APPENDIX H: Traffic Report

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www.ci.twentynine-palms.ca.us

URBAN | CROSSROADS

YONDER 29 PALMS

TRAFFIC ANALYSIS

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15631-05 TA Report	City of Twentynine Palms	April 20, 2024

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LIST OF ABBREVIATED TERMS

(1)	Reference
ADT	Average Daily Traffic
CAMUTCD	California Manual on Uniform Traffic Control Devices
Caltrans	California Department of Transportation
CMP	Congestion Management Program
DIF	Development Impact Fee
E+P	Existing Plus Project
HCM	Highway Capacity Manual
ITE	Institute of Transportation Engineers
LOS	Level of Service
MBTA	Morongo Basic Transit Authority
MBTM	Morongo Basin Transportation Model
NCHRP	National Cooperative Highway Research Program
PHF	Peak Hour Factor
Project	Yonder 29 Palms
RM	Room
SBCTA	San Bernardino County Transportation Authority
SBTAM	San Bernardino Transportation Analysis Model
SCAG	Southern California Association of Governments
sf	Square Feet
TA	Traffic Analysis
v/c	Volume to Capacity
vphgpl	Vehicles per Hour Green per Lane
WP	With Project

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1 INTRODUCTION

This report presents the results of the Traffic Analysis (TA) for Yonder 29 Palms ("Project"), which is located on the southeast corner of Lear Avenue at Twentynine Palms Highway in the City of Twentynine Palms, as shown on Exhibit 1-1. The purpose of this TA is to evaluate the potential circulation system deficiencies that may result from the development of the proposed Project, and where necessary recommend improvements to achieve acceptable operations consistent with General Plan level of service goals and policies. This traffic study has been prepared in accordance with the City of Twentynine Palms' Traffic Impact Analysis Guidelines (February, 2005), the San Bernardino County Congestion Management Program (CMP) Guidelines for CMP Traffic Impact Analysis Reports (Appendix B, 2016 Update), the City of Twentynine Palms' Vehicle Miles Traveled Policy Guidance (August 2020) and consultation with City staff during the traffic study scoping process. (1) (2) (3) The City approved Project Traffic Study Scoping agreement is provided in Appendix 1.1 of this TA.

1.1 SUMMARY OF FINDINGS

The Project is to construct the following improvements as design features in conjunction with development of the site:

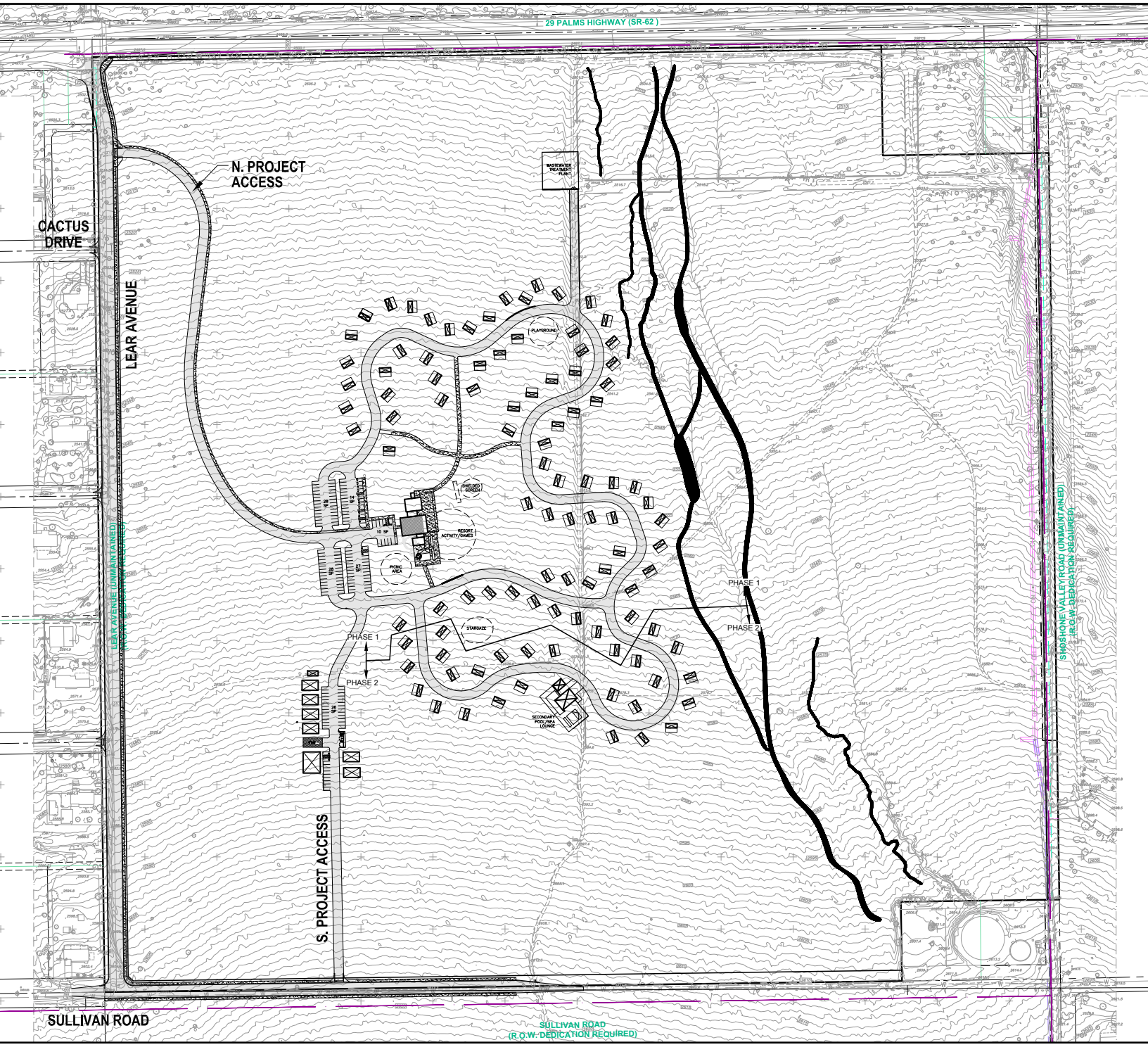
- Construct Lear Avenue along the site's westerly edge to its ultimate half-section plus 10 feet of pavement west of the centerline as a Collector between Twentynine Palms Highway (SR-62) and Sullivan Road.
- Construct Sullivan Road along the site's southerly edge to its ultimate half-section plus 10 feet of pavement south of the centerline as a Local Street between Lear Avenue and the South Project Access.
- The proposed driveways (North Project Access to Lear Avenue and South Project Access to Sullivan Road, including Sullivan Road to Lear Avenue) will be stop controlled for exiting (egress) traffic and will allow for full access.

Additional details and intersection lane geometrics are provided in Section 8 *Recommendations* of this report. The proposed Project is not anticipated to require the construction of any off-site improvements. As such, the Project Applicant's responsibility for the Project's contributions towards deficient off-site intersections is fulfilled through payment into pre-existing fee programs (if applicable) that would be assigned to the future construction of any future local/regional improvement needs. The Project Applicant would be required to pay requisite fees consistent with the City's requirements (see Section 8.3 *Local and Regional Funding Mechanisms*).

1.2 PROJECT OVERVIEW

A preliminary site plan for the proposed Project is shown on Exhibit 1-1. The Project is proposed to consist of the development of a 152.7-acre glamping resort with a total of 100 units. Additional amenities include food & beverage space, and a main lodge that could host special events. As indicated on Exhibit 1-1, vehicular access will be provided via the one driveway connection to the extension of Lear Avenue at Cactus Drive, with a secondary access driveway connecting to the easterly extension of Sullivan Road. Regional access to the Project site is accommodated via Twentynine Palms Highway (SR-62). For analysis purposes, it is assumed the Project would open by the end of Year 2025.

EXHIBIT 1-1: PRELIMINARY SITE PLAN



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In order to develop the traffic characteristics of the proposed project, trip-generation statistics published in the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition, 2021). (4) The Project is anticipated to generate a net total of 849 external vehicle trip-ends per day with 53 external AM peak vehicle hour trips and 58 external PM peak hour vehicle trips. The assumptions and methods used to estimate the Project's trip generation characteristics are discussed in greater detail in Section 4.1 *Project Trip Generation* of this report.

1.3 ANALYSIS SCENARIOS

For the purposes of this traffic study, potential deficiencies to traffic and circulation have been assessed for each of the following conditions:

- Existing (2023) Conditions
- Existing Plus Project (E+P)
- Cumulative (2025)
- Cumulative (2025) Plus Project
- General Plan Buildout (2045) Without Project
- General Plan Buildout (2045) With Project

1.3.1 EXISTING (2023) CONDITIONS

Information for Existing (2023) conditions is disclosed to represent the baseline traffic conditions as they existed at the time this report was prepared. Local schools were in session with in-person instruction at the time of the traffic counts. As such, no further adjustments were made to the existing baseline traffic counts.

1.3.2 EXISTING PLUS PROJECT CONDITIONS

The Existing Plus Project conditions represents Existing (2023) with the addition of the Project. The Existing Plus Project analysis is purely hypothetical because it assumes development occurs instantaneously, and does not portray a realistic analysis of cumulative growth.

1.3.3 CUMULATIVE (2025) CONDITIONS

The Cumulative (2025) traffic conditions analysis determines the potential near-term cumulative circulation system deficiencies. The roadway network is similar to Existing conditions except for new connections to be constructed by the Project. To account for background traffic growth, an ambient growth factor from Existing (2023) conditions of 4.04% (2 percent per year over 2 years) is included for Cumulative (2025) traffic conditions. Conservatively, this TA estimates the area ambient traffic growth and then adds traffic generated by other known or probable related projects.

1.3.4 GENERAL PLAN BUILDOUT (2045) CONDITIONS

Traffic projections for future long range conditions take into account the San Bernardino Transportation Analysis Model (SBTAM) and Morongo Basin Transportation Model (MBTM). The City General Plan/MBTM projections are utilized in this analysis because traffic volumes from that source are significantly higher than SBTAM (largely due to City buildout land use assumptions which are

higher than SBTAM socioeconomic data inputs). The Project involves a General Plan Amendment: from RS-E (Single Family, 1 unit per 2.5 acres) for all 152.7 acres, to 41.9 acres of Tourist Commercial (in the middle of the property where the Project is situated) and 110.8 acres of Open Space Recreational with 10 acre minimum (allows one home per 10 acres).

The General Plan Buildout (2045) traffic conditions analysis determines the potential near-term cumulative circulation system deficiencies. The roadway network is similar to Existing conditions except for new connections to be constructed by the Project. To account for background traffic growth, an ambient growth factor from Existing (2023) conditions of 4.04% (2 percent per year over 2 years) is included for Cumulative (2025) traffic conditions. Conservatively, this TA estimates the area ambient traffic growth and then adds traffic generated by other known or probable related projects.

1.4 STUDY AREA

To ensure that this TA satisfies the City of Twentynine Palms' traffic study requirements, Urban Crossroads, Inc. prepared a Project traffic study scoping package for review by City of Twentynine Palms staff prior to the preparation of this report. This agreement provides an outline of the Project study area, trip generation, trip distribution, and analysis methodology. The agreement approved by the City is included in Appendix 1.1 of this TA.

The 4 study area intersections shown on Exhibit 1-2 and listed in Table 1-1 were selected for evaluation in this TA based on consultation with City of Twentynine Palms staff. At a minimum, the study area includes intersections where the Project is anticipated to contribute 50 or more peak hour trips per the City's traffic study guidelines. (1) The "50 peak hour trip" criterion represents a minimum number of trips at which a typical intersection would have the potential to be affected by a given development proposal. The 50 peak hour trip criterion is a traffic engineering rule of thumb that is accepted and widely used within San Bernardino County for estimating a potential area of influence (i.e., study area).

TABLE 1-1: INTERSECTION ANALYSIS LOCATIONS

#	Intersection
1	Lear Av. / Twentynine Palms Hwy. (SR-62)
2	Monte Vista Av. / Twentynine Palms Hwy. (SR-62)
3	Lear Av. / Cactus Av. - *(Future Intersection)*
4	Lear Av. / Sullivan Rd. - *(Future Intersection)*
5	Lear Av. / N. Project Access - *(Future Intersection)*

1.5 ANALYSIS FINDINGS

This section provides a summary of the analysis results for Existing (2023), E+P, Cumulative (2025) without and with Project conditions, General Plan Buildout (2045) without and with Project conditions. A summary of LOS results for all analysis scenarios is presented on Table 1-2.

EXHIBIT 1-2: TRAFFIC ANALYSIS STUDY AREA

LEGEND:

- ❷ = EXISTING ANALYSIS LOCATION
- ② = FUTURE ANALYSIS LOCATION
- = FUTURE ROADWAY

N

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TABLE 1-2: LEVEL OF SERVICE (LOS) SUMMARY

#	Intersection	Existing (2023) AM	Existing (2023) PM	E+P AM	E+P PM	Cumulative (2025) AM	Cumulative (2025) PM	Cumulative (2025) Plus Project AM	Cumulative (2025) Plus Project PM	2045 Without Project AM	2045 Without Project PM	2045 With Project AM	2045 With Project PM
1	Lear Av. / Twentynine Palms Hwy. (SR-62)												
	- Without Improvements	●	●	●	●	●	●	●	●	●	●	●	●
	- With Improvements	N/A	N/A	N/A	N/A	N/A	N/A	●	●	●	●	●	●
2	Monte Vista Av. / Twentynine Palms Hwy. (SR-62)	●	●	●	●	●	●	●	●	●	●	●	●
3	Lear Av. / Cactus Av.	N/A	N/A	●	●	N/A	N/A	●	●	●	●	●	●
4	Lear Av. / Sullivan Rd.	N/A	N/A	●	●	N/A	N/A	●	●	●	●	●	●
5	Lear Av. / N. Project Access	N/A	N/A	●	●	N/A	N/A	●	●	●	●	●	●

Legend:

● = A - D ● = E ● = F

F:\UXRjobs_15600_16000_15600\15631\Excel\[15631 - Report.xlsx]1-2_LOS Summary

1.5.1 EXISTING (2023) AND EXISTING PLUS PROJECT CONDITIONS

The study area intersections are currently operating at an acceptable LOS under Existing (2023) traffic conditions and would continue to operate at an acceptable LOS with the addition of Project traffic.

No unsignalized study area intersections are anticipated to satisfy traffic signal warrants for Existing and Existing Plus Project conditions.

1.5.2 CUMULATIVE (2025) CONDITIONS

The study area intersections are anticipated to operate at an acceptable LOS under Cumulative (2025) traffic conditions and would continue to operate at an acceptable LOS with the addition of Project traffic.

No unsignalized study area intersections are anticipated to satisfy traffic signal warrants for Cumulative (2025) without or with Project conditions.

1.5.3 GENERAL PLAN BUILDOUT (2045) CONDITIONS

To serve General Plan Buildout traffic growth with or without the Project, separate southbound right and left turn lanes are needed on the north leg of the Lear Avenue / Twentynine Palms Hwy. (SR-62) intersection.

No unsignalized study area intersections are anticipated to satisfy traffic signal warrants for General Plan Buildout (2045) without or with Project conditions.

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2 METHODOLOGIES

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are consistent with City of Twentynine Palms' Traffic Study Guidelines.

2.1 LEVEL OF SERVICE

Traffic operations of roadway facilities are described using the term "Level of Service" (LOS). LOS is a qualitative description of traffic flow based on several factors, such as speed, travel time, delay, and freedom to maneuver. Six levels are typically defined ranging from LOS A, representing completely free-flow conditions, to LOS F, representing breakdown in flow resulting in stop-and-go conditions. LOS E represents operations at or near capacity, an unstable level where vehicles are operating with the minimum spacing for maintaining uniform flow.

2.2 INTERSECTION CAPACITY ANALYSIS

The definitions of LOS for interrupted traffic flow (flow restrained by the existence of traffic signals and other traffic control devices) differ slightly depending on the type of traffic control. The LOS is typically dependent on the quality of traffic flow at the intersections along a roadway. The 6th Edition Highway Capacity Manual (HCM) methodology expresses the LOS at an intersection in terms of delay time for the various intersection approaches. (5) The HCM uses different procedures depending on the type of intersection control.

2.2.1 SIGNALIZED INTERSECTIONS

The City of Twentynine Palms requires signalized intersection operations analysis based on the methodology described in the HCM. (5) Intersection LOS operations are based on an intersection's average control delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections LOS is related to the average control delay per vehicle and is correlated to a LOS designation as described on Table 2-1.

Consistent with Appendix B of the San Bernardino County CMP (2), the following saturation flow rates, in vehicles per hour green per lane (vphgpl), will be utilized in the traffic analysis for signalized intersections:

Existing and Cumulative Traffic Conditions:

- Exclusive through: 1800 vphgpl
- Exclusive left: 1700 vphgpl
- Exclusive right: 1800 vphgpl
- Exclusive dual left: 1600 vphgpl
- Exclusive triple left: 1500 vphgpl

General Plan Buildout Conditions:

- Exclusive through: 1900 vphgpl
- Exclusive left: 1800 vphgpl
- Exclusive right: 1900 vphgpl
- Exclusive dual left: 1700 vphgpl
- Exclusive triple left: 100 vphgpl

TABLE 2-1: SIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0[1]
Operations with very low delay occurring with favorable progression and/or short cycle length.	0 to 10.00	A
Operations with low delay occurring with good progression and/or short cycle lengths.	10.01 to 20.00	B
Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.01 to 35.00	C
Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.01 to 55.00	D
Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.01 to 80.00	E
Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths.	80.01 and up	F

Source: HCM, 6th Edition

[1] If V/C is greater than 1.0 then LOS is F per HCM.

The traffic modeling and signal timing optimization software package Synchro (Version 11) has been utilized to analyze signalized intersections. Synchro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis as specified in the HCM. Macroscopic level models represent traffic in terms of aggregate measures for each movement at the study intersections. Equations are used to determine measures of effectiveness such as delay and queue length. The level of service and capacity analysis performed by Synchro takes into consideration optimization and coordination of signalized intersections within a network.

The peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. Customary practice for LOS analysis is to use a peak 15-minute rate of flow. However, flow rates are typically expressed in vehicles per hour. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume (e.g., PHF = [Hourly Volume] / [4 x Peak 15-minute Flow Rate]). The use of a 15-minute PHF produces a more detailed analysis as compared to analyzing vehicles per hour. Existing PHFs have been used for all analysis scenarios. Per the HCM, PHF values over 0.95 often are indicative of high traffic volumes with capacity constraints on peak hour flows while lower PHF values are indicative of greater variability of flow during the peak hour. (5)

2.2.2 UNSIGNALIZED INTERSECTIONS

The City of Twentynine Palms requires the operations of unsignalized intersections be evaluated using the methodology described in the HCM. (5) The LOS rating is based on the weighted average control delay expressed in seconds per vehicle (see Table 2-2). At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and for the left turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane. Delay for the intersection is reported for the worst individual movement at a two-way stop-controlled intersection. For all-way stop controlled intersections, LOS is computed for the intersection as a whole (average delay).

TABLE 2-2: UNSIGNALIZED INTERSECTION LOS THRESHOLDS

Description	Average Control Delay (Seconds), V/C ≤ 1.0	Level of Service, V/C ≤ 1.0[1]
Little or no delays.	0 to 10.00	A
Short traffic delays.	10.01 to 15.00	B
Average traffic delays.	15.01 to 25.00	C
Long traffic delays.	25.01 to 35.00	D
Very long traffic delays.	35.01 to 50.00	E
Extreme traffic delays with intersection capacity exceeded.	> 50.00	F

Source: HCM, 6th Edition

[1] If V/C is greater than 1.0 then LOS is F per HCM.

2.3 TRAFFIC SIGNAL WARRANT ANALYSIS METHODOLOGY

The term "signal warrants" refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or determine the potential need for installation of a traffic signal at an otherwise unsignalized intersection. This TA uses the signal warrant criteria presented in the latest edition of the Caltrans California Manual on Uniform Traffic Control Devices (CA MUTCD). (6)

The signal warrant criteria for Existing study area intersections are based upon several factors, including volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. The CA MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. (6) Specifically, this TA utilizes the Peak Hour Volume-based Warrant 3 as the appropriate representative traffic signal warrant analysis for existing traffic conditions and for all future analysis scenarios for existing unsignalized intersections. Warrant 3 is appropriate to use for this TA because it provides specialized warrant criteria for intersections with rural characteristics. For the purposes of this study, the speed limit was the basis for determining whether Urban or Rural warrants were used for a given intersection. Rural warrants have been used as posted speed limits on the major roadways with unsignalized intersections are more than 40 miles per hour (MPH) and urban warrants have been used for roadways with speed limits of 40 MPH or less.

Future intersections that do not currently exist have been assessed regarding the potential need for new traffic signals based on future average daily traffic (ADT) volumes, using the Caltrans planning level ADT-based signal warrant analysis worksheets. Similarly, the speed limit has been used as the basis for determining the use of Urban and Rural warrants. Traffic signal warrant analyses were performed for all study area intersections

The Existing conditions traffic signal warrant analysis is presented in the subsequent section, Section 3 *Area Conditions* of this report. Existing Plus Project conditions traffic signal warrant analysis is presented in the subsequent section, Section 5 *Existing Plus Project Traffic Conditions* The traffic signal warrant analyses for future conditions are presented in Section 6 *Cumulative (2025) Traffic Conditions* of this report. It is important to note that a signal warrant defines the minimum condition under which the installation of a traffic signal might be warranted. Meeting this threshold condition does not require that a traffic control signal be installed at a particular location, but rather, that other traffic factors and conditions be evaluated in order to determine whether the signal is truly justified. It should also be noted that signal warrants do not necessarily correlate with LOS. An intersection may satisfy a signal warrant condition and operate at or above acceptable LOS or operate below acceptable LOS and not meet a signal warrant.

2.4 MINIMUM ACCEPTABLE LEVELS OF SERVICE (LOS)

Minimum Acceptable LOS and associated definitions of intersection deficiencies have been obtained from each of the applicable surrounding jurisdictions.

2.4.1 CITY OF TWENTYNINE PALMS

The City of Twentynine Palms has established LOS C as the minimum level of service for all new streets within the City (Implementation Policy CI-1.1 of the General Plan Circulation Element).

The City of Twentynine Palms' Vehicle Miles Traveled Policy Guidance (August 2020) indicates that "LOS is generally not a problem in the City of Twentynine Palms. Most streets and intersection function at LOS A or B. Rush hours are generally not congested. And intersections that were a problem have been improved with traffic signals and upgrades – Rt. 62 at Lear Avenue, Adobe Road, and Utah Trail. The City has no policy requiring LOS to be maintained on existing roads at C or better as some cities do." (3)

For the purposes of this this analysis, LOS D is recognized as the minimum level of service for existing intersections along State Route 62, while LOS C is the minimum acceptable for future roadways.

2.4.2 CALTRANS

Senate Bill 743 (SB 743), approved in 2013, endeavors to change the way transportation impacts will be determined according to the California Environmental Quality Act (CEQA). The Office of Planning and Research (OPR) has recommended the use of vehicle miles traveled (VMT) as the replacement for automobile delay-based LOS. Caltrans acknowledges automobile delay will no longer be considered a CEQA impact for development projects and uses VMT as the metric for determining impacts on the State Highway System (SHS). However, LOS D has been utilized as the target LOS for Caltrans facilities, consistent with other recent studies in the City.

3 AREA CONDITIONS

This section provides a summary of the existing circulation network, the City of Twentynine Palms General Plan Circulation Network, and a review of existing peak hour intersection operations and traffic signal warrant analyses.

3.1 EXISTING CIRCULATION NETWORK

Pursuant to the agreement with City of Twentynine Palms staff (Appendix 1.1), the study area includes a total of 4 existing and future intersections as shown previously on Exhibit 1-1. Exhibit 3-1 illustrates the study area intersections located near the proposed Project and identifies the number of through traffic lanes for existing roadways and intersection traffic controls.

3.2 CITY OF TWENTYNINE PALMS GENERAL PLAN CIRCULATION ELEMENT

As previously noted, the Project site is located within the City of Twentynine Palms. Exhibit 3-2 shows the City of Twentynine Palms General Plan Circulation Element and Exhibit 3-3 illustrates the City of Twentynine Palms General Plan roadway cross-sections.

Twentynine Palms Highway (SR-62) is designated as an Expressway within the study area.

Arterials can accommodate a minimum of four travel lanes, separated by a raised or painted median. These facilities typically provide access between Expressways and their destinations. Lear Avenue is designated as an Arterial north of Twentynine Palms Highway.

Collectors include one lane in each direction with a total pavement width of 44 feet. Lear Avenue is designated as a Collector south of Twentynine Palms Highway. Sullivan Road Avenue is designated as a Collector west of Lear Avenue.

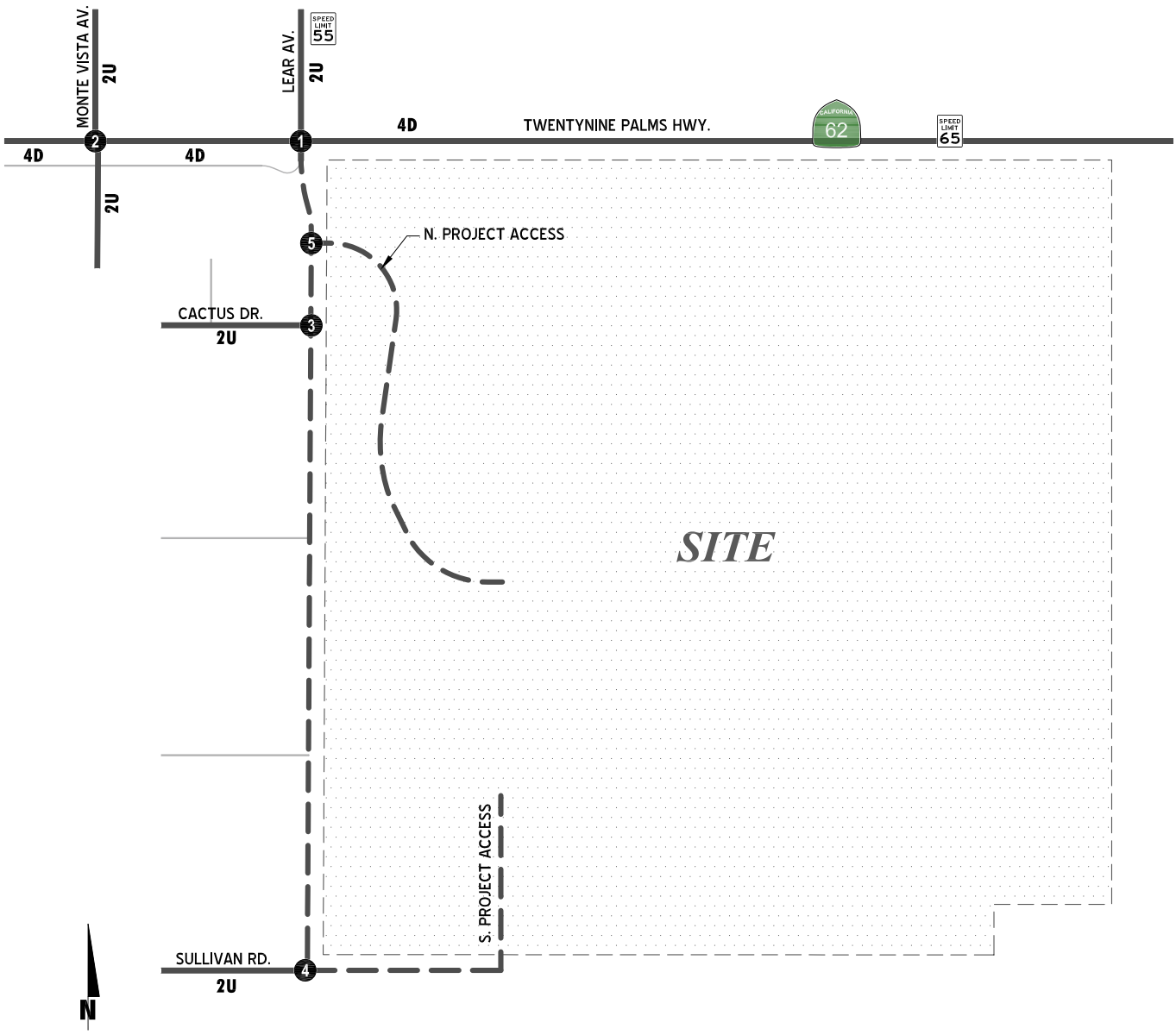
Local streets provide direct access to more developed portions of the City and are not designed (or intended) to carry through traffic. Examples of Local Streets within the study area include:

- Monte Vista Avenue
- Cactus Drive

3.3 BICYCLE, EQUESTRIAN, & PEDESTRIAN FACILITIES

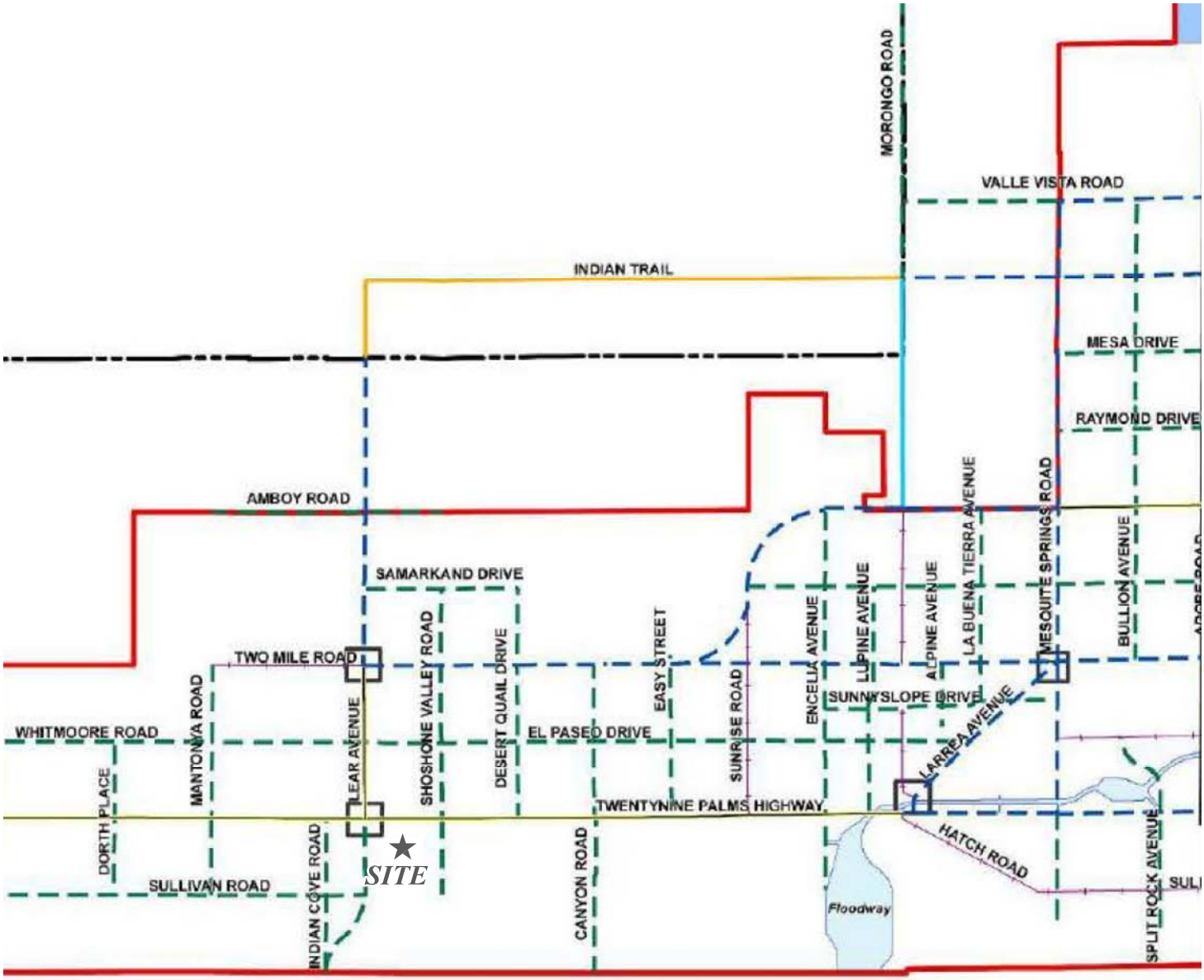
Exhibit 3-4 illustrates the City of Twentynine Palms plans for bicycle, equestrian, and pedestrian facilities. Future multi-purpose trails are designated to occur on Lear Avenue north of Twentynine Palms Highway (SR-62) and along Twentynine Palms Highway (SR-62) west of Lear Avenue. Existing pedestrian facilities within the study area are limited to crosswalks on the north leg and east leg of Lear Avenue at Twentynine Palms Highway (SR-62), as shown on Exhibit 3-5.

EXHIBIT 3-1: EXISTING NUMBER OF THROUGH LANES AND INTERSECTION CONTROLS



1	2	3	4	5
Lear Av. / Twentynine Palms Hwy. (SR-62)	Monte Vista Av. / Twentynine Palms Hwy. (SR-62)	Lear Av. / Cactus Dr.	Lear Av. / Sullivan Rd.	Lear Av. / Sullivan Rd.
DEF	* *	FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION

EXHIBIT 3-2: CITY OF TWENTYNINE PALMS CIRCULATION PLAN



SOURCE: CITY OF TWENTYNINE PALMS GENERAL PLAN (2012)

LEGEND:

- City Boundary
- Sphere of Influence (SOI) Boundary
- Marine Corps Air Ground Combat Center (MCAGCC)
- Floodways

San Bernardino County Circulation

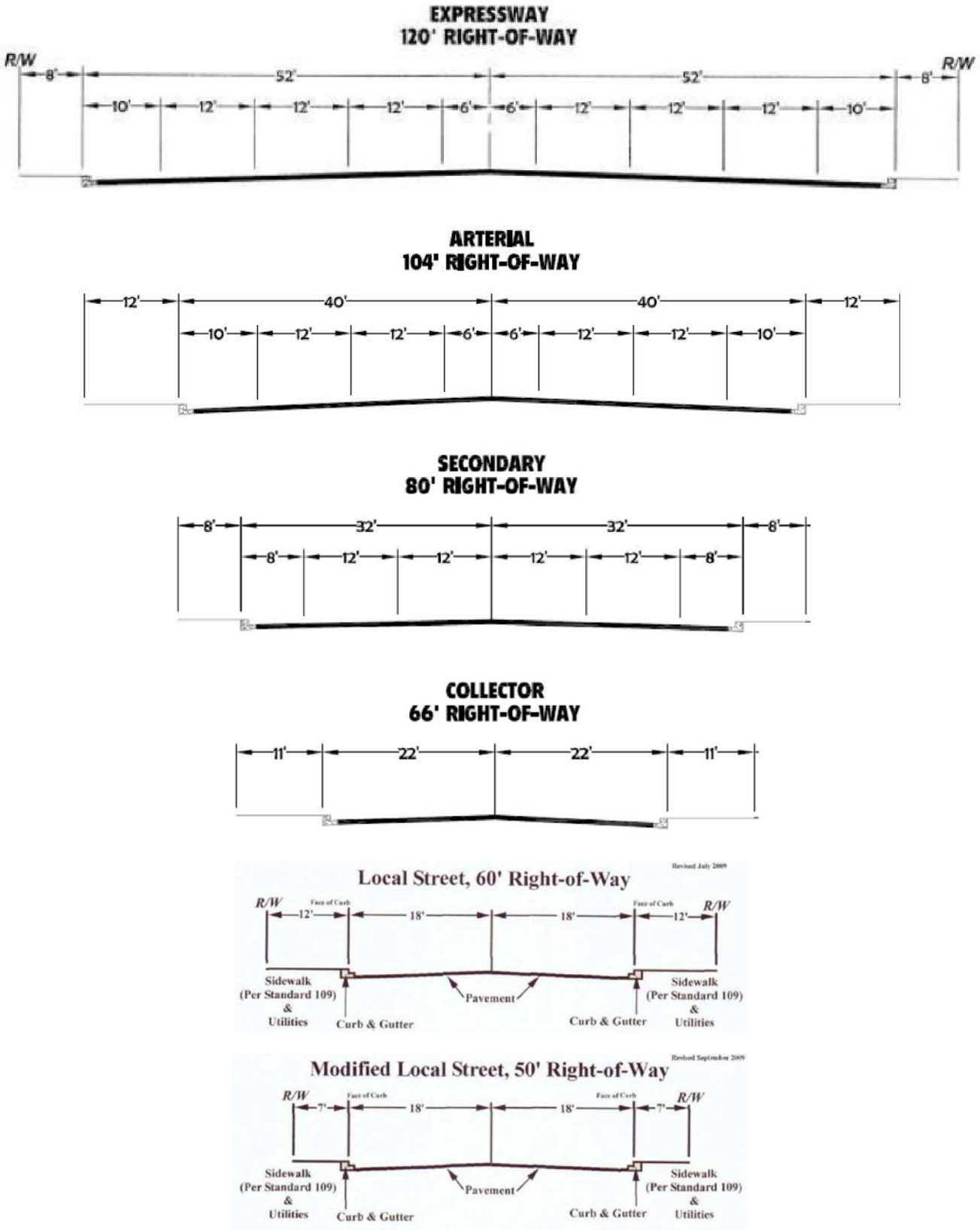
- Major Highway (104' ROW)
- Secondary Highway (88' ROW)

Twentynine Palms Circulation

- 6-Lane Expressway (120' ROW)
- Arterial (104' ROW)
- Secondary (80' ROW)
- Collector (66' ROW)
- Special Study Area

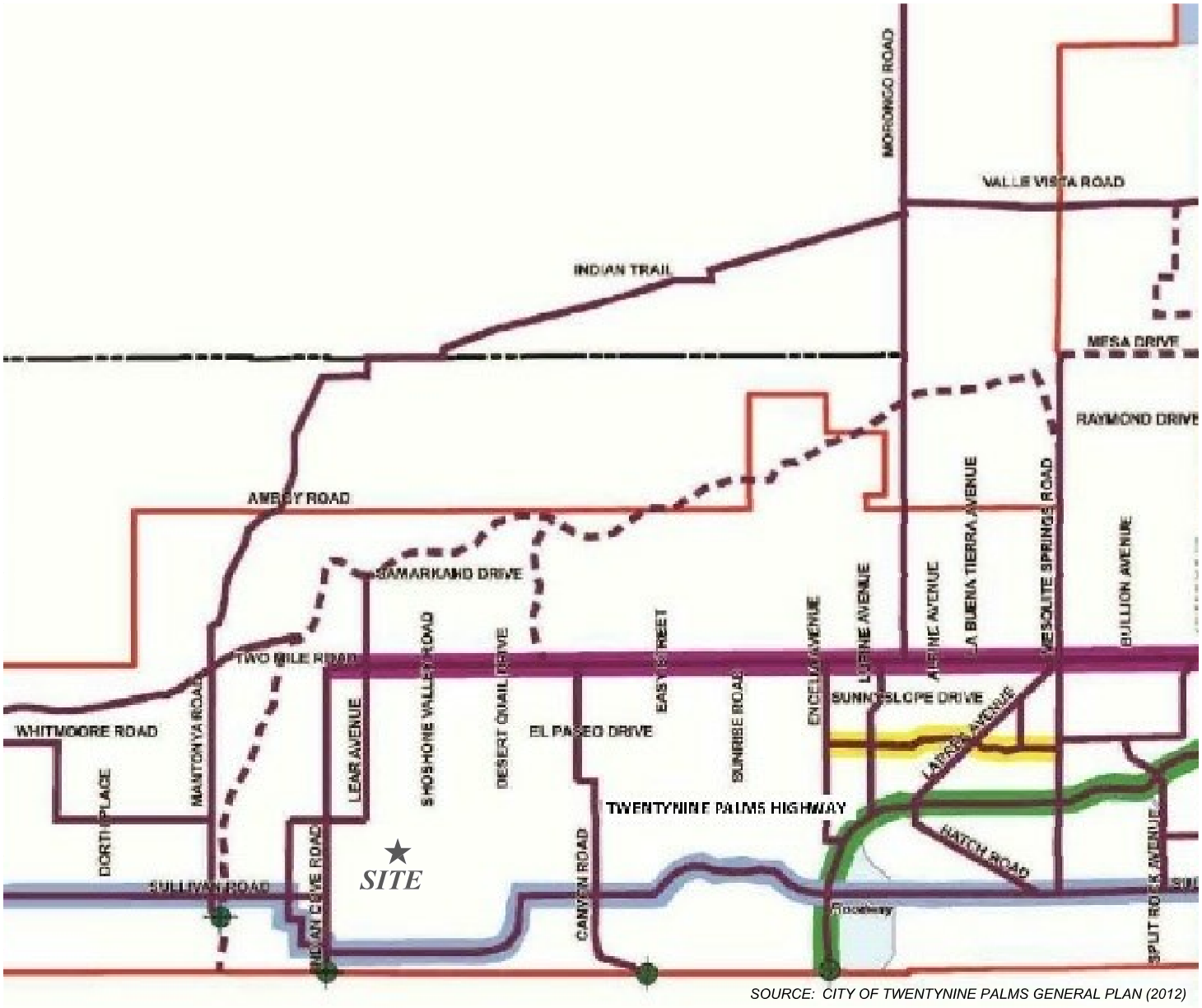
N

EXHIBIT 3-3: CITY OF TWENTYNINE PALMS ROADWAY CROSS-SECTIONS



SOURCE: CITY OF TWENTYNINE PALMS GENERAL PLAN (2012)

EXHIBIT 3-4: CITY OF TWENTYNINE PALMS TRAIL FACILITIES



SOURCE: CITY OF TWENTYNINE PALMS GENERAL PLAN (2012)

LEGEND:

- City Boundary
- Sphere of Influence (SOI) Boundary
- Marine Corps Air Ground Combat Center (MCAGCC)
- Floodways

Trail Type
- Copper Mt. College Connection
- Multi-Purpose - Pedestrian, Equestrian & Bicycle
- Multi-Purpose - Pedestrian & Equestrian

Proposed Connector Routes
- Base-Park Connection
- City Center
- Copper Mt. College Connection
- Foothill Connection
- High School Connection

Connections
- BLM
- Base
- City Property
- County
- JTNP

N

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EXHIBIT 3-5: EXISTING PEDESTRIAN FACILITIES

3.4 TRANSIT SERVICE

Morongo Basin Transit Authority (MBTA) connects Twentynine Palms and nearby communities. Route 1 (Yucca Valley-Twentynine Palms) serves Twentynine Palms Highway in the study area. The Project location on the southeast corner of Lear Avenue at Twentynine Palms Highway positions it near the Route 1 stop located on the southeast corner of Monte Vista Avenue at Twentynine Palms Highway. Route 1 continues eastward where transit riders can visit shops and restaurants. In addition, this transit route provides a potential non-automobile option for employees of Yonder 29 Palms to travel between their homes and their job.

Transit service is reviewed and updated by MBTA periodically to address ridership, budget and community demand needs. Changes in land use can affect these periodic adjustments which may lead to either enhanced or reduced service where appropriate. As such, it is recommended that the applicant work in conjunction with MBTA to potentially provide bus service to the site. Existing transit routes in the vicinity of the study area are illustrated on Exhibit 3-6.

3.5 EXISTING (2023) TRAFFIC COUNTS

The intersection LOS analysis is based on the traffic volumes observed during the peak hour conditions using traffic count data collected in November 2023. The following peak hours were selected for analysis:

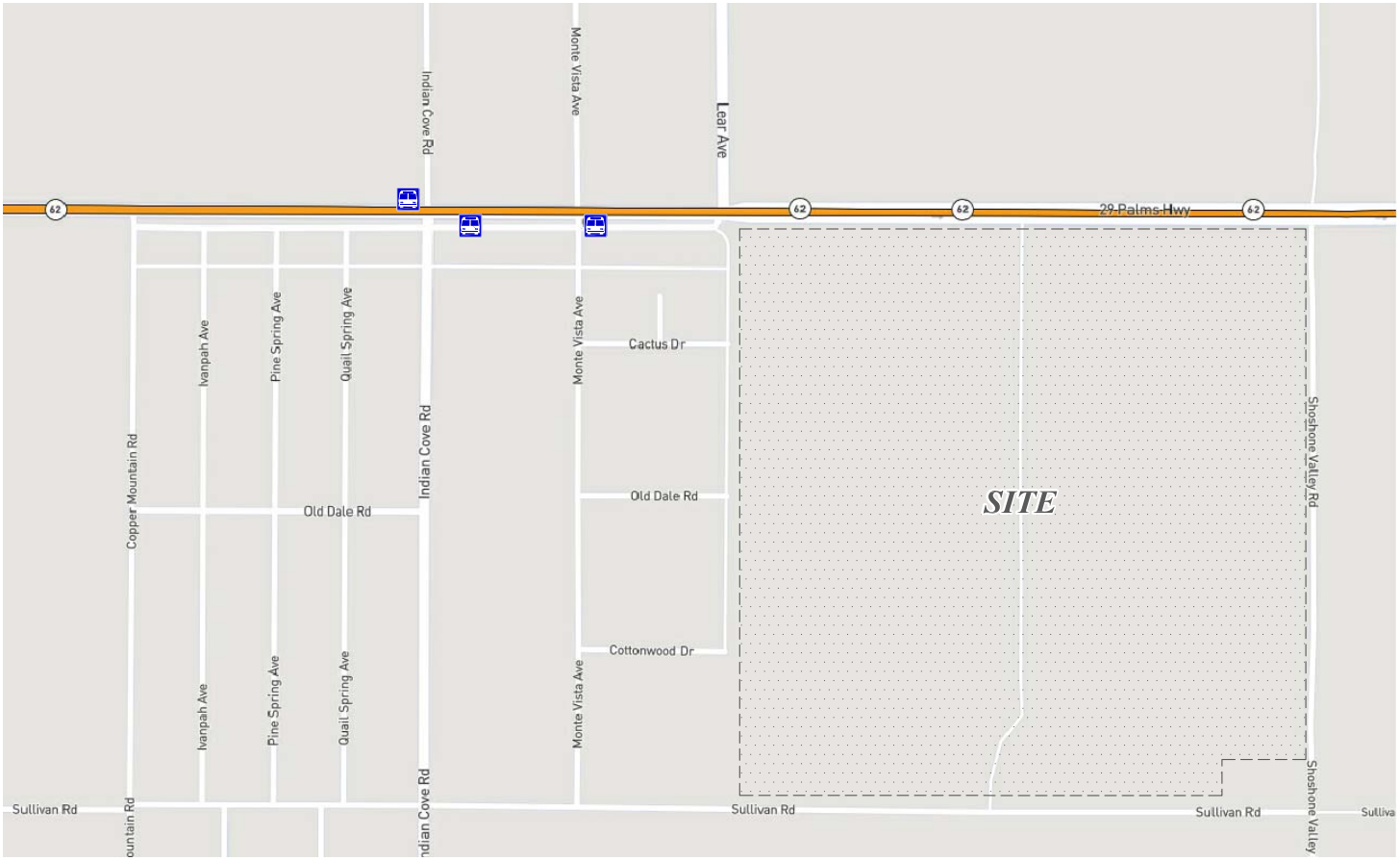
- Weekday AM Peak Hour (peak hour between 7:00 AM and 9:00 AM)
- Weekday PM Peak Hour (peak hour between 4:00 PM and 6:00 PM)

The 2023 weekday AM and weekday PM peak hour count data is representative of typical weekday peak hour traffic conditions in the study area. There were no observations made in the field that would indicate atypical traffic conditions on the count dates, such as construction activity or detour routes and near-by schools were in session and operating on normal schedules. The raw manual peak hour turning movement traffic count data sheets are included in Appendix 3.1.

