Appendix H

Focused Traffic Analysis For General Plan Level of Service Conformance and Vehicle Miles Traveled Screening, Palmdale Road Medical Offices

David Evans and Associates

April 4, 2024

FOCUSED TRAFFIC IMPACT ANALYSIS REPORT

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PALMDALE ROAD MEDICAL OFFICES

VICTORVILLE, CALIFORNIA

Prepared by:

DAVID EVANS AND ASSOCIATES INC.

UPDATED DRAFT REPORT
April 4, 2024

DAVID EVANS AND ASSOCIATES INC.

April 4, 2024 Job No. SHIL0000-0001

Mr. R. Paul Earle
Shiloh Medical Center, Inc.
12984 Hesperia Road
Victorville, CA 92395

RE: UPDATED DRAFT FOCUSED TRAFFIC IMPACT ANALYSIS – PALMDALE ROAD MEDICAL OFFICES – VICTORVILLE, CALIFORNIA – APN 3103-561-20

Dear Mr. Earle,

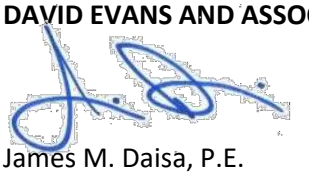
David Evans and Associates, Inc. is pleased to submit this Updated Focused Traffic Impact Analysis Report (TIA) for your proposed Palmdale Road Medical Offices Project in the City of Victorville, California. The proposed project consists of a medical family practice clinic with an attached lab and pharmacy and a medical office building. The project is located on Palmdale Road approximately 900 feet east of Cantina Street.

The report examines the traffic impacts specifically for the project and presents recommended traffic improvements. The report also evaluates the impacts of overall growth within the area to assure that cumulative traffic mitigations can be addressed. The report has been prepared in coordination with the City of Victorville Engineering Department requirements and scope of work approved prior to this report.

We are pleased to have been of assistance to you in processing and obtaining approval for the project. If you have any questions or comments, please feel free to contact me at 909-912-7304.

Respectfully submitted,

DAVID EVANS AND ASSOCIATES, INC.



James M. Daisa, P.E.
Senior Project Manager



DAVID EVANS AND ASSOCIATES INC.

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1 EXECUTIVE SUMMARY

This executive summary presents the findings and recommendations of this study.

1.1 Project Description

The project site is located on Palmdale Road (SR 18) approximately 900 feet east of Cantina Street in the City of Victorville, California. The proposed project is divided into two phases. The first phase consists of a medical family practice clinic with an attached lab and pharmacy. The second phase consists of a medical office building. The first phase is analyzed under background (opening year 2025) conditions while the second phase is analyzed under future (year 2035) conditions.

The project site is currently vacant and undeveloped property. It is bounded to the north by Aster Road and vacant/undeveloped properties, to the south by Palmdale Road and vacant/undeveloped properties, to the west by the Victorville Village Retail Center, and to the east by vacant/undeveloped properties.

Access to the site in the first phase of development is provided by a right in/right out only driveway on Palmdale Road (Highway 18). The driveway restriction is enforced by the existing raised median on Palmdale Road. In the second phase of development, a driveway will access Aster Road, currently unbuilt, which is to be extended to Cantina Street.

1.2 City of Victorville Level of Service Standard

The City's peak hour level of service standard is LOS D. An intersection found to operate at a LOS E with an Intersection Capacity Utilization (ICU) value greater than 0.95 or Highway Capacity Manual (HCM) delay worse than LOS D (i.e., LOS E or F) is considered deficient.

If a development project would worsen the peak hour level of service to a LOS E or LOS F, it is considered an impact that requires improvement to return the level of service to pre-project conditions. If a development project would worsen the level of service at an already deficient intersection with an increase in delay by two percent or more, it is considered a significant impact that requires improvement to return the level of service to at least pre-project conditions.

1.3 Proposed Project-Specific Access, Roadway, and Off-Site Intersection Improvements

In the first phase, the project is required to construct standard frontage improvements on Palmdale Road with the construction of the project site. These improvements include right-of-way dedication and widening of Palmdale Road (Highway 18) to meet city and Caltrans cross-section standards for this segment of Palmdale Road (which is classified as a six-lane superarterial in Victorville's General Plan), and to construct the project's access driveway including turning lanes as needed to safely accommodate entering traffic.

In Phase 2 of the project, the project proposes to construct secondary access to the project site for emergency access[1] and to reduce demand on the single access driveway on Palmdale Road. The extension of Aster Road (a local street) to the project site from Cantina Street is shared with an approved development located at the southeast corner of Cantina Street and Aster Road and constructing a segment Aster Road along its northerly frontage and the intersection of Aster Road with Cantina Street.

Fronting development is required to construct one-half of Aster Road plus an additional travel lane to allow for two-way travel. When the property to the north of Aster Road is developed, that development will construct the northern half of the street. The proposed project-specific access, roadway, and off-site intersection improvements are described in detail in Chapter 5, Section 5.1.

[1] If the secondary access is required by the Fire District, then the proposed Phase 2 improvements will need to be constructed in Phase 1 with the only difference being construction a two-way paved roadway extended north from the Phase 1 development to Aster Road.

1.4 Level of Service Comparison With and Without the Proposed Project

1.4.1 Near-Term (2025) Cumulative Impacts

A comparison of level of service between Background and Background Plus Project conditions (opening day scenario) is used to identify near-term level of service deficiencies that are cumulative in nature. Background ambient growth is comprised of traffic from local and regional development[2], and traffic generated by approved development in the immediate vicinity of the proposed project. Background Plus Project growth simply adds project generated traffic to background growth. A cumulative deficiency is typically mitigated by the development that adds traffic to the deficiency—each development contributing their fair-share of the cost of improving the deficit.

Table 1-1 compares the Background and Background Plus Project weekday peak hour level of service at the study intersections. In the year 2025 scenario, the study intersections operate at a LOS D or better during the peak hours with implementation of the proposed [project-specific improvements.

Table 1-1:Comparison of Background and Background + Project Intersection Levels of Service

Intersection	Intersection Control Type	Background Condition				Background Plus Project Conditions			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Palmdale Road (SR 18) at Cantina Street [a]	TS	14.5	B	26.6	C	15.7	B	28.3	C
2. Palmdale Road (SR 18) at Edison Driveway [b]	SSSC/Driveway	0.0	A	0.0	A	0.0	A	0.0	A
3. Palmdale Road (SR 18) at Project Driveway †	RIO	N/A				15.5	C	29.2	D
4. Cantina Street at Aster Road	SSSC	N/A				10.7	B	13.0	B

Notes:
[a] At the intersection of Palmdale Road and Cantina Street, a development project (the Palmdale Road Retail Center) is widening the westbound approach of Palmdale Road to add a third westbound through lane consistent with Victorville's General Plan classification of a six-lane superarterial. See Appendix D.
[b] This existing intersection accesses a gated driveway to a Southern California Edison facility. The eastbound left-turn lane is provided for U-turns and is related to the Edison facility. The delay and level of service presented in the table are for the U-turn movement. The existing left turn lane length will accommodate projected AM and PM peak hour 95th percentile vehicle queues under all scenarios (refer to Section 5.5 and 7.4).
† The level of service presented for the project's Palmdale Road private driveway is for the southbound movement (restricted to right turn out only). This movement is not subject to the City of Victorville's level of service (LOS) D policy.
Abbreviations:
TS – Traffic signal-controlled intersection, SSSC – Side-street stop-controlled intersection, RIRO – Right-in/right-out driveway

As shown in **Table 1-1,** the study intersections are anticipated to operate at an LOS C or better. As provided in **Chapter 5.3** the length of the U-turn pocket is anticipated to accommodate the anticipated 95th percentile queue during both the AM and PM peak hours.

1.4.2 Mid-Term (2036) Cumulative Impacts

Table 1-2, on the following page, compares the Future Background and Future Background Plus Project conditions for weekday peak hour level of service. Future Background conditions represent ten years beyond the project's opening year. The intersection of Palmdale Road (SR 18) / Cantina Street operates below the city's peak hour level of service standard during the PM peak hour.

Under Future Background Plus Project conditions, the level of service of the intersection of Palmdale Road (SR 18) / Cantina Street is anticipated to operate at LOS B in the AM and LOS D in the PM peak hours with the proposed project-specific improvements.

[2] Refer to Chapters 4 and 6 for more information on development of background traffic projections.

Table 1-2:Comparison of Future Background and Future Background + Project Intersection Levels of Service

Intersection	Intersection Control Type	Future Background Conditions				Future Background + Project Condition			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Palmdale Road (SR 18) at Cantina Street[a]	TS	20.3	C	81.4	F	23.4	C	89.0	F
w/ 3rd westbound through lane		N/A				16.4	B	48.5	D
2. Palmdale Road (SR 18) at Edison Driveway [b]	SSSC/ Driveway	0.0	A	0.0	A	0.0	A	0.0	A
3. Palmdale Road (SR 18) at Project Driveway†	RIO	N/A				21.3	C	84.1	F
4. Cantina Street at Aster Road	SSSC	N/A				11.4	B	15.6	C

Notes:
[a] At the intersection of Palmdale Road and Cantina Street, a development project (the Palmdale Road Retail Center) proposes widening the westbound approach of Palmdale Road to add a westbound through lane. See Appendix D.
[b] This existing intersection accesses a gated driveway to a Southern California Edison facility. The eastbound left-turn lane is provided for U-turns and is related to the Edison facility. The delay and level of service presented in the table is for the U-turn movement. The existing left turn lane length will accommodate projected AM and PM peak hour 95th percentile vehicle queues under all scenarios (refer to Section 5.5 and 7.4). The shaded cells in the table represent intersection peak hours with LOS deficiencies (LOS E or F).
† The level of service presented for the project's Palmdale Road private driveways is for the southbound movement (restricted to right turn out only). This movement is not subject to the City of Victorville's level of service (LOS) D policy.
Abbreviations:
TS – Traffic signal-controlled intersection, SSSC – Side-street stop-controlled intersection, RIRO – Right-in/right-out driveway

1.5 Long-Term (2045) Cumulative Impacts – Informational Purposes Only

Table 1-3 compares the Future and Future Plus Project Conditions results in the study intersections operating at an acceptable level of service. Future conditions represent the year of 2035 and includes growth in ambient traffic from regional and local development equaling 3.5 percent annually. The Future Conditions represent a 20-year long range planning scenario which Caltrans requests to be included in traffic impact studies. Forecasts for the year 2046 analysis scenario are derived from the San Bernardino Transportation Analysis Model (SBTAM). Under Future Conditions, the study intersections are anticipated to operate at an LOS D or better.

Table 1-3:Comparison of Future Background and Future Background + Project Intersection Levels of Service

Intersection	Intersection Control Type	Future Conditions				Future + Project Condition			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Palmdale Road (SR 18) at Cantina Street[a]	TS	16.1	B	33.5	C	19.0	B	38.9	D
w/ 3rd westbound through lane		N/A				15.2	B	26.7	C
2. Palmdale Road (SR 18) at Edison Driveway [b]	SSSC/ Driveway	0.0	0.0	A	0.0	A	A	0.0	A
3. Palmdale Road (SR 18) at Project Driveway†	RIO	N/A				16.7	C	43.3	E
4. Cantina Street at Aster Road	SSSC	N/A				11.2	B	14.1	B

Notes:
[a] At the intersection of Palmdale Road and Cantina Street, a development project (the Palmdale Road Retail Center) proposes widening the westbound approach of Palmdale Road to add a westbound through lane. See Appendix D.
[b] This existing intersection accesses a gated driveway to a Southern California Edison facility. The eastbound left-turn lane is provided for U-turns and is related to the Edison facility. The delay and level of service presented in the table is for the U-turn movement. The existing left turn lane length will accommodate projected AM and PM peak hour 95th percentile vehicle queues under all scenarios (refer to Section 5.5 and 7.4). The shaded cells in the table represent intersection peak hours with LOS deficiencies (LOS E or F).
† The level of service presented for the project's Palmdale Road private driveway is for the southbound movement (restricted to right turn out only). This movement is not subject to the City of Victorville's level of service (LOS) D policy.
Abbreviations:
TS – Traffic signal-controlled intersection, SSSC – Side-street stop-controlled intersection, RIRO – Right-in/right-out driveway

2 INTRODUCTION

This study evaluates the proposed project for conformance with the City of Victorville's General Plan level of service policies. This is done in accordance with the City of Victorville's traffic impact study guidelines and under the following analysis scenarios as outlined in the traffic scope approved by the City's Department of Public Works:

- Existing Conditions - **Chapter 3**
- Background Conditions (Year 2025) - **Chapter 4**
- Background plus Project Conditions- **Chapter 5**
- Future Background (Year 2035) Conditions – **Chapter 6**
- Future Background (Year 2035) plus Project Conditions - **Chapter 7**
- Future (Year 2046) Conditions – **Chapter 8**
- Future (Year 2046) Plus Project Conditions – **Chapter 9**

Figure 1 illustrates the vicinity map, and **Figure 2** illustrates the proposed project site plan.

2.1 Scenario Definitions

Existing Conditions. This scenario represents existing transportation conditions at the time this report was prepared. Data includes traffic counts collected in January 2023. This scenario is used as the baseline condition from which to measure project-specific impacts.

Background Conditions (Year 2025). This scenario represents conditions at the time the project is anticipated to be fully constructed and occupied (known as buildout Year 2025) but without traffic generated by the project. This scenario is comprised of ambient growth, a general rate of growth in traffic from overall regional growth (assumed to be 3.5% annually for this study). This scenario also includes traffic generated by the Other Area Project Palmdale Road Retail Development.

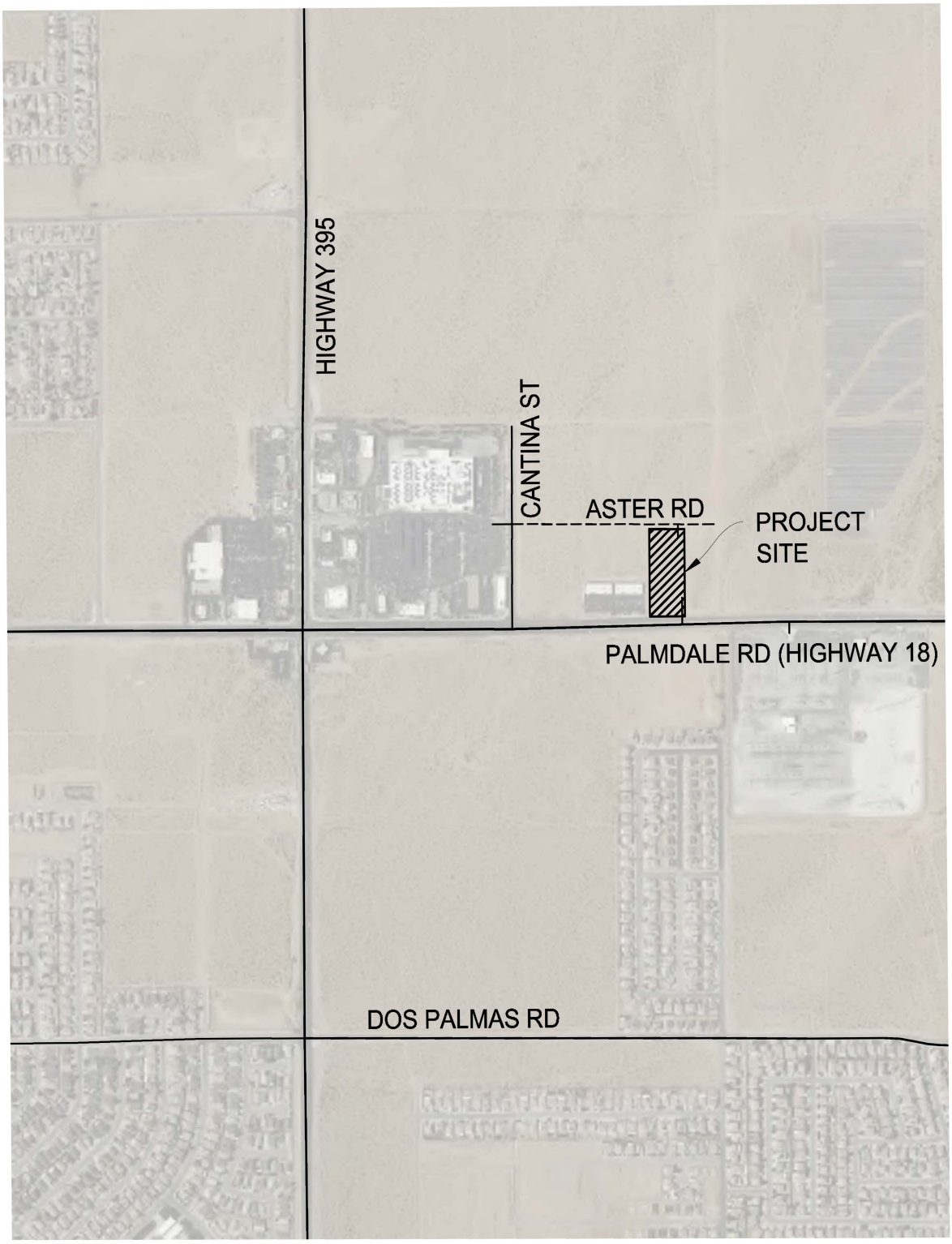
Background plus Project Conditions (Year 2025). This scenario adds the project's Phase 1 estimated traffic generation at buildout (2025) to the Background Conditions scenario described above. Impacts identified in this near-term scenario are considered "cumulative" impacts—impacts that the project contributes to, but does not solely cause, and may be responsible for a fair-share of the cost to implement any mitigation measures.

Future Background (Year 2035) Conditions. This scenario represents conditions at the 10-year forecast Year 2035 but without traffic generated by the project. This scenario is comprised of ambient growth, a general rate of growth in traffic from overall regional growth (assumed to be 3.5% annually for this study). This scenario also includes traffic generated by the Other Area Project Palmdale Road Retail Development.

Future Background (Year 2035) with Project Conditions. This scenario adds the project's combined total (Phase 1 and Phase 2) estimated traffic generation to the Future Background Conditions scenario described above. Impacts identified in this scenario are considered "cumulative" impacts—impacts that the project contributes to, but does not solely cause, and may be responsible for a fair-share of the cost to implement any mitigation measures.

Future Year 2045 Conditions. This scenario represents Caltrans' long-range 20-year planning horizon. Conditions identified in this scenario inform Caltrans of potential congestion problems in the future, but deficiencies and improvements identified in this analysis scenario are not used by the City of Victorville and are not integrated to any development conditions of approval. This scenario also includes traffic generated by the Other Area Project Palmdale Road Retail Development.

Future Year 2045 + Project Conditions. This scenario adds the project's estimated traffic generation at buildout (2025) to the Future 2045 Conditions described above.



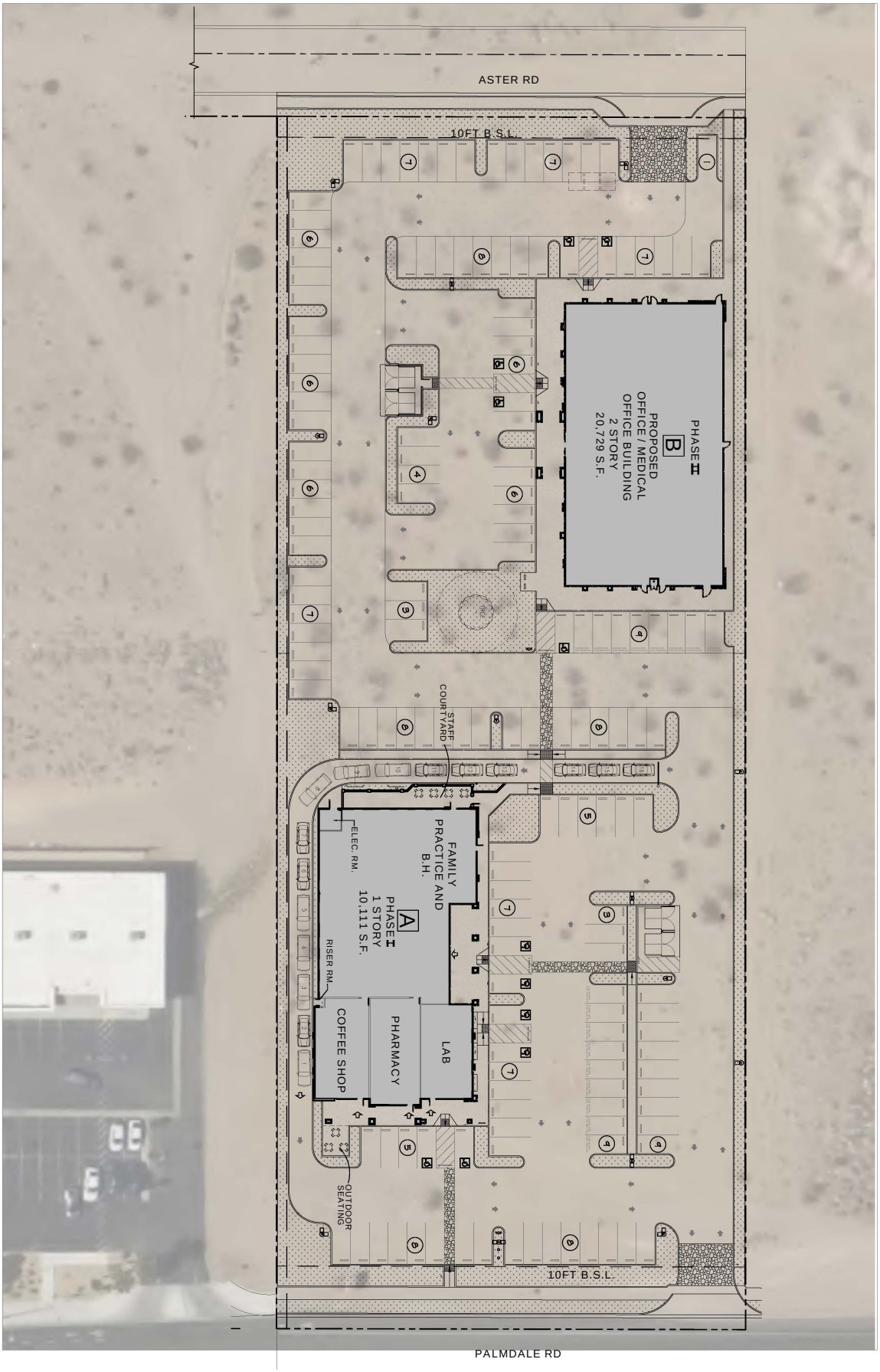
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NOT TO SCALE

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FIGURE 1: VICINITY MAP
PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

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FIGURE 2: SITE PLAN
PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

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3 EXISTING CONDITIONS

The proposed project is bounded to the north by vacant/undeveloped properties, to the south by Palmdale Road and vacant/undeveloped properties, to the west by the Victorville Village Retail Center, and to the east vacant/undeveloped properties.

3.1 Existing Street System

The following roadways provide local and regional access to the project within the study area:

Palmdale Road (Highway 18) is a major east-west primarily four-lane road (two lanes in each direction with a with turn pockets at key intersections) and with a raised curbed median, in the project area. Palmdale Road (Highway 18) is identified as a super arterial on the City of Victorville Circulation Plan. The posted speed limit within the project area is 55 mph.

Cantina Street is a north-south four-lane roadway, two lanes southbound, one lane northbound and a two-way-left-turn lane. It currently ends approximately 1,200 feet north of Palmdale Road (Highway 18). Cantina Street is identified as an arterial street, in the project area, on the City of Victorville circulation map. It will provide direct access to the project site.

3.2 Study Intersections

The study area for determining level of service impacts includes two existing intersections, a future intersection, and one proposed project driveway as study intersections:

1. Palmdale Road (SR 18) at Cantina Street (existing intersection)
2. Palmdale Road (SR 18) at Edison Driveway (existing intersection)
3. Palmdale Road (SR 18) at the project's eastern shared access driveway (future driveway)
4. Cantina Street at Aster Road (future intersection)

The intersection of Palmdale Road (SR 18) and Cantina Street is a signalized intersection that allows westbound to eastbound U-turns required for trips egressing the project site and destined to the east. The intersection of Palmdale Road (SR 18) with the Southern California Edison substation facility driveway (located about 1,780-feet east of Cantina Street) is a side street stop-controlled intersection with a break in the raised median and left turn bays for westbound access into the Edison substation and for eastbound to westbound U-turns required for trips ingressing the project from eastbound Palmdale Road.

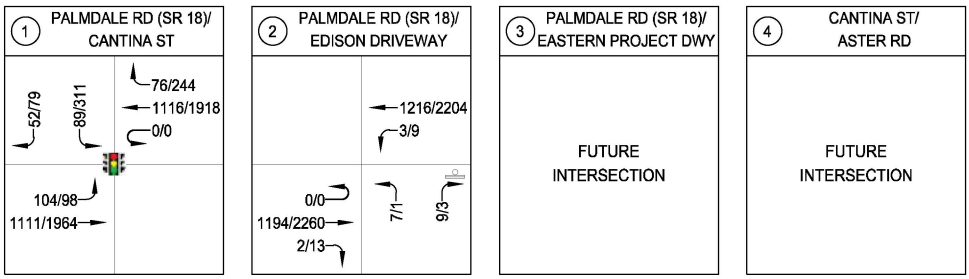
3.3 Existing Traffic Volumes

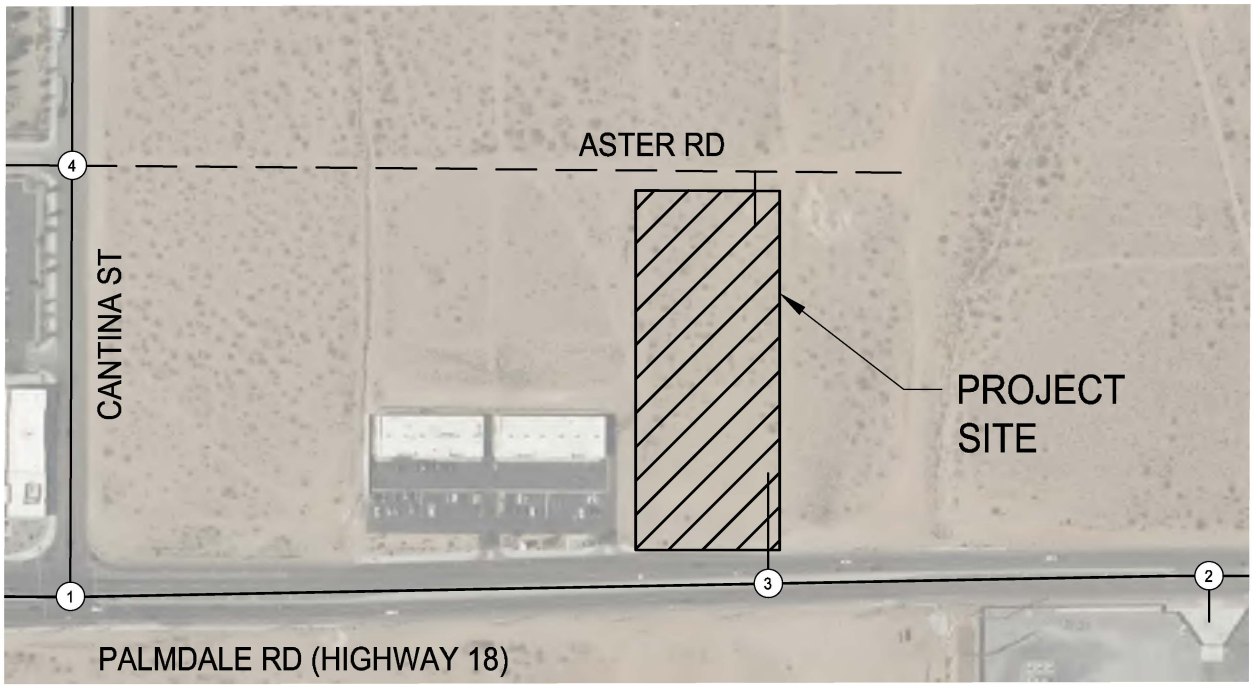
Turn movement counts were conducted in January 2023 by Newport Traffic Studies, an independent traffic data collection company. These counts were collected during the AM (7:00-9:00 AM) and PM (4:00-6:00 PM) peak periods. The raw turning movement counts are included in **Appendix B** of this study. **Figure 3** illustrates the existing peak hour traffic volumes in the study area.

3.4 Capacity Analysis Methodology

Intersection capacity analyses were conducted using Synchro software[3], which implements the methods of the Highway Capacity Manual, 6th Edition (HCM 6)[4] used in this report. The intersection capacity analyses utilize existing intersection geometrics and existing and forecasted traffic volumes in analyzing AM and PM peak hour intersection operating conditions.

3 Trafficware Ltd, Version 10.
4 Transportation Research Board, Washington D.C., 2010.





LEGEND

XX/XX - AM/PM TRAFFIC VOLUMES

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

DAVID EVANS AND ASSOCIATES INC.

FIGURE 3: EXISTING TRAFFIC VOLUMES
PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

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The traffic analysis methodology concepts presented in Chapters 19 and 20 of the Highway Capacity Manual (HCM 6) were utilized to calculate intersection Level of Service (LOS) based on the average control delay (in seconds per vehicle) of vehicles utilizing the intersections.

The analysis determines a LOS that quantitatively describes the operating characteristics of signalized intersections. **Table 3-1** provides LOS thresholds for signalized intersections as provided in the HCM 6 Chapter 19.

Table 3-1: HCM 6 – LOS Criteria for Signalized Intersections

Control Delay (seconds /veh)	LOS by Volume-to-Capacity Ratio [a]	
	≤1.0	>1.0
≤ 10	A	F
> 10 - 20	B	F
> 20 - 35	C	F
> 35 - 55	D	F
> 55 - 80	E	F
> 80	F	F
Note: [a] For approach-based and intersection-wide assessments, LOS is defined solely by control delay. Source: Highway Capacity Manual 6th Edition, Exhibit 19-8.		

The LOS for a Two-Way Stop Controlled (TWSC) intersection is determined by the computed or measured control delay. The LOS is determined for each minor street movement (or shared movement) by using the criteria provided in **Table 3-2** referenced from HCM 6 Chapter 20.

