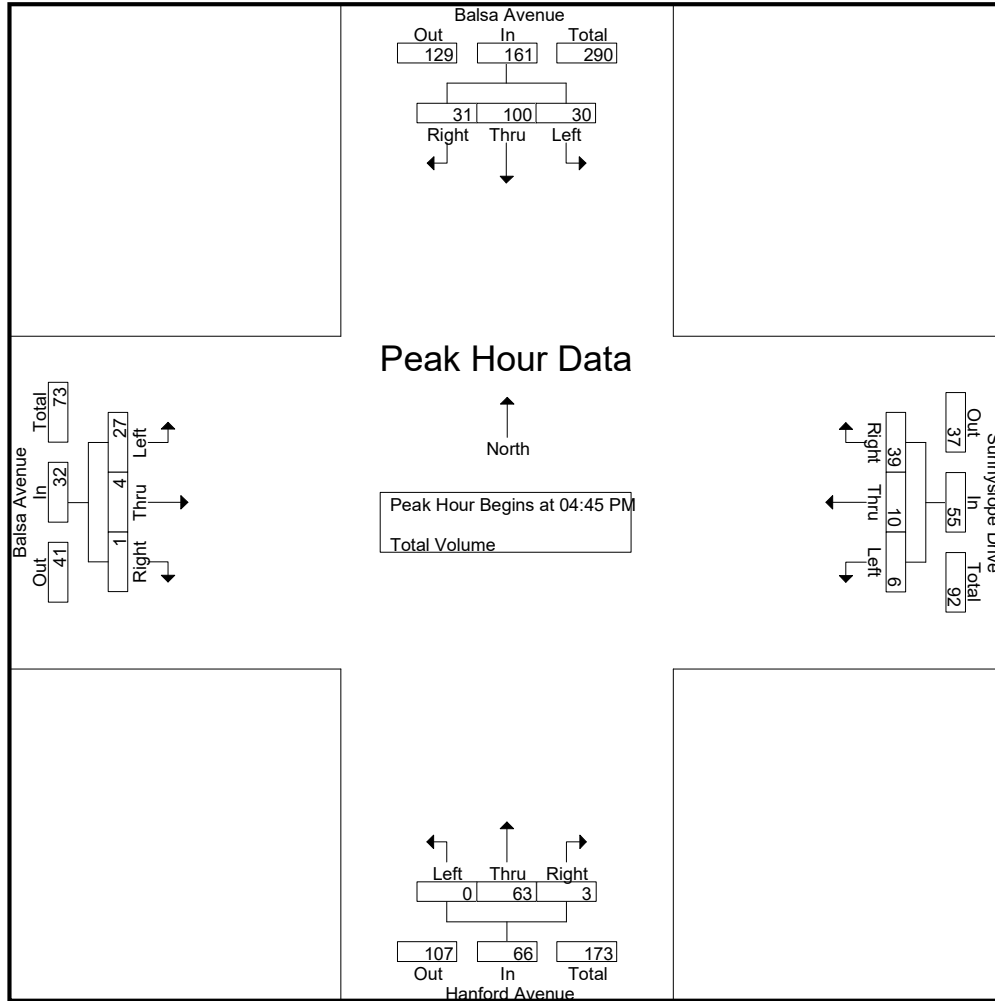
Groups Printed- Total Volume

	Balsa Avenue Southbound				Sunnyslope Drive Westbound				Hanford Avenue Northbound				Balsa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	8	19	8	35	1	5	8	14	0	10	0	10	0	2	0	2	61
04:15 PM	10	25	4	39	1	1	10	12	0	11	2	13	6	0	0	6	70
04:30 PM	8	22	9	39	2	2	11	15	0	10	1	11	6	0	0	6	71
04:45 PM	6	18	11	35	2	4	12	18	0	15	2	17	9	1	0	10	80
Total	32	84	32	148	6	12	41	59	0	46	5	51	21	3	0	24	282
05:00 PM	7	29	9	45	1	4	11	16	0	12	1	13	4	1	0	5	79
05:15 PM	8	29	3	40	3	2	6	11	0	16	0	16	11	2	1	14	81
05:30 PM	9	24	8	41	0	0	10	10	0	20	0	20	3	0	0	3	74
05:45 PM	8	18	6	32	0	2	5	7	0	15	0	15	5	2	0	7	61
Total	32	100	26	158	4	8	32	44	0	63	1	64	23	5	1	29	295
Grand Total	64	184	58	306	10	20	73	103	0	109	6	115	44	8	1	53	577
Apprch %	20.9	60.1	19		9.7	19.4	70.9		0	94.8	5.2		83	15.1	1.9		
Total %	11.1	31.9	10.1	53	1.7	3.5	12.7	17.9	0	18.9	1	19.9	7.6	1.4	0.2	9.2	

	Balsa Avenue Southbound				Sunnyslope Drive Westbound				Hanford Avenue Northbound				Balsa Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	6	18	11	35	2	4	12	18	0	15	2	17	9	1	0	10	80
05:00 PM	7	29	9	45	1	4	11	16	0	12	1	13	4	1	0	5	79
05:15 PM	8	29	3	40	3	2	6	11	0	16	0	16	11	2	1	14	81
05:30 PM	9	24	8	41	0	0	10	10	0	20	0	20	3	0	0	3	74
Total Volume	30	100	31	161	6	10	39	55	0	63	3	66	27	4	1	32	314
% App. Total	18.6	62.1	19.3		10.9	18.2	70.9		0	95.5	4.5		84.4	12.5	3.1		
PHF	.833	.862	.705	.894	.500	.625	.813	.764	.000	.788	.375	.825	.614	.500	.250	.571	.969

City of Yucca Valley
N/S: Balsa Avenue/Hanford Avenue
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Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:15 PM				04:45 PM				04:30 PM			
+0 mins.	6	18	11	35	1	1	10	12	0	15	2	17	6	0	0	6
+15 mins.	7	29	9	45	2	2	11	15	0	12	1	13	9	1	0	10
+30 mins.	8	29	3	40	2	4	12	18	0	16	0	16	4	1	0	5
+45 mins.	9	24	8	41	1	4	11	16	0	20	0	20	11	2	1	14
Total Volume	30	100	31	161	6	11	44	61	0	63	3	66	30	4	1	35
% App. Total	18.6	62.1	19.3		9.8	18	72.1		0	95.5	4.5		85.7	11.4	2.9	
PHF	.833	.862	.705	.894	.750	.688	.917	.847	.000	.788	.375	.825	.682	.500	.250	.625

Location: Yucca Valley
 N/S: Balsa Ave/Hanford Ave
 E/W: Balsa Ave/Sunnyslope Dr



Date: 11/13/2025
 Day: Thursday

PEDESTRIANS

	North Leg Balsa Avenue	East Leg Sunnyslope Drive	South Leg Hanford Avenue	West Leg Balsa Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	1	1
7:30 AM	1	0	0	0	1
7:45 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	1	1
TOTAL VOLUMES:	1	0	0	2	3

	North Leg Balsa Avenue	East Leg Sunnyslope Drive	South Leg Hanford Avenue	West Leg Balsa Avenue	
	Pedestrians	Pedestrians	Pedestrians	Pedestrians	
4:00 PM	0	1	3	0	4
4:15 PM	2	0	0	0	2
4:30 PM	1	0	0	0	1
4:45 PM	0	1	0	0	1
5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0
TOTAL VOLUMES:	3	2	3	0	8