Existing weekday ADT volumes are shown on Exhibit 3-7. Where actual 24-hour tube count data was not available, Existing ADT volumes were based upon factored intersection peak hour counts collected by Urban Crossroads, Inc. using the following formula for each intersection leg:

Weekday PM Peak Hour (Approach Volume + Exit Volume) x 11.765 = Leg Volume

EXHIBIT 3-6: EXISTING TRANSIT ROUTES



LEGEND:

- YUCCA VALLEY-TWENTYNINE PALMS ROUTE
- BUS STOP

N

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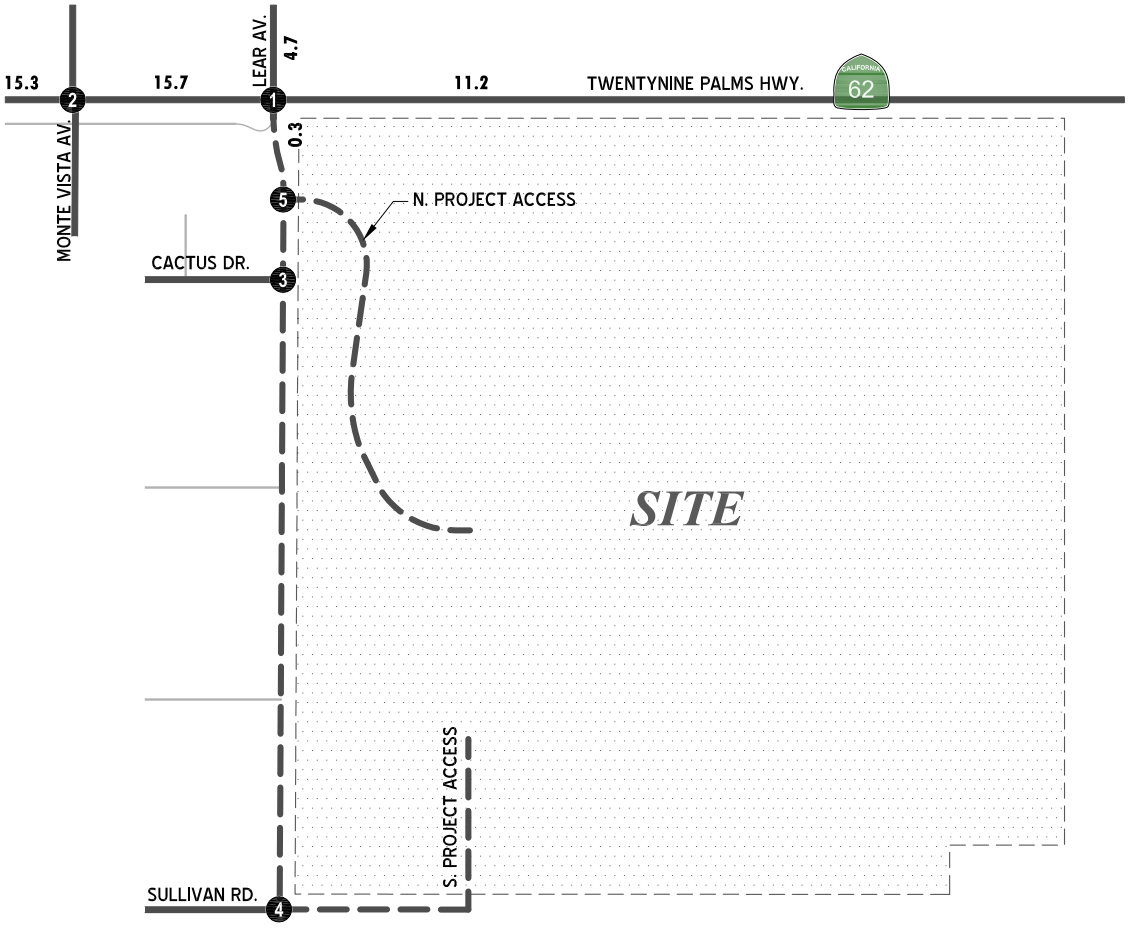
EXHIBIT 3-7: EXISTING (2023) TRAFFIC VOLUMES



LEGEND:

- 5 = INTERSECTION ID
- 100 = PEAK HOUR INTERSECTION VOLUMES
- **10.0** = VEHICLES PER DAY (1000'S)
- **NOM** = NOMINAL, LESS THAN 50 VEHICLES PER DAY

AM PEAK HOUR

1 Lear Av. / Twentynine Palms Hwy. (SR-62)	2 Monte Vista Av. / Twentynine Palms Hwy. (SR-62)	3 Lear Av. / Cactus Dr.	4 Lear Av. / Sullivan Rd.	5 Lear Av. / N. Project Access
141 2 7 — 5 344 1 175 375 1 — 1 1 2	1 480 5 1 543 1 — 2 1 7	FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION

PM PEAK HOUR

1 Lear Av. / Twentynine Palms Hwy. (SR-62)	2 Monte Vista Av. / Twentynine Palms Hwy. (SR-62)	3 Lear Av. / Cactus Dr.	4 Lear Av. / Sullivan Rd.	5 Lear Av. / N. Project Access
269 5 8 — 13 471 11 135 442 1 — 4 5 3	1 2 1 — 1 729 14 1 565 4 — 3 1 12	FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION

N

A comparison of the PM peak hour and daily traffic volumes of various roadway segments within the study area indicated that the peak-to-daily relationship is approximately 8.5 percent. As such, the above equation utilizing a factor of 11.765 estimates the ADT volumes on the study area roadway segments assuming a peak-to-daily relationship of approximately 8.5 percent (i.e., 1/0.085 = 11.765) and was assumed to sufficiently estimate average daily traffic (ADT) volumes for planning-level analyses. Existing weekday peak hour intersection volumes are also shown on Exhibit 3-7.

3.6 INTERSECTION OPERATIONS ANALYSIS

Existing peak hour traffic operations have been evaluated for the study area intersections based on the analysis methodologies presented in Section 2.2 *Intersection Capacity Analysis* of this report. The intersection operations analysis results are summarized on Table 3-1, which indicates that all existing study area intersections are currently operating at acceptable LOS during the peak hours. The intersection operations analysis worksheets are included in Appendix 3.2 of this TA.

TABLE 3-1: INTERSECTION ANALYSIS FOR EXISTING (2023) CONDITIONS

			Intersection Approach Lanes[2]												Delay[3] (secs.)		Level of Service	
		Traffic	Northbound			Southbound			Eastbound			Westbound						
#	Intersection	Control[1]	L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Lear Av. / Twentynine Palms Hwy. (SR-62)	TS	0.5	0.5	d	0	1!	0	1	2	0	1	2	0	18.6	18.4	B	B
2	Monte Vista Av. / Twentynine Palms Hwy. (SR-62)	CSS	0	1!	0	0	1!	0	1*	2	0	1*	2	0	17.5	19.9	C	C
3	Lear Av. / Cactus Av.		Future Intersection															
4	Lear Av. / Sullivan Rd.		Future Intersection															
5	Lear Av. / N. Project Access		Future Intersection															

[1] TS = Traffic Signal; CSS = Cross-street Stop

[2] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; d = Defacto Right Turn Lane; 0.5 = Shared Lane; 1! = Shared Left/Through/Right lane
* = Turn lane accommodated within two-way left-turn lane (TWLTL) median

[3] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

3.7 TRAFFIC SIGNAL WARRANTS

Traffic signal warrants for Existing traffic conditions are based on existing peak hour intersection turning volumes. There are no unsignalized study area intersections that currently warrant a traffic signal for Existing traffic conditions. Existing conditions traffic signal warrant analysis worksheets are provided in Appendix 3.3.

4 PROJECTED FUTURE TRAFFIC

The Project is proposed to consist of the development of a 152.7-acre glamping resort with a total of 100 units. Additional amenities include food & beverage space, and a main lodge that could host special events. Vehicular access will be provided via the one driveway connection to the extension of Lear Avenue at Cactus Drive, with a secondary access driveway connecting to the easterly extension of Sullivan Road. Regional access to the Project site is accommodated via Twentynine Palms Highway (SR-62).

4.1 PROJECT TRIP GENERATION

Trip generation represents the amount of traffic which is both attracted to and produced by a development. Determining traffic generation for a specific project is therefore based upon forecasting the amount of traffic that is expected to be both attracted to and produced by the specific land uses being proposed for a given development. In order to develop the traffic characteristics of the proposed project, trip-generation statistics published in the ITE Trip Generation Manual (11th Edition, 2021). (4)

Trip generation rates for the proposed uses and a summary of the proposed Project trip generation are included on Table 4-1. As shown in Table 4-1, the proposed Project is anticipated to generate 894 external vehicle trip-ends per day with 54 external AM peak vehicle hour trips and 62 external PM peak hour vehicle trips.

4.2 PROJECT TRIP DISTRIBUTION

The Project trip distribution and assignment process represents the directional orientation of traffic to and from the Project site The trip distribution pattern is heavily influenced by the geographical location of the site, the location of surrounding uses, and proximity to the surrounding highway network. Exhibit 4-1 illustrates the distribution patterns for the Project.

4.3 MODAL SPLIT

The potential for Project trips (non-truck) to be reduced by the use of public transit, walking or bicycling have not been included as part of the Project's estimated trip generation. Essentially, the Project's traffic projections are "conservative" in that these alternative travel modes would reduce the forecasted traffic volumes.

4.4 PROJECT TRIP ASSIGNMENT

The assignment of traffic from the Project area to the adjoining roadway system is based upon the Project trip generation, trip distribution, and the arterial highway and local street system improvements that would be in place by the time of initial occupancy of the Project. Based on the identified Project traffic generation and trip distribution patterns, Project ADT and peak hour intersection turning movement volumes are shown on Exhibit 4-2.

TABLE 4-1: PROJECT TRIP GENERATION SUMMARY

Trip Generation Rates[1]

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Glamping Units[3]	330	100 OCC RM	0.27	0.10	0.37	0.20	0.27	0.47	7.87
Food and Beverage	932	3.2 TSF	5.26	4.31	9.57	5.52	3.53	9.05	107.20

Trip Generation Results

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Glamping Units	330	100 OCC RM	27	10	37	20	27	47	787
Internal to Food & Beverage			*(5)*	*(2)*	*(7)*	*(2)*	*(5)*	*(7)*	*(118)*
Glamping Units External Trips			22	8	30	18	22	40	669
Food and Beverage	932	3.2 TSF	17	14	31	18	11	29	343
Internal to Glamping Units			*(2)*	*(5)*	*(7)*	*(5)*	*(2)*	*(7)*	*(118)*
Food and Beverage External Trips			15	9	24	13	9	22	225
Project Subtotal			44	24	68	38	38	76	1,130
Internal Capture Subtotal			*(7)*	*(7)*	*(14)*	*(7)*	*(7)*	*(14)*	*(236)*
PROJECT TOTAL EXTERNAL TRIPS			**37**	**17**	**54**	**31**	**31**	**62**	**894**

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition (2021).
[2] OCC RM = Occupied Room; TSF = Thousand Square Feet
[3] Glamping rates are based upon resort accommodations which include guest services and lodge facilities.

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EXHIBIT 4-1: PROJECT TRIP DISTRIBUTION

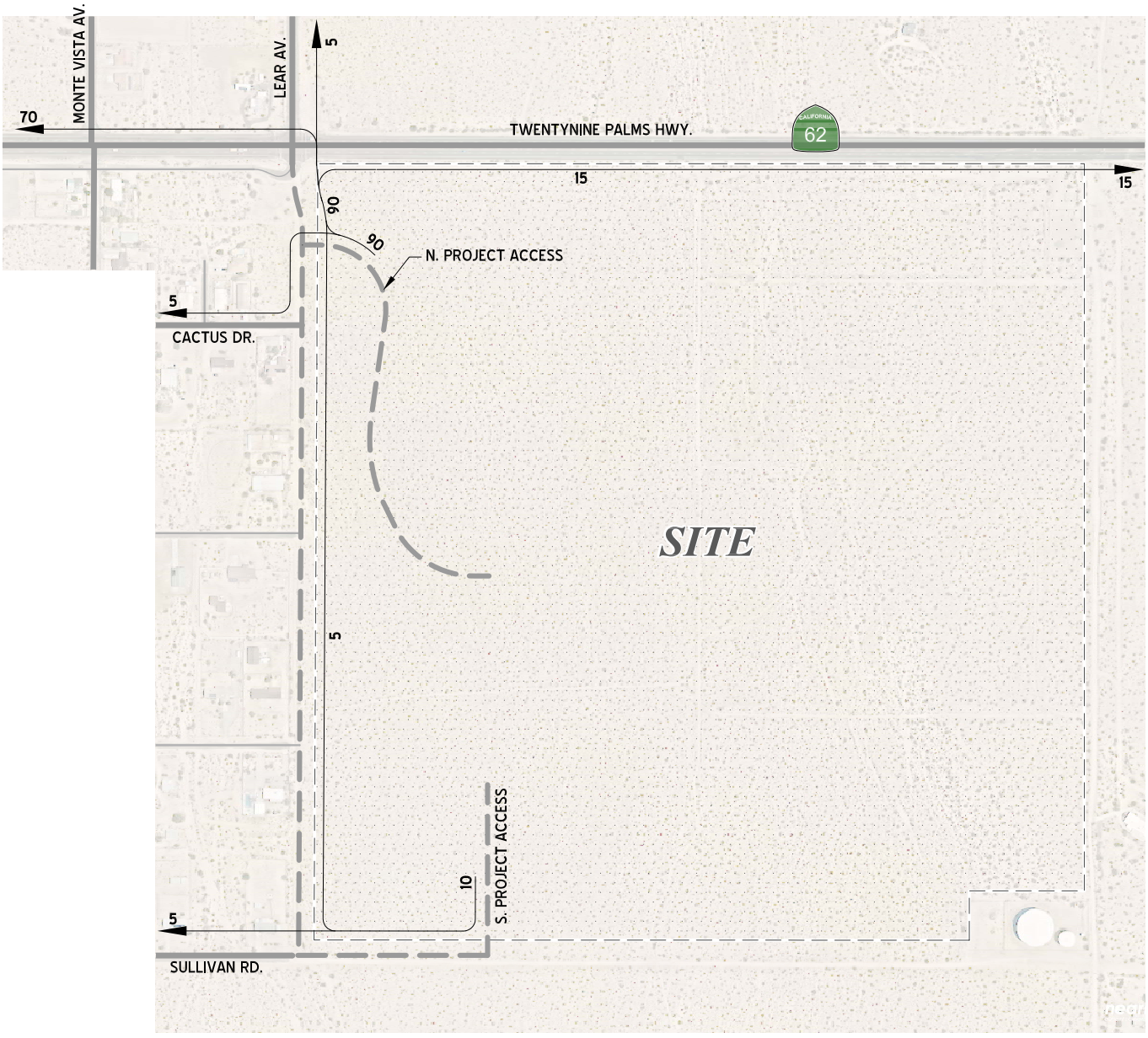
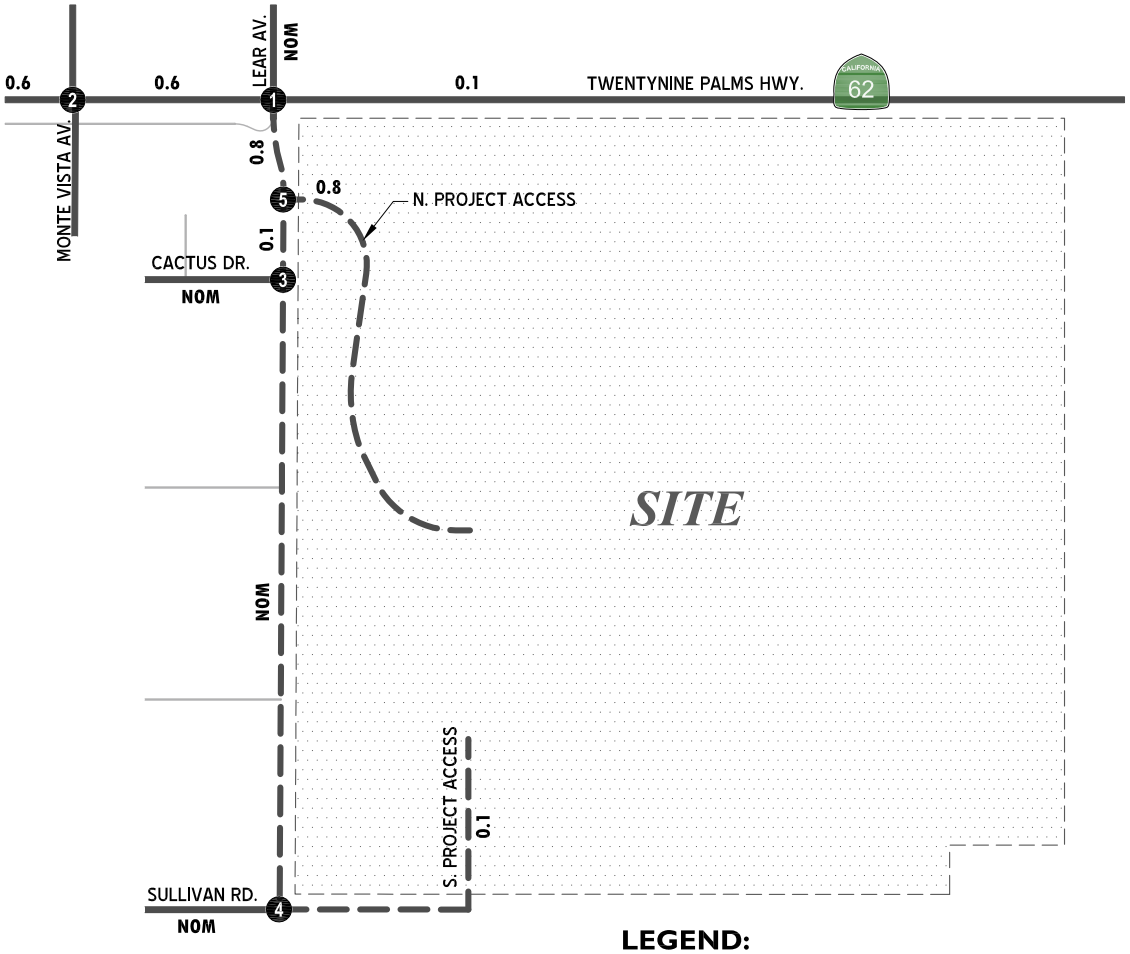


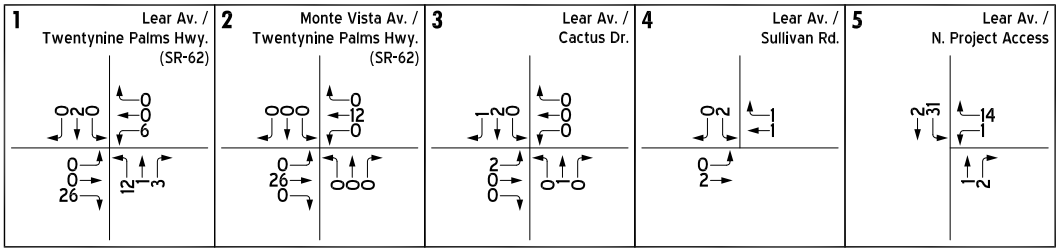
EXHIBIT 4-2: PROJECT ONLY TRAFFIC VOLUMES



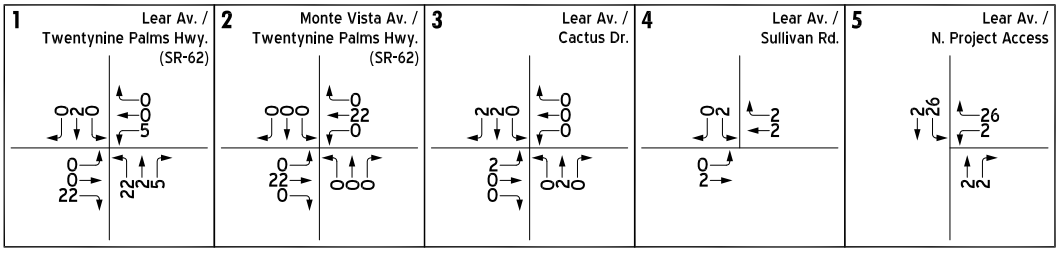
LEGEND:

- 5 = INTERSECTION ID
- 100 = PEAK HOUR INTERSECTION VOLUMES
- 10.0 = VEHICLES PER DAY (1000'S)
- NOM = NOMINAL, LESS THAN 50 VEHICLES PER DAY

AM PEAK HOUR



PM PEAK HOUR



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4.5 CUMULATIVE DEVELOPMENT TRAFFIC

Future year traffic forecasts have been based upon background (ambient) growth at 2% per year for 2025 traffic conditions. The total ambient growth is 4.04% for 2025 traffic conditions. The ambient growth factor is intended to approximate regional traffic growth. Ambient growth has been added to daily and peak hour traffic volumes on surrounding roadways, in conjunction with traffic generated by the development of future projects that have been approved but not yet built and/or for which development applications have been filed and are under consideration by governing agencies. Opening Year Cumulative (2025) traffic volumes are provided in Section 5 of this report. The traffic generated by the proposed Project was then manually added to the base volume to determine Opening Year Cumulative "With Project" forecasts.

A cumulative project list was developed for the purposes of this analysis through consultation with planning and engineering staff from the City of Twentynine Palms. The cumulative projects listed are those that would generate traffic and would contribute traffic to study area intersections. Exhibit 4-3 illustrates the cumulative development location map. A summary of cumulative development projects and their proposed land uses are shown on Table 4-2.

If applicable, traffic volumes generated by individual cumulative projects were manually added to the cumulative forecasts to ensure that traffic generated by the listed development projects on Table 4-2 are reflected as part of the background traffic.

The cumulative traffic analyses include the following traffic conditions, with the various traffic components:

- Cumulative (2025) Without Project
    - Existing 2023 counts
    - Ambient growth (4.04%)
    - Cumulative Development traffic
- Cumulative (2025) With Project
    - Existing 2023 counts
    - Ambient growth (4.04%)
    - Cumulative Development traffic
    - Project traffic

TABLE 4-2: CUMULATIVE DEVELOPMENT LAND USE SUMMARY

ID	Project Name	Land Use	Quantity	Units[1]
TP1	Micro Brewery Building Renovation	Drinking Place	1.475	TSF
TP2	Restaurant/Coffee Bar Building Renovation	Coffee Shop without Drive-Through Window	4.200	TSF
TP3	Coffee Shop New Building (Drive-Thru)	Coffee Shop with Drive-Through Window	1.800	TSF
TP4	Laundromat Building Renovation	--	3.972	TSF
TP5	Ice Cream/Juice Bar Building Renovation	Fast Casual Restaurant	4.100	TSF
TP6	Theatre 29 Expansion	Movie Theater	60	Seats
TP7	32 New Casitas	Multifamily Housing (Low-Rise)	32	DU
TP8	Museum Expansion New Building	Museum	2.432	TSF
TP9	Project Phoenix	Business Hotel	95	Room
		Recreational Community Center	26.500	TSF
		Shopping Center	2.500	TSF
		High-Turnover (Sit-Down) Restaurant	2.500	TSF
TP10	O'Reilly Auto Parts	Automobile Parts Sales	7.396	TSF
TP11	Depierro Car Wash & Restaurant (TPM 20501)	Fast Food Restaurant w/o Drive Thru	2.500	TSF
		Automated Car Wash	1	Tunnel
TP12	Grocery Outlet (Under Construction)	Grocery Store	16.0	TSF
TP13	Taco Bell	Fast Food Restaurant w/ Drive Thru	2.240	TSF
TP14	Wander Hotel	Hotel	95	Room
TP15	Dollar General	Retail Store	10.640	TSF

[1] DU = Dwelling Unit; RM = Room; TSF = Thousand Square Feet

EXHIBIT 4-3: CUMULATIVE DEVELOPMENT LOCATION MAP

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5 EXISTING PLUS PROJECT TRAFFIC CONDITIONS

This section discusses the methods used to develop Existing Plus Project traffic forecasts, and the resulting intersection operations and traffic signal warrant analyses.

The lane configurations and traffic controls assumed to be in place for Existing Plus Project conditions are consistent with those shown previously on Exhibit 3-1, except for Project driveways and those facilities assumed to be constructed by the Project to provide site access (e.g., intersection and roadway improvements along the Project's frontage and driveways).

5.1 EXISTING PLUS PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing (2023) traffic in conjunction with the addition of Project traffic. The weekday ADT and peak hour volumes which can be expected for Existing Plus Project traffic conditions are shown on Exhibit 5-1.

5.2 INTERSECTION OPERATIONS ANALYSIS

As shown on Table 5-1, there are no study area intersections that are anticipated to operate at a deficient LOS during any of the peak hours for Existing Plus Project traffic conditions.

The intersection operations analysis worksheets for Existing Plus Project traffic conditions are included in Appendix 5.1 of this TA.

TABLE 5-1: INTERSECTION ANALYSIS FOR EXISTING PLUS PROJECT CONDITIONS

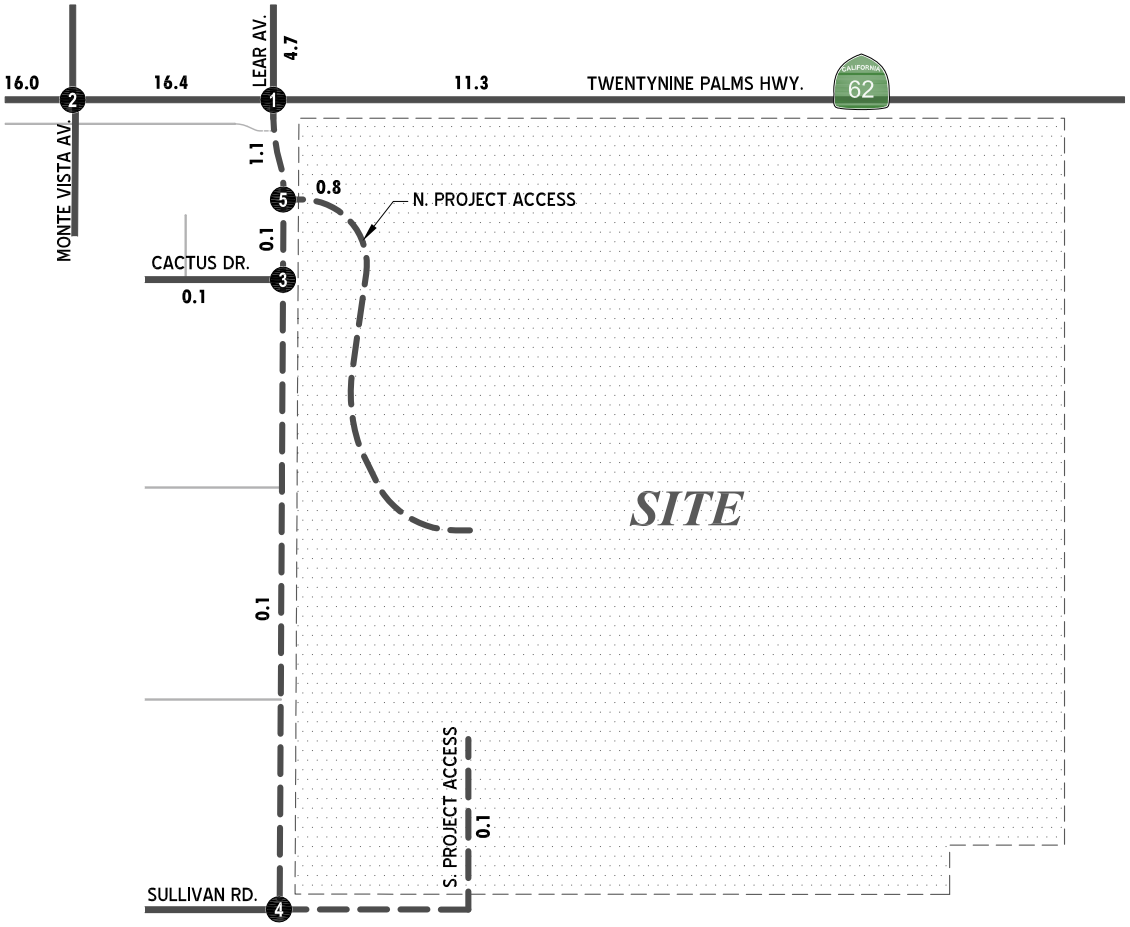
			Intersection Approach Lanes[2]												Delay[3] (secs.)		Level of Service	
		Traffic	Northbound			Southbound			Eastbound			Westbound						
#	Intersection	Control[1]	L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Lear Av. / Twentynine Palms Hwy. (SR-62)	TS	0.5	0.5	d	0	1!	0	1	2	0	1	2	0	18.7	18.5	B	B
2	Monte Vista Av. / Twentynine Palms Hwy. (SR-62)	CSS	0	1!	0	0	1!	0	1*	2	0	1*	2	0	18.1	21.9	C	C
3	Lear Av. / Cactus Av.	CSS	**0.5**	**0.5**	0	0	**1**	0	0	1!	0	0	0	0	8.6	8.6	A	A
4	Lear Av. / Sullivan Rd.	CSS	0	0	0	0	**1!**	0	0.5	0.5	0	0	1	0	8.5	8.5	A	A
5	Lear Av. / N. Project Access	CSS	0	**1**	0	**0.5**	**0.5**	0	0	0	0	0	**1!**	0	8.4	8.5	A	A

[1] TS = Traffic Signal; CSS = Cross-street Stop

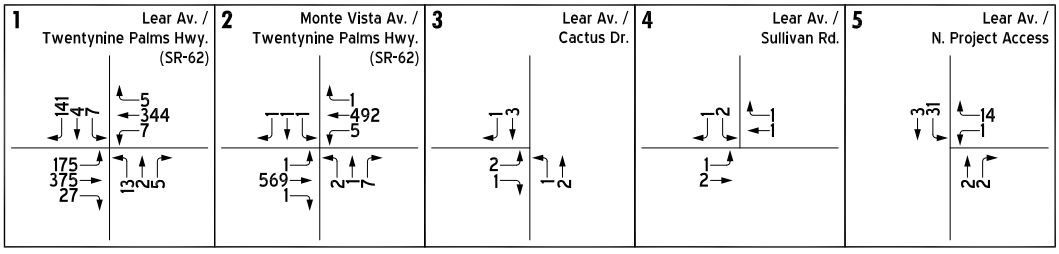
[2] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; d = Defacto Right Turn Lane; 0.5 = Shared Lane; 1! = Shared Left/Through/Right lane; **1** = Improvement
* = Turn lane accommodated within two-way left-turn lane (TWLTL) median

[3] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

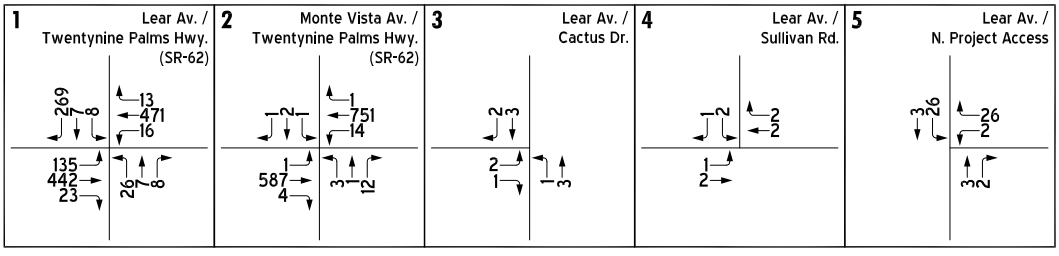
EXHIBIT 5-1: EXISTING PLUS PROJECT TRAFFIC VOLUMES



AM PEAK HOUR



PM PEAK HOUR



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5.3 TRAFFIC SIGNAL WARRANTS

The traffic signal warrant analysis for Existing Plus Project traffic conditions are based on the peak hour volumes or planning level ADT volume-based traffic signal warrants

No study area intersections are anticipated to meet either peak hour volume or ADT volume-based warrants for Existing Plus Project traffic conditions (see Appendix 3.3).

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6 CUMULATIVE (2025) TRAFFIC CONDITIONS

This section discusses the methods used to develop Cumulative (2025) Without and With Project traffic forecasts, and the resulting intersection operations and traffic signal warrant analyses.

The lane configurations and traffic controls assumed to be in place for Cumulative (2025) conditions are consistent with those shown previously on Exhibit 3-1, with the exception of the following:

- Project driveways and those facilities assumed to be constructed by the Project to provide site access are also assumed to be in place for Cumulative conditions With Project only (e.g., intersection and roadway improvements along the Project's frontage and driveways).
- If applicable, driveways and those facilities assumed to be constructed by cumulative developments to provide site access are also assumed to be in place for Cumulative conditions only.

6.1 CUMULATIVE WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Existing traffic volumes plus an ambient growth factor of 4.04% plus traffic from pending and approved but not yet constructed known development projects in the area. The weekday ADT and peak hour volumes which can be expected for Cumulative (2024) Without Project traffic conditions are shown on Exhibit 6-1.

6.2 CUMULATIVE WITH PROJECT TRAFFIC VOLUME FORECASTS

This scenario includes Cumulative (2025) Without Project traffic in conjunction with the addition of Project traffic. The weekday ADT and peak hour volumes which can be expected for Cumulative (2025) With Project traffic conditions are shown on Exhibit 6-2.

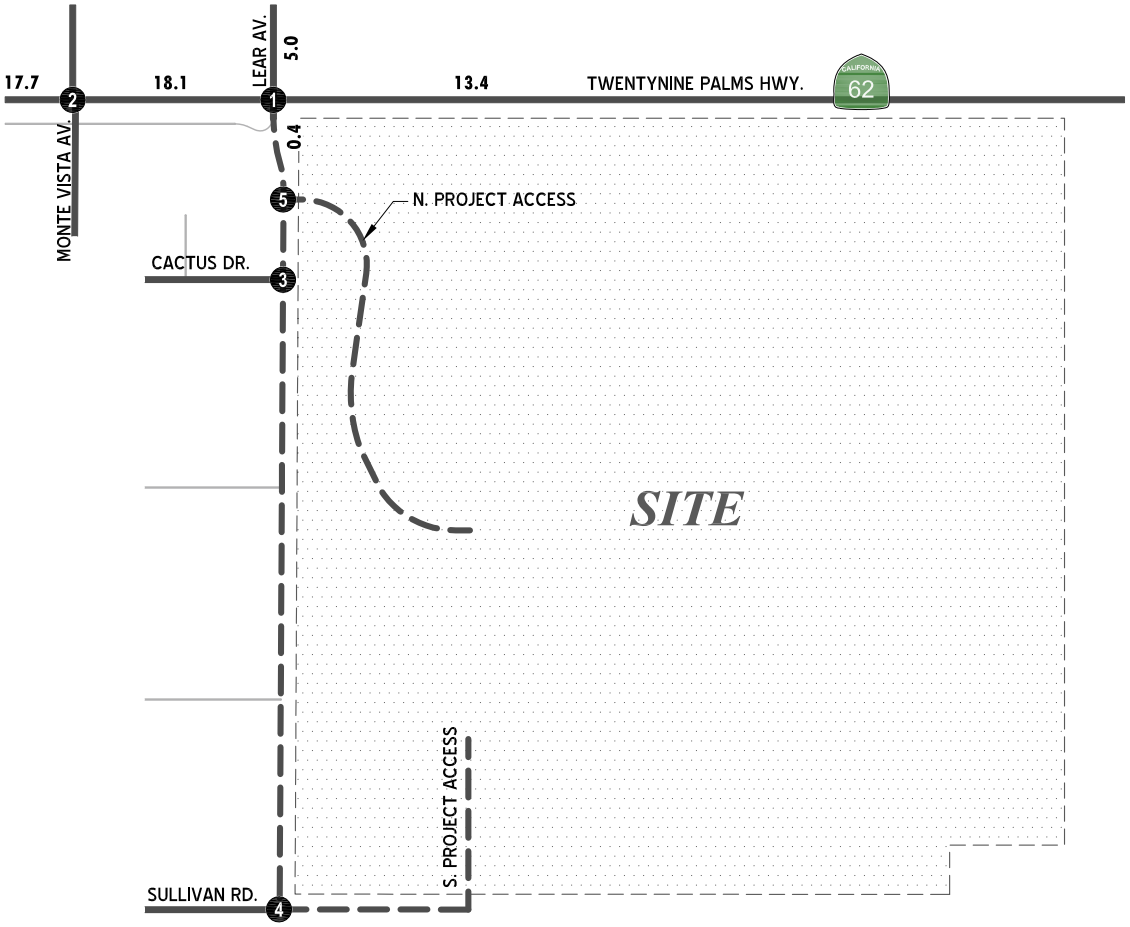
6.3 INTERSECTION OPERATIONS ANALYSIS

6.3.1 CUMULATIVE (2025) WITHOUT PROJECT TRAFFIC CONDITIONS

LOS calculations were conducted for the study intersections to evaluate their operations under Cumulative (2025) Without Project conditions with roadway and intersection geometrics consistent with Section 6.1 *Roadway Improvements*. As shown on Table 6-1, the study area intersections are anticipated to operate at an acceptable LOS under Cumulative (2025) Without Project traffic conditions

The intersection operations analysis worksheets for Cumulative (2025) Without Project traffic conditions are included in Appendix 6.1 of this TA.

EXHIBIT 6-1: CUMULATIVE (2025) WITHOUT PROJECT TRAFFIC VOLUMES



AM PEAK HOUR

1 Lear Av. / Twentynine Palms Hwy. (SR-62)	2 Monte Vista Av. / Twentynine Palms Hwy. (SR-62)	3 Lear Av. / Cactus Dr.	4 Lear Av. / Sullivan Rd.	5 Lear Av. / N. Project Access
147 2 11 → 8 ← 425 ← 1 182 → 462 → 1 1 ← 1 ← 2	1 ← 567 ← 5 1 → 637 → 1 2 ← 7	FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION

PM PEAK HOUR

1 Lear Av. / Twentynine Palms Hwy. (SR-62)	2 Monte Vista Av. / Twentynine Palms Hwy. (SR-62)	3 Lear Av. / Cactus Dr.	4 Lear Av. / Sullivan Rd.	5 Lear Av. / N. Project Access
280 5 12 → 17 ← 558 ← 11 140 → 533 → 1 4 ← 5 ← 3	1 ← 826 ← 15 1 → 661 → 4 3 ← 1 ← 12	FUTURE INTERSECTION	FUTURE INTERSECTION	FUTURE INTERSECTION

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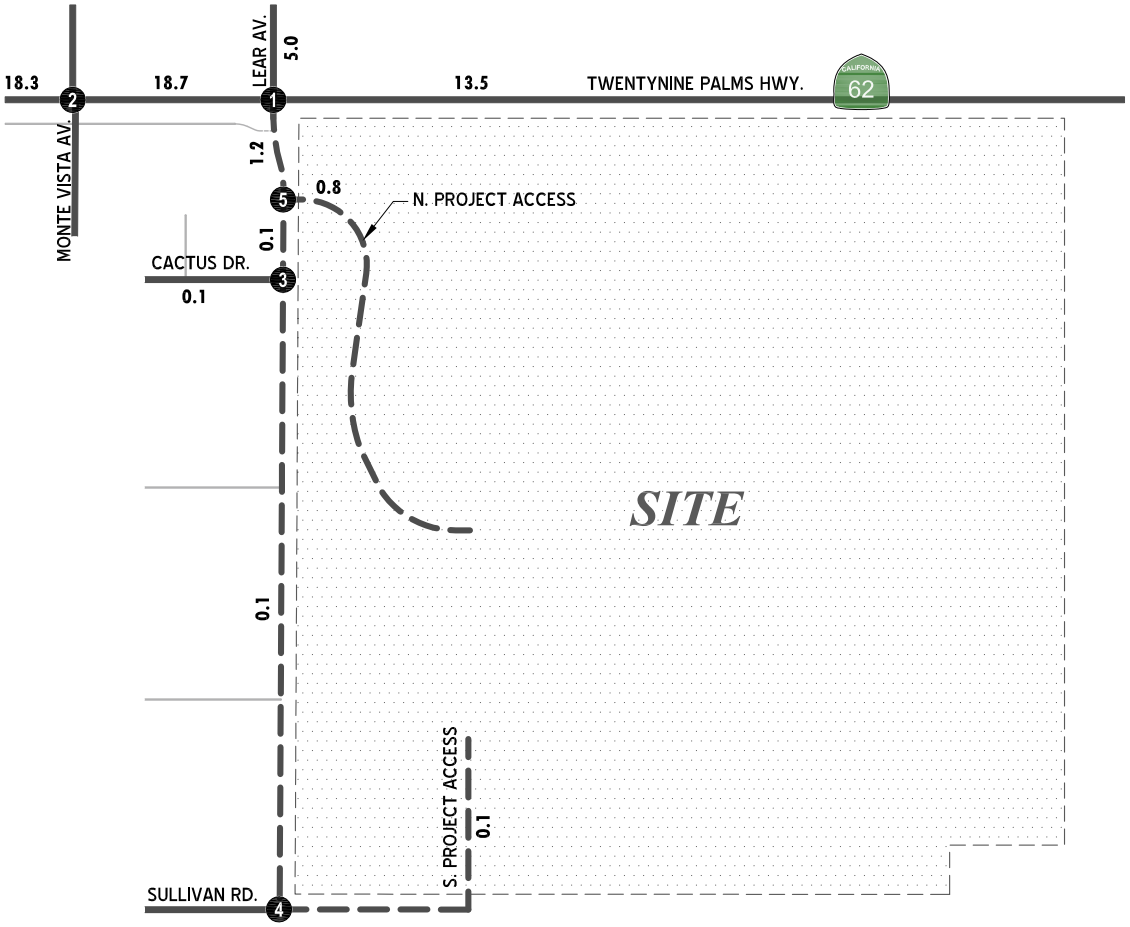
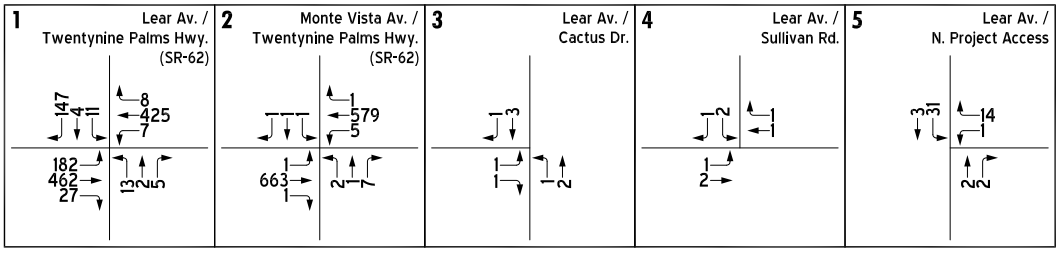
EXHIBIT 6-2: CUMULATIVE (2025) WITH PROJECT TRAFFIC VOLUMES



AM PEAK HOUR



PM PEAK HOUR

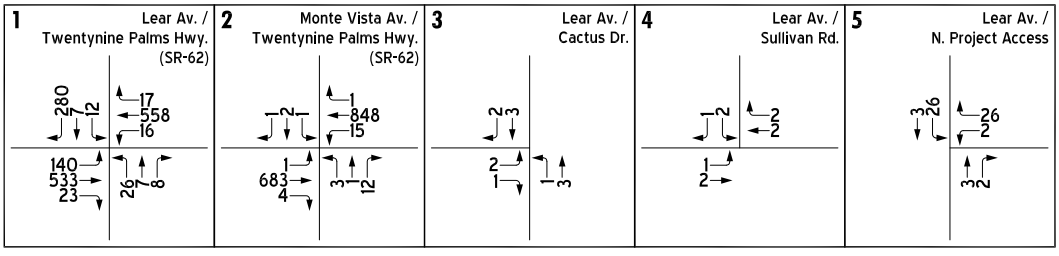


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TABLE 6-1: INTERSECTION ANALYSIS FOR CUMULATIVE (2025) CONDITIONS

#	Intersection	Traffic Control[1]	Intersection Approach Lanes[2] Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R	Delay[3] (secs.) AM	PM	Level of Service AM	PM
1	Lear Av. / Twentynine Palms Hwy. (SR-62)	TS	0.5	0.5	d	0	1!	0	1	2	0	1	2	0	18.9	19.1	B	B
2	Monte Vista Av. / Twentynine Palms Hwy. (SR-62)	CSS	0	1!	0	0	1!	0	1*	2	0	1*	2	0	20.9	25.4	C	D
3	Lear Av. / Cactus Av.		Future Intersection															
4	Lear Av. / Sullivan Rd.		Future Intersection															
5	Lear Av. / N. Project Access		Future Intersection															

1 TS = Traffic Signal; CSS = Cross-street Stop

2 When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; d = Defacto Right Turn Lane; 0.5 = Shared Lane; 1! = Shared Left/Through/Right lane; **1** = Improvement
* = Turn lane accommodated within two-way left-turn lane (TWLTL) median

3 Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

6.3.2 CUMULATIVE (2025) WITH PROJECT TRAFFIC CONDITIONS

As shown on Table 6-2, there are no study area intersections that are anticipated to operate at a deficient LOS during any of the peak hours for Cumulative (2025) With Project traffic conditions with the addition of Project traffic.

The intersection operations analysis worksheets for Cumulative (2025) With Project traffic conditions are included in Appendix 6.2 of this TA.

6.4 TRAFFIC SIGNAL WARRANTS

The traffic signal warrant analysis for Cumulative (2025) traffic conditions are based on the peak hour volumes or planning level ADT volume-based traffic signal warrants. No study area intersections are anticipated to meet either peak hour volume or ADT volume-based warrants for Cumulative (2025) Without and With Project traffic conditions (see Appendix 3.3).

TABLE 6-2: INTERSECTION ANALYSIS FOR CUMULATIVE (2025) PLUS PROJECT CONDITIONS

#	Intersection	Traffic Control[1]	Intersection Approach Lanes[2]												Delay[3] (secs.)		Level of Service	
			Northbound			Southbound			Eastbound			Westbound						
			L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Lear Av. / Twentynine Palms Hwy. (SR-62)	TS	0.5	0.5	d	0	1!	0	1	2	0	1	2	0	19.0	19.2	B	B
2	Monte Vista Av. / Twentynine Palms Hwy. (SR-62)	CSS	0	1!	0	0	1!	0	1*	2	0	1*	2	0	21.6	26.4	C	D
3	Lear Av. / Cactus Av.	**CSS**	**0.5**	**0.5**	0	0	**1**	0	0	1!	0	0	0	0	8.6	8.6	A	A
4	Lear Av. / Sullivan Rd.	**CSS**	0	0	0	0	**1!**	0	0.5	0.5	0	0	**1**	0	8.5	8.5	A	A
5	Lear Av. / N. Project Access	**CSS**	0	**1**	0	**0.5**	**0.5**	0	0	0	0	0	**1!**	0	8.4	8.5	A	A

[1] TS = Traffic Signal; CSS = Cross-street Stop

[2] When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; d = Defacto Right Turn Lane; 0.5 = Shared Lane; 1! = Shared Left/Through/Right lane; **1** = Improvement
* = Turn lane accommodated within two-way left-turn lane (TWLTL) median

[3] Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

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7 GENERAL PLAN BUILDOUT (2045) TRAFFIC CONDITIONS

This section discusses the methods used to develop General Plan Buildout (2045) Without and With Project traffic forecasts, and the resulting intersection operations and traffic signal warrant analyses.

The lane configurations and traffic controls assumed to be in place for General Plan Buildout (2045) take into consideration the City of Twentynine Palms General Plan Circulation Element (Exhibit 3-2). As note previously, Twentynine Palms Highway (SR-62) is designated as an Expressway within the study area. Lear Avenue is designated as an Arterial north of Twentynine Palms Highway.

Collectors include one lane in each direction with a total pavement width of 44 feet. Lear Avenue is designated as a Collector south of Twentynine Palms Highway. Sullivan Road Avenue is designated as a Collector west of Lear Avenue.

7.1 2045 WITHOUT PROJECT TRAFFIC VOLUME FORECASTS

Two sources of traffic projections for long range future conditions have been reviewed in order to determine General Plan Buildout (2045) traffic conditions in the study area: (1) the San Bernardino Transportation Analysis Model (SBTAM), a subregional analysis tool developed to assist local jurisdictions and agencies utilize forecasts that are consistent with the SCAG Regional Model, and (2) the Morongo Basin Transportation Model (MBTM), an analysis tool used by the City or Twentynine Palms to evaluate traffic conditions with buildout of the City's General Plan (Citywide Traffic Fee Program Traffic Study, March 6, 2007) (7).

Because the MBTM includes socioeconomic data inputs which directly represent General Plan buildout land uses (buildout likely to occur beyond 2045), traffic volume projections from that source are significantly higher than SBTAM traffic volumes. The City General Plan/MBTM projections are therefore utilized in this analysis.

The "without Project" designation (currently approved) for the site is RS-E (Single Family, 1 unit per 2.5 acres), which could allow up to 61 homes on the property.