Table 3-2: HCM 6 – LOS Criteria for TWSC

Control Delay (seconds/vehicle)	LOS by Volume-to-Capacity Ratio	
	Volume / Capacity Ratio ≤ 0.99	Volume / Capacity Ratio < 1.0
0 - 10	A	F
> 10 -15	B	F
> 15 - 25	C	F
> 25 - 35	D	F
> 35 - 50	E	F
> 50	F	F
Note: The LOS criteria apply to each lane on each approach of the stop-controlled minor street. LOS is not calculated for major-street approaches or for the intersection as a whole. Source: Highway Capacity Manual 6th Edition, Exhibit 20-2.		

Current City Policy on Intersection Performance

The City's peak hour level of service standard is LOS D. An intersection found to operate at a LOS E with an Intersection Capacity Utilization (ICU) value greater than 0.95 or Highway Capacity Manual (HCM) delay worse than LOS D (i.e., LOS E or F) is considered deficient.

If a development project would worsen an intersection peak hour LOS to E or worse, it is considered a significant impact that must be mitigated. If a development project would worsen an already deficient intersection by two percent or more, it is considered a significant impact that must be mitigated.

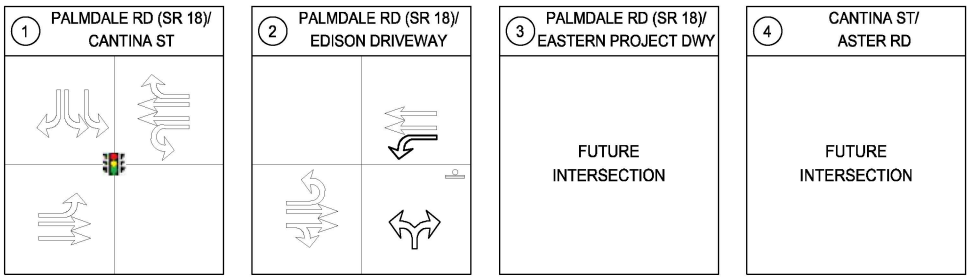
3.5 Existing Traffic Analysis

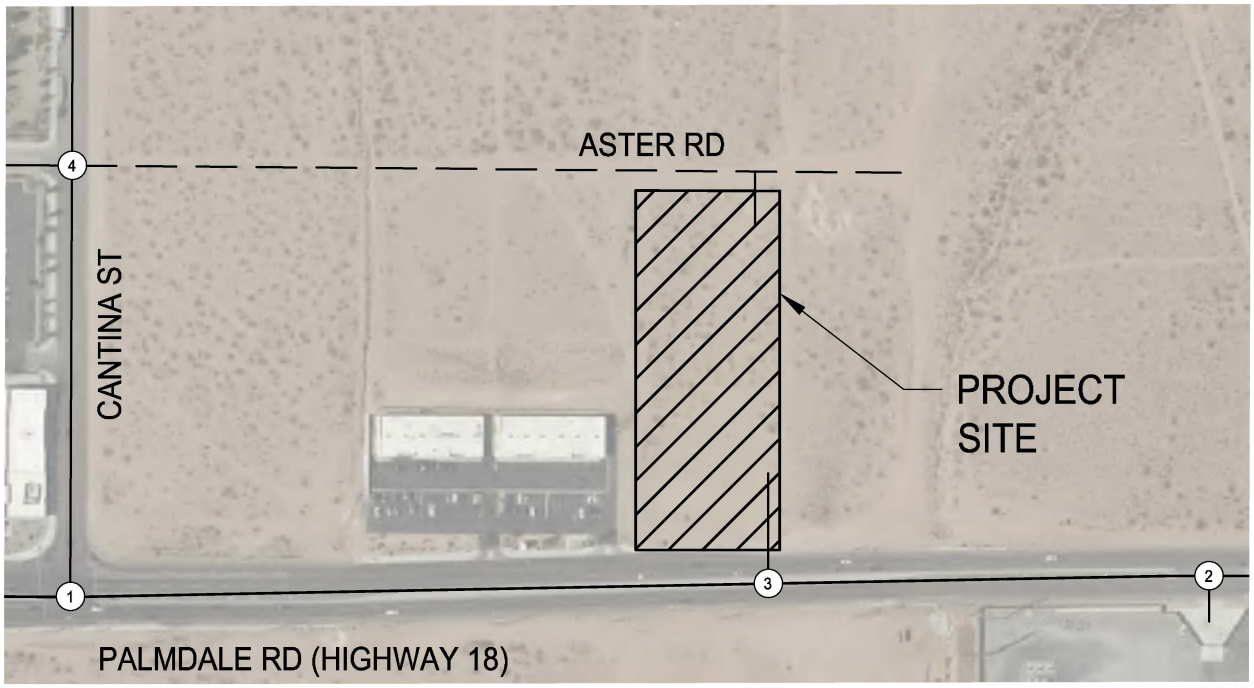
Existing intersection capacity and LOS analyses are based on the existing intersection geometrics and the AM and PM peak hour traffic volumes discussed earlier. The results of the analysis are shown in **Table 3-3** and provided in **Appendix C**. As shown in **Table 3-3** under Existing Conditions, the study intersection operate at LOS B during the AM and PM peak hours. The existing geometrics are illustrated in **Figure 4**.

Table 3-3: Intersection Capacity Analysis – Existing Conditions

Intersection	Intersection Control Type	AM Peak		PM Peak	
		Delay	LOS	Delay	LOS
1. Palmdale Road (SR 18) at Cantina Street[a]	TS	11.8	B	19.4	B
2. Palmdale Road (SR 18) at Edison Driveway [b]	SSSC/Driveway	0.0	A	0.0	A
3. Palmdale Road (SR 18) at Project Driveway[†]	RIO	N/A			
4. Cantina Street at Aster Road	SSSC	N/A			

Notes:
(1) The Edison Driveway is an existing gated driveway; delay is provided for the u-turn movement.
Notes:
[a] At the intersection of Palmdale Road and Cantina Street, a development project (the Palmdale Road Retail Center) proposes widening the westbound approach of Palmdale Road to add a westbound through lane. See Appendix D.
[b] This existing intersection accesses a gated driveway to a Southern California Edison facility. The eastbound left-turn lane is provided for U-turns and is related to the Edison facility. The delay and level of service presented in the table is for the U-turn movement. The existing left turn lane length will accommodate projected AM and PM peak hour 95th percentile vehicle queues under all scenarios (refer to Section 5.5 and 7.4).
[†] The level of service presented for the project's Palmdale Road private driveway is for the southbound movement (restricted to right turn out only). This movement is not subject to the City of Victorville's level of service (LOS) D policy.
Abbreviations:
TS – Traffic signal-controlled intersection, SSSC – Side-street stop-controlled intersection, RIRO – Right-in/right-out driveway





LEGEND

- EXISTING GEOMETRICS
- (#) - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH
- * - FREE RIGHT TURN

DAVID EVANS AND ASSOCIATES INC.

FIGURE 4: EXISTING INTERSECTION GEOMETRICS
PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

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4 BACKGROUND CONDITIONS (YEAR 2025)

This scenario represents conditions at the time the Proposed Project is anticipated to be fully constructed and occupied (known as buildout which is the Year 2025 for this project) but without traffic generated by the project.

This scenario is comprised of ambient growth, a general rate of growth in traffic from overall regional growth (assumed to be 3.5% annually for this study). This scenario also includes traffic generated by the Other Area Project Palmdale Road Retail Development.

4.1 Ambient Growth Projections

The Proposed Project is anticipated to be constructed and occupied in the Year 2025. As stated earlier in this report, near-term growth in traffic is comprised of regional ambient growth and other area projects expected to be completed within the same timeframe. Ambient growth is estimated as a 3.5% annual increase.

4.2 Background Conditions (Year 2025) Traffic Analysis

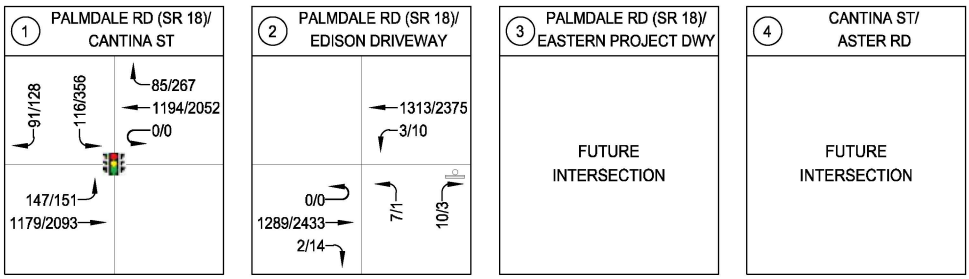
The Background Conditions traffic volumes are illustrated in **Figure 5**. Intersection capacity analysis for this scenario uses existing lanes geometries. The results of the analysis are shown in **Table 4-1** and provided in **Appendix C.**

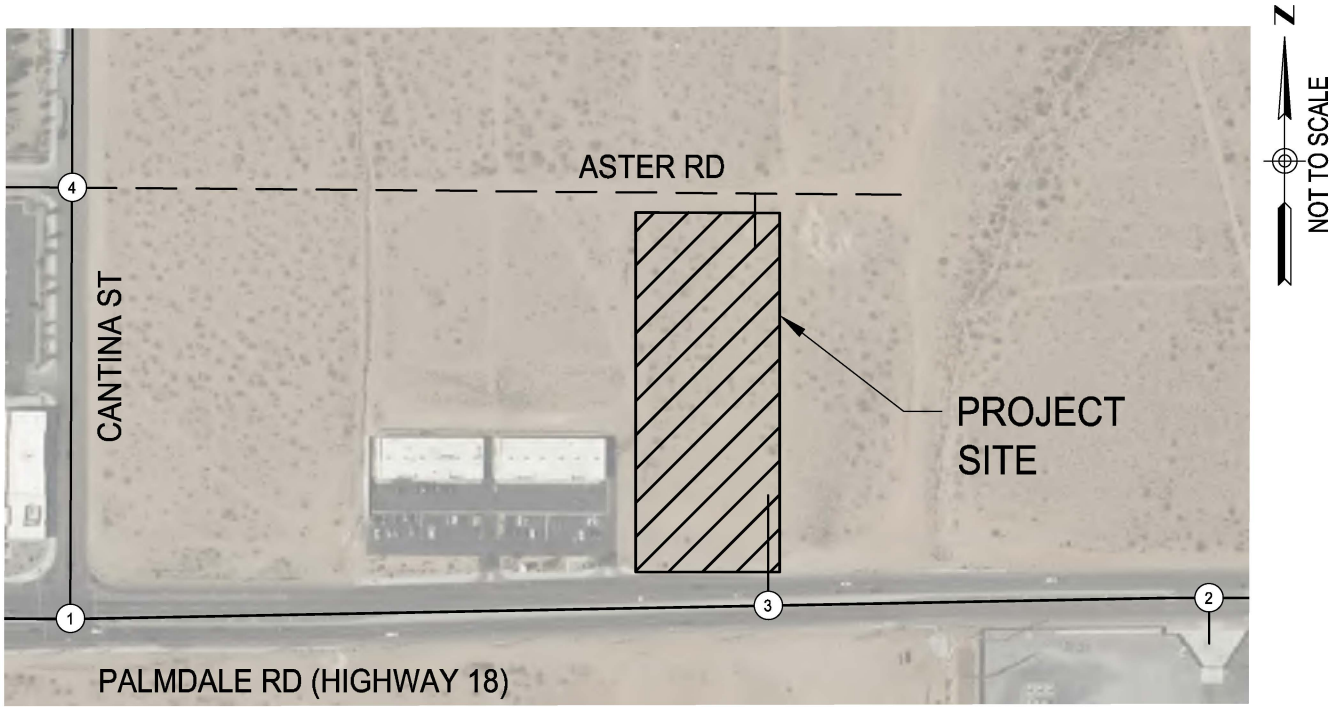
Table 4-1: Intersection Capacity Analysis – Background Conditions

Intersection	Intersection Control Type	AM Peak		PM Peak	
		Delay	LOS	Delay	LOS
1. Palmdale Road (SR 18) at Cantina Street[a]	TS	14.5	B	26.6	C
2. Palmdale Road (SR 18) at Edison Driveway [b]	SSSC/Driveway	0.0	A	0.0	A
3. Palmdale Road (SR 18) at Project Driveway[†]	RIO	N/A			
4. Cantina Street at Aster Road	SSSC	N/A			

Notes:
(1) The Edison Driveway is an existing gated driveway; delay is provided for the u-turn movement.
Notes:
[a] At the intersection of Palmdale Road and Cantina Street, a development project (the Palmdale Road Retail Center) proposes widening the westbound approach of Palmdale Road to add a westbound through lane. See Appendix D.
[b] This existing intersection accesses a gated driveway to a Southern California Edison facility. The eastbound left-turn lane is provided for U-turns and is related to the Edison facility. The delay and level of service presented in the table is for the U-turn movement. The existing left turn lane length will accommodate projected AM and PM peak hour 95th percentile vehicle queues under all scenarios (refer to Section 5.5 and 7.4).
The shaded cells in the table represent intersection peak hours with LOS deficiencies (LOS E or F).
[†] The level of service presented for the project's Palmdale Road private driveway is for the southbound movement (restricted to right turn out only). This movement is not subject to the City of Victorville's level of service (LOS) D policy.
Abbreviations:
TS – Traffic signal-controlled intersection, SSSC – Side-street stop-controlled intersection, RIRO – Right-in/right-out driveway

As presented in **Table 4-1**, under the background conditions, the study intersections are operating at LOS C or better.





LEGEND

XX/XX - AM/PM TRAFFIC VOLUMES

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

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FIGURE 5: BACKGROUND TRAFFIC VOLUMES
PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

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5 BACKGROUND PLUS PROJECT CONDITIONS

Background Plus Project Conditions scenario adds the project's Phase 1 estimated traffic generation at buildout (2025) to the Background Conditions scenario described above. Level of service impacts identified in this scenario are considered "cumulative" impacts—impacts that the project contributes to, but does not solely cause, and may be responsible for a fair-share of the cost to implement any mitigation measures.

5.1 Site Access and Project-Specific Roadway Frontage Improvements

In the first phase, the project is required to construct standard frontage improvements on Palmdale Road with the construction of the project site. These improvements include right-of-way dedication and widening of Palmdale Road (Highway 18) to meet city and Caltrans cross-section standards for this segment of Palmdale Road (which is classified as a six-lane superarterial in Victorville's General Plan), and to construct the project's access driveway including turning lanes as needed to safely accommodate entering traffic. The right turn in / right turn out driveway on Palmdale Road (SR 18) is located at the project's easternmost property line, about 1,100-feet east of Cantina Street (measured from centerline to centerline).

In Phase 2 of the project, the project proposes to construct secondary access to the project site for emergency access[5] and to reduce demand on the single access driveway on Palmdale Road. The extension of Aster Road (a local street) to the project site from Cantina Street is shared with an approved development located at the southeast corner of Cantina Street and Aster Road and constructing a segment Aster Road along its northerly frontage and the intersection of Aster Road with Cantina Street.

Fronting development is required to construct one-half of Aster Road plus an additional travel lane to allow for two-way travel. When the property to the north of Aster Road is developed, that development will construct the northern half of the street.

This analysis did not identify the need to provide a right turn deceleration lane into the project's Palmdale Road driveway. Furthermore, there are no off-site improvements required to mitigate level of service deficiencies.

5.2 Phase 1 Project Trip Generation

The trip generation rates for the site were obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. Opening year of the project is 2025.

Land use categories for estimating trips include **Clinic (ITE Land Use 630)** and **Coffee/Donut Shop with Drive-Through Window (ITE Land Use 937)** were obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. A reduction in trips of 10% for internal capture is assumed for the development. The proposed project Phase 1 is estimated to generate 908 daily trips, 120 AM peak hour and 73 PM peak hour trips.

Table 5-1, on the following page, summarizes the estimated trip generation on an average weekday, and during the AM (7-9 AM) and PM (4-6 PM) peak hours.

5.1 Project Trip Distribution and Assignment

The estimated Phase 1 project trips are distributed by direction and assigned to the local network of streets **Figure 6** distribution of the project trips. **Figure 7** illustrates the assignment of Phase 1 project trips to study intersections.

[5] If the secondary access is required by the Fire District, then the proposed Phase 2 improvements will need to be constructed in Phase 1 with the only difference being construction a two-way paved roadway extended north from the Phase 1 development to Aster Road.

Table 5-1: Project Phase 1 - Trip Generation

Use		Size/ Quantity	Daily	AM Peak Hour		PM Peak Hour			
Phase 1									
1	**Clinic - Land Use Category (ITE 630) (Includes Family Practice Office Space, Lab, and Pharmacy)**								
	Per 1,000 Sq. Ft. GLA	8,832	37.60	2.23	0.52	2.75	1.11	2.58	3.69
	Trips		333	20	5	25	10	23	33
2	**Coffee/Donut Shop with Drive-Through Window - Land Use Category (ITE 937)**								
	Per 1,000 Sq. Ft. GLA	1,279	533.57	43.80	42.08	85.88	19.50	19.50	38.99
	Trips		683	56	54	110	25	25	50
Phase 1 Project Trips			1,015	76	59	135	35	48	83
Phase 1 Internal Project Trips (10%)			102	8	6	14	4	5	9
Phase 1 Subtotal Project Trips			**913**	68	53	**121**	31	43	**74**

Source: "Trip Generation Manual, Institute of Transportation Engineers", 11th Edition

As presented in **Table 5-1** proposed project Phase 1 is estimated to generate 913 daily trips, 121 AM peak hour and 74 PM peak hour trips.

5.2 Background Plus Project Traffic Analysis

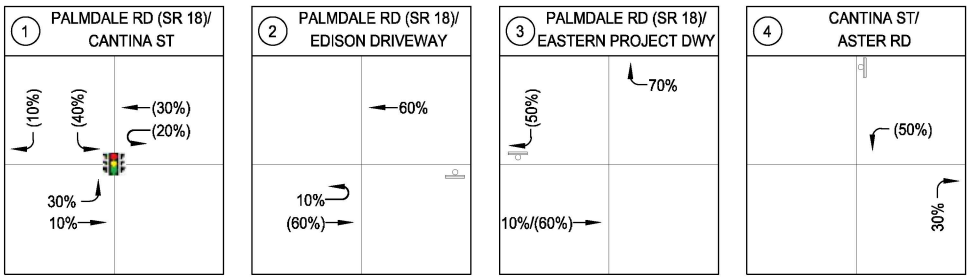
The project trip generation, traffic distribution and assignment patterns were used in the intersection capacity analyses to assess potential project impacts to level of service. The project trips were added to background traffic volumes to derive Background Plus Project Conditions. This scenario's traffic volumes are illustrated in **Figure 8**. Intersection capacity analysis for the study intersections uses the existing lanes geometries and project access driveway improvements. The results of the analysis are shown in **Table 5-2** and provided in **Appendix C**.

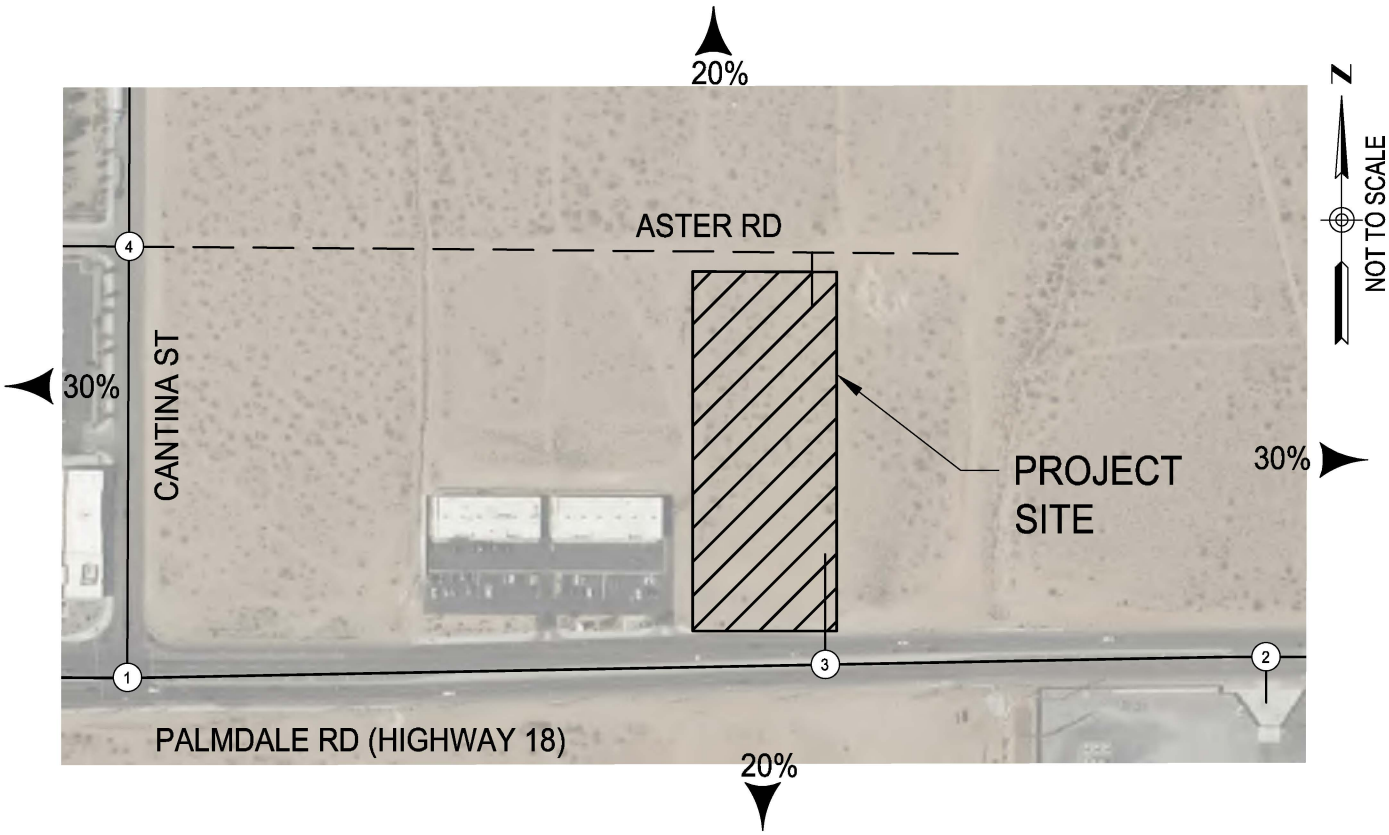
Table 5-2: Intersection Capacity Analysis – Background Plus Project Conditions

Intersection	Intersection Control Type	Background Condition				Background plus Project Conditions			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
5. Palmdale Road (SR 18) at Cantina Street [a]	TS	14.5	B	26.6	C	15.7	B	28.3	C
6. Palmdale Road (SR 18) at Edison Driveway [b]	SSSC/Driveway	0.0	A	0.0	A	0.0	A	0.0	A
7. Palmdale Road (SR 18) at Project Driveway †	RIO	N/A				15.5	C	29.2	D
8. Cantina Street at Aster Road	SSSC	N/A				10.7	B	13.0	B

Notes:
[a] At the intersection of Palmdale Road and Cantina Street, a development project (the Palmdale Road Retail Center) proposes widening the westbound approach of Palmdale Road to add a westbound through lane. See Appendix D.
[b] This existing intersection accesses a gated driveway to a Southern California Edison facility. The eastbound left-turn lane is provided for U-turns and is related to the Edison facility. The delay and level of service presented in the table is for the U-turn movement. The existing left turn lane length will accommodate projected AM and PM peak hour 95th percentile vehicle queues under all scenarios (refer to Section 5.5 and 7.4).
† The level of service presented for the project's Palmdale Road private driveway is for the southbound movement (restricted to right turn out only). This movement is not subject to the City of Victorville's level of service (LOS) D policy.
Abbreviations:
TS – Traffic signal-controlled intersection, SSSC – Side-street stop-controlled intersection, RIRO – Right-in/right-out driveway

As presented in **Table 5-2**, under Background Plus Project Conditions, the study intersections would operate at LOS D or better with the proposed project-specific improvements. The existing and proposed project geometrics are illustrated in **Figure 9**.





LEGEND

XX% - GENERAL PROJECT TRIP DISTRIBUTION

XX% - SPECIFIC PROJECT TRIP PERCENTAGE

XX%/(XX%) - INBOUND/(OUTBOUND)TRIP PERCENTAGE

(#) - STUDY INTERSECTIONS

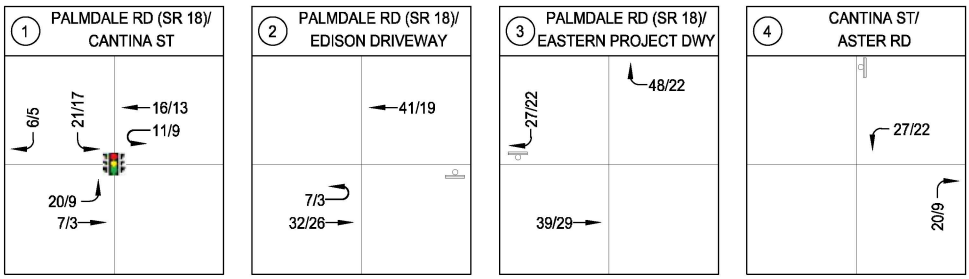
- SIGNALIZED INTERSECTION

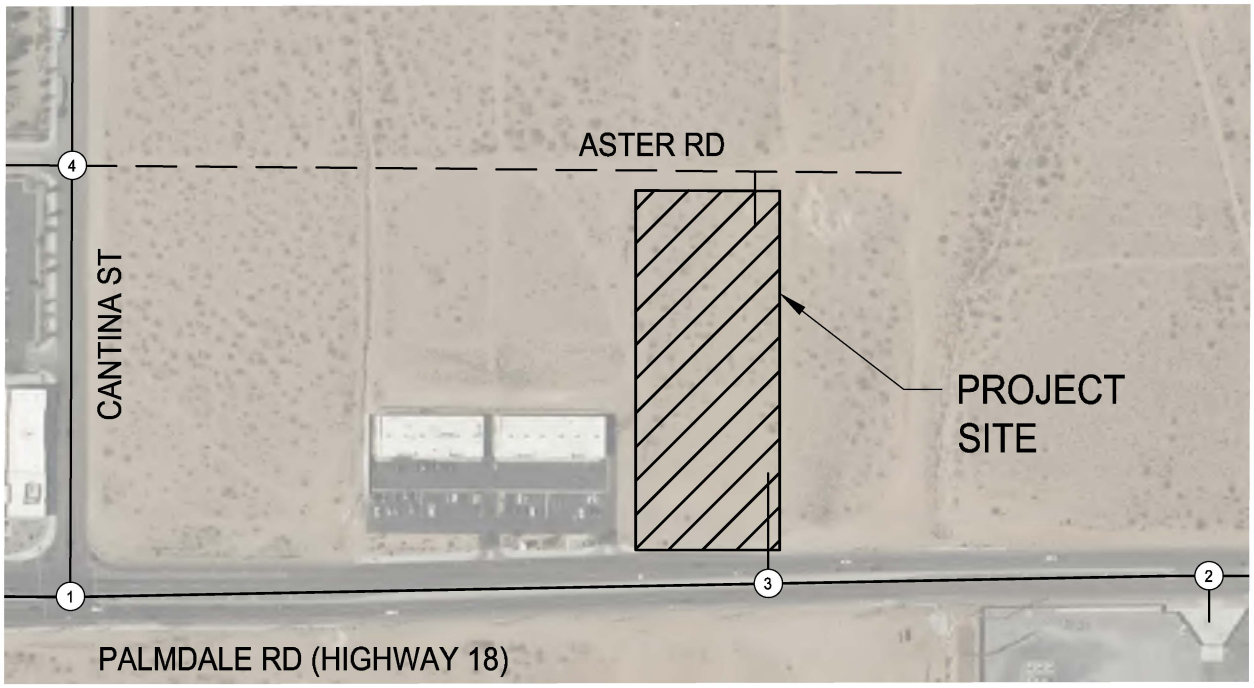
- STOP CONTROLLED APPROACH

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FIGURE 6: PHASE 1 - PROJECT TRIP DISTRIBUTION
PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