Location: Yucca Valley
 N/S: Balsa Ave/Hanford Ave
 E/W: Balsa Ave/Sunnyslope Dr



Date: 11/13/2025
 Day: Thursday

BICYCLES

		Southbound Balsa Avenue			Westbound Sunnyslope Drive			Northbound Hanford Avenue			Eastbound Balsa Avenue			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:		0	0	0	0	0	0	0	0	0	0	0	0	0

		Southbound Balsa Avenue			Westbound Sunnyslope Drive			Northbound Hanford Avenue			Eastbound Balsa Avenue			
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES:		0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix E - LOS Calculation Worksheets – Existing Conditions

HCM 7th Signalized Intersection Summary

1: Balsa Ave & 29 Palms Highway

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	560	15	31	580	22	51	17	16	46	32	21
Future Volume (veh/h)	12	560	15	31	580	22	51	17	16	46	32	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1853	1853	1870	1853	1853	1870	1716	1716	1870	1844	1844
Adj Flow Rate, veh/h	14	636	15	34	630	21	61	20	17	56	39	22
Peak Hour Factor	0.88	0.88	0.88	0.92	0.92	0.92	0.84	0.84	0.84	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	56	1598	38	533	2551	85	161	161	121	174	167	142
Arrive On Green	0.03	0.45	0.45	0.30	0.73	0.73	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1781	3515	83	1781	3476	116	1341	1776	1331	1371	1844	1563
Grp Volume(v), veh/h	14	318	333	34	319	332	61	18	19	56	39	22
Grp Sat Flow(s),veh/h/ln	1781	1760	1838	1781	1760	1832	1341	1630	1476	1371	1844	1563
Q Serve(g_s), s	0.8	13.2	13.3	1.5	6.5	6.5	4.9	1.1	1.3	4.3	2.2	1.4
Cycle Q Clear(g_c), s	0.8	13.2	13.3	1.5	6.5	6.5	7.0	1.1	1.3	5.6	2.2	1.4
Prop In Lane	1.00		0.05	1.00		0.06	1.00		0.90	1.00		1.00
Lane Grp Cap(c), veh/h	56	800	835	533	1292	1344	161	148	134	174	167	142
V/C Ratio(X)	0.25	0.40	0.40	0.06	0.25	0.25	0.38	0.12	0.14	0.32	0.23	0.16
Avail Cap(c_a), veh/h	178	800	835	533	1292	1344	420	462	419	438	523	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.0	20.0	20.0	27.5	4.8	4.8	49.7	46.0	46.1	48.6	46.4	46.1
Incr Delay (d2), s/veh	0.8	1.5	1.4	0.0	0.5	0.4	0.5	0.1	0.2	0.4	0.3	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(50%),veh/ln	0.4	5.5	5.7	0.6	2.0	2.1	1.6	0.5	0.5	1.5	1.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.8	21.5	21.4	27.6	5.2	5.2	50.3	46.1	46.2	49.0	46.7	46.3
LnGrp LOS	D	C	C	C	A	A	D	D	D	D	D	D
Approach Vol, veh/h	665				685		98				117	
Approach Delay, s/veh	22.1				6.3		48.7				47.7	
Approach LOS	C				A		D				D	
Timer - Assigned Phs	1	2			4	5	6	8				
Phs Duration (G+Y+Rc), s	38.9	56.0			15.1	8.2	86.7	15.1				
Change Period (Y+Rc), s	6.0	* 6			5.1	4.7	6.0	5.1				
Max Green Setting (Gmax), s	13.0	* 50			31.2	11.0	52.0	31.2				
Max Q Clear Time (g_c+I1), s	3.5	15.3			7.6	2.8	8.5	9.0				
Green Ext Time (p_c), s	0.0	2.4			0.2	0.0	2.4	0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh	18.8											
HCM 7th LOS	B											
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 7th TWSC
2: Balsa Ave & Wallgreens Driveway/Sonic Driveway

Existing Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	5	2	15	2	23	5	54	23	19	39	8
Future Vol, veh/h	6	5	2	15	2	23	5	54	23	19	39	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	54	54	54	91	91	91	82	82	82	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	9	4	16	2	25	6	66	28	24	49	10
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	182	209	30	169	200	80	59	0	0	94	0	0
Stage 1	103	103	-	92	92	-	-	-	-	-	-	-
Stage 2	79	106	-	77	108	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.93	7.33	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	771	688	1038	786	696	980	1543	-	-	1499	-	-
Stage 1	893	810	-	915	818	-	-	-	-	-	-	-
Stage 2	929	807	-	923	806	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	734	674	1038	757	681	980	1543	-	-	1499	-	-
Mov Cap-2 Maneuver	734	674	-	757	681	-	-	-	-	-	-	-
Stage 1	878	797	-	911	815	-	-	-	-	-	-	-
Stage 2	899	804	-	894	793	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Ctrl Dly, s/v	10.02		9.38		0.45		2.14					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	104	-	-	742	865	1499	-	-				
HCM Lane V/C Ratio	0.004	-	-	0.032	0.051	0.016	-	-				
HCM Ctrl Dly (s/v)	7.3	0	-	10	9.4	7.4	-	-				
HCM Lane LOS	A	A	-	B	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-				

HCM 7th TWSC
3: Hanford Avenue & Balsa Ave & Sunnyslope Dr

Existing Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	8	0	1	8	34	0	40	7	17	41	25
Future Vol, veh/h	18	8	0	1	8	34	0	40	7	17	41	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	69	69	69	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	12	0	1	11	47	0	58	10	20	49	30

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	154	158	49	160	184	63	80	0	0	68	0	0
Stage 1	90	90	-	63	63	-	-	-	-	-	-	-
Stage 2	64	68	-	97	120	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	813	734	1019	806	711	1002	1518	-	-	1533	-	-
Stage 1	917	820	-	948	842	-	-	-	-	-	-	-
Stage 2	947	838	-	910	796	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	752	723	1019	781	701	1002	1518	-	-	1533	-	-
Mov Cap-2 Maneuver	752	723	-	781	701	-	-	-	-	-	-	-
Stage 1	904	809	-	948	842	-	-	-	-	-	-	-
Stage 2	891	838	-	884	785	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	10.12		9.18		0		1.51	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1518	-	-	743 922	528	-	-
HCM Lane V/C Ratio	-	-	-	0.054 0.065	0.013	-	-
HCM Ctrl Dly (s/v)	0	-	-	10.1 9.2	7.4	0	-
HCM Lane LOS	A	-	-	B A	A A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2 0.2	0	-	-

