LINSCOTT LAW & GREENSPAN engineers

REVISED TRAFFIC STUDY

YUCCA VALLEY STARBUCKS

Yucca Valley, California

September 27, 2023

(Update of August 8, 2023 Report)

Prepared for:

Avant Real Estate
4490 Ayers Avenue
Vernon, California 90058

LLG Ref. 2-23-4691-1

Prepared by:
Megan A. Lam
Transportation Engineer II

Under the Supervision of:
Keil D. Maberry, P.E.
Principal

Linscott, Law & Greenspan, Engineers
2 Executive Circle
Suite 250
Irvine, CA 92614
949.825.6175 T
949.825.6173 F
www.llgengineers.com

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Project Description

- The project site is addressed as 57037 Twentynine Palms Highway (SR-62) and is generally located on the southeast corner of Barberry Avenue and Twentynine Palms Highway (SR-62) in the City of Yucca Valley, California. The proposed Project will consist of a 2,100 square-foot (SF) Starbucks coffee shop with drive-through window on a vacant pad within an existing retail center. The proposed Project includes 700 SF of indoor seating space and no outdoor seating space. access to the proposed project site will be provided via the existing driveway along Barberry Avenue. The Project is anticipated to be completed by the Year 2025.

- The proposed Project is forecast to generate approximately 840 net daily trips, with net 90 trips (46 inbound, 44 outbound) produced in the AM peak hour and 41 net trips (20 inbound, 21 outbound) produced in the PM peak hour on a "typical" weekday.

Study Area

- The two (2) key study intersections selected for evaluation were determined primarily through application of San Bernardino County criteria and in coordination with City staff. The intersections listed below provide local access to the study area and define the extent of the boundaries for this traffic investigation. The jurisdictions where the study intersections are located are identified as well.

Key Study Intersections:

1. Barberry Avenue at Twentynine Palms Highway (SR-62) (City of Yucca Valley/Caltrans)
2. Barberry Avenue at Yucca Trail (City of Yucca Valley)

Cumulative Projects Description

- The seven (7) cumulative projects are forecast to generate a combined total of 2,790 daily trips, with 143 trips (76 inbound and 67 outbound) forecast during the AM peak hour and 266 trips (134 inbound and 132 outbound) forecast during the PM peak hour.

Traffic Analysis

Existing Traffic Conditions

- For Existing traffic conditions, the two (2) study intersections currently operate at acceptable levels of service during both the AM and PM peak hours.

Existing With Project Traffic Conditions

- For the Existing With Project traffic conditions, the intersection of Barberry Avenue at Twentynine Palms Highway (SR-62) (Intersection No. 1) is forecast to operate at unacceptable LOS D during the PM peak hour. The remaining study intersection is forecast to operate at acceptable service levels during the AM and PM peak hours.

  The intersection of Barberry Avenue at Twentynine Palms Highway (SR-62) (Intersection No. 1) exceeds the LOS standards and criteria specified in this report. The implementation of recommended improvements at the intersection would result in acceptable service levels and ensure that the intersection operates efficiently.

Year 2025 With Project Traffic Conditions

- For the Year 2025 With Project traffic conditions, one (1) of the two (2) study intersections will operate at unacceptable service levels with the addition of Project generated traffic in the horizon Year 2025. The intersection of Barberry Avenue at Twentynine Palms Highway (SR-62) (Intersection No. 1) is forecast to operate at unacceptable LOS D during the PM peak hour. The remaining study intersection is forecast to operate at acceptable service levels during the AM and PM peak hours.

  Although the intersection of Barberry Avenue at Twentynine Palms Highway (SR-62) operates adversely, the intersection does not exceed the LOS standards and criteria specified in this report since the Project delay increase is only 2.9 seconds. Therefore, improvements at this location are not required under Year 2025 With Project traffic conditions.

Recommended Improvements

Existing With Project Traffic Conditions

- The results of the Existing With Project traffic conditions level of service analyses indicate that the proposed Project will exceed the LOS thresholds at one (1) of the two (2) study intersections The other remaining study intersection is forecast to operate at acceptable service levels. As such, the following intersection improvements are recommended:

  - ***No. 1 – Barberry Avenue at Twentynine Palms Highway (SR-62):*** Install proper signage to restrict the southbound approach to "right-turn only" during the PM peak period (4:00 PM – 6:00 PM). These improvements are subject to the approval of the City of Yucca Valley and Caltrans.

Year 2025 With Project Traffic Conditions

- The results of the Year 2025 With Project traffic conditions level of service analyses indicate that the proposed Project will not exceed the LOS thresholds at either of the two (2) key study intersections. As such, no improvement measures have been recommended. It should be noted that the determination of impacts and associated need for improvements is consistent with the LOS standards and thresholds identified in Section 3.4 of this report,

which are based City Guidelines. Improvements are required for Existing With Project traffic conditions because the proposed Project causes the intersection to degrade from an LOS C to LOS D. However, Year 2025 With Project traffic conditions does not require improvements because the intersection is already operating adversely (LOS D) without the Project, and the proposed Project adds a maximum of 2.9 seconds of delay to the intersection, which is less than the required threshold of 5.0 seconds or more.

Drive-Through Queueing Evaluation

- Based on empirical data from three (3) existing Starbucks sites, the expected queue of the proposed Project will likely be 9 vehicles or less 85% of the time. The proposed Project will provide storage for up to 16 vehicles within the proposed drive-through lane without encroaching into the drive aisle. Therefore, the 85th percentile expected queues can be accommodated without interfering with internal circulation or causing congestion to the drive aisles. It should be noted that the proposed 16 vehicle storage drive-through lane can also accommodate the observed 95th percentile queues (i.e. queue range between 10 vehicles and 12 vehicles). Based on this empirical data, the expected queue of the proposed Project will likely be 12 vehicles or less 95% of the time. Lastly, it should be noted that the proposed 16 vehicle storage drive-through lane can also accommodate the observed maximum queue of 15 vehicles, which only occurred two times and only at one site throughout the survey days.

Parking Analysis

- Application of the City of Yucca Valley parking code ratios to the development totals results in a code-parking requirement of 14 spaces. With a proposed parking supply of 15 spaces, the project site would provide adequate parking within its own parcel. Nonetheless, since the proposed Project shares parking spaces amongst all tenants in the existing shopping center, the following section calculates the parking requirements for a portion of the existing retail center (at full occupancy) with the proposed Project based on the shared parking methodology approach.

- The peak parking survey data shared parking demand of the existing retail center with the proposed Project and the re-occupancy of the one vacant suite is ***41 parking spaces*** and occurs at 7:00 PM on a Saturday. With a total parking supply of 41 parking spaces for the study zone, it can be concluded that adequate parking will be provided. It should be noted that while up to 10 parking spaces will be removed with the construction of the proposed Project, there is adequate parking supply in proximity of the parking study area to adequately accommodate the displaced parking spaces, if needed.

Vehicle Miles Traveled (VMT) Assessment

- The *San Bernardino County Transportation Impact Study Guidelines* state that 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 square feet
  - 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

  The proposed Project will consist of a 2,100 SF Starbucks with Drive-Through Window. Therefore, based on the aforementioned criteria [i.e. local-serving retail less than 50,000 SF (including restaurants)], this project would screen out from a VMT analysis and be presumed to have a less than significant impact on VMT, per the County's guidelines.

REVISED TRAFFIC STUDY

YUCCA VALLEY STARBUCKS

Yucca Valley, California

September 27, 2023

(Update of August 8, 2023 Report)

1.0 INTRODUCTION

This traffic analysis addresses the potential traffic and circulation needs associated with the proposed Yucca Valley Starbucks (hereinafter referred to as Project). The project applicant, Avant Real Estate, proposes to develop a 2,100 square-foot (SF) Starbucks coffee shop with drive-through window. The project site is addressed as 57037 Twentynine Palms Highway (SR-62) and is generally located on the southeast corner of Barberry Avenue and Twentynine Palms Highway (SR-62) in the City of Yucca Valley, California.

This report documents the findings and recommendations of a traffic study conducted by Linscott, Law & Greenspan, Engineers (LLG) to determine the nature and extent of the traffic that would be associated with the Project and consider whether any roadway network improvements would be required. The traffic analysis evaluates the operating conditions at two (2) key study intersections within the project vicinity, estimates the trip generation potential of the proposed project, and forecasts future operating conditions without and with the proposed project. Where necessary, intersection improvements/mitigation measures are identified. This traffic report satisfies the requirements and procedures outlined in the *San Bernardino County Transportation Impact Study Guidelines,* dated July 2019 and is consistent with the requirements outlined in the most current *Congestion Management Program for San Bernardino County.*

The project site has been visited and an inventory of adjacent area roadways and intersections was performed. Existing traffic information has been collected at two (2) key study intersections on a "typical" weekday for use in the preparation of intersection level of service calculations. Information concerning cumulative projects (planned and/or approved) in the vicinity of the proposed Project has been researched at the City of Yucca Valley. Based on our research, there are seven (7) cumulative projects in the City of Yucca Valley within the vicinity of the subject site. These seven (7) planned and/or approved cumulative projects were considered in the cumulative traffic analysis for this project.

This traffic report analyzes existing and future weekday AM peak hour and PM peak hour traffic conditions for a near-term (Year 2025) traffic setting upon completion of the proposed Project. Peak hour traffic forecasts for the Year 2025 have been projected by increasing existing traffic volumes by an annual growth rate of 2.0% per year and adding traffic volumes generated by seven (7) cumulative projects, which provides a conservative forecast.

1.1 Study Area

The two (2) key study intersections selected for evaluation were determined primarily through application of San Bernardino County criteria and in coordination with City staff. The intersections listed below provide local access to the study area and define the extent of the boundaries for this traffic investigation. The jurisdictions where the study intersections are located are identified as well.

Key Study Intersections:

3. Barberry Avenue at Twentynine Palms Highway (SR-62) (City of Yucca Valley/Caltrans)
4. Barberry Avenue at Yucca Trail (City of Yucca Valley)

1.2 Traffic Analysis Components

The Highway Capacity Manual (HCM) Delay and corresponding Level of Service (LOS) calculations at the key study locations were used to evaluate the potential traffic-related impacts associated with area growth, cumulative traffic and the proposed Project. When necessary, this report recommends intersection improvements that may be required to accommodate future traffic volumes and restore/maintain an acceptable Level of Service and/or accommodate added traffic volumes generated by the Project. Included in this Traffic Study are:

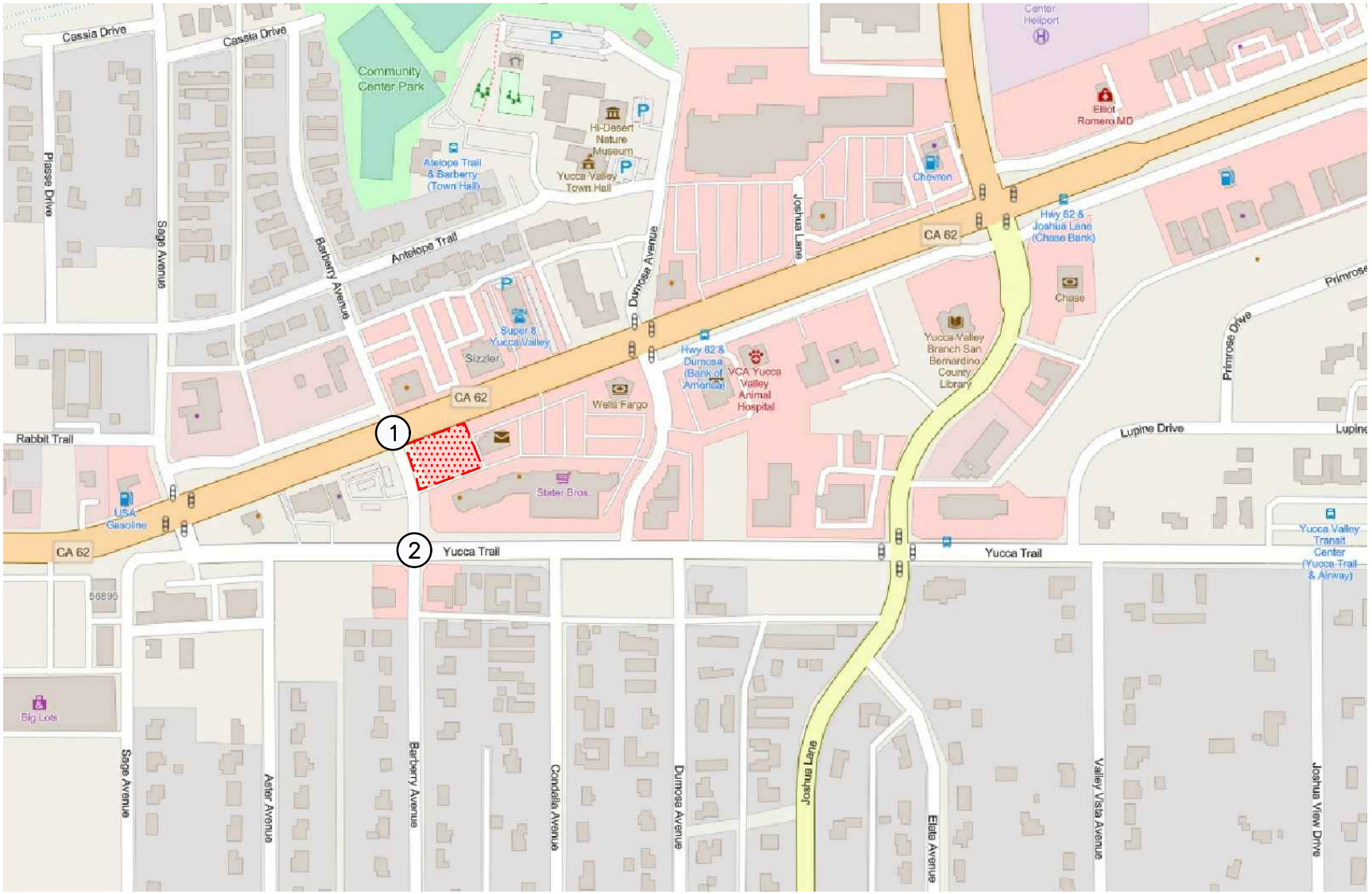
- Existing traffic counts,
- Estimated Project traffic generation/distribution/assignment,
- Estimated cumulative project traffic generation/distribution/assignment,
- AM and PM peak hour LOS analyses for Existing conditions,
- AM and PM peak hour LOS analyses for Existing conditions with Project traffic,
- AM and PM peak hour LOS analyses for Near-Term (Year 2025) Conditions without and with Project traffic,
- Recommended Improvements,
- Drive-Through Queueing Evaluation,
- Parking Analysis, and
- Vehicle Miles Traveled (VMT) Assessment.

Figure 1-1 presents a Vicinity Map, which illustrates the general location of the Project and depicts the study locations and surrounding street system.

1.3 Traffic Analysis Scenarios

The following scenarios are those for which volume/capacity and corresponding LOS calculations have been performed at the two (2) key study intersections for existing and near-term traffic conditions:

1. Existing (i.e. Baseline) Traffic Conditions,
2. Existing (i.e. Baseline) With Project Traffic Conditions,
3. Scenario (2) with Recommended Improvements, if any,
4. Year 2025 Without Project Traffic Conditions,
5. Year 2025 With Project Traffic Conditions,
6. Scenario (5) With Recommended Improvements, if any.