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PHASE I PROJECT TRIPS

AM PEAK PERIOD - 68 IN / 53 OUT
PM PEAK PERIOD - 31 IN / 43 OUT

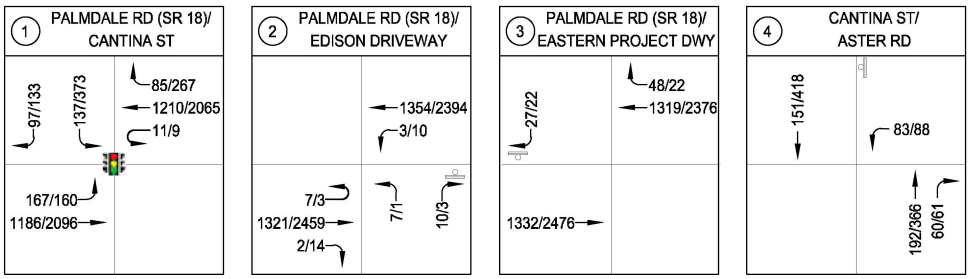
LEGEND

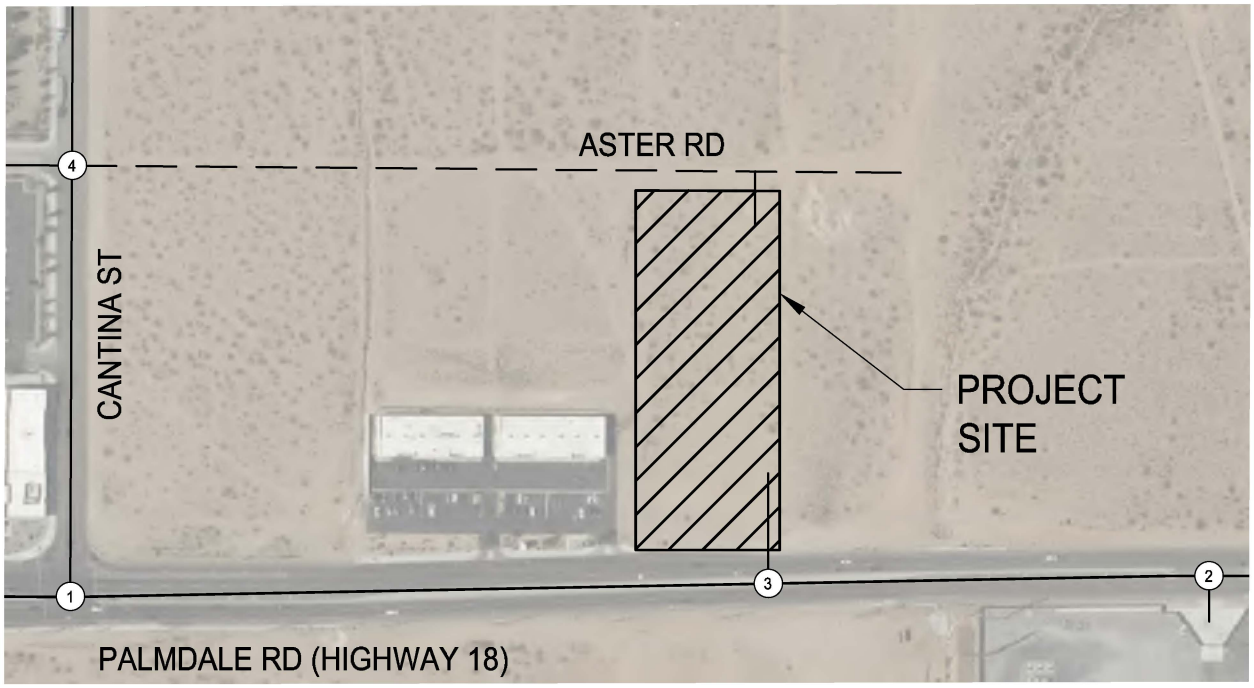
XX/XX - AM/PM PROJECT TRIP
(#) - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

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FIGURE 7: PHASE 1 PROJECT TRIPS
PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

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LEGEND

XX/XX - AM/PM TRAFFIC VOLUMES

(#) - STUDY INTERSECTIONS

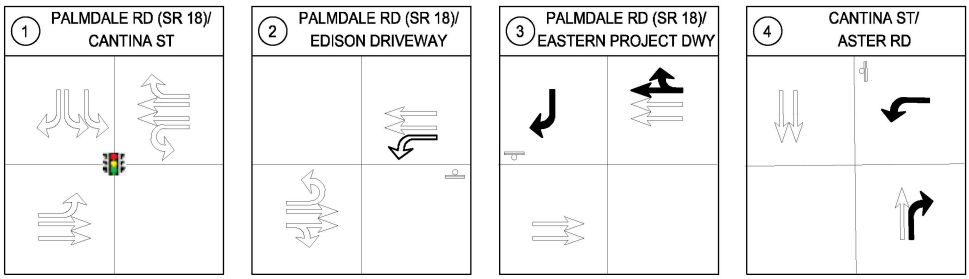
- SIGNALIZED INTERSECTION

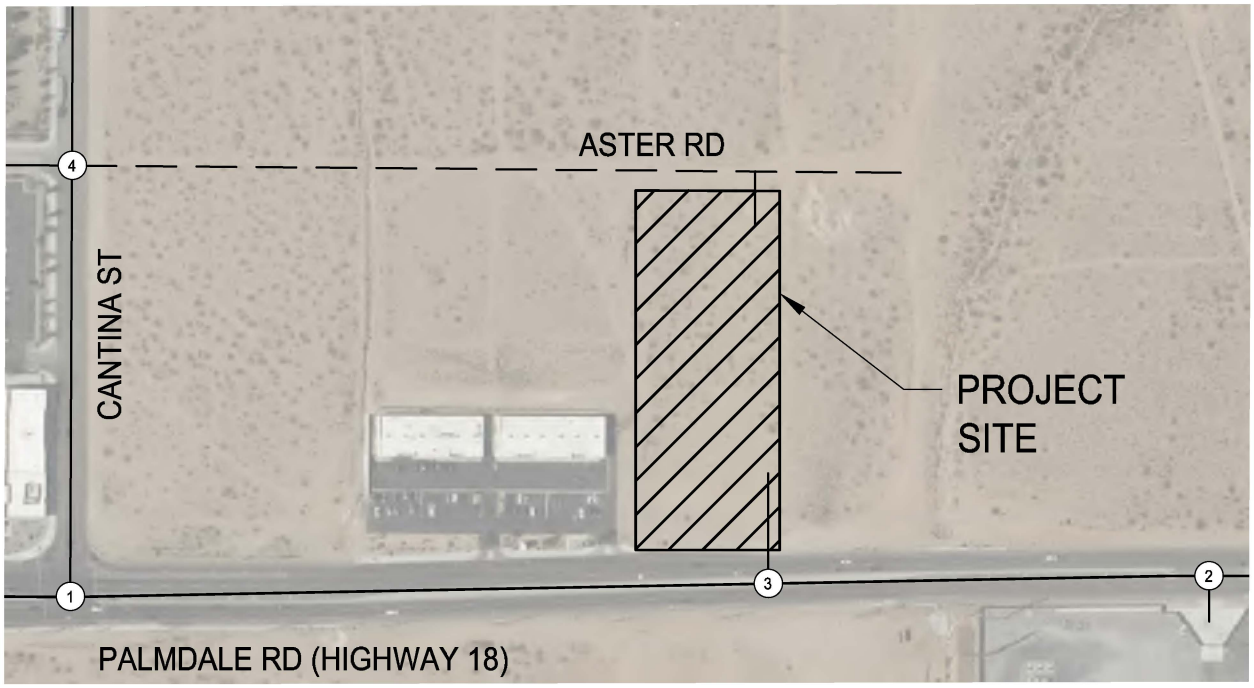
- STOP CONTROLLED APPROACH

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FIGURE 8: BACKGROUND PLUS PROJECT TRAFFIC VOLUMES
PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

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LEGEND

- EXISTING GEOMETRICS
- PROPOSED GEOMETRICS
- (#) - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

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FIGURE 9: BACKGROUND PLUS PROJECT
INTERSECTION GEOMETRICS
PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

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5.3 Background Plus Project Traffic Queuing Analysis

A queuing analysis for the Background Plus Project conditions was performed for the U-turn movements from Palmdale Road (SR 18) at Cantina Street and Palmdale Road (SR 18) at Edison Driveway. The queuing analysis was performed utilizing the Trafficware's SimTraffic Version 11 software package. The 95th percentile maximum queue length results for the Background Plus Project Conditions are shown in **Table 4 3** and **Appendix D**.

Table 5-3: Queuing Analysis – Background Plus Project Conditions

Intersection	Movement	Storage Length (Feet)	AM	PM
1. Palmdale Road (SR 18) / Cantina Street	WB U-turn	375	36	16
	WBT		196	306
	WBT		226	326
	WBR	300	55	67
3. Palmdale Road (SR 18) at Edison Driveway	EB U-turn	350	-	-
	EBTH		-	-
	EBTHR		-	-
Queue – In Feet 95% - 95 Percentile Queue Length				

As presented in **Table 5-3**, under Background Plus Project Conditions the existing turn bay lengths will accommodate the AM or PM peak 95th percentile traffic flows.

6 FUTURE BACKGROUND (YEAR 2035) CONDITIONS

The Future Background Conditions scenario represents conditions at the planning horizon Year 2035 without traffic generated by the project. This scenario is comprised of ambient growth, a general rate of growth in traffic from overall regional growth (assumed to be 3.5% annually for this study). This scenario also includes traffic generated by the Other Area Project Palmdale Road Retail Development.

6.1 Future Background (Year 2035) Traffic Analysis

The Future Background Conditions forecasted traffic volumes are illustrated in **Figure 10**.Intersection capacity analysis for the study intersections uses existing lanes geometries. The results of the analysis are shown in **Table 6-1** and provided in **Appendix C**.

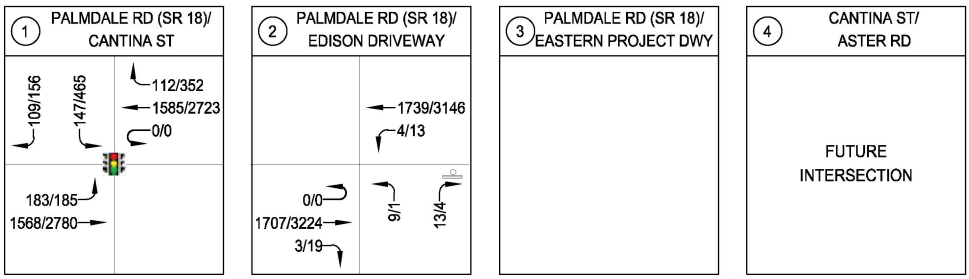
Table 6-1: Intersection Capacity Analysis – Future Background Conditions

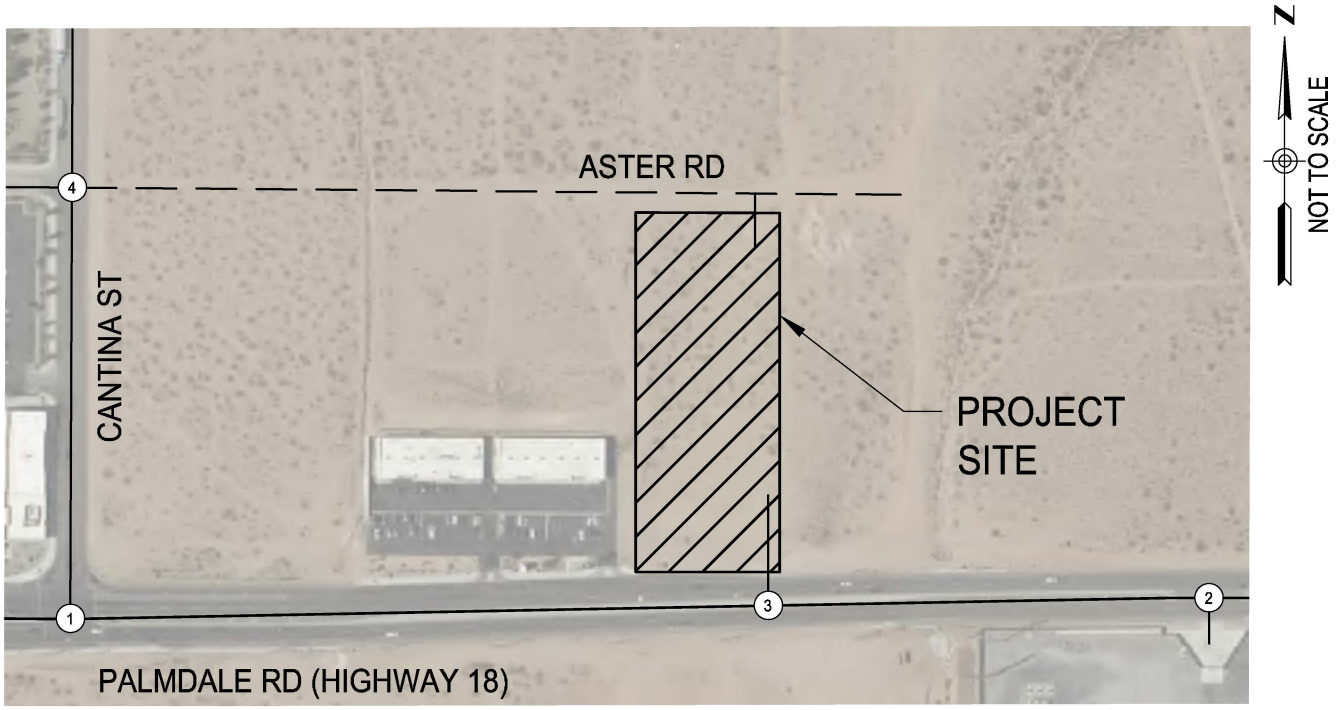
Intersection	Intersection Control Type	AM Peak		PM Peak	
		Delay	LOS	Delay	LOS
1. Palmdale Road (SR 18) at Cantina Street[a]	TS	20.3	C	81.4	F
2. Palmdale Road (SR 18) at Edison Driveway [b]	SSSC/Driveway	0.0	A	0.0	A
3. Palmdale Road (SR 18) at Project Driveway[†]	RIO	N/A			
4. Cantina Street at Aster Road	SSSC	N/A			

Notes:
(1) The Edison Driveway is an existing gated driveway; delay is provided for the U-turn movement.
Notes:
[a] At the intersection of Palmdale Road and Cantina Street, a development project (the Palmdale Road Retail Center) proposes widening the westbound approach of Palmdale Road to add a westbound through lane. See Appendix D.
[b] This existing intersection accesses a gated driveway to a Southern California Edison facility. The eastbound left-turn lane is provided for U-turns and is related to the Edison facility. The delay and level of service presented in the table is for the U-turn movement. The existing left turn lane length will accommodate projected AM and PM peak hour 95th percentile vehicle queues under all scenarios (refer to Section 5.5 and 7.4).
The shaded cells in the table represent intersection peak hours with LOS deficiencies (LOS E or F).
[†] The level of service presented for the project's Palmdale Road private driveway is for the southbound movement (restricted to right turn out only). This movement is not subject to the City of Victorville's level of service (LOS) D policy.
Abbreviations:
TS – Traffic signal-controlled intersection, SSSC – Side-street stop-controlled intersection, RIRO – Right-in/right-out driveway

As presented in under the **Table 6-1**, under Future Background Conditions, the study intersection would operate at LOS C during the AM peak hour and at LOS F during the PM peak hour.

The intersection of Palmdale Road (SR 18) / Cantina Street is anticipated to operate below the city's peak hour level of service standard. As a result, the impacts to the intersection of Palmdale Road (SR 18) / Cantina Street are identified as a cumulative impact prior to the addition of project traffic.





LEGEND

XX/XX - AM/PM TRAFFIC VOLUMES

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

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FIGURE 10: FUTURE BACKGROUND (YEAR 2035) TRAFFIC VOLUMES
PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

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7 FUTURE BACKGROUND (YEAR 2035) PLUS PROJECT CONDITIONS

The Future Background Plus Project Conditions scenario adds the project's combined total Phase 1 and Phase 2 estimated traffic generation to the Future Background Condition scenario described in **Chapter 6**. Level of service impacts identified in this scenario are considered "cumulative" impacts—impacts that the project contributes to, but does not solely cause, and may be responsible for a fair-share of the cost to implement any mitigation measures.

7.1 Phase 1 & Phase 2 Project Trip Generation

The trip generation rates for the site were obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. Opening year of the project is 2025.

Land use categories for estimating trips include **Clinic (ITE Land Use 630)**, **Coffee/Donut Shop with Drive-Through Window (ITE Land Use 937)**, and **Office/Medical Office Building - Stand-Alone (ITE Land Use 720)** were obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. A reduction in trips of 10% for internal capture is assumed for the development.

The proposed project Phase 1 is estimated to generate 908 daily trips, 120 AM peak hour and 73 PM peak hour trips. The proposed project Phase 2 is estimated to generate 583 daily trips, 52 AM peak hour and 64 PM peak hour trips. In total, Phase 1 and 2 of the proposed project would generate 1,491 daily trips, 172 AM peak hour and 137 PM peak hour trips.

Table 6-1 summarizes the estimated trip generation on an average weekday, and during the AM (7-9 AM) and PM (4-6 PM) peak hours.

Table 7-1: Project Phase 1 and Phase 2 - Trip Generation

	Use	Size/ Quantity	Daily	AM Peak Hour			PM Peak Hour		
Phase 1									
1	**Clinic - Land Use Category (ITE 630) (Includes Family Practice Office Space, Lab, and Pharmacy)**								
	Per 1,000 Sq. Ft. GLA	8,832	37.60	2.23	0.52	2.75	1.11	2.58	3.69
	Trips		333	20	5	25	10	23	33
2	**Coffee/Donut Shop with Drive-Through Window - Land Use Category (ITE 937)**								
	Per 1,000 Sq. Ft. GLA	1,279	533.57	43.80	42.08	85.88	19.50	19.50	38.99
	Trips		683	56	54	110	25	25	50
	Phase 1 Project Trips		1,015	76	59	135	35	48	83
	Phase 1 Internal Project Trips (10%)		102	8	6	14	4	5	9
	Phase 1 Subtotal Project Trips		**913**	68	53	**121**	31	43	**74**
Phase 2									
3	**Office/Medical Office Building - Stand-Alone - Land Use Category (ITE 720)**								
	Per 1,000 Sq. Ft. GLA	20,729	36	2.45	0.65	3.10	1.18	2.75	3.93
	Trips		747	51	14	65	25	57	82
	Internal Trips (10%)		75	5	2	7	2	6	8
	Subtotal Trips		**672**	46	12	**58**	23	51	**74**
	Total Project Trips		1,762	127	73	200	60	105	165
	Total Internal Project Trips (10%)		177	13	8	21	6	11	17
	Total Project Trips		**1,585**	114	65	**179**	54	94	**148**

Source: "Trip Generation Manual, Institute of Transportation Engineers", 11th Edition

As presented in **Table 7-1** in total, Phase 1 and 2 of the proposed project would generate 1,585 daily trips, 179 AM peak hour and 148 PM peak hour trips.

7.2 Project Trip Distribution and Assignment

The estimated total Phase 1 and 2 project trips are distributed by direction and assigned to the local network of streets **Figure 11** distribution of the project trips. **Figure 12** illustrates the assignment of Phase 1 project trips to study intersections. **Figure 13** illustrates the assignment of the combined total phase 1 and phase 2 project trips.

7.3 Future Background (Year 2035) Plus Project Traffic Analysis

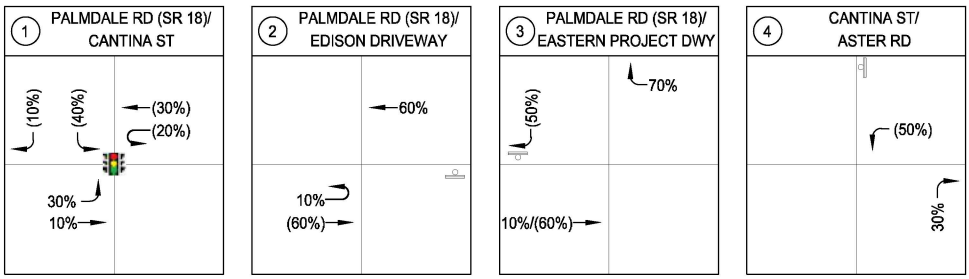
The traffic volumes under this scenario are illustrated in **Figure 14**. Intersection capacity analysis for the study intersections uses existing lanes geometries and the proposed project-specific access, roadway, and off-site intersection improvements described earlier. The results of the analysis are shown in **Table 7-2** and provided in **Appendix C.**

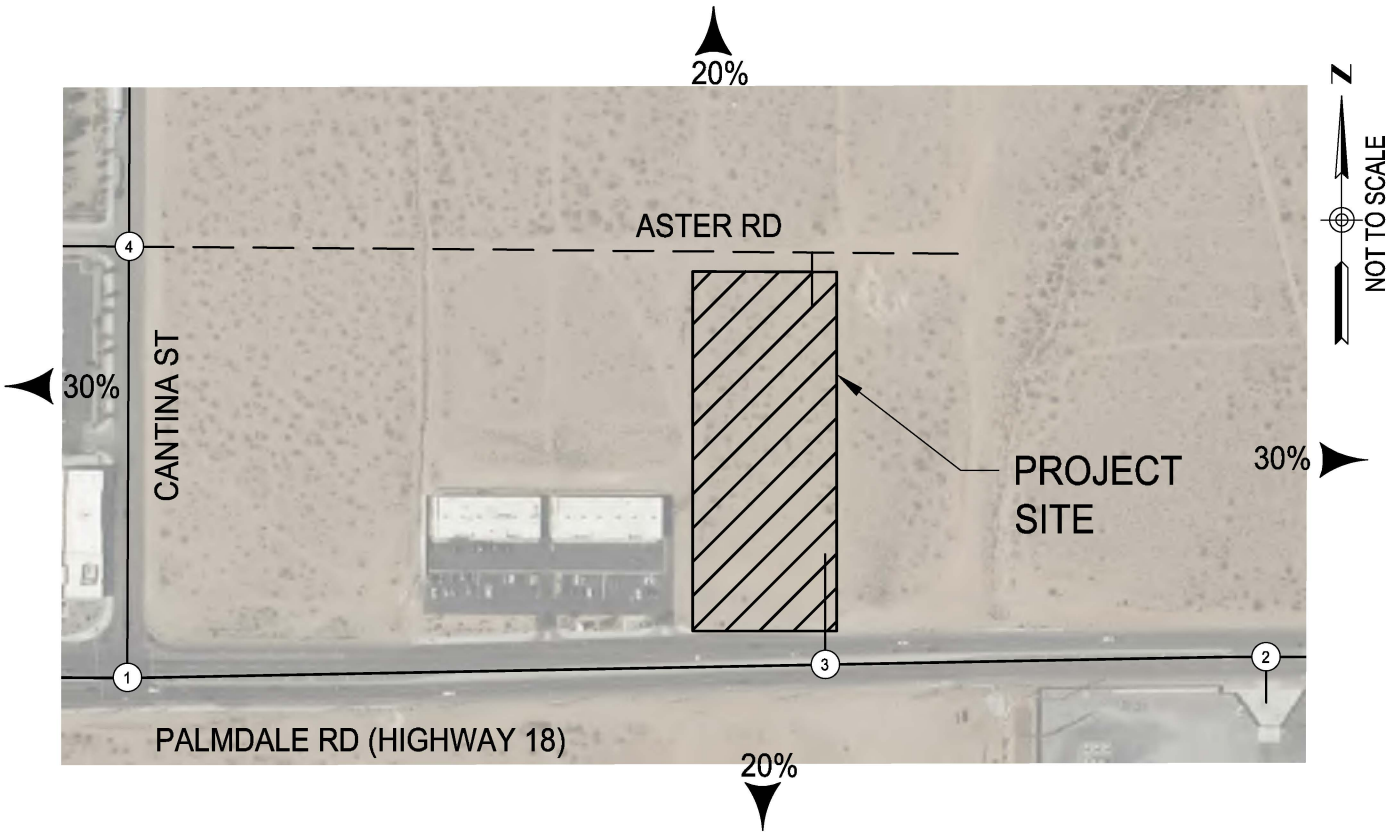
Table 7-2: Intersection Capacity Analysis – Future Background Plus Project Conditions

Intersection	Intersection Control Type	Future Background Conditions				Future Background + Project Condition			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Palmdale Road (SR 18) at Cantina Street[a]	TS	20.3	C	81.4	F	23.4	C	89.0	F
w/Palmdale Road Retail Development Improvements		N/A				16.4	B	48.5	D
2. Palmdale Road (SR 18) at Edison Driveway [b]	SSSC/Driveway	0.0	A	0.0	A	0.0	A	0.0	A
3. Palmdale Road (SR 18) at Project Driveway†	RIO	N/A				21.3	C	84.1	F
4. Cantina Street at Aster Road	SSSC	N/A				11.4	B	15.6	C

Notes:
[a] At the intersection of Palmdale Road and Cantina Street, a development project (the Palmdale Road Retail Center) proposes widening the westbound approach of Palmdale Road to add a westbound through lane. See Appendix D.
[b] This existing intersection accesses a gated driveway to a Southern California Edison facility. The eastbound left-turn lane is provided for U-turns and is related to the Edison facility. The delay and level of service presented in the table is for the U-turn movement. The existing left turn lane length will accommodate projected AM and PM peak hour 95th percentile vehicle queues under all scenarios (refer to Section 5.5 and 7.4).
The shaded cells in the table represent intersection peak hours with LOS deficiencies (LOS E or F).
† The level of service presented for the project's Palmdale Road private driveway is for the southbound movement (restricted to right turn out only). This movement is not subject to the City of Victorville's level of service (LOS) D policy.
Abbreviations:
TS – Traffic signal-controlled intersection, SSSC – Side-street stop-controlled intersection, RIRO – Right-in/right-out driveway

As presented in **Table 7-2,** under Future Background Plus Project Conditions, the study intersection would operate at LOS C during the AM peak hour and at LOS F during the PM peak hour.





LEGEND

XX% - GENERAL PROJECT TRIP DISTRIBUTION

XX% - SPECIFIC PROJECT TRIP PERCENTAGE

XX%/(XX%) - INBOUND/(OUTBOUND)TRIP PERCENTAGE

(#) - STUDY INTERSECTIONS

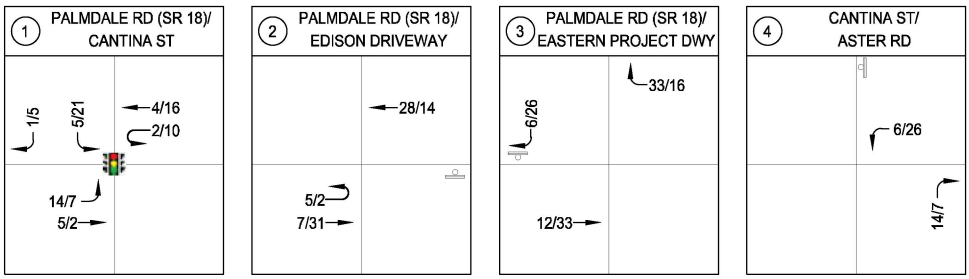
- SIGNALIZED INTERSECTION

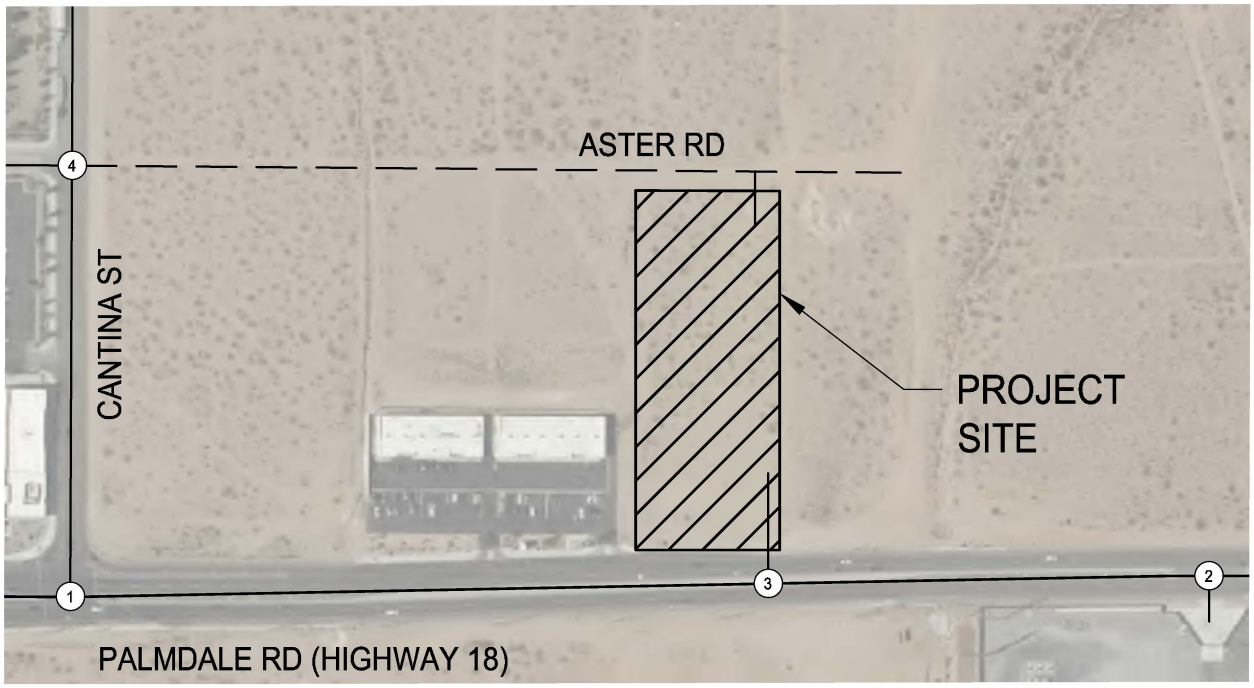
- STOP CONTROLLED APPROACH

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FIGURE 11: PHASE 2 - PROJECT TRIP DISTRIBUTION
PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