HCM 7th Signalized Intersection Summary

1: Balsa Ave & 29 Palms Highway

Existing Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	743	51	37	709	37	68	56	27	79	75	28
Future Volume (veh/h)	21	743	51	37	709	37	68	56	27	79	75	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1856	1856	1870	1856	1856	1870	1711	1711	1870	1842	1842
Adj Flow Rate, veh/h	22	782	48	39	739	35	81	67	28	95	90	30
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.84	0.84	0.84	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	77	1687	104	411	2392	113	164	289	114	189	234	198
Arrive On Green	0.04	0.50	0.50	0.23	0.70	0.70	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1781	3374	207	1781	3427	162	1272	2276	899	1301	1842	1561
Grp Volume(v), veh/h	22	408	422	39	380	394	81	47	48	95	90	30
Grp Sat Flow(s),veh/h/ln	1781	1763	1818	1781	1763	1826	1272	1625	1549	1301	1842	1561
Q Serve(g_s), s	1.4	18.1	18.1	2.1	10.0	10.0	7.5	3.1	3.4	8.5	5.4	2.1
Cycle Q Clear(g_c), s	1.4	18.1	18.1	2.1	10.0	10.0	12.9	3.1	3.4	11.9	5.4	2.1
Prop In Lane	1.00		0.11	1.00		0.09	1.00		0.58	1.00		1.00
Lane Grp Cap(c), veh/h	77	881	909	411	1230	1275	164	206	197	189	234	198
V/C Ratio(X)	0.29	0.46	0.46	0.09	0.31	0.31	0.49	0.23	0.25	0.50	0.38	0.15
Avail Cap(c_a), veh/h	193	881	909	411	1230	1275	334	423	403	362	479	406
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.6	19.5	19.5	36.3	7.0	7.0	54.0	47.1	47.2	52.6	48.1	46.6
Incr Delay (d2), s/veh	0.7	1.8	1.7	0.0	0.7	0.6	0.8	0.2	0.2	0.8	0.4	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 BackOfQ(50%),veh/ln	0.7	7.5	7.7	0.9	3.5	3.6	2.4	1.3	1.3	2.8	2.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	56.3	21.3	21.2	36.4	7.6	7.6	54.8	47.3	47.4	53.3	48.5	46.8
LnGrp LOS	E	C	C	D	A	A	D	D	D	D	D	D
Approach Vol, veh/h	852		813			176			215			
Approach Delay, s/veh	22.2		9.0			50.8			50.4			
Approach LOS	C		A			D			D			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	33.7	66.0		20.3	9.9	89.8		20.3				
Change Period (Y+Rc), s	6.0	* 6		5.1	4.7	6.0		5.1				
Max Green Setting (Gmax), s	13.0	* 60		31.2	13.0	60.0		31.2				
Max Q Clear Time (g_c+I1), s	4.1	20.1		13.9	3.4	12.0		14.9				
Green Ext Time (p_c), s	0.0	3.2		0.4	0.0	3.0		0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh	22.4											
HCM 7th LOS	C											
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 7th TWSC
2: Balsa Ave & Wallgreens Driveway/Sonic Driveway

Existing Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	39	5	24	26	1	47	23	66	46	38	101	27
Future Vol, veh/h	39	5	24	26	1	47	23	66	46	38	101	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	74	74	74	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	6	31	35	1	64	27	77	53	44	117	31
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	352	405	74	307	394	103	149	0	0	130	0	0
Stage 1	222	222	-	157	157	-	-	-	-	-	-	-
Stage 2	131	184	-	150	237	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.93	7.33	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	590	534	973	633	542	951	1431	-	-	1454	-	-
Stage 1	761	719	-	845	767	-	-	-	-	-	-	-
Stage 2	872	747	-	837	708	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	521	507	973	575	514	951	1431	-	-	1454	-	-
Mov Cap-2 Maneuver	521	507	-	575	514	-	-	-	-	-	-	-
Stage 1	737	697	-	828	752	-	-	-	-	-	-	-
Stage 2	796	732	-	778	686	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Ctrl Dly, s/v	11.75		10.41		1.29		1.73					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	283	-	-	622	766	1454	-	-				
HCM Lane V/C Ratio	0.019	-	-	0.142	0.131	0.03	-	-				
HCM Ctrl Dly (s/v)	7.6	0	-	11.7	10.4	7.6	-	-				
HCM Lane LOS	A	A	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.4	0.1	-	-				

HCM 7th TWSC
3: Hanford Avenue & Balsa Ave & Sunnyslope Dr

Existing Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	↔
Traffic Vol, veh/h	27	4	1	6	10	39	0	63	3	30	100	31
Future Vol, veh/h	27	4	1	6	10	39	0	63	3	30	100	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	69	69	69	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	42	6	2	8	14	54	0	91	4	36	120	37

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	291	288	120	289	324	93	158	0	0	96	0	0
Stage 1	193	193	-	93	93	-	-	-	-	-	-	-
Stage 2	98	96	-	196	230	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	661	622	931	663	594	964	1422	-	-	1498	-	-
Stage 1	809	741	-	913	818	-	-	-	-	-	-	-
Stage 2	908	816	-	806	714	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	593	605	931	638	578	964	1422	-	-	1498	-	-
Mov Cap-2 Maneuver	593	605	-	638	578	-	-	-	-	-	-	-
Stage 1	788	721	-	913	818	-	-	-	-	-	-	-
Stage 2	843	816	-	777	695	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Ctrl Dly, s/v	11.52		9.85		0		1.39	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1422	-	-	602	819	415	-	-
HCM Lane V/C Ratio	-	-	-	0.082	0.093	0.024	-	-
HCM Ctrl Dly (s/v)	0	-	-	11.5	9.8	7.5	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.3	0.1	-	-

Appendix F - LOS Calculation Worksheets – Opening Year 2027 Cumulative Conditions

HCM 7th Signalized Intersection Summary

1: Balsa Ave & 29 Palms Highway

Opening Year 2027 Cumulative Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	723	16	33	751	23	54	18	17	49	34	22
Future Volume (veh/h)	13	723	16	33	751	23	54	18	17	49	34	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1853	1853	1870	1853	1853	1870	1716	1716	1870	1844	1844
Adj Flow Rate, veh/h	15	822	16	36	816	22	64	21	18	60	41	23
Peak Hour Factor	0.88	0.88	0.88	0.92	0.92	0.92	0.84	0.84	0.84	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	1605	31	533	2563	69	159	161	121	173	167	142
Arrive On Green	0.03	0.45	0.45	0.30	0.73	0.73	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1781	3532	69	1781	3501	94	1338	1769	1336	1368	1844	1563
Grp Volume(v), veh/h	15	410	428	36	410	428	64	19	20	60	41	23
Grp Sat Flow(s),veh/h/ln	1781	1760	1840	1781	1760	1836	1338	1630	1475	1368	1844	1563
Q Serve(g_s), s	0.9	18.2	18.2	1.6	9.0	9.0	5.1	1.2	1.4	4.6	2.3	1.5
Cycle Q Clear(g_c), s	0.9	18.2	18.2	1.6	9.0	9.0	7.4	1.2	1.4	6.0	2.3	1.5
Prop In Lane	1.00		0.04	1.00		0.05	1.00		0.91	1.00		1.00
Lane Grp Cap(c), veh/h	60	800	836	533	1289	1344	159	148	134	173	167	142
V/C Ratio(X)	0.25	0.51	0.51	0.07	0.32	0.32	0.40	0.13	0.15	0.35	0.24	0.16
Avail Cap(c_a), veh/h	178	800	836	533	1289	1344	417	462	418	437	523	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	21.3	21.3	27.6	5.1	5.1	49.9	46.0	46.1	48.9	46.5	46.1
Incr Delay (d2), s/veh	0.8	2.3	2.2	0.0	0.7	0.6	0.6	0.1	0.2	0.4	0.3	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(50%),veh/ln	0.4	7.6	7.9	0.7	2.8	2.9	1.7	0.5	0.5	1.6	1.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.6	23.7	23.6	27.6	5.8	5.8	50.6	46.1	46.3	49.3	46.8	46.3
LnGrp LOS	D	C	C	C	A	A	D	D	D	D	D	D
Approach Vol, veh/h	853		874				103		124			
Approach Delay, s/veh	24.1		6.7				48.9		47.9			
Approach LOS	C		A				D		D			
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	38.9	56.0	15.1		8.4	86.5	15.1					
Change Period (Y+Rc), s	6.0	* 6	5.1		4.7	6.0	5.1					
Max Green Setting (Gmax), s	13.0	* 50	31.2		11.0	52.0	31.2					
Max Q Clear Time (g_c+I1), s	3.6	20.2	8.0		2.9	11.0	9.4					
Green Ext Time (p_c), s	0.0	3.2	0.2		0.0	3.3	0.2					
Intersection Summary												
HCM 7th Control Delay, s/veh	19.1											
HCM 7th LOS	B											
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	5	2	16	2	24	5	57	24	20	41	8
Future Vol, veh/h	6	5	2	16	2	24	5	57	24	20	41	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	54	54	54	91	91	91	82	82	82	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	9	4	18	2	26	6	70	29	25	52	10
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	190	219	31	178	209	84	62	0	0	99	0	0
Stage 1	108	108	-	96	96	-	-	-	-	-	-	-
Stage 2	83	111	-	81	113	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.93	7.33	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	761	679	1036	776	687	975	1540	-	-	1493	-	-
Stage 1	887	806	-	910	815	-	-	-	-	-	-	-
Stage 2	925	803	-	918	802	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	722	665	1036	747	673	975	1540	-	-	1493	-	-
Mov Cap-2 Maneuver	722	665	-	747	673	-	-	-	-	-	-	-
Stage 1	871	792	-	906	811	-	-	-	-	-	-	-
Stage 2	894	800	-	889	788	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Ctrl Dly, s/v	10.09		9.44		0.43		2.16					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	99	-	-	732	857	1493	-	-				
HCM Lane V/C Ratio	0.004	-	-	0.033	0.054	0.017	-	-				
HCM Ctrl Dly (s/v)	7.3	0	-	10.1	9.4	7.5	-	-				
HCM Lane LOS	A	A	-	B	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-				