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SOURCE: GOOGLE

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 1-1

VICINITY MAP

YUCCA VALLEY STARBUCKS, YUCCA VALLEY

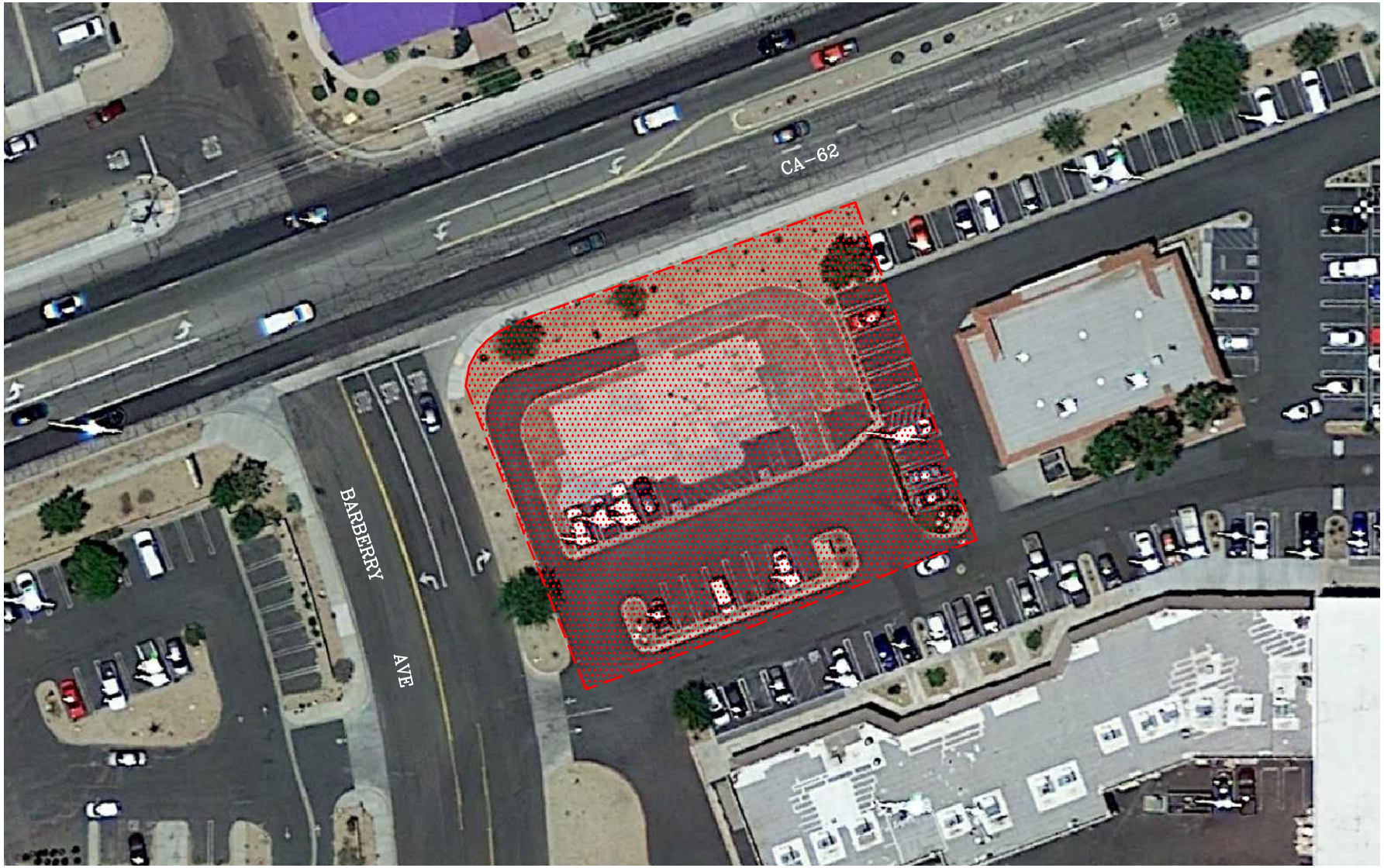
2.0 PROJECT DESCRIPTION AND LOCATION

The project site is addressed as 57037 Twentynine Palms Highway (SR-62) and is generally located on the southeast corner of Barberry Avenue and Twentynine Palms Highway (SR-62) in the City of Yucca Valley, California. The proposed Project will consist of a 2,100 square-foot (SF) Starbucks coffee shop with drive-through window on a vacant pad within an existing retail center. The proposed Project includes 700 SF of indoor seating space and no outdoor seating space. The Project is anticipated to be completed by the Year 2025.

Figure 2-1 presents an aerial image of the existing site for the proposed Project. ***Figure 2-2*** presents the site plan for the proposed Project.

2.1 Site Access

As shown in *Figure 2-2*, access to the proposed project site will be provided via the existing driveway along Barberry Avenue.



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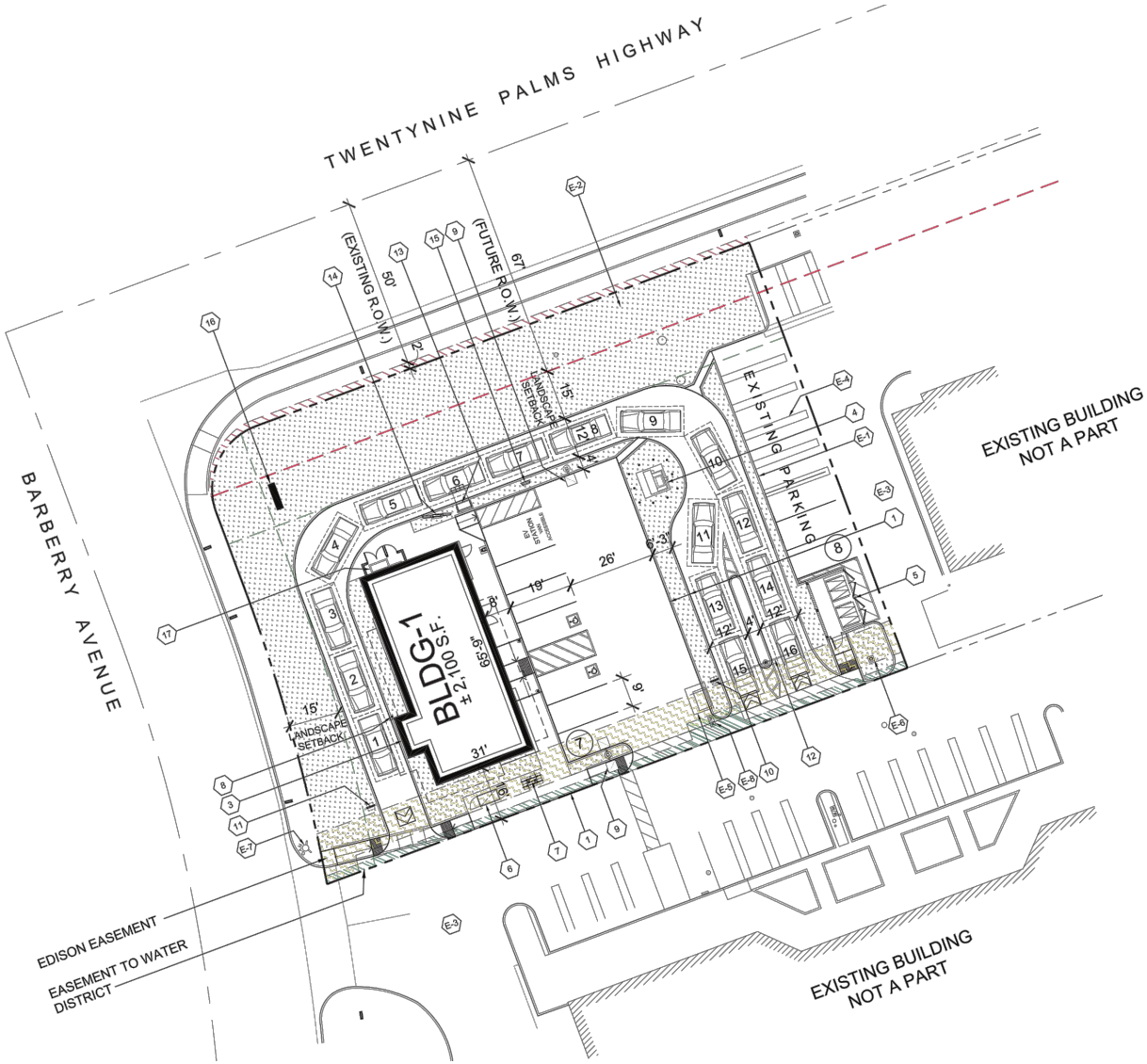
KEY

= PROJECT SITE

FIGURE 2-1

EXISTING SITE AERIAL

YUCCA VALLEY STARBUCKS, YUCCA VALLEY



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SOURCE: MMA ARCHITECTURE

FIGURE 2-2

PROPOSED SITE PLAN

YUCCA VALLEY STARBUCKS, YUCCA VALLEY

3.0 ANALYSIS CONDITIONS AND METHODOLOGY

3.1 Existing Street Network

The principal local network of streets serving the project includes Barberry Avenue, Yucca Trail, and Twentynine Palms Highway (SR-62), which provides regional access to the site. The following discussion provides a brief synopsis of these key area streets.

Barberry Avenue is generally a two-lane undivided roadway, except between Twentynine Palms Highway (SR-62) and Yucca Trail where it is a divided roadway, oriented in the north-south direction, and borders the Project site to the west. On-street parking is not permitted along either side of the roadway within the vicinity of the Project site. The posted speed limit on Barberry Avenue is 25 miles per hour (mph). The study intersections of Barberry Avenue at Twentynine Palms Highway (SR-62) and Yucca Trail are stop-controlled.

Yucca Trail is generally a two-lane, undivided roadway oriented in the east-west direction. On-street parking is generally not permitted along either side of the roadway within the vicinity of the Project site, except for the south side of the roadway east of Barberry Avenue. The posted speed limit on Yucca Trail is 40 mph.

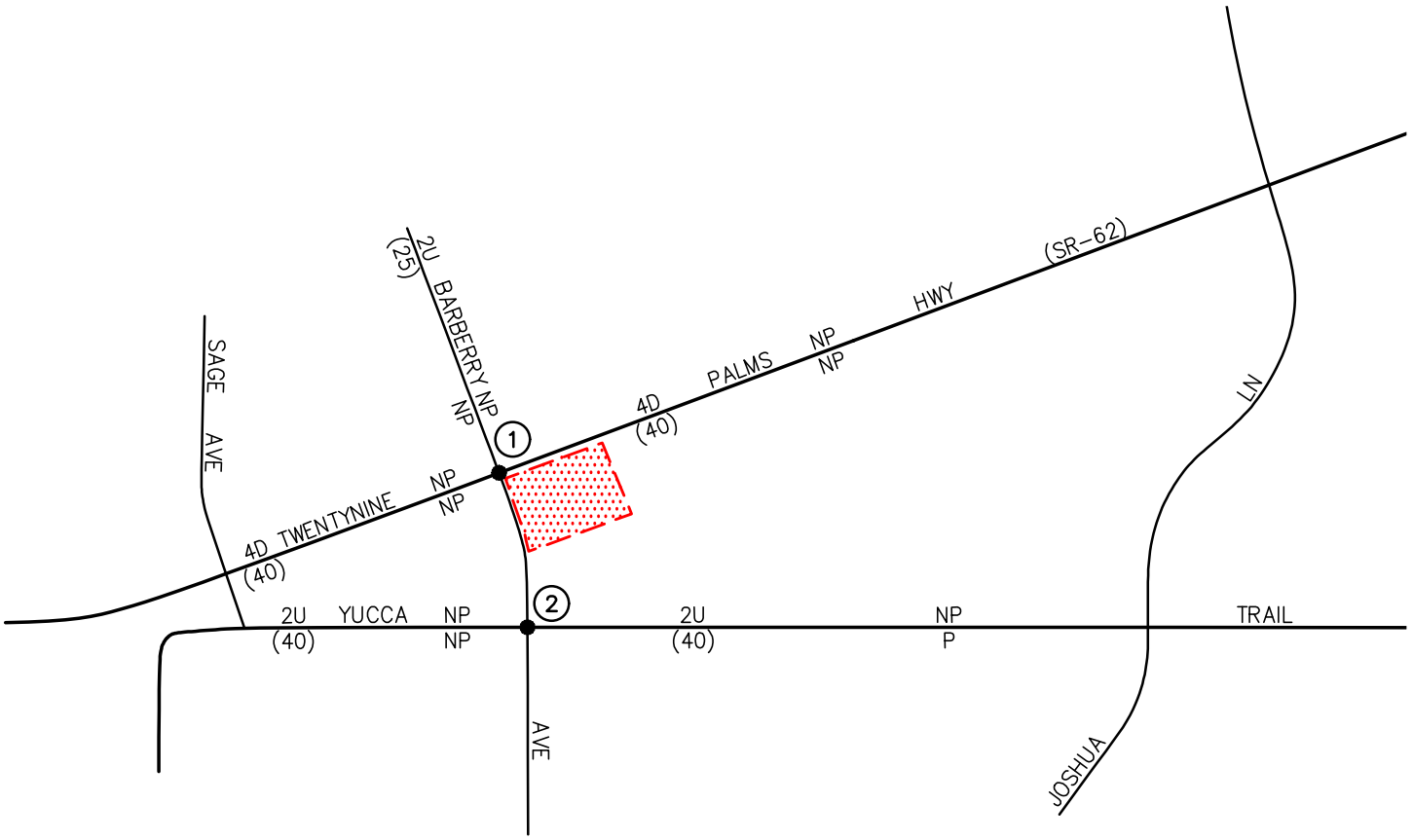
Twentynine Palms Highway (SR-62) is generally a four-lane divided roadway oriented in the east-west direction and borders the Project site to the north. On-street parking is generally not permitted along either side of the roadway within the vicinity of the Project site. The posted speed limit on SR-62 is 40 mph.

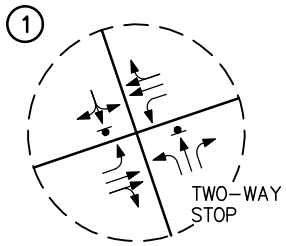
Figure 3-1 presents an inventory of the existing roadway conditions within the study area evaluated in this report. The number of travel lanes and intersection controls for the key area study intersections are identified.

3.2 Existing Traffic Volumes

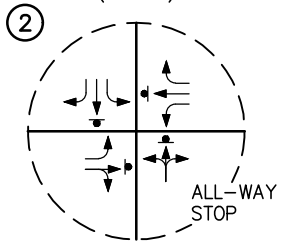
Two (2) key study intersections have been identified as the locations at which to evaluate existing and future traffic operating conditions. Some portion of potential Project-related traffic will pass through these intersections and the analysis will reveal the expected relative effect of the Project.

Existing AM peak hour and PM peak hour traffic volumes for the two (2) key study intersections evaluated in this report were obtained from manual peak hour turning movement counts conducted by Counts Unlimited in May 2023. ***Figures 3-2*** and ***3-3*** illustrate the existing AM peak hour and PM peak hour traffic volumes at the two (2) key study intersections evaluated in this report, respectively. ***Appendix A*** contains the detailed peak hour count sheets for the key intersections evaluated in this report.





BARBERRY AVE @ TWENTYNINE PALMS HWY (SR-62)



BARBERRY AVE @ YUCCA TRAIL

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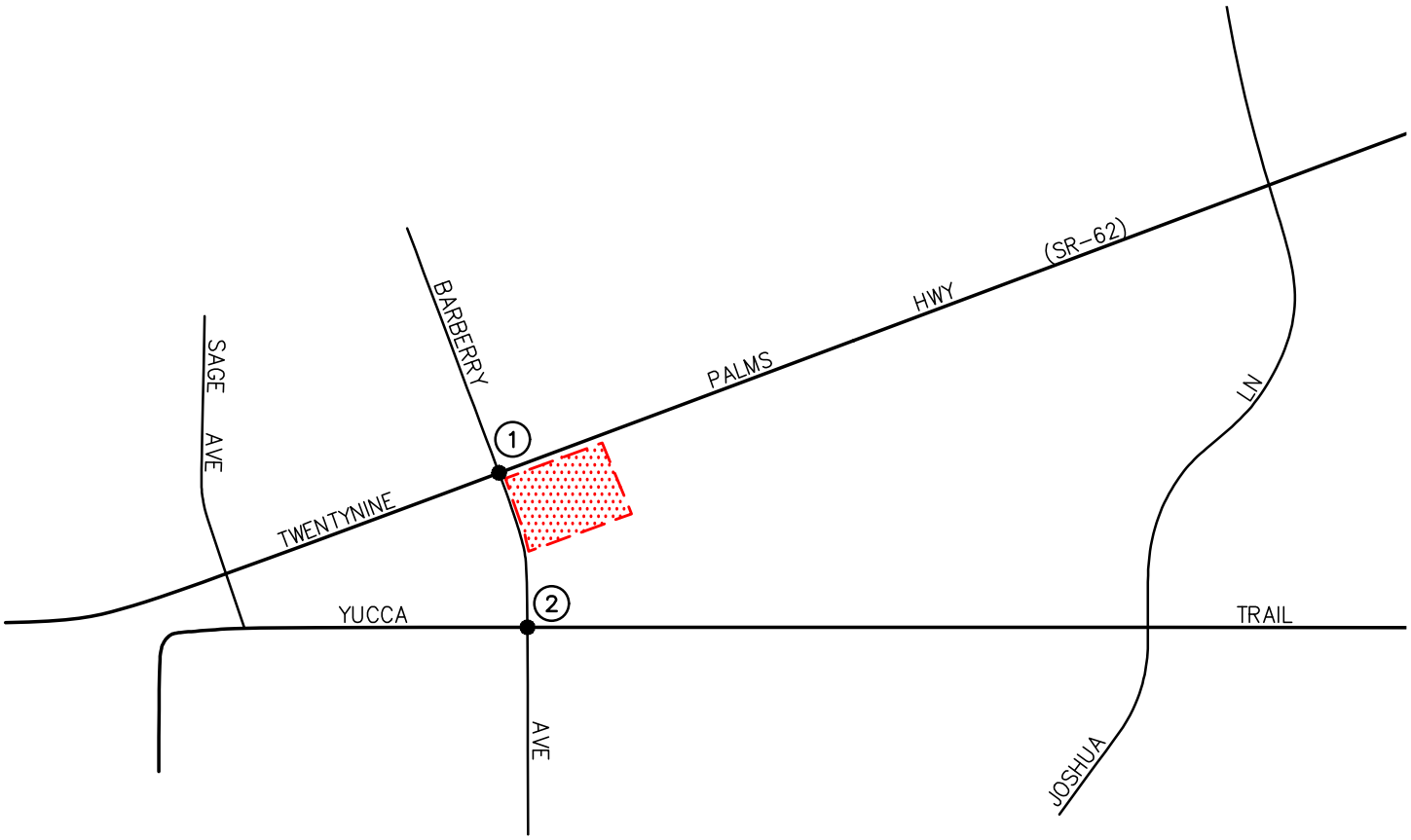
KEY