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PHASE 2 PROJECT TRIPS

AM PEAK PERIOD - 46 IN / 12 OUT
PM PEAK PERIOD - 23 IN / 51 OUT

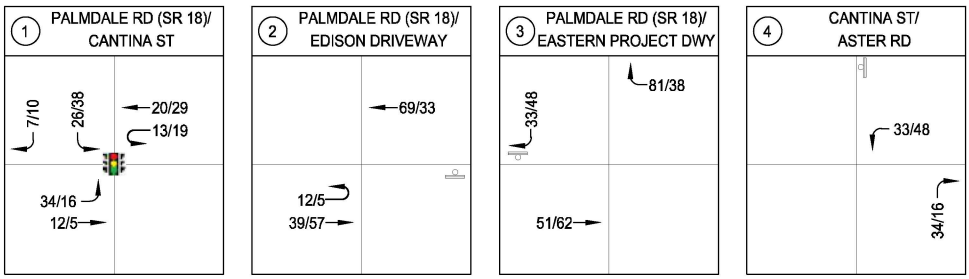
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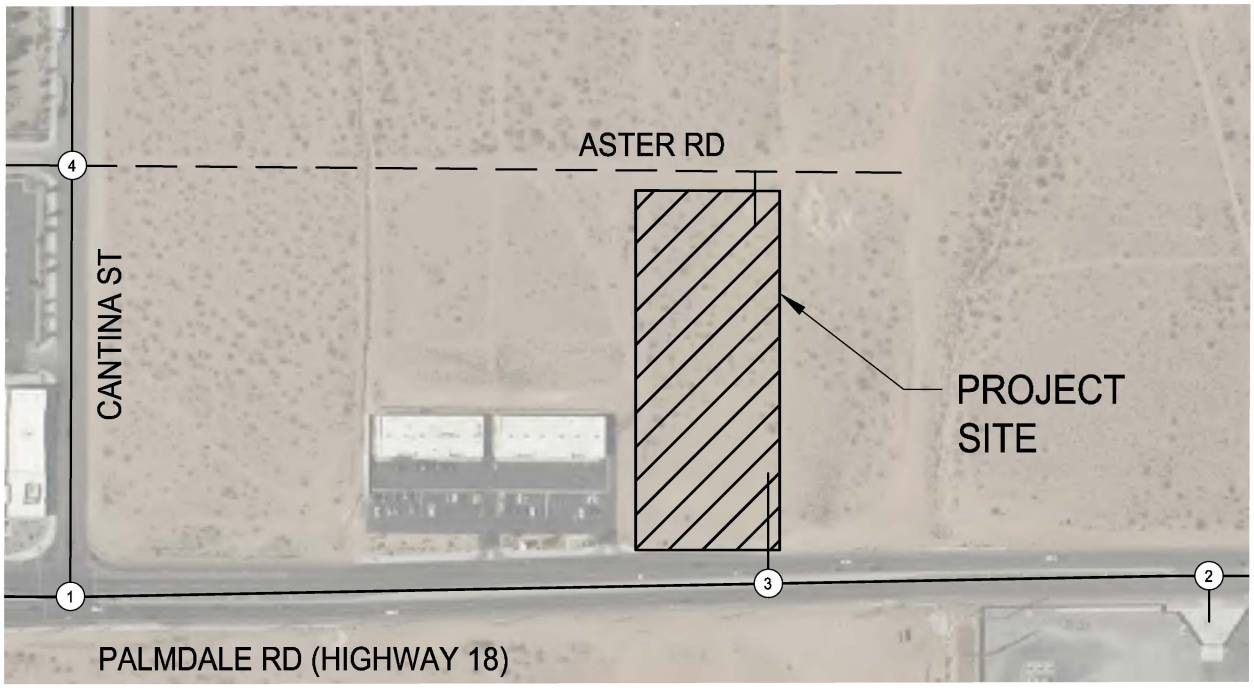
XX/XX - AM/PM PROJECT TRIP
(#) - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

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FIGURE 12: PHASE 2 PROJECT TRIPS
VICTORVILLE WAREHOUSE
VICTORVILLE, CALIFORNIA

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TOTAL PROJECT TRIPS

AM PEAK PERIOD - 114 IN / 65 OUT
PM PEAK PERIOD - 54 IN / 94 OUT

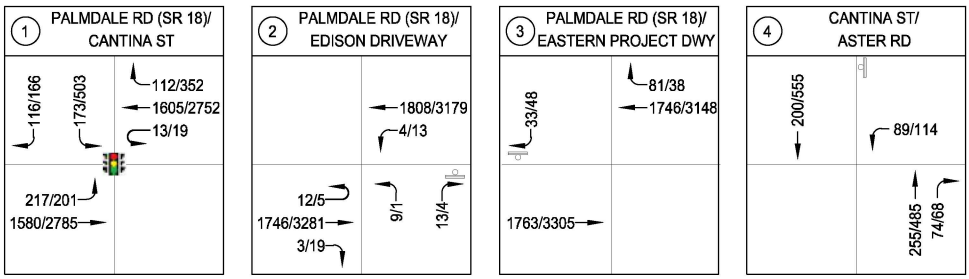
LEGEND

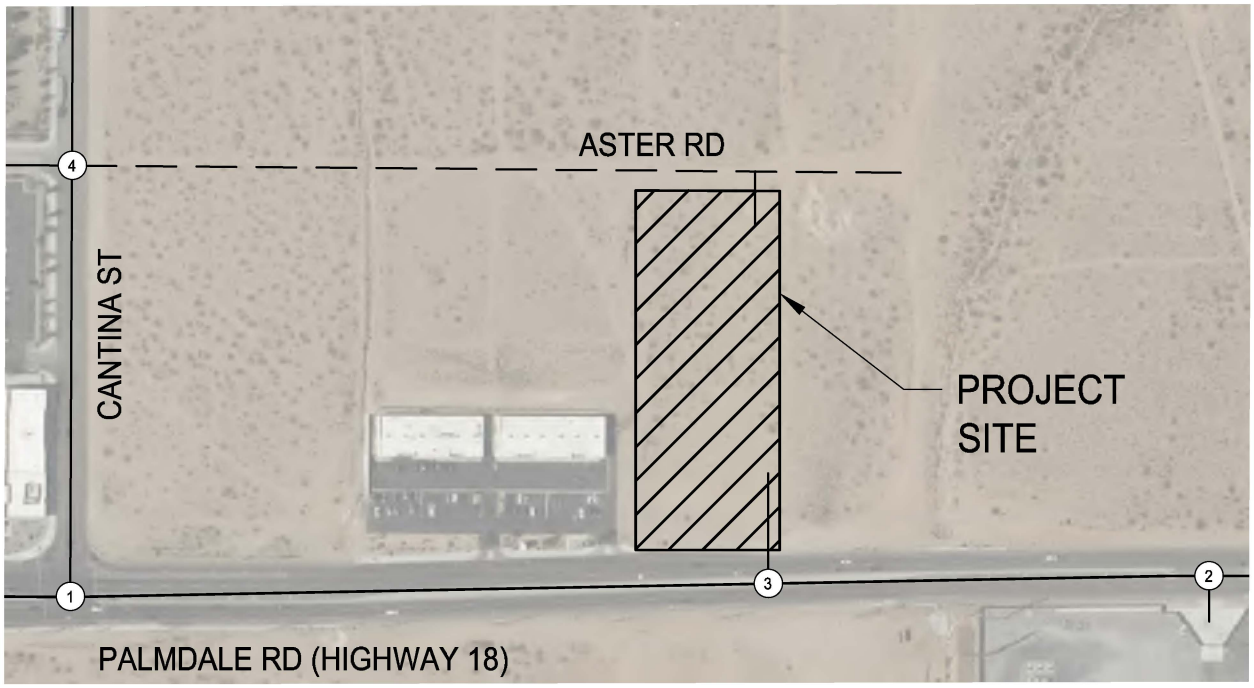
XX/XX - AM/PM PROJECT TRIP
(#) - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

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FIGURE 13: TOTAL PHASE I AND PHASE II PROJECT TRIPS
VICTORVILLE WAREHOUSE
VICTORVILLE, CALIFORNIA

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LEGEND

XX/XX - AM/PM TRAFFIC VOLUMES

(#) - STUDY INTERSECTIONS

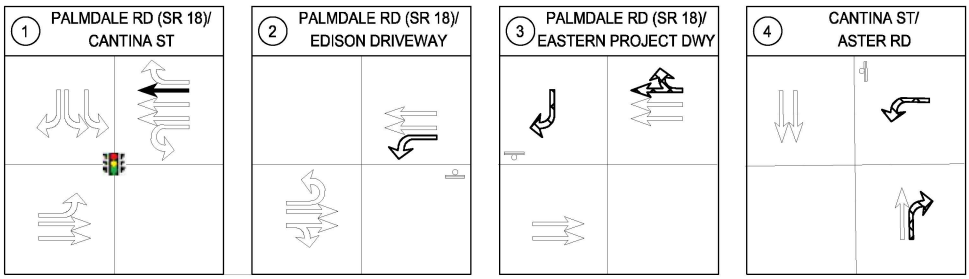
- SIGNALIZED INTERSECTION

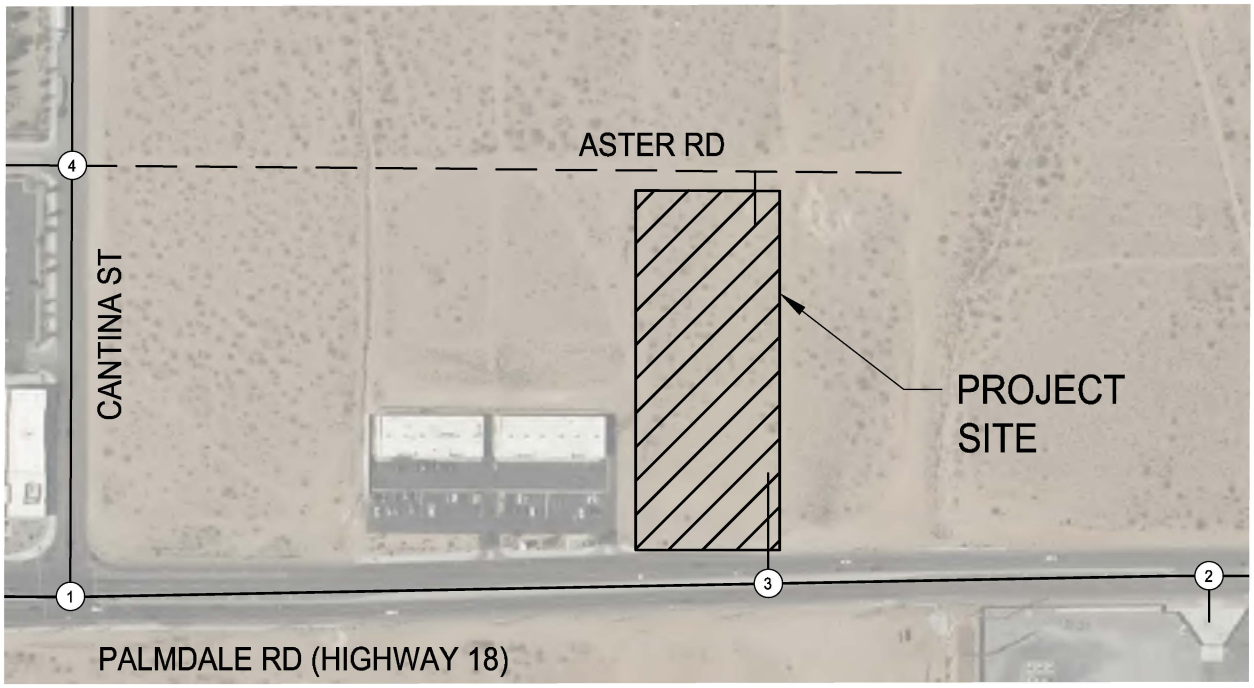
- STOP CONTROLLED APPROACH

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FIGURE 14: FUTURE BACKGROUND (YEAR 2035) PLUS PROJECT TRAFFIC VOLUMES PALMDALE ROAD MEDICAL OFFICES VICTORVILLE, CALIFORNIA

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LEGEND

- EXISTING GEOMETRICS
- PROPOSED GEOMETRICS
- FUTURE BACKGROUND PLUS PROJECT GEOMETRICS
- (#) - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

DAVID EVANS AND ASSOCIATES INC.

FIGURE 15: FUTURE BACKGROUND (YEAR 2035) PLUS PROJECT INTERSECTION GEOMETRICS
PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

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7.4 Future Background (Year 2035) Plus Project Traffic Queuing Analysis

A queuing analysis for the Future Background Plus Project Conditions for the U-turn movements from Palmdale Road (SR 18) at Cantina Street and Palmdale Road (SR 18) at Edison Driveway. The queuing analysis was performed utilizing Trafficware's SimTraffic Version 11 software package. The 95th percentile maximum queue length results for the Project Conditions are shown in **Table 7-3** and **Appendix E**.

Table 7-3: Queuing Analysis – Future Background Plus Project Conditions

Intersection	Movement	Storage Length (Feet)	with Existing Geometrics		with Palmdale Road Retail Development Improvements	
			AM	PM	AM	PM
1. Palmdale Road (SR 18) / Cantina Street	WB U-turn	375	36	37	27	32
	WBT		272	315	194	245
	WBT		297	344	183	246
	WBT		-	-	176	224
	WBR	300	57	55	60	70
3. Palmdale Road (SR 18) at Edison Driveway	EB U-turn	350	-	-	-	-
	EBTH		-	-	-	-
	EBTHR		-	-	-	-
Queue – In Feet 95% - 95 Percentile Queue Length "-" No queue provided						

As presented in **Table 7-3**, under Future Background Plus Project Conditions the proposed turn bay lengths will accommodate the AM or PM peak 95th percentile traffic flows.

8 FUTURE (YEAR 2045) CONDITIONS (FOR INFORMATIONAL PURPOSES)

The Future (Year 2045) conditions scenario represents a 20-year forecast planning horizon without traffic generated by the project. It is for informational purposes only because the City of Victorville does not use this long-range analysis scenario for conditioning project improvements.

Growth in traffic is from extrapolation of the 2040 San Bernardino County Transportation Analysis Model (SBTAM) model projections. Intersection turn movements were derived from post processing forecasted link approach volumes and balancing the turn movement volumes for each study intersection.

This scenario also includes traffic generated by the Other Area Project Palmdale Road Retail Development.

8.1 Future (Year 2045) Traffic Analysis

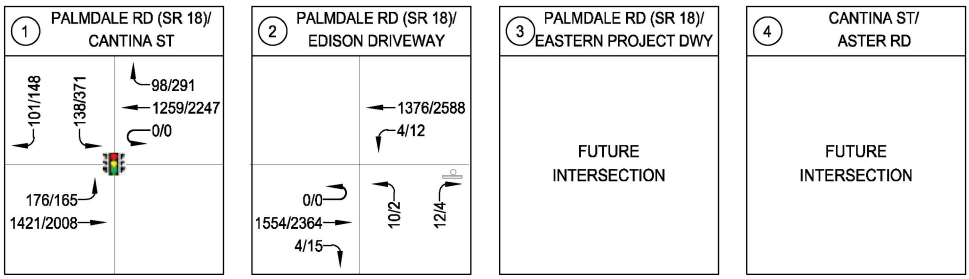
The Future (Year 2045) Conditions forecasted traffic volumes are illustrated in **Figure 16**. Intersection capacity analysis uses these traffic projections and the future lane geometries. The results of the analysis are shown in **Table 8-1** and provided in **Appendix C**.

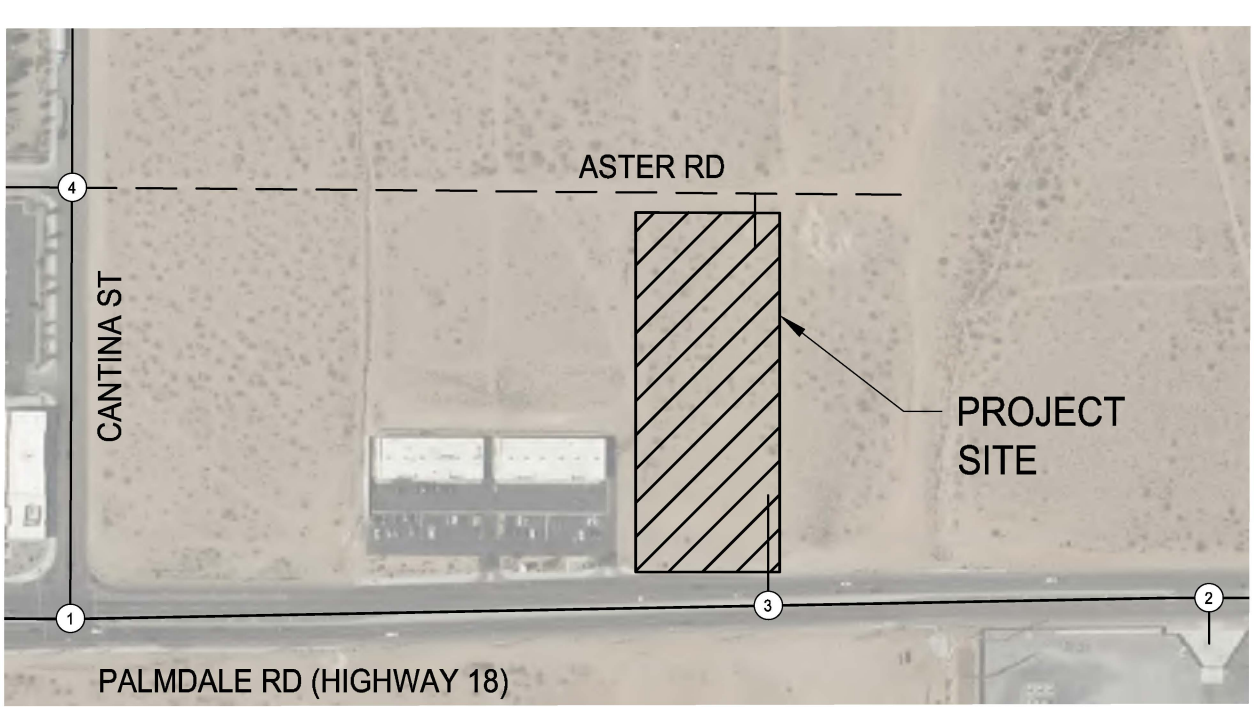
Table 8-1: Intersection Capacity Analysis – Future (Year 2045) Conditions

Intersection	Intersection Control Type	AM Peak		PM Peak	
		Delay	LOS	Delay	LOS
1. Palmdale Road (SR 18) at Cantina Street[a]	TS	16.1	B	33.5	C
2. Palmdale Road (SR 18) at Edison Driveway [b]	SSSC/Driveway	0.0	A	0.0	A
3. Palmdale Road (SR 18) at Project Driveway[†]	RIO	N/A			
4. Cantina Street at Aster Road	SSSC	N/A			

Notes:
(1) The Edison Driveway is an existing gated driveway; delay is provided for the U-turn movement.
Notes:
[a] At the intersection of Palmdale Road and Cantina Street, a development project (the Palmdale Road Retail Center) proposes widening the westbound approach of Palmdale Road to add a westbound through lane. See Appendix D.
[b] This existing intersection accesses a gated driveway to a Southern California Edison facility. The eastbound left-turn lane is provided for U-turns and is related to the Edison facility. The delay and level of service presented in the table is for the U-turn movement. The existing left turn lane length will accommodate projected AM and PM peak hour 95th percentile vehicle queues under all scenarios (refer to Section 5.5 and 7.4).
The shaded cells in the table represent intersection peak hours with LOS deficiencies (LOS E or F).
[†] The level of service presented for the project's Palmdale Road private driveway is for the southbound movement (restricted to right turn out only). This movement is not subject to the City of Victorville's level of service (LOS) D policy.
Abbreviations:
TS – Traffic signal-controlled intersection, SSSC – Side-street stop-controlled intersection, RIRO – Right-in/right-out driveway

As presented in under the **Table 8-1**, under Future (Year 2045) Conditions, the study intersection would operate at LOS B during the AM peak hour and at LOS C during the PM peak hour.





LEGEND

XX/XX - AM/PM TRAFFIC VOLUMES

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

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FIGURE 16: FUTURE (YEAR 2045) TRAFFIC VOLUMES PALMDALE ROAD MEDICAL OFFICES VICTORVILLE, CALIFORNIA

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9 FUTURE (YEAR 2045) PLUS PROJECT CONDITIONS

The Future (Year 2045) Plus Project conditions scenario adds the project's combined total Phase 1 and Phase 2 estimated traffic generation to the Future (Year 2045) Condition scenario described in **Chapter 8**. Level of service impacts identified in this scenario are considered "cumulative" impacts—impacts that the project contributes to, but does not solely cause, and may be responsible for a fair-share of the cost to implement any mitigation measures.

9.1 Future (Year 2045) Plus Project Traffic Analysis

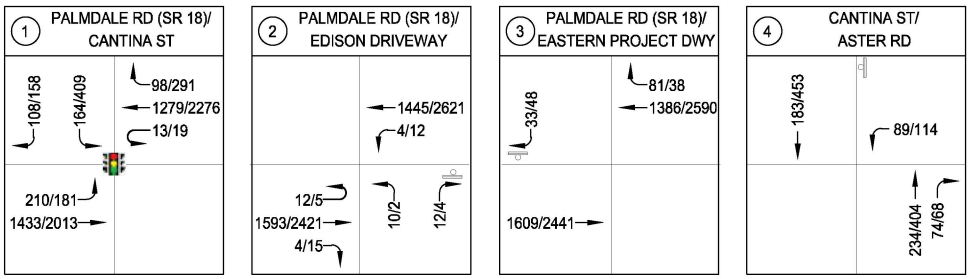
The traffic volumes under this scenario are illustrated in **Figure 17**. Intersection capacity analysis for the study intersections uses existing lanes geometries and the proposed project-specific access, roadway, and off-site intersection improvements described earlier. The results of the analysis are shown in **Table 7-2** and provided in **Appendix C.**

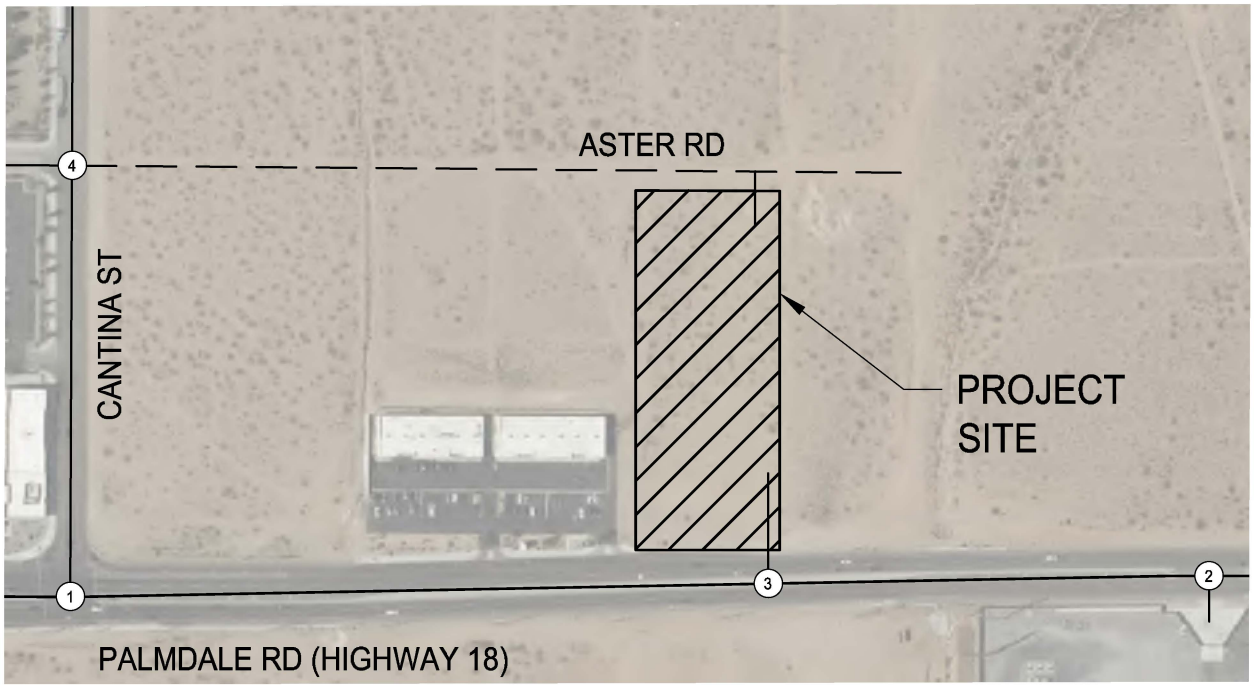
Table 9-1: Intersection Capacity Analysis – Future (Year 2045) Plus Project Conditions

Intersection	Intersection Control Type	Future Conditions				Future + Project Condition			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Palmdale Road (SR 18) at Cantina Street[a]	TS	16.1	B	33.5	C	19.0	B	38.9	D
w/Palmdale Road Retail Development Improvements		N/A				15.2	B	26.7	C
2. Palmdale Road (SR 18) at Edison Driveway [b]	SSSC/Driveway	0.0	0.0	A	0.0	A	A	0.0	A
3. Palmdale Road (SR 18) at Project Driveway†	RIO	N/A				16.7	C	43.3	E
4. Cantina Street at Aster Road	SSSC	N/A				11.2	B	14.1	B

Notes:
[a] At the intersection of Palmdale Road and Cantina Street, a development project (the Palmdale Road Retail Center) proposes widening the westbound approach of Palmdale Road to add a westbound through lane. See Appendix D.
[b] This existing intersection accesses a gated driveway to a Southern California Edison facility. The eastbound left-turn lane is provided for U-turns and is related to the Edison facility. The delay and level of service presented in the table is for the U-turn movement. The existing left turn lane length will accommodate projected AM and PM peak hour 95th percentile vehicle queues under all scenarios (refer to Section 5.5 and 7.4).
The shaded cells in the table represent intersection peak hours with LOS deficiencies (LOS E or F).
† The level of service presented for the project's Palmdale Road private driveway is for the southbound movement (restricted to right turn out only). This movement is not subject to the City of Victorville's level of service (LOS) D policy.
Abbreviations:
TS – Traffic signal-controlled intersection, SSSC – Side-street stop-controlled intersection, RIRO – Right-in/right-out driveway

As presented in **Table 7-2,** under Future (Year 2045) Plus Project Conditions, the study intersection would operate at LOS D during the AM peak hour and PM peak hour.





LEGEND

XX/XX - AM/PM TRAFFIC VOLUMES

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

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FIGURE 17: FUTURE (YEAR 2045) PLUS PROJECT TRAFFIC VOLUMES
PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

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Last Opened: Mar 21, 2024 - 3:13pm by: Tim

9.2 Future (Year 2045) Plus Project Traffic Queuing Analysis

A queuing analysis for the Future (Year 2045) Plus Project Conditions for the U-turn movements turn from Palmdale Road (SR 18) at Cantina Street and Palmdale Road (SR 18) at Edison Driveway. The queuing analysis was performed utilizing the Trafficware's SimTraffic Version 11 software package. The 95th percentile maximum queue length results for the Project Conditions are shown in **Table 7-3** and **Appendix E**.

Table 9-2: Queuing Analysis – Future (Year 2045) Plus Project Conditions

Intersection	Movement	Storage Length (Feet)	with Existing Geometrics		with Palmdale Road Retail Development Improvements	
			AM	PM	AM	PM
1. Palmdale Road (SR 18) / Cantina Street	WB U-turn	375	25	45	30	44
	WBT		206	312	165	248
	WBT		226	340	167	240
	WBT		-	-	137	215
	WBR	300	46	61	47	84
3. Palmdale Road (SR 18) at Edison Driveway	EB U-turn	350	-	-	-	-
	EBTH		-	13	-	-
	EBTHR		5	13	-	-
Queue – In Feet 95% - 95 Percentile Queue Length "-" No queue provided						

As presented in **Table 7-3**, under Future (Year 2045) Plus Project Conditions the proposed turn bay lengths will accommodate the AM or PM peak 95th percentile traffic flows.

10 APPENDICES

Appendix A: Approved City Scope Agreement
Appendix B: Turn Movement Count Volumes
Appendix C: Intersection Capacity Analysis Calculations
Appendix D: Palmdale Road Retail Development Project Trips and Improvements
Appendix E: Queuing Analysis

Appendix A: Approved City Scope Agreement

From: Anwar Wagdy <awagdy@victorvilleca.gov>
Sent: Monday, September 12, 2022 1:57 PM
To: Trisha Munoz
Cc: Jim Daisa; Robert Kilpatrick; Robert A. Martinez AIA, CASp, CASI (robert.martinez@MOA.Archi); Fredy Bonilla; Dr R. Paul Earle
Subject: RE: Project Scoping Memorandum - Palmdale Road Medical Offices

Hi Trisha, hope all is well.

Your scoping letter is acceptable to us, but please add the following:

- Address the cumulative queuing length for each of the U-turn locations (Cantina and Edison).
- Will there be a W/B deceleration lane at the driveways?

Since this project is along a state highway, Caltrans may provide additional comments/requirements.

Thanks,
Anwar Wagdy,
City Traffic Engineer

From: Trisha Munoz <TMunoz@deainc.com>
Sent: Thursday, September 8, 2022 9:31 AM
To: Anwar Wagdy <awagdy@victorvilleca.gov>
Cc: Jim Daisa <Jim.Daisa@deainc.com>; Robert Kilpatrick <RKilpatrick@deainc.com>; Robert A. Martinez AIA, CASp, CASI (robert.martinez@MOA.Archi) <robert.martinez@MOA.Archi>; Fredy Bonilla <fbonilla@victorvilleca.gov>; Dr R. Paul Earle <pearle@shilohmc.com>
Subject: Project Scoping Memorandum - Palmdale Road Medical Offices

[EXTERNAL EMAIL]: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Anwar,

Please see attached the Traffic Study Scope Memorandum for the proposed Palmdale Road Medical Office located north of Palmdale Road and approximately 1,100 feet east of Cantina Street in the City of Victorville, California.
This memorandum provides our assumptions for completing the focused traffic impact study for review and approval (or commenting) by the affected jurisdictions including the City of Victorville and Caltrans District 8 LDR.

The Memorandum is concurrently submitted to Caltrans District 8 LDR.

If you have any questions, please do not hesitate to contact us.

Trisha Munoz, EIT | Engineering Designer II, Transportation
David Evans and Associates, Inc.
18484 Outer Highway 18 North, Suite 225 | Apple Valley, CA, 92307 | www.deainc.com
d: 760.524.9120 | c: 760.686.1215 | Cisco: 39120 | tnm@deainc.com

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DAVID EVANS AND ASSOCIATES INC.

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DAVID EVANS AND ASSOCIATES INC.

September 6, 2022 Job No. SHIL0000-0001

MEMORANDUM



To: Mr. R. Paul Earle
Shiloh Medical Center, Inc.
12984 Hesperia Road
Victorville, CA 92395

From: James M. Daisa, PE
Senior Transportation Project Manager

RE: TRAFFIC STUDY SCOPE AND VEHICLE MILES TRAVELED (VMT) SCREENING FOR THE PALMDALE ROAD MEDICAL OFFICES, VICTORVILLE, CALIFORNIA – APN 3103-561-20

This memorandum presents key elements of the proposed Focused Traffic Impact Analysis Report (TIA Report) scope of work for the above referenced development project. The purpose of this memorandum is to present our traffic study assumptions and methodologies to the City of Victorville for their review and approval.

A. Project Description

The proposed project consists of an 8,683 SF Clinic includes medical offices, lab and pharmacy, a 1,279 SF Coffee/Donut Shop with Drive-Through Window, and a 18,000 SF Medical Office Building. The project site is located north of Palmdale Road and approximately 1,100 feet east of Cantina Street in the City of Victorville, California, as illustrated in **Exhibit A**.