HCM 7th TWSC
3: Hanford Avenue & Balsa Ave & Sunnyslope Dr

Opening Year 2027 Cumulative Conditions
AM Peak Hour

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	8	0	1	8	36	0	42	7	18	43	27
Future Vol, veh/h	19	8	0	1	8	36	0	42	7	18	43	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	69	69	69	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	12	0	1	11	50	0	61	10	22	52	33
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	162	166	52	167	194	66	84	0	0	71	0	0
Stage 1	95	95	-	66	66	-	-	-	-	-	-	-
Stage 2	66	71	-	101	128	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	804	726	1016	797	702	998	1512	-	-	1529	-	-
Stage 1	912	816	-	945	840	-	-	-	-	-	-	-
Stage 2	944	836	-	905	790	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	740	716	1016	772	691	998	1512	-	-	1529	-	-
Mov Cap-2 Maneuver	740	716	-	772	691	-	-	-	-	-	-	-
Stage 1	898	804	-	945	840	-	-	-	-	-	-	-
Stage 2	885	836	-	878	779	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Ctrl Dly, s/v	10.21		9.2			0			1.51			
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1512	-	-	733	919	531	-	-				
HCM Lane V/C Ratio	-	-	-	0.057	0.068	0.014	-	-				
HCM Ctrl Dly (s/v)	0	-	-	10.2	9.2	7.4	0	-				
HCM Lane LOS	A	-	-	B	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-				

HCM 7th Signalized Intersection Summary

1: Balsa Ave & 29 Palms Highway

Opening Year 2027 Cumulative Conditions
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	939	54	39	909	39	72	59	29	84	80	30
Future Volume (veh/h)	22	939	54	39	909	39	72	59	29	84	80	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1856	1856	1870	1856	1856	1870	1711	1711	1870	1842	1842
Adj Flow Rate, veh/h	23	988	51	41	947	37	86	70	31	101	96	32
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.84	0.84	0.84	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	1705	88	398	2385	93	169	300	125	195	247	210
Arrive On Green	0.04	0.50	0.50	0.22	0.69	0.69	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1781	3411	176	1781	3459	135	1262	2235	933	1294	1842	1561
Grp Volume(v), veh/h	23	511	528	41	483	501	86	50	51	101	96	32
Grp Sat Flow(s),veh/h/ln	1781	1763	1824	1781	1763	1831	1262	1625	1543	1294	1842	1561
Q Serve(g_s), s	1.5	24.5	24.5	2.2	14.1	14.1	8.0	3.3	3.6	9.1	5.7	2.2
Cycle Q Clear(g_c), s	1.5	24.5	24.5	2.2	14.1	14.1	13.7	3.3	3.6	12.7	5.7	2.2
Prop In Lane	1.00		0.10	1.00		0.07	1.00		0.60	1.00		1.00
Lane Grp Cap(c), veh/h	79	881	912	398	1215	1263	169	218	207	195	247	210
V/C Ratio(X)	0.29	0.58	0.58	0.10	0.40	0.40	0.51	0.23	0.25	0.52	0.39	0.15
Avail Cap(c_a), veh/h	193	881	912	398	1215	1263	328	423	401	358	479	406
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.5	21.1	21.1	37.1	8.0	8.0	53.7	46.4	46.5	52.2	47.4	45.9
Incr Delay (d2), s/veh	0.7	2.8	2.7	0.0	1.0	0.9	0.9	0.2	0.2	0.8	0.4	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 BackOfQ(50%),veh/ln	0.7	10.2	10.6	1.0	5.0	5.2	2.6	1.3	1.4	3.0	2.6	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	56.2	23.9	23.8	37.1	8.9	8.9	54.6	46.6	46.7	53.0	47.8	46.0
LnGrp LOS	E	C	C	D	A	A	D	D	D	D	D	D
Approach Vol, veh/h	1062		1025				187			229		
Approach Delay, s/veh	24.5		10.1				50.3			49.8		
Approach LOS	C		B				D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.8	66.0		21.2	10.1	88.7		21.2				
Change Period (Y+Rc), s	6.0	* 6		5.1	4.7	6.0		5.1				
Max Green Setting (Gmax), s	13.0	* 60		31.2	13.0	60.0		31.2				
Max Q Clear Time (g_c+l1), s	4.2	26.5		14.7	3.5	16.1		15.7				
Green Ext Time (p_c), s	0.0	4.3		0.4	0.0	4.1		0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh	22.8											
HCM 7th LOS	C											
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	41	5	25	28	1	50	24	70	49	40	107	29
Future Vol, veh/h	41	5	25	28	1	50	24	70	49	40	107	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	74	74	74	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	6	32	38	1	68	28	81	57	47	124	34
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	372	428	79	324	417	110	158	0	0	138	0	0
Stage 1	234	234	-	166	166	-	-	-	-	-	-	-
Stage 2	138	194	-	158	251	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.93	7.33	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	572	518	966	617	526	943	1420	-	-	1444	-	-
Stage 1	748	710	-	836	761	-	-	-	-	-	-	-
Stage 2	865	739	-	828	698	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	501	490	966	557	497	943	1420	-	-	1444	-	-
Mov Cap-2 Maneuver	501	490	-	557	497	-	-	-	-	-	-	-
Stage 1	723	686	-	818	744	-	-	-	-	-	-	-
Stage 2	784	724	-	766	675	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Ctrl Dly, s/v	12.06		10.6		1.27		1.72					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	279	-	-	602	750	1444	-	-				
HCM Lane V/C Ratio	0.02	-	-	0.153	0.142	0.032	-	-				
HCM Ctrl Dly (s/v)	7.6	0	-	12.1	10.6	7.6	-	-				
HCM Lane LOS	A	A	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.5	0.1	-	-				