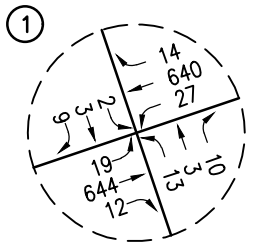
(#) = STUDY INTERSECTION
= APPROACH LANE ASSIGNMENT
● = TRAFFIC SIGNAL, ☛ = STOP SIGN
P = PARKING, NP = NO PARKING
U = UNDIVIDED, D = DIVIDED
2 = NUMBER OF TRAVEL LANES
(XX)= POSTED SPEED LIMIT (MPH)
= PROJECT SITE

FIGURE 3-1

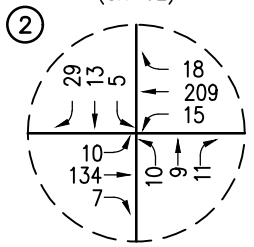
EXISTING ROADWAY CONDITIONS AND INTERSECTION CONTROLS

YUCCA VALLEY STARBUCKS, YUCCA VALLEY





BARBERRY AVE @
TWENTYNINE PALMS HWY
(SR-62)



BARBERRY AVE @
YUCCA TRAIL

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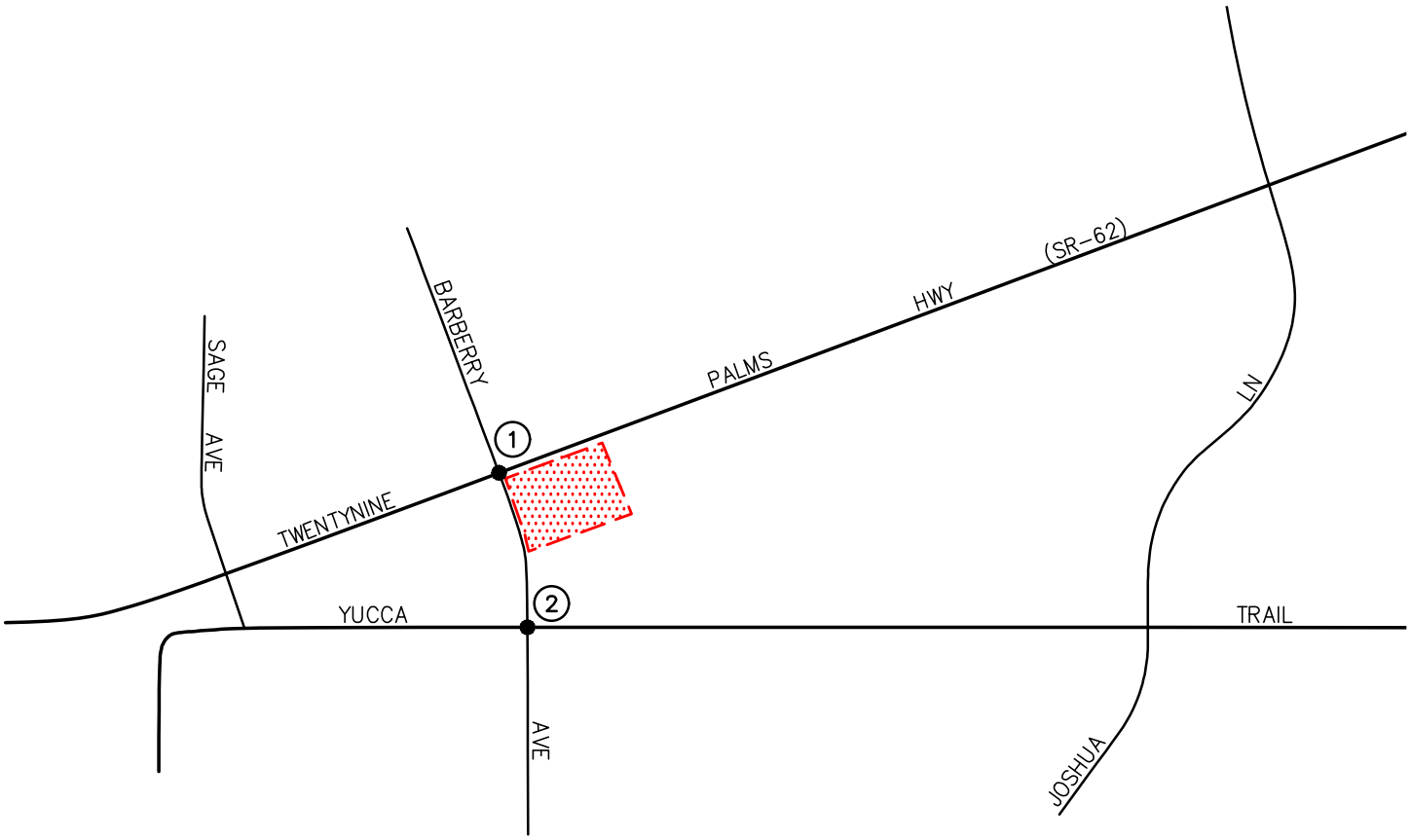
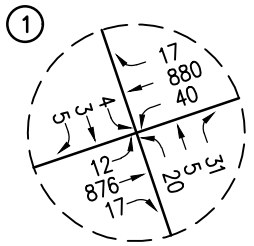
KEY
(#) = STUDY INTERSECTION
= PROJECT SITE

FIGURE 3-2

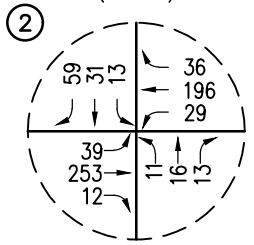
EXISTING AM PEAK HOUR TRAFFIC VOLUMES

YUCCA VALLEY STARBUCKS, YUCCA VALLEY





BARBERRY AVE @
TWENTYNINE PALMS HWY
(SR-62)



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KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 3-3

EXISTING PM PEAK HOUR TRAFFIC VOLUMES

YUCCA VALLEY STARBUCKS, YUCCA VALLEY

3.3 Level of Service (LOS) Analysis Methodologies

In conformance with County of San Bernardino and San Bernardino County CMP requirements, AM and PM peak hour operating conditions for the key study intersections were evaluated using the methodology outlined in *Chapter 20 of the HCM 7* for two-way stop-controlled intersections and the methodology outlined in *Chapter 21 of the HCM 7* for all-way stop-controlled intersections.

3.3.1 *Highway Capacity Manual 7 (HCM 7) Method of Analysis (Unsignalized Intersections)*

The HCM unsignalized methodology for stop-controlled intersections was utilized for the analysis of the unsignalized intersections. LOS criteria for unsignalized intersections differ from LOS criteria for signalized intersections as signalized intersections are designed for heavier traffic and therefore a greater delay. Unsignalized intersections are also associated with more uncertainty for users, as delays are less predictable, which can reduce users' delay tolerance.

3.3.1.1 Two-Way Stop-Controlled Intersections

Two-way stop-controlled intersections are comprised of a major street, which is uncontrolled and a minor street, which is controlled by stop signs. Level of service for a two-way stop-controlled intersection is determined by the computed or measured control delay. The control delay by movement, by approach and for the intersection as a whole is estimated by the computed capacity for each movement. LOS is determined for each minor-street movement (or shared movement) as well as major-street left turns. The worst side street approach delay is reported. LOS is not defined for the intersection as a whole or for major-street approaches, as it is assumed that major-street through vehicles experience zero delay. The HCM control delay value ranges for two-way stop-controlled intersections are shown in ***Table 3-1***.

3.3.1.2 All-Way Stop-Controlled Intersections

All-way stop-controlled intersections require every vehicle to stop at the intersection before proceeding. Because each driver must stop, the decision to proceed into the intersection is a function of traffic conditions on the other approaches. The time between subsequent vehicle departures depends on the degree of conflict that results between the vehicles and vehicles on the other approaches. This methodology determines the control delay for each lane on the approach, computes a weighted average for the whole approach and computes a weighted average for the intersection as a whole. Level of service (LOS) at the approach and intersection levels is based solely on control delay. The HCM control delay value ranges for all-way stop-controlled intersections are shown in *Table 3-1*.

3.4 Level of Service (LOS) Standards and Thresholds

The proposed Project is located within the Desert region of San Bernardino County and therefore the following criteria as stated in the *San Bernardino County Transportation Impact Study Guidelines,* dated July 2019 has been utilized to evaluate the need for improvements at the two (2) key study intersections.

Unsignalized Intersections

Consistent with the acceptable LOS for the Desert, Valley, and Mountain regions as described in the current General Plan, the County should consider the following unsignalized intersection criteria when identifying operational deficiencies:

An operational improvement would be required if the study determines that either section a) or both sections b) and c) occur:

a) The addition of project related traffic causes the intersection to degrade from an LOS D or better to a LOS E or worse in the Valley and Mountain regions or from an 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 E or F in the Valley and Mountain regions or at an LOS D, E, or F in the Desert region (per Section 10.5.2 b))

AND

c) One or both of the following conditions are met:

1) The project adds five (5) or more trips to any minor street approach
2) The intersection meets the peak hour traffic signal warrant after the addition of project traffic (per Section 10.5.2 c)).

If the conditions above are satisfied, improvements should be identified that achieve the following:

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

3.5 Existing Level of Service Results

Table 3-2 summarizes the existing peak hour service level calculations for the two (2) key study intersections based on existing traffic volumes and current street geometry. Review of *Table 3-2* indicates that the two (2) study intersections currently operate at acceptable levels of service during both the AM and PM peak hours.

Appendix B presents the HCM/LOS calculations for the two (2) key study intersections for the AM peak hour and PM peak hour.

TABLE 3-1

LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS (HCM 7 METHODOLOGY)[1,2]

Level of Service (LOS)	Highway Capacity Manual (HCM) Delay Per Vehicle (seconds/vehicle)	Level of Service Description
A	≤ 10.0	Little or no delay
B	> 10.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion

1 Source: *Highway Capacity Manual 7*, Chapter 20: Two-Way Stop-Controlled Intersections. The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection as a whole.

2 Source: *Highway Capacity Manual 7*, Chapter 21: All-Way Stop-Controlled Intersections. For approaches and intersection-wide assessment, LOS is defined solely by control delay.

TABLE 3-2
EXISTING PEAK HOUR LEVELS OF SERVICE

Key Intersections	Minimum Acceptable LOS	Time Period	Control Type	Delay (s/v)	LOS
1. Barberry Avenue at Twentynine Palms Highway (SR-62)	C	AM	Two-Way	17.2	C
		PM	Stop	23.4	C
2. Barberry Avenue at Yucca Trail	C	AM	All-Way	10.8	B
		PM	Stop	11.4	B

Notes:
- s/v = seconds per vehicle (delay)

4.0 TRAFFIC FORECASTING METHODOLOGY

In order to estimate the traffic characteristics of the proposed Project, a multi-step process has been utilized. The first step is trip generation, which estimates the total arriving and departing traffic on a peak hour and daily basis. The traffic generation potential is forecast by applying the appropriate vehicle trip generation equations or rates to the Project development tabulation.

The second step of the forecasting process is trip distribution, which identifies the origins and destinations of inbound and outbound Project traffic. These origins and destinations are typically based on demographics and existing/anticipated travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of Project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area.

With the forecasting process complete and Project traffic assignments developed, the effect of the proposed Project's added traffic is isolated by comparing operational (LOS) conditions at selected key intersections using expected future traffic volumes with and without forecast Project traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated.

5.0 PROJECT TRAFFIC CHARACTERISTICS

5.1 Project Trip Generation Forecast

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation equations and/or rates used in the traffic forecasting procedure are found in the 11th Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 2021].

Table 5-1 summarizes the trip generation rates used in forecasting the vehicular trips generated by the proposed Project and presents the forecast daily and peak hour project traffic volumes for a "typical" weekday. As shown in the upper portion of *Table 5-1,* the trip generation potential of the proposed Project has been estimated using ITE Land Use 937: Coffee/Donut Shop with Drive-Through Window trip rates.

A review of the last row of *Table 5-1* indicates that the Project is forecast to generate approximately 840 net daily trips, with net 90 trips (46 inbound, 44 outbound) produced in the AM peak hour and 41 net trips (20 inbound, 21 outbound) produced in the PM peak hour on a "typical" weekday.

It should be noted that the aforementioned overall Project trip generation includes adjustments for pass-by to account for trips that are already in the everyday traffic stream on the adjoining streets (i.e. Twentynine Palms Highway and Yucca Trail) and will stop as they pass by the Project site as a matter of convenience on their path to another destination. The *ITE Trip Generation Manual, 11th Edition,* does not contain any pass-by information for the Coffee/Donut Shop with Drive-Through Window land use. Therefore, the Daily, AM peak hour and PM peak hour pass-by rates were conservatively assumed at 25%, 50%, and 25%, respectively.

5.2 Project Traffic Distribution and Assignment

Figure 5-1 presents the traffic distribution pattern for the proposed Project. Project traffic volumes both entering and exiting the Project site have been distributed and assigned to the adjacent street system based on the following considerations:

- location of site access points in relation to the surrounding street system,
- the site's proximity to major traffic carriers (i.e. Twentynine Palms Highway)
- location of residential areas and existing Starbucks in the area,
- expected localized traffic flow patterns based on adjacent street channelization and presence of traffic signals, and
- ingress/egress availability at the project site.