The proposed project is bounded to the north by vacant/undeveloped properties, to the south by Palmdale Road and vacant/undeveloped properties, to the west by the Victorville Village Retail Center, and to the east vacant/undeveloped properties. **Exhibit B** illustrates the proposed site plan. As shown in the plan, access to the site will be provided from the existing driveway of the Victorville Village Retail Center driveway and a secondary new driveway from Palmdale Road.

B. Project Trip Generation

Table A summarizes the estimated trip generation for the proposed project for weekday AM (7-9 AM) and PM (4-6 PM) peak hours. The trip generation rates for the site include Clinic (ITE Land Use 630), Coffee/Donut Shop with Drive-Through Window (ITE Land Use 937), and Office/Medical Office Building - Stand-Alone (ITE Land Use 720) were obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. A reduction in trips of 10% for internal capture is assumed for the development.

The proposed project Phase I is estimated to generate 908 daily trips, 120 AM peak hour and 73 PM peak hour trips. The proposed project Phase II is estimated to generate 583 daily trips, 52 AM peak hour and 64 PM peak hour trips. In total, Phase I and II of the proposed project would generate 1,491 daily trips, 172 AM peak hour and 137 PM peak hour trips.

C. Project Trip Distribution and Assignment

To address the impacts of the estimated project traffic, the trips were distributed by direction towards major commute routes and concentrations of residential and commercial / employment centers. Once the distribution pattern was established, project trips were assigned to the area streets that serve the project.

The distribution of the Phase I project trips is illustrated in **Exhibit C1**. The distribution of the Phase II project trips is illustrated in **Exhibit C2**. The assignment of Phase I project trips to study intersections is illustrated in **Exhibit D1**, and the assignment of Phase II project trips to study intersections is illustrated in **Exhibit D2.** The combined assignment of Phase I and Phase II project trips to study intersections is illustrated in **Exhibit D3.**

Table A: Project Trip Generation

	Use	Size/ Quantity	Daily	AM Peak Hour			PM Peak Hour		
Phase I									
1	**Clinic - Land Use Category (ITE 630) (Includes Family Practice Office Space, Lab, and Pharmacy)**								
	Per 1,000 Sq. Ft. GLA	8,683	37.60	2.23	0.52	2.75	1.11	2.58	3.69
	Trips		327	19	5	24	10	23	33
2	**Coffee/Donut Shop with Drive-Through Window - Land Use Category (ITE 937)**								
	Per 1,000 Sq. Ft. GLA	1,279	533.57	43.80	42.08	85.88	19.50	19.50	38.99
	Trips		683	57	54	111	25	25	50
	Phase I Project Trips		1,009	76	59	134	35	48	82
	Phase I Internal Project Trips (10%)		101	8	6	14	4	5	9
	Phase I Subtotal Project Trips		**908**	68	53	**120**	31	43	**73**
Phase II									
3	**Office/Medical Office Building - Stand-Alone - Land Use Category (ITE 720)**								
	Per 1,000 Sq. Ft. GLA	18,000	36	2.45	0.65	3.10	1.18	2.75	3.93
	Trips		648	45	12	57	21	50	71
	Internal Trips (10%)		65	4	1	5	2	5	7
	Subtotal Trips		**583**	41	11	**52**	19	45	**64**
	Total Project Trips		1,657	121	71	191	56	98	153
	Total Internal Project Trips (10%)		166	12	7	19	6	10	16
	Total Project Trips		**1,491**	109	64	**172**	50	88	**137**

Source: "Trip Generation Manual, Institute of Transportation Engineers", 11th Edition

D. Study Intersections

Since the proposed project is located at the southeast corner of Palmdale Road and Cantina Street, we identify three existing intersections and one proposed project driveway as study intersections:

1. Palmdale Road (SR 18) at Cantina Street (existing intersection)
2. Palmdale Road (SR 18) at the project's western shared/reciprocal access driveway (existing intersection)
3. Palmdale Road (SR 18) at Edison Driveway (existing intersection)
4. Palmdale Road (SR 18) at the project's eastern shared access driveway (future intersection)

The intersection of Palmdale Road (SR 18) and Cantina Street is a signalized intersection that allows westbound to eastbound U-turns required for trips egressing the project site and destined to the east. The intersection of Palmdale Road (SR 18) with the project's western shared / reciprocal access driveway is an existing side street stop-controlled driveway serving a commercial center that will be modified to provide reciprocal access to the proposed project. The intersection of Palmdale Road (SR 18) with the Southern California Edison substation facility driveway (located about 1,780-feet east of Cantina Street) is a side street stop-controlled intersection with a break in the raised median and left turn bays for westbound access into the Edison substation and for eastbound to westbound U-turns required for trips ingressing the project from eastbound Palmdale Road.

Site Access

Access to the site is proposed with an existing right turn in / right turn out driveway for the Victorville Village Commercial Center located about 850-feet east of Cantina Street (measured from centerline to centerline) which is proposed to be modified to provide reciprocal access to the proposed project. A second access to the proposed project is a right turn in / right turn out driveway on Palmdale Road (SR 18) located about 1,100-feet east of Cantina Street (measured from centerline to centerline).

Palmdale Road's raised median enforces the driveway right in/ right out restrictions but also requires customers / employees of the project to make U-turns when ingressing the site while traveling eastbound on Palmdale Road and when egressing the site when destined to points east.

E. Capacity Analysis Methodology and Assumptions

Intersection capacity and level of service will be calculated using the Highway Capacity Manual (HCM6) methodologies for signalized and non-signalized intersections. All study intersections will be analyzed to identify deficiencies in the city's Level of Service (LOS) policy. The capacity analysis will use the following input parameters:

- Trucks will be reflected as a percentage of the total intersection approach traffic volumes.
- Field measures Peak Hour Factors (PHF) will be used in existing and near-term background scenarios and a PHF of 0.95 will be used in long-term year 2034 analyses.
- Match existing coordination cycle length; otherwise, use cycle lengths ranging from a minimum of 70 seconds to a maximum of 120 seconds. A 90-second cycle length is preferred. Optimize green time splits.
- Lost time shall be 2 seconds per critical movement. A two-phase intersection would have a total of 4 seconds lost time. An eight-phase intersection would have a total of 8 seconds of lost time (4 critical movements times 2 seconds each).
- Intersection capacity analysis parameters, software settings, and assumptions will be consistent with San Bernardino County's Transportation Impact Study Guidelines (July 2019) as follows:

  Saturation flows for existing and background (opening day) scenarios:

  - 1,800 vehicles per hour green per lane (vphgpl) for exclusive through and right turn lanes.
  - 1,700 vphgpl for exclusive left turn lanes.
  - 1,600 vphgpl for exclusive dual left turn lanes.

  Saturation flows for future cumulative scenarios:

  - 1,900 vehicles per hour green per lane (vphgpl) for exclusive through and right turn lanes.
  - 1,800 vphgpl for exclusive left turn lanes.
  - 1,800 vphgpl for exclusive double right turn lanes.
  - 1,700 vphgpl for exclusive dual left turn lanes.

F. Traffic Study Scenarios

Scenarios analyzed in this study are consistent with Victorville and San Bernardino County Congestion Management Program (CMP) requirements and include:

1. Existing Conditions (AM (7-9 AM) and PM (4-6 PM) peak)
2. Background Conditions (Year 2024)
   a. Existing + ambient growth from 2022 to 2024 (assuming a growth rate of 3.5% per year)
3. Background + Project (Phase I) Conditions (Year 2024)
   a. Background conditions + Project traffic
4. Future Background Conditions (Year 2034)
   a. Background (2024) conditions + ambient growth from 2024 to 2034 (assuming a growth rate of 3.5% per year)

5. Future + Project (Phase I and Phase II) (Year 2034)
    a. Future background conditions (Year 2034) + Project (Phase I and Phase II) traffic

G. Vehicle Miles Traveled (VMT) Analysis Screening

The City of Victorville Vehicle Miles Traveled (VMT) Analysis Guidelines were adopted in June of 2020 in conformance with SB 743.

Project Screening from Conducting VMT Analyses

Victorville uses screening criteria to determine if a development project is required to conduct a VMT analysis as part of the CEQA environmental clearance process. If a project satisfies the criteria described below it can be presumed to have a less than significant impact on VMT and does not require a VMT analysis.

Victorville has two criteria for screening projects from requiring a VMT analysis. The first criterion is based on the project's net daily increase in vehicle trips—if the project's net daily traffic generation is equal to or less than the city's threshold of 1,285 trips per day, it is exempt from having to conduct a VMT analysis.

The second criterion is comprised of a list of specific land uses types and a maximum size threshold in terms of dwelling units for residential projects and floor area for non-residential projects. Development projects within the land use categories listed and under the maximum size have been determined to generate less than 3,000 metric tons of CO2 emissions annually, which is the most stringent threshold of any of California's air quality management districts under which a project would not be expected to significantly impact air quality due to vehicle miles of travel (VMT). Proposed projects matching the "project type of land use" and falling under the maximum size threshold are exempt from having to conduct a VMT analysis.

1. Screening for Net Increase in Daily Vehicle Trips

As shown in **Table A**, the project's net increase in daily vehicle trips is 1,491 which exceeds the 1,285 daily trip threshold in the city's guidelines. Based on this criterion, the project is not screened from requiring a VMT.

2. Project Type Screening

According to the City of Victorville's VMT guidelines, the following land uses or development with the specified maximum size are exempt from having to conduct a VMT analysis:

- Single Family or Multifamily Residential – 136 dwelling units or less
- **Office — 227,000 square feet or less**
- **Retail — 122,000 square feet or less**
- Warehousing — 829,000 square feet or less
- Light Industrial — 296,000 square feet or less
- K-12 Public School
- Daycare/Childcare/Pre-K
- Affordable Housing
- Student Housing
- Community Institutions, Social Services and Public Buildings

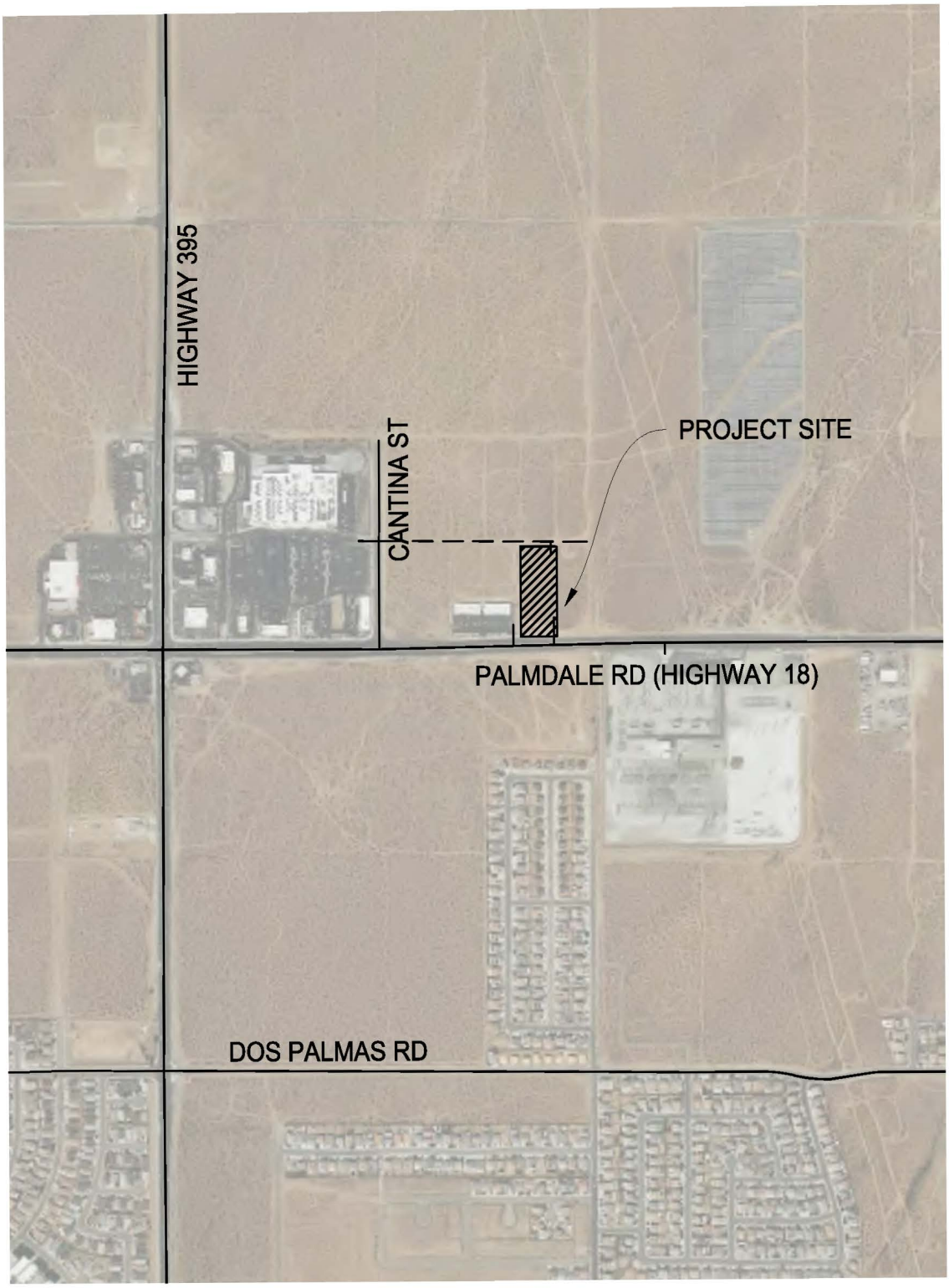
The proposed project is comprised of medical offices and a retail use (a coffee/donut shop with drive-through window). The combined Phase I and Phase II medical office building square footage (26,683 square feet) and the proposed coffee/donut shop building square footage (1,279 square feet) are below the city's size threshold of 227,000 square feet for office use and 122,000 square feet for retail uses.

Therefore, based on this criterion, the project **is screened out** from having to conduct a VMT analysis under CEQA.

If you have any questions or comments, please feel free to contact us.

Attachments

1. Exhibit A – Vicinity Map
2. Exhibit B – Site Plan
3. Exhibit C1 – Phase I Project Trip Distribution
4. Exhibit C2 – Phase II Project Trip Distribution
5. Exhibit D1 – Phase I Project Trips
6. Exhibit D2 – Phase II Project Trips
7. Exhibit D3 – Total Project Trips



N

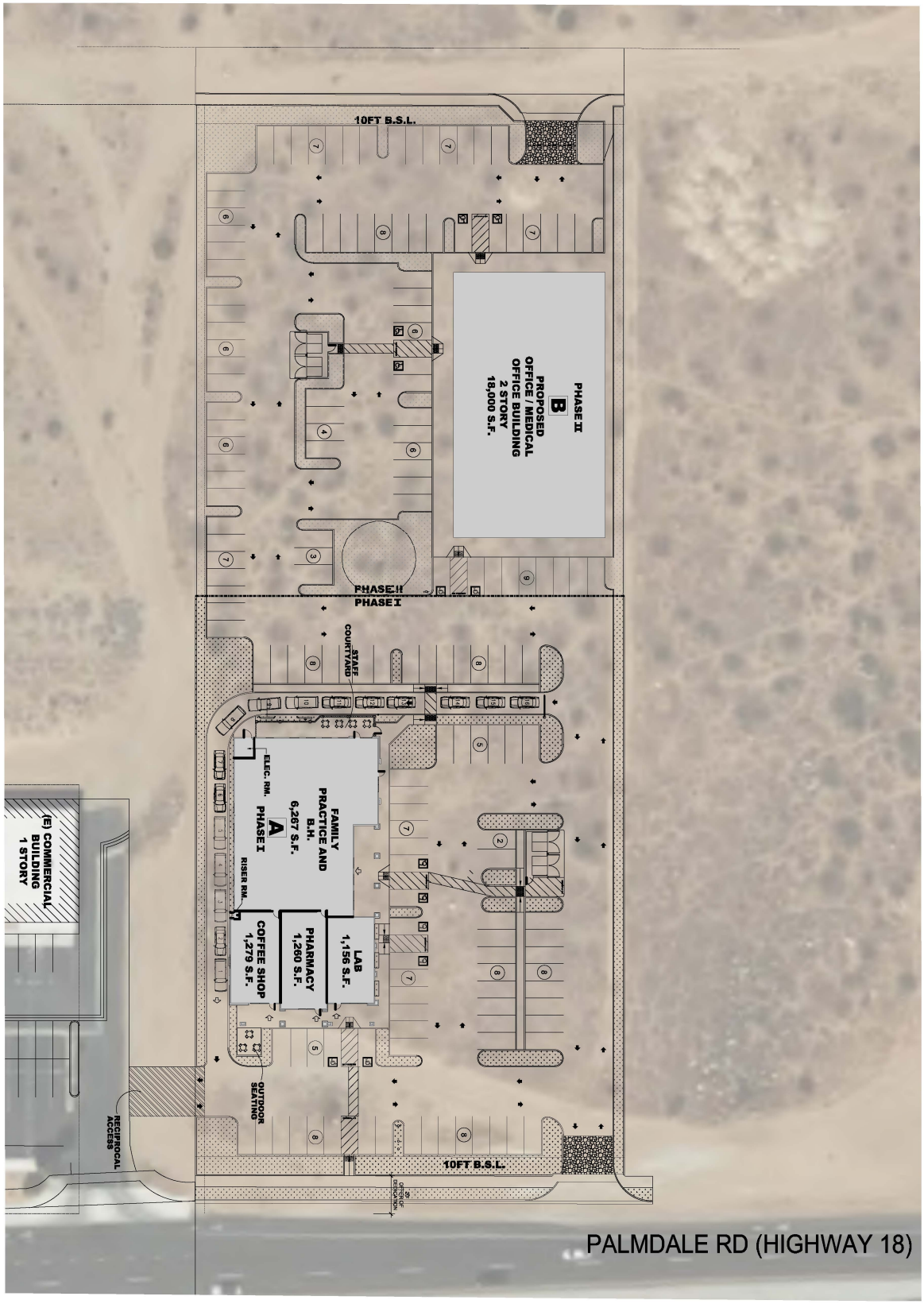
NOT TO SCALE

DAVID EVANS AND ASSOCIATES INC.

EXHIBIT A: VICINITY MAP

PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

Drawing Name: P:\SIS\HIL00000001\0400CAD\TT\EXHIBITS\Scope Agreement\Exhibit A.dwg
Last Opened: Aug 24, 2022 - 3:19pm by: Tmm



N

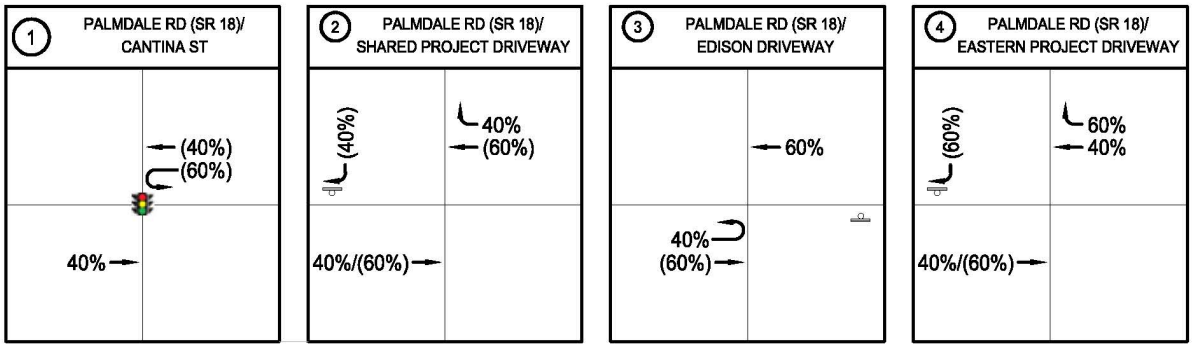
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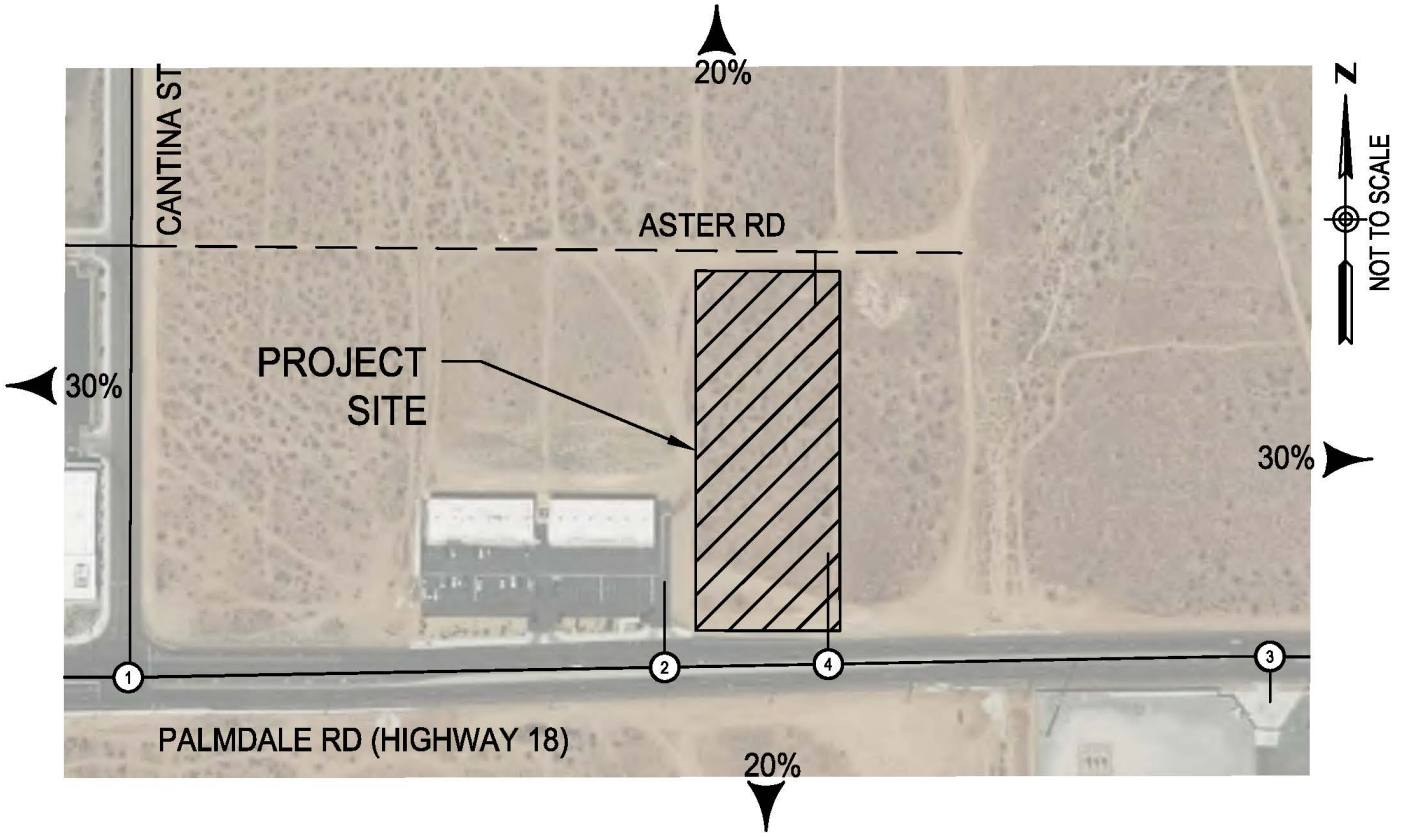
DAVID EVANS AND ASSOCIATES INC.

EXHIBIT B: SITE PLAN

PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

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LEGEND

XX% - GENERAL PROJECT TRIP DISTRIBUTION

XX% - SPECIFIC PROJECT TRIP PERCENTAGE

XX%/(XX%) - INBOUND/(OUTBOUND)TRIP PERCENTAGE

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

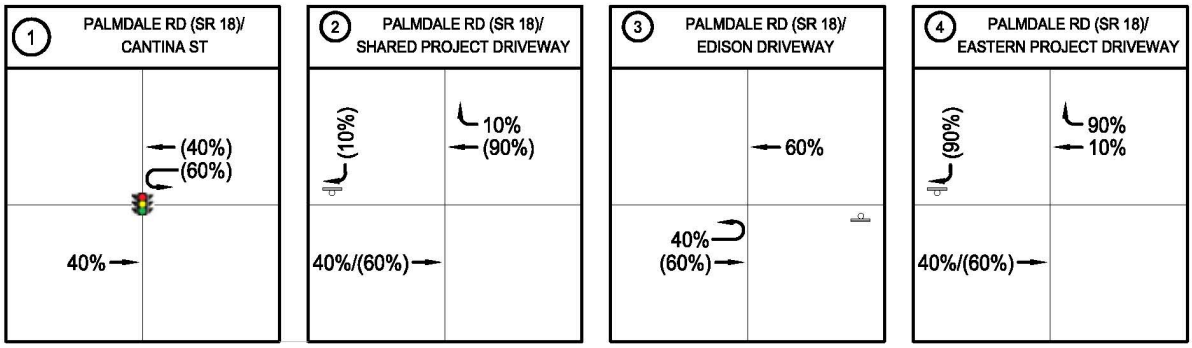
- STOP CONTROLLED APPROACH

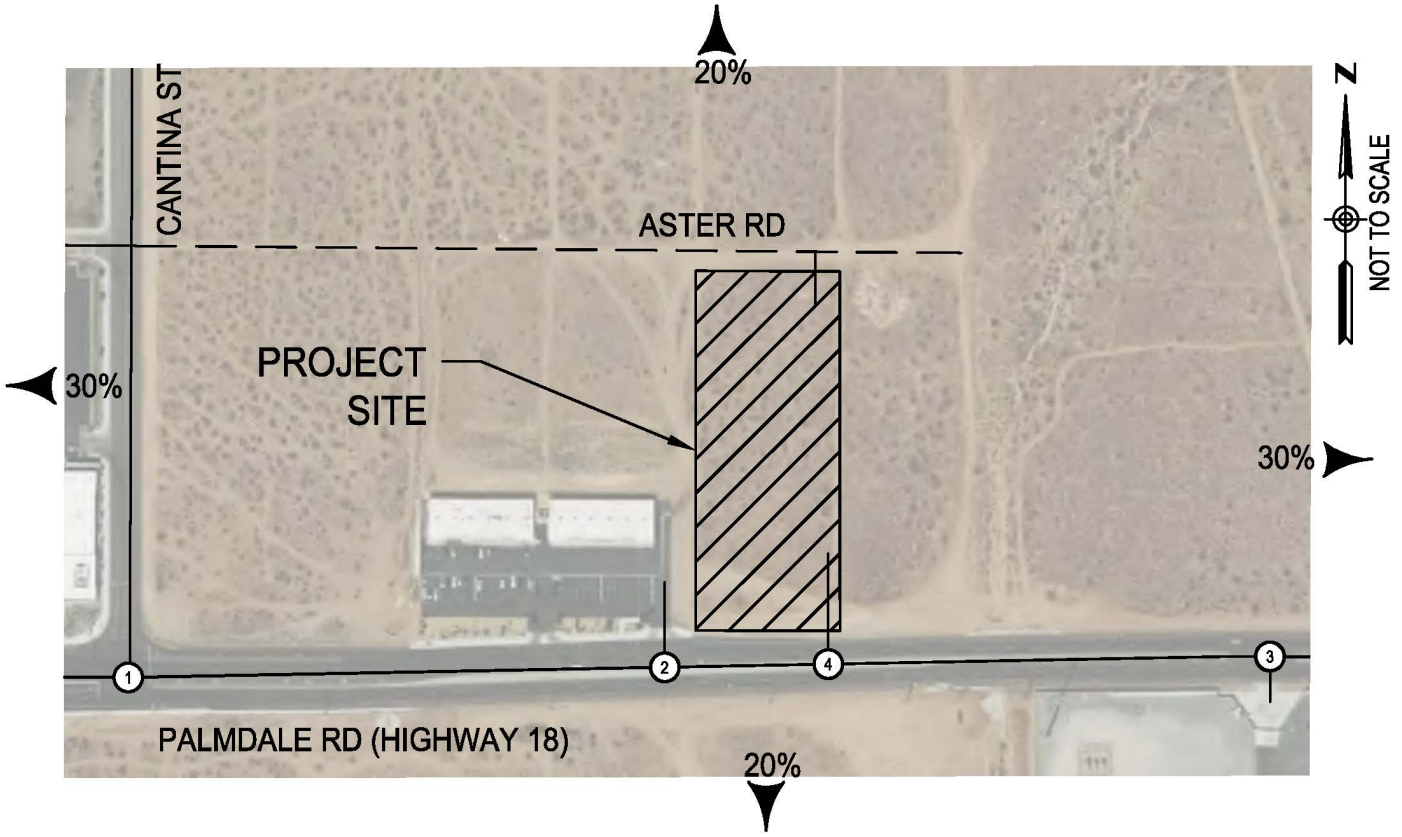
EXHIBIT C1: PHASE 1 - PROJECT TRIP DISTRIBUTION

PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

Drawing Name: P:\SIS\HIL00000001\0400CAD\TT\EXHIBITS\Scope Agreement\Exhibit C.dwg
Last Opened: Aug 24, 2022 - 3:21pm by: Tmm