HCM 7th TWSC
3: Hanford Avenue & Balsa Ave & Sunnyslope Dr

Opening Year 2027 Cumulative Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	4	1	6	11	41	0	67	3	32	106	33
Future Vol, veh/h	29	4	1	6	11	41	0	67	3	32	106	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	69	69	69	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	6	2	8	15	57	0	97	4	39	128	40
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	310	306	128	307	344	99	167	0	0	101	0	0
Stage 1	205	205	-	99	99	-	-	-	-	-	-	-
Stage 2	105	101	-	208	245	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	643	607	922	645	579	956	1410	-	-	1491	-	-
Stage 1	797	732	-	907	813	-	-	-	-	-	-	-
Stage 2	901	811	-	794	704	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	572	590	922	619	562	956	1410	-	-	1491	-	-
Mov Cap-2 Maneuver	572	590	-	619	562	-	-	-	-	-	-	-
Stage 1	774	711	-	907	813	-	-	-	-	-	-	-
Stage 2	831	811	-	763	683	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Ctrl Dly, s/v	11.82		9.97			0			1.4			
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1410	-	-	580	804	417	-	-				
HCM Lane V/C Ratio	-	-	-	0.09	0.1	0.026	-	-				
HCM Ctrl Dly (s/v)	0	-	-	11.8	10	7.5	0	-				
HCM Lane LOS	A	-	-	B	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0.3	0.1	-	-				

Appendix G - LOS Calculation Worksheets – Opening Year 2027 Cumulative with Project Conditions

HCM 7th Signalized Intersection Summary

1: Balsa Ave & 29 Palms Highway

Opening Year 2027 Cumulative + Project
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	723	34	42	751	23	72	20	26	49	36	22
Future Volume (veh/h)	13	723	34	42	751	23	72	20	26	49	36	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1853	1853	1870	1853	1853	1870	1716	1716	1870	1844	1844
Adj Flow Rate, veh/h	15	822	34	46	816	22	86	24	27	60	44	23
Peak Hour Factor	0.88	0.88	0.88	0.92	0.92	0.92	0.84	0.84	0.84	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	1566	65	507	2512	68	177	172	153	185	194	165
Arrive On Green	0.03	0.45	0.45	0.28	0.72	0.72	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	3445	142	1781	3501	94	1334	1630	1454	1354	1844	1563
Grp Volume(v), veh/h	15	420	436	46	410	428	86	24	27	60	44	23
Grp Sat Flow(s),veh/h/ln	1781	1760	1827	1781	1760	1836	1334	1630	1454	1354	1844	1563
Q Serve(g_s), s	0.9	18.8	18.8	2.1	9.4	9.4	6.9	1.5	1.9	4.7	2.4	1.5
Cycle Q Clear(g_c), s	0.9	18.8	18.8	2.1	9.4	9.4	9.4	1.5	1.9	6.5	2.4	1.5
Prop In Lane	1.00		0.08	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	60	800	830	507	1263	1317	177	172	153	185	194	165
V/C Ratio(X)	0.25	0.52	0.53	0.09	0.32	0.32	0.49	0.14	0.18	0.32	0.23	0.14
Avail Cap(c_a), veh/h	178	800	830	507	1263	1317	415	462	412	426	523	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	21.5	21.5	28.9	5.7	5.7	49.4	44.7	44.8	47.8	45.1	44.7
Incr Delay (d2), s/veh	0.8	2.5	2.4	0.0	0.7	0.7	0.8	0.1	0.2	0.4	0.2	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 BackOfQ(50%),veh/ln	0.4	7.9	8.2	0.9	3.1	3.2	2.3	0.6	0.7	1.6	1.1	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	52.6	24.0	23.9	28.9	6.4	6.4	50.1	44.8	45.0	48.2	45.3	44.8
LnGrp LOS	D	C	C	C	A	A	D	D	D	D	D	D
Approach Vol, veh/h	871		884			137			127			
Approach Delay, s/veh	24.4		7.6			48.2			46.6			
Approach LOS	C		A			D			D			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	37.3	56.0		16.7	8.4	84.9		16.7				
Change Period (Y+Rc), s	6.0	* 6		5.1	4.7	6.0		5.1				
Max Green Setting (Gmax), s	13.0	* 50		31.2	11.0	52.0		31.2				
Max Q Clear Time (g_c+l1), s	4.1	20.8		8.5	2.9	11.4		11.4				
Green Ext Time (p_c), s	0.0	3.3		0.2	0.0	3.3		0.2				
Intersection Summary												
HCM 7th Control Delay, s/veh	20.0											
HCM 7th LOS	C											
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 7th TWSC
2: Balsa Ave & Wallgreens Driveway/Sonic Driveway

Opening Year 2027 Cumulative + Project
AM Peak Hour

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	35	5	18	16	2	24	20	57	24	20	41	37
Future Vol, veh/h	35	5	18	16	2	24	20	57	24	20	41	37
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	54	54	54	91	91	91	82	82	82	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	65	9	33	18	2	26	24	70	29	25	52	47
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	245	274	49	214	282	84	99	0	0	99	0	0
Stage 1	126	126	-	133	133	-	-	-	-	-	-	-
Stage 2	119	148	-	81	149	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.93	7.33	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	698	633	1009	733	626	975	1493	-	-	1493	-	-
Stage 1	865	791	-	870	786	-	-	-	-	-	-	-
Stage 2	884	775	-	918	773	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	654	611	1009	674	604	975	1493	-	-	1493	-	-
Mov Cap-2 Maneuver	654	611	-	674	604	-	-	-	-	-	-	-
Stage 1	850	777	-	855	772	-	-	-	-	-	-	-
Stage 2	843	761	-	862	760	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Ctrl Dly, s/v	10.79		9.69		1.48		1.52					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	336	-	-	729	813	1493	-	-				
HCM Lane V/C Ratio	0.016	-	-	0.147	0.057	0.017	-	-				
HCM Ctrl Dly (s/v)	7.5	0	-	10.8	9.7	7.5	-	-				
HCM Lane LOS	A	A	-	B	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.5	0.2	0.1	-	-				

HCM 7th TWSC
3: Hanford Avenue & Balsa Ave & Sunnyslope Dr

Opening Year 2027 Cumulative + Project
AM Peak Hour

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	8	0	1	8	40	0	49	7	22	50	32
Future Vol, veh/h	23	8	0	1	8	40	0	49	7	22	50	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	69	69	69	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	35	12	0	1	11	56	0	71	10	27	60	39
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	190	194	60	195	228	76	99	0	0	81	0	0
Stage 1	113	113	-	76	76	-	-	-	-	-	-	-
Stage 2	77	81	-	119	152	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	770	701	1005	764	672	985	1494	-	-	1516	-	-
Stage 1	892	802	-	933	832	-	-	-	-	-	-	-
Stage 2	932	828	-	885	772	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	701	688	1005	736	659	985	1494	-	-	1516	-	-
Mov Cap-2 Maneuver	701	688	-	736	659	-	-	-	-	-	-	-
Stage 1	875	787	-	933	832	-	-	-	-	-	-	-
Stage 2	868	828	-	855	757	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Ctrl Dly, s/v	10.54		9.3			0			1.57			
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1494	-	-	698	906	550	-	-				
HCM Lane V/C Ratio	-	-	-	0.068	0.075	0.017	-	-				
HCM Ctrl Dly (s/v)	0	-	-	10.5	9.3	7.4	0	-				
HCM Lane LOS	A	-	-	B	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0.1	-	-				