The anticipated AM and PM peak hour project traffic volumes associated with the proposed Project are presented in ***Figures 5-2*** and ***5-3***, respectively. The traffic volume assignments presented in *Figures 5-2* and *5-3* reflect the traffic distribution characteristics shown in *Figure 5-1* and the traffic generation forecast presented in *Table 5-1.*

TABLE 5-1

PROJECT TRAFFIC GENERATION FORECAST[3]

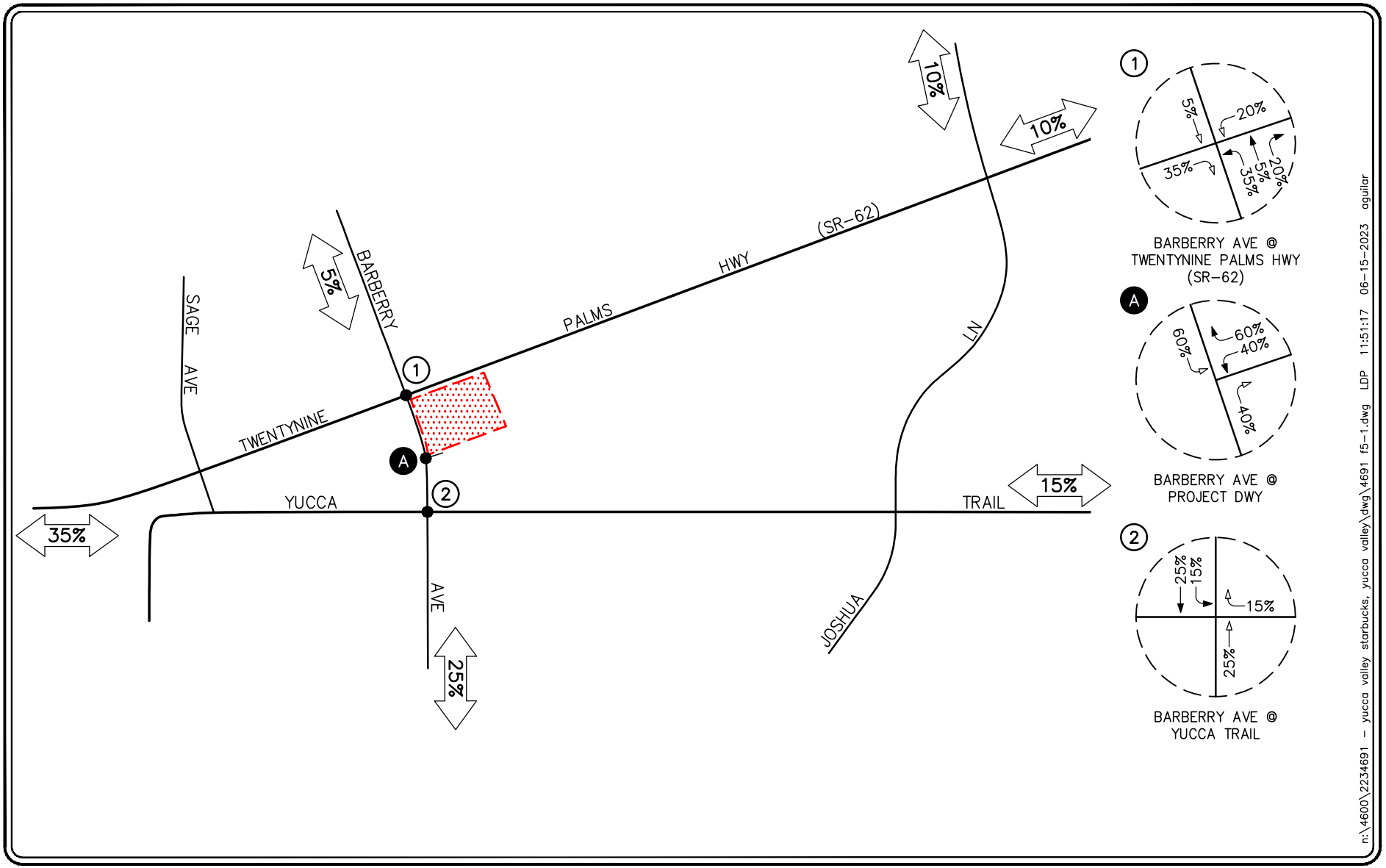
ITE Land Use Code / Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Generation Factors:							
▪ 937: Coffee/Donut Shop with Drive-Through Window (TE/TSF)	533.57	51%	49%	85.88	50%	50%	38.99
Proposed Project Generation Forecast:							
▪ Starbucks (2,100 SF)	1,120	92	88	180	41	41	82
Pass-by (Daily: 25%, AM: 50% PM: 50%)[4]	-280	-46	-44	-90	-21	-20	-41
Starbucks Net Trip Generation	***840***	***46***	***44***	***90***	***20***	***21***	***41***

Notes:

- TE/TSF = Trip ends per thousand square feet

[3] Source*: Trip Generation, 11th Edition*, Institute of Transportation Engineers, (ITE) [Washington, D.C. (2021)].

[4] Source*:* The *ITE Trip Generation Manual* does not contain any pass-by information for the Coffee/Donut Shop With Drive-Through Window land use. Therefore, the Daily, AM peak hour & PM peak hour pass-by rates were conservatively assumed at 25%, 50%, and 25%, respectively.



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N NO SCALE

KEY

(#) = STUDY INTERSECTION

= INBOUND PERCENTAGE

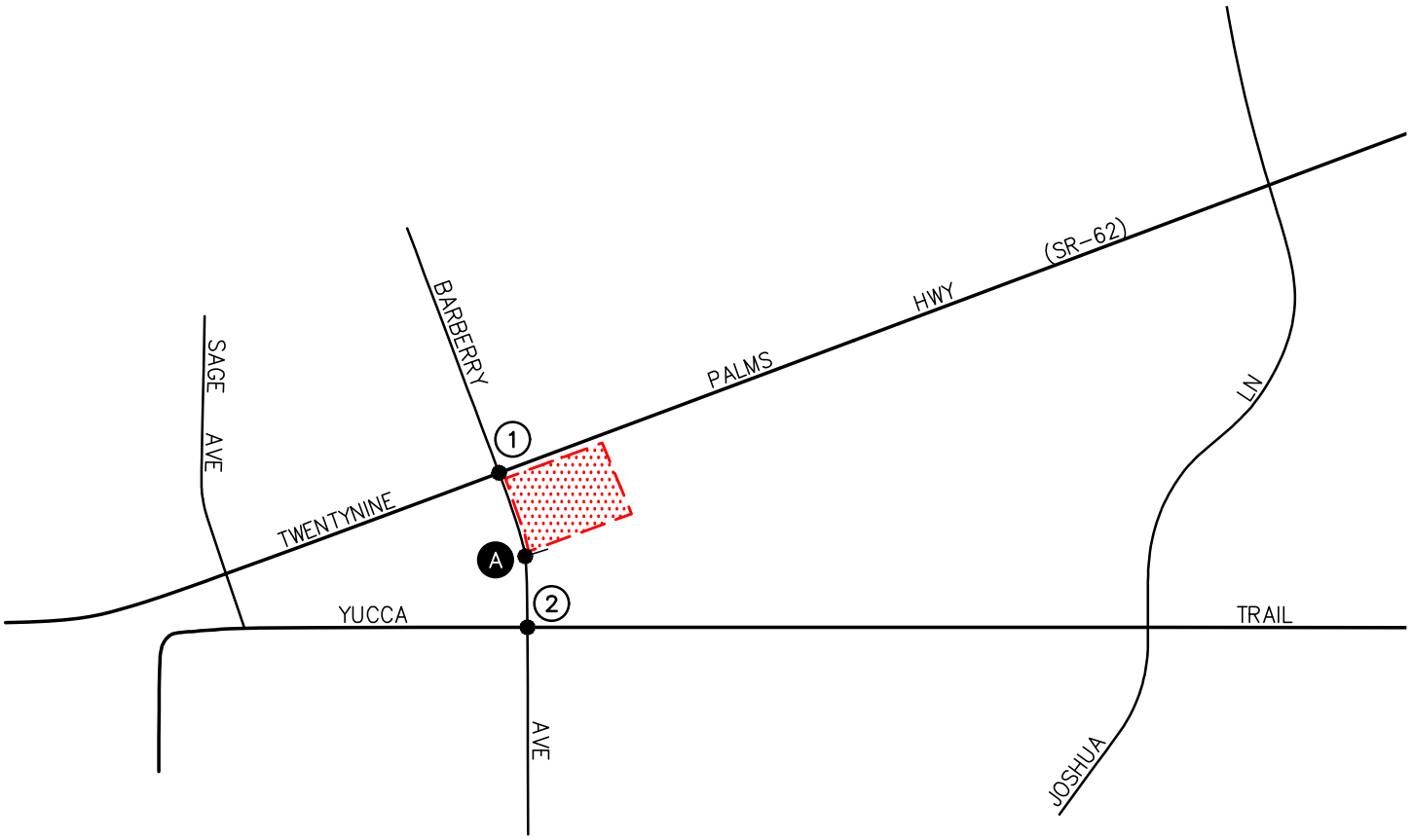
= OUTBOUND PERCENTAGE

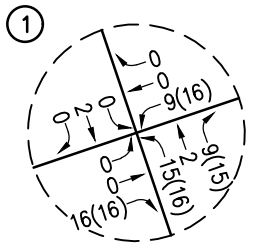
= PROJECT SITE

FIGURE 5-1

PROJECT TRAFFIC DISTRIBUTION PATTERN

YUCCA VALLEY STARBUCKS, YUCCA VALLEY





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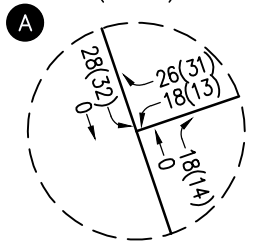

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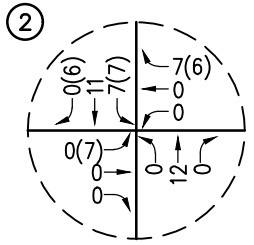
PROJECT DWY



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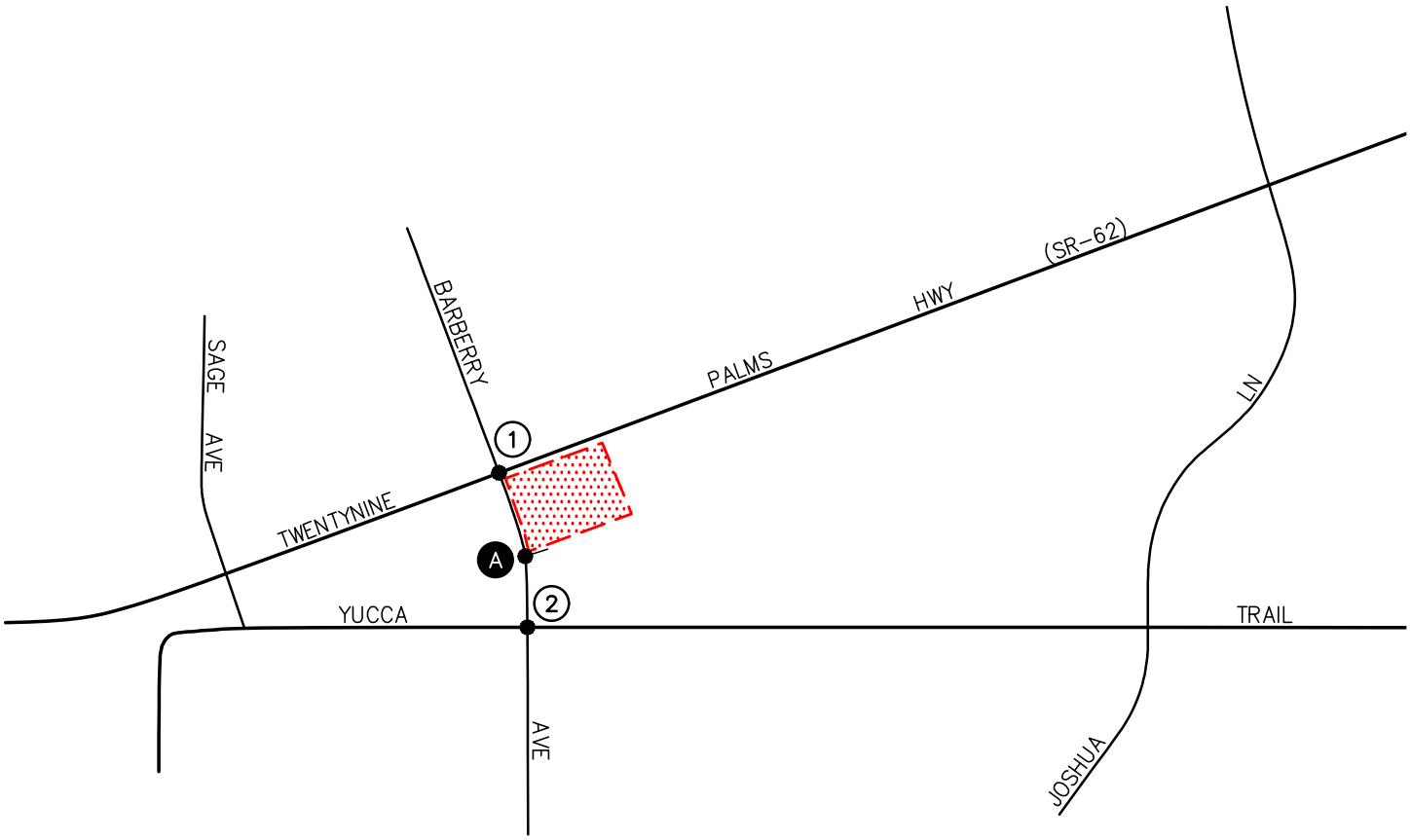
KEY

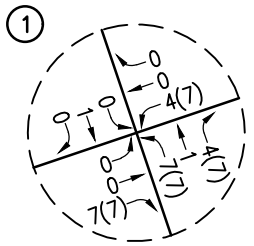
(#) = STUDY INTERSECTION
(XX) = PASS-BY TRIPS
= PROJECT SITE

FIGURE 5-2

AM PEAK HOUR PROJECT TRAFFIC VOLUMES

YUCCA VALLEY STARBUCKS, YUCCA VALLEY





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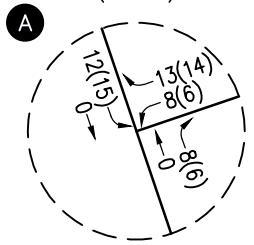

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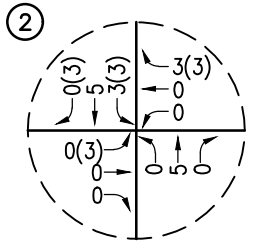

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(XX) = PASS-BY TRIPS
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FIGURE 5-3

PM PEAK HOUR PROJECT TRAFFIC VOLUMES

YUCCA VALLEY STARBUCKS, YUCCA VALLEY

6.0 FUTURE TRAFFIC CONDITIONS

6.1 Existing With Project Traffic Volumes

The estimates of Project generated traffic volumes were added to Existing traffic conditions to develop traffic projections for Existing With Project traffic conditions. ***Figures 6-1*** and ***6-2*** present the anticipated AM and PM peak hour Existing With Project traffic volumes, respectively at the two (2) key study intersections.

6.2 Year 2025 Without Project Traffic Volumes

6.2.1 *Ambient Growth Traffic*

Horizon year, background traffic growth estimates have been calculated using an ambient growth factor. The ambient traffic growth factor is intended to include unknown and future cumulative projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area. The future growth in traffic volumes has been calculated at two percent (2.0%) per year. Applied to existing Year 2023 traffic volumes results in a four percent (4.0%) growth in existing volumes to horizon year 2025.

6.2.2 *Cumulative Projects Traffic Characteristics*

In order to make a realistic estimate of future on-street conditions prior to implementation of the Project, the status of other known development projects (cumulative projects) has been researched at the City of Yucca Valley. With this information, the service levels of key study intersections with the proposed Project can be evaluated within the context of the cumulative impact of all ongoing development and these cumulative projects' added traffic volumes. Based on our research, there are seven (7) cumulative projects in the City of Yucca Valley within the vicinity of the subject site. These seven (7) planned and/or approved cumulative projects were considered in the cumulative traffic analysis for this project.

Table 6-1 provides the location and a brief description for each of the seven (7) cumulative projects. ***Figure 6-3*** graphically illustrates the location of the cumulative projects. These cumulative projects are expected to generate vehicular traffic, which may affect the operating conditions of the key study intersections.

Table 6-2 presents the development totals and resultant trip generation for the seven (7) cumulative projects. As shown in *Table 6-2*, the seven (7) cumulative projects are forecast to generate a combined total of 2,790 daily trips, with 143 trips (76 inbound and 67 outbound) forecast during the AM peak hour and 266 trips (134 inbound and 132 outbound) forecast during the PM peak hour.

The AM and PM peak hour traffic volumes associated with the seven (7) cumulative projects in the Year 2025 are presented in ***Figures 6-4*** and ***6-5***, respectively. Cumulative project trips were developed using the rates/equations contained within the 11th Edition of *Trip Generation* and/or from available traffic studies and distributed to the study area using traffic engineering judgement and/or available traffic studies.

6.2.3 *Year 2025 Without Project Traffic Volumes*

Figures 6-6 and ***6-7*** present Year 2025 Without Project AM and PM peak hour traffic volumes at the two (2) key study intersections, respectively. It should be noted that the Year 2025 Without Project traffic volumes include ambient traffic growth as well as the traffic from the seven (7) cumulative projects.

6.3 Year 2025 With Project Traffic Volumes

The estimates of Project generated traffic volumes were added to the Year 2025 Without Project traffic conditions to develop traffic projections for Year 2025 With Project traffic conditions. ***Figures 6-8*** and ***6-9*** present the anticipated AM and PM peak hour Year 2025 With Project traffic volumes, respectively, at the two (2) key study intersections.