LEGEND

XX% - GENERAL PROJECT TRIP DISTRIBUTION

XX% - SPECIFIC PROJECT TRIP PERCENTAGE

XX%/(XX%) - INBOUND/(OUTBOUND)TRIP PERCENTAGE

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

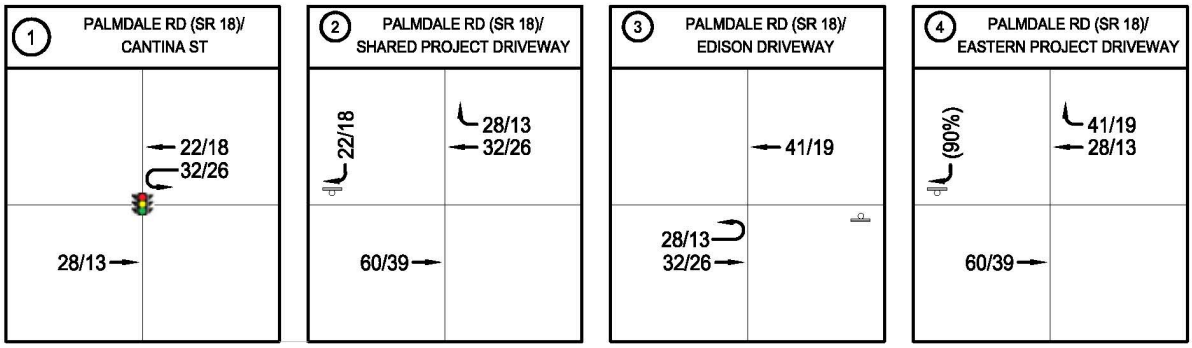
- STOP CONTROLLED APPROACH

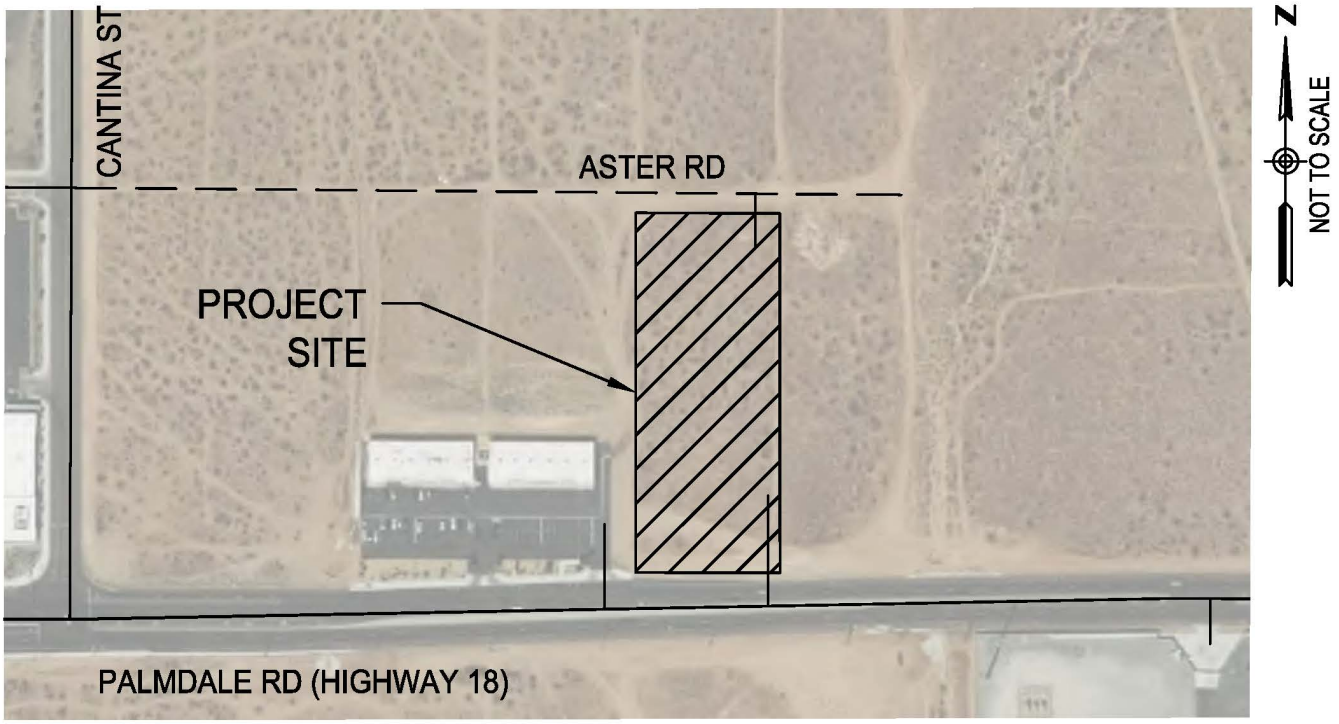
EXHIBIT C2: PHASE 2 - PROJECT TRIP DISTRIBUTION

PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

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PHASE I PROJECT TRIPS

AM PEAK PERIOD - 68 IN / 53 OUT
PM PEAK PERIOD - 31 IN / 43 OUT

LEGEND

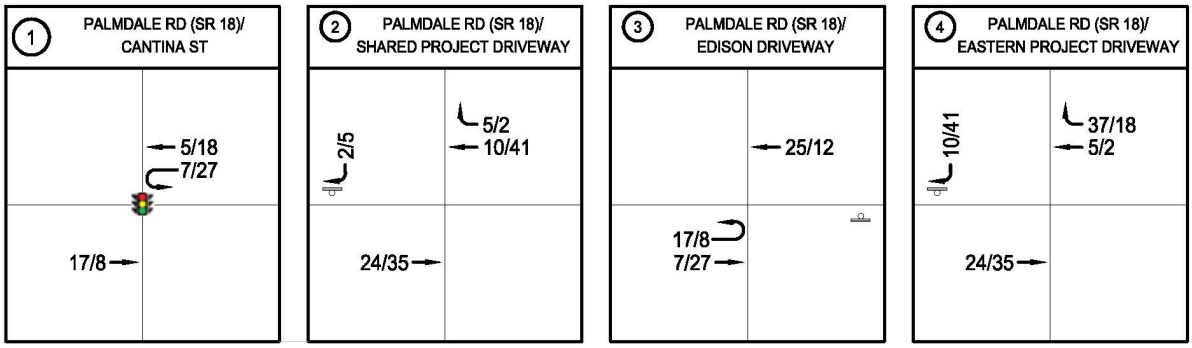
XX/XX - AM/PM PROJECT TRIP
(#) - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

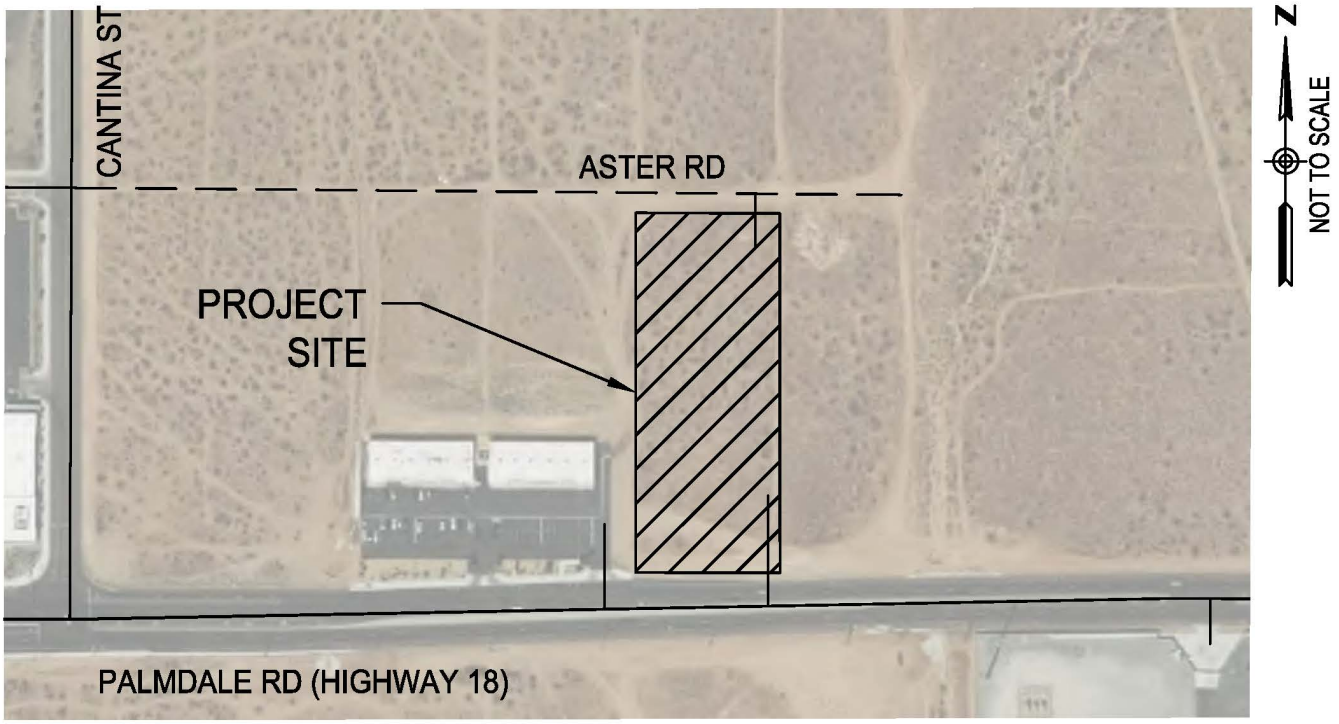
EXHIBIT D1: PHASE 1 PROJECT TRIPS

PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

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Last Opened: Aug 24, 2022 - 3:22pm by: Tmm





PHASE 2 PROJECT TRIPS

AM PEAK PERIOD - 41 IN / 11 OUT
PM PEAK PERIOD - 19 IN / 45 OUT

LEGEND

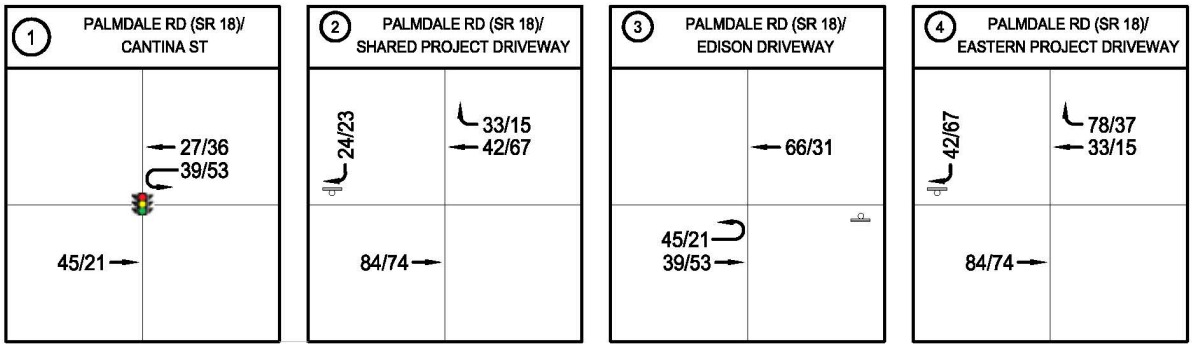
XX/XX - AM/PM PROJECT TRIP
(#) - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

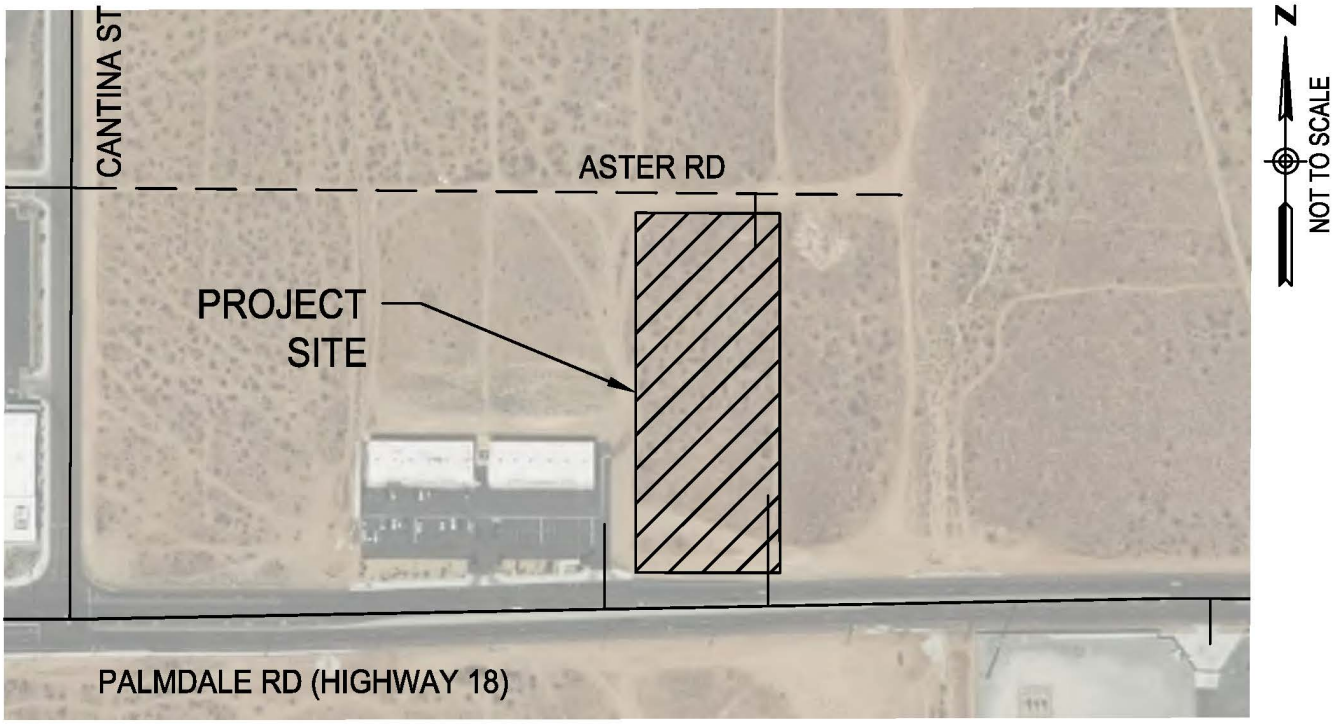
EXHIBIT D2: PHASE 2 PROJECT TRIPS

PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

Drawing Name: P:\SIS\HIL00000001\0400CAD\TT\EXHIBITS\Scope Agreement\Exhibit D.dwg
Last Opened: Aug 24, 2022 - 3:22pm by: Tmm





TOTAL PROJECT TRIPS

AM PEAK PERIOD - 109 IN / 64 OUT
PM PEAK PERIOD - 50 IN / 88 OUT

LEGEND

XX/XX - AM/PM PROJECT TRIP
(#) - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

EXHIBIT D3: TOTAL PROJECT TRIPS

PALMDALE ROAD MEDICAL OFFICES
VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

Drawing Name: P:\SIS\HIL00000001\0400CAD\TT\EXHIBITS\Scope Agreement\Exhibit D.dwg
Last Opened: Aug 24, 2022 - 3:22pm by: Tmm

Appendix B: Turn Movement Count Volumes

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: CANTINA ST
EAST-WEST STREET: PALMDALE BLVD
JURISDICTION: VICTORVILLE

DATE: 01-05-23

PEAK HOUR: 07:15AM

NORTH LEG

TOTAL: 141

Rt	Thru	Lt	
52		89	Total
8		9	1st
10		25	2nd
19		24	3rd
15		31	4th

EAST LEG TOTAL: 1,192

	1st	2nd	3rd	4th	Total
Rt	21	20	19	16	76
Thru	306	283	261	266	1116
Lt					

WEST LEG TOTAL: 1,215

Total	1st	2nd	3rd	4th	
104	23	21	25	35	Lt
1111	296	311	255	249	Thru
					Rt

PEAK HOUR FACTORS

NORTH LEG = 0.77
SOUTH LEG =
EAST LEG = 0.91
WEST LEG = 0.91

ALL LEGS = 0.95

SOUTH LEG

TOTAL: 0

	Lt	Thru	Rt
1st			
2nd			
3rd			
4th			
Total			

HOUR TOTAL: 2,548

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : CANTINA ST — VICTORVILLE

EAST-WEST STREET : PALMDALE BLVD — 01-05-23

BEGINNING TIME : 07:00AM

AUTOS RT	AUTOS THRU	AUTOS LT	LARGE 2 AXLE RT	LARGE 2 AXLE THRU	LARGE 2 AXLE LT	3 AXLE RT	3 AXLE THRU	3 AXLE LT	4(+) AXLE RT	4(+) AXLE THRU	4(+) AXLE LT	TOTALS
NORTH LEG												
5	0	9	0	0	0	0	0	0	0	0	0	14
8	0	9	0	0	0	0	0	0	0	0	0	17
10	0	25	0	0	0	0	0	0	0	0	0	35
19	0	24	0	0	0	0	0	0	0	0	0	43
15	0	31	0	0	0	0	0	0	0	0	0	46
10	0	26	0	0	0	0	0	0	0	0	0	36
10	0	29	0	0	0	0	0	0	0	0	0	39
6	0	26	0	0	0	0	0	0	0	0	0	32
83	0	179	0	0	0	0	0	0	0	0	0	262
SOUTH LEG												
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
EAST LEG												
14	234	0	0	1	0	0	1	0	0	5	0	255
21	298	0	0	3	0	0	0	0	0	5	0	327
20	276	0	0	1	0	0	2	0	0	4	0	303
19	250	0	0	2	0	0	1	0	0	8	0	280
16	252	0	0	4	0	0	1	0	0	9	0	282
19	214	0	0	1	0	0	0	0	0	6	0	240
14	201	0	0	2	0	0	3	0	0	5	0	225
11	215	0	0	1	0	0	1	0	0	6	0	234
134	1940	0	0	15	0	0	9	0	0	48	0	2146
WEST LEG												
0	210	11	0	2	0	0	1	0	0	8	0	232
0	282	23	0	2	0	0	2	0	0	10	0	319
0	297	21	0	3	0	0	1	0	0	10	0	332
0	239	25	0	1	0	0	1	0	0	14	0	280
0	237	35	0	0	0	0	1	0	0	11	0	284
0	195	33	0	2	0	0	2	0	0	11	0	243
0	171	30	0	2	0	0	1	0	0	10	0	214
0	176	23	0	3	0	0	0	0	0	9	0	211
0	1807	201	0	15	0	0	9	0	0	83	0	2115

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: CANTINA ST

EAST-WEST STREET: PALMDALE BLVD

TIME: 07:00AM-08:00AM DATE: 01-05-23

NORTH LEG

42		67	Total
5		9	1st
8		9	2nd
10		25	3rd
19		24	4th
Rt	Thru	Lt	

Rt	14	21	20	19	74
Thru	241	306	283	261	1091
Lt					
	1st	2nd	3rd	4th	Total

Total	1st	2nd	3rd	4th	
80	11	23	21	25	Lt
1083	221	296	311	255	Thru
					Rt

	Lt	Thru	Rt
1st			
2nd			
3rd			
4th			
Total			

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: CANTINA ST

EAST-WEST STREET: PALMDALE BLVD

TIME: 08:00AM-09:00AM DATE: 01-05-23

NORTH LEG

41		112	Total
15		31	1st
10		26	2nd
10		29	3rd
6		26	4th
Rt	Thru	Lt	

Rt	16	19	14	11	60
Thru	266	221	211	223	921
Lt					
	1st	2nd	3rd	4th	Total

Total	1st	2nd	3rd	4th	
121	35	33	30	23	Lt
831	249	210	184	188	Thru
					Rt

	Lt	Thru	Rt
1st			
2nd			
3rd			
4th			
Total			

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: CANTINA ST
EAST-WEST STREET: PALMDALE BLVD
JURISDICTION: VICTORVILLE

DATE: 01-05-23

PEAK HOUR: 04:15PM

NORTH LEG

TOTAL: 390

Rt	Thru	Lt	
79		311	Total
23		83	1st
14		88	2nd
19		72	3rd
23		68	4th

EAST LEG TOTAL: 2,162

	1st	2nd	3rd	4th	Total
Rt	61	60	68	55	244
Thru	468	501	483	466	1918
Lt					

WEST LEG TOTAL: 2,062

Total	1st	2nd	3rd	4th	
98	25	22	26	25	Lt
1964	491	499	511	463	Thru
					Rt

PEAK HOUR FACTORS

NORTH LEG = 0.92
SOUTH LEG =
EAST LEG = 0.96
WEST LEG = 0.96

ALL LEGS = 0.97

SOUTH LEG

TOTAL: 0

	Lt	Thru	Rt
1st			
2nd			
3rd			
4th			
Total			

HOUR TOTAL: 4,614

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : CANTINA ST — VICTORVILLE

EAST-WEST STREET : PALMDALE BLVD — 01-05-23

BEGINNING TIME : 04:00PM

AUTOS			LARGE 2 AXLE			3 AXLE			4(+) AXLE			TOTALS
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	
NORTH LEG												
11	0	66	0	0	0	0	0	0	0	0	0	77
23	0	83	0	0	0	0	0	0	0	0	0	106
13	0	88	0	0	0	0	0	0	1	0	0	102
19	0	72	0	0	0	0	0	0	0	0	0	91
22	0	68	1	0	0	0	0	0	0	0	0	91
19	0	61	1	0	0	0	0	0	0	0	0	81
14	0	53	0	0	0	0	0	0	1	0	0	68
15	0	57	0	0	0	0	0	0	0	0	0	72
136	0	548	2	0	0	0	0	0	2	0	0	688
SOUTH LEG												
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
EAST LEG												
44	438	0	0	3	0	0	2	0	0	5	0	492
61	461	0	0	1	0	0	1	0	0	5	0	529
60	494	0	0	2	0	0	0	0	0	5	0	561
68	476	0	0	2	0	0	1	0	0	4	0	551
55	456	0	0	3	0	0	0	0	0	7	0	521
50	414	0	0	1	0	0	2	0	0	4	0	471
44	455	0	0	4	0	0	3	0	0	4	0	510
36	405	0	0	2	0	0	0	0	0	5	0	448
418	3599	0	0	18	0	0	9	0	0	39	0	4083
WEST LEG												
0	418	27	0	2	0	0	3	0	0	10	0	460
0	483	25	0	2	0	0	0	0	0	6	0	516
0	486	22	0	2	0	0	3	0	0	8	0	521
0	498	26	0	3	0	0	2	0	0	8	0	537
0	457	25	0	0	0	0	1	0	0	5	0	488
0	443	22	0	1	0	0	1	0	0	8	0	475
0	375	20	0	1	0	0	0	0	0	10	0	406
0	323	16	0	0	0	0	1	0	0	7	0	347
0	3483	183	0	11	0	0	11	0	0	62	0	3750

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: CANTINA ST

EAST-WEST STREET: PALMDALE BLVD

TIME: 04:00PM-05:00PM DATE: 01-05-23

NORTH LEG

67		309	Total
11		66	1st
23		83	2nd
14		88	3rd
19		72	4th
Rt	Thru	Lt	

Rt	44	61	60	68	233
Thru	448	468	501	483	1900
Lt					
	1st	2nd	3rd	4th	Total

Total	1st	2nd	3rd	4th	
100	27	25	22	26	Lt
1934	433	491	499	511	Thru
					Rt

	Lt	Thru	Rt
1st			
2nd			
3rd			
4th			
Total			

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: CANTINA ST

EAST-WEST STREET: PALMDALE BLVD

TIME: 05:00PM-06:00PM DATE: 01-05-23

NORTH LEG

73		239	Total
23		68	1st
20		61	2nd
15		53	3rd
15		57	4th
Rt	Thru	Lt	

Rt	55	50	44	36	185
Thru	466	421	466	412	1765
Lt					
	1st	2nd	3rd	4th	Total

Total	1st	2nd	3rd	4th	
83	25	22	20	16	Lt
1633	463	453	386	331	Thru
					Rt

	Lt	Thru	Rt
1st			
2nd			
3rd			
4th			
Total			

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: EDISON DRWY
EAST-WEST STREET: PALMDALE BLVD
JURISDICTION: VICTORVILLE

DATE: 01-05-23

PEAK HOUR: 07:15AM

NORTH LEG

TOTAL: 0

			Total
			1st
			2nd
			3rd
			4th
Rt	Thru	Lt	

EAST LEG TOTAL: 1,219

	1st	2nd	3rd	4th	Total
Rt					
Thru	326	310	290	290	1216
Lt	0	2	0	1	3

Total	1st	2nd	3rd	4th	
					Lt
1194	306	334	277	277	Thru
2	0	0	0	2	Rt

WEST LEG TOTAL: 1,196

PEAK HOUR FACTORS

NORTH LEG =
SOUTH LEG = 0.57
EAST LEG = 0.93
WEST LEG = 0.90

ALL LEGS = 0.93

	Lt	Thru	Rt
1st	0		0
2nd	2		3
3rd	3		4
4th	2		2
Total	7		9

TOTAL: 16

SOUTH LEG

HOUR TOTAL: 2,431

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : EDISON DRWY — VICTORVILLE

EAST-WEST STREET : PALMDALE BLVD — 01-05-23

BEGINNING TIME : 07:00AM

AUTOS			LARGE 2 AXLE			3 AXLE			4 (+) AXLE			TOTALS
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	
NORTH LEG												
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH LEG												
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	2	0	2	1	0	0	0	0	0	5
0	0	0	2	0	2	2	0	1	0	0	0	7
1	0	1	1	0	1	0	0	0	0	0	0	4
2	0	1	3	0	1	0	0	0	0	0	0	7
0	0	1	1	0	3	0	0	0	0	0	0	5
0	0	1	1	0	0	1	0	0	0	0	0	3
3	0	4	10	0	9	4	0	1	0	0	0	31
EAST LEG												
0	251	0	0	1	0	0	1	0	0	5	0	258
0	318	0	0	2	0	0	1	0	0	5	0	326
0	305	2	0	0	0	0	1	0	0	4	0	312
0	282	0	0	1	0	0	0	0	0	7	0	290
0	279	1	0	0	0	0	1	0	0	10	0	291
0	240	0	0	0	0	0	0	0	0	5	0	245
0	223	0	0	0	0	0	2	0	0	5	0	230
0	238	3	0	0	0	0	2	0	0	7	0	250
0	2136	6	0	4	0	0	8	0	0	48	0	2202
WEST LEG												
0	219	0	0	2	0	0	1	0	0	9	0	231
0	293	0	0	2	0	0	2	0	0	9	0	306
0	320	0	0	2	0	0	1	0	0	11	0	334
0	261	0	0	2	0	0	1	0	0	13	0	277
2	265	0	0	1	0	0	1	0	0	10	0	279
0	219	0	0	1	0	0	2	0	0	12	0	234
1	201	0	0	2	0	0	1	0	0	10	0	215
1	199	0	0	3	0	0	0	0	0	9	0	212
4	1977	0	0	15	0	0	9	0	0	83	0	2088

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: EDISON DRWY

EAST-WEST STREET: PALMDALE BLVD

TIME: 07:00AM-08:00AM DATE: 01-05-23

NORTH LEG

			Total
			1st
			2nd
			3rd
			4th
Rt	Thru	Lt	

	1st	2nd	3rd	4th	Total
Rt					
Thru	258	326	310	290	1184
Lt	0	0	2	0	2

Total	1st	2nd	3rd	4th	
					Lt
1148	231	306	334	277	Thru
0	0	0	0	0	Rt

	Lt	Thru	Rt
1st	0		0
2nd	0		0
3rd	2		3
4th	3		4
Total	5		7

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: EDISON DRWY

EAST-WEST STREET: PALMDALE BLVD

TIME: 08:00AM-09:00AM DATE: 01-05-23

NORTH LEG

			Total
			1st
			2nd
			3rd
			4th
Rt	Thru	Lt	

Rt					
Thru	290	245	230	247	1012
Lt	1	0	0	3	4
	1st	2nd	3rd	4th	Total

Total	1st	2nd	3rd	4th	
					Lt
936	277	234	214	211	Thru
4	2	0	1	1	Rt

	Lt	Thru	Rt
1st	2		2
2nd	2		5
3rd	4		1
4th	1		2
Total	9		10

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: EDISON DRWY
EAST-WEST STREET: PALMDALE BLVD
JURISDICTION: VICTORVILLE

DATE: 01-05-23

PEAK HOUR: 04:15PM

NORTH LEG

TOTAL: 0

	Rt	Thru	Lt
Total			
1st			
2nd			
3rd			
4th			

EAST LEG TOTAL: 2,213

	1st	2nd	3rd	4th	Total
Rt					
Thru	544	560	561	539	2204
Lt	3	3	2	1	9

WEST LEG TOTAL: 2,273

	Total	1st	2nd	3rd	4th
Lt					
Thru	2260	573	584	576	527
Rt	13	2	3	5	3

SOUTH LEG

	Lt	Thru	Rt
1st	1		2
2nd	0		1
3rd	0		0
4th	0		0
Total	1		3

TOTAL: 4

PEAK HOUR FACTORS

NORTH LEG =
SOUTH LEG = 0.33
EAST LEG = 0.98
WEST LEG = 0.97

ALL LEGS = 0.98

HOUR TOTAL: 4,490

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : EDISON DRWY — VICTORVILLE

EAST-WEST STREET : PALMDALE BLVD — 01-05-23

BEGINNING TIME : 04:00PM

AUTOS RT	AUTOS THRU	AUTOS LT	LARGE 2 AXLE RT	LARGE 2 AXLE THRU	LARGE 2 AXLE LT	3 AXLE RT	3 AXLE THRU	3 AXLE LT	4(+) AXLE RT	4(+) AXLE THRU	4(+) AXLE LT	TOTALS
NORTH LEG												
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH LEG												
0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	1	0	0	0	0	0	0	0	0	0	3
1	0	0	0	0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	1	0	0	0	0	0	0	0	0	0	4
EAST LEG												
0	484	0	0	2	2	0	2	0	0	5	0	495
0	536	1	0	2	2	0	1	0	0	5	0	547
0	553	1	0	2	1	0	0	1	0	5	0	563
0	555	1	0	1	1	0	0	0	0	5	0	563
0	532	0	0	3	0	0	0	1	0	4	0	540
0	467	0	0	3	0	0	1	1	0	6	0	478
0	510	0	0	2	0	0	2	0	0	5	0	519
0	445	0	0	3	0	0	1	0	0	4	0	453
0	4082	3	0	18	6	0	7	3	0	39	0	4158
WEST LEG												
1	484	0	1	1	0	0	2	0	0	10	0	499
1	563	0	1	1	0	0	1	0	0	8	0	575
2	575	0	1	0	0	0	3	0	0	6	0	587
3	567	0	2	1	0	0	1	0	0	7	0	581
1	519	0	1	0	0	1	1	0	0	7	0	530
0	505	0	0	1	0	1	0	0	0	7	0	514
0	431	0	0	1	0	0	0	0	0	9	0	441
0	381	0	0	0	0	0	1	0	0	8	0	390
8	4025	0	6	5	0	2	9	0	0	62	0	4117