HCM 7th Signalized Intersection Summary

1: Balsa Ave & 29 Palms Highway

Opening Year 2027 Cumulative + Project
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	939	60	42	909	39	78	60	32	84	81	30
Future Volume (veh/h)	22	939	60	42	909	39	78	60	32	84	81	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1870	1856	1856	1870	1856	1856	1870	1711	1711	1870	1842	1842
Adj Flow Rate, veh/h	23	988	57	44	947	37	93	71	33	101	98	32
Peak Hour Factor	0.95	0.95	0.95	0.96	0.96	0.96	0.84	0.84	0.84	0.83	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	79	1694	98	386	2363	92	176	310	135	202	259	220
Arrive On Green	0.04	0.50	0.50	0.22	0.68	0.68	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1781	3388	195	1781	3459	135	1260	2201	962	1290	1842	1561
Grp Volume(v), veh/h	23	514	531	44	483	501	93	51	53	101	98	32
Grp Sat Flow(s),veh/h/ln	1781	1763	1820	1781	1763	1831	1260	1625	1538	1290	1842	1561
Q Serve(g_s), s	1.5	24.7	24.7	2.4	14.3	14.3	8.7	3.4	3.7	9.1	5.8	2.2
Cycle Q Clear(g_c), s	1.5	24.7	24.7	2.4	14.3	14.3	14.5	3.4	3.7	12.7	5.8	2.2
Prop In Lane	1.00		0.11	1.00		0.07	1.00		0.63	1.00		1.00
Lane Grp Cap(c), veh/h	79	881	910	386	1204	1251	176	229	216	202	259	220
V/C Ratio(X)	0.29	0.58	0.58	0.11	0.40	0.40	0.53	0.22	0.24	0.50	0.38	0.15
Avail Cap(c_a), veh/h	193	881	910	386	1204	1251	327	423	400	356	479	406
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.5	21.2	21.2	37.7	8.3	8.3	53.4	45.8	45.9	51.5	46.8	45.2
Incr Delay (d2), s/veh	0.7	2.8	2.7	0.0	1.0	1.0	0.9	0.2	0.2	0.7	0.3	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 BackOfQ(50%),veh/ln	0.7	10.3	10.7	1.0	5.1	5.3	2.8	1.4	1.4	2.9	2.7	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	56.2	24.0	23.9	37.8	9.3	9.3	54.3	45.9	46.1	52.3	47.1	45.3
LnGrp LOS	E	C	C	D	A	A	D	D	D	D	D	D
Approach Vol, veh/h	1068		1028				197		231			
Approach Delay, s/veh	24.6		10.5				49.9		49.1			
Approach LOS	C		B				D		D			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	32.0	66.0		22.0	10.1	88.0		22.0				
Change Period (Y+Rc), s	6.0	* 6		5.1	4.7	6.0		5.1				
Max Green Setting (Gmax), s	13.0	* 60		31.2	13.0	60.0		31.2				
Max Q Clear Time (g_c+l1), s	4.4	26.7		14.7	3.5	16.3		16.5				
Green Ext Time (p_c), s	0.0	4.4		0.5	0.0	4.1		0.4				
Intersection Summary												
HCM 7th Control Delay, s/veh	23.1											
HCM 7th LOS	C											
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 7th TWSC
2: Balsa Ave & Wallgreens Driveway/Sonic Driveway

Opening Year 2027 Cumulative + Project
PM Peak Hour

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	51	5	30	28	1	50	29	70	49	40	107	39
Future Vol, veh/h	51	5	30	28	1	50	29	70	49	40	107	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	74	74	74	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	6	39	38	1	68	34	81	57	47	124	45
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	390	446	85	336	440	110	170	0	0	138	0	0
Stage 1	240	240	-	177	177	-	-	-	-	-	-	-
Stage 2	150	206	-	158	263	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.93	7.33	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.53	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.53	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.519	4.019	3.319	2.219	-	-	2.219	-	-
Pot Cap-1 Maneuver	556	506	958	606	510	943	1406	-	-	1444	-	-
Stage 1	743	706	-	824	752	-	-	-	-	-	-	-
Stage 2	852	731	-	828	690	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	485	476	958	540	480	943	1406	-	-	1444	-	-
Mov Cap-2 Maneuver	485	476	-	540	480	-	-	-	-	-	-	-
Stage 1	717	682	-	802	732	-	-	-	-	-	-	-
Stage 2	769	712	-	760	667	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Ctrl Dly, s/v	12.6		10.7		1.49		1.63					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	326	-	-	585	738	1444	-	-				
HCM Lane V/C Ratio	0.024	-	-	0.191	0.145	0.032	-	-				
HCM Ctrl Dly (s/v)	7.6	0	-	12.6	10.7	7.6	-	-				
HCM Lane LOS	A	A	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.5	0.1	-	-				

HCM 7th TWSC
3: Hanford Avenue & Balsa Ave & Sunnyslope Dr

Opening Year 2027 Cumulative + Project
PM Peak Hour

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	4	1	6	11	42	0	70	3	33	109	34
Future Vol, veh/h	30	4	1	6	11	42	0	70	3	33	109	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	72	72	72	69	69	69	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	46	6	2	8	15	58	0	101	4	40	131	41
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	320	317	131	318	355	104	172	0	0	106	0	0
Stage 1	211	211	-	104	104	-	-	-	-	-	-	-
Stage 2	109	106	-	214	252	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	633	599	918	635	570	951	1405	-	-	1485	-	-
Stage 1	791	728	-	902	809	-	-	-	-	-	-	-
Stage 2	896	808	-	788	699	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	561	582	918	609	553	951	1405	-	-	1485	-	-
Mov Cap-2 Maneuver	561	582	-	609	553	-	-	-	-	-	-	-
Stage 1	768	706	-	902	809	-	-	-	-	-	-	-
Stage 2	825	808	-	757	678	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Ctrl Dly, s/v	11.98		10.02			0			1.4			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1405	-	-	570	798	418	-	-				
HCM Lane V/C Ratio	-	-	-	0.095	0.103	0.027	-	-				
HCM Ctrl Dly (s/v)	0	-	-	12	10	7.5	0	-				
HCM Lane LOS	A	-	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0.3	0.1	-	-				

Appendix H - Drive Through Data Collection Sheets

	Weekday AM Peak Hour								
	44175 Jefferson St, La Quinta			34051 Date Palm Dr, Cathedral City			81-776 Highway 111 Indio		
TIME	Average	85th Percentile	Peak Queue	Average	85th Percentile	Peak Queue	Average	85th Percentile	Peak Queue
6:00 AM	4	5	5	1	2	2	4	6	6
6:15 AM	2	3	3	3	4	4	5	5	5
6:30 AM	4	8	10	4	5	5	9	9	9
6:45 AM	11	12	12	1	1	1	6	7	7
7:00 AM	14	14	14	4	5	5	6	7	7
7:15 AM	14	16	17	8	10	10	8	9	9
7:30 AM	20	22	22	9	10	10	6	8	8
7:45 AM	14	15	15	11	12	12	6	7	7
8:00 AM	20	20	20	12	13	13	10	13	14
8:15 AM	20	22	23	15	16	16	15	16	16
8:30 AM	19	20	20	16	18	18	15	16	16
8:45 AM	14	17	18	12	13	13	13	14	14
9:00 AM	6	18	18	4	10	10	2	6	6
2:00 PM	4	7	7	14	16	16	6	7	7
2:15 PM	3	4	4	5	6	7	3	5	5
2:30 PM	9	11	12	4	5	5	5	6	6
2:45 PM	6	10	11	2	3	3	3	5	5
3:00 PM	6	8	9	5	5	5	7	8	8
3:15 PM	13	15	15	8	9	9	6	8	8
3:30 PM	6	9	11	6	6	6	3	4	4
3:45 PM	5	8	8	7	8	8	5	6	6
4:00 PM	2	3	3	6	7	7	5	5	5
4:15 PM	6	8	8	4	4	4	4	5	5
4:30 PM	5	6	6	6	6	6	5	8	8
4:45 PM	3	3	3	3	4	4	9	10	10
5:00 PM	1	3	3	2	4	4	3	8	8