TABLE 6-1
LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS[5]

No.	Cumulative Project	Location/Address	Description
Yucca Valley			
1.	Nice Dream Ices	56778 Twentynine Palms Hwy	3,936 SF Ice Cream Shop
2.	High Desert Times	56695 Twentynine Palms Hwy	1,127 SF Magazine Store
3.	Star Café	55761 Twentynine Palms Highway	2,840 SF Café/Restaurant to replace existing automotive shop
4.	Chipotle Restaurant	57590 Twentynine Palms Highway	2,313 SF Fast Casual Restaurant
5.	Domino's Pizza	Northwest Corner of Balsa Avenue at Twentynine Palms Highway	1,600 SF Fast Food Restaurant
6.	Quick Quack Car Wash	58024 Twentynine Palms Highway	3,600 SF Carwash with a with 94 ft tunnel
7.	Aquatics & Recreation Center Project	Brehm Park	40,000 SF Indoor Aquatics/Gymnasium/ Multi-purpose space

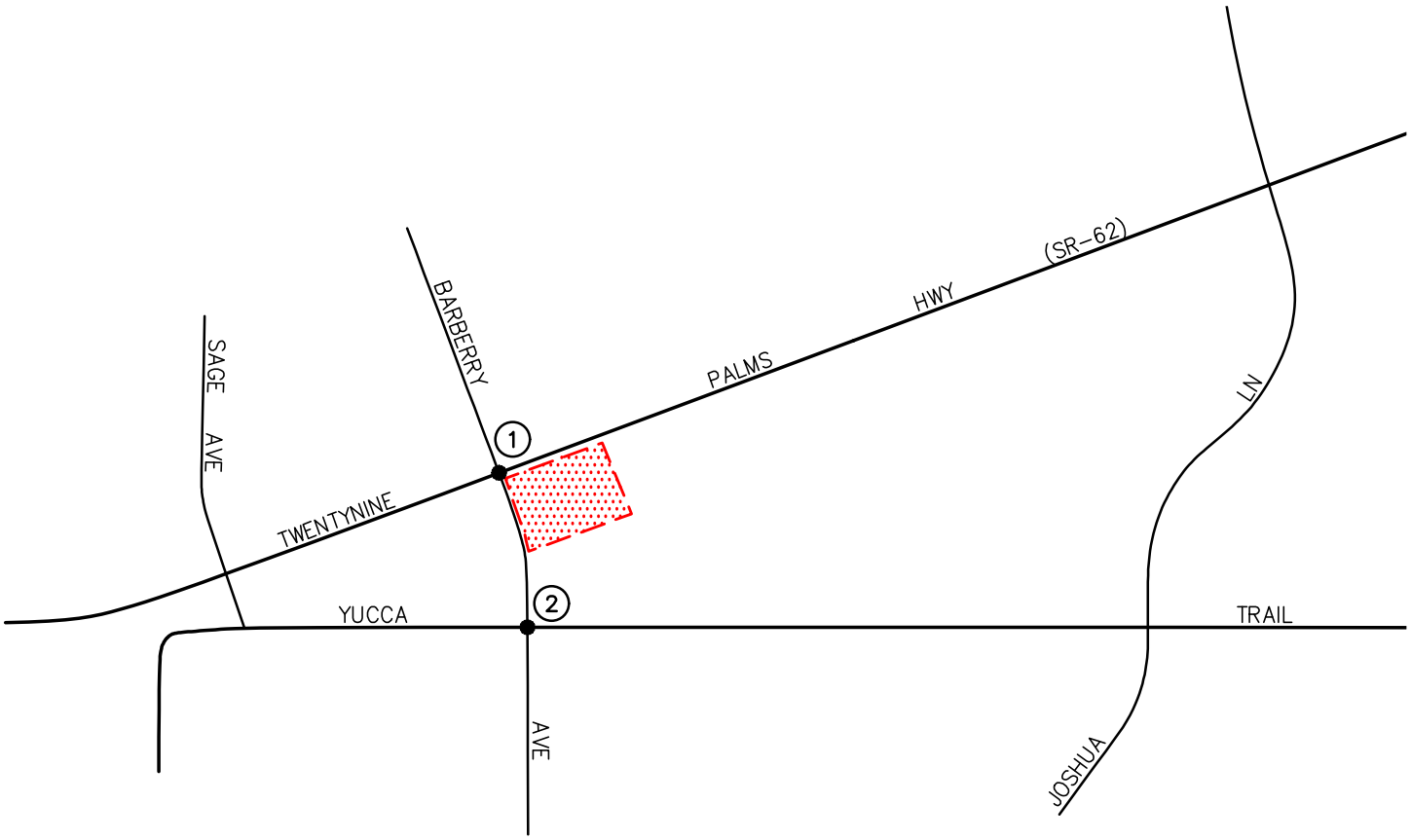
Notes:
- SF = Square-feet
- DU = Dwelling units

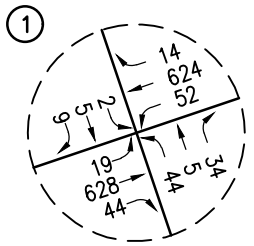
[5] Source: City of Yucca Valley Planning Department.

TABLE 6-2
CUMULATIVE PROJECTS TRAFFIC GENERATION FORECAST[6]

Cumulative Project Description	Daily 2-Way	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
1. Nice Dream Ices	382	3	3	6	27	22	49
2. High Desert Times	61	2	1	3	4	3	7
3. Star Café	227	9	10	19	7	2	9
4. Chipotle Restaurant	202	2	1	3	9	8	17
5. Domino's Pizza	155	1	1	2	11	9	20
6. Quick Quack Car Wash	610	9	25	34	29	35	64
7. Aquatics & Recreation Center Project	1,153	50	26	76	47	53	100
Cumulative Projects Total Trip Generation Potential	**2,790**	**76**	**67**	**143**	**134**	**132**	**266**

[6] Unless otherwise noted, Source: *Trip Generation*, 11th Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2021).





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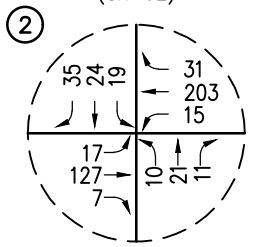

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KEY

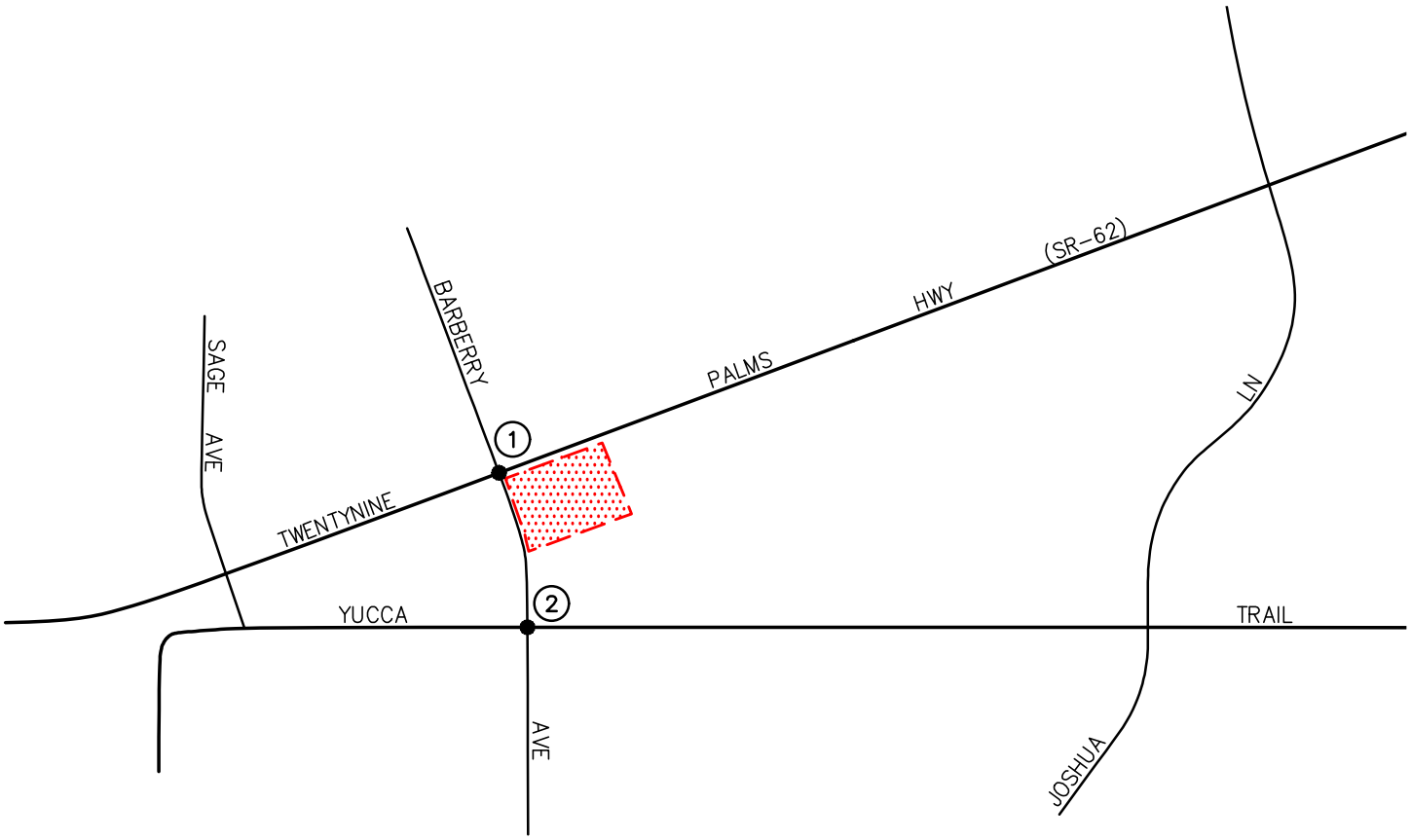
(#) = STUDY INTERSECTION

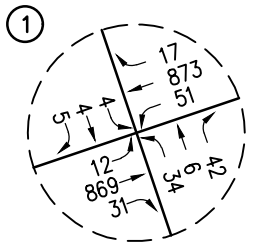
= PROJECT SITE

FIGURE 6-1

EXISTING WITH PROJECT AM PEAK HOUR TRAFFIC VOLUMES

YUCCA VALLEY STARBUCKS, YUCCA VALLEY





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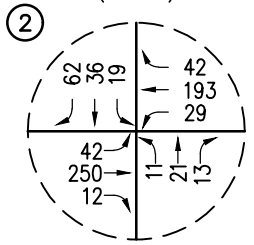

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(#) = STUDY INTERSECTION

= PROJECT SITE

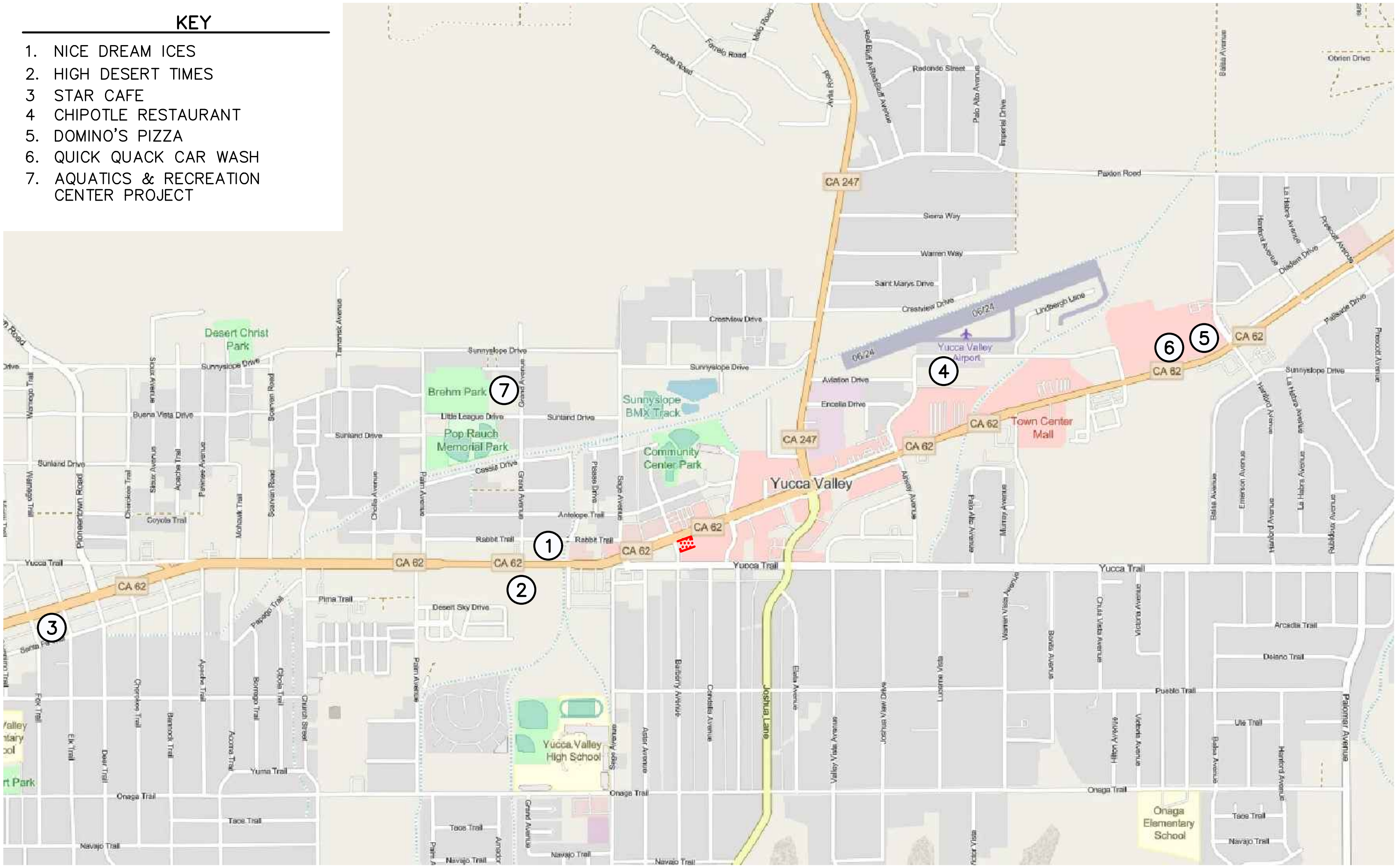
FIGURE 6-2

EXISTING WITH PROJECT PM PEAK HOUR TRAFFIC VOLUMES

YUCCA VALLEY STARBUCKS, YUCCA VALLEY

KEY

1. NICE DREAM ICES
2. HIGH DESERT TIMES
3 STAR CAFE
4 CHIPOTLE RESTAURANT
5. DOMINO'S PIZZA
6. QUICK QUACK CAR WASH
7. AQUATICS & RECREATION CENTER PROJECT



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N NO SCALE

KEY

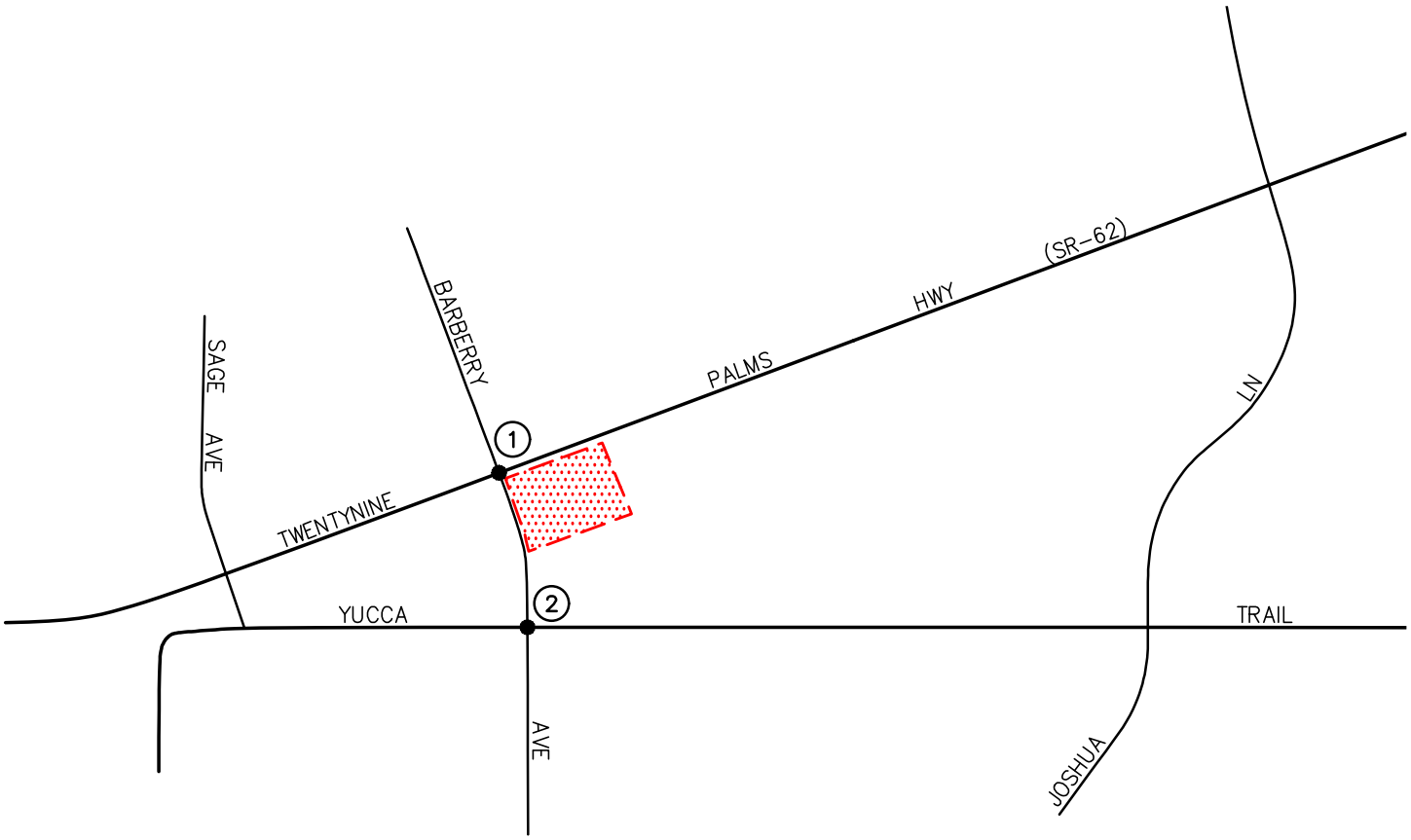
(#) = CUMULATIVE PROJECTS LOCATION

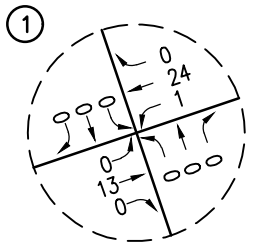
= PROJECT SITE

FIGURE 6–3

LOCATION OF CUMULATIVE PROJECTS

YUCCA VALLEY STARBUCKS, YUCCA VALLEY





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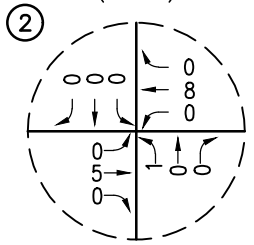