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: EDISON DRWY

EAST-WEST STREET: PALMDALE BLVD

TIME: 04:00PM-05:00PM DATE: 01-05-23

NORTH LEG

			Total
			1st
			2nd
			3rd
			4th
Rt	Thru	Lt	

	1st	2nd	3rd	4th	Total
Rt					
Thru	493	544	560	561	2158
Lt	2	3	3	2	10

Total	1st	2nd	3rd	4th	
					Lt
2230	497	573	584	576	Thru
12	2	2	3	5	Rt

	Lt	Thru	Rt
1st	0		0
2nd	1		2
3rd	0		1
4th	0		0
Total	1		3

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: EDISON DRWY

EAST-WEST STREET: PALMDALE BLVD

TIME: 05:00PM-06:00PM DATE: 01-05-23

NORTH LEG

			Total
			1st
			2nd
			3rd
			4th
Rt	Thru	Lt	

	1st	2nd	3rd	4th	Total
Rt					
Thru	539	477	519	453	1988
Lt	1	1	0	0	2

Total	1st	2nd	3rd	4th	
					Lt
1871	527	513	441	390	Thru
4	3	1	0	0	Rt

	Lt	Thru	Rt
1st	0		0
2nd	0		0
3rd	0		0
4th	0		0
Total	0		0

Prepared by NEWPORT TRAFFIC STUDIES

Appendix C: Intersection Capacity Analysis Calculations

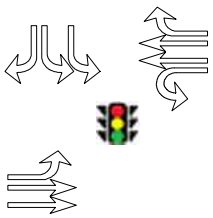
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TMO	21-Mar-24	SHIL0000-0001	1 OF 2

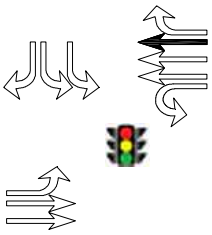
E/W STREET : PALMDALE RD (HWY 18)
N/S STREET : CANTINA ST
CONDITION : AM PEAK HOUR

INTERSECTION : 1
PROJECTED GROWTH PER YEAR : 3.5%

CONDITION DIAGRAMS



EXISTING GEOMETRICS



FUTURE BACKGROUND PLUS PROJECT GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition	Year 2025 Ambient Growth	Adjacent Property Trips	Background Condition	Phase I Project Trips	Background + Project Condition	Year 2035 Ambient Growth	Future Condition	Total Phase I&II Project Trips	Future + Project Condition	Future Condition	Future + Project Condition
Scenario #	1			3		5		7		9	11	13
PALMDALE RD (HWY 18)												
EB LEFT	104	7	36	147	20	167	36	183	34	217	176	210
EB THRU	1111	78	-10	1179	7	1186	389	1,568	12	1580	1,420	1432
EB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
WB LEFT	0	0	0	0	11	11	0	0	13	13	0	13
WB THRU	1116	78	0	1194	16	1210	391	1,585	20	1605	1,260	1280
WB RIGHT	76	5	4	85	0	85	27	112	0	112	98	98
CANTINA ST												
NB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
NB THRU	0	0	0	0	0	0	0	0	0	0	0	0
NB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
SB LEFT	89	6	21	116	21	137	31	147	26	173	138	164
SB THRU	0	0	0	0	0	0	0	0	0	0	0	0
SB RIGHT	52	4	35	91	6	97	18	109	7	116	101	108
TOTALS	**2548**	**178**	**86**	**2812**	**81**	**2893**	**892**	**3704**	**112**	**3816**	**3193**	**3305**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TMO	21-Mar-24	SHIL0000-0001	2	OF 2

E/W STREET : PALMDALE RD (HWY 18) N/S STREET : CANTINA ST

CONDITION : AM PEAK HOUR PHF : 0.95

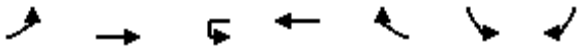
NORTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
8	0	9	0	0	0	0	0	0	0	0	0
10	0	25	0	0	0	0	0	0	0	0	0
19	0	24	0	0	0	0	0	0	0	0	0
15	0	31	0	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
21	298	0	0	3	0	0	0	0	0	5	0
20	276	0	0	1	0	0	2	0	0	4	0
19	250	0	0	2	0	0	1	0	0	8	0
16	252	0	0	4	0	0	1	0	0	9	0

WEST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
0	282	23	0	2	0	0	2	0	0	10	0
0	297	21	0	3	0	0	1	0	0	10	0
0	239	25	0	1	0	0	1	0	0	14	0
0	237	35	0	0	0	0	1	0	0	11	0

	Truck Volumes	Auto Volumes	Totals	Truck Percentage	Balanced Totals
PALMDALE RD (HWY 18)					
EB LEFT	0	104	**104**	**1%**	**104**
EB THRU	56	1055	**1,111**	**5%**	**1,111**
EB RIGHT	0	0	**0**	**0%**	**0**
WB LEFT	0	0	**0**	**0%**	**0**
WB THRU	40	1076	**1,116**	**4%**	**1,116**
WB RIGHT	0	76	**76**	**1%**	**76**
CANTINA ST					
NB LEFT	0	0	**0**	**0%**	**0**
NB THRU	0	0	**0**	**0%**	**0**
NB RIGHT	0	0	**0**	**0%**	**0**
SB LEFT	0	89	**89**	**1%**	**89**
SB THRU	0	0	**0**	**0%**	**0**
SB RIGHT	0	52	**52**	**1%**	**52**



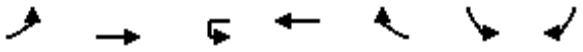
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	104	1111	0	1116	76	89	52
Future Volume (veh/h)	104	1111	0	1116	76	89	52
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1730		1744	1786	1786	1786
Adj Flow Rate, veh/h	109	1169		1175	80	94	55
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5		4	1	1	1
Cap, veh/h	137	2410		2016	921	587	269
Arrive On Green	0.08	0.73		0.61	0.61	0.18	0.18
Sat Flow, veh/h	1701	3373		3400	1514	3300	1514
Grp Volume(v), veh/h	109	1169		1175	80	94	55
Grp Sat Flow(s),veh/h/ln	1701	1643		1657	1514	1650	1514
Q Serve(g_s), s	5.7	13.2		19.4	2.0	2.2	2.8
Cycle Q Clear(g_c), s	5.7	13.2		19.4	2.0	2.2	2.8
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	137	2410		2016	921	587	269
V/C Ratio(X)	0.80	0.49		0.58	0.09	0.16	0.20
Avail Cap(c_a), veh/h	227	2410		2016	921	587	269
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	40.7	5.0		10.7	7.3	31.3	31.6
Incr Delay (d2), s/veh	10.0	0.7		1.2	0.2	0.6	1.7
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	2.6		5.6	0.5	0.9	2.6
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	50.7	5.7		11.9	7.5	31.9	33.3
LnGrp LOS	D	A		B	A	C	C
Approach Vol, veh/h		1278		1255		149	
Approach Delay, s/veh		9.5		11.6		32.4	
Approach LOS		A		B		C	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		70.0		20.0	11.2	58.8	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		56.0		16.0	12.0	50.0	
Max Q Clear Time (g_c+I1), s		15.2		4.8	7.7	21.4	
Green Ext Time (p_c), s		9.2		0.3	0.1	8.9	

Intersection Summary	
HCM 6th Ctrl Delay	11.8
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.



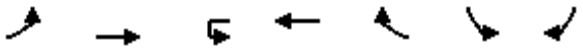
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	147	1179	0	1194	85	116	91
Future Volume (veh/h)	147	1179	0	1194	85	116	91
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1730		1744	1786	1786	1786
Adj Flow Rate, veh/h	155	1241		1257	89	122	96
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5		4	1	1	1
Cap, veh/h	187	2410		1918	876	587	269
Arrive On Green	0.11	0.73		0.58	0.58	0.18	0.18
Sat Flow, veh/h	1701	3373		3400	1514	3300	1514
Grp Volume(v), veh/h	155	1241		1257	89	122	96
Grp Sat Flow(s),veh/h/ln	1701	1643		1657	1514	1650	1514
Q Serve(g_s), s	8.0	14.6		23.2	2.4	2.8	5.0
Cycle Q Clear(g_c), s	8.0	14.6		23.2	2.4	2.8	5.0
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	187	2410		1918	876	587	269
V/C Ratio(X)	0.83	0.51		0.66	0.10	0.21	0.36
Avail Cap(c_a), veh/h	227	2410		1918	876	587	269
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	39.2	5.1		12.9	8.5	31.6	32.5
Incr Delay (d2), s/veh	18.9	0.8		1.8	0.2	0.8	3.7
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	2.9		7.1	0.7	1.2	4.6
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	58.1	5.9		14.6	8.7	32.4	36.1
LnGrp LOS	E	A		B	A	C	D
Approach Vol, veh/h		1396		1346		218	
Approach Delay, s/veh		11.7		14.2		34.0	
Approach LOS		B		B		C	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		70.0		20.0	13.9	56.1	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		56.0		16.0	12.0	50.0	
Max Q Clear Time (g_c+I1), s		16.6		7.0	10.0	25.2	
Green Ext Time (p_c), s		10.0		0.4	0.1	9.3	

Intersection Summary	
HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	167	1186	11	1210	85	137	97
Future Volume (veh/h)	167	1186	11	1210	85	137	97
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1730		1744	1786	1786	1786
Adj Flow Rate, veh/h	176	1248		1274	89	144	102
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5		4	1	1	1
Cap, veh/h	208	2410		1877	857	587	269
Arrive On Green	0.12	0.73		0.57	0.57	0.18	0.18
Sat Flow, veh/h	1701	3373		3400	1514	3300	1514
Grp Volume(v), veh/h	176	1248		1274	89	144	102
Grp Sat Flow(s),veh/h/ln	1701	1643		1657	1514	1650	1514
Q Serve(g_s), s	9.1	14.7		24.4	2.4	3.4	5.3
Cycle Q Clear(g_c), s	9.1	14.7		24.4	2.4	3.4	5.3
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	208	2410		1877	857	587	269
V/C Ratio(X)	0.85	0.52		0.68	0.10	0.25	0.38
Avail Cap(c_a), veh/h	227	2410		1877	857	587	269
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	38.7	5.2		13.7	9.0	31.8	32.6
Incr Delay (d2), s/veh	23.0	0.8		2.0	0.2	1.0	4.0
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	2.9		7.6	0.7	1.4	4.9
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	61.7	6.0		15.7	9.2	32.8	36.6
LnGrp LOS	E	A		B	A	C	D
Approach Vol, veh/h		1424		1363		246	
Approach Delay, s/veh		12.8		15.3		34.4	
Approach LOS		B		B		C	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		70.0		20.0	15.0	55.0	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		56.0		16.0	12.0	50.0	
Max Q Clear Time (g_c+I1), s		16.7		7.3	11.1	26.4	
Green Ext Time (p_c), s		10.1		0.5	0.0	9.2	

Intersection Summary	
HCM 6th Ctrl Delay	15.7
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.

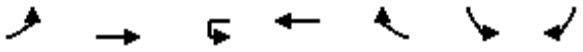
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	183	1568	0	1585	112	147	109
Future Volume (veh/h)	183	1568	0	1585	112	147	109
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1730		1744	1786	1786	1786
Adj Flow Rate, veh/h	193	1651		1668	118	155	115
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5		4	1	1	1
Cap, veh/h	225	2410		1844	843	587	269
Arrive On Green	0.13	0.73		0.56	0.56	0.18	0.18
Sat Flow, veh/h	1701	3373		3400	1514	3300	1514
Grp Volume(v), veh/h	193	1651		1668	118	155	115
Grp Sat Flow(s),veh/h/ln	1701	1643		1657	1514	1650	1514
Q Serve(g_s), s	10.0	24.2		40.5	3.4	3.6	6.1
Cycle Q Clear(g_c), s	10.0	24.2		40.5	3.4	3.6	6.1
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	225	2410		1844	843	587	269
V/C Ratio(X)	0.86	0.69		0.90	0.14	0.26	0.43
Avail Cap(c_a), veh/h	227	2410		1844	843	587	269
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	38.2	6.4		17.8	9.6	31.9	32.9
Incr Delay (d2), s/veh	26.3	1.6		7.8	0.3	1.1	4.9
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	4.9		13.9	1.0	1.5	5.6
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	64.5	8.0		25.6	9.9	33.0	37.8
LnGrp LOS	E	A		C	A	C	D
Approach Vol, veh/h		1844		1786		270	
Approach Delay, s/veh		13.9		24.6		35.1	
Approach LOS		B		C		D	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		70.0		20.0	15.9	54.1	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		56.0		16.0	12.0	50.0	
Max Q Clear Time (g_c+I1), s		26.2		8.1	12.0	42.5	
Green Ext Time (p_c), s		14.1		0.5	0.0	5.7	

Intersection Summary	
HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Notes

User approved ignoring U-Turning movement.



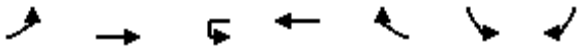
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	217	1580	13	1605	112	173	116
Future Volume (veh/h)	217	1580	13	1605	112	173	116
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1730		1744	1786	1786	1786
Adj Flow Rate, veh/h	228	1663		1689	118	182	122
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5		4	1	1	1
Cap, veh/h	227	2410		1841	841	587	269
Arrive On Green	0.13	0.73		0.56	0.56	0.18	0.18
Sat Flow, veh/h	1701	3373		3400	1514	3300	1514
Grp Volume(v), veh/h	228	1663		1689	118	182	122
Grp Sat Flow(s),veh/h/ln	1701	1643		1657	1514	1650	1514
Q Serve(g_s), s	12.0	24.6		41.6	3.4	4.3	6.5
Cycle Q Clear(g_c), s	12.0	24.6		41.6	3.4	4.3	6.5
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	227	2410		1841	841	587	269
V/C Ratio(X)	1.01	0.69		0.92	0.14	0.31	0.45
Avail Cap(c_a), veh/h	227	2410		1841	841	587	269
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	39.0	6.5		18.1	9.6	32.2	33.1
Incr Delay (d2), s/veh	61.1	1.6		8.8	0.3	1.4	5.4
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	5.0		14.5	1.0	1.8	6.0
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	100.1	8.1		26.9	10.0	33.6	38.5
LnGrp LOS	F	A		C	A	C	D
Approach Vol, veh/h		1891		1807		304	
Approach Delay, s/veh		19.2		25.8		35.6	
Approach LOS		B		C		D	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		70.0		20.0	16.0	54.0	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		56.0		16.0	12.0	50.0	
Max Q Clear Time (g_c+I1), s		26.6		8.5	14.0	43.6	
Green Ext Time (p_c), s		14.1		0.6	0.0	5.0	

Intersection Summary	
HCM 6th Ctrl Delay	23.4
HCM 6th LOS	C

Notes

User approved ignoring U-Turning movement.



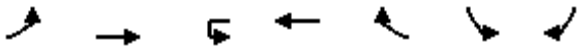
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	217	1580	13	1605	112	173	116
Future Volume (veh/h)	217	1580	13	1605	112	173	116
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1730		1744	1786	1786	1786
Adj Flow Rate, veh/h	228	1663		1689	118	182	122
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5		4	1	1	1
Cap, veh/h	264	2410		2541	808	587	269
Arrive On Green	0.16	0.73		0.53	0.53	0.18	0.18
Sat Flow, veh/h	1701	3373		4918	1514	3300	1514
Grp Volume(v), veh/h	228	1663		1689	118	182	122
Grp Sat Flow(s),veh/h/ln	1701	1643		1587	1514	1650	1514
Q Serve(g_s), s	11.8	24.6		23.1	3.5	4.3	6.5
Cycle Q Clear(g_c), s	11.8	24.6		23.1	3.5	4.3	6.5
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	264	2410		2541	808	587	269
V/C Ratio(X)	0.86	0.69		0.66	0.15	0.31	0.45
Avail Cap(c_a), veh/h	340	2410		2541	808	587	269
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	37.1	6.5		15.2	10.6	32.2	33.1
Incr Delay (d2), s/veh	16.5	1.6		1.4	0.4	1.4	5.4
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	5.0		7.0	1.1	1.8	6.0
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	53.6	8.1		16.5	11.0	33.6	38.5
LnGrp LOS	D	A		B	B	C	D
Approach Vol, veh/h		1891		1807		304	
Approach Delay, s/veh		13.6		16.2		35.6	
Approach LOS		B		B		D	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		70.0		20.0	18.0	52.0	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		56.0		16.0	18.0	44.0	
Max Q Clear Time (g_c+I1), s		26.6		8.5	13.8	25.1	
Green Ext Time (p_c), s		14.1		0.6	0.2	11.1	

Intersection Summary	
HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.



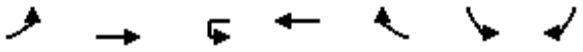
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	176	1421	0	1259	98	138	101
Future Volume (veh/h)	176	1421	0	1259	98	138	101
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1730		1744	1786	1786	1786
Adj Flow Rate, veh/h	185	1496		1325	103	145	106
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5		4	1	1	1
Cap, veh/h	217	2410		1860	849	587	269
Arrive On Green	0.13	0.73		0.56	0.56	0.18	0.18
Sat Flow, veh/h	1701	3373		3400	1514	3300	1514
Grp Volume(v), veh/h	185	1496		1325	103	145	106
Grp Sat Flow(s),veh/h/ln	1701	1643		1657	1514	1650	1514
Q Serve(g_s), s	9.6	20.1		26.3	2.9	3.4	5.6
Cycle Q Clear(g_c), s	9.6	20.1		26.3	2.9	3.4	5.6
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	217	2410		1860	849	587	269
V/C Ratio(X)	0.85	0.62		0.71	0.12	0.25	0.39
Avail Cap(c_a), veh/h	227	2410		1860	849	587	269
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	38.4	5.9		14.4	9.3	31.8	32.7
Incr Delay (d2), s/veh	24.8	1.2		2.4	0.3	1.0	4.3
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	4.1		8.3	0.8	1.4	5.1
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	63.2	7.1		16.8	9.6	32.8	37.0
LnGrp LOS	E	A		B	A	C	D
Approach Vol, veh/h		1681		1428		251	
Approach Delay, s/veh		13.3		16.3		34.6	
Approach LOS		B		B		C	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		70.0		20.0	15.5	54.5	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		56.0		16.0	12.0	50.0	
Max Q Clear Time (g_c+I1), s		22.1		7.6	11.6	28.3	
Green Ext Time (p_c), s		12.8		0.5	0.0	9.4	

Intersection Summary	
HCM 6th Ctrl Delay	16.1
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.



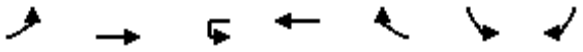
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	210	1433	13	1279	98	164	108
Future Volume (veh/h)	210	1433	13	1279	98	164	108
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1730		1744	1786	1786	1786
Adj Flow Rate, veh/h	221	1508		1346	103	173	114
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5		4	1	1	1
Cap, veh/h	227	2410		1841	841	587	269
Arrive On Green	0.13	0.73		0.56	0.56	0.18	0.18
Sat Flow, veh/h	1701	3373		3400	1514	3300	1514
Grp Volume(v), veh/h	221	1508		1346	103	173	114
Grp Sat Flow(s),veh/h/ln	1701	1643		1657	1514	1650	1514
Q Serve(g_s), s	11.6	20.3		27.4	2.9	4.1	6.0
Cycle Q Clear(g_c), s	11.6	20.3		27.4	2.9	4.1	6.0
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	227	2410		1841	841	587	269
V/C Ratio(X)	0.97	0.63		0.73	0.12	0.29	0.42
Avail Cap(c_a), veh/h	227	2410		1841	841	587	269
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	38.8	5.9		15.0	9.5	32.1	32.9
Incr Delay (d2), s/veh	52.3	1.2		2.6	0.3	1.3	4.8
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.8	4.1		8.7	0.9	1.7	5.6
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	91.2	7.2		17.6	9.8	33.4	37.7
LnGrp LOS	F	A		B	A	C	D
Approach Vol, veh/h		1729		1449		287	
Approach Delay, s/veh		17.9		17.0		35.1	
Approach LOS		B		B		D	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		70.0		20.0	16.0	54.0	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		56.0		16.0	12.0	50.0	
Max Q Clear Time (g_c+I1), s		22.3		8.0	13.6	29.4	
Green Ext Time (p_c), s		12.9		0.6	0.0	9.4	

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

Notes

User approved ignoring U-Turning movement.



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	210	1433	13	1279	98	164	108
Future Volume (veh/h)	210	1433	13	1279	98	164	108
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1730		1744	1786	1786	1786
Adj Flow Rate, veh/h	221	1508		1346	103	173	114
Peak Hour Factor	0.95	0.95		0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	5		4	1	1	1
Cap, veh/h	257	2410		2561	814	587	269
Arrive On Green	0.15	0.73		0.54	0.54	0.18	0.18
Sat Flow, veh/h	1701	3373		4918	1514	3300	1514
Grp Volume(v), veh/h	221	1508		1346	103	173	114
Grp Sat Flow(s),veh/h/ln	1701	1643		1587	1514	1650	1514
Q Serve(g_s), s	11.4	20.3		16.4	3.0	4.1	6.0
Cycle Q Clear(g_c), s	11.4	20.3		16.4	3.0	4.1	6.0
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	257	2410		2561	814	587	269
V/C Ratio(X)	0.86	0.63		0.53	0.13	0.29	0.42
Avail Cap(c_a), veh/h	340	2410		2561	814	587	269
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	37.3	5.9		13.4	10.3	32.1	32.9
Incr Delay (d2), s/veh	15.6	1.2		0.8	0.3	1.3	4.8
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	4.1		4.9	0.9	1.7	5.6
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	52.9	7.2		14.2	10.6	33.4	37.7
LnGrp LOS	D	A		B	B	C	D
Approach Vol, veh/h		1729		1449		287	
Approach Delay, s/veh		13.0		13.9		35.1	
Approach LOS		B		B		D	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		70.0		20.0	17.6	52.4	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		56.0		16.0	18.0	44.0	
Max Q Clear Time (g_c+I1), s		22.3		8.0	13.4	18.4	
Green Ext Time (p_c), s		12.9		0.6	0.2	10.0	

Intersection Summary	
HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TMO	21-Mar-24	SHIL0000-0001	1 OF 2

E/W STREET : PALMDALE RD (HWY 18)
N/S STREET : CANTINA ST
CONDITION : PM PEAK HOUR

INTERSECTION : 1
PROJECTED GROWTH PER YEAR : 3.5%

TURN MOVEMENTS

Condition	Existing Condition	Year 2025 Ambient Growth	Adjacent Property Trips	Background Condition	Phase I Project Trips	Background + Project Condition	Year 2035 Ambient Growth	Future Condition	Total Phase I&II Project Trips	Future + Project Condition	Future Condition	Future + Project Condition
Scenario #	2			4		6		8		10	12	14
PALMDALE RD (HWY 18)												
EB LEFT	98	7	46	151	9	160	34	185	16	201	165	181
EB THRU	1964	137	-8	2093	3	2096	687	2,780	5	2785	2,008	2013
EB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
WB LEFT	0	0	0	0	9	9	0	0	19	19	0	19
WB THRU	1918	134	0	2052	13	2065	671	2,723	29	2752	2,247	2276
WB RIGHT	244	17	6	267	0	267	85	352	0	352	291	291
CANTINA ST												
NB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
NB THRU	0	0	0	0	0	0	0	0	0	0	0	0
NB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
SB LEFT	311	22	23	356	17	373	109	465	38	503	371	409
SB THRU	0	0	0	0	0	0	0	0	0	0	0	0
SB RIGHT	79	6	43	128	5	133	28	156	10	166	148	158
TOTALS	**4614**	**323**	**110**	**5047**	**56**	**5103**	**1614**	**6661**	**117**	**6778**	**5230**	**5347**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TMO	21-Mar-24	SHIL0000-0001	2	OF 2

E/W STREET : PALMDALE RD (HWY 18) N/S STREET : CANTINA ST

CONDITION : PM PEAK HOUR PHF : 0.97

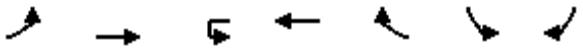
NORTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
23	0	83	0	0	0	0	0	0	0	0	0
13	0	88	0	0	0	0	0	0	1	0	0
19	0	72	0	0	0	0	0	0	0	0	0
22	0	68	1	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
61	461	0	0	1	0	0	1	0	0	5	0
60	494	0	0	2	0	0	0	0	0	5	0
68	476	0	0	2	0	0	1	0	0	4	0
55	456	0	0	3	0	0	0	0	0	7	0

WEST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
0	483	25	0	2	0	0	0	0	0	6	0
0	486	22	0	2	0	0	3	0	0	8	0
0	498	26	0	3	0	0	2	0	0	8	0
0	457	25	0	0	0	0	1	0	0	5	0

	Truck Volumes	Auto Volumes	Totals	Truck Percentage	Balanced Totals
PALMDALE RD (HWY 18)					
EB LEFT	0	98	**98**	**1%**	**98**
EB THRU	40	1924	**1,964**	**2%**	**1,964**
EB RIGHT	0	0	**0**	**0%**	**0**
WB LEFT	0	0	**0**	**0%**	**0**
WB THRU	31	1887	**1,918**	**2%**	**1,918**
WB RIGHT	0	244	**244**	**1%**	**244**
CANTINA ST					
NB LEFT	0	0	**0**	**0%**	**0**
NB THRU	0	0	**0**	**0%**	**0**
NB RIGHT	0	0	**0**	**0%**	**0**
SB LEFT	0	311	**311**	**1%**	**311**
SB THRU	0	0	**0**	**0%**	**0**
SB RIGHT	2	77	**79**	**3%**	**79**



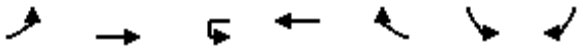
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	98	1964	0	1918	244	311	79
Future Volume (veh/h)	98	1964	0	1918	244	311	79
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1772		1772	1786	1786	1758
Adj Flow Rate, veh/h	101	2025		1977	252	321	81
Peak Hour Factor	0.97	0.97		0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	2		2	1	1	3
Cap, veh/h	120	2777		2455	1293	412	186
Arrive On Green	0.07	0.82		0.73	0.73	0.13	0.13
Sat Flow, veh/h	1701	3455		3455	1514	3300	1490
Grp Volume(v), veh/h	101	2025		1977	252	321	81
Grp Sat Flow(s),veh/h/ln	1701	1683		1683	1514	1650	1490
Q Serve(g_s), s	9.4	42.3		61.6	4.7	15.1	8.0
Cycle Q Clear(g_c), s	9.4	42.3		61.6	4.7	15.1	8.0
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	120	2777		2455	1293	412	186
V/C Ratio(X)	0.84	0.73		0.81	0.19	0.78	0.43
Avail Cap(c_a), veh/h	159	2777		2455	1293	412	186
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	73.4	6.1		14.2	2.0	67.9	64.8
Incr Delay (d2), s/veh	24.8	1.7		2.9	0.3	13.5	7.2
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	10.3		20.2	2.5	7.1	7.1
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	98.2	7.9		17.1	2.4	81.3	72.0
LnGrp LOS	F	A		B	A	F	E
Approach Vol, veh/h		2126		2229		402	
Approach Delay, s/veh		12.2		15.5		79.5	
Approach LOS		B		B		E	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		136.0		24.0	15.3	120.7	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		122.0		20.0	15.0	113.0	
Max Q Clear Time (g_c+I1), s		44.3		17.1	11.4	63.6	
Green Ext Time (p_c), s		29.2		0.4	0.1	25.7	

Intersection Summary	
HCM 6th Ctrl Delay	19.4
HCM 6th LOS	B

Notes

User approved ignoring U-Turning movement.



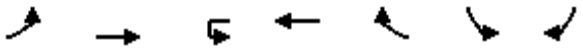
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	151	2093	0	2052	267	356	128
Future Volume (veh/h)	151	2093	0	2052	267	356	128
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1772		1772	1786	1786	1758
Adj Flow Rate, veh/h	156	2158		2115	275	367	132
Peak Hour Factor	0.97	0.97		0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	2		2	1	1	3
Cap, veh/h	159	2777		2378	1258	412	186
Arrive On Green	0.09	0.82		0.71	0.71	0.13	0.13
Sat Flow, veh/h	1701	3455		3455	1514	3300	1490
Grp Volume(v), veh/h	156	2158		2115	275	367	132
Grp Sat Flow(s),veh/h/ln	1701	1683		1683	1514	1650	1490
Q Serve(g_s), s	14.6	50.0		79.4	6.0	17.5	13.6
Cycle Q Clear(g_c), s	14.6	50.0		79.4	6.0	17.5	13.6
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	159	2777		2378	1258	412	186
V/C Ratio(X)	0.98	0.78		0.89	0.22	0.89	0.71
Avail Cap(c_a), veh/h	159	2777		2378	1258	412	186
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	72.3	6.8		18.6	2.8	68.9	67.2
Incr Delay (d2), s/veh	64.6	2.2		5.5	0.4	23.8	20.4
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.1	12.2		27.5	3.2	8.7	12.1
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	136.9	9.0		24.1	3.2	92.7	87.6
LnGrp LOS	F	A		C	A	F	F
Approach Vol, veh/h		2314		2390		499	
Approach Delay, s/veh		17.7		21.7		91.4	
Approach LOS		B		C		F	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		136.0		24.0	19.0	117.0	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		122.0		20.0	15.0	113.0	
Max Q Clear Time (g_c+I1), s		52.0		19.5	16.6	81.4	
Green Ext Time (p_c), s		32.5		0.1	0.0	21.8	

Intersection Summary	
HCM 6th Ctrl Delay	26.6
HCM 6th LOS	C

Notes

User approved ignoring U-Turning movement.