	Weekend AM Peak Hour								
	44175 Jefferson St, La Quinta			34051 Date Palm Dr, Cathedral City			81-776 Highway 111 Indio		
TIME	Average	85th Percentile	Peak Queue	Average	85th Percentile	Peak Queue	Average	85th Percentile	Peak Queue
6:00 AM	1	1	1	0	0	0	2	2	2
6:15 AM	2	3	3	1	1	1	1	1	1
6:30 AM	2	3	3	2	3	3	3	3	3
6:45 AM	2	4	4	0	0	0	6	7	7
7:00 AM	3	3	3	2	3	3	4	5	5
7:15 AM	4	4	4	0	0	0	1	2	2
7:30 AM	3	4	4	2	3	3	4	5	5
7:45 AM	2	3	3	3	4	4	9	11	11
8:00 AM	11	14	16	2	3	3	8	9	9
8:15 AM	15	17	17	4	6	7	4	5	5
8:30 AM	11	14	15	5	5	5	3	4	4
8:45 AM	11	13	13	6	6	6	3	4	4
9:00 AM	3	8	8	3	9	9	0	0	0
2:00 PM	10	11	11	18	18	18	8	9	9
2:15 PM	12	12	12	18	20	20	10	11	11
2:30 PM	10	10	10	17	18	18	5	7	7
2:45 PM	11	12	12	13	14	14	4	6	6
3:00 PM	11	11	11	13	13	13	8	9	9
3:15 PM	9	10	10	10	11	11	6	8	8
3:30 PM	12	13	13	13	14	14	3	3	3
3:45 PM	8	8	8	4	7	7	5	6	6
4:00 PM	8	8	8	4	5	5	3	4	4
4:15 PM	5	6	6	3	3	3	6	8	8
4:30 PM	13	13	13	6	6	6	7	9	10
4:45 PM	10	11	11	7	8	8	11	12	12
5:00 PM	3	9	9	2	5	5	3	9	9

DRIVE THRU SURVEY

LOCATION: Dutch Bros, 44175 Jefferson St
CITY: La Quinta

DAY: Wednesday
DATE: 11/12/2025

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
6:00	2	3	5
6:05	1	3	4
6:10	2	1	3
6:15	0	1	1
6:20	2	1	3
6:25	0	1	1
6:30	0	0	0
6:35	1	1	2
6:40	5	5	10
6:45	5	5	10
6:50	5	5	10
6:55	6	6	12
7:00	5	9	14
7:05	5	9	14
7:10	6	8	14
7:15	4	6	10
7:20	6	7	13
7:25	6	11	17
7:30	7	15	22
7:35	7	12	19
7:40	5	14	19
7:45	6	9	15
7:50	7	8	15
7:55	7	5	12
8:00	7	13	20
8:05	7	13	20
8:10	6	13	19
8:15	8	15	23
8:20	7	11	18
8:25	6	11	17
8:30	6	12	18
8:35	7	10	17
8:40	7	13	20
8:45	7	11	18
8:50	6	3	9
8:55	7	6	13
9:00	6	12	18

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
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Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

DRIVE THRU SURVEY

LOCATION: Dutch Bros, 44175 Jefferson St
CITY: La Quinta

DAY: Wednesday
DATE: 11/12/2025

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
14:00	7	0	7
14:05	4	0	4
14:10	1	0	1
14:15	2	2	4
14:20	2	2	4
14:25	0	0	0
14:30	7	1	8
14:35	5	2	7
14:40	7	5	12
14:45	6	5	11
14:50	4	1	5
14:55	0	0	0
15:00	5	0	5
15:05	3	0	3
15:10	6	3	9
15:15	7	4	11
15:20	6	7	13
15:25	8	7	15
15:30	8	3	11
15:35	3	1	4
15:40	3	0	3
15:45	1	0	1
15:50	6	2	8
15:55	5	0	5
16:00	2	0	2
16:05	0	0	0
16:10	3	0	3
16:15	6	2	8
16:20	2	2	4
16:25	5	0	5
16:30	3	0	3
16:35	3	2	5
16:40	4	2	6
16:45	3	0	3
16:50	1	2	3
16:55	1	0	1
17:00	3	0	3

DRIVE THRU SURVEY

LOCATION: Dutch Bros, 44175 Jefferson St
CITY: La Quinta

DAY: Saturday
DATE: 12/6/2025

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
6:00	0	0	0
6:05	1	0	1
6:10	0	0	0
6:15	2	1	3
6:20	1	0	1
6:25	2	0	2
6:30	1	0	1
6:35	1	0	1
6:40	2	1	3
6:45	1	0	1
6:50	0	1	1
6:55	2	2	4
7:00	2	0	2
7:05	2	1	3
7:10	2	0	2
7:15	4	0	4
7:20	4	0	4
7:25	2	0	2
7:30	2	0	2
7:35	3	0	3
7:40	2	2	4
7:45	1	0	1
7:50	0	0	0
7:55	2	1	3
8:00	5	1	6
8:05	6	3	9
8:10	6	10	16
8:15	7	7	14
8:20	7	6	13
8:25	7	10	17
8:30	7	8	15
8:35	5	2	7
8:40	7	2	9
8:45	6	2	8
8:50	6	7	13
8:55	7	5	12
9:00	6	2	8

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
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Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
951-268-6268

DRIVE THRU SURVEY

LOCATION: Dutch Bros, 44175 Jefferson St
CITY: La Quinta

DAY: Saturday
DATE: 12/6/2025

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
14:00	7	4	11
14:05	6	3	9
14:10	7	2	9
14:15	7	4	11
14:20	8	4	12
14:25	7	4	11
14:30	7	3	10
14:35	7	3	10
14:40	7	3	10
14:45	7	5	12
14:50	7	2	9
14:55	6	6	12
15:00	7	4	11
15:05	7	4	11
15:10	6	3	9
15:15	6	2	8
15:20	7	1	8
15:25	7	3	10
15:30	7	6	13
15:35	6	4	10
15:40	6	6	12
15:45	5	1	6
15:50	6	2	8
15:55	5	3	8
16:00	5	3	8
16:05	6	1	7
16:10	5	2	7
16:15	4	0	4
16:20	4	2	6
16:25	4	1	5
16:30	7	5	12
16:35	6	6	12
16:40	7	6	13
16:45	8	1	9
16:50	7	2	9
16:55	7	4	11
17:00	7	2	9

DRIVE THRU SURVEY

LOCATION: Dutch Bros, 34051 Date Palm Dr
CITY: Cathedral City

DAY: Wednesday
DATE: 11/12/2025

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
6:00	0	0	0
6:05	1	1	2
6:10	0	0	0
6:15	3	1	4
6:20	1	0	1
6:25	1	2	3
6:30	1	2	3
6:35	4	1	5
6:40	3	0	3
6:45	1	0	1
6:50	1	0	1
6:55	0	0	0
7:00	2	2	4
7:05	3	2	5
7:10	2	1	3
7:15	1	3	4
7:20	2	6	8
7:25	1	9	10
7:30	4	4	8
7:35	4	6	10
7:40	4	4	8
7:45	2	8	10
7:50	5	4	9
7:55	4	8	12
8:00	3	8	11
8:05	4	9	13
8:10	2	10	12
8:15	5	9	14
8:20	4	9	13
8:25	5	11	16
8:30	5	13	18
8:35	5	12	17
8:40	4	9	13
8:45	4	8	12
8:50	5	8	13
8:55	4	6	10
9:00	4	6	10

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
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DRIVE THRU SURVEY