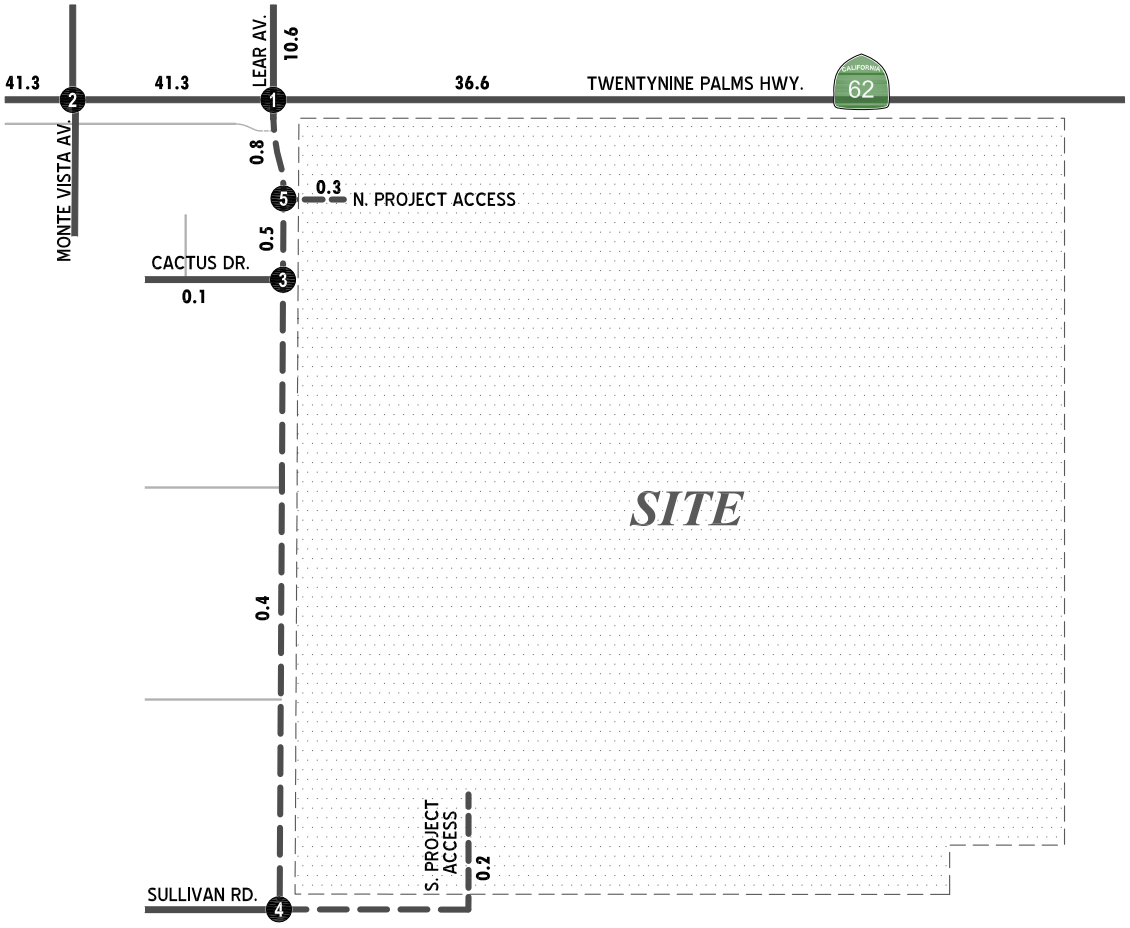
The weekday ADT and peak hour volumes which can be expected for General Plan Buildout (2045) Without Project traffic conditions are shown on Exhibit 7-1.

7.2 2045 WITH PROJECT TRAFFIC VOLUME FORECASTS

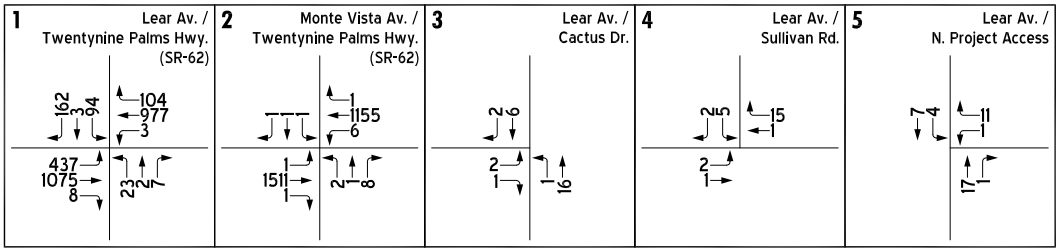
The Project involves a General Plan Amendment: from RS-E (Single Family, 1 unit per 2.5 acres) for all 152.7 acres, to 41.9 acres of Tourist Commercial (in the middle of the property where the Project is situated) and 110.8 acres of Open Space Recreational with 10 acre minimum (allows one home per 10 acres).

Table 7-1 shows the differences in trip generation between the currently approved land use for the property and the Project land use changes.

EXHIBIT 7-1: GENERAL PLAN BUILDOUT (2045) WITHOUT PROJECT TRAFFIC VOLUMES



AM PEAK HOUR



PM PEAK HOUR

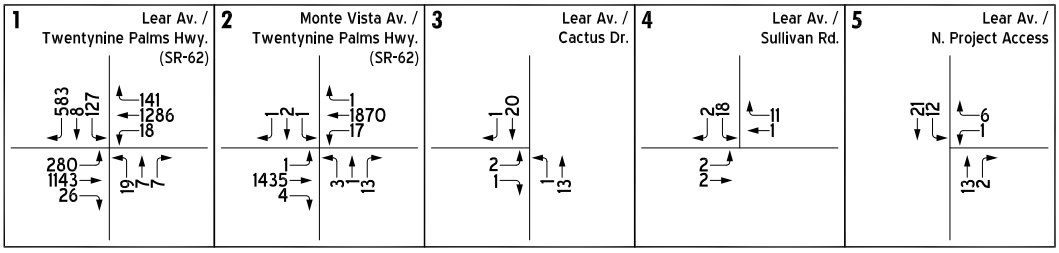


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TABLE 7-1: GENERAL PLAN PROJECT AREA TRIP GENERATION COMPARISON

Trip Generation Rates[1]

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Glamping Units[3]	330	100 OCC RM	0.27	0.10	0.37	0.20	0.27	0.47	7.87
Food and Beverage	932	3.2 TSF	5.26	4.31	9.57	5.52	3.53	9.05	107.20
Single Family Detached	210	varies	0.18	0.52	0.70	0.59	0.35	0.94	9.43

Currently Approved General Plan Project Area Land Use Trip Generation Results

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Single Family Detached	210	61 DU	11	32	43	36	21	57	575
CURRENLTY APPROVED GENERAL PLAN PROJECT AREA TOTAL TRIPS			**11**	**32**	**43**	**36**	**21**	**57**	**575**

Proposed General Plan Project Area Land Use Trip Generation Results

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Glamping Units	330	100 OCC RM	27	10	37	20	27	47	787
Internal to Food & Beverage			*(5)*	*(2)*	*(7)*	*(2)*	*(5)*	*(7)*	*(118)*
Glamping Units External Trips			22	8	30	18	22	40	669
Food and Beverage	932	3.2 TSF	17	14	31	18	11	29	343
Internal to Glamping Units			*(2)*	*(5)*	*(7)*	*(5)*	*(2)*	*(7)*	*(118)*
Food and Beverage External Trips			15	9	24	13	9	22	225
Single Family Detached	210	11 DU	2	6	8	6	4	10	104
Project Area Subtotal			46	30	76	44	42	86	1,234
Internal Capture Subtotal			*(7)*	*(7)*	*(14)*	*(7)*	*(7)*	*(14)*	*(236)*
PROPOSED GENERAL PLAN PROJECT AREA TOTAL EXTERNAL TRIPS			**39**	**23**	**62**	**37**	**35**	**72**	**998**

Trip Generation Comparison

Land Use	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Currently Approved General Plan Land Use Project Area	11	32	43	36	21	57	575
Proposed General Plan Land Use Project Area	39	23	62	37	35	72	998
DELTA (Proposed - Previous)	**28**	**-9**	**19**	**1**	**14**	**15**	**423**

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition (2021).
[2] OCC RM = Occupied Room; TSF = Thousand Square Feet
[3] Glamping rates are based upon resort accommodations which include guest services and lodge facilities.

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The weekday ADT and peak hour volumes which can be expected for General Plan Buildout (2045) With Project traffic conditions are shown on Exhibit 7-2.

7.3 INTERSECTION OPERATIONS ANALYSIS

7.3.1 2045 WITHOUT PROJECT TRAFFIC CONDITIONS

LOS calculations were conducted for the study intersections to evaluate their operations under General Plan Buildout (2045) Without Project conditions with roadway and intersection geometrics consistent with Section 6.1 *Roadway Improvements*.

As shown on Table 7-2, the study area intersections are anticipated to operate at an acceptable LOS under General Plan Buildout (2045) Without Project traffic conditions.

The intersection operations analysis worksheets for 2045 Without Project traffic conditions are included in Appendix 7.1 of this TA.

TABLE 7-2: INTERSECTION ANALYSIS FOR 2045 WITHOUT PROJECT CONDITIONS

			Intersection Approach Lanes[2]												Delay[3] (secs.)		Level of Service	
		Traffic	Northbound			Southbound			Eastbound			Westbound						
#	Intersection	Control[1]	L	T	R	L	T	R	L	T	R	L	T	R	AM	PM	AM	PM
1	Lear Av. / Twentynine Palms Hwy. (SR-62)																	
	- Without Improvements	TS	0.5	0.5	d	0	1!	0	1	2	0	1	2	0	32.8	>80	D	F
	- With Improvements	TS	0.5	0.5	d	**1**	1	**1>**	1	2	0	1	2	0	28.7	37.3	C	D
2	Monte Vista Av. / Twentynine Palms Hwy. (SR-62)	CSS	0	1!	0	0	1!	0	1*	2	0	1*	2	0	33.6	32.7	C	D
3	Lear Av. / Cactus Av.	**CSS**	**0.5**	**0.5**	0	0	**1**	0	0	1!	0	0	0	0	8.6	8.7	A	A
4	Lear Av. / Sullivan Rd.	**CSS**	0	0	0	0	**1!**	0	0.5	0.5	0	0	**1**	0	8.6	8.7	A	A
5	Lear Av. / N. Project Access	**CSS**	0	**1**	0	**0.5**	**0.5**	0	0	0	0	0	**1!**	0	8.5	8.5	A	A

1 TS = Traffic Signal; CSS = Cross-street Stop

2 When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; d = Defacto Right Turn Lane; 0.5 = Shared Lane; 1! = Shared Left/Through/Right lane; **1** = Improvement
* = Turn lane accommodated within two-way left-turn lane (TWLTL) median

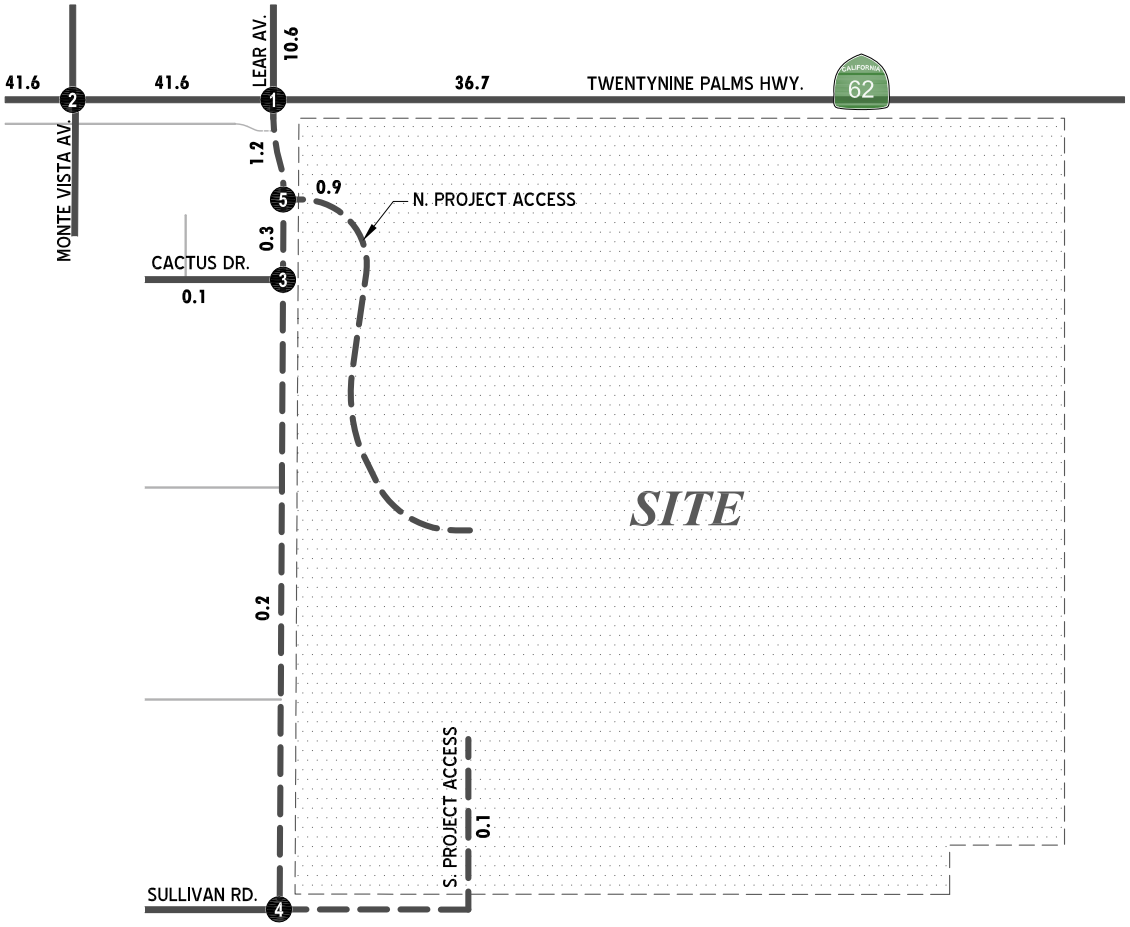
3 Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

To serve General Plan Buildout traffic growth with or without the Project, separate southbound right and left turn lanes are needed on the north leg of the Lear Avenue / Twentynine Palms Hwy. (SR-62) intersection.

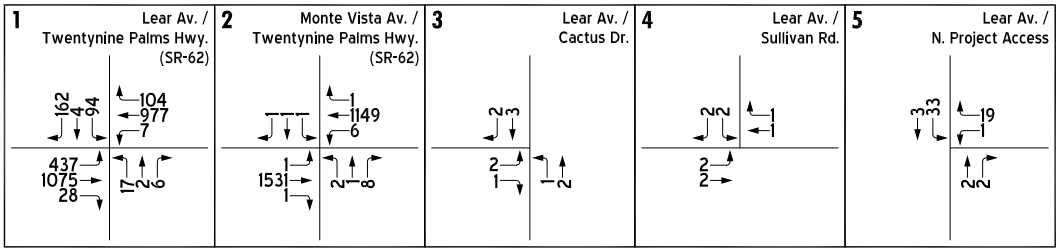
7.3.2 CUMULATIVE (2025) WITH PROJECT TRAFFIC CONDITIONS

As shown on Table 7-3, there are no study area intersections that are anticipated to operate at a deficient LOS during any of the peak hours for General Plan Buildout (2045) With Project traffic conditions with the addition of Project traffic.

EXHIBIT 7-2: GENERAL PLAN BUILDOUT (2045) WITH PROJECT TRAFFIC VOLUMES



AM PEAK HOUR



PM PEAK HOUR

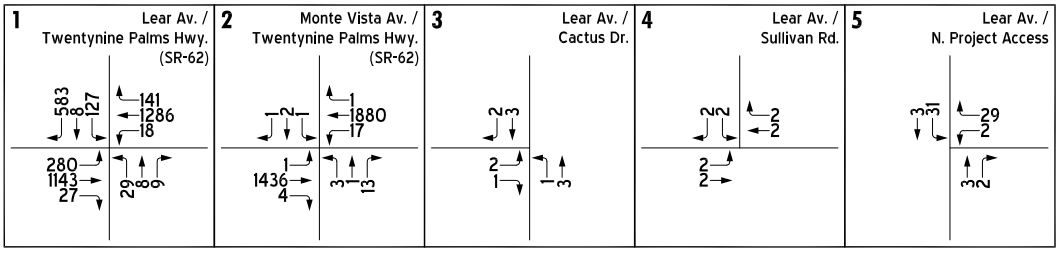


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TABLE 7-3: INTERSECTION ANALYSIS FOR 2045 WITH PROJECT CONDITIONS

#	Intersection	Traffic Control[1]	Intersection Approach Lanes[2] Northbound L	T	R	Southbound L	T	R	Eastbound L	T	R	Westbound L	T	R	Delay[3] (secs.) AM	PM	Level of Service AM	PM
1	Lear Av. / Twentynine Palms Hwy. (SR-62)																	
	- Without Improvements	TS	0.5	0.5	d	0	1!	0	1	2	0	1	2	0	33.6	>80	D	F
	- With Improvements	TS	0.5	0.5	d	**1**	1	**1>**	1	2	0	1	2	0	29.6	37.5	C	D
2	Monte Vista Av. / Twentynine Palms Hwy. (SR-62)	CSS	0	1!	0	0	1!	0	1*	2	0	1*	2	0	33.8	32.7	C	D
3	Lear Av. / Cactus Av.	**CSS**	**0.5**	**0.5**	0	0	**1**	0	0	1!	0	0	0	0	8.6	8.6	A	A
4	Lear Av. / Sullivan Rd.	**CSS**	0	0	0	0	**1!**	0	0.5	0.5	0	0	**1**	0	8.5	8.5	A	A
5	Lear Av. / N. Project Access	**CSS**	0	**1**	0	**0.5**	**0.5**	0	0	0	0	0	**1!**	0	8.4	8.5	A	A

1 TS = Traffic Signal; CSS = Cross-street Stop

2 When a right turn is designated, the lane can either be striped or unstriped. To function as a right turn lane there must be sufficient width for right turning vehicles to travel outside the through lanes.
L = Left; T = Through; R = Right; d = Defacto Right Turn Lane; 0.5 = Shared Lane; 1! = Shared Left/Through/Right lane; **1** = Improvement
* = Turn lane accommodated within two-way left-turn lane (TWLTL) median

3 Per the Highway Capacity Manual (6th Edition), overall average intersection delay and level of service are shown for intersections with a traffic signal or all way stop control. For intersections with cross street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

To serve General Plan Buildout traffic growth with or without the Project, separate southbound right and left turn lanes are needed on the north leg of the Lear Avenue / Twentynine Palms Hwy. (SR-62) intersection.

The intersection operations analysis worksheets for General Plan Buildout (2045) With Project traffic conditions are included in Appendix 7.2 of this TA.

7.4 TRAFFIC SIGNAL WARRANTS

The traffic signal warrant analysis for General Plan Buildout (2045) traffic conditions are based on the peak hour volumes or planning level ADT volume-based traffic signal warrants. No study area intersections are anticipated to meet either peak hour volume or ADT volume-based warrants for General Plan Buildout (2045) Without and With Project traffic conditions (see Appendix 3.3).

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8 RECOMMENDATIONS

8.1 SITE ADJACENT AND SITE ACCESS RECOMMENDATIONS

The following recommendations are based on the minimum improvements needed to accommodate site access and maintain acceptable peak hour operations for the proposed Project. The site adjacent recommendations are shown on Exhibit 8-1 and Exhibit 8-2 illustrates the concept striping plan for improvements along Lear Avenue south of Twentynine Palms Highway (SR-62). Site access intersection improvements include the following:

Lear Avenue & North Project Access (#5)

- Install a stop control on the westbound approach.
- Provide a westbound shared left-right turn lane.

Lear Avenue & Sullivan Road / South Project Access (#4)

- Install a stop control on the southbound approach.
- Provide a westbound shared through-right turn lane.

In addition, the Project is to construct the following site-adjacent roadways:

- Construct Lear Avenue along the site's westerly edge to its ultimate half-section plus 10 feet of pavement west of the centerline as a Collector between Twentynine Palms Highway (SR-62) and Sullivan Road.
- Construct Sullivan Road along the site's southerly edge to its ultimate half-section plus 10 feet of pavement south of the centerline as a Local Street between Lear Avenue and the South Project Access.

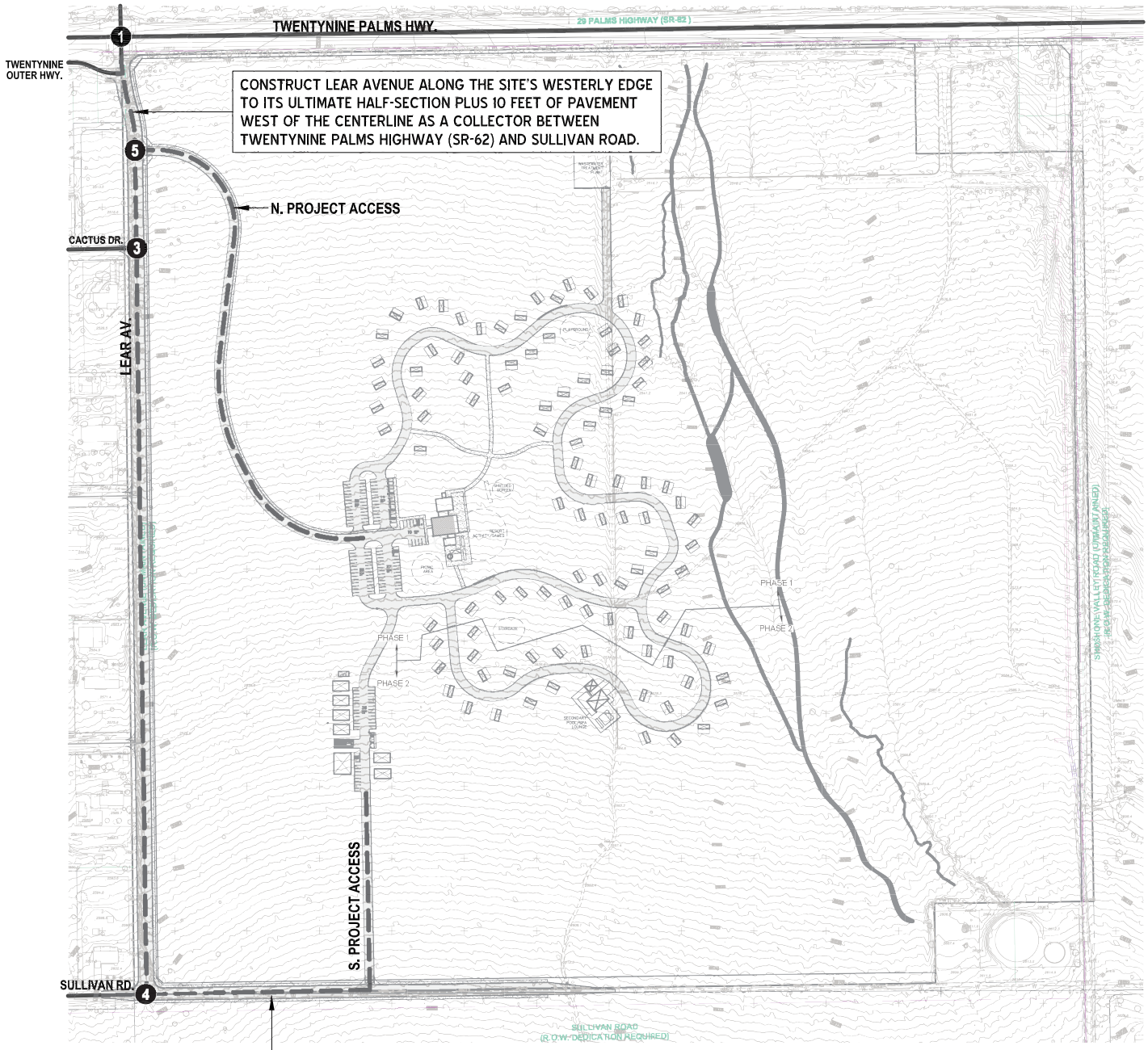
On-site traffic signing and striping should be implemented agreeable with the provisions of the California Manual on Uniform Traffic Control Devices (CA MUTCD) and in conjunction with detailed construction plans for the Project site.

Sight distance at each project access point should be reviewed with respect to standard Caltrans and City of Twentynine Palms sight distance standards at the time of preparation of final grading, landscape, and street improvement plans.

8.2 OFF-SITE RECOMMENDATIONS

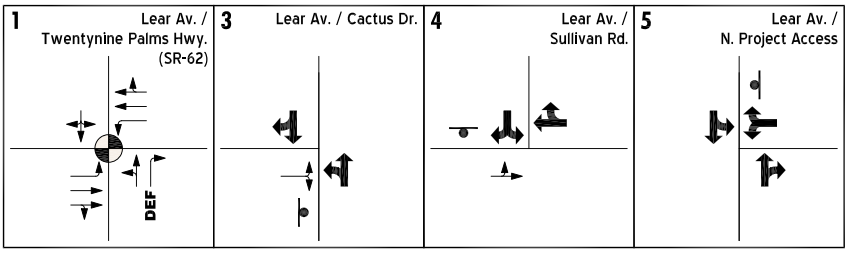
For Existing plus Project and Cumulative plus Project scenarios, there are no off-site improvements recommended as the study area intersections are anticipated to operate at an acceptable LOS during evaluated peak hours. To serve General Plan Buildout traffic growth with or without the Project, separate southbound right and left turn lanes are needed on the north leg of the Lear Avenue / Twentynine Palms Hwy. (SR-62) intersection. The Project Applicant shall pay requisite fees for the applicable pre-existing fee programs.

EXHIBIT 8-1: SITE ACCESS RECOMMENDATIONS



CONSTRUCT SULLIVAN ROAD ALONG THE SITE'S SOUTHERLY EDGE TO ITS ULTIMATE HALF-SECTION PLUS 10 FEET OF PAVEMENT SOUTH OF THE CENTERLINE AS A LOCAL STREET BETWEEN LEAR AVENUE AND THE SOUTH PROJECT ACCESS.

SIGHT DISTANCE AT THE PROJECT ACCESS POINTS SHOULD BE REVIEWED WITH RESPECT TO STANDARD CALTRANS AND CITY OF TWENTYNINE PALMS SIGHT DISTANCE STANDARDS AT THE TIME OF PREPARATION OF FINAL GRADING, LANDSCAPE AND STREET IMPROVEMENT PLANS.



ON-SITE TRAFFIC SIGNING AND STRIPING SHOULD BE IMPLEMENTED AGREEABLE WITH THE PROVISIONS OF THE CA MUTCD AND IN CONJUNCTION WITH DETAILED CONSTRUCTION PLANS FOR THE PROJECT SITE.

LEGEND:

- # = INTERSECTION ID
- = TRAFFIC SIGNAL
- = STOP SIGN
- = EXISTING LANE
- = LANE IMPROVEMENT
- DEF = DEFACTO RIGHT TURN LANE

N

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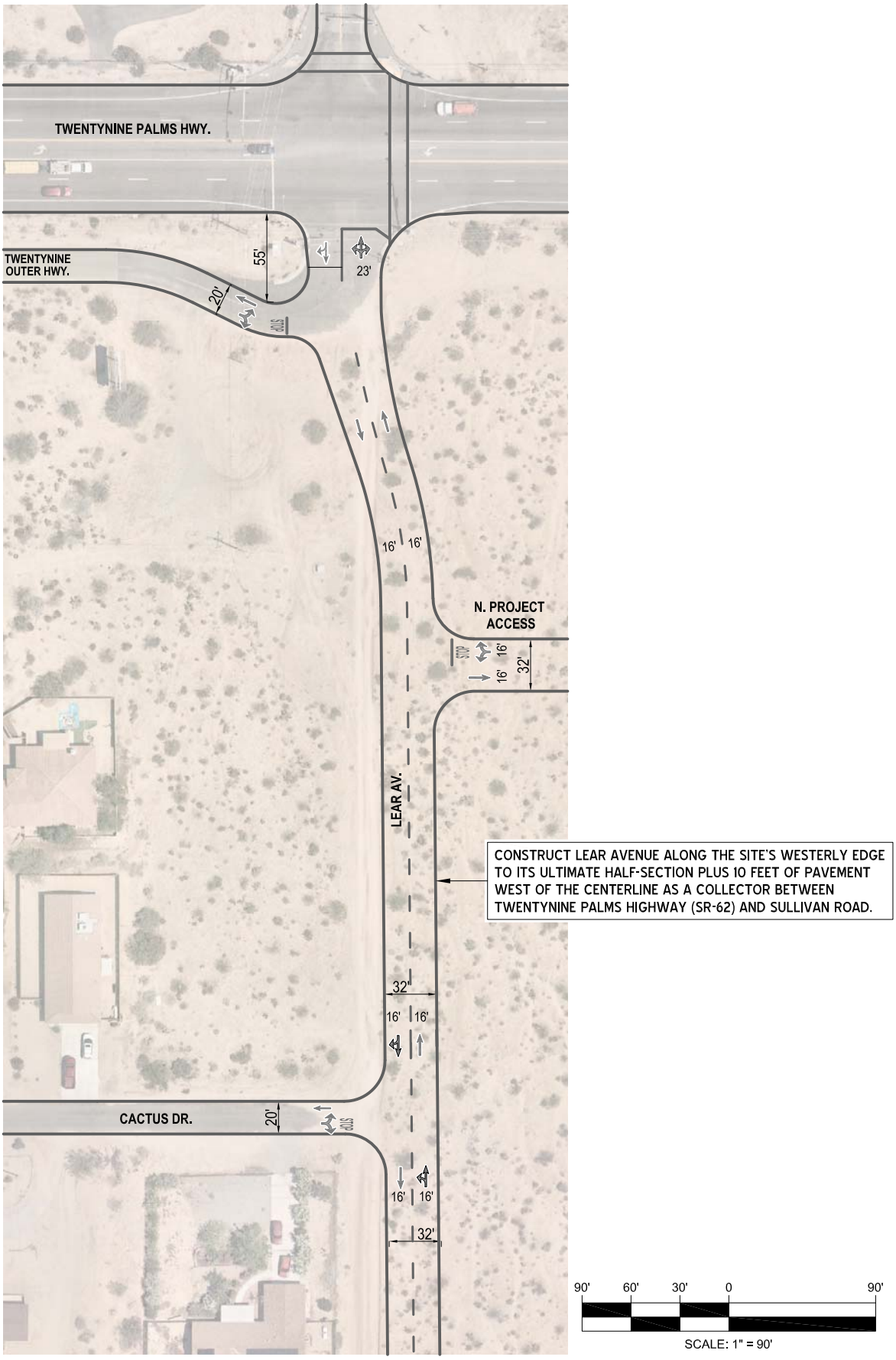
EXHIBIT 8-2: LEAR AVENUE AND N. PROJECT ACCESS CONCEPT STRIPING PLAN



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8.3 LOCAL AND REGIONAL FUNDING MECHANISMS

Transportation improvements within the City of Twentynine Palms are funded through a combination of direct project mitigation, fair share contributions or development impact fee programs, such as the County's Measure "I" Fund and the City of Twentynine Palms DIF program. Identification and timing of needed improvements is generally determined through local jurisdictions based upon a variety of factors. The proposed Project would be required to pay DIF fees.

In 2004, the voters of San Bernardino County approved the 30-year extension of Measure "I", a one-half of one percent sales tax on retail transactions, through the year 2040, for transportation projects including, but not limited to, infrastructure improvements, commuter rail, public transit, and other identified improvements. The Measure "I" extension requires that a regional traffic impact fee be created to ensure development is paying its fair share. A regional Nexus study was prepared by San Bernardino County Transportation Authority (SBCTA) and concluded that each jurisdiction should include a regional fee component in their local programs in order to meet the Measure "I" requirement. The regional component assigns specific facilities and cost sharing formulas to each jurisdiction and was most recently updated in March 2021. Revenues collected through these programs are used in tandem with Measure "I" funds to deliver projects identified in the Nexus Study. While Measure "I" is a self-executing sales tax administered by SBCTA, it bears discussion here because the funds raised through Measure "I" have funded in the past and will continue to fund new transportation facilities in San Bernardino County.

9 REFERENCES

1. **City of Twentynince Palms.** *Traffic Study Policy.* Twentynine Palms : s.n., February 22, 2005 (Adopted).
2. **San Bernardino Associated Governments.** *Congestion Management Program for County of San Bernardino.* County of San Bernardino : s.n., Updated June 2016.
3. **City of Twentynine Palms.** *Vehicle Miles Traveled Policy Guidance.* Twentynine Palms : s.n., August 25, 2020.
4. **Institute of Transportation Engineers.** *Trip Generation Manual.* 11th Edition. 2021.
5. **Transportation Research Board.** *Highway Capacity Manual (HCM).* 6th Edition. s.l. : National Academy of Sciences, 2016.
6. **California Department of Transportation.** California Manual on Uniform Traffic Control Devices (CA MUTCD). [book auth.] California Department of Transportation. *California Manual on Uniform Traffic Control Devices (CA MUTCD).* 2014, Updated March 30, 2021 (Revision 6).
7. **Urban Crossroads, Inc.** *Citywide Traffic Fee Program Traffic Study.* March 6, 2007.

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APPENDIX 1.1: APPROVED TRAFFIC STUDY SCOPING AGREEMENT

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October 20, 2023

Mr. Richard Pedersen
City of Twentynine Palms
6136 Adobe Road
Twentynine Palms, CA 92277

YONDER 29 PALMS TRAFFIC ANALYSIS AND VMT SCOPE

Dear Mr. Richard Pedersen:

Urban Crossroads, Inc. is pleased to submit this scope for a level of service (LOS) access analysis and vehicle miles traveled (VMT) screening to the City of Twentynine Palms regarding the proposed Yonder 29 Palms development ("Project"). The Project is located on the southeast corner of Lear Avenue at Twentynine Palms Highway in the City of Twentynine Palms. Access to the site is provided via the one driveway connection to the extension of Lear Avenue at Cactus Drive, with a secondary access driveway connecting to the easterly extension of Sullivan Road.

The project consists of a 150-acre glamping resort with a total of 130 units. Additional amenities include food & beverage space, and a main lodge that could host special events. The on-site facilities are connected via a pedestrian / golf cart trail network.

The remainder of this letter describes the proposed analysis methodology, Project trip generation, trip distribution, and analysis scenarios. The following scoping assumptions for the LOS access analysis and VMT screening assessment have been prepared in accordance with the City of Twentynine Palms Traffic Study Policy (February 2005), Planning Commission Resolution No 20-07 (July 2020), and the Adoption of SB743, Vehicle Miles Traveled Policy Guidance Staff Report (August 2020).

A preliminary site plan for the proposed Project is shown on Exhibit 1. Exhibit 2 depicts the location of the proposed project in relation to the existing roadway network. It is anticipated that the Project would be fully developed by year 2025.

TRIP GENERATION

In order to develop the traffic characteristics of the Project, trip-generation statistics published in the *Institute of Transportation Engineers (ITE) Trip Generation* (11th Edition, 2021) are used. Table 1 shows the vehicle trip generation rates for the Project, as well as the vehicle trip generation summary with daily and peak hour trip generation estimates.

As shown on Table 1, the Project is anticipated to generate a total of 849 external vehicle trip-ends per day with 53 external AM peak vehicle hour trips and 58 external PM peak hour vehicle trips.

EXHIBIT 1: PRELIMINARY SITE PLAN

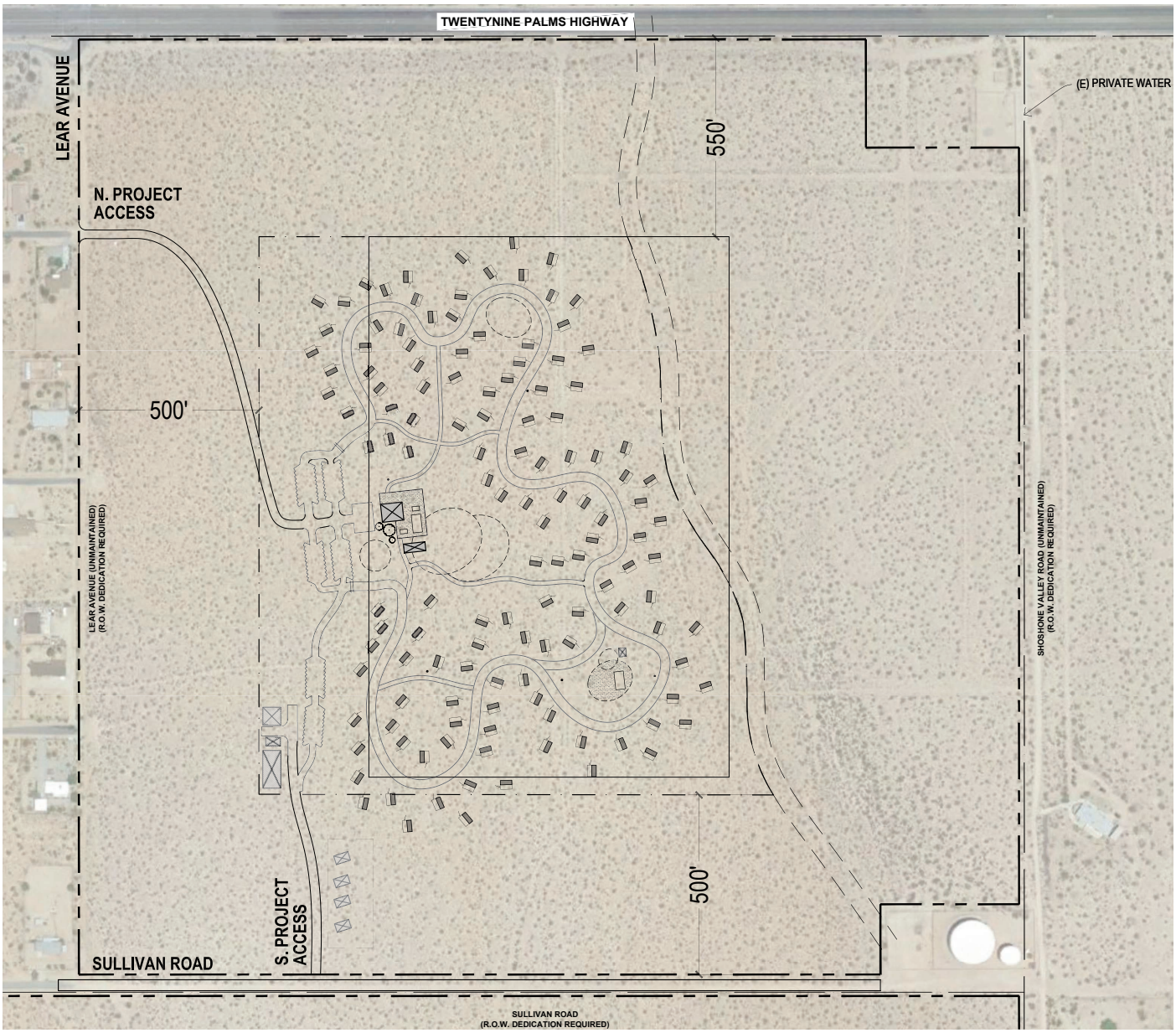

EXHIBIT 2: TRAFFIC ANALYSIS STUDY AREA

LEGEND:

- ❷ = EXISTING ANALYSIS LOCATION
- ② = FUTURE ANALYSIS LOCATION
- = FUTURE ROADWAY

N

TABLE 1: PROJECT TRIP GENERATION SUMMARY

Trip Generation Rates[1]

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Glamping Units[3]	330	130 OCC RM	0.27	0.10	0.37	0.20	0.27	0.47	7.87
Food and Beverage	932	3.2 TSF	5.26	4.31	9.57	5.52	3.53	9.05	107.20

Trip Generation Results

Land Use	ITE LU Code	Quantity[2]	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Glamping Units	330	130 OCC RM	35	13	48	26	35	61	1,023
Internal to Food & Beverage			*(9)*	*(2)*	*(11)*	*(5)*	*(8)*	*(13)*	*(210)*
Internal to Lodge Event Space			*(2)*	*(2)*	*(4)*	*(3)*	*(3)*	*(6)*	*(97)*
Glamping Units External Trips			24	9	33	18	24	42	716
Food and Beverage	932	3.2 TSF	17	14	31	18	11	29	343
Internal to Glamping Units			*(2)*	*(9)*	*(11)*	*(8)*	*(5)*	*(13)*	*(210)*
Food and Beverage External Trips			15	5	20	10	6	16	133
Project Subtotal			52	27	79	44	46	90	1,366
Internal Capture Subtotal			*(13)*	*(13)*	*(26)*	*(16)*	*(16)*	*(32)*	*(517)*
PROJECT TOTAL EXTERNAL TRIPS			**39**	**14**	**53**	**28**	**30**	**58**	**849**

[1] Trip Generation Source: Institute of Transportation Engineers (ITE), Trip Generation Manual, 11th Edition (2021).
[2] OCC RM = Occupied Room; TSF = Thousand Square Feet
[3] Glamping rates are based upon resort accomodations which include guest services and lodge facilities.

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PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

The trip distribution pattern is heavily influenced by the geographical location of the site and the anticipated connections to existing nearby roadways. Exhibit 3 shows the Project trip distribution pattern.

The extension of Lear Avenue south of Twentynine Palms Highway to Sullivan Road is anticipated to be implemented by the Project as a new two-lane roadway (easterly half section of a Collector, plus 10 feet west of centerline to accomplish a 32-foot interim pavement section). Sullivan Road is also anticipated be implemented by the Project between Lear Avenue and the south Project Access as two-lane roadway (northerly half section of a Local, plus 10 feet south of centerline to accomplish a 28-foot interim pavement section).

Based on the identified Project traffic generation and trip distribution pattern, Project peak hour intersection turning movement and daily volumes are shown on Exhibit 4.

GENERAL PLAN CIRCULATION ELEMENT

The City of Twentynine Palms General Plan Circulation Element is depicted on Exhibit 5. Roadway cross-sections are shown on Exhibit 6. Twentynine Palms Highway is classified as an Expressway, and Lear Avenue is shown as Collector south of Twentynine Palms Highway.

ANALYSIS SCENARIOS

Consistent with the City's TA guidelines, intersection analysis will be provided for the following analysis scenarios:

- Existing (2023) Conditions
- Existing Plus Project
- Cumulative (2025)
- Cumulative (2025) plus Project

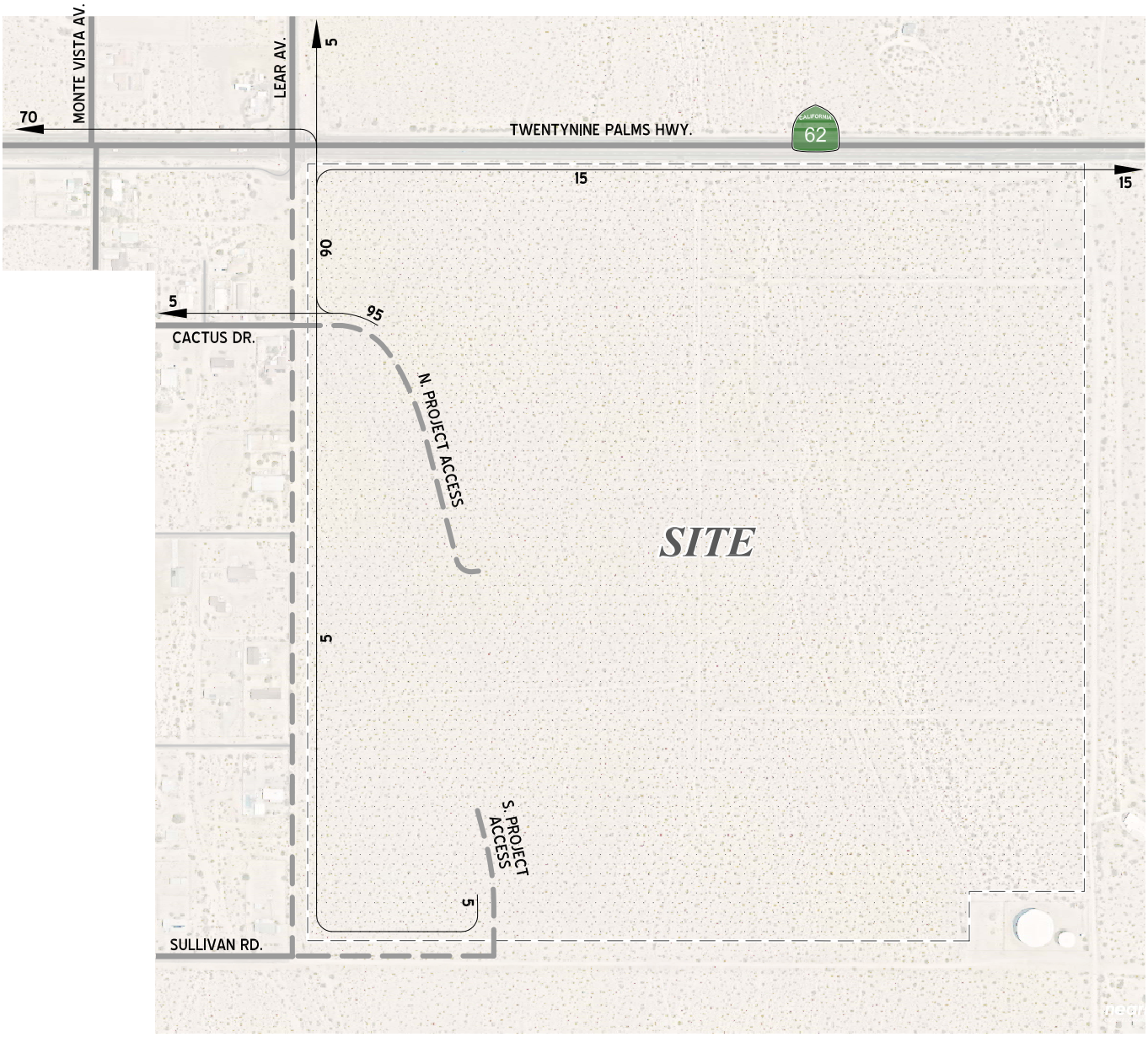
STUDY AREA

For the LOS analysis study area, the following intersections will be evaluated:

#	Intersection
1	Lear Av. / Twentynine Palms Hwy. (SR-62)
2	Monte Vista Av. / Twentynine Palms Hwy. (SR-62)
3	Lear Av. / Cactus Av. – N. Project Dwy. - *(Future Intersection)*
4	Lear Av. / Sullivan Rd. - *(Future Intersection)*

Exhibit 2 identifies the proposed study area intersection analysis locations.