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KEY

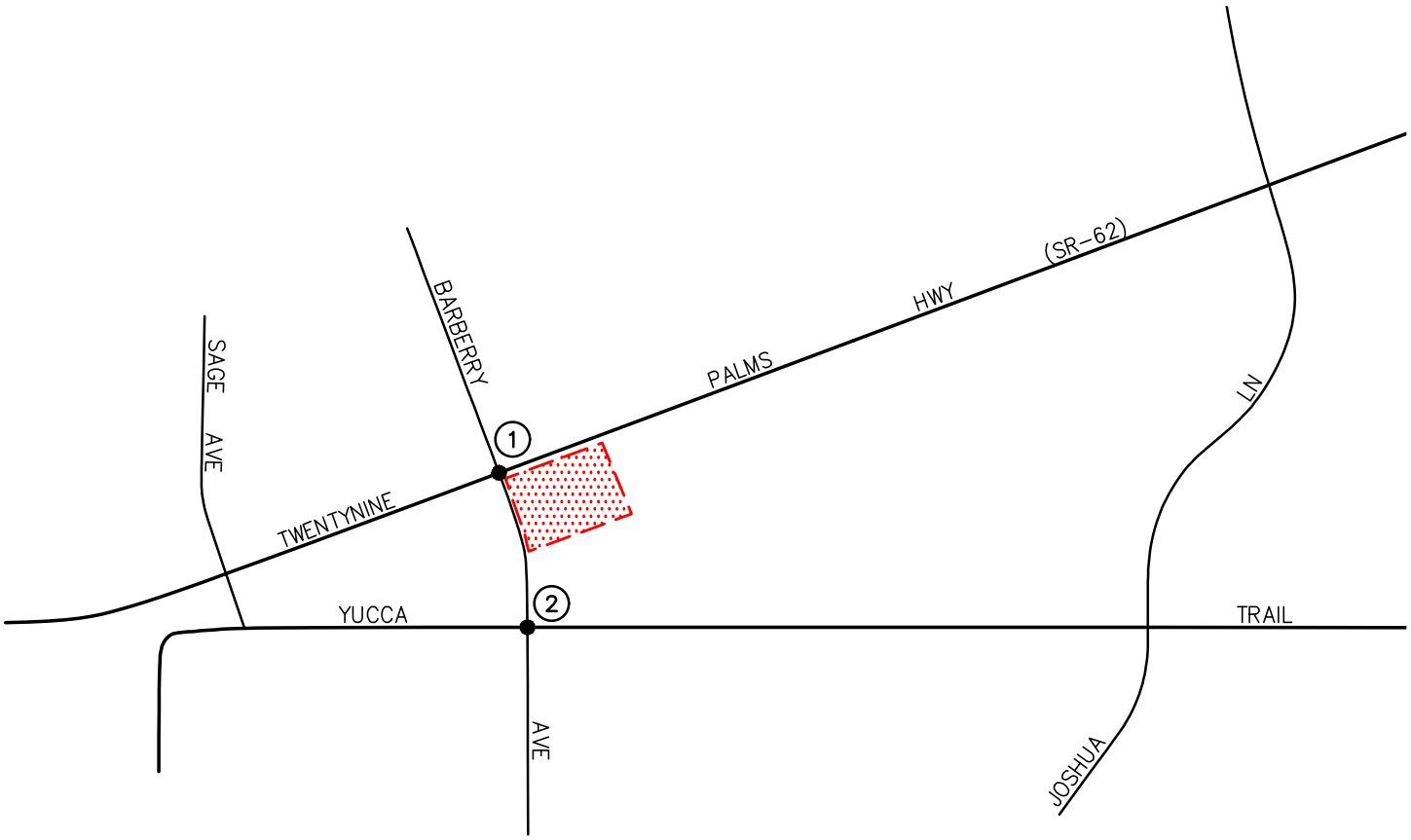
(#) = STUDY INTERSECTION

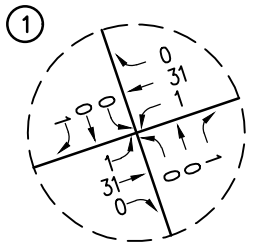
= PROJECT SITE

FIGURE 6-4

AM PEAK HOUR CUMULATIVE PROJECTS TRAFFIC VOLUMES

YUCCA VALLEY STARBUCKS, YUCCA VALLEY





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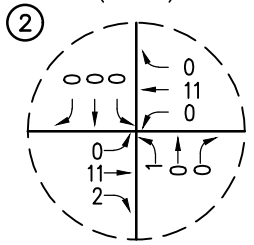

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KEY

(#) = STUDY INTERSECTION

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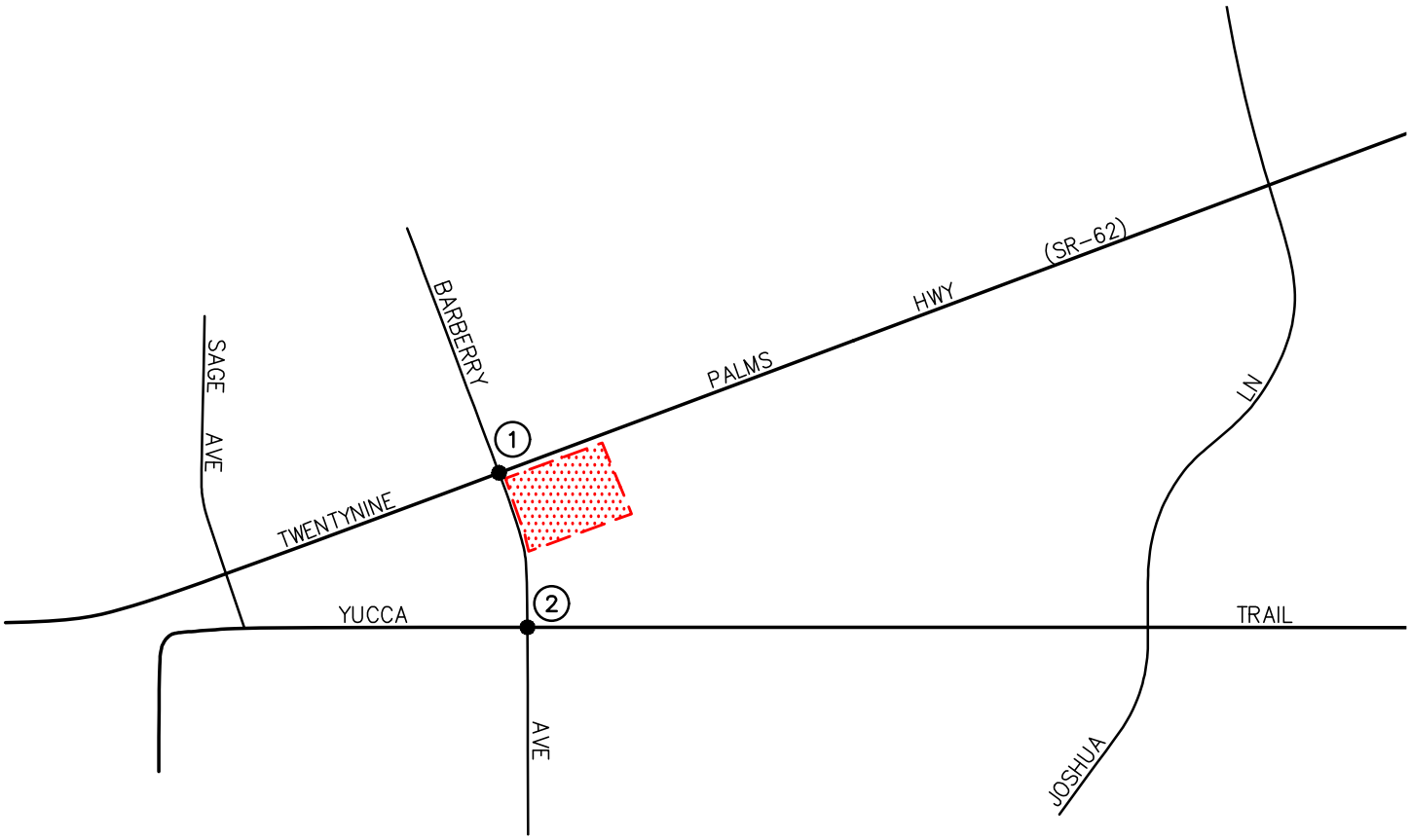
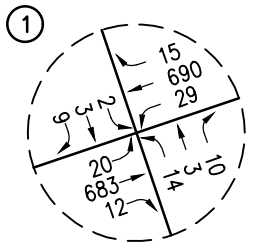
FIGURE 6-5

PM PEAK HOUR CUMULATIVE PROJECTS TRAFFIC VOLUMES

YUCCA VALLEY STARBUCKS, YUCCA VALLEY





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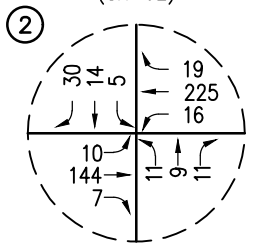

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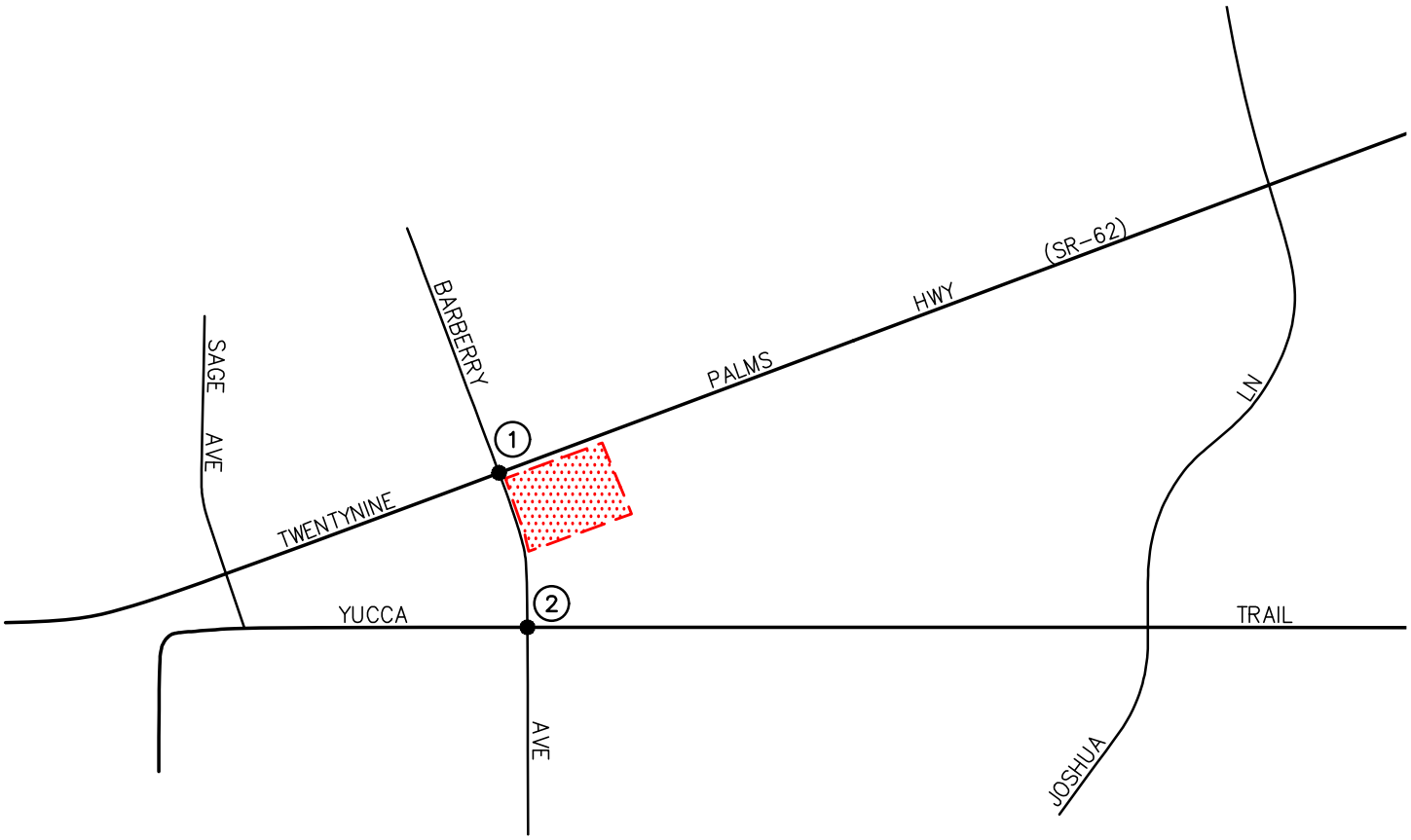
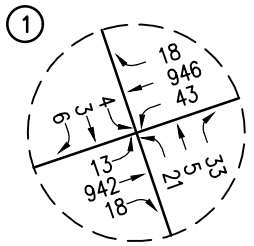
FIGURE 6-6

YEAR 2025 WITHOUT PROJECT AM PEAK HOUR TRAFFIC VOLUMES

YUCCA VALLEY STARBUCKS, YUCCA VALLEY





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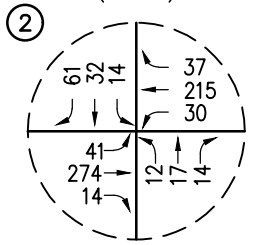