LOCATION: Dutch Bros, 34051 Date Palm Dr
CITY: Cathedral City

DAY: Wednesday
DATE: 11/12/2025

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
14:00	5	9	14
14:05	5	11	16
14:10	4	7	11
14:15	4	3	7
14:20	3	0	3
14:25	3	0	3
14:30	1	2	3
14:35	2	3	5
14:40	2	0	2
14:45	3	0	3
14:50	1	1	2
14:55	1	0	1
15:00	1	4	5
15:05	4	1	5
15:10	3	1	4
15:15	3	6	9
15:20	4	3	7
15:25	5	3	8
15:30	3	3	6
15:35	3	3	6
15:40	3	1	4
15:45	4	4	8
15:50	4	2	6
15:55	4	3	7
16:00	4	3	7
16:05	4	1	5
16:10	3	2	5
16:15	2	2	4
16:20	3	1	4
16:25	4	0	4
16:30	2	3	5
16:35	4	2	6
16:40	5	1	6
16:45	3	0	3
16:50	2	0	2
16:55	0	4	4
17:00	3	1	4

DRIVE THRU SURVEY

LOCATION: Dutch Bros, 34051 Date Palm Dr
CITY: Cathedral City

DAY: Saturday
DATE: 12/6/2025

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
6:00	0	0	0
6:05	0	0	0
6:10	0	0	0
6:15	0	0	0
6:20	0	1	1
6:25	0	0	0
6:30	1	2	3
6:35	0	0	0
6:40	1	0	1
6:45	0	0	0
6:50	0	0	0
6:55	0	0	0
7:00	0	1	1
7:05	0	1	1
7:10	3	0	3
7:15	0	0	0
7:20	0	0	0
7:25	0	0	0
7:30	0	0	0
7:35	3	0	3
7:40	3	0	3
7:45	2	0	2
7:50	3	0	3
7:55	3	1	4
8:00	3	0	3
8:05	0	0	0
8:10	1	0	1
8:15	1	0	1
8:20	3	4	7
8:25	1	1	2
8:30	2	3	5
8:35	4	0	4
8:40	3	1	4
8:45	2	3	5
8:50	3	2	5
8:55	3	3	6
9:00	5	4	9

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
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DRIVE THRU SURVEY

LOCATION: Dutch Bros, 34051 Date Palm Dr
CITY: Cathedral City

DAY: Saturday
DATE: 12/6/2025

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
14:00	5	13	18
14:05	5	13	18
14:10	5	13	18
14:15	5	12	17
14:20	5	15	20
14:25	5	11	16
14:30	6	12	18
14:35	4	12	16
14:40	5	10	15
14:45	5	8	13
14:50	4	10	14
14:55	5	7	12
15:00	4	9	13
15:05	4	8	12
15:10	4	8	12
15:15	4	5	9
15:20	3	7	10
15:25	4	7	11
15:30	5	9	14
15:35	4	9	13
15:40	3	9	12
15:45	3	4	7
15:50	4	0	4
15:55	0	0	0
16:00	4	1	5
16:05	3	1	4
16:10	2	0	2
16:15	0	1	1
16:20	2	1	3
16:25	3	0	3
16:30	1	3	4
16:35	2	4	6
16:40	2	4	6
16:45	2	3	5
16:50	3	5	8
16:55	4	3	7
17:00	3	2	5

DRIVE THRU SURVEY

LOCATION: Dutch Bros, 81-776 Hwy 111
CITY: Indio, CA

DAY: Wednesday
DATE: 11/12/2025

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
6:00	1	5	6
6:05	2	1	3
6:10	2	0	2
6:15	2	3	5
6:20	2	2	4
6:25	2	3	5
6:30	2	6	8
6:35	2	7	9
6:40	2	7	9
6:45	2	5	7
6:50	2	1	3
6:55	2	4	6
7:00	2	3	5
7:05	2	3	5
7:10	2	5	7
7:15	2	6	8
7:20	2	5	7
7:25	2	7	9
7:30	2	6	8
7:35	2	3	5
7:40	1	2	3
7:45	3	4	7
7:50	2	3	5
7:55	3	2	5
8:00	3	3	6
8:05	3	6	9
8:10	3	11	14
8:15	3	13	16
8:20	4	11	15
8:25	4	10	14
8:30	5	9	14
8:35	5	11	16
8:40	5	9	14
8:45	5	8	13
8:50	5	9	14
8:55	5	5	10
9:00	3	3	6

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
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DRIVE THRU SURVEY

LOCATION: Dutch Bros, 81-776 Hwy 111
CITY: Indio, CA

DAY: Wednesday
DATE: 11/12/2025

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
14:00	3	0	3
14:05	3	3	6
14:10	2	5	7
14:15	4	1	5
14:20	2	0	2
14:25	2	0	2
14:30	3	2	5
14:35	3	3	6
14:40	3	0	3
14:45	3	2	5
14:50	1	0	1
14:55	3	0	3
15:00	3	3	6
15:05	4	4	8
15:10	4	2	6
15:15	4	4	8
15:20	3	2	5
15:25	2	1	3
15:30	3	0	3
15:35	1	0	1
15:40	3	1	4
15:45	1	3	4
15:50	3	1	4
15:55	3	3	6
16:00	3	2	5
16:05	2	3	5
16:10	2	3	5
16:15	2	3	5
16:20	3	0	3
16:25	1	1	2
16:30	4	4	8
16:35	2	0	2
16:40	3	2	5
16:45	3	7	10
16:50	4	4	8
16:55	4	4	8
17:00	4	4	8

DRIVE THRU SURVEY

LOCATION: Dutch Bros, 81-776 Hwy 111
CITY: Indio, CA

DAY: Saturday
DATE: 12/6/2025

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
6:00	2	0	2
6:05	1	0	1
6:10	1	0	1
6:15	0	0	0
6:20	1	0	1
6:25	1	0	1
6:30	3	0	3
6:35	2	0	2
6:40	2	0	2
6:45	3	1	4
6:50	3	2	5
6:55	3	4	7
7:00	3	2	5
7:05	3	1	4
7:10	2	0	2
7:15	2	0	2
7:20	0	0	0
7:25	0	0	0
7:30	2	0	2
7:35	3	2	5
7:40	2	2	4
7:45	4	3	7
7:50	3	6	9
7:55	4	7	11
8:00	4	5	9
8:05	4	4	8
8:10	4	2	6
8:15	3	2	5
8:20	2	1	3
8:25	1	1	2
8:30	3	1	4
8:35	2	0	2
8:40	1	1	2
8:45	1	1	2
8:50	1	1	2
8:55	3	1	4
9:00	0	0	0

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
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DRIVE THRU SURVEY

LOCATION: Dutch Bros, 81-776 Hwy 111
CITY: Indio, CA

DAY: Saturday
DATE: 12/6/2025

TIME	PickUp Window To Order Board	Order Board to End of Queue	TOTAL
14:00	3	3	6
14:05	3	5	8
14:10	4	5	9
14:15	4	7	11
14:20	5	6	11
14:25	4	4	8
14:30	1	2	3
14:35	2	2	4
14:40	4	3	7
14:45	4	2	6
14:50	1	2	3
14:55	1	0	1
15:00	3	2	5
15:05	4	4	8
15:10	3	6	9
15:15	4	4	8
15:20	4	2	6
15:25	2	2	4
15:30	3	0	3
15:35	2	1	3
15:40	2	1	3
15:45	3	2	5
15:50	4	2	6
15:55	2	1	3
16:00	1	0	1
16:05	2	2	4
16:10	3	1	4
16:15	3	0	3
16:20	4	4	8
16:25	4	2	6
16:30	2	3	5
16:35	3	3	6
16:40	5	5	10
16:45	4	4	8
16:50	5	7	12
16:55	4	8	12
17:00	5	4	9