EXHIBIT 3: PROJECT TRIP DISTRIBUTION



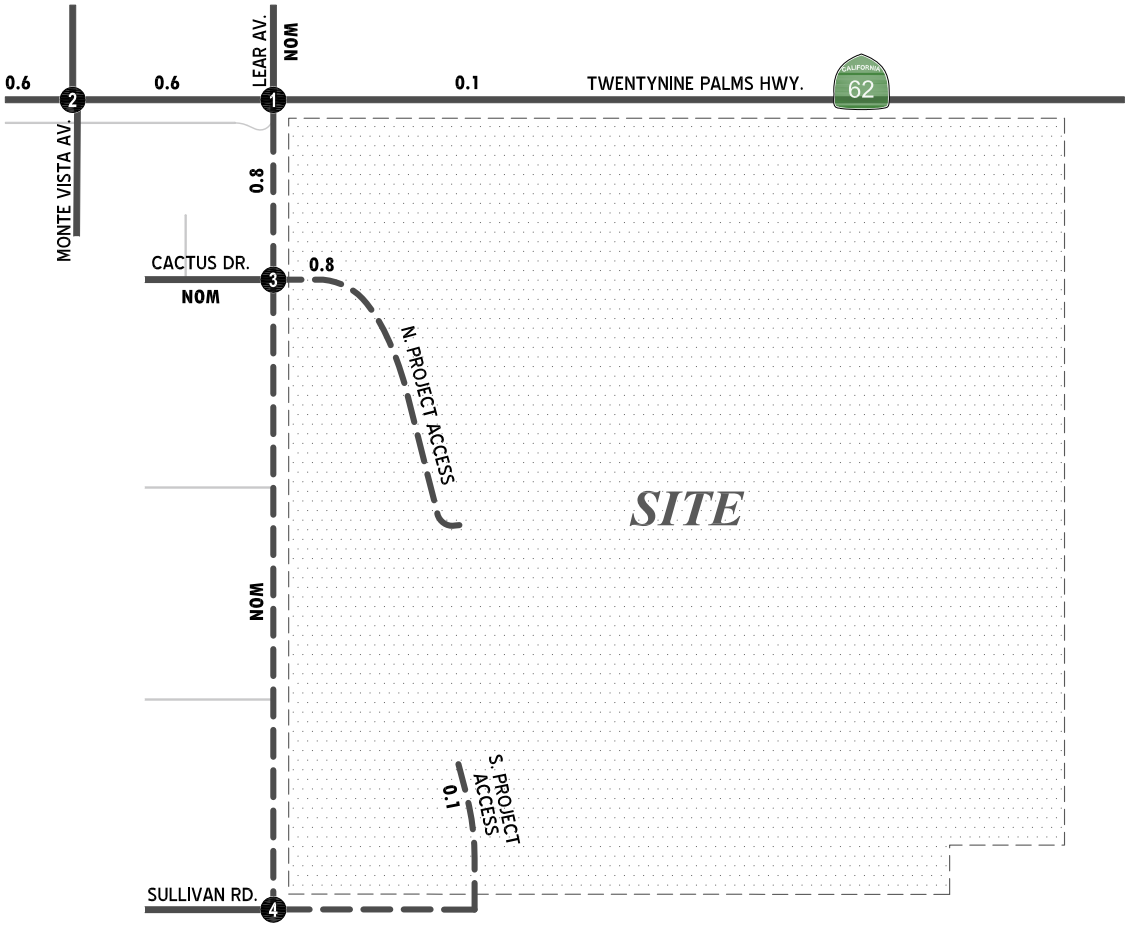
LEGEND:

10 = PERCENT TO/FROM PROJECT

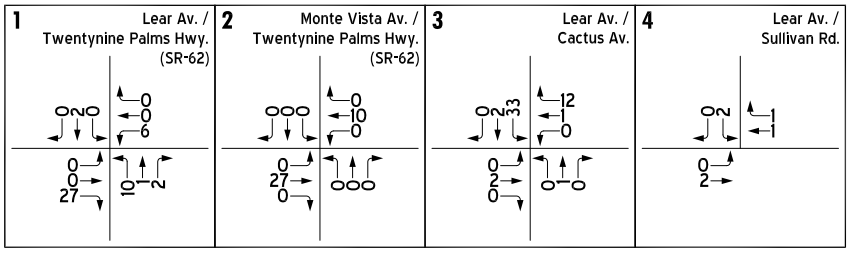
= FUTURE PROJECT DRIVEWAY

N

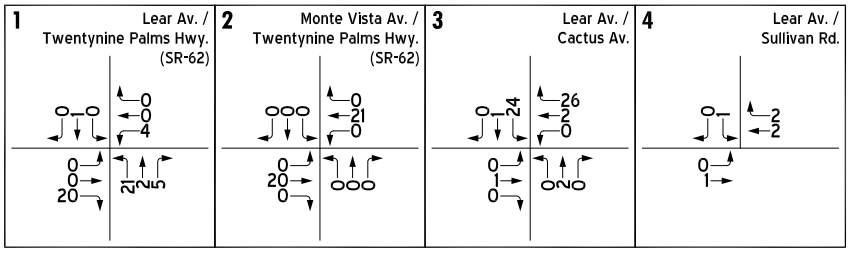
EXHIBIT 4: PROJECT ONLY TRAFFIC VOLUMES



AM PEAK HOUR



PM PEAK HOUR

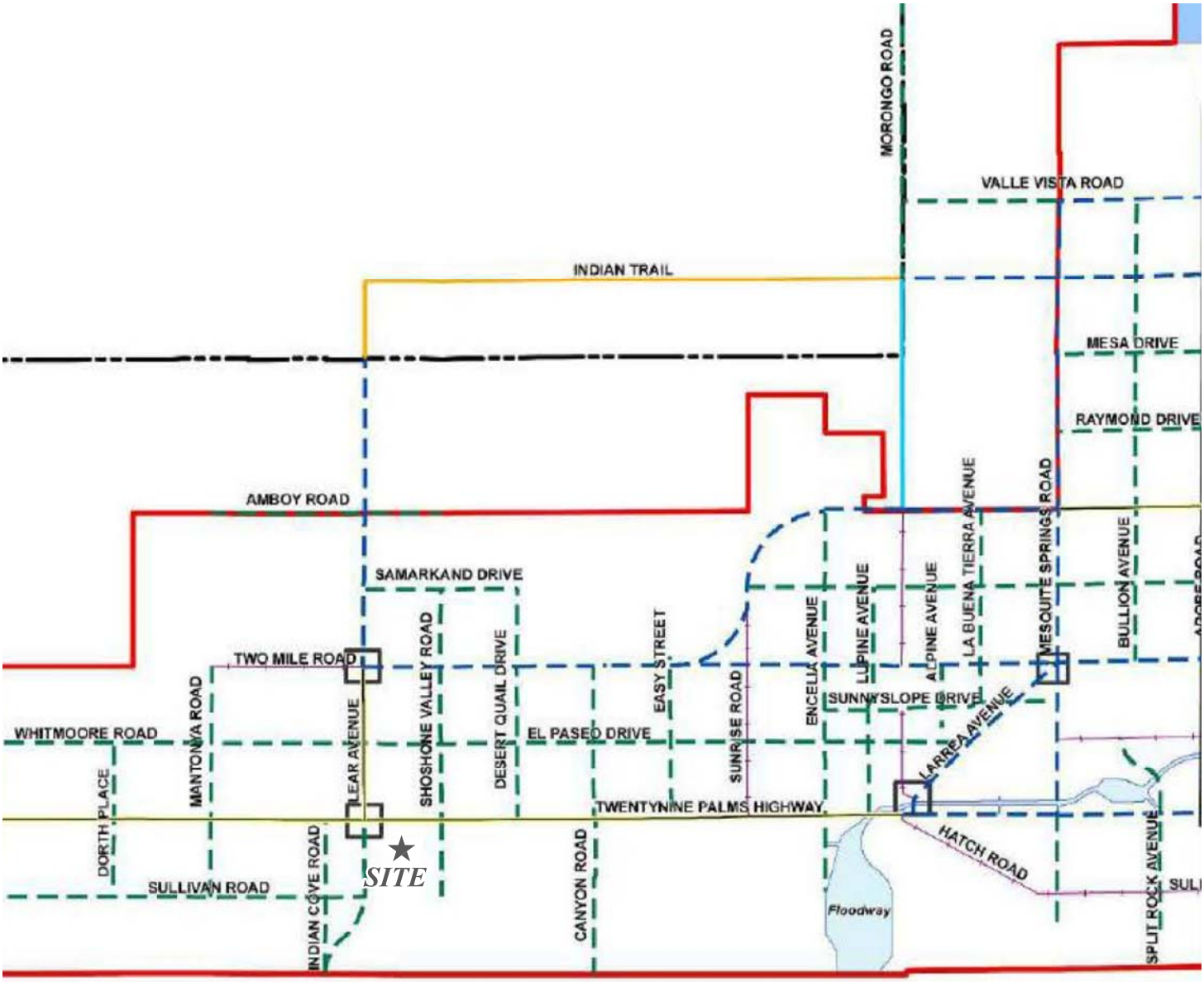


LEGEND:

- (4) = INTERSECTION ID
- 100 = PEAK HOUR INTERSECTION VOLUMES
- **10.0** = VEHICLES PER DAY (1000'S)
- **NOM** = NOMINAL, LESS THAN 50 VEHICLES PER DAY

N

EXHIBIT 5: CITY OF TWENTYNINE PALMS CIRCULATION PLAN



SOURCE: CITY OF TWENTYNINE PALMS GENERAL PLAN (2012)

LEGEND:

- City Boundary
- Sphere of Influence (SOI) Boundary
- Marine Corps Air Ground Combat Center (MCAGCC)
- Floodways

San Bernardino County Circulation

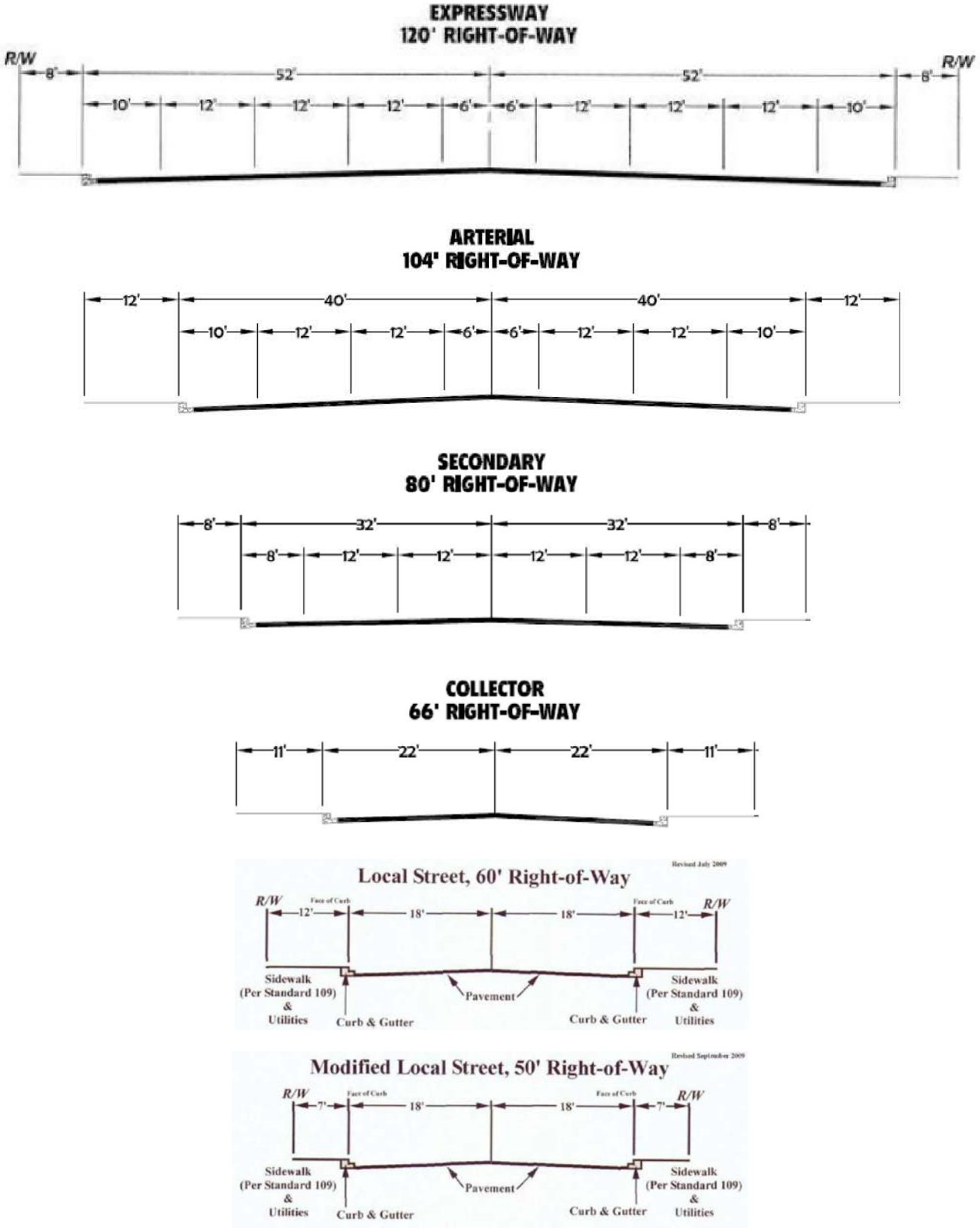
- Major Highway (104' ROW)
- Secondary Highway (88' ROW)

Twentynine Palms Circulation

- 6-Lane Expressway (120' ROW)
- Arterial (104' ROW)
- Secondary (80' ROW)
- Collector (66' ROW)
- Special Study Area

N

EXHIBIT 6: CITY OF TWENTYNINE PALMS ROADWAY CROSS-SECTIONS



SOURCE: CITY OF TWENTYNINE PALMS GENERAL PLAN (2012)

ANALYSIS METHODOLOGY

Per the City of Twentynine Palms' General Plan, LOS C as the threshold for acceptable traffic conditions on the circulation network.

For the purposes of this analysis, signalized intersection operations analysis will be based on the methodology described in the Highway Capacity Manual (6th Edition). Intersection LOS operations are based on an intersection's average control delay. Unsignalized intersections will be evaluated using the methodology described in the HCM 6th Edition. At two-way or side-street stop-controlled intersections, LOS is calculated for each controlled movement and for the left turn movement from the major street, as well as for the intersection as a whole. For approaches composed of a single lane, the delay is computed as the average of all movements in that lane.

TRAFFIC COUNTS

Traffic count data will be collected in the early part of November 2023 during the AM peak period of 7:00 AM to 9:00 AM and PM peak period of 4:00 PM to 6:00 PM.

CUMULATIVE DEVELOPMENT TRAFFIC

It is requested that City staff review the list of cumulative development projects (shown on Exhibit 7 and listed on Table 2) for inclusion in the traffic study. Consistent with other studies performed in the area, an ambient growth rate of 2% per year will be utilized as a minimum if necessary. The rate will be compounded over a 2-year period (i.e., 1.022years = 1.0404 or 4.04%) for Interim Year (2025) conditions.

VMT SCREENING

Consistent with City Guidelines, the project will be evaluated based on available screening criteria based on the location and project type to determine if a presumption of a less than significant transportation impact can be made. If the Project does not satisfy screening criteria, VMT analysis consistent with the City guidelines will be prepared.

Please review this scope for LOS access analysis and VMT screening, and provide any comments or your concurrence. If you have any questions, please contact John Kain at (949) 375-2435 or Marlie Whiteman at (714) 585-0574.

Respectfully submitted,

URBAN CROSSROADS, INC.

John Kain, AICP
Principal

Marlie Whiteman, PE
Senior Associate

EXHIBIT 7: CUMULATIVE DEVELOPMENT LOCATION MAP

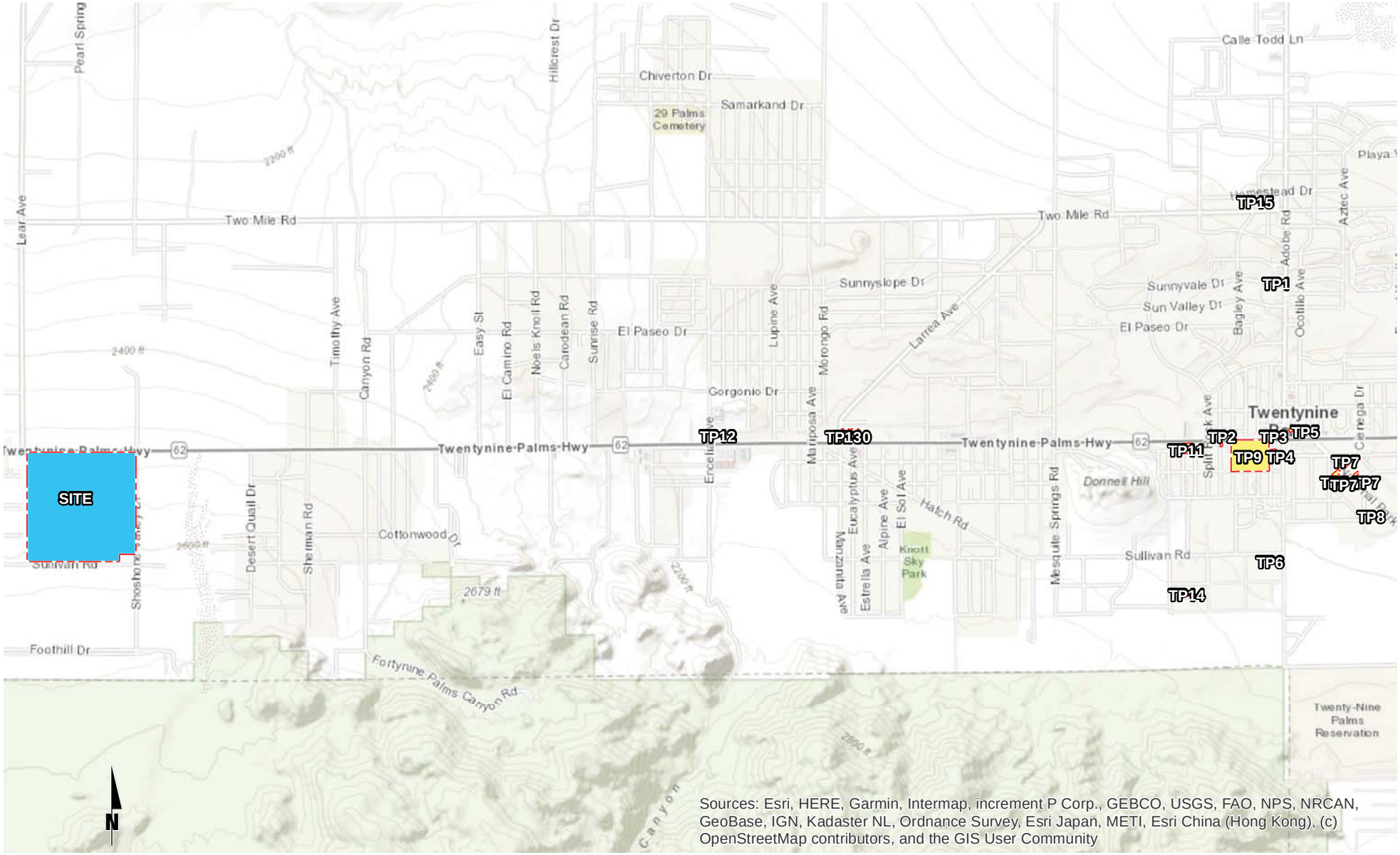


TABLE 2: CUMULATIVE DEVELOPMENT LAND USE SUMMARY

ID	Project Name	Land Use[1]	Quantity	Units[2]
TP1	Micro Brewery Building Renovation	Drinking Place	1.475	TSF
TP2	Restaurant/Coffee Bar Building Renovation	Coffee Shop without Drive-Through Window	4.200	TSF
TP3	Coffee Shop New Building (Drive-Thru)	Coffee Shop with Drive-Through Window	1.800	TSF
TP4	Laundromat Building Renovation	--	3.972	TSF
TP5	Ice Cream/Juice Bar Building Renovation	Fast Casual Restaurant	4.100	TSF
TP6	Theatre 29 Expansion	Movie Theater	60	Seats
TP7	32 New Casitas	Multifamily Housing (Low-Rise)	32	DU
TP8	Museum Expansion New Building	Museum	2.432	TSF
TP9	Project Phoenix	Business Hotel	95	Room
		Recreational Community Center	26.500	TSF
		Shopping Center	2.500	TSF
		High-Turnover (Sit-Down) Restaurant	2.500	TSF
TP10	O'Reilly Auto Parts	Automobile Parts Sales	7.396	TSF
TP11	Depierro Car Wash & Restaurant (TPM 20501)	Fast Food Restaurant w/o Drive Thru	2.500	TSF
		Automated Car Wash	1.000	Tunnel
TP12	Grocery Outlet (Under Construction)	Grocery Store	16.0	TSF
TP13	Taco Bell	Fast Food Restaurant w/ Drive Thru	2.2	TSF
TP14	Wander Hotel	Hotel	95	Room
TP15	Dollar General	Retail Store	10.640	TSF

[1] SFDR = Single Family Detached Residential

[2] DU = Dwelling Unit; RM = Room; TSF = Thousand Square Feet; AC = Acre; OCC RM = Occupied Room

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APPENDIX 3.1: TRAFFIC COUNTS – NOVEMBER 2023

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Counts Unlimited, Inc.
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of Twentynine Palms
N/S: Lear Avenue/Twentynine Outerhwy
E/W: Twentynine Palms Highway
Weather: Clear

File Name : 01_TNP_Lear_TPH AM
Site Code : 231063
Start Date : 11/8/2023
Page No : 1

Groups Printed- Total Volume

	Lear Avenue Southbound				Twentynine Palms Highway Westbound				Twentynine Outerhighway Northbound				Twentynine Palms Highway 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	2	0	24	26	0	67	1	68	1	0	1	2	64	66	0	130	226
07:15 AM	1	0	36	37	0	81	1	82	0	0	2	2	70	96	0	166	287
07:30 AM	2	1	31	34	0	77	1	78	0	0	0	0	47	91	0	138	250
07:45 AM	3	0	40	43	0	81	0	81	0	0	0	0	30	104	0	134	258
Total	8	1	131	140	0	306	3	309	1	0	3	4	211	357	0	568	1021
08:00 AM	1	1	34	36	1	105	3	109	1	0	0	1	28	84	0	112	258
08:15 AM	2	0	33	35	1	83	1	85	0	0	3	3	35	78	0	113	236
08:30 AM	4	0	44	48	0	109	0	109	0	1	0	1	26	82	0	108	266
08:45 AM	1	0	43	44	0	86	2	88	0	1	0	1	29	82	0	111	244
Total	8	1	154	163	2	383	6	391	1	2	3	6	118	326	0	444	1004
Grand Total	16	2	285	303	2	689	9	700	2	2	6	10	329	683	0	1012	2025
Apprch %	5.3	0.7	94.1		0.3	98.4	1.3		20	20	60		32.5	67.5	0		
Total %	0.8	0.1	14.1	15	0.1	34	0.4	34.6	0.1	0.1	0.3	0.5	16.2	33.7	0	50	

	Lear Avenue Southbound				Twentynine Palms Highway Westbound				Twentynine Outerhighway Northbound				Twentynine Palms Highway 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 07:15 AM																	
07:15 AM	1	0	36	37	0	81	1	82	0	0	**2**	**2**	**70**	96	0	**166**	**287**
07:30 AM	2	**1**	31	34	0	77	1	78	0	0	0	0	47	91	0	138	250
07:45 AM	**3**	0	**40**	**43**	0	81	0	81	0	0	0	0	30	**104**	0	134	258
08:00 AM	1	1	34	36	**1**	**105**	**3**	**109**	**1**	0	0	1	28	84	0	112	258
Total Volume	7	2	141	150	1	344	5	350	1	0	2	3	175	375	0	550	1053
% App. Total	4.7	1.3	94		0.3	98.3	1.4		33.3	0	66.7		31.8	68.2	0		
PHF	.583	.500	.881	.872	.250	.819	.417	.803	.250	.000	.250	.375	.625	.901	.000	.828	.917

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City of Twentynine Palms
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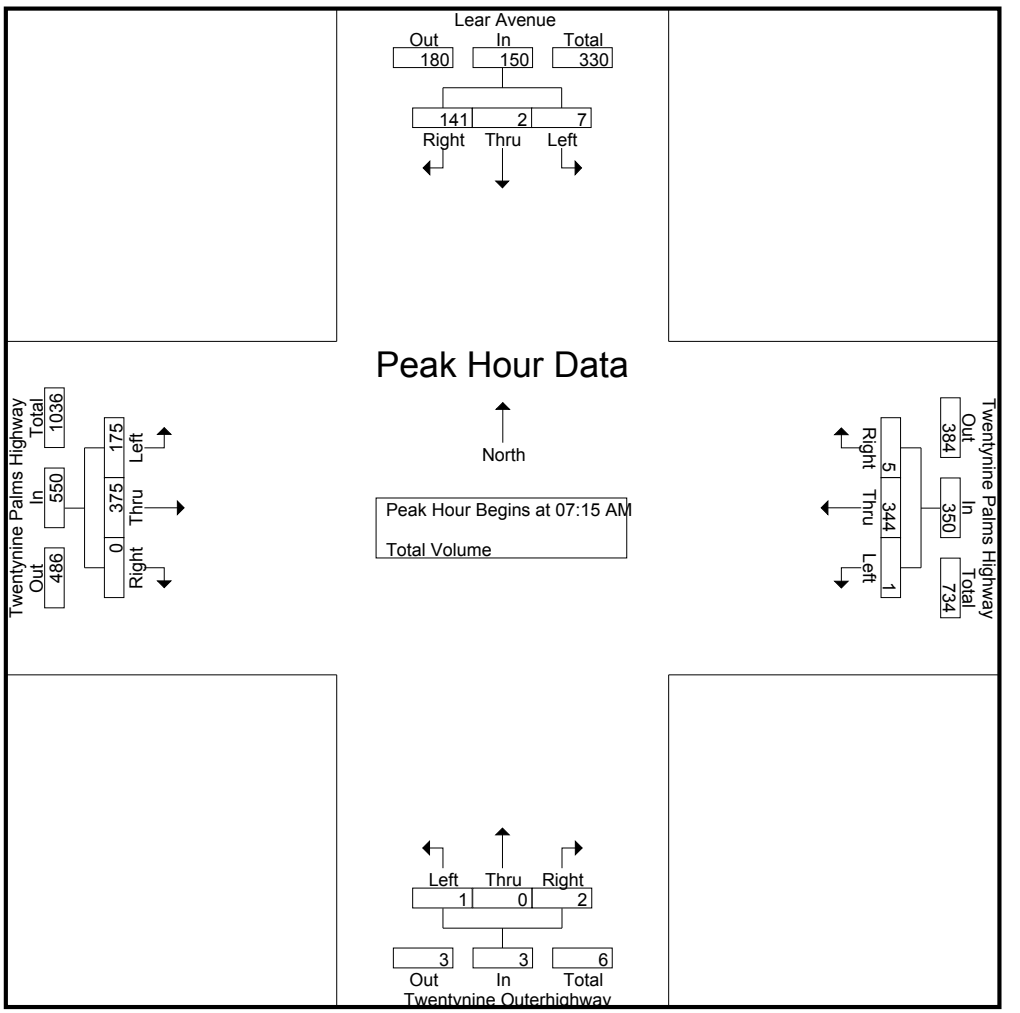
Weather: Clear

File Name : 01_TNP_Lear_TPH AM
Site Code : 231063
Start Date : 11/8/2023
Page No : 2



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				07:00 AM			
+0 mins.	1	**1**	34	36	**1**	105	**3**	**109**	**1**	0	0	1	64	66	0	130
+15 mins.	2	0	33	35	1	83	1	85	0	0	**3**	**3**	**70**	96	0	**166**
+30 mins.	**4**	0	**44**	**48**	0	**109**	0	109	0	**1**	0	1	47	91	0	138
+45 mins.	1	0	43	44	0	86	2	88	0	1	0	1	30	**104**	0	134
Total Volume	8	1	154	163	2	383	6	391	1	2	3	6	211	357	0	568
% App. Total	4.9	0.6	94.5		0.5	98	1.5		16.7	33.3	50		37.1	62.9	0	
PHF	.500	.250	.875	.849	.500	.878	.500	.897	.250	.500	.250	.500	.754	.858	.000	.855

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City of Twentynine Palms
N/S: Lear Avenue/Twentynine Outerhwy
E/W: Twentynine Palms Highway
Weather: Clear

File Name : 01_TNP_Lear_TPH PM
Site Code : 231063
Start Date : 11/8/2023
Page No : 1

Groups Printed- Total Volume

	Lear Avenue Southbound				Twentynine Palms Highway Westbound				Twentynine Outerhighway Northbound				Twentynine Palms Highway 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	2	0	74	76	1	88	1	90	0	2	1	3	26	96	1	123	292
04:15 PM	3	3	69	75	3	125	4	132	2	1	1	4	33	116	0	149	360
04:30 PM	1	0	83	84	2	121	5	128	0	2	1	3	42	114	0	156	371
04:45 PM	3	2	62	67	2	105	3	110	1	1	1	3	33	111	0	144	324
Total	9	5	288	302	8	439	13	460	3	6	4	13	134	437	1	572	1347
05:00 PM	1	0	55	56	4	103	1	108	1	1	0	2	27	101	0	128	294
05:15 PM	3	0	50	53	2	95	3	100	0	1	0	1	26	116	0	142	296
05:30 PM	2	1	45	48	2	105	2	109	0	1	0	1	22	105	0	127	285
05:45 PM	0	1	31	32	0	77	2	79	0	0	0	0	35	108	0	143	254
Total	6	2	181	189	8	380	8	396	1	3	0	4	110	430	0	540	1129
Grand Total	15	7	469	491	16	819	21	856	4	9	4	17	244	867	1	1112	2476
Apprch %	3.1	1.4	95.5		1.9	95.7	2.5		23.5	52.9	23.5		21.9	78	0.1		
Total %	0.6	0.3	18.9	19.8	0.6	33.1	0.8	34.6	0.2	0.4	0.2	0.7	9.9	35	0	44.9	

	Lear Avenue Southbound				Twentynine Palms Highway Westbound				Twentynine Outerhighway Northbound				Twentynine Palms Highway 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 04:15 PM																	
04:15 PM	**3**	**3**	69	75	3	**125**	4	**132**	**2**	1	**1**	**4**	33	**116**	0	149	360
04:30 PM	1	0	**83**	**84**	2	121	**5**	128	0	**2**	1	3	**42**	114	0	**156**	**371**
04:45 PM	3	2	62	67	2	105	3	110	1	1	1	3	33	111	0	144	324
05:00 PM	1	0	55	56	**4**	103	1	108	1	1	0	2	27	101	0	128	294
Total Volume	8	5	269	282	11	454	13	478	4	5	3	12	135	442	0	577	1349
% App. Total	2.8	1.8	95.4		2.3	95	2.7		33.3	41.7	25		23.4	76.6	0		
PHF	.667	.417	.810	.839	.688	.908	.650	.905	.500	.625	.750	.750	.804	.953	.000	.925	.909

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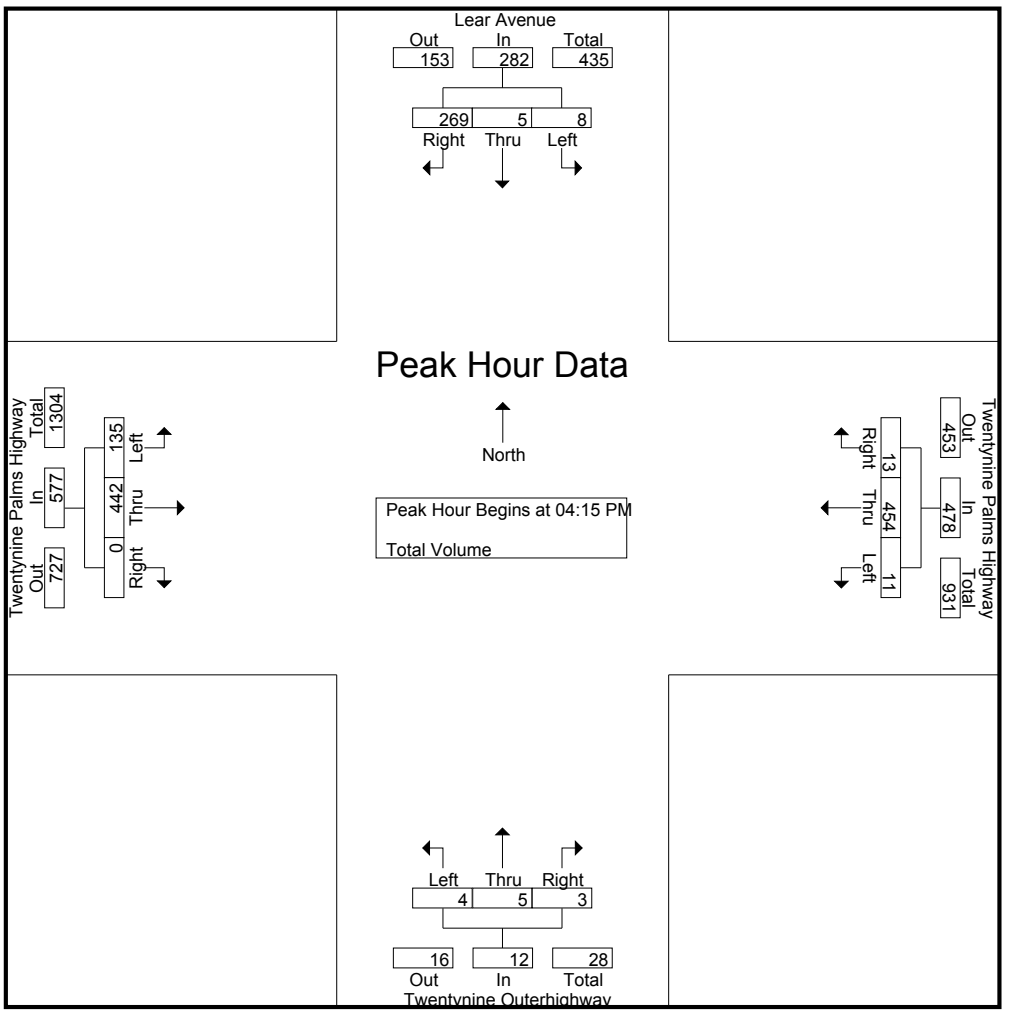
(951) 268-6268

City of Twentynine Palms
N/S: Lear Avenue/Twentynine Outerhwy
E/W: Twentynine Palms Highway
Weather: Clear

File Name : 01_TNP_Lear_TPH PM
Site Code : 231063
Start Date : 11/8/2023
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:15 PM				04:00 PM				04:15 PM			
+0 mins.	2	0	74	76	3	**125**	4	**132**	0	**2**	**1**	3	33	**116**	0	149
+15 mins.	**3**	**3**	69	75	2	121	**5**	128	**2**	1	1	**4**	**42**	114	0	**156**
+30 mins.	1	0	**83**	**84**	2	105	3	110	0	2	1	3	33	111	0	144
+45 mins.	3	2	62	67	**4**	103	1	108	1	1	1	3	27	101	0	128
Total Volume	9	5	288	302	11	454	13	478	3	6	4	13	135	442	0	577
% App. Total	3	1.7	95.4		2.3	95	2.7		23.1	46.2	30.8		23.4	76.6	0	
PHF	.750	.417	.867	.899	.688	.908	.650	.905	.375	.750	1.000	.813	.804	.953	.000	.925

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Corona, CA 92878
(951) 268-6268

City of Twentynine Palms
N/S: Monte Vista Avenue
E/W: Twentynine Palms Highway
Weather: Clear

File Name : 02_TNP_MV_TPH AM
Site Code : 231063
Start Date : 11/8/2023
Page No : 1

Groups Printed- Total Volume

	Monte Vista Avenue Southbound				Twentynine Palms Highway Westbound				Monte Vista Avenue Northbound				Twentynine Palms Highway 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	0	0	0	0	0	88	0	88	1	0	1	2	0	139	0	139	229
07:15 AM	0	0	0	0	1	116	0	117	0	0	0	0	0	158	1	159	276
07:30 AM	0	0	0	0	2	108	0	110	1	0	5	6	0	136	0	136	252
07:45 AM	0	0	0	0	0	122	0	122	0	0	1	1	0	129	0	129	252
Total	0	0	0	0	3	434	0	437	2	0	7	9	0	562	1	563	1009
08:00 AM	0	0	0	0	2	131	0	133	1	0	1	2	0	110	0	110	245
08:15 AM	0	0	0	0	2	123	0	125	0	0	2	2	0	113	0	113	240
08:30 AM	0	0	0	0	0	155	0	155	0	0	2	2	0	111	0	111	268
08:45 AM	0	0	0	0	0	128	0	128	1	0	3	4	0	106	1	107	239
Total	0	0	0	0	4	537	0	541	2	0	8	10	0	440	1	441	992
Grand Total	0	0	0	0	7	971	0	978	4	0	15	19	0	1002	2	1004	2001
Apprch %	0	0	0		0.7	99.3	0		21.1	0	78.9		0	99.8	0.2		
Total %	0	0	0	0	0.3	48.5	0	48.9	0.2	0	0.7	0.9	0	50.1	0.1	50.2	

	Monte Vista Avenue Southbound				Twentynine Palms Highway Westbound				Monte Vista Avenue Northbound				Twentynine Palms Highway 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 07:15 AM																	
07:15 AM	0	0	0	0	1	116	0	117	0	0	0	0	0	**158**	**1**	**159**	**276**
07:30 AM	0	0	0	0	**2**	108	0	110	**1**	0	**5**	**6**	0	136	0	136	252
07:45 AM	0	0	0	0	0	122	0	122	0	0	1	1	0	129	0	129	252
08:00 AM	0	0	0	0	2	**131**	0	**133**	1	0	1	2	0	110	0	110	245
Total Volume	0	0	0	0	5	477	0	482	2	0	7	9	0	533	1	534	1025
% App. Total	0	0	0		1	99	0		22.2	0	77.8		0	99.8	0.2		
PHF	.000	.000	.000	.000	.625	.910	.000	.906	.500	.000	.350	.375	.000	.843	.250	.840	.928

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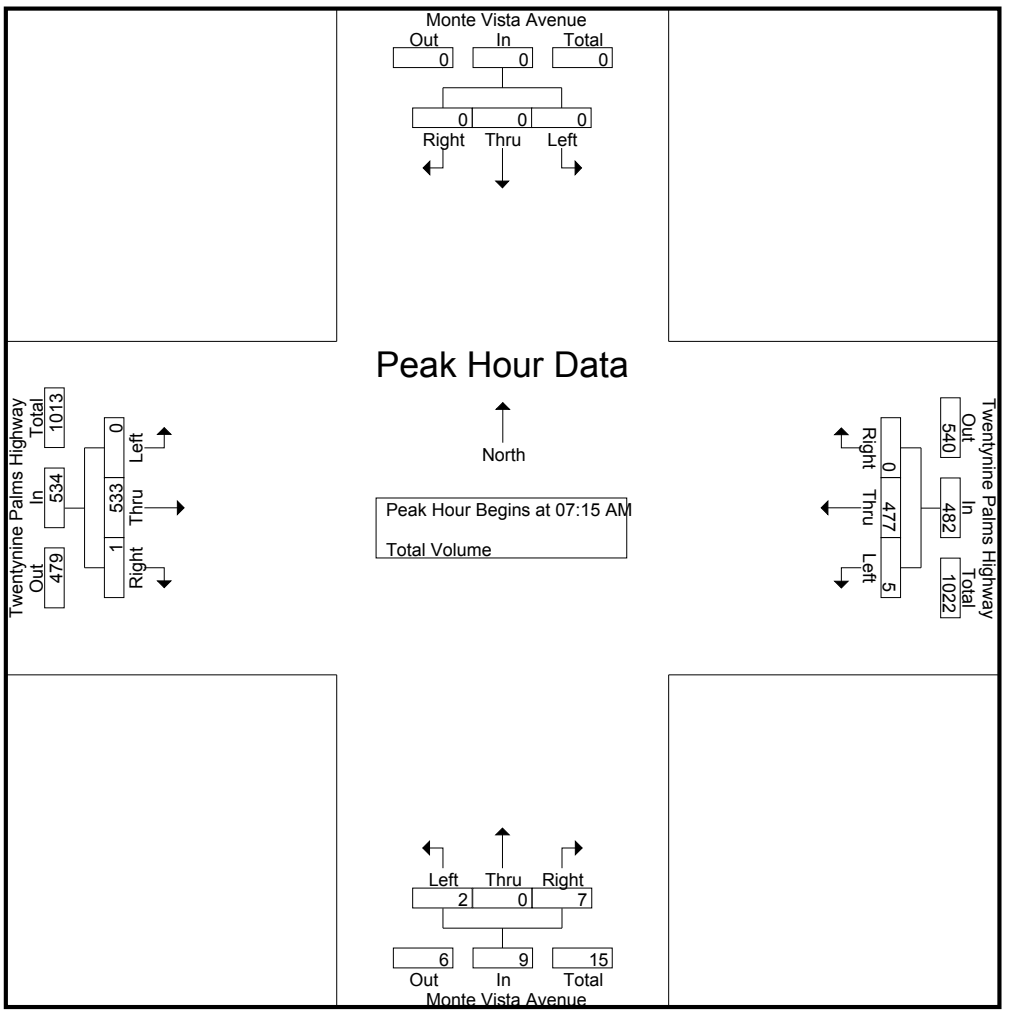
City of Twentynine Palms
N/S: Monte Vista Avenue
E/W: Twentynine Palms Highway
Weather: Clear

File Name : 02_TNP_MV_TPH AM
Site Code : 231063
Start Date : 11/8/2023
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				08:00 AM				07:30 AM				07:00 AM			
+0 mins.	0	0	0	0	**2**	131	0	133	**1**	0	**5**	**6**	0	139	0	139
+15 mins.	0	0	0	0	2	123	0	125	0	0	1	1	0	**158**	**1**	**159**
+30 mins.	0	0	0	0	0	**155**	0	**155**	1	0	1	2	0	136	0	136
+45 mins.	0	0	0	0	0	128	0	128	0	0	2	2	0	129	0	129
Total Volume	0	0	0	0	4	537	0	541	2	0	9	11	0	562	1	563
% App. Total	0	0	0		0.7	99.3	0		18.2	0	81.8		0	99.8	0.2	
PHF	.000	.000	.000	.000	.500	.866	.000	.873	.500	.000	.450	.458	.000	.889	.250	.885

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City of Twentynine Palms
N/S: Monte Vista Avenue
E/W: Twentynine Palms Highway
Weather: Clear

File Name : 02_TNP_MV_TPH PM
Site Code : 231063
Start Date : 11/8/2023
Page No : 1

Groups Printed- Total Volume

	Monte Vista Avenue Southbound				Twentynine Palms Highway Westbound				Monte Vista Avenue Northbound				Twentynine Palms Highway 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	0	0	0	0	1	162	0	163	1	0	5	6	0	117	2	119	288
04:15 PM	0	0	0	0	7	198	0	205	1	0	3	4	0	148	2	150	359
04:30 PM	0	1	0	1	6	197	0	203	1	0	3	4	1	154	0	155	363
04:45 PM	0	0	0	0	0	172	1	173	0	1	1	2	0	141	0	141	316
Total	0	1	0	1	14	729	1	744	3	1	12	16	1	560	4	565	1326
05:00 PM	0	0	0	0	1	158	0	159	0	0	0	0	0	128	0	128	287
05:15 PM	0	0	0	0	2	144	1	147	0	0	2	2	0	148	3	151	300
05:30 PM	0	0	0	0	1	147	0	148	0	0	1	1	0	125	2	127	276
05:45 PM	0	0	0	0	1	106	0	107	0	0	0	0	0	142	0	142	249
Total	0	0	0	0	5	555	1	561	0	0	3	3	0	543	5	548	1112
Grand Total	0	1	0	1	19	1284	2	1305	3	1	15	19	1	1103	9	1113	2438
Apprch %	0	100	0		1.5	98.4	0.2		15.8	5.3	78.9		0.1	99.1	0.8		
Total %	0	0	0	0	0.8	52.7	0.1	53.5	0.1	0	0.6	0.8	0	45.2	0.4	45.7	

	Monte Vista Avenue Southbound				Twentynine Palms Highway Westbound				Monte Vista Avenue Northbound				Twentynine Palms Highway 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 04:00 PM																	
04:00 PM	0	0	0	0	1	162	0	163	**1**	0	**5**	**6**	0	117	**2**	119	288
04:15 PM	0	0	0	0	**7**	**198**	0	**205**	1	0	3	4	0	148	2	150	359
04:30 PM	0	**1**	0	**1**	6	197	0	203	1	0	3	4	**1**	**154**	0	**155**	**363**
04:45 PM	0	0	0	0	0	172	**1**	173	0	**1**	1	2	0	141	0	141	316
Total Volume	0	1	0	1	14	729	1	744	3	1	12	16	1	560	4	565	1326
% App. Total	0	100	0		1.9	98	0.1		18.8	6.2	75		0.2	99.1	0.7		
PHF	.000	.250	.000	.250	.500	.920	.250	.907	.750	.250	.600	.667	.250	.909	.500	.911	.913

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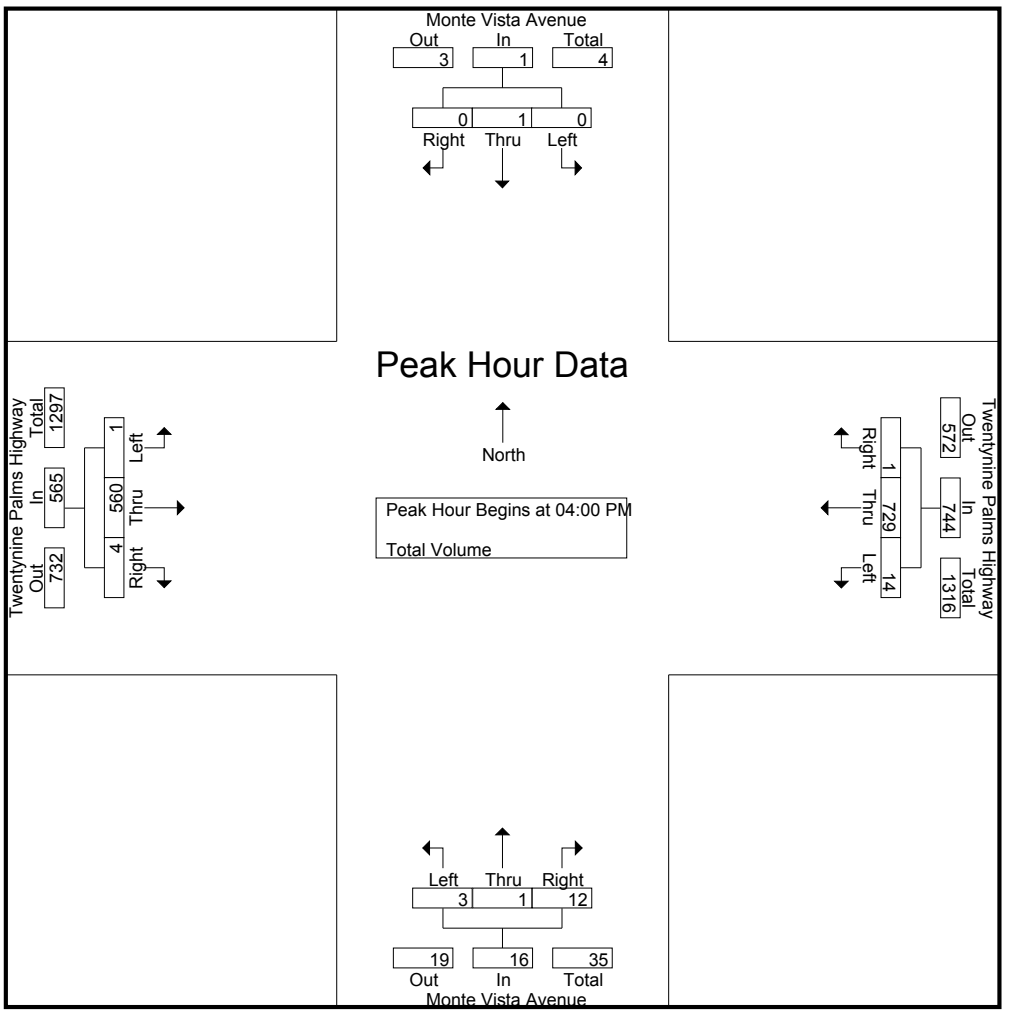
City of Twentynine Palms
N/S: Monte Vista Avenue
E/W: Twentynine Palms Highway
Weather: Clear

File Name : 02_TNP_MV_TPH PM
Site Code : 231063
Start Date : 11/8/2023
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:30 PM			
+0 mins.	0	0	0	0	1	162	0	163	**1**	0	**5**	**6**	**1**	**154**	0	**155**
+15 mins.	0	0	0	0	**7**	**198**	0	**205**	1	0	3	4	0	141	0	141
+30 mins.	0	**1**	0	**1**	6	197	0	203	1	0	3	4	0	128	0	128
+45 mins.	0	0	0	0	0	172	**1**	173	0	**1**	1	2	0	148	**3**	151
Total Volume	0	1	0	1	14	729	1	744	3	1	12	16	1	571	3	575
% App. Total	0	100	0		1.9	98	0.1		18.8	6.2	75		0.2	99.3	0.5	
PHF	.000	.250	.000	.250	.500	.920	.250	.907	.750	.250	.600	.667	.250	.927	.250	.927

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City of Twentynine Palms
Lear Avenue
N/ Twentynine Palms Highway
24 Hour Directional Volume Count