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(#) = STUDY INTERSECTION

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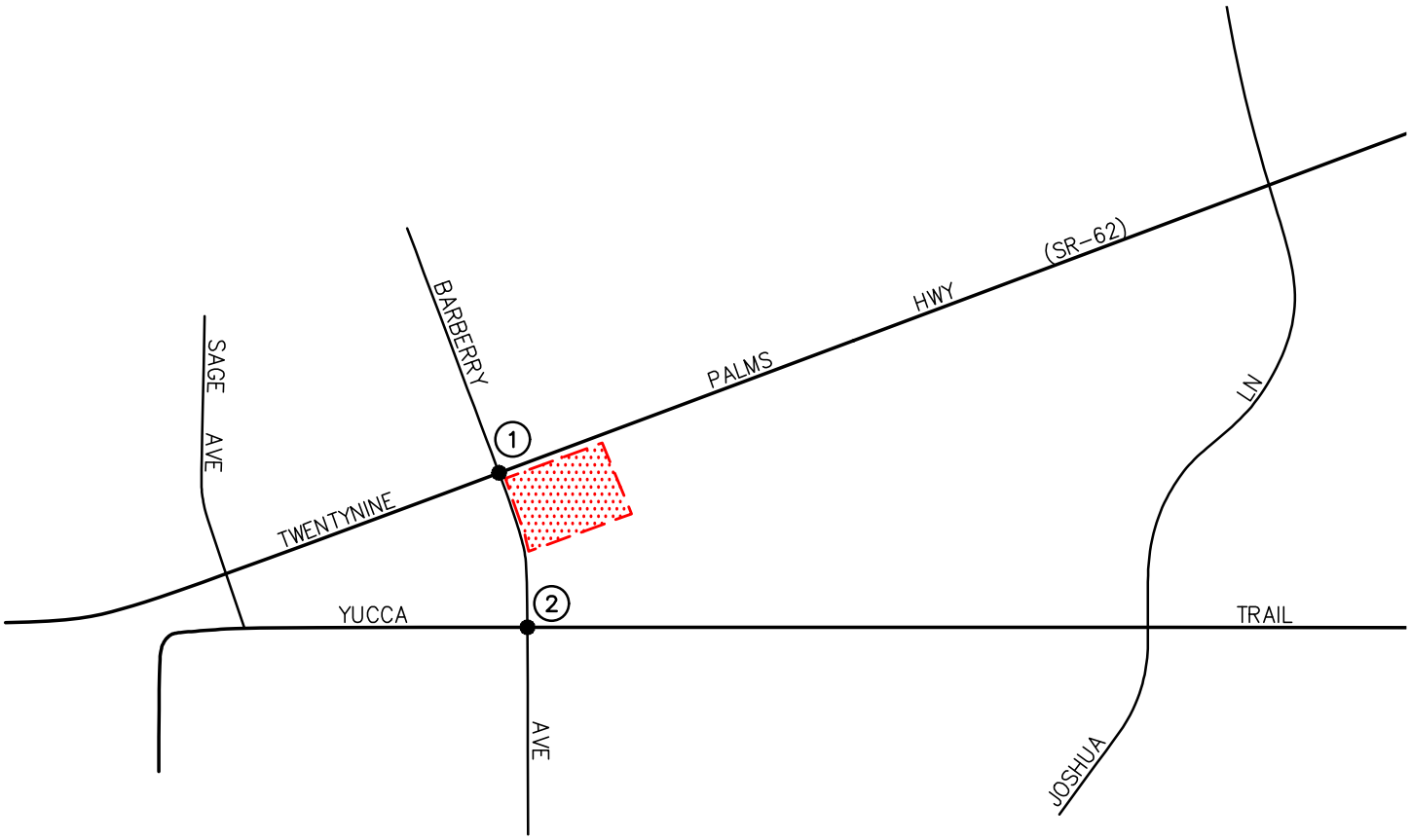
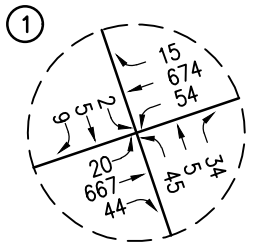
FIGURE 6-7

YEAR 2025 WITHOUT PROJECT PM PEAK HOUR TRAFFIC VOLUMES

YUCCA VALLEY STARBUCKS, YUCCA VALLEY





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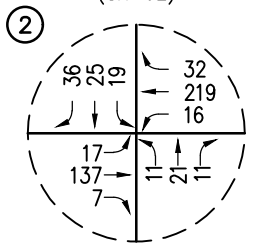

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(#) = STUDY INTERSECTION

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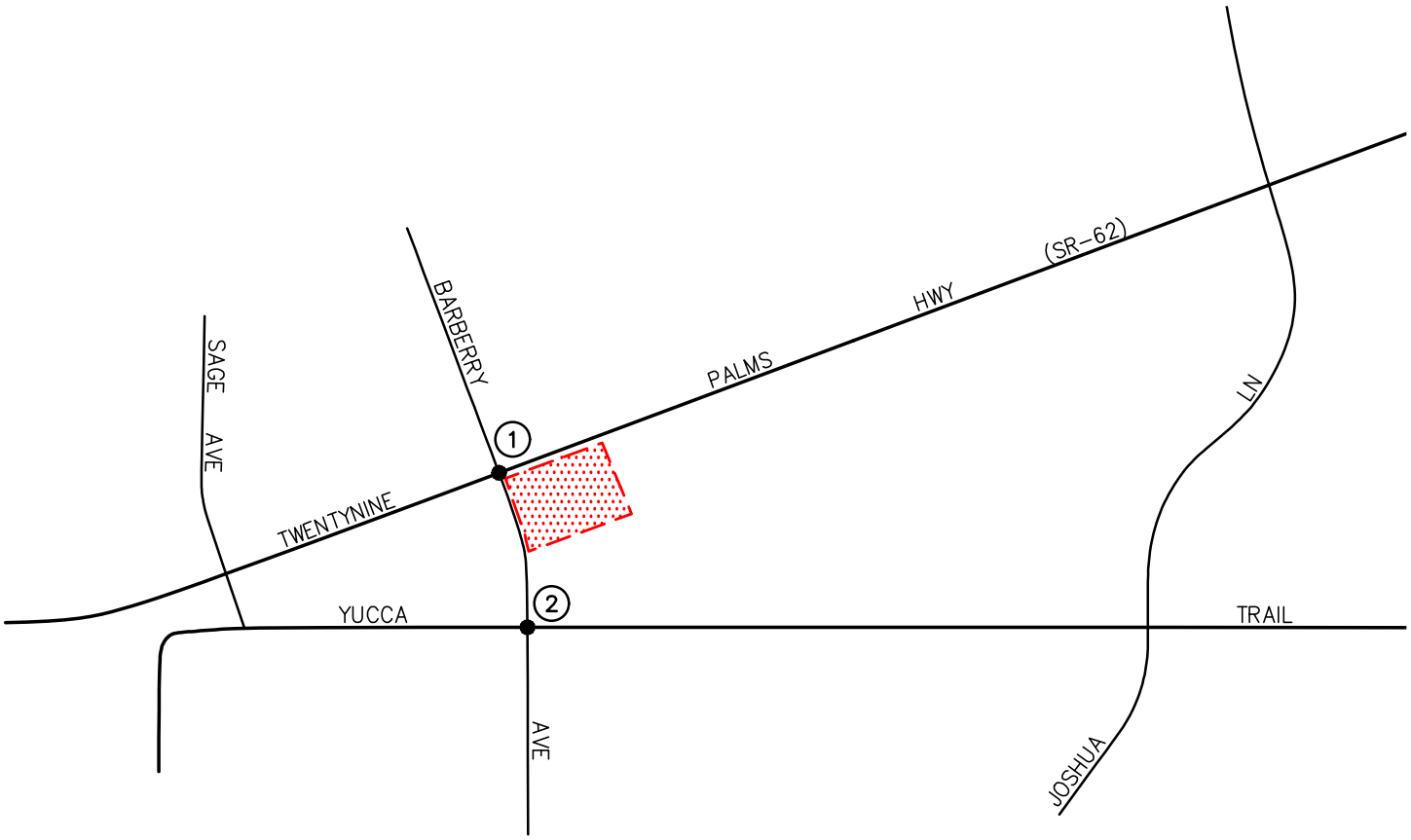
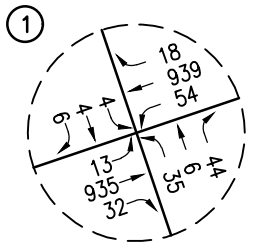
FIGURE 6-8

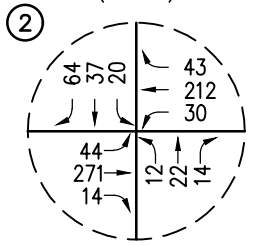
YEAR 2025 WITH PROJECT AM PEAK HOUR TRAFFIC VOLUMES

YUCCA VALLEY STARBUCKS, YUCCA VALLEY





BARBERRY AVE @
TWENTYNINE PALMS HWY
(SR-62)



BARBERRY AVE @
YUCCA TRAIL

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LINSCOTT LAW & GREENSPAN
engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

FIGURE 6-9

YEAR 2025 WITH PROJECT PM PEAK HOUR TRAFFIC VOLUMES

YUCCA VALLEY STARBUCKS, YUCCA VALLEY

7.0 EXISTING WITH PROJECT ANALYSIS

Table 7-1 summarizes the peak hour Level of Service results at the two (2) key study intersections for "Existing With Project" traffic conditions. The first column (1) of Delay/LOS values in *Table 7-1* presents a summary of Existing AM and PM peak hour traffic conditions (which were also presented in *Table 3-2*). The second column (2) presents forecast Existing With Project traffic conditions. The third column (3) shows whether the traffic associated with the Project will exceed the LOS thresholds based on the standards and criteria defined in this report. The fourth column (4) presents the resultant level of service with the inclusion of recommended traffic improvements, where needed, to achieve an acceptable level of service.

7.1 Existing With Project Traffic Conditions

Review of column (2) of *Table 7-1* indicates that one (1) of the two (2) study intersections will operate at unacceptable service levels with the addition of Project generated traffic to existing traffic. The intersection of Barberry Avenue at Twentynine Palms Highway (SR-62) (Intersection No. 1) is forecast to operate at unacceptable LOS D during the PM peak hour. The remaining study intersection is forecast to operate at acceptable service levels during the AM and PM peak hours.

Review of column (3) of *Table 7-1* indicates that the intersection of Barberry Avenue at Twentynine Palms Highway (SR-62) (Intersection No. 1) exceeds the LOS standards and criteria specified in this report. Column (4) indicates that the implementation of recommended improvements at the intersection would result in acceptable service levels and ensure that the intersection operates efficiently. Recommended improvements are discussed within Section 9.0 later in this TIA.

Appendix B also contains the Delay/LOS calculation worksheets for Existing With Project Traffic Conditions.

TABLE 7-1

EXISTING WITH PROJECT CONDITIONS PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY

Key Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Existing With Project Traffic Conditions		(3) Exceeds LOS Thresholds		(4) Existing With Project Traffic Conditions with Improvements	
			Delay (s/v)	LOS	Delay (s/v)	LOS	Increase (2) – (1)	Yes/No	Delay (s/v)	LOS
1. Barberry Avenue at Twentynine Palms Highway (SR-62)	C	AM	17.2	C	19.4	C	2.2	No	19.2	C
		PM	23.4	C	**25.9**	**D**	**2.5**	**Yes**	22.9	C
2. Barberry Avenue at Yucca Trail	C	AM	10.8	B	11.0	B	0.2	No	--	--
		PM	11.4	B	11.4	B	0.0	No	--	--

Notes:

- s/v = seconds per vehicle (delay)
- **Bold Delay/LOS values** indicate adverse service levels based on the LOS standards mentioned in this report

8.0 YEAR 2025 WITH PROJECT ANALYSIS

Table 8-1 summarizes the peak hour Level of Service results at the two (2) key study intersections for "Year 2025 With Project" traffic conditions. The first column (1) of Delay/LOS values in *Table 8-1* presents a summary of existing AM and PM peak hour traffic conditions (which were also presented in *Table 3-2*). The second column (2) presents forecast Year 2025 Without Project traffic conditions. The third column (3) identifies forecast Year 2025 With Project traffic conditions. The fourth column (4) shows whether the traffic associated with the Project will exceed the LOS thresholds based on the standards and criteria defined in this report. The fifth column (5) presents the resultant level of service with the inclusion of recommended traffic improvements, where needed, to achieve an acceptable level of service.

8.1 Year 2025 Without Project Traffic Conditions

Review of column (2) of *Table 8-1* indicates that one (1) of the two (2) study intersections is forecast to operate at unacceptable service levels with the addition of ambient traffic growth and cumulative projects traffic. The intersection of Barberry Avenue at Twentynine Palms Highway (SR-62) (Intersection No. 1) is forecast to operate at unacceptable LOS D during the PM peak hour. The remaining study intersection will continue to operate at acceptable levels of service during both the AM and PM peak hours.

8.2 Year 2025 With Project Traffic Conditions

Review of column (3) of *Table 8-1* indicates that one (1) of the two (2) study intersections will operate at unacceptable service levels with the addition of Project generated traffic in the horizon Year 2025. The intersection of Barberry Avenue at Twentynine Palms Highway (SR-62) (Intersection No. 1) is forecast to operate at unacceptable LOS D during the PM peak hour. The remaining study intersection is forecast to operate at acceptable service levels during the AM and PM peak hours.

Although the intersection of Barberry Avenue at Twentynine Palms Highway (SR-62) operates adversely, review of column (4) of *Table 8-1* indicates that the intersection does not exceed the LOS standards and criteria specified in this report (Section 3.4), which states "*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 E or F in the Valley and Mountain regions or at an LOS D, E, or F in the Desert region (per Section 10.5.2 b))*". Therefore, since the Project delay increase is only 2.9 seconds, improvements at this location are not required under Year 2025 With Project traffic conditions.

Appendix C contains the Delay/LOS calculation worksheets for Year 2025 Traffic Conditions and Year 2025 With Project Traffic Conditions.

TABLE 8-1

YEAR 2025 WITH PROJECT CONDITIONS PEAK HOUR INTERSECTION CAPACITY ANALYSIS SUMMARY

Key Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2025 Without Project Traffic Conditions		(3) Year 2025 With Project Traffic Conditions		(4) Exceeds LOS Thresholds		(5) Year 2025 With Project Traffic Conditions With Improvements	
			Delay (s/v)	LOS	Delay (s/v)	LOS	Delay (s/v)	LOS	Increase (3) – (2)	Yes/No	Delay (s/v)	LOS
1. Barberry Avenue at Twentynine Palms Highway (SR-62)	C	AM	17.2	C	18.3	C	20.9	C	2.6	No	--	--
		PM	23.4	C	**25.1**	**D**	**28.0**	**D**	2.9	No	--	--
2. Barberry Avenue at Yucca Trail	C	AM	10.8	B	11.4	B	11.5	B	0.1	No	--	--
		PM	11.4	B	12.1	B	12.2	B	0.1	No	--	--

Notes:

- s/v = seconds per vehicle (delay)
- **Bold Delay/LOS values** indicate adverse service levels based on the LOS standards mentioned in this report

9.0 RECOMMENDED IMPROVEMENTS

For those intersections where projected traffic volumes are expected to result in poor operating conditions, this report recommends traffic improvements that improve the service levels of the intersection to acceptable levels. The identified improvements are expected to:

- Address the poor operating conditions of existing traffic, Project traffic and future non-project (ambient traffic growth and cumulative) traffic, and
- Improve Levels of Service to an acceptable range and/or to pre-project conditions.

9.1 Existing With Project Traffic Conditions

The results of the Existing With Project traffic conditions level of service analyses presented in *Table 7-1* indicate that the proposed Project will exceed the LOS thresholds at one (1) of the two (2) study intersections The other remaining study intersection is forecast to operate at acceptable service levels. As such, the following intersection improvements are recommended:

- **No. 1 – Barberry Avenue at Twentynine Palms Highway (SR-62):** Install proper signage to restrict the southbound approach/north leg of the intersection to "right-turn only" during the PM peak period (4:00 PM – 6:00 PM). These improvements are subject to the approval of the City of Yucca Valley and Caltrans.

9.2 Year 2025 With Project Traffic Conditions

The results of the Year 2025 With Project traffic conditions level of service analyses indicate that the proposed Project will not exceed the LOS thresholds at either of the two (2) key study intersections. As such, no improvement measures have been recommended.

10.0 DRIVE-THROUGH QUEUEING EVALUATION

A drive-through queuing evaluation has been completed to ensure that the proposed Project will not impact internal circulation of the existing retail center and to ensure that the proposed drive-through lane will provide adequate storage. To confirm the adequacy of storage provided for the proposed drive-through lane, existing queuing observations from the following three (3) existing Starbucks stores were utilized.

- Starbucks Site #1, located at 23622 Rockfield Boulevard, Rancho Santa Margarita
- Starbucks Site #2, located at 7876 Valley View Street, Buena Park
- Starbucks Site #3, located at 1224 N. Harbor Boulevard, Anaheim

These Starbucks stores are similar in size, design, and setting to the proposed Project and have been utilized in other jurisdictions in the Region. Furthermore, the results are consistent with Starbucks standards of providing storage for a minimum of 12 vehicles. Lastly, the proposed Starbucks would presumably reduce the drive through queuing demand at the existing Starbucks to the east along SR-62, such that any local counts would likely be lesser in the future and not be specifically applicable.

Drive-through queuing observations were conducted at the three (3) locations on three weekdays (i.e. Wednesday, Thursday and Friday) during the morning, mid-day and evening service periods, generally between the hours of 7:00 AM and 9:00 AM, 11:00 AM and 1:00 PM, and 4:00 PM and 7:00 PM. The queuing observations for Site #1 and Site #2 were conducted on Wednesday April 6, 2022, Thursday April 7, 2022 and Friday April 8, 2022. The queuing observations for Site #3 were conducted on Wednesday September 29, 2021, Thursday September 30, 2021 and Friday October 1, 2021. In order to provide a detailed queuing analysis, the vehicular queues observed at the three (3) sites were recorded at 1-minute intervals.