TNP001
Site Code: 051-231063

Start Time	11/8/23 Wed	Northbound Morning	Northbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Southbound Morning	Southbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		5	27			1	31				
12:15		5	30			1	29				
12:30		1	30			4	36				
12:45		0	28	11	115	1	52	7	148	18	263
01:00		2	37			0	36				
01:15		3	24			1	33				
01:30		1	31			0	43				
01:45		0	27	6	119	1	50	2	162	8	281
02:00		0	20			0	34				
02:15		0	38			1	57				
02:30		1	29			1	52				
02:45		3	23	4	110	2	61	4	204	8	314
03:00		1	39			3	61				
03:15		3	31			2	69				
03:30		4	27			7	74				
03:45		3	**43**	11	140	3	**72**	15	276	26	416
04:00		3	**30**			1	**76**				
04:15		1	**37**			4	**75**				
04:30		5	**51**			7	**85**				
04:45		7	41	16	159	4	70	16	306	32	465
05:00		15	29			5	57				
05:15		32	31			9	53				
05:30		56	24			15	47				
05:45		36	37	139	121	17	34	46	191	185	312
06:00		33	25			27	28				
06:15		51	30			27	28				
06:30		45	13			31	30				
06:45		**63**	21	192	89	26	28	111	114	303	203
07:00		**67**	21			26	9				
07:15		**72**	18			36	17				
07:30		**48**	18			34	17				
07:45		30	25	217	82	42	15	138	58	355	140
08:00		31	20			37	14				
08:15		37	22			36	12				
08:30		27	15			**48**	11				
08:45		32	14	127	71	**44**	10	165	47	292	118
09:00		21	16			**41**	10				
09:15		26	12			**43**	11				
09:30		26	12			33	12				
09:45		24	7	97	47	34	7	151	40	248	87
10:00		16	9			46	8				
10:15		26	11			35	11				
10:30		23	6			50	5				
10:45		25	10	90	36	32	9	163	33	253	69
11:00		21	7			43	3				
11:15		22	9			33	3				
11:30		33	3			32	3				
11:45		29	4	105	23	40	2	148	11	253	34
Total		1015	1112	1015	1112	966	1590	966	1590	1981	2702
Combined Total		2127		2127		2556		2556		4683	
AM Peak	-	06:45	-	-	-	08:30	-	-	-	-	-
Vol.	-	250	-	-	-	176	-	-	-	-	-
P.H.F.		0.868				0.917					
PM Peak	-	-	03:45	-	-	-	03:45	-	-	-	-
Vol.	-	-	161	-	-	-	308	-	-	-	-
P.H.F.			0.789				0.906				
Percentage		47.7%	52.3%			37.8%	62.2%				
ADT/AADT		ADT 4,683		AADT 4,683							

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City of Twentynine Palms
Twentynine Palms Highway
W/ Lear Avenue
24 Hour Directional Volume Count

TNP002
Site Code: 051-231063

Start Time	11/8/23 Wed	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		12	118			5	142				
12:15		16	117			7	111				
12:30		9	143			11	134				
12:45		4	120	41	498	3	152	26	539	67	1037
01:00		9	152			5	144				
01:15		12	109			5	132				
01:30		6	133			6	153				
01:45		5	120	32	514	4	163	20	592	52	1106
02:00		4	100			8	141				
02:15		2	126			13	167				
02:30		7	110			9	175				
02:45		5	123	18	459	10	183	40	666	58	1125
03:00		6	133			8	162				
03:15		10	124			9	147				
03:30		9	120			16	186				
03:45		8	149	33	526	6	173	39	668	72	1194
04:00		11	124			10	**166**				
04:15		10	**155**			17	**197**				
04:30		23	**163**			21	**204**				
04:45		20	**147**	64	589	28	**181**	76	748	140	1337
05:00		50	**128**			32	159				
05:15		74	145			32	141				
05:30		94	127			40	153				
05:45		81	141	299	541	44	106	148	559	447	1100
06:00		93	108			68	82				
06:15		105	99			79	89				
06:30		129	100			93	85				
06:45		**164**	74	491	381	82	80	322	336	813	717
07:00		**133**	78			89	54				
07:15		**164**	76			115	64				
07:30		**138**	83			107	48				
07:45		131	96	566	333	119	36	430	202	996	535
08:00		111	71			136	46				
08:15		115	73			115	47				
08:30		109	64			155	37				
08:45		111	59	446	267	127	35	533	165	979	432
09:00		99	60			127	37				
09:15		89	57			126	31				
09:30		100	39			118	43				
09:45		120	27	408	183	110	24	481	135	889	318
10:00		82	41			**149**	29				
10:15		120	42			**127**	26				
10:30		119	26			**148**	21				
10:45		105	36	426	145	**138**	23	562	99	988	244
11:00		110	26			139	22				
11:15		105	34			105	16				
11:30		137	21			109	12				
11:45		102	23	454	104	122	9	475	59	929	163
Total		3278	4540	3278	4540	3152	4768	3152	4768	6430	9308
Combined Total		7818		7818		7920		7920		15738	
AM Peak	-	06:45	-	-	-	10:00	-	-	-	-	-
Vol.	-	599	-	-	-	562	-	-	-	-	-
P.H.F.		0.913				0.943					
PM Peak	-	-	04:15	-	-	-	04:00	-	-	-	-
Vol.	-	-	593	-	-	-	748	-	-	-	-
P.H.F.			0.910				0.917				
Percentage		41.9%	58.1%			39.8%	60.2%				
ADT/AADT		ADT 15,738		AADT 15,738							

APPENDIX 3.2: EXISTING (2023) CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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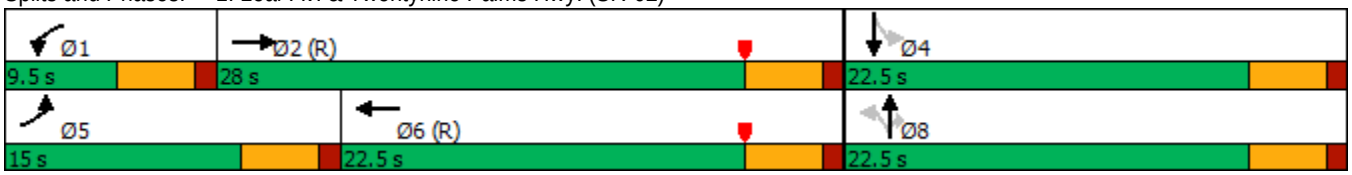
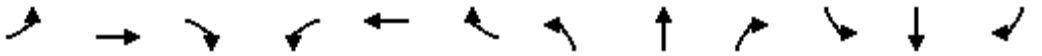
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	375	1	1	344	5	1	1	2	7	2	141
Future Volume (vph)	175	375	1	1	344	5	1	1	2	7	2	141
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	300		0	310		0	0		50	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	120			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			55			35			55	
Link Distance (ft)		655			2881			588			432	
Travel Time (s)		8.1			35.7			11.5			5.4	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (s)	15.0	28.0		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (%)	25.0%	46.7%		15.8%	37.5%		37.5%	37.5%	37.5%	37.5%	37.5%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lear Av. & Twentynine Palms Hwy. (SR-62)

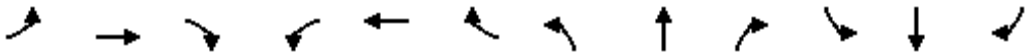




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	375	1	1	344	5	1	1	2	7	2	141
Future Volume (veh/h)	175	375	1	1	344	5	1	1	2	7	2	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	190	408	1	1	374	5	1	1	2	8	2	153
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	1632	4	3	1126	15	291	259	448	70	21	423
Arrive On Green	0.14	0.47	0.47	0.00	0.33	0.33	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1594	3445	8	1688	3401	45	668	865	1494	24	68	1411
Grp Volume(v), veh/h	190	199	210	1	185	194	2	0	2	163	0	0
Grp Sat Flow(s),veh/h/ln	1594	1683	1770	1688	1683	1763	1533	0	1494	1503	0	0
Q Serve(g_s), s	7.0	4.2	4.2	0.0	5.0	5.0	0.0	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.0	4.2	4.2	0.0	5.0	5.0	0.0	0.0	0.1	5.1	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.03	0.50		1.00	0.05		0.94
Lane Grp Cap(c), veh/h	230	797	838	3	557	584	550	0	448	514	0	0
V/C Ratio(X)	0.83	0.25	0.25	0.36	0.33	0.33	0.00	0.00	0.00	0.32	0.00	0.00
Avail Cap(c_a), veh/h	279	797	838	141	557	584	550	0	448	514	0	0
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	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.0	9.4	9.4	29.9	15.1	15.1	14.7	0.0	14.7	16.5	0.0	0.0
Incr Delay (d2), s/veh	15.6	0.8	0.7	62.7	1.6	1.5	0.0	0.0	0.0	1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	1.2	1.3	0.1	1.7	1.8	0.0	0.0	0.0	1.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.6	10.2	10.1	92.6	16.7	16.6	14.7	0.0	14.7	18.1	0.0	0.0
LnGrp LOS	D	B	B	F	B	B	B	A	B	B	A	A
Approach Vol, veh/h		599			380			4			163	
Approach Delay, s/veh		19.8			16.9			14.7			18.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.6	32.9		22.5	13.1	24.4		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	23.5		18.0	10.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.0	6.2		7.1	9.0	7.0		2.1				
Green Ext Time (p_c), s	0.0	1.8		0.5	0.1	1.3		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		18.6	
HCM 6th LOS		B	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	543	1	5	480	1	2	1	7	1	1	1
Future Volume (vph)	1	543	1	5	480	1	2	1	7	1	1	1
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	50		0	50		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		402			655			418			421	
Travel Time (s)		5.0			8.1			9.5			9.6	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	543	1	5	480	1	2	1	7	1	1	1
Future Vol, veh/h	1	543	1	5	480	1	2	1	7	1	1	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	584	1	5	516	1	2	1	8	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	522	0	0	590	0	0	866	1124	303	832	1124	269
Stage 1	-	-	-	-	-	-	592	592	-	532	532	-
Stage 2	-	-	-	-	-	-	274	532	-	300	592	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1041	-	-	982	-	-	247	204	693	262	204	729
Stage 1	-	-	-	-	-	-	460	492	-	499	524	-
Stage 2	-	-	-	-	-	-	709	524	-	684	492	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1036	-	-	977	-	-	242	201	686	254	201	722
Mov Cap-2 Maneuver	-	-	-	-	-	-	242	201	-	254	201	-
Stage 1	-	-	-	-	-	-	457	489	-	496	519	-
Stage 2	-	-	-	-	-	-	700	519	-	671	489	-

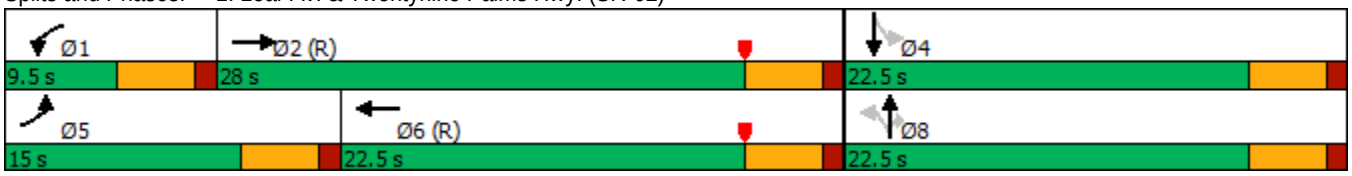
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	13.6	17.5
HCM LOS			B	C

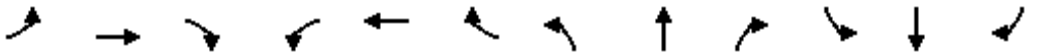
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	427	1036	-	-	977	-	-	291
HCM Lane V/C Ratio	0.025	0.001	-	-	0.006	-	-	0.011
HCM Control Delay (s)	13.6	8.5	-	-	8.7	-	-	17.5
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	442	1	11	471	13	4	5	3	8	5	269
Future Volume (vph)	135	442	1	11	471	13	4	5	3	8	5	269
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	300		0	310		0	0		50	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	120			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			55			35			55	
Link Distance (ft)		655			2881			588			432	
Travel Time (s)		8.1			35.7			11.5			5.4	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (s)	15.0	28.0		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (%)	25.0%	46.7%		15.8%	37.5%		37.5%	37.5%	37.5%	37.5%	37.5%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lear Av. & Twentynine Palms Hwy. (SR-62)

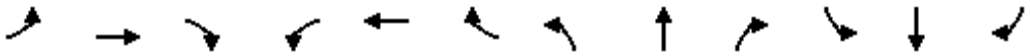




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	442	1	11	471	13	4	5	3	8	5	269
Future Volume (veh/h)	135	442	1	11	471	13	4	5	3	8	5	269
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	148	486	1	12	518	14	4	5	3	9	5	296
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	1585	3	25	1206	33	229	252	448	66	16	430
Arrive On Green	0.11	0.46	0.46	0.02	0.36	0.36	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1594	3447	7	1688	3348	90	475	838	1494	15	53	1434
Grp Volume(v), veh/h	148	237	250	12	260	272	9	0	3	310	0	0
Grp Sat Flow(s),veh/h/ln	1594	1683	1771	1688	1683	1755	1313	0	1494	1501	0	0
Q Serve(g_s), s	5.4	5.3	5.3	0.4	7.0	7.0	0.0	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.4	5.3	5.3	0.4	7.0	7.0	0.2	0.0	0.1	10.9	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.05	0.44		1.00	0.03		0.95
Lane Grp Cap(c), veh/h	183	774	814	25	606	632	481	0	448	512	0	0
V/C Ratio(X)	0.81	0.31	0.31	0.47	0.43	0.43	0.02	0.00	0.01	0.61	0.00	0.00
Avail Cap(c_a), veh/h	279	774	814	141	606	632	481	0	448	512	0	0
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	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.9	10.2	10.2	29.3	14.5	14.5	14.8	0.0	14.7	18.5	0.0	0.0
Incr Delay (d2), s/veh	9.8	1.0	1.0	12.9	2.2	2.1	0.1	0.0	0.0	5.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.6	1.7	0.2	2.4	2.5	0.1	0.0	0.0	3.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	11.2	11.2	42.2	16.7	16.7	14.8	0.0	14.8	23.7	0.0	0.0
LnGrp LOS	D	B	B	D	B	B	B	A	B	C	A	A
Approach Vol, veh/h		635			544			12			310	
Approach Delay, s/veh		16.9			17.3			14.8			23.7	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	32.1		22.5	11.4	26.1		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	23.5		18.0	10.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.4	7.3		12.9	7.4	9.0		2.2				
Green Ext Time (p_c), s	0.0	2.1		0.7	0.1	1.8		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		18.4	
HCM 6th LOS		B	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	565	4	14	729	1	3	1	12	1	1	1
Future Volume (vph)	1	565	4	14	729	1	3	1	12	1	1	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	50		0	50		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		402			655			418			421	
Travel Time (s)		5.0			8.1			9.5			9.6	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	565	4	14	729	1	3	1	12	1	1	1
Future Vol, veh/h	1	565	4	14	729	1	3	1	12	1	1	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	621	4	15	801	1	3	1	13	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	807	0	0	630	0	0	1066	1467	323	1155	1469	411
Stage 1	-	-	-	-	-	-	630	630	-	837	837	-
Stage 2	-	-	-	-	-	-	436	837	-	318	632	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	6.7	5.5	6.5
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	5.5	5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	5.5	5	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	814	-	-	948	-	-	177	127	673	199	193	620
Stage 1	-	-	-	-	-	-	436	473	-	417	431	-
Stage 2	-	-	-	-	-	-	569	380	-	732	519	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	810	-	-	943	-	-	172	124	667	189	188	614
Mov Cap-2 Maneuver	-	-	-	-	-	-	172	124	-	189	188	-
Stage 1	-	-	-	-	-	-	433	470	-	414	422	-
Stage 2	-	-	-	-	-	-	555	372	-	712	516	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	15.3	19.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	368	810	-	-	943	-	-	245
HCM Lane V/C Ratio	0.048	0.001	-	-	0.016	-	-	0.013
HCM Control Delay (s)	15.3	9.4	-	-	8.9	-	-	19.9
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0.1	-	-	0

APPENDIX 3.3: TRAFFIC SIGNAL WARRANT ANALYSIS WORKSHEETS

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(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

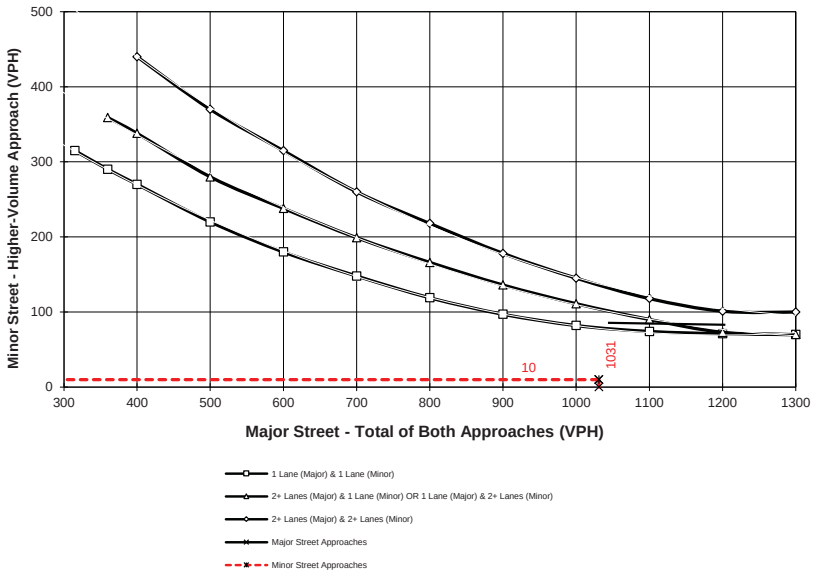
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2023) AM Peak Hour Warrants**

Major Street Name = **Twentynine Palms Hwy. (SR-62)** Total of Both Approaches (VPH) = **1,031**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Monte Vista Av.** High Volume Approach (VPH) = **10**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_15600\15631\Warrants\01 - Existing\02R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

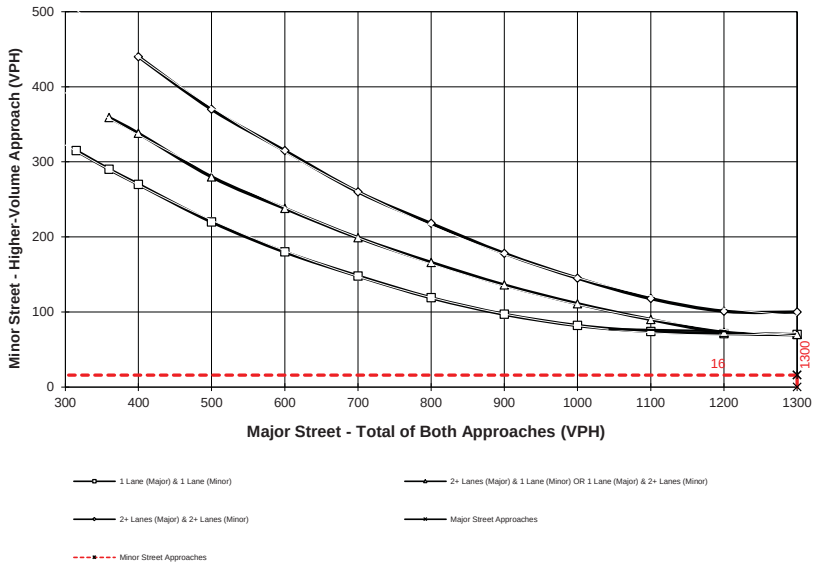
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing (2023) PM Peak Hour Warrants**

Major Street Name = **Twentynine Palms Hwy. (SR-62)** Total of Both Approaches (VPH) = **1,314**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Monte Vista Av.** High Volume Approach (VPH) = **16**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_15600\15631\Warrants\01 - Existing\02R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

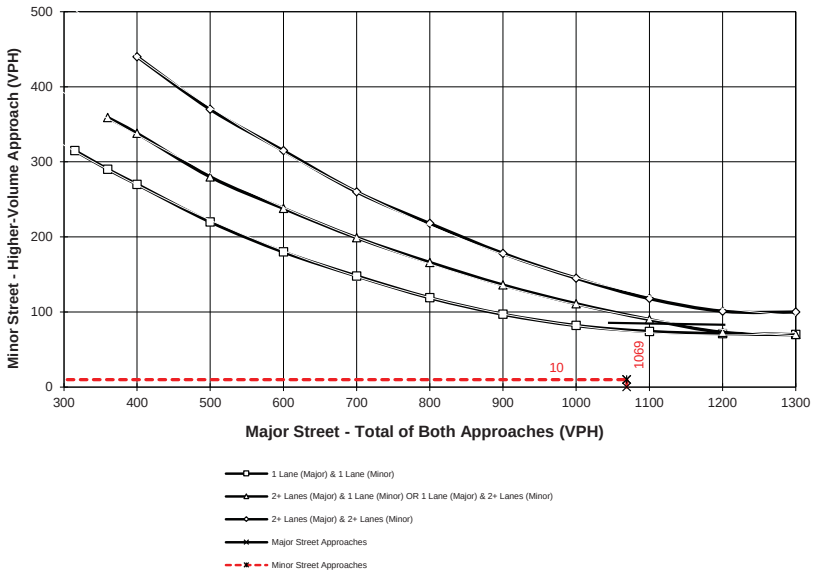
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing + Project AM Peak Hour Warrants**

Major Street Name = **Twentynine Palms Hwy. (SR-62)** Total of Both Approaches (VPH) = **1,069**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Monte Vista Av.** High Volume Approach (VPH) = **10**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_15600\15631\Warrants\02 - EP\02R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

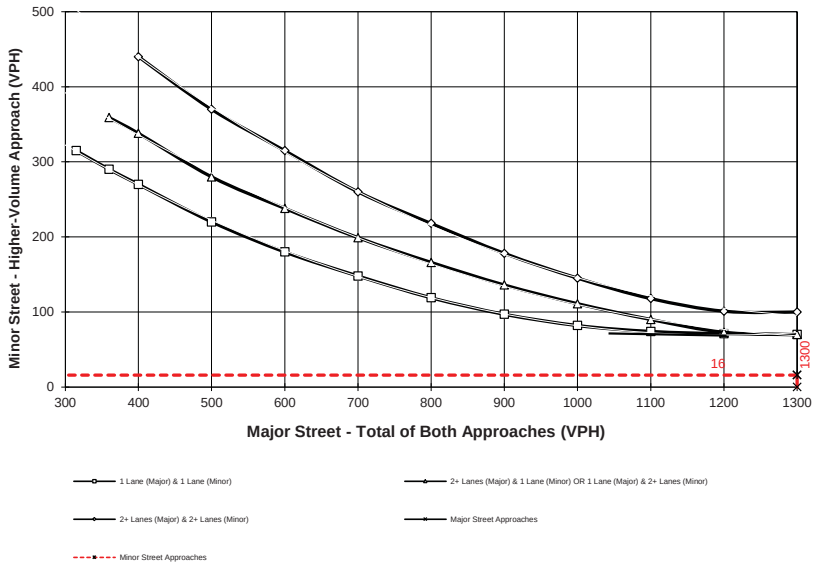
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing + Project PM Peak Hour Warrants**

Major Street Name = **Twentynine Palms Hwy. (SR-62)** Total of Both Approaches (VPH) = **1,358**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Monte Vista Av.** High Volume Approach (VPH) = **16**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_15600\15631\Warrants\02 - EP\02R_PM.xls\Fig 4C-4 (Rural Peak)

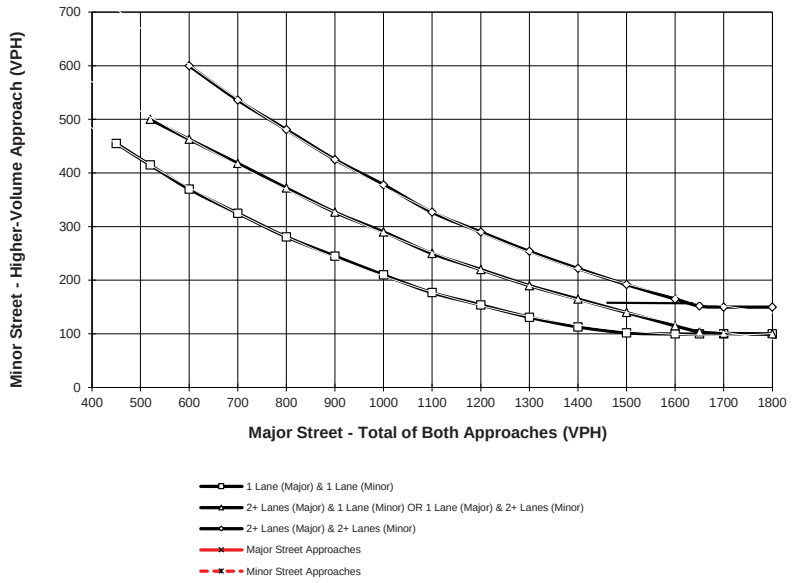
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Existing + Project AM Peak Hour Warrants**

Major Street Name = **Lear Av.**
Total of Both Approaches (VPH) = **7**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Cactus Dr.**
High Volume Approach (VPH) = **3**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

F:\UXRjobs_15600_16000_15600\15631\Warrants\02 - EP\03U_AM.xls\Fig 4C-3 (Urban Peak)

California MUTCD 2014 Edition
(FHWA's MUTCD 2009, as amended for use in California)

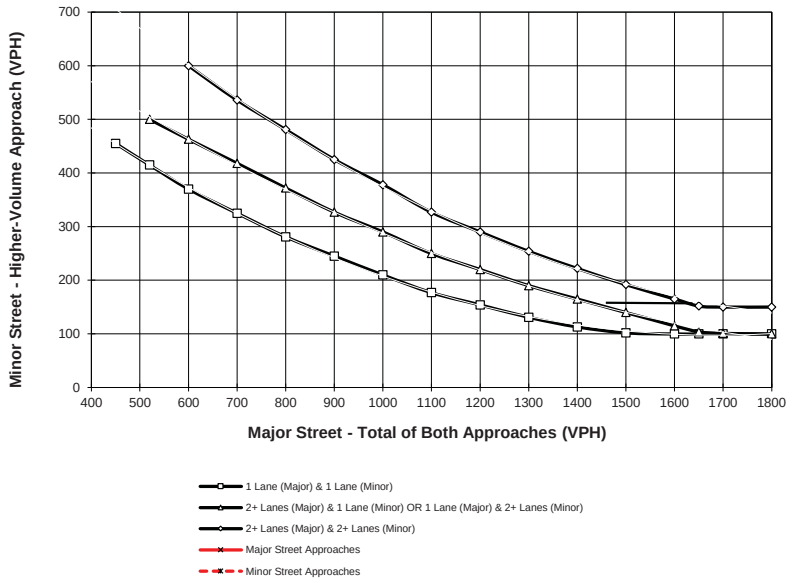
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Existing + Project PM Peak Hour Warrants**

Major Street Name = **Lear Av.**
Total of Both Approaches (VPH) = **9**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Cactus Dr.**
High Volume Approach (VPH) = **3**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

F:\UXRjobs_15600_16000_15600\15631\Warrants\02 - EP\03U_PM.xls\Fig 4C-3 (Urban Peak)

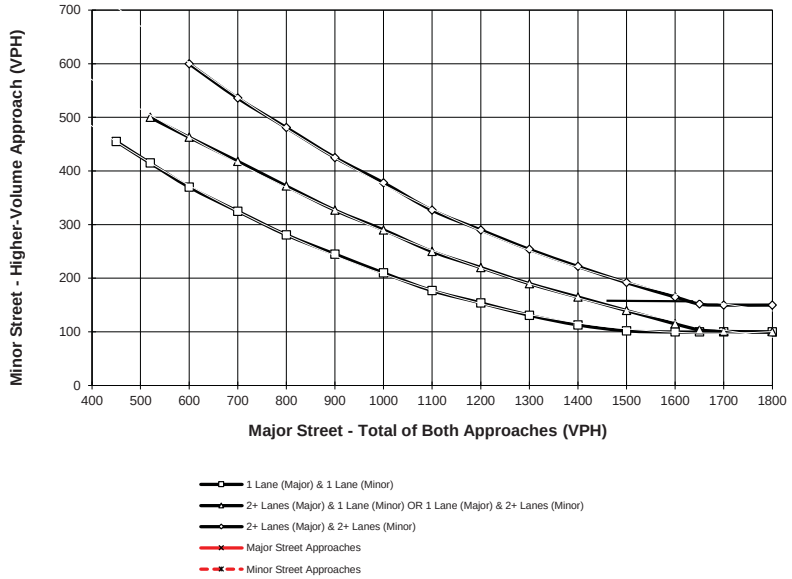
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Existing + Project AM Peak Hour Warrants**

Major Street Name = **Sullivan Rd.**
Total of Both Approaches (VPH) = **5**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Lear Av.**
High Volume Approach (VPH) = **3**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #4

F:\UXRjobs_15600_16000_15600\15631\Warrants\02 - EP\04U_AM.xls\Fig 4C-3 (Urban Peak)

California MUTCD 2014 Edition
(FHWA's MUTCD 2009, as amended for use in California)

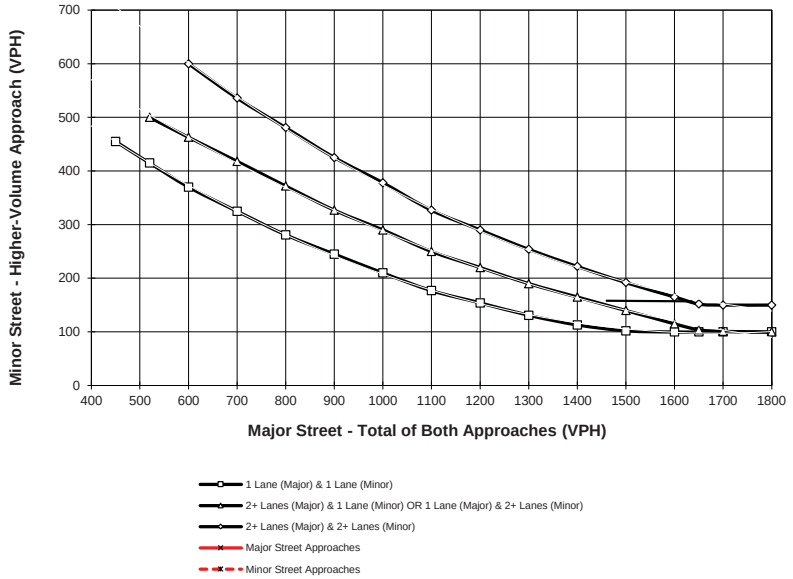
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Existing + Project PM Peak Hour Warrants**

Major Street Name = **Sullivan Rd.**
Total of Both Approaches (VPH) = **7**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Lear Av.**
High Volume Approach (VPH) = **3**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #4

F:\UXRjobs_15600_16000_15600\15631\Warrants\02 - EP\04U_PM.xls\Fig 4C-3 (Urban Peak)

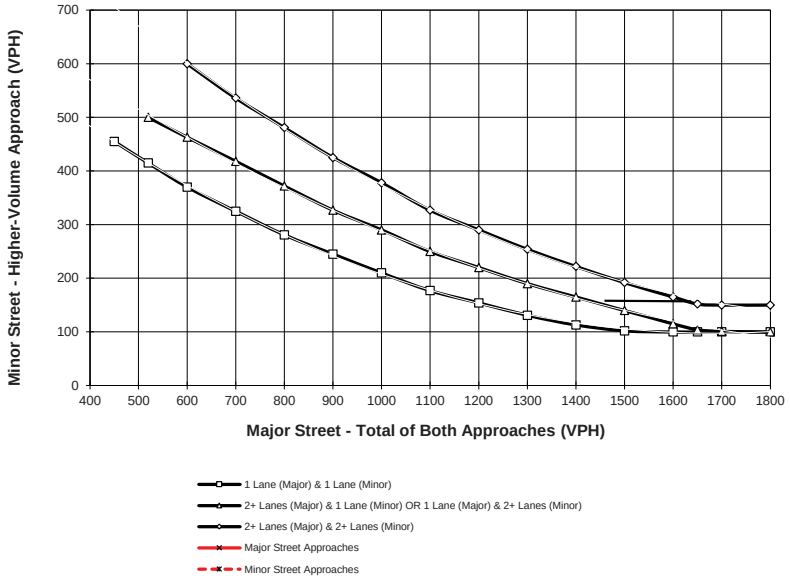
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Existing + Project AM Peak Hour Warrants**

Major Street Name = **Lear Av.**
Total of Both Approaches (VPH) = **38**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **N. Project Access**
High Volume Approach (VPH) = **15**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #5

F:\UXRjobs_15600_16000_15600\15631\Warrants\02 - EP\05U_AM.xls\Fig 4C-3 (Urban Peak)

California MUTCD 2014 Edition
(FHWA's MUTCD 2009, as amended for use in California)

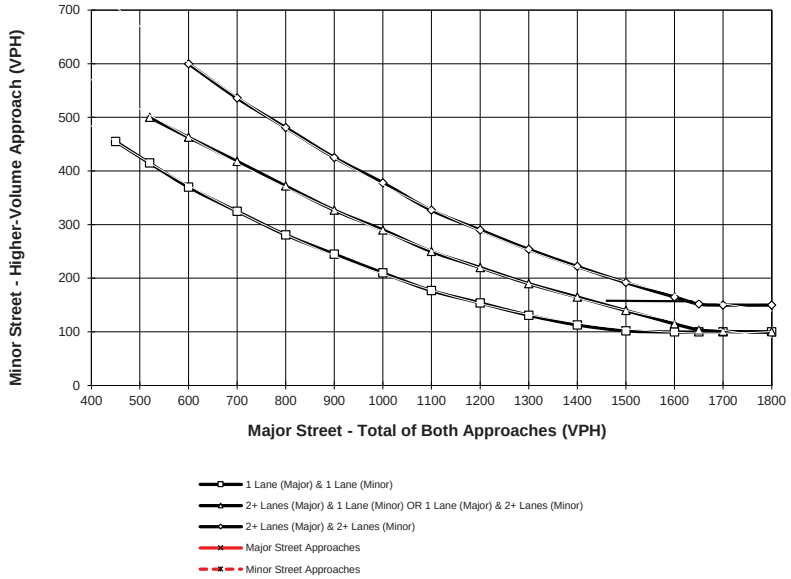
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Existing + Project PM Peak Hour Warrants**

Major Street Name = **Lear Av.**
Total of Both Approaches (VPH) = **34**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **N. Project Access**
High Volume Approach (VPH) = **28**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #5

F:\UXRjobs_15600_16000_15600\15631\Warrants\02 - EP\05U_PM.xls\Fig 4C-3 (Urban Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

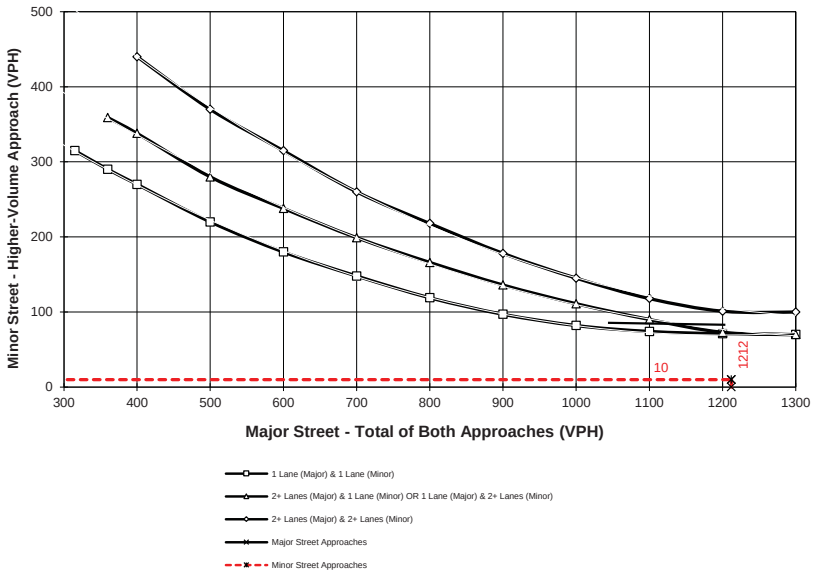
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Cumulative (2025) Without Project AM Peak Hour Warrants**

Major Street Name = **Twentynine Palms Hwy. (SR-62)** Total of Both Approaches (VPH) = **1,212**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Monte Vista Av.** High Volume Approach (VPH) = **10**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_15600\15631\Warrants\03 - EAC\02R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

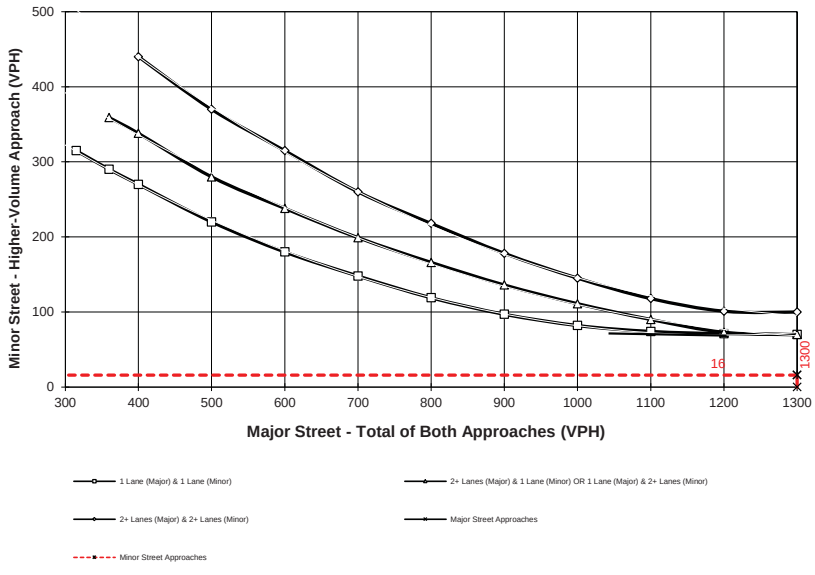
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Cumulative (2025) Without Project PM Peak Hour Warrants**

Major Street Name = **Twentynine Palms Hwy. (SR-62)** Total of Both Approaches (VPH) = **1,508**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Monte Vista Av.** High Volume Approach (VPH) = **16**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_15600\15631\Warrants\03 - EAC\02R_PM.xls\Fig 4C-4 (Rural Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

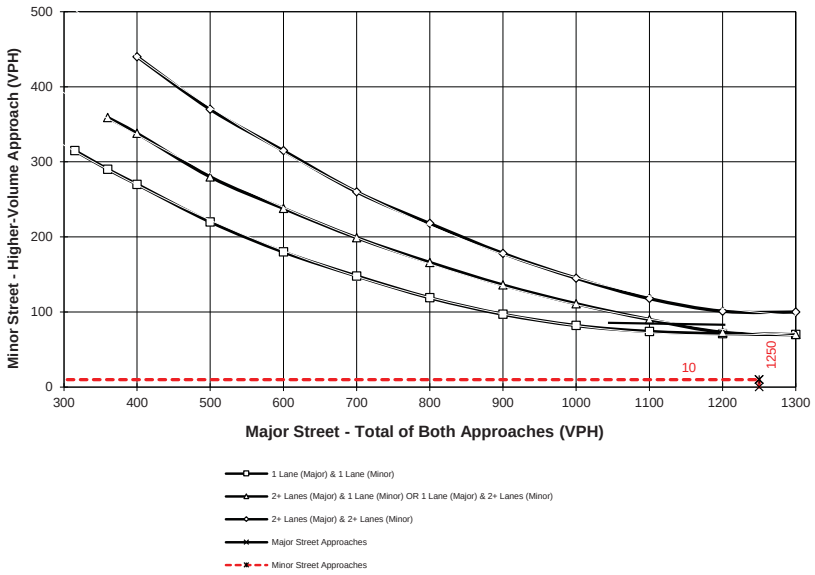
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Cumulative (2025) With Project AM Peak Hour Warrants**

Major Street Name = **Twentynine Palms Hwy. (SR-62)** Total of Both Approaches (VPH) = **1,250**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Monte Vista Av.** High Volume Approach (VPH) = **10**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_15600\15631\Warrants\04 - EAPC\02R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

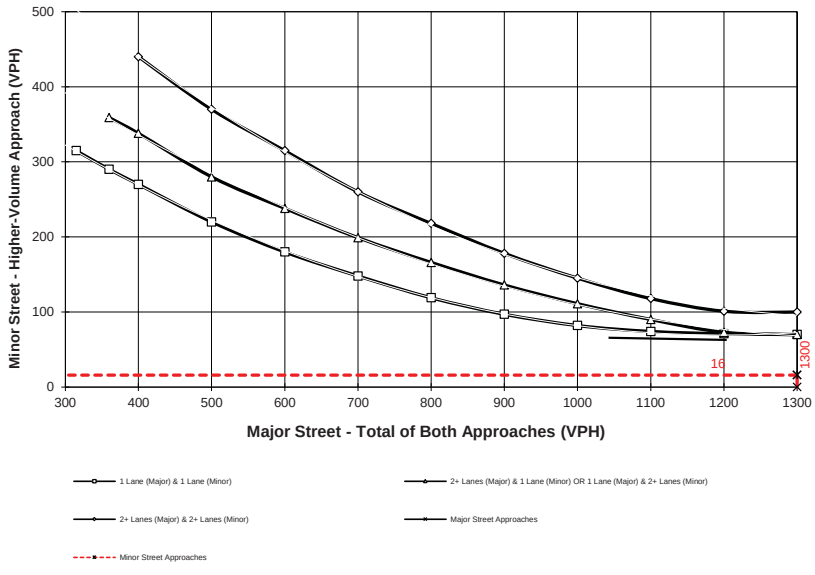
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Cumulative (2025) With Project PM Peak Hour Warrants**

Major Street Name = **Twentynine Palms Hwy. (SR-62)** Total of Both Approaches (VPH) = **1,552**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Monte Vista Av.** High Volume Approach (VPH) = **16**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_15600\15631\Warrants\04 - EAPC\02R_PM.xls\Fig 4C-4 (Rural Peak)

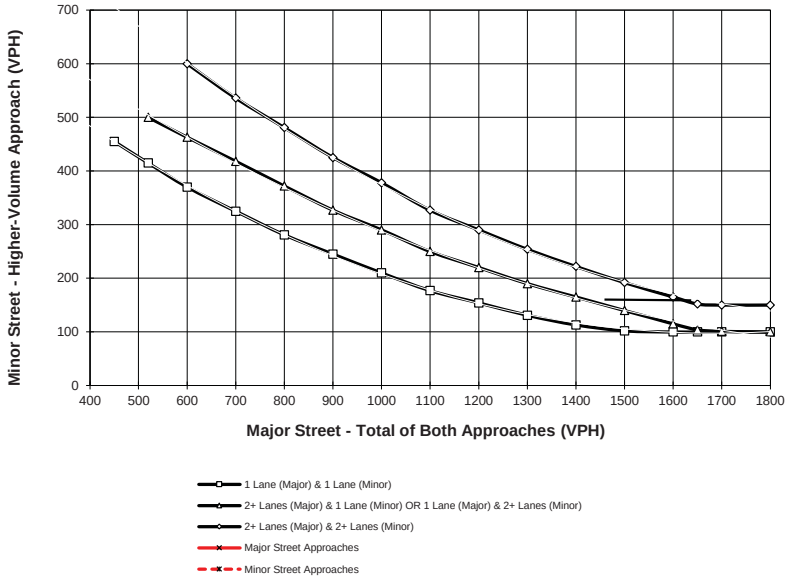
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Cumulative (2025) With Project AM Peak Hour Warrants**

Major Street Name = **Lear Av.**
Total of Both Approaches (VPH) = **7**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Cactus Dr.**
High Volume Approach (VPH) = **2**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

F:\UXRjobs_15600_16000_15600\15631\Warrants\04 - EAPC\03U_AM.xls\Fig 4C-3 (Urban Peak)

California MUTCD 2014 Edition
(FHWA's MUTCD 2009, as amended for use in California)

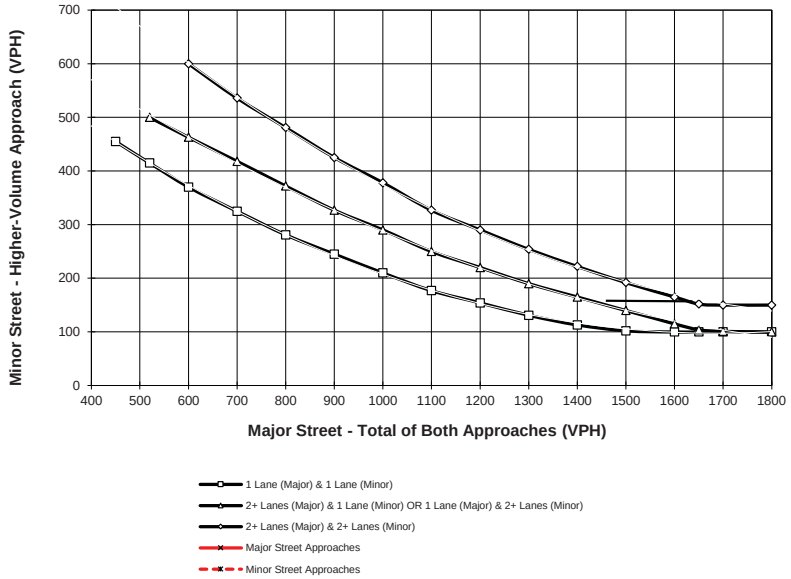
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Cumulative (2025) With Project PM Peak Hour Warrants**

Major Street Name = **Lear Av.**
Total of Both Approaches (VPH) = **9**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Cactus Dr.**
High Volume Approach (VPH) = **3**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

F:\UXRjobs_15600_16000_15600\15631\Warrants\04 - EAPC\03U_PM.xls\Fig 4C-3 (Urban Peak)

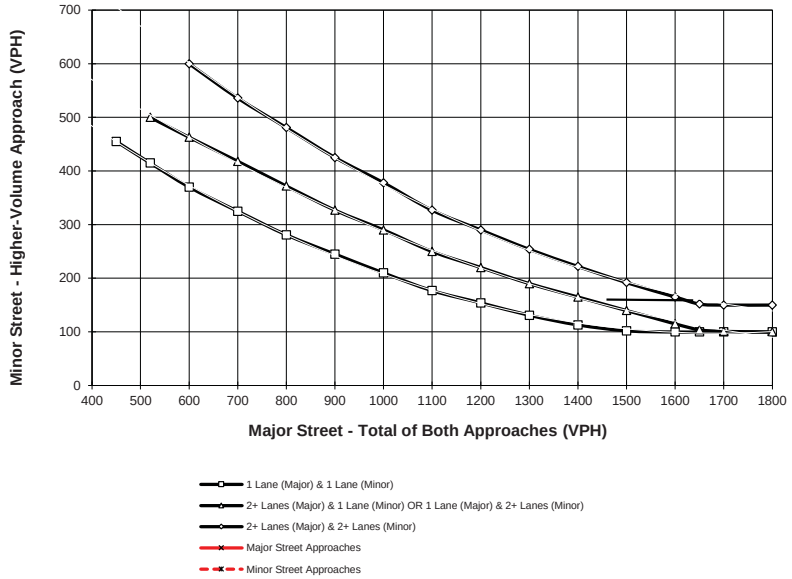
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Cumulative (2025) With Project AM Peak Hour Warrants**

Major Street Name = **Sullivan Rd.**
Total of Both Approaches (VPH) = **5**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Lear Av.**
High Volume Approach (VPH) = **3**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #4

F:\UXRjobs_15600_16000_15600\15631\Warrants\04 - EAPC\04U_AM.xls\Fig 4C-3 (Urban Peak)

California MUTCD 2014 Edition
(FHWA's MUTCD 2009, as amended for use in California)

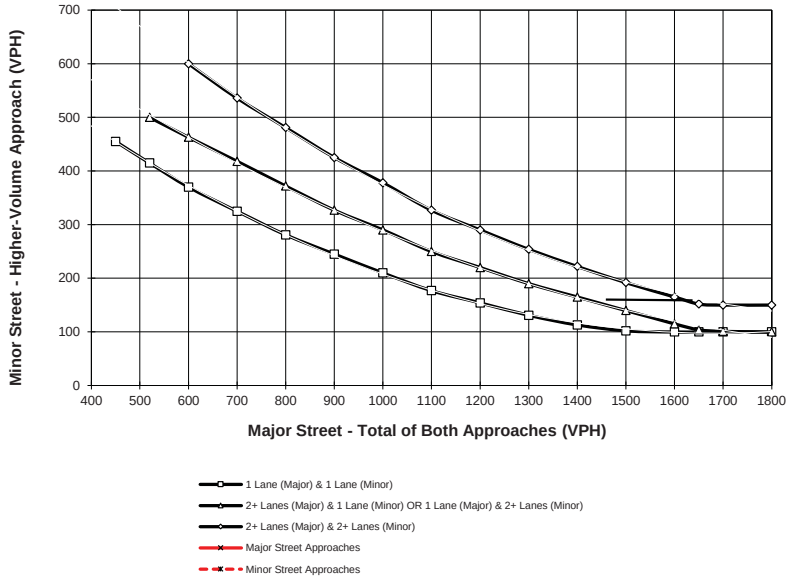
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Cumulative (2025) With Project PM Peak Hour Warrants**

Major Street Name = **Sullivan Rd.**
Total of Both Approaches (VPH) = **7**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Lear Av.**
High Volume Approach (VPH) = **3**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #4

F:\UXRjobs_15600_16000_15600\15631\Warrants\04 - EAPC\04U_PM.xls\Fig 4C-3 (Urban Peak)

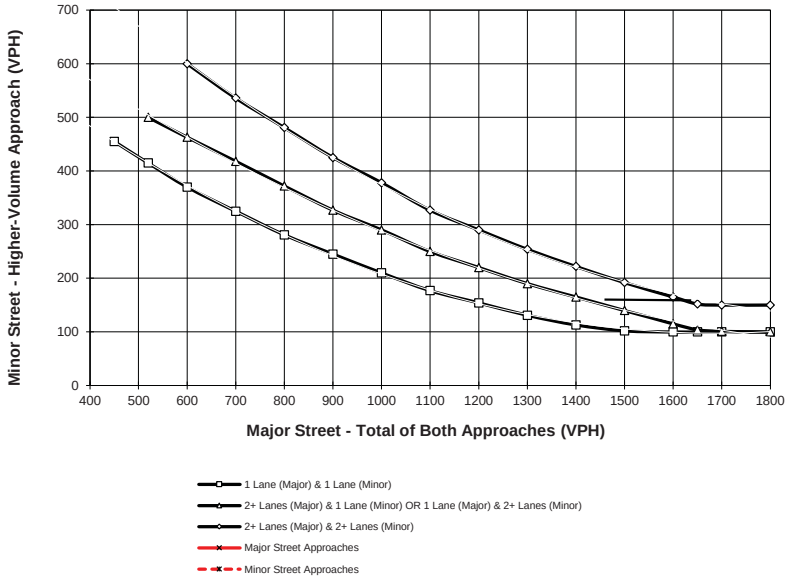
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Cumulative (2025) With Project AM Peak Hour Warrants**

Major Street Name = **Lear Av.**
Total of Both Approaches (VPH) = **38**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **N. Project Access**
High Volume Approach (VPH) = **15**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #5

F:\UXRjobs_15600_16000_15600\15631\Warrants\04 - EAPC\05U_AM.xls\Fig 4C-3 (Urban Peak)

California MUTCD 2014 Edition
(FHWA's MUTCD 2009, as amended for use in California)

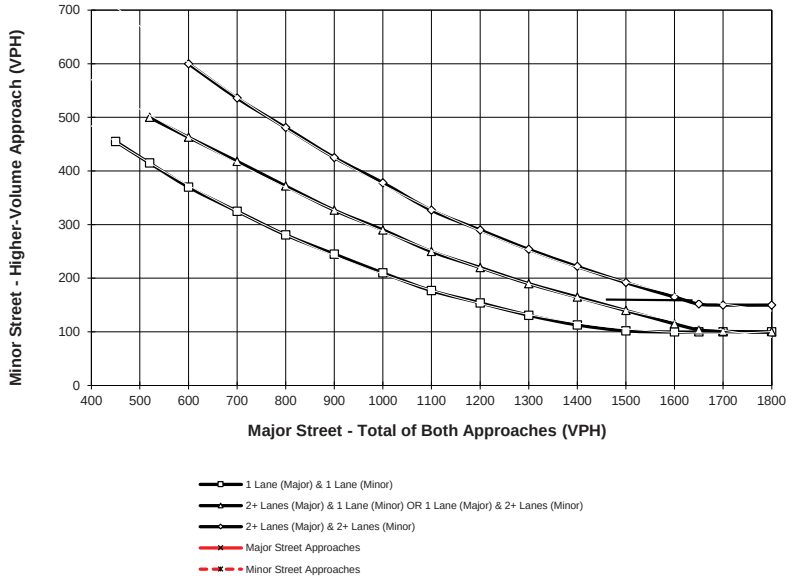
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **Cumulative (2025) With Project PM Peak Hour Warrants**

Major Street Name = **Lear Av.**
Total of Both Approaches (VPH) = **34**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **N. Project Access**
High Volume Approach (VPH) = **28**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #5

F:\UXRjobs_15600_16000_15600\15631\Warrants\04 - EAPC\05U_PM.xls\Fig 4C-3 (Urban Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

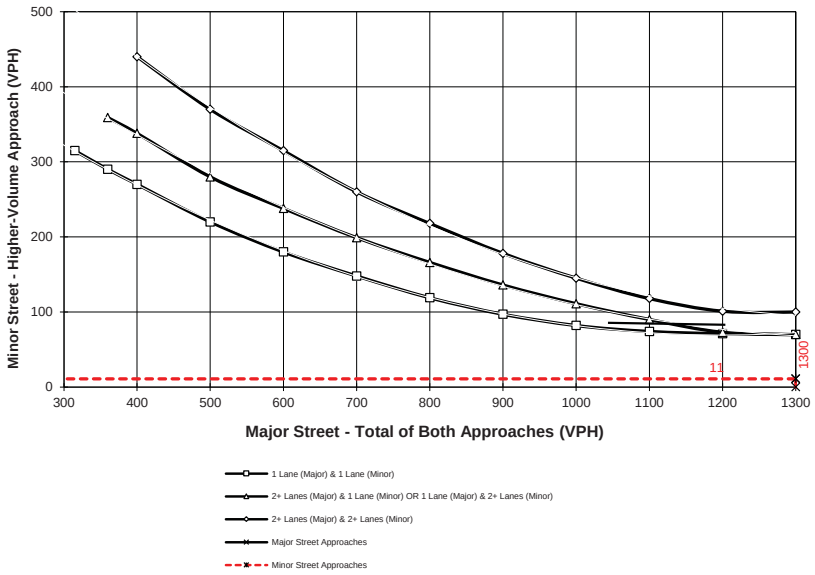
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **2045 Without Project AM Peak Hour Warrants**

Major Street Name = **Twentynine Palms Hwy. (SR-62)** Total of Both Approaches (VPH) = **2,675**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Monte Vista Av.** High Volume Approach (VPH) = **11**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_15600\15631\Warrants\05 - 2045NP\02R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

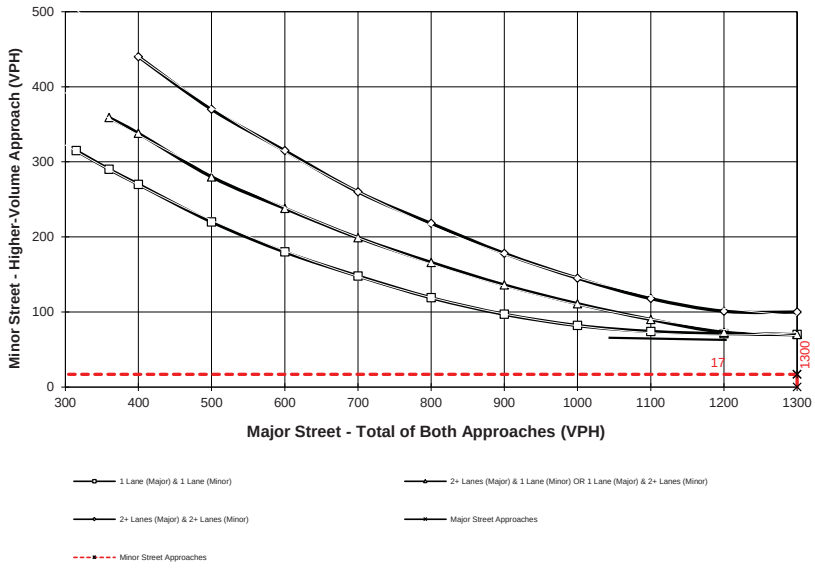
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **2045 Without Project PM Peak Hour Warrants**

Major Street Name = **Twentynine Palms Hwy. (SR-62)** Total of Both Approaches (VPH) = **3,328**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Monte Vista Av.** High Volume Approach (VPH) = **17**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_15600\15631\Warrants\05 - 2045NP\02R_PM.xls\Fig 4C-4 (Rural Peak)

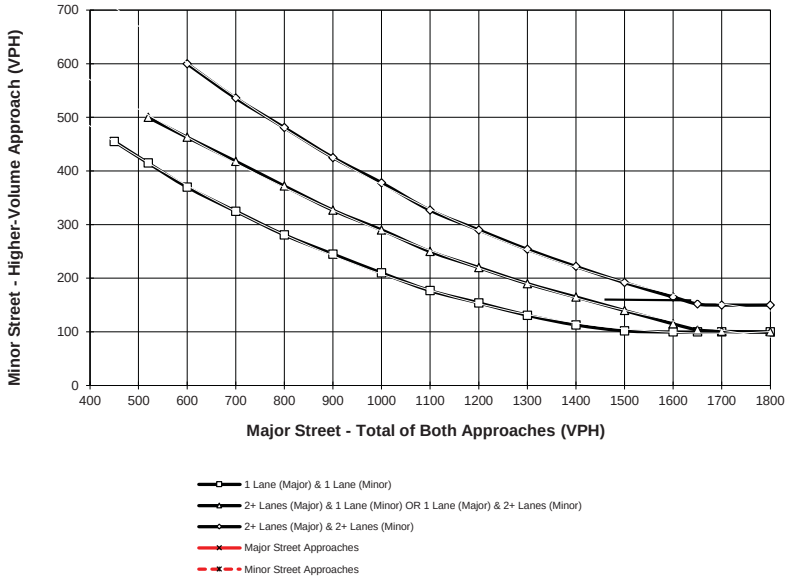
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2045 Without Project AM Peak Hour Warrants**

Major Street Name = **Lear Av.**
Total of Both Approaches (VPH) = **25**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Cactus Dr.**
High Volume Approach (VPH) = **3**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

F:\UXRjobs_15600_16000_15600\15631\Warrants\05 - 2045NP\03U_AM.xls\Fig 4C-3 (Urban Peak)

California MUTCD 2014 Edition
(FHWA's MUTCD 2009, as amended for use in California)

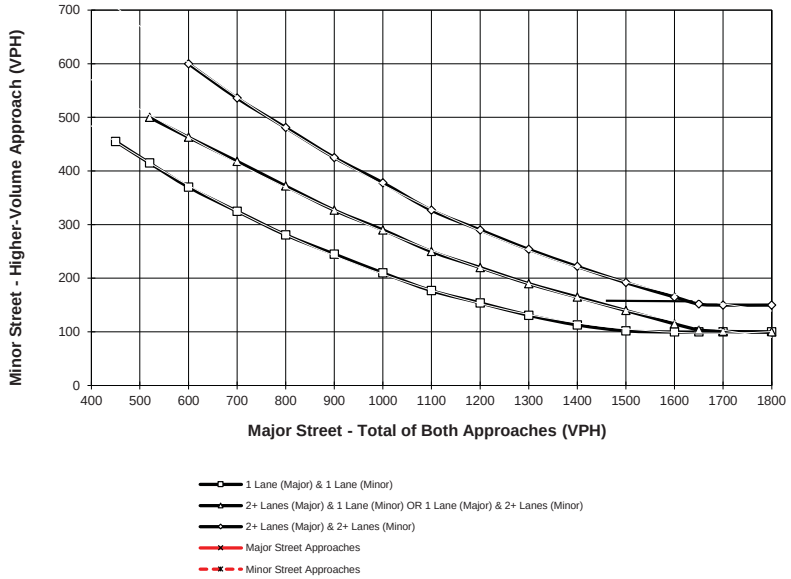
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2045 Without Project PM Peak Hour Warrants**

Major Street Name = **Lear Av.**
Total of Both Approaches (VPH) = **35**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Cactus Dr.**
High Volume Approach (VPH) = **3**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

F:\UXRjobs_15600_16000_15600\15631\Warrants\05 - 2045NP\03U_PM.xls\Fig 4C-3 (Urban Peak)

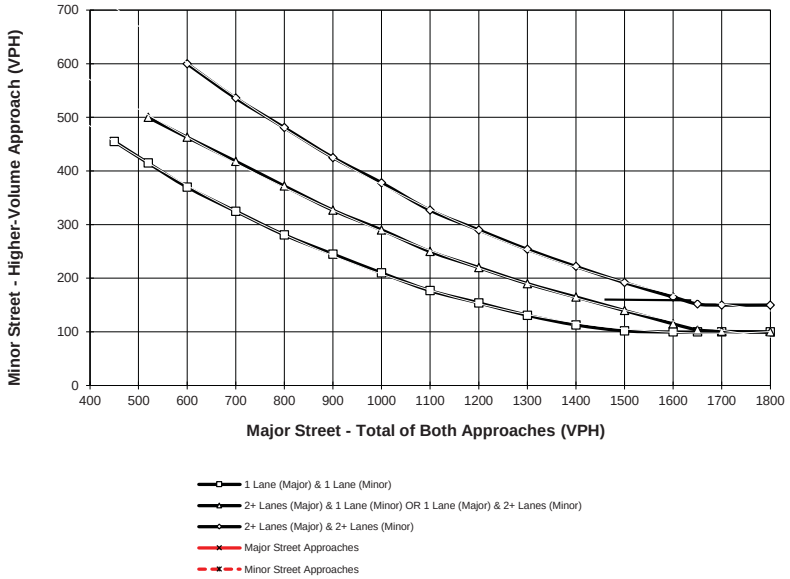
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2045 Without Project AM Peak Hour Warrants**

Major Street Name = **Sullivan Rd.**
Total of Both Approaches (VPH) = **19**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Lear Av.**
High Volume Approach (VPH) = **7**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #4

F:\UXRjobs_15600_16000_15600\15631\Warrants\05 - 2045NP\04U_AM.xls\Fig 4C-3 (Urban Peak)

California MUTCD 2014 Edition
(FHWA's MUTCD 2009, as amended for use in California)

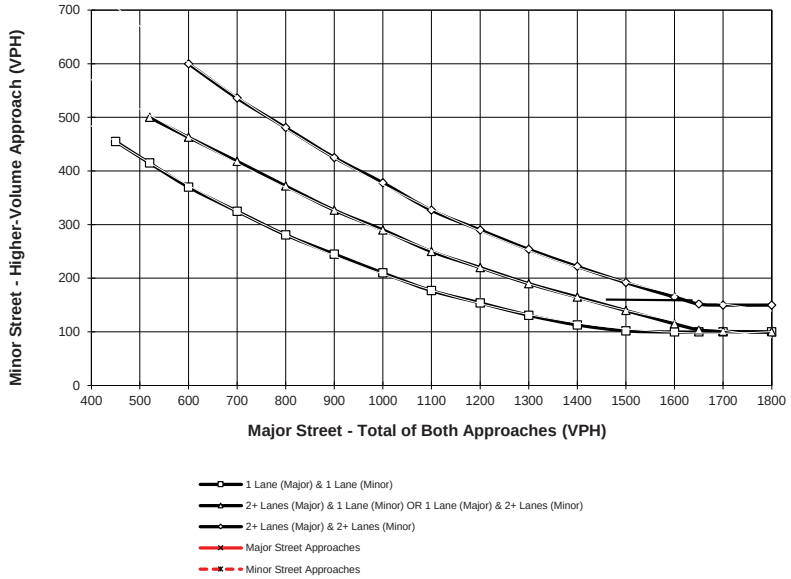
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2045 Without Project PM Peak Hour Warrants**

Major Street Name = **Lear Av.**
Total of Both Approaches (VPH) = **20**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Sullivan Rd.**
High Volume Approach (VPH) = **12**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #4

F:\UXRjobs_15600_16000_15600\15631\Warrants\05 - 2045NP\04U_PM.xls\Fig 4C-3 (Urban Peak)

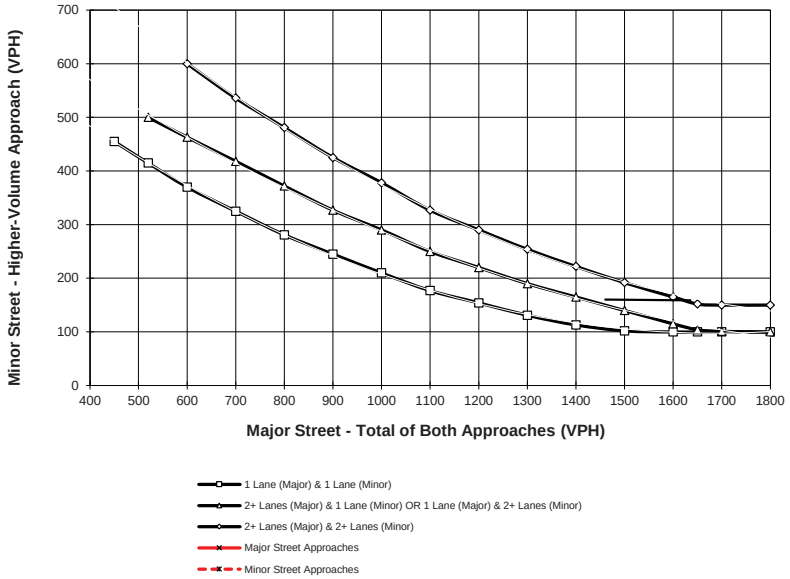
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2045 Without Project AM Peak Hour Warrants**

Major Street Name = **Lear Av.**
Total of Both Approaches (VPH) = **29**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **N. Project Access**
High Volume Approach (VPH) = **12**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #5

F:\UXRjobs_15600_16000_15600\15631\Warrants\05 - 2045NP\05U_AM.xls\Fig 4C-3 (Urban Peak)

California MUTCD 2014 Edition
(FHWA's MUTCD 2009, as amended for use in California)

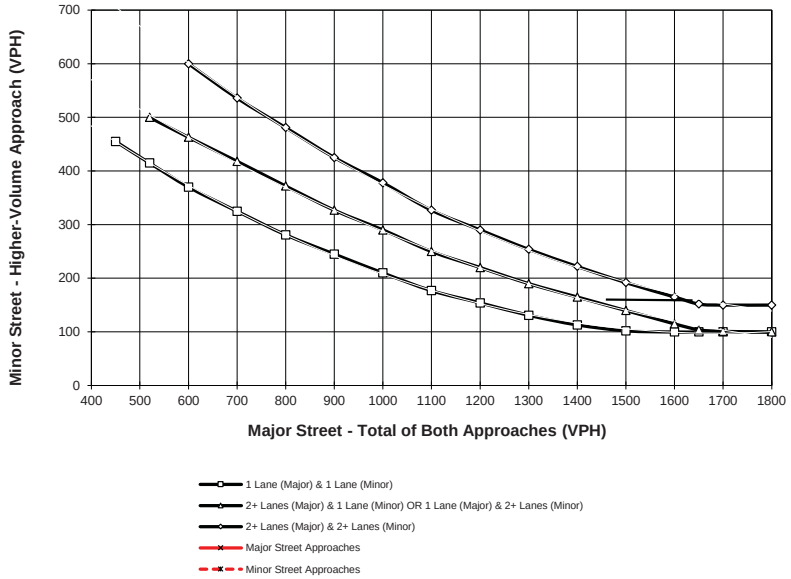
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2045 Without Project PM Peak Hour Warrants**

Major Street Name = **Lear Av.**
Total of Both Approaches (VPH) = **48**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **N. Project Access**
High Volume Approach (VPH) = **7**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #5

F:\UXRjobs_15600_16000_15600\15631\Warrants\05 - 2045NP\05U_PM.xls\Fig 4C-3 (Urban Peak)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

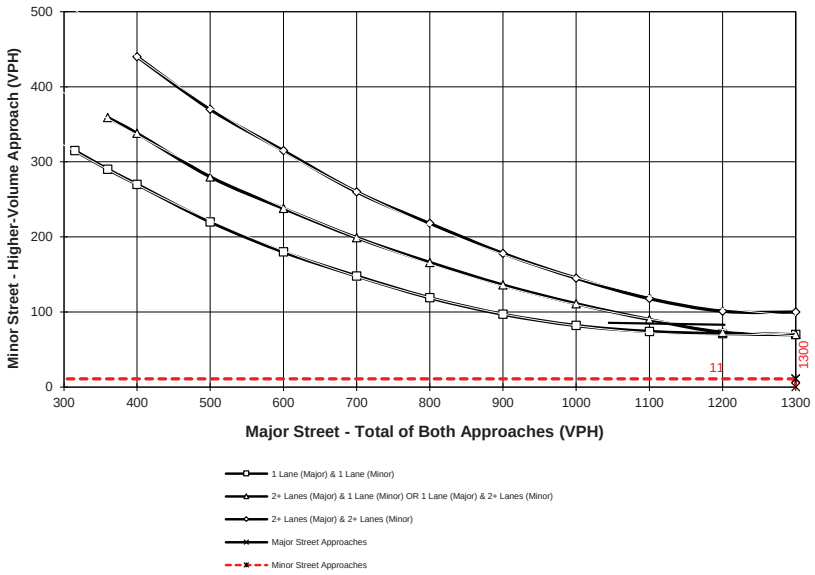
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **2045 With Project AM Peak Hour Warrants**

Major Street Name = **Twentynine Palms Hwy. (SR-62)** Total of Both Approaches (VPH) = **2,689**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Monte Vista Av.** High Volume Approach (VPH) = **11**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_15600\15631\Warrants\06 - 2045WP\02R_AM.xls\Fig 4C-4 (Rural Peak)

California MUTCD 2016 Edition
(FHWA's MUTCD 2009, as amended for use in California)

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

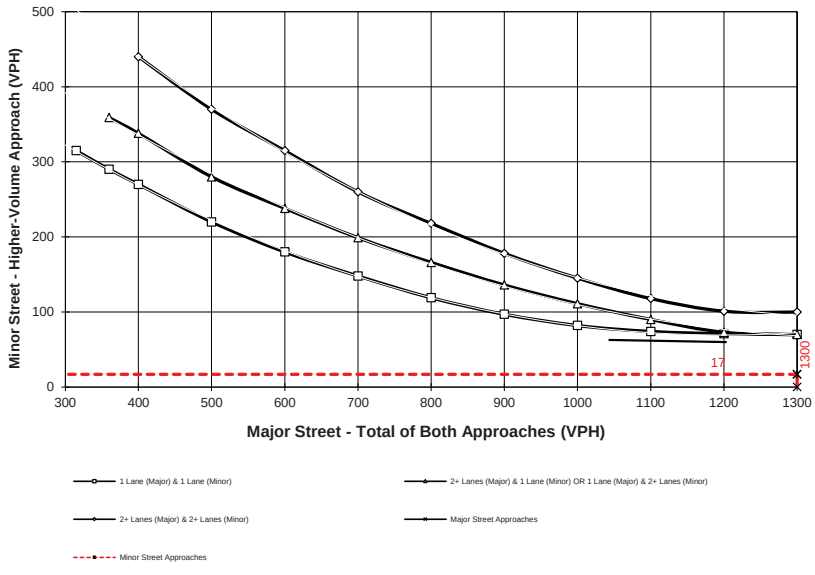
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 64 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **2045 With Project PM Peak Hour Warrants**

Major Street Name = **Twentynine Palms Hwy. (SR-62)** Total of Both Approaches (VPH) = **3,339**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Monte Vista Av.** High Volume Approach (VPH) = **17**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 100 vph applies as the lower threshold for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #2

F:\UXRjobs_15600_16000_15600\15631\Warrants\06 - 2045WP\02R_PM.xls\Fig 4C-4 (Rural Peak)

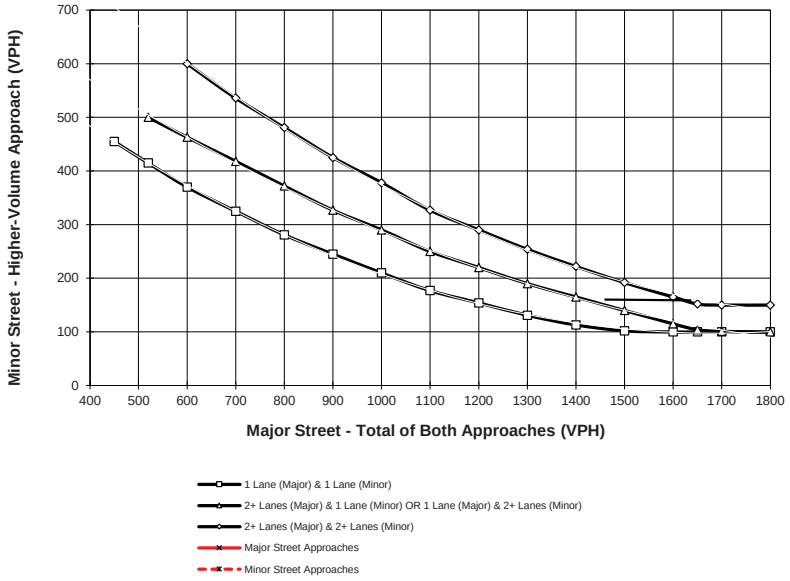
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2045 With Project AM Peak Hour Warrants**

Major Street Name = **Lear Av.**
Total of Both Approaches (VPH) = **8**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Cactus Dr.**
High Volume Approach (VPH) = **3**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

F:\UXRjobs_15600_16000_15600\15631\Warrants\06 - 2045WPI03U_AM.xls\Fig 4C-3 (Urban Peak)

California MUTCD 2014 Edition
(FHWA's MUTCD 2009, as amended for use in California)

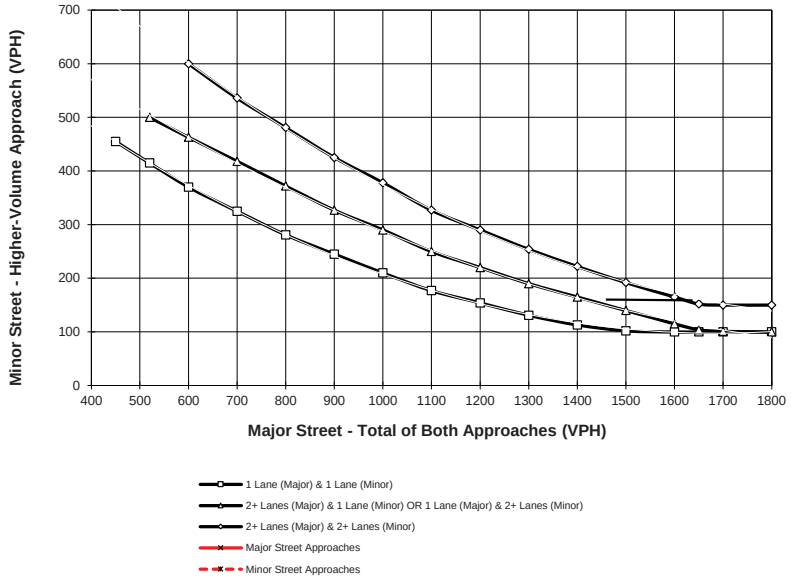
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2045 With Project PM Peak Hour Warrants**

Major Street Name = **Lear Av.**
Total of Both Approaches (VPH) = **9**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Cactus Dr.**
High Volume Approach (VPH) = **3**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #3

F:\UXRjobs_15600_16000_15600\15631\Warrants\06 - 2045WPI03U_PM.xls\Fig 4C-3 (Urban Peak)

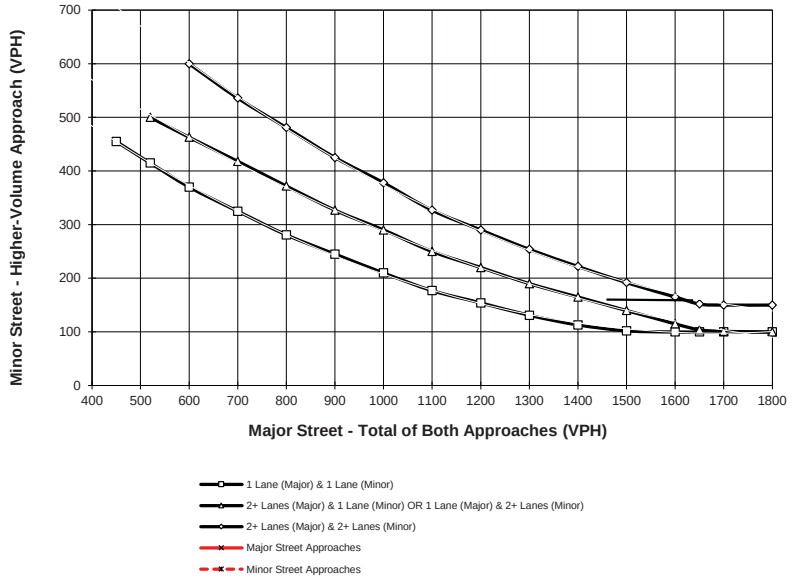
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2045 With Project AM Peak Hour Warrants**

Major Street Name = **Sullivan Rd.**
Total of Both Approaches (VPH) = **6**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Lear Av.**
High Volume Approach (VPH) = **4**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #4

F:\UXRjobs_15600_16000_15600\15631\Warrants\06 - 2045WP\04U_AM.xls\Fig 4C-3 (Urban Peak)

California MUTCD 2014 Edition
(FHWA's MUTCD 2009, as amended for use in California)

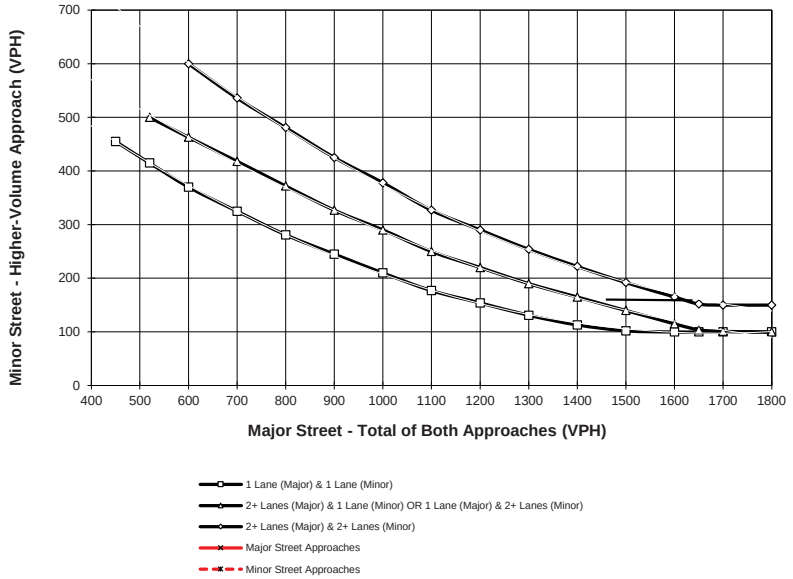
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2045 With Project PM Peak Hour Warrants**

Major Street Name = **Sullivan Rd.**
Total of Both Approaches (VPH) = **8**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **Lear Av.**
High Volume Approach (VPH) = **4**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #4

F:\UXRjobs_15600_16000_15600\15631\Warrants\06 - 2045WP\04U_PM.xls\Fig 4C-3 (Urban Peak)

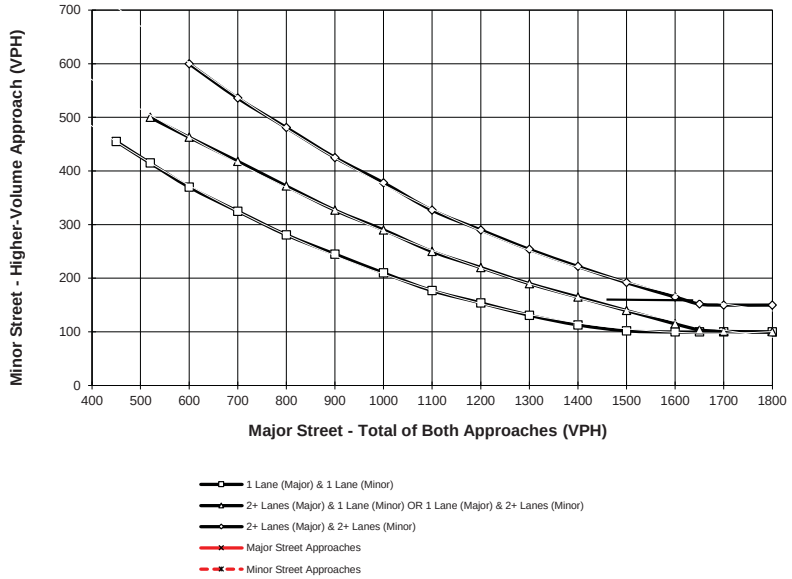
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2045 With Project AM Peak Hour Warrants**

Major Street Name = **Lear Av.**
Total of Both Approaches (VPH) = **40**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **N. Project Access**
High Volume Approach (VPH) = **20**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #5

California MUTCD 2014 Edition
(FHWA's MUTCD 2009, as amended for use in California)

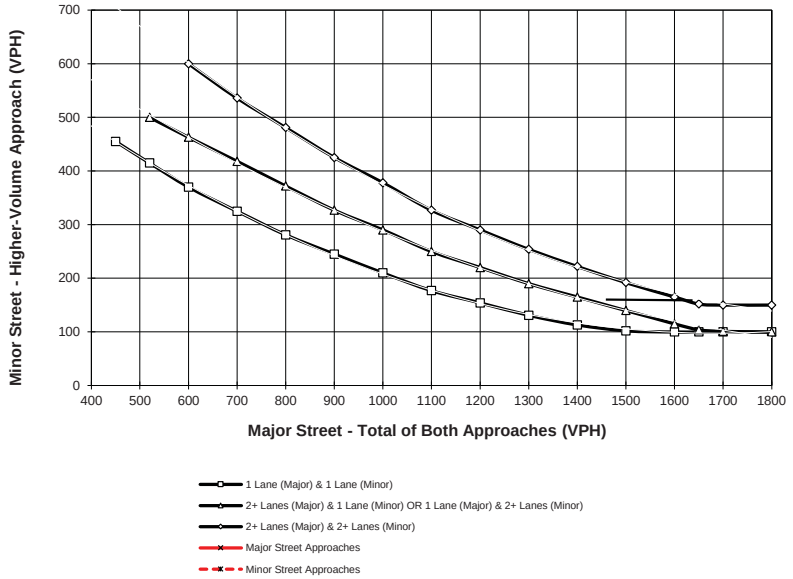
Figure 4C-3. Warrant 3, Peak Hour

Traffic Conditions = **2045 With Project PM Peak Hour Warrants**

Major Street Name = **Lear Av.**
Total of Both Approaches (VPH) = **39**
Number of Approach Lanes on Major Street = **1**

Minor Street Name = **N. Project Access**
High Volume Approach (VPH) = **31**
Number of Approach Lanes On Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



*Note: 150 vph applies as the lower threshold for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold for a minor-street approach with one lane

Intersection ID: #5

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	E+P
				CALC JC	DATE 11/15/23
				CHK	DATE

Jurisdiction: **City of Twentynine Palms**
Major Street: **Lear Av.**
Minor Street: **Cactus Dr.**
Critical Approach Speed (Major) 30 mph
Critical Approach Speed (Minor) 30 mph

Major Street Approach Lanes = **1** lane
Minor Street Approach Lanes **1** lane

Major Street Future ADT = **102** vpd
Minor Street Future ADT = **34** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……..
or
In built up area of isolated community of < 10,000 population ……..

URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL	Minimum Requirements ADT: Vehicles Per Day on Major Street (Total of Both Approaches)		Minimum Requirements ADT: Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
XX	Urban	Rural	Urban	Rural
CONDITION A - Minimum Vehicular Volume				
Satisfied / Not Satisfied XX				
Number of lanes for moving traffic on each approach				
Major Street / Minor Street				
1 **102** / *1* **34**	8,000	5,600	2,400	1,680
2 + / *1*	9,600	6,720	2,400	1,680
2 + / *2* +	9,600	6,720	3,200	2,240
1 / *2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic				
Satisfied / Not Satisfied XX				
Number of lanes for moving traffic on each approach				
Major Street / Minor Street				
1 **102** / *1* **34**	12,000	8,400	1,200	850
2 + / *1*	14,400	10,080	1,200	850
2 + / *2* +	14,400	10,080	1,600	1,120
1 / *2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B				
Satisfied / Not Satisfied XX				
No one condition satisfied, but following conditions fulfilled 80% of more ….. A 1% B 1%	2 CONDITIONS 80%		2 CONDITIONS 80%	

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	E+P
				CALC JC	DATE 11/15/23
Jurisdiction: **City of Twentynine Palms**				CHK	DATE
Major Street: **Sullivan Rd.**				Critical Approach Speed (Major)	30 mph
Minor Street: **Lear Av.**				Critical Approach Speed (Minor)	30 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes **1** lane

Major Street Future ADT = **78** vpd Minor Street Future ADT = **46** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……..

or

In built up area of isolated community of < 10,000 population ……

URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL	Minimum Requirements ADT			
	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
CONDITION A - Minimum Vehicular Volume	Urban	Rural	Urban	Rural
Satisfied / Not Satisfied: XX / XX				
Number of lanes for moving traffic on each approach: Major Street / Minor Street				
1 **78** / *1* **46**	8,000	5,600	2,400	1,680
2 + / *1*	9,600	6,720	2,400	1,680
2 + / *2* +	9,600	6,720	3,200	2,240
1 / *2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied / Not Satisfied: XX				
Number of lanes for moving traffic on each approach: Major Street / Minor Street	Urban	Rural	Urban	Rural
1 **78** / *1* **46**	12,000	8,400	1,200	850
2 + / *1*	14,400	10,080	1,200	850
2 + / *2* +	14,400	10,080	1,600	1,120
1 / *2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B				
Satisfied / Not Satisfied: XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more ….. A: 1% B: 1%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	C (2025) w/ Project
				CALC JC	DATE 11/15/23
				CHK	DATE

Jurisdiction: **City of Twentynine Palms**
Major Street: **Lear Av.** — Critical Approach Speed (Major) 30 mph
Minor Street: **Cactus Dr.** — Critical Approach Speed (Minor) 30 mph

Major Street Approach Lanes = **1** lane — Minor Street Approach Lanes **1** lane

Major Street Future ADT = **103** vpd — Minor Street Future ADT = **35** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……..

or

In built up area of isolated community of < 10,000 population ……..

URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL	Minimum Requirements ADT			
XX	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
CONDITION A - Minimum Vehicular Volume	Urban	Rural	Urban	Rural
Satisfied / Not Satisfied: XX				
Number of lanes for moving traffic on each approach				
Major Street / Minor Street				
1 **103** / *1* **35**	8,000	5,600	2,400	1,680
2 + / *1*	9,600	6,720	2,400	1,680
2 + / *2* +	9,600	6,720	3,200	2,240
1 / *2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied / Not Satisfied: XX				
Number of lanes for moving traffic on each approach				
Major Street / Minor Street	Urban	Rural	Urban	Rural
1 **103** / *1* **35**	12,000	8,400	1,200	850
2 + / *1*	14,400	10,080	1,200	850
2 + / *2* +	14,400	10,080	1,600	1,120
1 / *2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B				
Satisfied / Not Satisfied: XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more ….. **A** 1% **B** 1%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

DIST	CO	RTE	PM	TRAFFIC CONDITIONS	C (2025) w/ Project
				CALC JC	DATE 11/15/23
				CHK	DATE

Jurisdiction: **City of Twentynine Palms**
Major Street: **Sullivan Rd.**
Minor Street: **Lear Av.**
Critical Approach Speed (Major) 30 mph
Critical Approach Speed (Minor) 30 mph

Major Street Approach Lanes = **1** lane
Minor Street Approach Lanes **1** lane

Major Street Future ADT = **79** vpd
Minor Street Future ADT = **47** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……..
or
In built up area of isolated community of < 10,000 population ……..

URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements ADT			
XX					
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **79**	*1* **47**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **79**	*1* **47**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 1% **B** 1%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

DIST	CO	RTE	PM				
				TRAFFIC CONDITIONS			**2045NP**
				CALC	JC	DATE	04/19/24
Jurisdiction:	**City of Twentynine Palms**			CHK		DATE	
Major Street:	**Lear Av.**			Critical Approach Speed (Major)			30 mph
Minor Street:	**Cactus Dr.**			Critical Approach Speed (Minor)			30 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes = **1** lane

Major Street Future ADT = **450** vpd Minor Street Future ADT = **25** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……..

or

In built up area of isolated community of < 10,000 population ……

URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements ADT			
XX					
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **450**	*1* **25**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **450**	*1* **25**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 1% **B** 2%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM		TRAFFIC CONDITIONS		2045NP
				CALC	JC	DATE	04/19/24
Jurisdiction:	City of Twentynine Palms			CHK		DATE	
Major Street:	Lear Av.				Critical Approach Speed (Major)		30 mph
Minor Street:	Sullivan Rd.				Critical Approach Speed (Minor)		30 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes = **1** lane

Major Street Future ADT = **200** vpd Minor Street Future ADT = **100** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……..

or

In built up area of isolated community of < 10,000 population ……

URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements ADT			
XX					
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **200**	*1* **100**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **200**	*1* **100**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 3% **B** 2%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet (Average Traffic Estimate Form)

DIST	CO	RTE	PM		TRAFFIC CONDITIONS		2045NP
				CALC	JC	DATE	04/19/24
Jurisdiction:	City of Twentynine Palms			CHK		DATE	
Major Street:	Lear Av.				Critical Approach Speed (Major)		30 mph
Minor Street:	N. Project Access				Critical Approach Speed (Minor)		30 mph

Major Street Approach Lanes = **1** lane

Minor Street Approach Lanes = **1** lane

Major Street Future ADT = **653** vpd

Minor Street Future ADT = **150** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……..

or

In built up area of isolated community of < 10,000 population ……

URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements ADT: Vehicles Per Day on Major Street (Total of Both Approaches)		Minimum Requirements ADT: Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
XX					
CONDITION A - Minimum Vehicular Volume					
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **653**	*1* **150**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic					
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **653**	*1* **150**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX	2 CONDITIONS		2 CONDITIONS	
No one condition satisfied, but following conditions fulfilled 80% of more …..		80%		80%	
A	**B**				
6%	**5%**				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM		TRAFFIC CONDITIONS		2045WP
				CALC	JC	DATE	04/19/24
Jurisdiction:	City of Twentynine Palms			CHK		DATE	
Major Street:	Lear Av.				Critical Approach Speed (Major)		30 mph
Minor Street:	Cactus Dr.				Critical Approach Speed (Minor)		30 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes = **1** lane

Major Street Future ADT = **250** vpd Minor Street Future ADT = **36** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……..

or

In built up area of isolated community of < 10,000 population ……..

URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements ADT			
XX					
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **250**	*1* **36**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **250**	*1* **36**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 2% **B** 2%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM		TRAFFIC CONDITIONS		2045WP
				CALC	JC	DATE	04/19/24
Jurisdiction:	City of Twentynine Palms			CHK		DATE	
Major Street:	Lear Av.				Critical Approach Speed (Major)		30 mph
Minor Street:	Sullivan Rd.				Critical Approach Speed (Minor)		30 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes = **1** lane

Major Street Future ADT = **100** vpd Minor Street Future ADT = **50** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); ……..

or

In built up area of isolated community of < 10,000 population ……..