Tables 10-1 through ***10-3*** summarize the queue frequency that was observed at the three (3) existing sites for the weekday (Wednesday), weekday (Thursday) and weekday (Friday) peak periods, respectively. Our evaluation of this data indicates that on average during the weekday (Wednesday) peak periods, an average queue of 4 vehicles in the drive-through lane can be expected, with an 85th percentile queue of approximately 8 vehicles, a 95th percentile queue of approximately 10 vehicles and a max queue of approximately 13 vehicles. Similarly, our evaluation of this data indicates that on average during the weekday (Thursday) peak periods, an average queue of 4 vehicles in the drive-through lane can be expected, with an 85th percentile queue of approximately 9 vehicles, a 95th percentile queue of approximately 12 vehicles and a max queue of approximately 15 vehicles. In addition, our evaluation of this data also indicates that on average during the weekday (Friday) peak periods, an average queue of 5 vehicles in the drive-through lane can be expected, with an 85th percentile queue of approximately 9 vehicles, a 95th percentile queue of approximately 11 vehicles and a max queue of approximately 14 vehicles. It should be noted that the 85th percentile queue is generally utilized when designing/sizing the length of the proposed drive-through lane.

In conclusion, the three (3) existing study sites experienced an 85th percentile queue range between 8 vehicles and 9 vehicles. Based on this empirical data, the expected queue of the proposed Project

will likely be 9 vehicles or less 85% of the time. As shown in *Figure 2-2,* the proposed Project will provide storage for up to 16 vehicles within the proposed drive-through lane without encroaching into the drive aisle. Therefore, the 85th percentile expected queues can be accommodated without interfering with internal circulation or causing congestion to the drive aisles. It should be noted that the proposed 16 vehicle storage drive-through lane can also accommodate the observed 95th percentile queues (i.e. queue range between 10 vehicles and 12 vehicles). Based on this empirical data, the expected queue of the proposed Project will likely be 12 vehicles or less 95% of the time. Lastly, it should be noted that the proposed 16 vehicle storage drive-through lane can also accommodate the observed maximum queue of 15 vehicles, which only occurred two times and only at one site throughout the survey days.

TABLE 10-1

STARBUCKS QUEUING ANALYSIS SUMMARY – WEDNESDAY[7]

Queue Length (Vehicles)	Queue Frequency of Vehicles Observed				Cumulative	
	Site #1 23622 Rockfield Boulevard	Site #2 7876 Valley View Street	Site #3 1224 N. Harbor Boulevard	Total	Frequency	Percentage
0	39	58	5	102	102	8.1%
1	47	80	23	150	252	20.0%
2	39	37	44	120	372	29.5%
3	39	52	38	129	501	39.8%
4	35	54	41	130	631	50.1%
5	51	52	51	154	785	62.3%
6	50	38	45	133	918	72.9%
7	27	32	49	108	1,026	81.4%
8	30	13	49	92	1,118	88.7%
9	32	3	38	73	1,191	94.5%
10	10	1	21	32	1,223	97.1%
11	11	0	10	21	1,244	98.7%
12	8	0	5	13	1,257	99.8%
13	2	0	1	3	1,260	100.0%
Total	**420**	**420**	**420**	**1,260**	**--**	**--**
Average	**5.0**	**3.0**	**6.0**	**4.0**	**--**	**--**
85th Percentile	**8.0**	**6.0**	**9.0**	**8.0**	**--**	**--**
95th Percentile	**10.0**	**7.0**	**10.0**	**10.0**	**--**	**--**
Max	**13.0**	**10.0**	**13.0**	**13.0**	**--**	**--**

[7] Source: Queuing surveys conducted every minute, between the hours of 7:00 AM to 9:00 AM, 11:00 AM to 1:00 PM, and 4:00 PM to 7:00 PM on Wednesday, April 6, 2022 for sites #1 and #2, and on Wednesday, September 29, 2021 for site #3.

TABLE 10-2
STARBUCKS QUEUING ANALYSIS SUMMARY – THURSDAY[8]

Queue Length (Vehicles)	Queue Frequency of Vehicles Observed				Cumulative	
	Site #1 23622 Rockfield Boulevard	Site #2 7876 Valley View Street	Site #3 1224 N. Harbor Boulevard	Total	Frequency	Percentage
0	21	42	8	71	71	5.6%
1	41	93	23	157	228	18.1%
2	41	73	44	158	386	30.6%
3	26	57	65	148	534	42.4%
4	29	48	76	153	687	54.5%
5	33	35	79	147	834	66.2%
6	19	25	53	97	931	73.9%
7	18	14	20	52	983	78.0%
8	32	27	15	74	1,057	83.9%
9	35	6	26	67	1,124	89.2%
10	29	0	6	35	1,159	92.0%
11	26	0	5	31	1,190	94.4%
12	22	0	0	22	1,212	96.2%
13	24	0	0	24	1,236	98.1%
14	22	0	0	22	1,258	99.8%
15	2	0	0	2	1,260	100.0%
Total	**420**	**420**	**420**	**1,260**	**--**	**--**
Average	**7.0**	**3.0**	**5.0**	**4.0**	**--**	**--**
85th Percentile	**12.0**	**6.0**	**7.0**	**9.0**	**--**	**--**
95th Percentile	**14.0**	**8.0**	**9.0**	**12.0**	**--**	**--**
Max	**15.0**	**9.0**	**11.0**	**15.0**	**--**	**--**

[8] Source: Queuing surveys conducted every minute, between the hours of 7:00 AM to 9:00 AM, 11:00 AM to 1:00 PM, and 4:00 PM to 7:00 PM on Thursday, April 7, 2022 for sites #1 and #2, and on Thursday, September 30, 2021 for site #3.

TABLE 10-3

STARBUCKS QUEUING ANALYSIS SUMMARY – FRIDAY[9]

Queue Length (Vehicles)	Queue Frequency of Vehicles Observed				Cumulative	
	Site #1 23622 Rockfield Boulevard	Site #2 7876 Valley View Street	Site #3 1224 N. Harbor Boulevard	Total	Frequency	Percentage
0	19	47	6	72	72	5.7%
1	10	66	34	110	182	14.4%
2	17	61	67	145	327	26.0%
3	33	54	56	143	470	37.3%
4	31	53	57	141	611	48.5%
5	32	24	38	94	705	56.0%
6	50	34	30	114	819	65.0%
7	35	35	19	89	908	72.1%
8	46	28	21	95	1,003	79.6%
9	66	11	18	95	1,098	87.1%
10	44	5	21	70	1,168	92.7%
11	28	2	16	46	1,214	96.3%
12	2	0	21	23	1,237	98.2%
13	7	0	11	18	1,255	99.6%
14	0	0	5	5	1,260	100.0%
Total	**420**	**420**	**420**	**1,260**	**--**	**--**
Average	**7.0**	**4.0**	**5.0**	**5.0**	**--**	**--**
85th Percentile	**10.0**	**7.0**	**10.0**	**9.0**	**--**	**--**
95th Percentile	**11.0**	**8.0**	**12.0**	**11.0**	**--**	**--**
Max	**13.0**	**11.0**	**14.0**	**14.0**	**--**	**--**

[9] Source: Queuing surveys conducted every minute, between the hours of 7:00 AM to 9:00 AM, 11:00 AM to 1:00 PM, and 4:00 PM to 7:00 PM on Friday, April 8, 2022 for sites #1 and #2, and on Friday, October 1, 2021 for site #3.

11.0 PARKING ANALYSIS

As previously identified, the proposed Project is located on a vacant pad within an existing retail center. A parking analysis has been prepared for the proposed Project, and the following summarizes the parking requirements of the proposed Starbucks Project in the context of the existing shopping center based on City-code parking requirements and a survey shared parking analysis.

11.1 City Code Parking Requirements

The City-code parking calculation for the proposed Starbucks Project is based on the City's requirements as outlined in the *Yucca Valley Municipal Code; Chapter 9.33.040; Off-Street Parking Spaces Requirements*. The table presented below identifies the City-code parking requirement for the proposed Starbucks Project:

Land Use	Size (SF)	City of Yucca Valley [1]	Spaces Required
Restaurant (fast food with drive-through)	2,100 SF (inclusive of 700 SF indoor seating area and no outdoor seating area)	1 space per 50 square feet of seating area (including outdoor dining)	14

[1] Source: City of Yucca Valley Municipal Code, *Chapter 9.33.040; Off-Street Parking Spaces Requirements.*

As shown, application of the above-referenced parking code ratios to the development totals results in a code-parking requirement of 14 spaces. With a proposed parking supply of 15 spaces, the project site would provide adequate parking within its own parcel. Nonetheless, since the proposed Project shares parking spaces amongst all tenants in the existing shopping center, the following section calculates the parking requirements for a portion of the existing retail center (at full occupancy) with the proposed Project based on the shared parking methodology approach.

11.2 Parking Survey Data Analysis

To determine the current parking demand of the existing uses within the parking study area of the existing retail center, parking surveys were conducted on one weekday (Thursday) and one weekend day (Saturday) by Counts Unlimited, Inc. The parking surveys were performed at one-hour intervals between 6:00 AM and 8:00 PM on Thursday May 18, 2023 and Saturday May 20, 2023. The parking surveys consisted of counting the number of parked vehicles within one zone of the existing retail center, which has a total parking supply of 41 spaces. ***Figure 11-1*** shows the location of the parking zone. The proposed Project site is located within the study zone, which currently provides parking for the adjacent commercial uses. It should be noted that there was one existing vacancy (i.e. a 1,200 SF retail suite) during the parking surveys.

The results of the weekday (Thursday) and weekend day (Saturday) parking surveys are reflected in ***Tables 11-1*** and ***11-2***, respectively. As shown in *Table 11-1*, the study zone experienced a weekday (Thursday) peak parking demand of *20 vehicles* at 5:00 PM and 6:00 PM. In addition, as shown in

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LINSCOTT LAW & GREENSPAN engineers

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KEY

= PARKING ZONE

FIGURE 11-1

PARKING SURVEY ZONE MAP

YUCCA VALLEY STARBUCKS, YUCCA VALLEY

Table 11-2, the study zone experienced a weekend (Saturday) peak parking demand of *29 vehicles* at 6:00 PM and 7:00 PM.

11.2.1 *Survey Data Shared Parking Demand Analysis and Results*

In order to determine the most appropriate peak-parking requirement for the parking study area with the proposed Project, utilization of the survey data for the existing land uses is combined with the parking demand within the ULI shared parking model for the proposed Starbucks and any existing vacancies. This methodology reflects the most accurate peak parking demand for the site because the existing retail center is currently occupied, such that the current/actual peak parking demand can be easily measured by conducting parking surveys while the parking demand for the proposed Starbucks and any vacancies can be forecasted using the *ULI Shared Parking* methodology.

The hourly parking demand profiles (expressed in percent of peak demand) utilized in this study and applied to the proposed Starbucks and the re-occupied vacant uses are based on profiles developed by the Urban Land Institute (ULI) and published in *Shared Parking, 3rd Edition* as well as field studies of Starbucks locations. These factors present a profile of parking demand over time and have been used directly in the analysis of the proposed Starbucks and the re-occupied vacant uses.

Tables 11-1 and ***11-2*** present an approach which applies the City code parking requirement and ULI time of day parking profiles to the proposed Starbucks and the re-occupancy of the one vacant suite for the weekday (Thursday) and weekend day (Saturday) time frames, respectively, while directly applying the parking survey data results as a time of day parking profile for the occupied square-footage within the existing retail center.

As shown in *Table 11-1*, the peak parking requirement of the existing retail center with the proposed Project and the re-occupancy of the one vacant suite during a typical weekday (Thursday) totals *31 parking spaces* and occurs at 6:00 PM. As shown in *Table 11-2*, the peak parking requirement of the existing retail center with the proposed Project and the re-occupancy of the one vacant suite during a typical weekend day (Saturday) totals *41 parking spaces* and occurs at 7:00 PM.

As a result, based on a review of *Tables 11-1* and *11-2,* the peak parking survey data shared parking demand of the existing retail center with the proposed Project and the re-occupancy of the one vacant suite is ***41 parking spaces*** and occurs at 7:00 PM on a Saturday. With a total parking supply of 41 parking spaces for the study zone, it can be concluded that adequate parking will be provided. It should be noted that while up to 10 parking spaces will be removed with the construction of the proposed Project, there is adequate parking supply in proximity of the parking study area to adequately accommodate the displaced parking spaces, if needed.

Appendix D contains the weekday and weekend day ULI shared parking analysis calculation worksheets.

TABLE 11-1
WEEKDAY SHARED PARKING DEMAND ANALYSIS [1]

Land Use	Existing Center	Proposed Starbucks	Vacant Retail	Total Spaces = 19 Shared Parking Demand	Comparison w/ Parking Supply 41 Spaces
Size Pkg Rate[2]	Actual Observed Hourly Parking Demand [3]	0.700 KSF 20 /KSF	1.200 KSF 4 /KSF		
Gross Spaces		14 Spc.	5 Spc.		
Time of Day		Number of Spaces	Number of Spaces		Surplus (Deficiency)
6:00 AM	0	9	0	9	32
7:00 AM	0	14	0	14	27
8:00 AM	2	14	1	17	24
9:00 AM	4	13	1	18	23
10:00 AM	6	6	3	15	26
11:00 AM	8	5	4	17	24
12:00 PM	19	4	5	28	13
1:00 PM	15	3	5	23	18
2:00 PM	9	4	4	17	24
3:00 PM	12	5	4	21	20
4:00 PM	17	5	4	26	15
5:00 PM	20	5	4	29	12
6:00 PM	**20**	**7**	**4**	**31**	**10**
7:00 PM	17	4	4	25	16
8:00 PM	14	6	3	23	18

Notes:

[1] Source: ULI - Urban Land Institute "Shared Parking," Third Edition (2020) or field studies of Starbucks locations.

[2] Parking rates for all land uses based on City code.

[3] On-site parking surveys conducted by Counts Unlimited.

TABLE 11-2
WEEKEND SHARED PARKING DEMAND ANALYSIS [1]

Land Use	Existing Center	Proposed Starbucks	Vacant Retail		
Size		0.700 KSF	1.200 KSF	Total	
Pkg Rate[2]	Actual	20 /KSF	4 /KSF	Spaces =	Comparison w/
Gross Spaces	Observed	14 Spc.	5 Spc.	19	Parking Supply
	Hourly			Shared	41 Spaces
Time of Day	Parking Demand [3]	Number of Spaces	Number of Spaces	Parking Demand	Surplus (Deficiency)
6:00 AM	0	2	0	2	39
7:00 AM	0	5	0	5	36
8:00 AM	3	8	1	12	29
9:00 AM	2	13	3	18	23
10:00 AM	7	13	4	24	17
11:00 AM	10	11	5	26	15
12:00 PM	13	8	5	26	15
1:00 PM	24	9	5	38	3
2:00 PM	15	4	5	24	17
3:00 PM	14	6	5	25	16
4:00 PM	8	7	5	20	21
5:00 PM	24	5	4	33	8
6:00 PM	29	5	4	38	3
7:00 PM	**29**	**8**	**4**	**41**	**0**
8:00 PM	26	7	4	37	4

Notes:

[1] Source: ULI - Urban Land Institute "Shared Parking," Third Edition (2020) or field studies of Starbucks locations.

[2] Parking rates for all land uses based on City code.

[3] On-site parking surveys conducted by Counts Unlimited.

12.0 VEHICLE MILES TRAVELED (VMT) ASSESSMENT

On December 28, 2018, the California Natural Resources Agency adopted revised CEQA Guidelines. Among the changes to the guidelines was the removal of vehicle delay and LOS from consideration for transportation impacts under CEQA. With the adopted guidelines, transportation impacts are to be evaluated based on a project's effect on vehicle miles traveled. Lead agencies are allowed to continue using their current impact criteria, or to opt into the revised transportation guidelines. However, the new guidelines must be used starting July 1, 2020, as required in CEQA section 15064.3. The County of San Bernardino recently adopted new traffic impact criteria in July 2019 to be consistent with the CEQA revisions. These new guidelines are contained within the *San Bernardino County Transportation Impact Study Guidelines,* dated July 2019 and provide screening criteria and methodology for VMT analysis.

The *San Bernardino County Transportation Impact Study Guidelines* state that 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 square feet
- 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 stated previously, the proposed Project will consist of a 2,100 SF Starbucks with Drive-Through Window. Therefore, based on the aforementioned criteria [i.e. local-serving retail less than 50,000 SF (including restuarants)], this project would screen out from a VMT analysis and be presumed to have a less than significant impact on VMT, per the County's guidelines.