URBAN (U)

(Based on Estimated Average Daily Traffic - See Note)

URBAN / RURAL	Minimum Requirements ADT			
	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
CONDITION A - Minimum Vehicular Volume	Urban	Rural	Urban	Rural
Satisfied / Not Satisfied: XX / XX				
Number of lanes for moving traffic on each approach: Major Street / Minor Street				
1 **100** / *1* **50**	8,000	5,600	2,400	1,680
2 + / *1*	9,600	6,720	2,400	1,680
2 + / *2* +	9,600	6,720	3,200	2,240
1 / *2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic	Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied / Not Satisfied: XX	Urban	Rural	Urban	Rural
Number of lanes for moving traffic on each approach: Major Street / Minor Street				
1 **100** / *1* **50**	12,000	8,400	1,200	850
2 + / *1*	14,400	10,080	1,200	850
2 + / *2* +	14,400	10,080	1,600	1,120
1 / *2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B				
Satisfied / Not Satisfied: XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more ….. A: 1% B: 1%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)

DIST	CO	RTE	PM		TRAFFIC CONDITIONS		2045WP
				CALC	JC	DATE	04/19/24
Jurisdiction:	City of Twentynine Palms			CHK		DATE	
Major Street:	Lear Av.				Critical Approach Speed (Major)		30 mph
Minor Street:	N. Project Access				Critical Approach Speed (Minor)		30 mph

Major Street Approach Lanes = **1** lane Minor Street Approach Lanes = **1** lane

Major Street Future ADT = **744** vpd Minor Street Future ADT = **449** vpd

Speed limit or critical speed on major street traffic > 64 km/h (40 mph); …….. [ ]

or **URBAN (U)**

In built up area of isolated community of < 10,000 population …… [ ]

(Based on Estimated Average Daily Traffic - See Note)

URBAN	RURAL	Minimum Requirements ADT			
XX					
CONDITION A - Minimum Vehicular Volume		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **744**	*1* **449**	8,000	5,600	2,400	1,680
2 +	*1*	9,600	6,720	2,400	1,680
2 +	*2* +	9,600	6,720	3,200	2,240
1	*2* +	8,000	5,600	3,200	2,240
CONDITION B - Interruption of Continuous Traffic		Vehicles Per Day on Major Street (Total of Both Approaches)		Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	
Satisfied	Not Satisfied				
	XX				
Number of lanes for moving traffic on each approach					
Major Street	Minor Street	Urban	Rural	Urban	Rural
1 **744**	*1* **449**	12,000	8,400	1,200	850
2 +	*1*	14,400	10,080	1,200	850
2 +	*2* +	14,400	10,080	1,600	1,120
1	*2* +	12,000	8,400	1,600	1,120
Combination of CONDITIONS A + B					
Satisfied	Not Satisfied				
	XX	2 CONDITIONS 80%		2 CONDITIONS 80%	
No one condition satisfied, but following conditions fulfilled 80% of more …..	**A** 9% **B** 6%				

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

APPENDIX 5.1: EXISTING PLUS PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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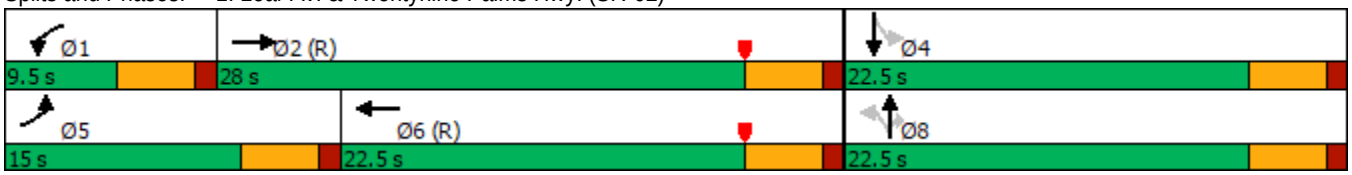
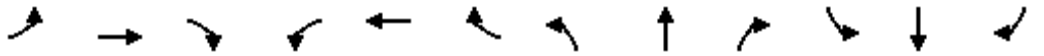
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	375	27	7	344	5	13	2	5	7	4	141
Future Volume (vph)	175	375	27	7	344	5	13	2	5	7	4	141
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	300		0	310		0	0		50	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	120			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			55			35			55	
Link Distance (ft)		655			2881			300			432	
Travel Time (s)		8.1			35.7			5.8			5.4	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (s)	15.0	28.0		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (%)	25.0%	46.7%		15.8%	37.5%		37.5%	37.5%	37.5%	37.5%	37.5%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lear Av. & Twentynine Palms Hwy. (SR-62)

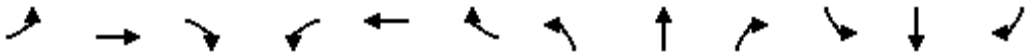




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	375	27	7	344	5	13	2	5	7	4	141
Future Volume (veh/h)	175	375	27	7	344	5	13	2	5	7	4	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	190	408	29	8	374	5	14	2	5	8	4	153
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	230	1481	105	18	1126	15	448	56	448	70	26	419
Arrive On Green	0.14	0.46	0.46	0.01	0.33	0.33	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1594	3187	226	1688	3401	45	1118	188	1494	24	86	1396
Grp Volume(v), veh/h	190	215	222	8	185	194	16	0	5	165	0	0
Grp Sat Flow(s),veh/h/ln	1594	1683	1730	1688	1683	1763	1306	0	1494	1506	0	0
Q Serve(g_s), s	7.0	4.7	4.7	0.3	5.0	5.0	0.0	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.0	4.7	4.7	0.3	5.0	5.0	0.4	0.0	0.1	5.1	0.0	0.0
Prop In Lane	1.00		0.13	1.00		0.03	0.87		1.00	0.05		0.93
Lane Grp Cap(c), veh/h	230	782	804	18	557	584	504	0	448	515	0	0
V/C Ratio(X)	0.83	0.27	0.28	0.46	0.33	0.33	0.03	0.00	0.01	0.32	0.00	0.00
Avail Cap(c_a), veh/h	279	782	804	141	557	584	504	0	448	515	0	0
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	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.0	9.9	9.9	29.5	15.1	15.1	14.8	0.0	14.7	16.5	0.0	0.0
Incr Delay (d2), s/veh	15.6	0.9	0.9	17.3	1.6	1.5	0.1	0.0	0.0	1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	1.4	1.5	0.2	1.7	1.8	0.2	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.6	10.7	10.7	46.8	16.7	16.6	15.0	0.0	14.8	18.1	0.0	0.0
LnGrp LOS	D	B	B	D	B	B	B	A	B	B	A	A
Approach Vol, veh/h		627			387			21			165	
Approach Delay, s/veh		19.8			17.3			14.9			18.1	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	32.4		22.5	13.1	24.4		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	23.5		18.0	10.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.3	6.7		7.1	9.0	7.0		2.4				
Green Ext Time (p_c), s	0.0	1.9		0.5	0.1	1.3		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		18.7	
HCM 6th LOS		B	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	569	1	5	492	1	2	1	7	1	1	1
Future Volume (vph)	1	569	1	5	492	1	2	1	7	1	1	1
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	50		0	50		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		402			655			418			421	
Travel Time (s)		5.0			8.1			9.5			9.6	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

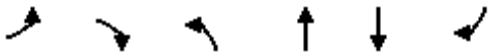
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	569	1	5	492	1	2	1	7	1	1	1
Future Vol, veh/h	1	569	1	5	492	1	2	1	7	1	1	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	612	1	5	529	1	2	1	8	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	535	0	0	618	0	0	900	1165	317	859	1165	275
Stage 1	-	-	-	-	-	-	620	620	-	545	545	-
Stage 2	-	-	-	-	-	-	280	545	-	314	620	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1029	-	-	958	-	-	233	193	679	250	193	722
Stage 1	-	-	-	-	-	-	442	478	-	490	517	-
Stage 2	-	-	-	-	-	-	703	517	-	671	478	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1024	-	-	953	-	-	228	190	673	243	190	715
Mov Cap-2 Maneuver	-	-	-	-	-	-	228	190	-	243	190	-
Stage 1	-	-	-	-	-	-	439	475	-	487	512	-
Stage 2	-	-	-	-	-	-	693	512	-	658	475	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	14	18.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	409	1024	-	-	953	-	-	278
HCM Lane V/C Ratio	0.026	0.001	-	-	0.006	-	-	0.012
HCM Control Delay (s)	14	8.5	-	-	8.8	-	-	18.1
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	3	1	1	1	1	2
Future Volume (vph)	3	1	1	1	1	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)	30			55	35	
Link Distance (ft)	415			2063	288	
Travel Time (s)	9.4			25.6	5.6	
Confl. Peds. (#/hr)	5	5	5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

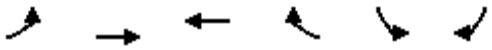
Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	1	1	1	1	2
Future Vol, veh/h	3	1	1	1	1	2
Conflicting Peds, #/hr	5	5	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	1	1	1	1	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	15	12	8	0	-	0
Stage 1	7	-	-	-	-	-
Stage 2	8	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1004	1069	1612	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	1015	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	993	1059	1604	-	-	-
Mov Cap-2 Maneuver	993	-	-	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	1010	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	3.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1604	-	1009	-	-
HCM Lane V/C Ratio	0.001	-	0.004	-	-
HCM Control Delay (s)	7.2	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	2	1	1	1	1
Future Volume (vph)	1	2	1	1	1	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)		30	30		55	
Link Distance (ft)		460	644		2063	
Travel Time (s)		10.5	14.6		25.6	
Confl. Peds. (#/hr)	5			5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	2	1	1	1	1
Future Vol, veh/h	1	2	1	1	1	1
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	2	1	1	1	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	7	0	-	0	16	12
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	9	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1614	-	-	-	1002	1069
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	1014	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1606	-	-	-	991	1059
Mov Cap-2 Maneuver	-	-	-	-	991	-
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	1009	-

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1606	-	-	-	1024
HCM Lane V/C Ratio	0.001	-	-	-	0.002
HCM Control Delay (s)	7.2	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	15	1	2	33	1
Future Volume (vph)	1	15	1	2	33	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)	30		30			30
Link Distance (ft)	327		288			300
Travel Time (s)	7.4		6.5			6.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	7.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	15	1	2	33	1
Future Vol, veh/h	1	15	1	2	33	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	16	1	2	36	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	75	2	0	0	3	0
Stage 1	2	-	-	-	-	-
Stage 2	73	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	928	1082	-	-	1619	-
Stage 1	1021	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	908	1082	-	-	1619	-
Mov Cap-2 Maneuver	908	-	-	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	929	-	-	-	-	-

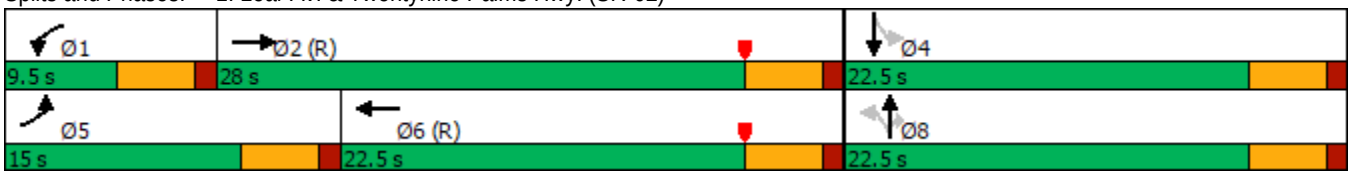
Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	7.1
HCM LOS	A		

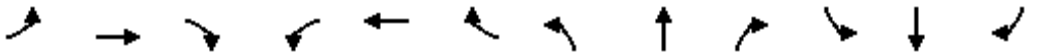
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1069	1619	-
HCM Lane V/C Ratio	-	-	0.016	0.022	-
HCM Control Delay (s)	-	-	8.4	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	135	442	23	16	471	13	26	7	8	8	7	269
Future Volume (vph)	135	442	23	16	471	13	26	7	8	8	7	269
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	300		0	310		0	0		50	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	120			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			55			35			55	
Link Distance (ft)		655			2881			300			432	
Travel Time (s)		8.1			35.7			5.8			5.4	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (s)	15.0	28.0		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (%)	25.0%	46.7%		15.8%	37.5%		37.5%	37.5%	37.5%	37.5%	37.5%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lear Av. & Twentynine Palms Hwy. (SR-62)

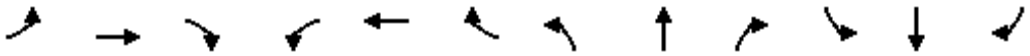




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	135	442	23	16	471	13	26	7	8	8	7	269
Future Volume (veh/h)	135	442	23	16	471	13	26	7	8	8	7	269
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	148	486	25	18	518	14	29	8	9	9	8	296
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	183	1477	76	36	1206	33	313	73	448	66	20	427
Arrive On Green	0.11	0.45	0.45	0.02	0.36	0.36	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1594	3257	167	1688	3348	90	688	244	1494	15	67	1422
Grp Volume(v), veh/h	148	251	260	18	260	272	37	0	9	313	0	0
Grp Sat Flow(s),veh/h/ln	1594	1683	1741	1688	1683	1755	932	0	1494	1504	0	0
Q Serve(g_s), s	5.4	5.7	5.8	0.6	7.0	7.0	0.0	0.0	0.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.4	5.7	5.8	0.6	7.0	7.0	1.4	0.0	0.3	11.0	0.0	0.0
Prop In Lane	1.00		0.10	1.00		0.05	0.78		1.00	0.03		0.95
Lane Grp Cap(c), veh/h	183	763	789	36	606	632	387	0	448	513	0	0
V/C Ratio(X)	0.81	0.33	0.33	0.49	0.43	0.43	0.10	0.00	0.02	0.61	0.00	0.00
Avail Cap(c_a), veh/h	279	763	789	141	606	632	387	0	448	513	0	0
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	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.9	10.5	10.5	29.0	14.5	14.5	15.1	0.0	14.8	18.6	0.0	0.0
Incr Delay (d2), s/veh	9.8	1.1	1.1	10.0	2.2	2.1	0.5	0.0	0.1	5.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	1.7	1.8	0.3	2.4	2.5	0.4	0.0	0.1	3.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	11.7	11.7	39.0	16.7	16.7	15.6	0.0	14.9	23.9	0.0	0.0
LnGrp LOS	D	B	B	D	B	B	B	A	B	C	A	A
Approach Vol, veh/h		659			550			46			313	
Approach Delay, s/veh		17.1			17.4			15.4			23.9	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	31.7		22.5	11.4	26.1		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	23.5		18.0	10.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.6	7.8		13.0	7.4	9.0		3.4				
Green Ext Time (p_c), s	0.0	2.2		0.7	0.1	1.8		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			18.5									
HCM 6th LOS			B									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	587	4	14	751	1	3	1	12	1	2	1
Future Volume (vph)	1	587	4	14	751	1	3	1	12	1	2	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	50		0	50		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		402			655			418			421	
Travel Time (s)		5.0			8.1			9.5			9.6	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

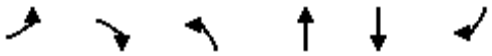
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	587	4	14	751	1	3	1	12	1	2	1
Future Vol, veh/h	1	587	4	14	751	1	3	1	12	1	2	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	645	4	15	825	1	3	1	13	1	2	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	831	0	0	654	0	0	1103	1515	335	1191	1517	423
Stage 1	-	-	-	-	-	-	654	654	-	861	861	-
Stage 2	-	-	-	-	-	-	449	861	-	330	656	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	6.7	5.5	6.5
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	5.5	5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	5.5	5	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	797	-	-	929	-	-	166	118	661	189	183	610
Stage 1	-	-	-	-	-	-	422	461	-	406	422	-
Stage 2	-	-	-	-	-	-	559	371	-	723	508	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	793	-	-	925	-	-	160	115	655	180	178	604
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	115	-	180	178	-
Stage 1	-	-	-	-	-	-	419	458	-	404	413	-
Stage 2	-	-	-	-	-	-	543	363	-	702	505	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	15.8	21.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	350	793	-	-	925	-	-	217
HCM Lane V/C Ratio	0.05	0.001	-	-	0.017	-	-	0.02
HCM Control Delay (s)	15.8	9.5	-	-	9	-	-	21.9
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	3	1	1	1	1	3
Future Volume (vph)	3	1	1	1	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)	30			55	35	
Link Distance (ft)	415			2063	288	
Travel Time (s)	9.4			25.6	5.6	
Confl. Peds. (#/hr)	5	5	5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

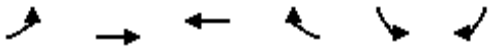
Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	1	1	1	1	3
Future Vol, veh/h	3	1	1	1	1	3
Conflicting Peds, #/hr	5	5	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	1	1	1	1	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	16	13	9	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	8	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1002	1067	1611	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	1015	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	991	1057	1603	-	-	-
Mov Cap-2 Maneuver	991	-	-	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	1010	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	3.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1603	-	1007	-	-
HCM Lane V/C Ratio	0.001	-	0.004	-	-
HCM Control Delay (s)	7.2	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	2	2	1	1	1
Future Volume (vph)	1	2	2	1	1	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)		30	30		55	
Link Distance (ft)		460	644		2063	
Travel Time (s)		10.5	14.6		25.6	
Confl. Peds. (#/hr)	5			5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	2	2	1	1	1
Future Vol, veh/h	1	2	2	1	1	1
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	2	2	1	1	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	8	0	-	0	17	13
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	9	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1612	-	-	-	1001	1067
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	1014	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1604	-	-	-	990	1057
Mov Cap-2 Maneuver	-	-	-	-	990	-
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	1009	-

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1604	-	-	-	1022
HCM Lane V/C Ratio	0.001	-	-	-	0.002
HCM Control Delay (s)	7.2	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	28	1	2	28	1
Future Volume (vph)	2	28	1	2	28	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)	30		30			30
Link Distance (ft)	327		288			300
Travel Time (s)	7.4		6.5			6.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	7.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	28	1	2	28	1
Future Vol, veh/h	2	28	1	2	28	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	30	1	2	30	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	63	2	0	0	3	0
Stage 1	2	-	-	-	-	-
Stage 2	61	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	943	1082	-	-	1619	-
Stage 1	1021	-	-	-	-	-
Stage 2	962	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	925	1082	-	-	1619	-
Mov Cap-2 Maneuver	925	-	-	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	944	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1070	1619	-
HCM Lane V/C Ratio	-	-	0.03	0.019	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

APPENDIX 6.1: CUMULATIVE (2025) WITHOUT PROJECT CONDITIONS INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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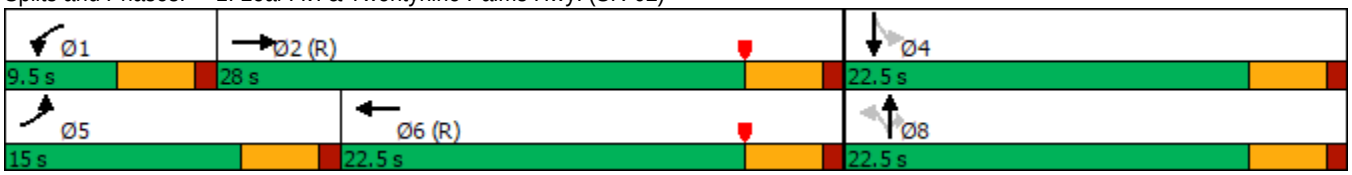
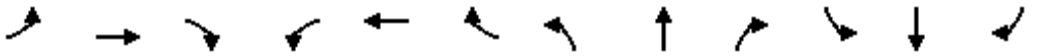
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	462	1	1	425	8	1	1	2	11	2	147
Future Volume (vph)	182	462	1	1	425	8	1	1	2	11	2	147
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	300		0	310		0	0		50	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	120			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			55			35			55	
Link Distance (ft)		655			2881			300			432	
Travel Time (s)		8.1			35.7			5.8			5.4	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (s)	15.0	28.0		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (%)	25.0%	46.7%		15.8%	37.5%		37.5%	37.5%	37.5%	37.5%	37.5%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lear Av. & Twentynine Palms Hwy. (SR-62)

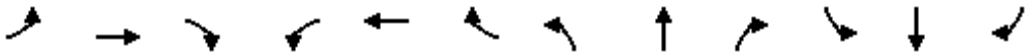




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	462	1	1	425	8	1	1	2	11	2	147
Future Volume (veh/h)	182	462	1	1	425	8	1	1	2	11	2	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	198	502	1	1	462	9	1	1	2	12	2	160
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	1633	3	3	1100	21	291	260	448	76	25	415
Arrive On Green	0.15	0.47	0.47	0.00	0.33	0.33	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1594	3447	7	1688	3377	66	669	866	1494	39	82	1384
Grp Volume(v), veh/h	198	245	258	1	230	241	2	0	2	174	0	0
Grp Sat Flow(s),veh/h/ln	1594	1683	1771	1688	1683	1759	1535	0	1494	1505	0	0
Q Serve(g_s), s	7.2	5.4	5.4	0.0	6.4	6.4	0.0	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.2	5.4	5.4	0.0	6.4	6.4	0.0	0.0	0.1	5.5	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.04	0.50		1.00	0.07		0.92
Lane Grp Cap(c), veh/h	238	797	839	3	548	573	551	0	448	516	0	0
V/C Ratio(X)	0.83	0.31	0.31	0.36	0.42	0.42	0.00	0.00	0.00	0.34	0.00	0.00
Avail Cap(c_a), veh/h	279	797	839	141	548	573	551	0	448	516	0	0
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	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.8	9.7	9.7	29.9	15.8	15.8	14.7	0.0	14.7	16.6	0.0	0.0
Incr Delay (d2), s/veh	16.7	1.0	1.0	62.7	2.4	2.3	0.0	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	1.6	1.7	0.1	2.3	2.4	0.0	0.0	0.0	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	10.7	10.7	92.6	18.2	18.1	14.7	0.0	14.7	18.4	0.0	0.0
LnGrp LOS	D	B	B	F	B	B	B	A	B	B	A	A
Approach Vol, veh/h		701			472			4			174	
Approach Delay, s/veh		19.4			18.3			14.7			18.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.6	32.9		22.5	13.5	24.0		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	23.5		18.0	10.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.0	7.4		7.5	9.2	8.4		2.1				
Green Ext Time (p_c), s	0.0	2.2		0.6	0.1	1.6		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		18.9	
HCM 6th LOS		B	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	637	1	5	567	1	2	1	7	1	1	1
Future Volume (vph)	1	637	1	5	567	1	2	1	7	1	1	1
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	50		0	50		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		402			655			418			421	
Travel Time (s)		5.0			8.1			9.5			9.6	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	637	1	5	567	1	2	1	7	1	1	1
Future Vol, veh/h	1	637	1	5	567	1	2	1	7	1	1	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	685	1	5	610	1	2	1	8	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	616	0	0	691	0	0	1014	1319	353	976	1319	316
Stage 1	-	-	-	-	-	-	693	693	-	626	626	-
Stage 2	-	-	-	-	-	-	321	626	-	350	693	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	960	-	-	900	-	-	193	156	643	206	156	680
Stage 1	-	-	-	-	-	-	400	443	-	439	475	-
Stage 2	-	-	-	-	-	-	665	475	-	639	443	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	955	-	-	896	-	-	189	153	637	200	153	674
Mov Cap-2 Maneuver	-	-	-	-	-	-	189	153	-	200	153	-
Stage 1	-	-	-	-	-	-	398	440	-	436	470	-
Stage 2	-	-	-	-	-	-	656	470	-	626	440	-

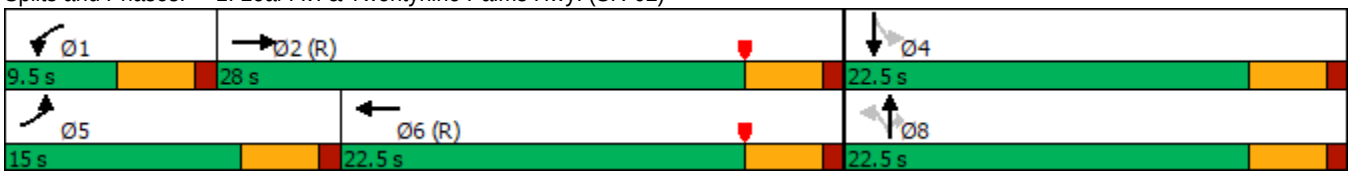
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	15.4	20.9
HCM LOS			C	C

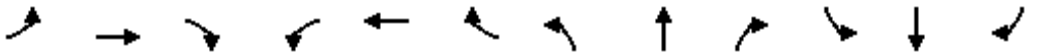
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	356	955	-	-	896	-	-	230
HCM Lane V/C Ratio	0.03	0.001	-	-	0.006	-	-	0.014
HCM Control Delay (s)	15.4	8.8	-	-	9	-	-	20.9
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	533	1	11	558	17	4	5	3	12	5	280
Future Volume (vph)	140	533	1	11	558	17	4	5	3	12	5	280
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	300		0	310		0	0		50	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	120			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			55			35			55	
Link Distance (ft)		655			2881			300			432	
Travel Time (s)		8.1			35.7			5.8			5.4	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (s)	15.0	28.0		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (%)	25.0%	46.7%		15.8%	37.5%		37.5%	37.5%	37.5%	37.5%	37.5%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lear Av. & Twentynine Palms Hwy. (SR-62)

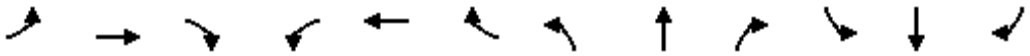




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	533	1	11	558	17	4	5	3	12	5	280
Future Volume (veh/h)	140	533	1	11	558	17	4	5	3	12	5	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	154	586	1	12	613	19	4	5	3	13	5	308
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	1586	3	25	1186	37	224	245	448	69	18	426
Arrive On Green	0.12	0.46	0.46	0.02	0.36	0.36	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1594	3448	6	1688	3333	103	458	817	1494	23	60	1419
Grp Volume(v), veh/h	154	286	301	12	309	323	9	0	3	326	0	0
Grp Sat Flow(s),veh/h/ln	1594	1683	1771	1688	1683	1752	1275	0	1494	1502	0	0
Q Serve(g_s), s	5.7	6.6	6.6	0.4	8.7	8.7	0.0	0.0	0.1	0.6	0.0	0.0
Cycle Q Clear(g_c), s	5.7	6.6	6.6	0.4	8.7	8.7	0.2	0.0	0.1	11.6	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.06	0.44		1.00	0.04		0.94
Lane Grp Cap(c), veh/h	190	774	814	25	599	624	469	0	448	513	0	0
V/C Ratio(X)	0.81	0.37	0.37	0.47	0.52	0.52	0.02	0.00	0.01	0.64	0.00	0.00
Avail Cap(c_a), veh/h	279	774	814	141	599	624	469	0	448	513	0	0
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	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.8	10.5	10.5	29.3	15.3	15.3	14.8	0.0	14.7	18.8	0.0	0.0
Incr Delay (d2), s/veh	10.7	1.4	1.3	12.9	3.2	3.1	0.1	0.0	0.0	5.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.0	2.1	0.2	3.1	3.2	0.1	0.0	0.0	4.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	11.9	11.8	42.2	18.4	18.3	14.9	0.0	14.8	24.7	0.0	0.0
LnGrp LOS	D	B	B	D	B	B	B	A	B	C	A	A
Approach Vol, veh/h		741			644			12			326	
Approach Delay, s/veh		17.0			18.8			14.8			24.7	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	32.1		22.5	11.7	25.8		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	23.5		18.0	10.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.4	8.6		13.6	7.7	10.7		2.2				
Green Ext Time (p_c), s	0.0	2.6		0.7	0.1	1.9		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		19.1	
HCM 6th LOS		B	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	661	4	15	826	1	3	1	12	1	2	1
Future Volume (vph)	1	661	4	15	826	1	3	1	12	1	2	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	50		0	50		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		402			655			418			421	
Travel Time (s)		5.0			8.1			9.5			9.6	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	661	4	15	826	1	3	1	12	1	2	1
Future Vol, veh/h	1	661	4	15	826	1	3	1	12	1	2	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	726	4	16	908	1	3	1	13	1	2	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	914	0	0	735	0	0	1227	1681	375	1317	1683	465
Stage 1	-	-	-	-	-	-	735	735	-	946	946	-
Stage 2	-	-	-	-	-	-	492	946	-	371	737	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	6.7	5.5	6.5
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	5.5	5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	5.5	5	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	742	-	-	866	-	-	134	94	623	157	152	576
Stage 1	-	-	-	-	-	-	377	424	-	369	390	-
Stage 2	-	-	-	-	-	-	527	338	-	692	472	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	738	-	-	862	-	-	129	91	617	149	147	571
Mov Cap-2 Maneuver	-	-	-	-	-	-	129	91	-	149	147	-
Stage 1	-	-	-	-	-	-	375	421	-	367	381	-
Stage 2	-	-	-	-	-	-	511	330	-	671	469	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	17.8	25.4
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	298	738	-	-	862	-	-	181
HCM Lane V/C Ratio	0.059	0.001	-	-	0.019	-	-	0.024
HCM Control Delay (s)	17.8	9.9	-	-	9.3	-	-	25.4
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1

APPENDIX 6.2: CUMULATIVE (2025) WITH PROJECT CONDITIONS

INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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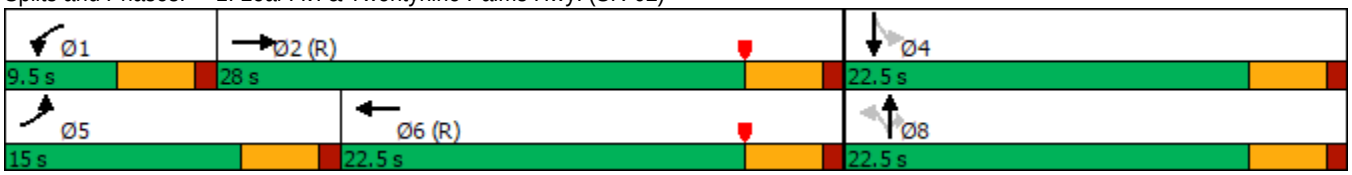
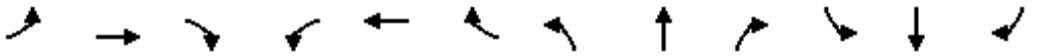
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	462	27	7	425	8	13	2	5	11	4	147
Future Volume (vph)	182	462	27	7	425	8	13	2	5	11	4	147
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	300		0	310		0	0		50	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	120			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			55			35			55	
Link Distance (ft)		655			2881			300			432	
Travel Time (s)		8.1			35.7			5.8			5.4	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (s)	15.0	28.0		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (%)	25.0%	46.7%		15.8%	37.5%		37.5%	37.5%	37.5%	37.5%	37.5%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lear Av. & Twentynine Palms Hwy. (SR-62)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	182	462	27	7	425	8	13	2	5	11	4	147
Future Volume (veh/h)	182	462	27	7	425	8	13	2	5	11	4	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	198	502	29	8	462	9	14	2	5	12	4	160
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	1503	87	18	1100	21	441	55	448	76	30	411
Arrive On Green	0.15	0.46	0.46	0.01	0.33	0.33	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1594	3234	186	1688	3377	66	1095	185	1494	39	98	1370
Grp Volume(v), veh/h	198	261	270	8	230	241	16	0	5	176	0	0
Grp Sat Flow(s),veh/h/ln	1594	1683	1737	1688	1683	1759	1280	0	1494	1507	0	0
Q Serve(g_s), s	7.2	5.9	5.9	0.3	6.4	6.4	0.0	0.0	0.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.2	5.9	5.9	0.3	6.4	6.4	0.4	0.0	0.1	5.5	0.0	0.0
Prop In Lane	1.00		0.11	1.00		0.04	0.87		1.00	0.07		0.91
Lane Grp Cap(c), veh/h	238	782	807	18	548	573	496	0	448	516	0	0
V/C Ratio(X)	0.83	0.33	0.33	0.46	0.42	0.42	0.03	0.00	0.01	0.34	0.00	0.00
Avail Cap(c_a), veh/h	279	782	807	141	548	573	496	0	448	516	0	0
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	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.8	10.2	10.2	29.5	15.8	15.8	14.8	0.0	14.7	16.6	0.0	0.0
Incr Delay (d2), s/veh	16.7	1.1	1.1	17.3	2.4	2.3	0.1	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	1.8	1.8	0.2	2.3	2.4	0.2	0.0	0.0	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.5	11.3	11.3	46.8	18.2	18.1	15.0	0.0	14.8	18.4	0.0	0.0
LnGrp LOS	D	B	B	D	B	B	B	A	B	B	A	A
Approach Vol, veh/h		729			479			21			176	
Approach Delay, s/veh		19.5			18.6			14.9			18.4	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	32.4		22.5	13.5	24.0		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	23.5		18.0	10.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.3	7.9		7.5	9.2	8.4		2.4				
Green Ext Time (p_c), s	0.0	2.3		0.6	0.1	1.6		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		19.0	
HCM 6th LOS		B	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	663	1	5	579	1	2	1	7	1	1	1
Future Volume (vph)	1	663	1	5	579	1	2	1	7	1	1	1
Ideal Flow (vphpl)	1700	1800	1800	1700	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	50		0	50		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		402			655			418			421	
Travel Time (s)		5.0			8.1			9.5			9.6	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

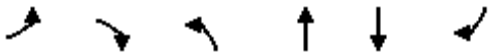
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	663	1	5	579	1	2	1	7	1	1	1
Future Vol, veh/h	1	663	1	5	579	1	2	1	7	1	1	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	713	1	5	623	1	2	1	8	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	629	0	0	719	0	0	1048	1360	367	1003	1360	322
Stage 1	-	-	-	-	-	-	721	721	-	639	639	-
Stage 2	-	-	-	-	-	-	327	639	-	364	721	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	949	-	-	878	-	-	182	147	630	196	147	674
Stage 1	-	-	-	-	-	-	385	430	-	431	469	-
Stage 2	-	-	-	-	-	-	660	469	-	627	430	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	944	-	-	874	-	-	178	145	624	190	145	668
Mov Cap-2 Maneuver	-	-	-	-	-	-	178	145	-	190	145	-
Stage 1	-	-	-	-	-	-	383	427	-	428	464	-
Stage 2	-	-	-	-	-	-	651	464	-	614	427	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	15.9	21.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	341	944	-	-	874	-	-	220
HCM Lane V/C Ratio	0.032	0.001	-	-	0.006	-	-	0.015
HCM Control Delay (s)	15.9	8.8	-	-	9.1	-	-	21.6
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	3	1	1	1	1	2
Future Volume (vph)	3	1	1	1	1	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)	30			55	35	
Link Distance (ft)	415			2063	288	
Travel Time (s)	9.4			25.6	5.6	
Confl. Peds. (#/hr)	5	5	5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

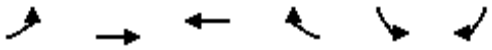
Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	1	1	1	1	2
Future Vol, veh/h	3	1	1	1	1	2
Conflicting Peds, #/hr	5	5	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	1	1	1	1	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	15	12	8	0	-	0
Stage 1	7	-	-	-	-	-
Stage 2	8	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1004	1069	1612	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	1015	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	993	1059	1604	-	-	-
Mov Cap-2 Maneuver	993	-	-	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	1010	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	3.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1604	-	1009	-	-
HCM Lane V/C Ratio	0.001	-	0.004	-	-
HCM Control Delay (s)	7.2	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	2	1	1	1	1
Future Volume (vph)	1	2	1	1	1	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)		30	30		55	
Link Distance (ft)		460	644		2063	
Travel Time (s)		10.5	14.6		25.6	
Confl. Peds. (#/hr)	5			5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	2	1	1	1	1
Future Vol, veh/h	1	2	1	1	1	1
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	2	1	1	1	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	7	0	-	0	16	12
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	9	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1614	-	-	-	1002	1069
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	1014	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1606	-	-	-	991	1059
Mov Cap-2 Maneuver	-	-	-	-	991	-
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	1009	-

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1606	-	-	-	1024
HCM Lane V/C Ratio	0.001	-	-	-	0.002
HCM Control Delay (s)	7.2	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	15	1	2	33	1
Future Volume (vph)	1	15	1	2	33	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)	30		30			30
Link Distance (ft)	327		288			300
Travel Time (s)	7.4		6.5			6.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	7.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	15	1	2	33	1
Future Vol, veh/h	1	15	1	2	33	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	16	1	2	36	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	75	2	0	0	3	0
Stage 1	2	-	-	-	-	-
Stage 2	73	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	928	1082	-	-	1619	-
Stage 1	1021	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	908	1082	-	-	1619	-
Mov Cap-2 Maneuver	908	-	-	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	929	-	-	-	-	-

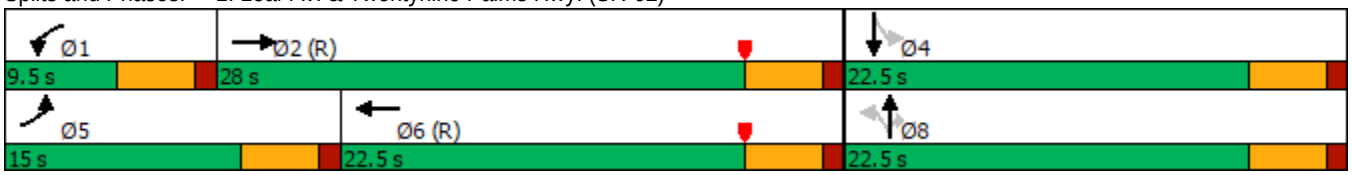
Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	7.1
HCM LOS	A		

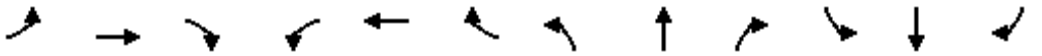
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1069	1619	-
HCM Lane V/C Ratio	-	-	0.016	0.022	-
HCM Control Delay (s)	-	-	8.4	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	533	23	16	558	17	26	7	8	12	7	280
Future Volume (vph)	140	533	23	16	558	17	26	7	8	12	7	280
Ideal Flow (vphpl)	1700	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	300		0	310		0	0		50	0		0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	120			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			55			35			55	
Link Distance (ft)		655			2881			300			432	
Travel Time (s)		8.1			35.7			5.8			5.4	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (s)	15.0	28.0		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (%)	25.0%	46.7%		15.8%	37.5%		37.5%	37.5%	37.5%	37.5%	37.5%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lear Av. & Twentynine Palms Hwy. (SR-62)

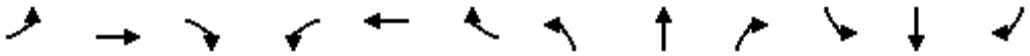




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	140	533	23	16	558	17	26	7	8	12	7	280
Future Volume (veh/h)	140	533	23	16	558	17	26	7	8	12	7	280
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1673	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772	1772
Adj Flow Rate, veh/h	154	586	25	18	613	19	29	8	9	13	8	308
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	1491	64	36	1186	37	304	71	448	69	22	422
Arrive On Green	0.12	0.45	0.45	0.02	0.36	0.36	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1594	3289	140	1688	3333	103	655	235	1494	23	73	1408
Grp Volume(v), veh/h	154	300	311	18	309	323	37	0	9	329	0	0
Grp Sat Flow(s),veh/h/ln	1594	1683	1746	1688	1683	1752	890	0	1494	1504	0	0
Q Serve(g_s), s	5.7	7.1	7.1	0.6	8.7	8.7	0.0	0.0	0.3	0.8	0.0	0.0
Cycle Q Clear(g_c), s	5.7	7.1	7.1	0.6	8.7	8.7	1.5	0.0	0.3	11.7	0.0	0.0
Prop In Lane	1.00		0.08	1.00		0.06	0.78		1.00	0.04		0.94
Lane Grp Cap(c), veh/h	190	763	792	36	599	624	374	0	448	514	0	0
V/C Ratio(X)	0.81	0.39	0.39	0.49	0.52	0.52	0.10	0.00	0.02	0.64	0.00	0.00
Avail Cap(c_a), veh/h	279	763	792	141	599	624	374	0	448	514	0	0
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	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.8	10.9	10.9	29.0	15.3	15.3	15.1	0.0	14.8	18.8	0.0	0.0
Incr Delay (d2), s/veh	10.7	1.5	1.5	10.0	3.2	3.1	0.5	0.0	0.1	6.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	2.2	2.3	0.3	3.1	3.2	0.4	0.0	0.1	4.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	12.4	12.4	39.0	18.4	18.3	15.6	0.0	14.9	24.8	0.0	0.0
LnGrp LOS	D	B	B	D	B	B	B	A	B	C	A	A
Approach Vol, veh/h		765			650			46			329	
Approach Delay, s/veh		17.2			18.9			15.5			24.8	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.8	31.7		22.5	11.7	25.8		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	23.5		18.0	10.5	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.6	9.1		13.7	7.7	10.7		3.5				
Green Ext Time (p_c), s	0.0	2.7		0.7	0.1	1.9		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		19.2	
HCM 6th LOS		B	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	683	4	15	848	1	3	1	12	1	2	1
Future Volume (vph)	1	683	4	15	848	1	3	1	12	1	2	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (ft)	50		0	50		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		402			655			418			421	
Travel Time (s)		5.0			8.1			9.5			9.6	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

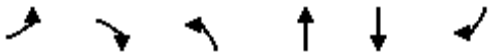
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	683	4	15	848	1	3	1	12	1	2	1
Future Vol, veh/h	1	683	4	15	848	1	3	1	12	1	2	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	751	4	16	932	1	3	1	13	1	2	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	938	0	0	760	0	0	1264	1730	388	1353	1732	477
Stage 1	-	-	-	-	-	-	760	760	-	970	970	-
Stage 2	-	-	-	-	-	-	504	970	-	383	762	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	6.7	5.5	6.5
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6	5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6	5	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	726	-	-	848	-	-	126	87	611	149	144	566
Stage 1	-	-	-	-	-	-	364	413	-	314	381	-
Stage 2	-	-	-	-	-	-	518	330	-	648	462	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	723	-	-	844	-	-	121	84	605	141	140	561
Mov Cap-2 Maneuver	-	-	-	-	-	-	121	84	-	141	140	-
Stage 1	-	-	-	-	-	-	362	411	-	312	372	-
Stage 2	-	-	-	-	-	-	502	322	-	628	459	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	18.6	26.4
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	283	723	-	-	844	-	-	173
HCM Lane V/C Ratio	0.062	0.002	-	-	0.02	-	-	0.025
HCM Control Delay (s)	18.6	10	-	-	9.3	-	-	26.4
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	3	1	1	1	1	3
Future Volume (vph)	3	1	1	1	1	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)	30			55	35	
Link Distance (ft)	415			2063	288	
Travel Time (s)	9.4			25.6	5.6	
Confl. Peds. (#/hr)	5	5	5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

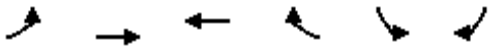
Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	1	1	1	1	3
Future Vol, veh/h	3	1	1	1	1	3
Conflicting Peds, #/hr	5	5	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	1	1	1	1	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	16	13	9	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	8	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1002	1067	1611	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	1015	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	991	1057	1603	-	-	-
Mov Cap-2 Maneuver	991	-	-	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	1010	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	3.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1603	-	1007	-	-
HCM Lane V/C Ratio	0.001	-	0.004	-	-
HCM Control Delay (s)	7.2	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	2	2	1	1	1
Future Volume (vph)	1	2	2	1	1	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)		30	30		55	
Link Distance (ft)		460	644		2063	
Travel Time (s)		10.5	14.6		25.6	
Confl. Peds. (#/hr)	5			5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	2	2	1	1	1
Future Vol, veh/h	1	2	2	1	1	1
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	2	2	1	1	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	8	0	-	0	17	13
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	9	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1612	-	-	-	1001	1067
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	1014	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1604	-	-	-	990	1057
Mov Cap-2 Maneuver	-	-	-	-	990	-
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	1009	-

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1604	-	-	-	1022
HCM Lane V/C Ratio	0.001	-	-	-	0.002
HCM Control Delay (s)	7.2	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	28	1	2	28	1
Future Volume (vph)	2	28	1	2	28	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Link Speed (mph)	30		30			30
Link Distance (ft)	327		288			300
Travel Time (s)	7.4		6.5			6.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	7.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	28	1	2	28	1
Future Vol, veh/h	2	28	1	2	28	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	30	1	2	30	1

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	63	2	0	0	3	0
Stage 1	2	-	-	-	-	-
Stage 2	61	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	943	1082	-	-	1619	-
Stage 1	1021	-	-	-	-	-
Stage 2	962	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	925	1082	-	-	1619	-
Mov Cap-2 Maneuver	925	-	-	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	944	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1070	1619	-
HCM Lane V/C Ratio	-	-	0.03	0.019	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

APPENDIX 7.1: GENERAL PLAN (2045) WITH PROJECT INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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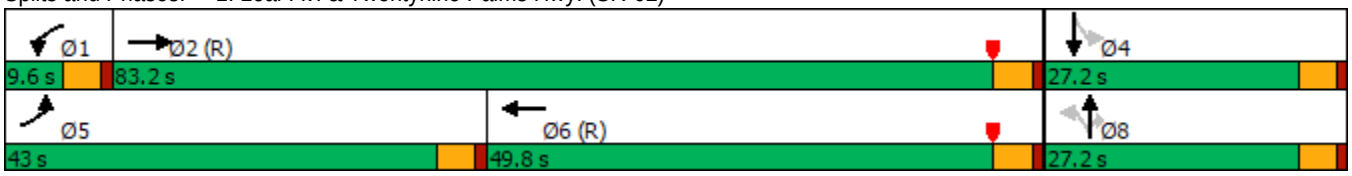
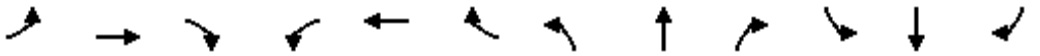
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	437	1075	8	3	977	104	23	2	7	94	3	162
Future Volume (vph)	437	1075	8	3	977	104	23	2	7	94	3	162
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1900	1900	1900	1800	1900	1900
Storage Length (ft)	300		0	310		0	0		50	150		150
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	120			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			55			35			55	
Link Distance (ft)		655			2881			300			432	
Travel Time (s)		8.1			35.7			5.8			5.4	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (s)	43.0	83.2		9.6	49.8		27.2	27.2	27.2	27.2	27.2	
Total Split (%)	35.8%	69.3%		8.0%	41.5%		22.7%	22.7%	22.7%	22.7%	22.7%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lear Av. & Twentynine Palms Hwy. (SR-62)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	437	1075	8	3	977	104	23	2	7	94	3	162
Future Volume (veh/h)	437	1075	8	3	977	104	23	2	7	94	3	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1870	1870	1772	1870	1870	1870	1870	1870	1772	1870	1870
Adj Flow Rate, veh/h	437	1075	8	3	977	104	23	2	7	94	3	162
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	466	2510	19	7	1368	146	195	15	297	131	13	171
Arrive On Green	0.28	0.69	0.69	0.00	0.42	0.42	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1688	3615	27	1688	3238	345	726	77	1572	474	67	904
Grp Volume(v), veh/h	437	528	555	3	536	545	25	0	7	259	0	0
Grp Sat Flow(s),veh/h/ln	1688	1777	1865	1688	1777	1806	803	0	1572	1445	0	0
Q Serve(g_s), s	30.4	15.5	15.5	0.2	29.9	30.0	0.0	0.0	0.4	18.3	0.0	0.0
Cycle Q Clear(g_c), s	30.4	15.5	15.5	0.2	29.9	30.0	3.0	0.0	0.4	21.3	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.19	0.92		1.00	0.36		0.63
Lane Grp Cap(c), veh/h	466	1234	1295	7	751	763	210	0	297	314	0	0
V/C Ratio(X)	0.94	0.43	0.43	0.45	0.71	0.71	0.12	0.00	0.02	0.82	0.00	0.00
Avail Cap(c_a), veh/h	541	1234	1295	72	751	763	210	0	297	314	0	0
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	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.5	8.0	8.0	59.6	28.7	28.7	40.6	0.0	39.6	48.4	0.0	0.0
Incr Delay (d2), s/veh	22.7	1.1	1.0	40.6	5.7	5.7	1.2	0.0	0.1	21.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.8	5.0	5.2	0.2	12.9	13.1	0.7	0.0	0.2	9.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	9.1	9.0	100.2	34.4	34.3	41.7	0.0	39.8	69.6	0.0	0.0
LnGrp LOS	E	A	A	F	C	C	D	A	D	E	A	A
Approach Vol, veh/h		1520			1084			32			259	
Approach Delay, s/veh		25.2			34.5			41.3			69.6	
Approach LOS		C			C			D			E	

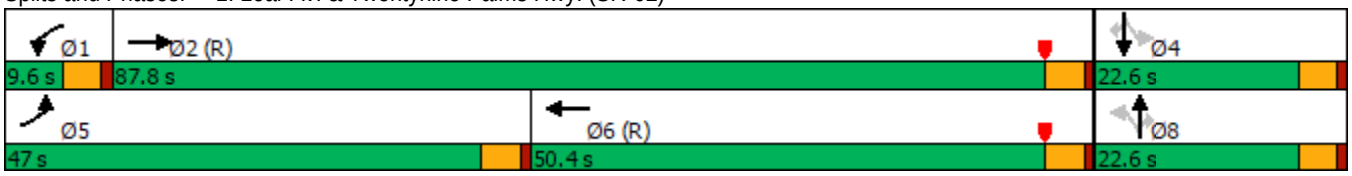
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	87.8		27.2	37.6	55.2		27.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	78.7		22.7	38.5	45.3		22.7				
Max Q Clear Time (g_c+I1), s	2.2	17.5		23.3	32.4	32.0		5.0				
Green Ext Time (p_c), s	0.0	7.2		0.0	0.7	5.1		0.1				

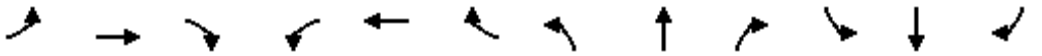
Intersection Summary			
HCM 6th Ctrl Delay		32.8	
HCM 6th LOS		C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	437	1075	8	3	977	104	23	2	7	94	3	162
Future Volume (vph)	437	1075	8	3	977	104	23	2	7	94	3	162
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1900	1900	1900	1800	1900	1900
Storage Length (ft)	300		0	310		0	0		50	150		150
Storage Lanes	1		0	1		0	0		1	1		1
Taper Length (ft)	120			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			55			35			55	
Link Distance (ft)		655			2881			300			432	
Travel Time (s)		8.1			35.7			5.8			5.4	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	47.0	87.8		9.6	50.4		22.6	22.6	22.6	22.6	22.6	22.6
Total Split (%)	39.2%	73.2%		8.0%	42.0%		18.8%	18.8%	18.8%	18.8%	18.8%	18.8%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	Max

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lear Av. & Twentynine Palms Hwy. (SR-62)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	437	1075	8	3	977	104	23	2	7	94	3	162
Future Volume (veh/h)	437	1075	8	3	977	104	23	2	7	94	3	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1870	1870	1772	1870	1870	1870	1870	1870	1772	1870	1870
Adj Flow Rate, veh/h	437	1075	8	3	977	104	23	2	7	94	3	162
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	468	2649	20	7	1487	158	229	18	237	237	282	237
Arrive On Green	0.28	0.73	0.73	0.00	0.46	0.46	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1688	3615	27	1688	3238	345	1136	117	1569	1320	1870	1569
Grp Volume(v), veh/h	437	528	555	3	536	545	25	0	7	94	3	162
Grp Sat Flow(s),veh/h/ln	1688	1777	1865	1688	1777	1806	1252	0	1569	1320	1870	1569
Q Serve(g_s), s	30.3	13.6	13.6	0.2	28.0	28.0	1.8	0.0	0.5	8.0	0.2	11.7
Cycle Q Clear(g_c), s	30.3	13.6	13.6	0.2	28.0	28.0	2.0	0.0	0.5	10.0	0.2	11.7
Prop In Lane	1.00		0.01	1.00		0.19	0.92		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	468	1302	1367	7	816	830	246	0	237	237	282	237
V/C Ratio(X)	0.93	0.41	0.41	0.45	0.66	0.66	0.10	0.00	0.03	0.40	0.01	0.68
Avail Cap(c_a), veh/h	598	1302	1367	72	816	830	246	0	237	237	282	237
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	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	6.1	6.1	59.6	25.1	25.1	44.1	0.0	43.5	48.4	43.3	48.2
Incr Delay (d2), s/veh	19.1	0.9	0.9	40.6	4.1	4.0	0.8	0.0	0.2	4.9	0.1	14.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.3	4.0	4.2	0.2	11.7	11.9	0.7	0.0	0.2	2.8	0.1	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.4	7.0	7.0	100.2	29.2	29.2	44.9	0.0	43.7	53.3	43.4	63.2
LnGrp LOS	E	A	A	F	C	C	D	A	D	D	D	E
Approach Vol, veh/h		1520			1084			32			259	
Approach Delay, s/veh		22.7			29.4			44.6			59.4	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	92.4		22.6	37.8	59.6		22.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	83.3		18.1	42.5	45.9		18.1				
Max Q Clear Time (g_c+I1), s	2.2	15.6		13.7	32.3	30.0		4.0				
Green Ext Time (p_c), s	0.0	7.2		0.3	1.0	5.5		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			28.7									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1511	1	6	1155	1	2	1	8	1	1	1
Future Volume (vph)	1	1511	1	6	1155	1	2	1	8	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		402			655			418			421	
Travel Time (s)		5.0			8.1			9.5			9.6	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

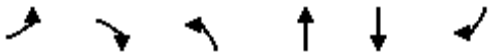
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1511	1	6	1155	1	2	1	8	1	1	1
Future Vol, veh/h	1	1511	1	6	1155	1	2	1	8	1	1	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1511	1	6	1155	1	2	1	8	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1161	0	0	1517	0	0	2114	2692	766	1936	2692	588
Stage 1	-	-	-	-	-	-	1519	1519	-	1173	1173	-
Stage 2	-	-	-	-	-	-	595	1173	-	763	1519	-
Critical Hdwy	4.14	-	-	4.14	-	-	6	4.6	4.9	6	4.6	4.9
Critical Hdwy Stg 1	-	-	-	-	-	-	4.6	3.5	-	4.6	3.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	4.6	3.5	-	4.6	3.5	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3	3.5	2.7	3	3.5	2.7
Pot Cap-1 Maneuver	597	-	-	436	-	-	75	93	618	96	93	741
Stage 1	-	-	-	-	-	-	304	450	-	420	551	-
Stage 2	-	-	-	-	-	-	712	551	-	612	450	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	594	-	-	434	-	-	73	91	612	92	91	734
Mov Cap-2 Maneuver	-	-	-	-	-	-	73	91	-	92	91	-
Stage 1	-	-	-	-	-	-	302	447	-	417	541	-
Stage 2	-	-	-	-	-	-	697	541	-	599	447	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	22.7	33.6
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	214	594	-	-	434	-	-	129
HCM Lane V/C Ratio	0.051	0.002	-	-	0.014	-	-	0.023
HCM Control Delay (s)	22.7	11.1	-	-	13.4	-	-	33.6
HCM Lane LOS	C	B	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	1	1	16	6	2
Future Volume (vph)	2	1	1	16	6	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			55	35	
Link Distance (ft)	415			2063	288	
Travel Time (s)	9.4			25.6	5.6	
Confl. Peds. (#/hr)	5	5	5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

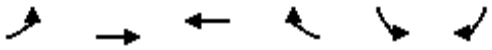
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	1	1	16	6	2
Future Vol, veh/h	2	1	1	16	6	2
Conflicting Peds, #/hr	5	5	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	1	1	17	7	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	37	18	14	0	-	0
Stage 1	13	-	-	-	-	-
Stage 2	24	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	975	1061	1604	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	999	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	964	1051	1596	-	-	-
Mov Cap-2 Maneuver	964	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	994	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1596	-	991	-	-
HCM Lane V/C Ratio	0.001	-	0.003	-	-
HCM Control Delay (s)	7.3	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	1	1	15	5	2
Future Volume (vph)	2	1	1	15	5	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		55	
Link Distance (ft)		460	644		2063	
Travel Time (s)		10.5	14.6		25.6	
Confl. Peds. (#/hr)	5			5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

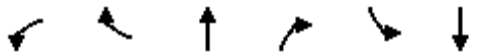
Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	1	1	15	5	2
Future Vol, veh/h	2	1	1	15	5	2
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	1	1	16	5	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	22	0	-	0	24	19
Stage 1	-	-	-	-	14	-
Stage 2	-	-	-	-	10	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1593	-	-	-	992	1059
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	1013	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1585	-	-	-	981	1049
Mov Cap-2 Maneuver	-	-	-	-	981	-
Stage 1	-	-	-	-	1003	-
Stage 2	-	-	-	-	1008	-

Approach	EB	WB	SB
HCM Control Delay, s	4.8	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1585	-	-	-	1000
HCM Lane V/C Ratio	0.001	-	-	-	0.008
HCM Control Delay (s)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	11	17	1	4	7
Future Volume (vph)	1	11	17	1	4	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		35			35
Link Distance (ft)	327		288			300
Travel Time (s)	7.4		5.6			5.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	11	17	1	4	7
Future Vol, veh/h	1	11	17	1	4	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	12	18	1	4	8

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	35	19	0	0	19	0
Stage 1	19	-	-	-	-	-
Stage 2	16	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	978	1059	-	-	1597	-
Stage 1	1004	-	-	-	-	-
Stage 2	1007	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	975	1059	-	-	1597	-
Mov Cap-2 Maneuver	975	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	1004	-	-	-	-	-

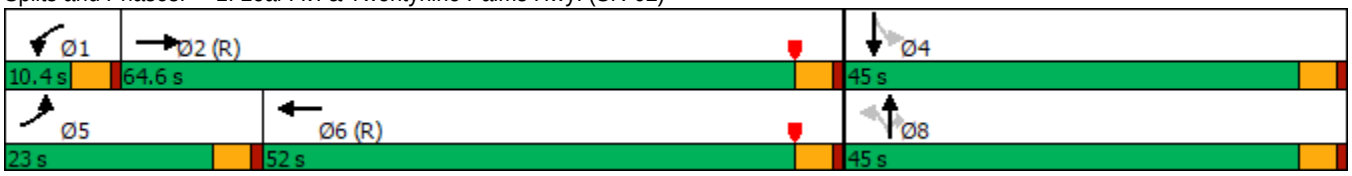
Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	2.6
HCM LOS	A		

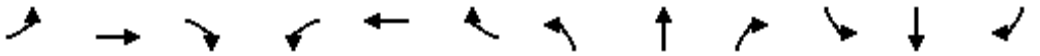
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1051	1597	-
HCM Lane V/C Ratio	-	-	0.012	0.003	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	1143	26	18	1286	141	19	7	7	127	8	583
Future Volume (vph)	280	1143	26	18	1286	141	19	7	7	127	8	583
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1900	1900	1900	1800	1900	1900
Storage Length (ft)	300		0	310		0	0		50	150		150
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	120			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			55			35			55	
Link Distance (ft)		655			2881			300			432	
Travel Time (s)		8.1			35.7			5.8			5.4	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (s)	23.0	64.6		10.4	52.0		45.0	45.0	45.0	45.0	45.0	
Total Split (%)	19.2%	53.8%		8.7%	43.3%		37.5%	37.5%	37.5%	37.5%	37.5%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lear Av. & Twentynine Palms Hwy. (SR-62)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	1143	26	18	1286	141	19	7	7	127	8	583
Future Volume (veh/h)	280	1143	26	18	1286	141	19	7	7	127	8	583
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1870	1870	1772	1870	1870	1870	1870	1870	1772	1870	1870
Adj Flow Rate, veh/h	280	1143	26	18	1286	141	19	7	7	127	8	583
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	260	1887	43	32	1278	140	167	54	533	121	13	425
Arrive On Green	0.15	0.53	0.53	0.02	0.40	0.40	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1688	3551	81	1688	3229	352	342	160	1578	254	37	1259
Grp Volume(v), veh/h	280	572	597	18	705	722	26	0	7	718	0	0
Grp Sat Flow(s),veh/h/ln	1688	1777	1855	1688	1777	1804	503	0	1578	1550	0	0
Q Serve(g_s), s	18.5	26.7	26.7	1.3	47.5	47.5	0.0	0.0	0.4	37.7	0.0	0.0
Cycle Q Clear(g_c), s	18.5	26.7	26.7	1.3	47.5	47.5	2.3	0.0	0.4	40.5	0.0	0.0
Prop In Lane	1.00		0.04	1.00		0.20	0.73		1.00	0.18		0.81
Lane Grp Cap(c), veh/h	260	944	986	32	703	714	222	0	533	559	0	0
V/C Ratio(X)	1.08	0.61	0.61	0.57	1.00	1.01	0.12	0.00	0.01	1.29	0.00	0.00
Avail Cap(c_a), veh/h	260	944	986	83	703	714	222	0	533	559	0	0
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	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.8	19.4	19.4	58.4	36.2	36.3	26.8	0.0	26.5	41.0	0.0	0.0
Incr Delay (d2), s/veh	77.5	2.9	2.8	14.9	34.6	36.3	1.1	0.0	0.0	141.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.0	10.6	11.0	0.7	25.5	26.2	0.6	0.0	0.1	37.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	128.3	22.3	22.2	73.3	70.9	72.6	27.9	0.0	26.5	182.6	0.0	0.0
LnGrp LOS	F	C	C	E	F	F	C	A	C	F	A	A
Approach Vol, veh/h		1449			1445			33			718	
Approach Delay, s/veh		42.8			71.7			27.6			182.6	
Approach LOS		D			E			C			F	

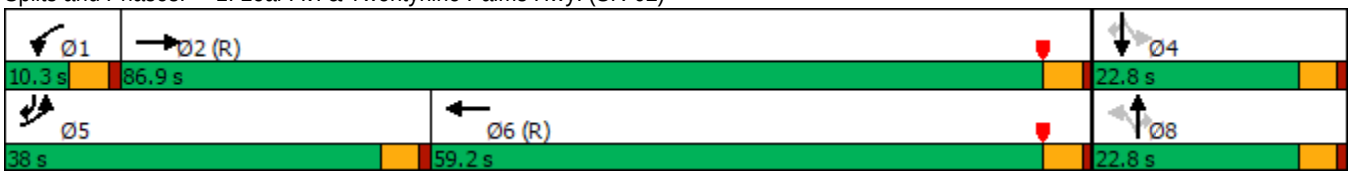
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	68.2		45.0	23.0	52.0		45.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.9	60.1		40.5	18.5	47.5		40.5				
Max Q Clear Time (g_c+I1), s	3.3	28.7		42.5	20.5	49.5		4.3				
Green Ext Time (p_c), s	0.0	7.6		0.0	0.0	0.0		0.2				

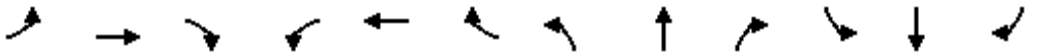
Intersection Summary			
HCM 6th Ctrl Delay		81.7	
HCM 6th LOS		F	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	1143	26	18	1286	141	19	7	7	127	8	583
Future Volume (vph)	280	1143	26	18	1286	141	19	7	7	127	8	583
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1900	1900	1900	1800	1900	1900
Storage Length (ft)	300		0	310		0	0		50	150		150
Storage Lanes	1		0	1		0	0		1	1		1
Taper Length (ft)	120			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			55			35			55	
Link Distance (ft)		655			2881			300			432	
Travel Time (s)		8.1			35.7			5.8			5.4	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5	22.5	22.5	22.5	9.5
Total Split (s)	38.0	86.9		10.3	59.2		22.8	22.8	22.8	22.8	22.8	38.0
Total Split (%)	31.7%	72.4%		8.6%	49.3%		19.0%	19.0%	19.0%	19.0%	19.0%	31.7%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag		Lead	Lag							Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lear Av. & Twentynine Palms Hwy. (SR-62)

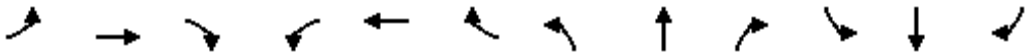




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	1143	26	18	1286	141	19	7	7	127	8	583
Future Volume (veh/h)	280	1143	26	18	1286	141	19	7	7	127	8	583
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1870	1870	1772	1870	1870	1870	1870	1870	1772	1870	1870
Adj Flow Rate, veh/h	280	1143	26	18	1286	141	19	7	7	127	8	583
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	310	2544	58	32	1780	194	155	50	239	237	285	531
Arrive On Green	0.18	0.72	0.72	0.02	0.55	0.55	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1688	3552	81	1688	3229	353	679	325	1569	1314	1870	1569
Grp Volume(v), veh/h	280	572	597	18	705	722	26	0	7	127	8	583
Grp Sat Flow(s),veh/h/ln	1688	1777	1855	1688	1777	1805	1005	0	1569	1314	1870	1569
Q Serve(g_s), s	19.5	16.2	16.2	1.3	35.4	35.9	1.4	0.0	0.5	11.1	0.4	18.3
Cycle Q Clear(g_c), s	19.5	16.2	16.2	1.3	35.4	35.9	2.1	0.0	0.5	13.2	0.4	18.3
Prop In Lane	1.00		0.04	1.00		0.20	0.73		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	310	1273	1329	32	979	995	205	0	239	237	285	531
V/C Ratio(X)	0.90	0.45	0.45	0.57	0.72	0.73	0.13	0.00	0.03	0.53	0.03	1.10
Avail Cap(c_a), veh/h	471	1273	1329	82	979	995	205	0	239	237	285	531
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	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	7.1	7.1	58.4	20.0	20.2	43.8	0.0	43.3	49.7	43.3	39.9
Incr Delay (d2), s/veh	14.6	1.1	1.1	14.9	4.6	4.6	1.3	0.0	0.2	8.4	0.2	68.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	5.0	5.2	0.7	14.1	14.4	0.7	0.0	0.2	4.0	0.2	25.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.5	8.3	8.2	73.3	24.6	24.8	45.1	0.0	43.5	58.1	43.5	108.5
LnGrp LOS	E	A	A	E	C	C	D	A	D	E	D	F
Approach Vol, veh/h		1449			1445			33			718	
Approach Delay, s/veh		18.7			25.3			44.8			98.8	
Approach LOS		B			C			D			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	90.4		22.8	26.6	70.6		22.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.8	82.4		18.3	33.5	54.7		18.3				
Max Q Clear Time (g_c+I1), s	3.3	18.2		20.3	21.5	37.9		4.1				
Green Ext Time (p_c), s	0.0	8.2		0.0	0.6	8.0		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			37.3									
HCM 6th LOS			D									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1435	4	17	1870	1	3	1	13	1	2	1
Future Volume (vph)	1	1435	4	17	1870	1	3	1	13	1	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		402			655			418			421	
Travel Time (s)		5.0			8.1			9.5			9.6	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

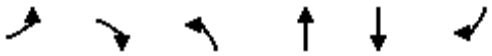
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1435	4	17	1870	1	3	1	13	1	2	1
Future Vol, veh/h	1	1435	4	17	1870	1	3	1	13	1	2	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1435	4	17	1870	1	3	1	13	1	2	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1876	0	0	1444	0	0	2419	3354	730	2635	3356	946
Stage 1	-	-	-	-	-	-	1444	1444	-	1910	1910	-
Stage 2	-	-	-	-	-	-	975	1910	-	725	1446	-
Critical Hdwy	4.14	-	-	4.14	-	-	4.8	3.6	3.9	4.8	3.6	3.9
Critical Hdwy Stg 1	-	-	-	-	-	-	3.6	3	-	3.6	3	-
Critical Hdwy Stg 2	-	-	-	-	-	-	3.6	3	-	3.6	3	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.2	2.5	2.7	3.2	2.5	2.7
Pot Cap-1 Maneuver	316	-	-	465	-	-	109	130	785	87	130	668
Stage 1	-	-	-	-	-	-	471	685	-	346	529	-
Stage 2	-	-	-	-	-	-	634	529	-	739	684	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	314	-	-	463	-	-	103	124	778	82	124	662
Mov Cap-2 Maneuver	-	-	-	-	-	-	103	124	-	82	124	-
Stage 1	-	-	-	-	-	-	467	680	-	343	507	-
Stage 2	-	-	-	-	-	-	605	507	-	720	679	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	17.1	32.7
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	315	314	-	-	463	-	-	134
HCM Lane V/C Ratio	0.054	0.003	-	-	0.037	-	-	0.03
HCM Control Delay (s)	17.1	16.5	-	-	13.1	-	-	32.7
HCM Lane LOS	C	C	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	1	1	13	20	1
Future Volume (vph)	2	1	1	13	20	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			55	35	
Link Distance (ft)	415			2063	288	
Travel Time (s)	9.4			25.6	5.6	
Confl. Peds. (#/hr)	5	5	5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

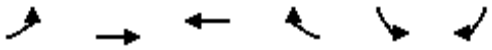
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	1	1	13	20	1
Future Vol, veh/h	2	1	1	13	20	1
Conflicting Peds, #/hr	5	5	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	1	1	14	22	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	49	33	28	0	-	0
Stage 1	28	-	-	-	-	-
Stage 2	21	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	960	1041	1585	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	1002	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	949	1031	1577	-	-	-
Mov Cap-2 Maneuver	949	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	997	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1577	-	975	-	-
HCM Lane V/C Ratio	0.001	-	0.003	-	-
HCM Control Delay (s)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	2	1	11	18	2
Future Volume (vph)	2	2	1	11	18	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		55	
Link Distance (ft)		460	644		2063	
Travel Time (s)		10.5	14.6		25.6	
Confl. Peds. (#/hr)	5			5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	2	1	11	18	2
Future Vol, veh/h	2	2	1	11	18	2
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	2	1	12	20	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	18	0	-	0	23	17
Stage 1	-	-	-	-	12	-
Stage 2	-	-	-	-	11	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1599	-	-	-	993	1062
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	1012	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1591	-	-	-	982	1052
Mov Cap-2 Maneuver	-	-	-	-	982	-
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	1007	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	8.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1591	-	-	-	989
HCM Lane V/C Ratio	0.001	-	-	-	0.022
HCM Control Delay (s)	7.3	0	-	-	8.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	6	13	2	12	21
Future Volume (vph)	1	6	13	2	12	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	327		288			300
Travel Time (s)	7.4		6.5			6.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	6	13	2	12	21
Future Vol, veh/h	1	6	13	2	12	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	7	14	2	13	23

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	64	15	0	0	16	0
Stage 1	15	-	-	-	-	-
Stage 2	49	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	942	1065	-	-	1602	-
Stage 1	1008	-	-	-	-	-
Stage 2	973	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	934	1065	-	-	1602	-
Mov Cap-2 Maneuver	934	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	965	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	2.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1044	1602	-
HCM Lane V/C Ratio	-	-	0.007	0.008	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

APPENDIX 7.2: GENERAL PLAN (2045) WITH PROJECT INTERSECTION OPERATIONS ANALYSIS WORKSHEETS

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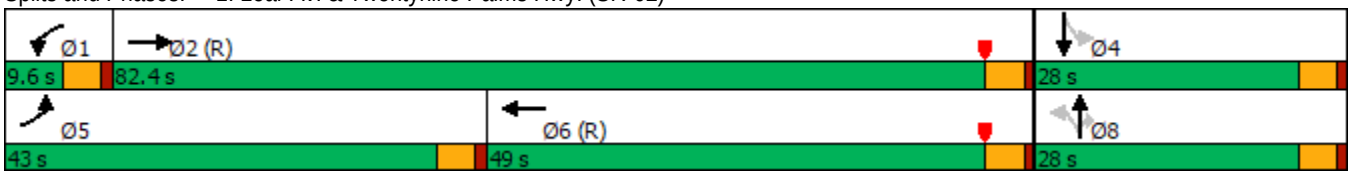
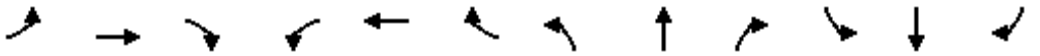
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	437	1075	28	7	977	104	17	2	6	94	4	162
Future Volume (vph)	437	1075	28	7	977	104	17	2	6	94	4	162
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1900	1900	1900	1800	1900	1900
Storage Length (ft)	300		0	310		0	0		50	150		150
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	120			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			55			35			55	
Link Distance (ft)		655			2881			300			432	
Travel Time (s)		8.1			35.7			5.8			5.4	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (s)	43.0	82.4		9.6	49.0		28.0	28.0	28.0	28.0	28.0	
Total Split (%)	35.8%	68.7%		8.0%	40.8%		23.3%	23.3%	23.3%	23.3%	23.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lear Av. & Twentynine Palms Hwy. (SR-62)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	437	1075	28	7	977	104	17	2	6	94	4	162
Future Volume (veh/h)	437	1075	28	7	977	104	17	2	6	94	4	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1870	1870	1772	1870	1870	1870	1870	1870	1772	1870	1870
Adj Flow Rate, veh/h	437	1075	28	7	977	104	17	2	6	94	4	162
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	466	2416	63	15	1346	143	206	21	308	138	15	186
Arrive On Green	0.28	0.68	0.68	0.01	0.37	0.37	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1688	3538	92	1688	3238	345	764	109	1573	498	76	948
Grp Volume(v), veh/h	437	540	563	7	536	545	19	0	6	260	0	0
Grp Sat Flow(s),veh/h/ln	1688	1777	1853	1688	1777	1806	872	0	1573	1521	0	0
Q Serve(g_s), s	30.4	16.6	16.6	0.5	31.1	31.1	0.0	0.0	0.4	17.8	0.0	0.0
Cycle Q Clear(g_c), s	30.4	16.6	16.6	0.5	31.1	31.1	2.1	0.0	0.4	19.9	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.19	0.89		1.00	0.36		0.62
Lane Grp Cap(c), veh/h	466	1214	1266	15	739	751	228	0	308	339	0	0
V/C Ratio(X)	0.94	0.44	0.44	0.48	0.73	0.73	0.08	0.00	0.02	0.77	0.00	0.00
Avail Cap(c_a), veh/h	541	1214	1266	72	739	751	228	0	308	339	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.90	0.90	0.90	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	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.5	8.7	8.7	59.3	31.7	31.7	39.5	0.0	38.9	46.7	0.0	0.0
Incr Delay (d2), s/veh	22.7	1.2	1.1	22.3	6.1	6.0	0.7	0.0	0.1	15.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.8	5.5	5.7	0.3	14.0	14.2	0.5	0.0	0.2	8.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	9.8	9.8	81.5	37.8	37.7	40.2	0.0	39.1	62.0	0.0	0.0
LnGrp LOS	E	A	A	F	D	D	D	A	D	E	A	A
Approach Vol, veh/h		1540			1088			25			260	
Approach Delay, s/veh		25.5			38.0			40.0			62.0	
Approach LOS		C			D			D			E	

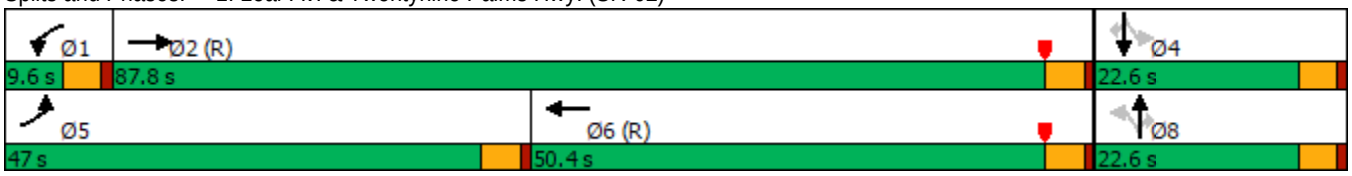
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	86.5		28.0	37.6	54.4		28.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	77.9		23.5	38.5	44.5		23.5				
Max Q Clear Time (g_c+I1), s	2.5	18.6		21.9	32.4	33.1		4.1				
Green Ext Time (p_c), s	0.0	7.4		0.2	0.7	4.6		0.1				

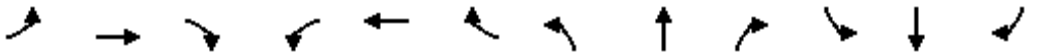
Intersection Summary			
HCM 6th Ctrl Delay		33.6	
HCM 6th LOS		C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	437	1075	28	7	977	104	17	2	6	94	4	162
Future Volume (vph)	437	1075	28	7	977	104	17	2	6	94	4	162
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1900	1900	1900	1800	1900	1900
Storage Length (ft)	300		0	310		0	0		50	150		150
Storage Lanes	1		0	1		0	0		1	1		1
Taper Length (ft)	120			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			55			35			55	
Link Distance (ft)		655			2881			300			432	
Travel Time (s)		8.1			35.7			5.8			5.4	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	47.0	87.8		9.6	50.4		22.6	22.6	22.6	22.6	22.6	22.6
Total Split (%)	39.2%	73.2%		8.0%	42.0%		18.8%	18.8%	18.8%	18.8%	18.8%	18.8%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	Max

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lear Av. & Twentynine Palms Hwy. (SR-62)

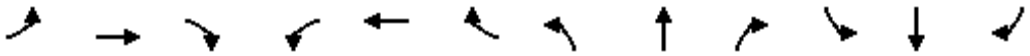




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	437	1075	28	7	977	104	17	2	6	94	4	162
Future Volume (veh/h)	437	1075	28	7	977	104	17	2	6	94	4	162
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1870	1870	1772	1870	1870	1870	1870	1870	1772	1870	1870
Adj Flow Rate, veh/h	437	1075	28	7	977	104	17	2	6	94	4	162
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	468	2576	67	15	1487	158	224	23	237	243	282	237
Arrive On Green	0.28	0.73	0.73	0.01	0.41	0.41	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1688	3538	92	1688	3238	345	1110	155	1569	1321	1870	1569
Grp Volume(v), veh/h	437	540	563	7	536	545	19	0	6	94	4	162
Grp Sat Flow(s),veh/h/ln	1688	1777	1853	1688	1777	1806	1265	0	1569	1321	1870	1569
Q Serve(g_s), s	30.3	14.2	14.2	0.5	29.1	29.2	1.2	0.0	0.4	7.9	0.2	11.7
Cycle Q Clear(g_c), s	30.3	14.2	14.2	0.5	29.1	29.2	1.4	0.0	0.4	9.4	0.2	11.7
Prop In Lane	1.00		0.05	1.00		0.19	0.89		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	468	1294	1349	15	816	830	248	0	237	243	282	237
V/C Ratio(X)	0.93	0.42	0.42	0.48	0.66	0.66	0.08	0.00	0.03	0.39	0.01	0.68
Avail Cap(c_a), veh/h	598	1294	1349	72	816	830	248	0	237	243	282	237
HCM Platoon Ratio	1.00	1.00	1.00	0.90	0.90	0.90	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	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	6.4	6.4	59.3	27.6	27.6	43.8	0.0	43.4	47.9	43.4	48.2
Incr Delay (d2), s/veh	19.1	1.0	1.0	22.3	4.1	4.0	0.6	0.0	0.2	4.6	0.1	14.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.3	4.3	4.5	0.3	12.7	12.9	0.5	0.0	0.2	2.8	0.1	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.4	7.4	7.3	81.5	31.7	31.6	44.4	0.0	43.6	52.5	43.4	63.2
LnGrp LOS	E	A	A	F	C	C	D	A	D	D	D	E
Approach Vol, veh/h		1540			1088			25			260	
Approach Delay, s/veh		22.7			32.0			44.2			59.0	
Approach LOS		C			C			D			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	91.9		22.6	37.8	59.6		22.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	83.3		18.1	42.5	45.9		18.1				
Max Q Clear Time (g_c+I1), s	2.5	16.2		13.7	32.3	31.2		3.4				
Green Ext Time (p_c), s	0.0	7.5		0.3	1.0	5.3		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		29.6	
HCM 6th LOS		C	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1531	1	6	1149	1	2	1	8	1	1	1
Future Volume (vph)	1	1531	1	6	1149	1	2	1	8	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		402			655			418			421	
Travel Time (s)		5.0			8.1			9.5			9.6	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

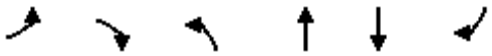
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1531	1	6	1149	1	2	1	8	1	1	1
Future Vol, veh/h	1	1531	1	6	1149	1	2	1	8	1	1	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1531	1	6	1149	1	2	1	8	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1155	0	0	1537	0	0	2131	2706	776	1940	2706	585
Stage 1	-	-	-	-	-	-	1539	1539	-	1167	1167	-
Stage 2	-	-	-	-	-	-	592	1167	-	773	1539	-
Critical Hdwy	4.14	-	-	4.14	-	-	6	4.6	4.9	6	4.6	4.9
Critical Hdwy Stg 1	-	-	-	-	-	-	4.6	3.5	-	4.6	3.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	4.6	3.5	-	4.6	3.5	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3	3.5	2.7	3	3.5	2.7
Pot Cap-1 Maneuver	601	-	-	429	-	-	74	92	612	95	92	743
Stage 1	-	-	-	-	-	-	298	444	-	422	553	-
Stage 2	-	-	-	-	-	-	713	553	-	606	444	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	598	-	-	427	-	-	72	90	606	91	90	736
Mov Cap-2 Maneuver	-	-	-	-	-	-	72	90	-	91	90	-
Stage 1	-	-	-	-	-	-	296	441	-	419	542	-
Stage 2	-	-	-	-	-	-	697	542	-	593	441	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	23	33.8
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	211	598	-	-	427	-	-	128
HCM Lane V/C Ratio	0.052	0.002	-	-	0.014	-	-	0.023
HCM Control Delay (s)	23	11	-	-	13.6	-	-	33.8
HCM Lane LOS	C	B	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	1	1	2	3	2
Future Volume (vph)	2	1	1	2	3	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			55	35	
Link Distance (ft)	415			2063	288	
Travel Time (s)	9.4			25.6	5.6	
Confl. Peds. (#/hr)	5	5	5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

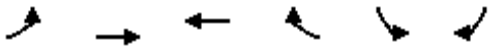
Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	1	1	2	3	2
Future Vol, veh/h	2	1	1	2	3	2
Conflicting Peds, #/hr	5	5	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	1	1	2	3	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	18	14	10	0	-	0
Stage 1	9	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1000	1066	1610	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	989	1056	1602	-	-	-
Mov Cap-2 Maneuver	989	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	2.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1602	-	1010	-	-
HCM Lane V/C Ratio	0.001	-	0.003	-	-
HCM Control Delay (s)	7.2	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	2	1	1	2	2
Future Volume (vph)	2	2	1	1	2	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		55	
Link Distance (ft)		460	644		2063	
Travel Time (s)		10.5	14.6		25.6	
Confl. Peds. (#/hr)	5			5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	2	1	1	2	2
Future Vol, veh/h	2	2	1	1	2	2
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	2	1	1	2	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	7	0	-	0	18	12
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	11	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1614	-	-	-	1000	1069
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	1012	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1606	-	-	-	989	1059
Mov Cap-2 Maneuver	-	-	-	-	989	-
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	1007	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1606	-	-	-	1023
HCM Lane V/C Ratio	0.001	-	-	-	0.004
HCM Control Delay (s)	7.2	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	19	2	2	33	3
Future Volume (vph)	1	19	2	2	33	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		35			35
Link Distance (ft)	327		288			300
Travel Time (s)	7.4		5.6			5.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

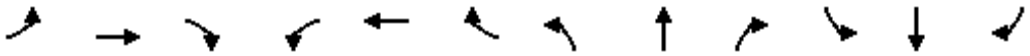
Intersection	
Int Delay, s/veh	6.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	19	2	2	33	3
Future Vol, veh/h	1	19	2	2	33	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	21	2	2	36	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	78	3	0	0	4	0
Stage 1	3	-	-	-	-	-
Stage 2	75	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	925	1081	-	-	1618	-
Stage 1	1020	-	-	-	-	-
Stage 2	948	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	905	1081	-	-	1618	-
Mov Cap-2 Maneuver	905	-	-	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	927	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	6.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1071	1618	-
HCM Lane V/C Ratio	-	-	0.02	0.022	-
HCM Control Delay (s)	-	-	8.4	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1531	1	6	1149	1	2	1	8	1	1	1
Future Volume (vph)	1	1531	1	6	1149	1	2	1	8	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		402			655			418			421	
Travel Time (s)		5.0			8.1			9.5			9.6	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

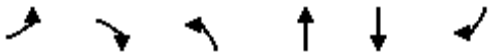
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1531	1	6	1149	1	2	1	8	1	1	1
Future Vol, veh/h	1	1531	1	6	1149	1	2	1	8	1	1	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1531	1	6	1149	1	2	1	8	1	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1155	0	0	1537	0	0	2131	2706	776	1940	2706	585
Stage 1	-	-	-	-	-	-	1539	1539	-	1167	1167	-
Stage 2	-	-	-	-	-	-	592	1167	-	773	1539	-
Critical Hdwy	4.14	-	-	4.14	-	-	6	4.6	4.9	6	4.6	4.9
Critical Hdwy Stg 1	-	-	-	-	-	-	4.6	3.5	-	4.6	3.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	4.6	3.5	-	4.6	3.5	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3	3.5	2.7	3	3.5	2.7
Pot Cap-1 Maneuver	601	-	-	429	-	-	74	92	612	95	92	743
Stage 1	-	-	-	-	-	-	298	444	-	422	553	-
Stage 2	-	-	-	-	-	-	713	553	-	606	444	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	598	-	-	427	-	-	72	90	606	91	90	736
Mov Cap-2 Maneuver	-	-	-	-	-	-	72	90	-	91	90	-
Stage 1	-	-	-	-	-	-	296	441	-	419	542	-
Stage 2	-	-	-	-	-	-	697	542	-	593	441	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	23	33.8
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	211	598	-	-	427	-	-	128
HCM Lane V/C Ratio	0.052	0.002	-	-	0.014	-	-	0.023
HCM Control Delay (s)	23	11	-	-	13.6	-	-	33.8
HCM Lane LOS	C	B	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	1	1	2	3	2
Future Volume (vph)	2	1	1	2	3	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			55	35	
Link Distance (ft)	415			2063	288	
Travel Time (s)	9.4			25.6	5.6	
Confl. Peds. (#/hr)	5	5	5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

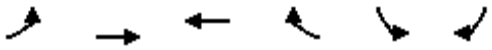
Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	1	1	2	3	2
Future Vol, veh/h	2	1	1	2	3	2
Conflicting Peds, #/hr	5	5	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	1	1	2	3	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	18	14	10	0	-	0
Stage 1	9	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1000	1066	1610	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	989	1056	1602	-	-	-
Mov Cap-2 Maneuver	989	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	2.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1602	-	1010	-	-
HCM Lane V/C Ratio	0.001	-	0.003	-	-
HCM Control Delay (s)	7.2	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	2	1	1	2	2
Future Volume (vph)	2	2	1	1	2	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		55	
Link Distance (ft)		460	644		2063	
Travel Time (s)		10.5	14.6		25.6	
Confl. Peds. (#/hr)	5			5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

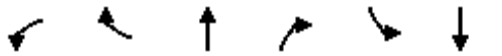
Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	2	1	1	2	2
Future Vol, veh/h	2	2	1	1	2	2
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	2	1	1	2	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	7	0	-	0	18	12
Stage 1	-	-	-	-	7	-
Stage 2	-	-	-	-	11	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1614	-	-	-	1000	1069
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	1012	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1606	-	-	-	989	1059
Mov Cap-2 Maneuver	-	-	-	-	989	-
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	1007	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1606	-	-	-	1023
HCM Lane V/C Ratio	0.001	-	-	-	0.004
HCM Control Delay (s)	7.2	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	19	2	2	33	3
Future Volume (vph)	1	19	2	2	33	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		35			35
Link Distance (ft)	327		288			300
Travel Time (s)	7.4		5.6			5.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	6.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	19	2	2	33	3
Future Vol, veh/h	1	19	2	2	33	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	21	2	2	36	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	78	3	0	0	4	0
Stage 1	3	-	-	-	-	-
Stage 2	75	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	925	1081	-	-	1618	-
Stage 1	1020	-	-	-	-	-
Stage 2	948	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	905	1081	-	-	1618	-
Mov Cap-2 Maneuver	905	-	-	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	927	-	-	-	-	-

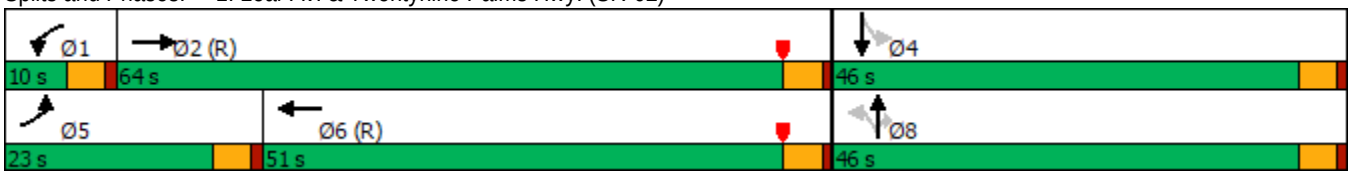
Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	6.7
HCM LOS	A		

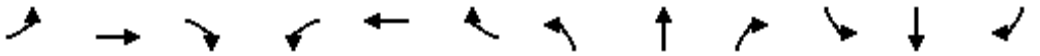
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1071	1618	-
HCM Lane V/C Ratio	-	-	0.02	0.022	-
HCM Control Delay (s)	-	-	8.4	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	1143	27	18	1286	141	29	8	9	127	8	583
Future Volume (vph)	280	1143	27	18	1286	141	29	8	9	127	8	583
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1900	1900	1900	1800	1900	1900
Storage Length (ft)	300		0	310		0	0		50	150		150
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (ft)	120			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			55			35			55	
Link Distance (ft)		655			2881			300			432	
Travel Time (s)		8.1			35.7			5.8			5.4	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases							8		8	4		
Detector Phase	5	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5	22.5	22.5	22.5	
Total Split (s)	23.0	64.0		10.0	51.0		46.0	46.0	46.0	46.0	46.0	
Total Split (%)	19.2%	53.3%		8.3%	42.5%		38.3%	38.3%	38.3%	38.3%	38.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5		4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lear Av. & Twentynine Palms Hwy. (SR-62)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	1143	27	18	1286	141	29	8	9	127	8	583
Future Volume (veh/h)	280	1143	27	18	1286	141	29	8	9	127	8	583
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1870	1870	1772	1870	1870	1870	1870	1870	1772	1870	1870
Adj Flow Rate, veh/h	280	1143	27	18	1286	141	29	8	9	127	8	583
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	260	1855	44	32	1251	137	174	42	546	118	13	412
Arrive On Green	0.15	0.52	0.52	0.02	0.39	0.39	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	1688	3548	84	1688	3229	352	347	121	1578	239	37	1192
Grp Volume(v), veh/h	280	572	598	18	705	722	37	0	9	718	0	0
Grp Sat Flow(s),veh/h/ln	1688	1777	1855	1688	1777	1804	468	0	1578	1467	0	0
Q Serve(g_s), s	18.5	27.2	27.2	1.3	46.5	46.5	0.0	0.0	0.5	36.4	0.0	0.0
Cycle Q Clear(g_c), s	18.5	27.2	27.2	1.3	46.5	46.5	5.1	0.0	0.5	41.5	0.0	0.0
Prop In Lane	1.00		0.05	1.00		0.20	0.78		1.00	0.18		0.81
Lane Grp Cap(c), veh/h	260	929	970	32	689	699	215	0	546	543	0	0
V/C Ratio(X)	1.08	0.62	0.62	0.57	1.02	1.03	0.17	0.00	0.02	1.32	0.00	0.00
Avail Cap(c_a), veh/h	260	929	970	77	689	699	215	0	546	543	0	0
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	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	50.8	20.1	20.2	58.4	36.7	36.8	27.0	0.0	25.8	41.4	0.0	0.0
Incr Delay (d2), s/veh	77.5	3.1	2.9	14.9	40.6	42.6	1.7	0.0	0.1	157.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.0	10.8	11.3	0.7	26.2	27.0	0.8	0.0	0.2	39.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	128.3	23.2	23.1	73.3	77.4	79.4	28.7	0.0	25.9	199.2	0.0	0.0
LnGrp LOS	F	C	C	E	F	F	C	A	C	F	A	A
Approach Vol, veh/h		1450			1445			46			718	
Approach Delay, s/veh		43.4			78.3			28.1			199.2	
Approach LOS		D			E			C			F	

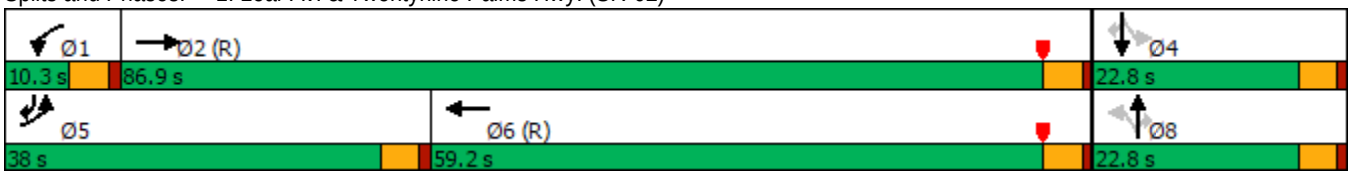
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	67.2		46.0	23.0	51.0		46.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	59.5		41.5	18.5	46.5		41.5				
Max Q Clear Time (g_c+I1), s	3.3	29.2		43.5	20.5	48.5		7.1				
Green Ext Time (p_c), s	0.0	7.6		0.0	0.0	0.0		0.3				

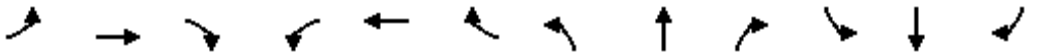
Intersection Summary			
HCM 6th Ctrl Delay		87.6	
HCM 6th LOS		F	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	1143	27	18	1286	141	29	8	9	127	8	583
Future Volume (vph)	280	1143	27	18	1286	141	29	8	9	127	8	583
Ideal Flow (vphpl)	1800	1900	1900	1800	1900	1900	1900	1900	1900	1800	1900	1900
Storage Length (ft)	300		0	310		0	0		50	150		150
Storage Lanes	1		0	1		0	0		1	1		1
Taper Length (ft)	120			120			90			90		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		55			55			35			55	
Link Distance (ft)		655			2881			300			432	
Travel Time (s)		8.1			35.7			5.8			5.4	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA		Perm	NA	Perm	Perm	NA	pm+ov
Protected Phases	5	2		1	6			8			4	5
Permitted Phases							8		8	4		4
Detector Phase	5	2		1	6		8	8	8	4	4	5
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5	22.5	22.5	22.5	9.5
Total Split (s)	38.0	86.9		10.3	59.2		22.8	22.8	22.8	22.8	22.8	38.0
Total Split (%)	31.7%	72.4%		8.6%	49.3%		19.0%	19.0%	19.0%	19.0%	19.0%	31.7%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag		Lead	Lag							Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Recall Mode	None	C-Max		None	C-Max		Max	Max	Max	Max	Max	None

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	

Splits and Phases: 1: Lear Av. & Twentynine Palms Hwy. (SR-62)

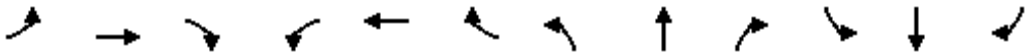




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	280	1143	27	18	1286	141	29	8	9	127	8	583
Future Volume (veh/h)	280	1143	27	18	1286	141	29	8	9	127	8	583
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1772	1870	1870	1772	1870	1870	1870	1870	1870	1772	1870	1870
Adj Flow Rate, veh/h	280	1143	27	18	1286	141	29	8	9	127	8	583
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	310	2541	60	32	1780	194	162	39	239	220	285	531
Arrive On Green	0.18	0.72	0.72	0.02	0.55	0.55	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1688	3548	84	1688	3229	353	711	253	1569	1311	1870	1569
Grp Volume(v), veh/h	280	572	598	18	705	722	37	0	9	127	8	583
Grp Sat Flow(s),veh/h/ln	1688	1777	1855	1688	1777	1805	964	0	1569	1311	1870	1569
Q Serve(g_s), s	19.5	16.2	16.2	1.3	35.4	35.9	3.1	0.0	0.6	11.3	0.4	18.3
Cycle Q Clear(g_c), s	19.5	16.2	16.2	1.3	35.4	35.9	3.6	0.0	0.6	14.9	0.4	18.3
Prop In Lane	1.00		0.05	1.00		0.20	0.78		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	310	1273	1329	32	979	995	200	0	239	220	285	531
V/C Ratio(X)	0.90	0.45	0.45	0.57	0.72	0.73	0.18	0.00	0.04	0.58	0.03	1.10
Avail Cap(c_a), veh/h	471	1273	1329	82	979	995	200	0	239	220	285	531
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	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	7.1	7.1	58.4	20.0	20.2	44.4	0.0	43.3	51.2	43.3	39.9
Incr Delay (d2), s/veh	14.6	1.2	1.1	14.9	4.6	4.6	2.0	0.0	0.3	10.5	0.2	68.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	5.0	5.2	0.7	14.1	14.4	1.1	0.0	0.2	4.2	0.2	25.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.5	8.3	8.2	73.3	24.6	24.8	46.5	0.0	43.6	61.7	43.5	108.5
LnGrp LOS	E	A	A	E	C	C	D	A	D	E	D	F
Approach Vol, veh/h		1450			1445			46			718	
Approach Delay, s/veh		18.7			25.3			45.9			99.5	
Approach LOS		B			C			D			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	90.4		22.8	26.6	70.6		22.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.8	82.4		18.3	33.5	54.7		18.3				
Max Q Clear Time (g_c+I1), s	3.3	18.2		20.3	21.5	37.9		5.6				
Green Ext Time (p_c), s	0.0	8.2		0.0	0.6	8.0		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			37.5									
HCM 6th LOS			D									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1436	4	17	1880	1	3	1	13	1	2	1
Future Volume (vph)	1	1436	4	17	1880	1	3	1	13	1	2	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	0		0	0		50
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	90			90			90			90		
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		402			655			418			421	
Travel Time (s)		5.0			8.1			9.5			9.6	
Confl. Peds. (#/hr)	5		5	5		5	5		5	5		5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

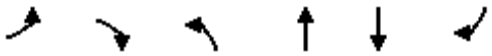
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1436	4	17	1880	1	3	1	13	1	2	1
Future Vol, veh/h	1	1436	4	17	1880	1	3	1	13	1	2	1
Conflicting Peds, #/hr	5	0	5	5	0	5	5	0	5	5	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1436	4	17	1880	1	3	1	13	1	2	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1886	0	0	1445	0	0	2425	3365	730	2646	3367	951
Stage 1	-	-	-	-	-	-	1445	1445	-	1920	1920	-
Stage 2	-	-	-	-	-	-	980	1920	-	726	1447	-
Critical Hdwy	4.14	-	-	4.14	-	-	4.8	3.6	3.9	4.8	3.6	3.9
Critical Hdwy Stg 1	-	-	-	-	-	-	3.6	3	-	3.6	3	-
Critical Hdwy Stg 2	-	-	-	-	-	-	3.6	3	-	3.6	3	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.2	2.5	2.7	3.2	2.5	2.7
Pot Cap-1 Maneuver	314	-	-	465	-	-	108	129	785	86	129	666
Stage 1	-	-	-	-	-	-	471	684	-	344	526	-
Stage 2	-	-	-	-	-	-	632	526	-	739	684	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	313	-	-	463	-	-	102	123	778	81	123	660
Mov Cap-2 Maneuver	-	-	-	-	-	-	102	123	-	81	123	-
Stage 1	-	-	-	-	-	-	467	679	-	341	504	-
Stage 2	-	-	-	-	-	-	603	504	-	720	679	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	17.2	32.7
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	313	313	-	-	463	-	-	134
HCM Lane V/C Ratio	0.054	0.003	-	-	0.037	-	-	0.03
HCM Control Delay (s)	17.2	16.5	-	-	13.1	-	-	32.7
HCM Lane LOS	C	C	-	-	B	-	-	D
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2	1	1	3	3	2
Future Volume (vph)	2	1	1	3	3	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			55	35	
Link Distance (ft)	415			2063	288	
Travel Time (s)	9.4			25.6	5.6	
Confl. Peds. (#/hr)	5	5	5			5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

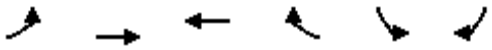
Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	1	1	3	3	2
Future Vol, veh/h	2	1	1	3	3	2
Conflicting Peds, #/hr	5	5	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	1	1	3	3	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	19	14	10	0	-	0
Stage 1	9	-	-	-	-	-
Stage 2	10	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	998	1066	1610	-	-	-
Stage 1	1014	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	987	1056	1602	-	-	-
Mov Cap-2 Maneuver	987	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	1008	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	1.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1602	-	1009	-	-
HCM Lane V/C Ratio	0.001	-	0.003	-	-
HCM Control Delay (s)	7.2	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	2	2	2	2	2
Future Volume (vph)	2	2	2	2	2	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		30	30		55	
Link Distance (ft)		460	644		2063	
Travel Time (s)		10.5	14.6		25.6	
Confl. Peds. (#/hr)	5			5	5	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

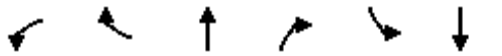
Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	2	2	2	2	2
Future Vol, veh/h	2	2	2	2	2	2
Conflicting Peds, #/hr	5	0	0	5	5	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	2	2	2	2	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	9	0	-	0	19	13
Stage 1	-	-	-	-	8	-
Stage 2	-	-	-	-	11	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1611	-	-	-	998	1067
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	1012	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1603	-	-	-	987	1057
Mov Cap-2 Maneuver	-	-	-	-	987	-
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	1007	-

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1603	-	-	-	1021
HCM Lane V/C Ratio	0.001	-	-	-	0.004
HCM Control Delay (s)	7.2	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	29	3	2	31	3
Future Volume (vph)	2	29	3	2	31	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	327		288			300
Travel Time (s)	7.4		6.5			6.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	29	3	2	31	3
Future Vol, veh/h	2	29	3	2	31	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	32	3	2	34	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	75	4	0	0	5	0
Stage 1	4	-	-	-	-	-
Stage 2	71	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	928	1080	-	-	1616	-
Stage 1	1019	-	-	-	-	-
Stage 2	952	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	909	1080	-	-	1616	-
Mov Cap-2 Maneuver	909	-	-	-	-	-
Stage 1	1019	-	-	-	-	-
Stage 2	932	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	6.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1067	1616	-
HCM Lane V/C Ratio	-	-	0.032	0.021	-
HCM Control Delay (s)	-	-	8.5	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-