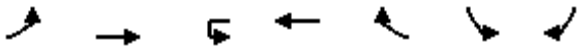
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	160	2096	9	2065	267	373	133
Future Volume (veh/h)	160	2096	9	2065	267	373	133
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1772		1772	1786	1786	1758
Adj Flow Rate, veh/h	165	2161		2129	275	385	137
Peak Hour Factor	0.97	0.97		0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	2		2	1	1	3
Cap, veh/h	159	2777		2378	1258	412	186
Arrive On Green	0.09	0.82		0.71	0.71	0.13	0.13
Sat Flow, veh/h	1701	3455		3455	1514	3300	1490
Grp Volume(v), veh/h	165	2161		2129	275	385	137
Grp Sat Flow(s),veh/h/ln	1701	1683		1683	1514	1650	1490
Q Serve(g_s), s	15.0	50.2		80.8	6.0	18.5	14.2
Cycle Q Clear(g_c), s	15.0	50.2		80.8	6.0	18.5	14.2
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	159	2777		2378	1258	412	186
V/C Ratio(X)	1.03	0.78		0.90	0.22	0.93	0.74
Avail Cap(c_a), veh/h	159	2777		2378	1258	412	186
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	72.5	6.8		18.8	2.8	69.3	67.5
Incr Delay (d2), s/veh	80.7	2.2		5.8	0.4	30.4	22.6
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	12.2		28.1	3.2	9.5	12.6
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	153.2	9.1		24.6	3.2	99.7	90.1
LnGrp LOS	F	A		C	A	F	F
Approach Vol, veh/h		2326		2404		522	
Approach Delay, s/veh		19.3		22.1		97.2	
Approach LOS		B		C		F	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		136.0		24.0	19.0	117.0	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		122.0		20.0	15.0	113.0	
Max Q Clear Time (g_c+I1), s		52.2		20.5	17.0	82.8	
Green Ext Time (p_c), s		32.6		0.0	0.0	21.3	

Intersection Summary	
HCM 6th Ctrl Delay	28.3
HCM 6th LOS	C

Notes

User approved ignoring U-Turning movement.



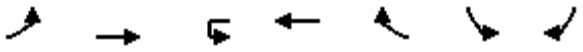
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	185	2780	0	2723	352	465	156
Future Volume (veh/h)	185	2780	0	2723	352	465	156
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1772		1772	1786	1786	1758
Adj Flow Rate, veh/h	191	2866		2807	363	479	161
Peak Hour Factor	0.97	0.97		0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	2		2	1	1	3
Cap, veh/h	159	2777		2378	1258	412	186
Arrive On Green	0.09	0.82		0.71	0.71	0.13	0.13
Sat Flow, veh/h	1701	3455		3455	1514	3300	1490
Grp Volume(v), veh/h	191	2866		2807	363	479	161
Grp Sat Flow(s),veh/h/ln	1701	1683		1683	1514	1650	1490
Q Serve(g_s), s	15.0	132.0		113.0	8.5	20.0	17.0
Cycle Q Clear(g_c), s	15.0	132.0		113.0	8.5	20.0	17.0
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	159	2777		2378	1258	412	186
V/C Ratio(X)	1.20	1.03		1.18	0.29	1.16	0.86
Avail Cap(c_a), veh/h	159	2777		2378	1258	412	186
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	72.5	14.0		23.5	3.0	70.0	68.7
Incr Delay (d2), s/veh	134.3	25.9		85.9	0.6	96.3	38.0
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.3	40.0		65.0	4.5	13.9	15.4
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	206.8	39.9		109.4	3.6	166.3	106.7
LnGrp LOS	F	F		F	A	F	F
Approach Vol, veh/h		3057		3170		640	
Approach Delay, s/veh		50.4		97.3		151.3	
Approach LOS		D		F		F	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		136.0		24.0	19.0	117.0	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		122.0		20.0	15.0	113.0	
Max Q Clear Time (g_c+I1), s		134.0		22.0	17.0	115.0	
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0	

Intersection Summary	
HCM 6th Ctrl Delay	81.4
HCM 6th LOS	F

Notes

User approved ignoring U-Turning movement.



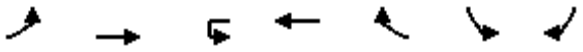
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	201	2785	19	2752	352	503	166
Future Volume (veh/h)	201	2785	19	2752	352	503	166
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1772		1772	1786	1786	1758
Adj Flow Rate, veh/h	207	2871		2837	363	519	171
Peak Hour Factor	0.97	0.97		0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	2		2	1	1	3
Cap, veh/h	159	2777		2378	1258	412	186
Arrive On Green	0.09	0.82		0.71	0.71	0.13	0.13
Sat Flow, veh/h	1701	3455		3455	1514	3300	1490
Grp Volume(v), veh/h	207	2871		2837	363	519	171
Grp Sat Flow(s),veh/h/ln	1701	1683		1683	1514	1650	1490
Q Serve(g_s), s	15.0	132.0		113.0	8.5	20.0	18.2
Cycle Q Clear(g_c), s	15.0	132.0		113.0	8.5	20.0	18.2
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	159	2777		2378	1258	412	186
V/C Ratio(X)	1.30	1.03		1.19	0.29	1.26	0.92
Avail Cap(c_a), veh/h	159	2777		2378	1258	412	186
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	72.5	14.0		23.5	3.0	70.0	69.2
Incr Delay (d2), s/veh	172.4	26.5		91.4	0.6	134.6	47.4
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.0	40.2		66.8	4.5	16.1	16.7
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	244.9	40.5		114.9	3.6	204.6	116.6
LnGrp LOS	F	F		F	A	F	F
Approach Vol, veh/h		3078		3200		690	
Approach Delay, s/veh		54.3		102.3		182.8	
Approach LOS		D		F		F	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		136.0		24.0	19.0	117.0	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		122.0		20.0	15.0	113.0	
Max Q Clear Time (g_c+I1), s		134.0		22.0	17.0	115.0	
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0	

Intersection Summary	
HCM 6th Ctrl Delay	89.0
HCM 6th LOS	F

Notes

User approved ignoring U-Turning movement.



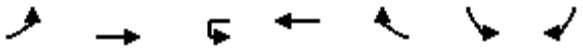
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	201	2785	19	2752	352	503	166
Future Volume (veh/h)	201	2785	19	2752	352	503	166
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1772		1772	1786	1786	1758
Adj Flow Rate, veh/h	207	2871		2837	363	519	171
Peak Hour Factor	0.97	0.97		0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	2		2	1	1	3
Cap, veh/h	226	2777		3227	1199	412	186
Arrive On Green	0.13	0.82		0.67	0.67	0.13	0.13
Sat Flow, veh/h	1701	3455		4997	1514	3300	1490
Grp Volume(v), veh/h	207	2871		2837	363	519	171
Grp Sat Flow(s),veh/h/ln	1701	1683		1612	1514	1650	1490
Q Serve(g_s), s	19.2	132.0		75.5	10.5	20.0	18.2
Cycle Q Clear(g_c), s	19.2	132.0		75.5	10.5	20.0	18.2
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	226	2777		3227	1199	412	186
V/C Ratio(X)	0.92	1.03		0.88	0.30	1.26	0.92
Avail Cap(c_a), veh/h	234	2777		3227	1199	412	186
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	68.5	14.0		21.4	4.5	70.0	69.2
Incr Delay (d2), s/veh	36.3	26.5		3.8	0.7	134.6	47.4
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	40.2		25.8	5.4	16.1	16.7
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	104.7	40.5		25.2	5.2	204.6	116.6
LnGrp LOS	F	F		C	A	F	F
Approach Vol, veh/h		3078		3200		690	
Approach Delay, s/veh		44.8		23.0		182.8	
Approach LOS		D		C		F	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		136.0		24.0	25.3	110.7	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		122.0		20.0	22.0	106.0	
Max Q Clear Time (g_c+I1), s		134.0		22.0	21.2	77.5	
Green Ext Time (p_c), s		0.0		0.0	0.0	25.0	

Intersection Summary	
HCM 6th Ctrl Delay	48.5
HCM 6th LOS	D

Notes

User approved ignoring U-Turning movement.



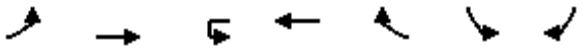
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	165	2008	0	2247	291	371	148
Future Volume (veh/h)	165	2008	0	2247	291	371	148
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1772		1772	1786	1786	1758
Adj Flow Rate, veh/h	170	2070		2316	300	382	153
Peak Hour Factor	0.97	0.97		0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	2		2	1	1	3
Cap, veh/h	159	2777		2378	1258	412	186
Arrive On Green	0.09	0.82		0.71	0.71	0.13	0.13
Sat Flow, veh/h	1701	3455		3455	1514	3300	1490
Grp Volume(v), veh/h	170	2070		2316	300	382	153
Grp Sat Flow(s),veh/h/ln	1701	1683		1683	1514	1650	1490
Q Serve(g_s), s	15.0	44.7		103.6	6.7	18.3	16.0
Cycle Q Clear(g_c), s	15.0	44.7		103.6	6.7	18.3	16.0
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	159	2777		2378	1258	412	186
V/C Ratio(X)	1.07	0.75		0.97	0.24	0.93	0.82
Avail Cap(c_a), veh/h	159	2777		2378	1258	412	186
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	72.5	6.4		22.1	2.8	69.3	68.3
Incr Delay (d2), s/veh	89.9	1.9		13.3	0.4	29.1	31.9
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	10.9		37.9	3.5	9.4	14.4
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	162.4	8.2		35.4	3.3	98.4	100.1
LnGrp LOS	F	A		D	A	F	F
Approach Vol, veh/h		2240		2616		535	
Approach Delay, s/veh		19.9		31.7		98.9	
Approach LOS		B		C		F	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		136.0		24.0	19.0	117.0	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		122.0		20.0	15.0	113.0	
Max Q Clear Time (g_c+I1), s		46.7		20.3	17.0	105.6	
Green Ext Time (p_c), s		30.4		0.0	0.0	6.8	

Intersection Summary	
HCM 6th Ctrl Delay	33.5
HCM 6th LOS	C

Notes

User approved ignoring U-Turning movement.



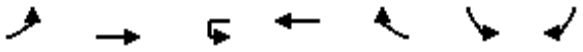
Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	181	2013	19	2276	291	409	158
Future Volume (veh/h)	181	2013	19	2276	291	409	158
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1772		1772	1786	1786	1758
Adj Flow Rate, veh/h	187	2075		2346	300	422	163
Peak Hour Factor	0.97	0.97		0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	2		2	1	1	3
Cap, veh/h	159	2777		2378	1258	412	186
Arrive On Green	0.09	0.82		0.71	0.71	0.13	0.13
Sat Flow, veh/h	1701	3455		3455	1514	3300	1490
Grp Volume(v), veh/h	187	2075		2346	300	422	163
Grp Sat Flow(s),veh/h/ln	1701	1683		1683	1514	1650	1490
Q Serve(g_s), s	15.0	45.0		108.0	6.7	20.0	17.2
Cycle Q Clear(g_c), s	15.0	45.0		108.0	6.7	20.0	17.2
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	159	2777		2378	1258	412	186
V/C Ratio(X)	1.17	0.75		0.99	0.24	1.02	0.88
Avail Cap(c_a), veh/h	159	2777		2378	1258	412	186
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	72.5	6.4		22.8	2.8	70.0	68.8
Incr Delay (d2), s/veh	125.3	1.9		15.6	0.4	50.3	39.7
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	10.9		40.2	3.5	11.3	15.6
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	197.8	8.3		38.3	3.3	120.3	108.5
LnGrp LOS	F	A		D	A	F	F
Approach Vol, veh/h		2262		2646		585	
Approach Delay, s/veh		23.9		34.4		117.0	
Approach LOS		C		C		F	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		136.0		24.0	19.0	117.0	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		122.0		20.0	15.0	113.0	
Max Q Clear Time (g_c+I1), s		47.0		22.0	17.0	110.0	
Green Ext Time (p_c), s		30.5		0.0	0.0	2.8	

Intersection Summary	
HCM 6th Ctrl Delay	38.9
HCM 6th LOS	D

Notes

User approved ignoring U-Turning movement.



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	181	2013	19	2276	291	409	158
Future Volume (veh/h)	181	2013	19	2276	291	409	158
Initial Q (Qb), veh	0	0		0	0	0	0
Ped-Bike Adj(A_pbT)	1.00				1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00		1.00	1.00	1.00	1.00
Work Zone On Approach		No		No		No	
Adj Sat Flow, veh/h/ln	1786	1772		1772	1786	1786	1758
Adj Flow Rate, veh/h	187	2075		2346	300	422	163
Peak Hour Factor	0.97	0.97		0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	2		2	1	1	3
Cap, veh/h	207	2777		3281	1216	412	186
Arrive On Green	0.12	0.82		0.68	0.68	0.13	0.13
Sat Flow, veh/h	1701	3455		4997	1514	3300	1490
Grp Volume(v), veh/h	187	2075		2346	300	422	163
Grp Sat Flow(s),veh/h/ln	1701	1683		1612	1514	1650	1490
Q Serve(g_s), s	17.4	45.0		48.5	7.8	20.0	17.2
Cycle Q Clear(g_c), s	17.4	45.0		48.5	7.8	20.0	17.2
Prop In Lane	1.00				1.00	1.00	1.00
Lane Grp Cap(c), veh/h	207	2777		3281	1216	412	186
V/C Ratio(X)	0.90	0.75		0.71	0.25	1.02	0.88
Avail Cap(c_a), veh/h	234	2777		3281	1216	412	186
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	69.3	6.4		16.1	3.9	70.0	68.8
Incr Delay (d2), s/veh	32.1	1.9		1.4	0.5	50.3	39.7
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	10.9		16.1	4.0	11.3	15.6
Unsig. Movement Delay, s/veh							
LnGrp Delay(d),s/veh	101.4	8.3		17.4	4.3	120.3	108.5
LnGrp LOS	F	A		B	A	F	F
Approach Vol, veh/h		2262		2646		585	
Approach Delay, s/veh		16.0		16.0		117.0	
Approach LOS		B		B		F	

Timer - Assigned Phs		2		4	5	6	
Phs Duration (G+Y+Rc), s		136.0		24.0	23.5	112.5	
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0	
Max Green Setting (Gmax), s		122.0		20.0	22.0	106.0	
Max Q Clear Time (g_c+I1), s		47.0		22.0	19.4	50.5	
Green Ext Time (p_c), s		30.5		0.0	0.1	33.5	

Intersection Summary	
HCM 6th Ctrl Delay	26.7
HCM 6th LOS	C

Notes

User approved ignoring U-Turning movement.

CALCULATION OF FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES (NCHRP 255)

Intersection No.: 1
North/South Street: CANTINA ST
East/West Street: PALMDALE RD (HWY 18)

Analysis Condition: YEAR 2045 FUTURE TRAFFIC

A.M. Peak Hour

			Forecast Future Year				
Approach Direction		**Base Year Count**		**Link Volume**		**Turn Volume**	**Balanced Volume**
South leg	Left	0	Approach	0	Left	0	0
NB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0
North leg	Left	89	Approach	182	Left	117	117
SB	Through	0	Departure	232	Through	0	0
	Right	52			Right	66	66
West leg	Left	104	Approach	1,558	Left	140	140
EB	Through	1,111	Departure	1,316	Through	1,427	1,430
	Right	0			Right	0	0
East leg	Left	0	Approach	1,340	Left	0	0
WB	Through	1,116	Departure	1,543	Through	1,251	1,260
	Right	76			Right	93	94

P.M. Peak Hour

			Forecast Future Year				
Approach Direction		**Base Year Count**		**Link Volume**		**Turn Volume**	**Balanced Volume**
South leg	Left	0	Approach	0	Left	0	0
NB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0
North leg	Left	311	Approach	454	Left	348	348
SB	Through	0	Departure	403	Through	0	0
	Right	79			Right	105	105
West leg	Left	98	Approach	2,150	Left	119	119
EB	Through	1,964	Departure	2,351	Through	2,016	2,016
	Right	0			Right	0	0
East leg	Left	0	Approach	2,516	Left	0	0
WB	Through	1,918	Departure	2,363	Through	2,247	2,247
	Right	244			Right	285	285

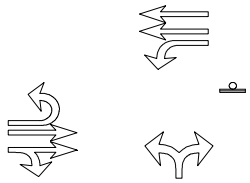
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TMO	21-Mar-24	SHIL0000-0001	1 OF 2

E/W STREET : PALMDALE RD (HWY 18)
N/S STREET : EDISON DRIVEWAY
CONDITION : AM PEAK HOUR

INTERSECTION : 2
PROJECTED GROWTH PER YEAR : 3.5%

CONDITION DIAGRAMS



EXISTING GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition	Year 2025 Ambient Growth	Adjacent Property Trips	Background Condition	Phase I Project Trips	Background + Project Condition	Year 2035 Ambient Growth	Future Condition	Total Phase I&II Project Trips	Future + Project Condition	Future Condition	Future + Project Condition
Scenario #	1			3		5		7		9	11	13
PALMDALE RD (HWY 18)												
EB LEFT	0	0	0	0	7	7	0	0	12	12	0	12
EB THRU	1194	84	11	1289	32	1321	418	1,707	39	1746	1,554	1593
EB RIGHT	2	0	0	2	0	2	1	3	0	3	4	4
WB LEFT	3	0	0	3	0	3	1	4	0	4	4	4
WB THRU	1216	85	12	1313	41	1354	426	1,739	69	1808	1,376	1445
WB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
EDISON DRIVEWAY												
NB LEFT	7	0	0	7	0	7	2	9	0	9	10	10
NB THRU	0	0	0	0	0	0	0	0	0	0	0	0
NB RIGHT	9	1	0	10	0	10	3	13	0	13	12	12
SB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
SB THRU	0	0	0	0	0	0	0	0	0	0	0	0
SB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**2431**	**170**	**23**	**2624**	**80**	**2704**	**851**	**3475**	**120**	**3595**	**2960**	**3080**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TMO	21-Mar-24	SHIL0000-0001	2	OF 2

E/W STREET : PALMDALE RD (HWY 18) N/S STREET : EDISON DRIVEWAY
CONDITION : AM PEAK HOUR PHF : 0.93

NORTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	2	0	2	1	0	0	0	0	0
0	0	0	2	0	2	2	0	1	0	0	0
1	0	1	1	0	1	0	0	0	0	0	0

EAST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
0	318	0	0	2	0	0	1	0	0	5	0
0	305	2	0	0	0	0	1	0	0	4	0
0	282	0	0	1	0	0	0	0	0	7	0
0	279	1	0	0	0	0	1	0	0	10	0

WEST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
0	293	0	0	2	0	0	2	0	0	9	0
0	320	0	0	2	0	0	1	0	0	11	0
0	261	0	0	2	0	0	1	0	0	13	0
2	265	0	0	1	0	0	1	0	0	10	0

	Truck Volumes	Auto Volumes	Totals	Truck Percentage	Balanced Totals
PALMDALE RD (HWY 18)					
EB LEFT	0	0	**0**	**0%**	**0**
EB THRU	55	1139	**1,194**	**5%**	**1,194**
EB RIGHT	0	2	**2**	**1%**	**2**
WB LEFT	0	3	**3**	**1%**	**3**
WB THRU	32	1184	**1,216**	**3%**	**1,216**
WB RIGHT	0	0	**0**	**0%**	**0**
EDISON DRIVEWAY					
NB LEFT	6	1	**7**	**86%**	**7**
NB THRU	0	0	**0**	**0%**	**0**
NB RIGHT	8	1	**9**	**89%**	**9**
SB LEFT	0	0	**0**	**0%**	**0**
SB THRU	0	0	**0**	**0%**	**0**
SB RIGHT	0	0	**0**	**0%**	**0**

Intersection	
Int Delay, s/veh	0.8

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	1194	2	3	1216	7	9
Future Vol, veh/h	0	1194	2	3	1216	7	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	350	-	-	350	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93	93
Heavy Vehicles, %	0	5	1	1	3	86	89
Mvmt Flow	0	1284	2	3	1308	8	10

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	1308	0	0	1286	0	1945	643
Stage 1	-	-	-	-	-	1285	-
Stage 2	-	-	-	-	-	660	-
Critical Hdwy	6.4	-	-	4.12	-	8.52	8.68
Critical Hdwy Stg 1	-	-	-	-	-	7.52	-
Critical Hdwy Stg 2	-	-	-	-	-	7.52	-
Follow-up Hdwy	2.5	-	-	2.21	-	4.36	4.19
Pot Cap-1 Maneuver	214	-	-	541	-	22	259
Stage 1	-	-	-	-	-	111	-
Stage 2	-	-	-	-	-	302	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	214	-	-	541	-	22	259
Mov Cap-2 Maneuver	-	-	-	-	-	22	-
Stage 1	-	-	-	-	-	111	-
Stage 2	-	-	-	-	-	300	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	127.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	45	214	-	-	541	-
HCM Lane V/C Ratio	0.382	-	-	-	0.006	-
HCM Control Delay (s)	127.9	0	-	-	11.7	-
HCM Lane LOS	F	A	-	-	B	-
HCM 95th %tile Q(veh)	1.3	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	1289	2	3	1313	7	10
Future Vol, veh/h	0	1289	2	3	1313	7	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	350	-	-	350	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93	93
Heavy Vehicles, %	0	5	1	1	3	86	89
Mvmt Flow	0	1386	2	3	1412	8	11

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	1412	0	0	1388	0	2099	694
Stage 1	-	-	-	-	-	1387	-
Stage 2	-	-	-	-	-	712	-
Critical Hdwy	6.4	-	-	4.12	-	8.52	8.68
Critical Hdwy Stg 1	-	-	-	-	-	7.52	-
Critical Hdwy Stg 2	-	-	-	-	-	7.52	-
Follow-up Hdwy	2.5	-	-	2.21	-	4.36	4.19
Pot Cap-1 Maneuver	184	-	-	494	-	16	235
Stage 1	-	-	-	-	-	94	-
Stage 2	-	-	-	-	-	278	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	184	-	-	494	-	16	235
Mov Cap-2 Maneuver	-	-	-	-	-	16	-
Stage 1	-	-	-	-	-	94	-
Stage 2	-	-	-	-	-	276	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	189.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	35	184	-	-	494	-
HCM Lane V/C Ratio	0.522	-	-	-	0.007	-
HCM Control Delay (s)	189.4	0	-	-	12.3	-
HCM Lane LOS	F	A	-	-	B	-
HCM 95th %tile Q(veh)	1.8	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	1321	2	3	1354	7	10
Future Vol, veh/h	0	1321	2	3	1354	7	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	350	-	-	350	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93	93
Heavy Vehicles, %	0	5	1	1	3	86	89
Mvmt Flow	0	1420	2	3	1456	8	11

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	1456	0	0	1422	0	2155	711
Stage 1	-	-	-	-	-	1421	-
Stage 2	-	-	-	-	-	734	-
Critical Hdwy	6.4	-	-	4.12	-	8.52	8.68
Critical Hdwy Stg 1	-	-	-	-	-	7.52	-
Critical Hdwy Stg 2	-	-	-	-	-	7.52	-
Follow-up Hdwy	2.5	-	-	2.21	-	4.36	4.19
Pot Cap-1 Maneuver	172	-	-	480	-	14	227
Stage 1	-	-	-	-	-	89	-
Stage 2	-	-	-	-	-	269	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	172	-	-	480	-	14	227
Mov Cap-2 Maneuver	-	-	-	-	-	14	-
Stage 1	-	-	-	-	-	89	-
Stage 2	-	-	-	-	-	267	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	227.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	31	172	-	-	480	-
HCM Lane V/C Ratio	0.59	-	-	-	0.007	-
HCM Control Delay (s)	227.1	0	-	-	12.6	-
HCM Lane LOS	F	A	-	-	B	-
HCM 95th %tile Q(veh)	1.9	0	-	-	0	-

Intersection	
Int Delay, s/veh	9.8

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	1707	3	4	1739	9	13
Future Vol, veh/h	0	1707	3	4	1739	9	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	350	-	-	350	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93	93
Heavy Vehicles, %	0	5	1	1	3	86	89
Mvmt Flow	0	1835	3	4	1870	10	14

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	1870	0	0	1838	0	2780	919
Stage 1	-	-	-	-	-	1837	-
Stage 2	-	-	-	-	-	943	-
Critical Hdwy	6.4	-	-	4.12	-	8.52	8.68
Critical Hdwy Stg 1	-	-	-	-	-	7.52	-
Critical Hdwy Stg 2	-	-	-	-	-	7.52	-
Follow-up Hdwy	2.5	-	-	2.21	-	4.36	4.19
Pot Cap-1 Maneuver	93	-	-	332	-	~ 4	153
Stage 1	-	-	-	-	-	44	-
Stage 2	-	-	-	-	-	193	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	93	-	-	332	-	~ 4	153
Mov Cap-2 Maneuver	-	-	-	-	-	~ 4	-
Stage 1	-	-	-	-	-	44	-
Stage 2	-	-	-	-	-	191	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	$ 1550.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	9	93	-	-	332	-
HCM Lane V/C Ratio	2.628	-	-	-	0.013	-
HCM Control Delay (s)	$ 1550.7	0	-	-	16	-
HCM Lane LOS	F	A	-	-	C	-
HCM 95th %tile Q(veh)	4	0	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	12.8

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	1746	3	4	1808	9	13
Future Vol, veh/h	0	1746	3	4	1808	9	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	350	-	-	350	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93	93
Heavy Vehicles, %	0	5	1	1	3	86	89
Mvmt Flow	0	1877	3	4	1944	10	14

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	1944	0	0	1880	0	2859	940
Stage 1	-	-	-	-	-	1879	-
Stage 2	-	-	-	-	-	980	-
Critical Hdwy	6.4	-	-	4.12	-	8.52	8.68
Critical Hdwy Stg 1	-	-	-	-	-	7.52	-
Critical Hdwy Stg 2	-	-	-	-	-	7.52	-
Follow-up Hdwy	2.5	-	-	2.21	-	4.36	4.19
Pot Cap-1 Maneuver	83	-	-	319	-	~ 3	147
Stage 1	-	-	-	-	-	41	-
Stage 2	-	-	-	-	-	182	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	83	-	-	319	-	~ 3	147
Mov Cap-2 Maneuver	-	-	-	-	-	~ 3	-
Stage 1	-	-	-	-	-	41	-
Stage 2	-	-	-	-	-	180	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	$ 2088.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	7	83	-	-	319	-
HCM Lane V/C Ratio	3.379	-	-	-	0.013	-
HCM Control Delay (s)	$ 2088.4	0	-	-	16.4	-
HCM Lane LOS	F	A	-	-	C	-
HCM 95th %tile Q(veh)	4.2	0	-	-	0	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	5.1

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	1554	4	4	1376	10	12
Future Vol, veh/h	0	1554	4	4	1376	10	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	350	-	-	350	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93	93
Heavy Vehicles, %	0	5	1	1	3	86	89
Mvmt Flow	0	1671	4	4	1480	11	13

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	1480	0	0	1675	0	2421	838
Stage 1	-	-	-	-	-	1673	-
Stage 2	-	-	-	-	-	748	-
Critical Hdwy	6.4	-	-	4.12	-	8.52	8.68
Critical Hdwy Stg 1	-	-	-	-	-	7.52	-
Critical Hdwy Stg 2	-	-	-	-	-	7.52	-
Follow-up Hdwy	2.5	-	-	2.21	-	4.36	4.19
Pot Cap-1 Maneuver	166	-	-	383	-	~ 8	178
Stage 1	-	-	-	-	-	59	-
Stage 2	-	-	-	-	-	263	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	166	-	-	383	-	~ 8	178
Mov Cap-2 Maneuver	-	-	-	-	-	~ 8	-
Stage 1	-	-	-	-	-	59	-
Stage 2	-	-	-	-	-	260	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	$ 679.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	17	166	-	-	383	-
HCM Lane V/C Ratio	1.392	-	-	-	0.011	-
HCM Control Delay (s)	$ 679.5	0	-	-	14.5	-
HCM Lane LOS	F	A	-	-	B	-
HCM 95th %tile Q(veh)	3.4	0	-	-	0	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	5.8

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	1593	4	4	1445	10	12
Future Vol, veh/h	0	1593	4	4	1445	10	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	350	-	-	350	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93	93
Heavy Vehicles, %	0	5	1	1	3	86	89
Mvmt Flow	0	1713	4	4	1554	11	13

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	1554	0	0	1717	0	2500	859
Stage 1	-	-	-	-	-	1715	-
Stage 2	-	-	-	-	-	785	-
Critical Hdwy	6.4	-	-	4.12	-	8.52	8.68
Critical Hdwy Stg 1	-	-	-	-	-	7.52	-
Critical Hdwy Stg 2	-	-	-	-	-	7.52	-
Follow-up Hdwy	2.5	-	-	2.21	-	4.36	4.19
Pot Cap-1 Maneuver	149	-	-	369	-	~ 7	171
Stage 1	-	-	-	-	-	55	-
Stage 2	-	-	-	-	-	248	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	149	-	-	369	-	~ 7	171
Mov Cap-2 Maneuver	-	-	-	-	-	~ 7	-
Stage 1	-	-	-	-	-	55	-
Stage 2	-	-	-	-	-	245	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	$ 807.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	15	149	-	-	369	-
HCM Lane V/C Ratio	1.577	-	-	-	0.012	-
HCM Control Delay (s)	$ 807.5	0	-	-	14.9	-
HCM Lane LOS	F	A	-	-	B	-
HCM 95th %tile Q(veh)	3.6	0	-	-	0	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TMO	21-Mar-24	SHIL0000-0001	1 OF 2

E/W STREET : PALMDALE RD (HWY 18)
N/S STREET : EDISON DRIVEWAY
CONDITION : PM PEAK HOUR

INTERSECTION : 2
PROJECTED GROWTH PER YEAR : 3.5%

TURN MOVEMENTS

Condition	Existing Condition	Year 2025 Ambient Growth	Adjacent Property Trips	Background Condition	Phase I Project Trips	Background + Project Condition	Year 2035 Ambient Growth	Future Condition	Total Phase I&II Project Trips	Future + Project Condition	Future Condition	Future + Project Condition
Scenario #	2			4		6		8		10	12	14
PALMDALE RD (HWY 18)												
EB LEFT	0	0	0	0	3	3	0	0	5	5	0	5
EB THRU	2260	158	15	2433	26	2459	791	3,224	57	3281	2,364	2421
EB RIGHT	13	1	0	14	0	14	5	19	0	19	15	15
WB LEFT	9	1	0	10	0	10	3	13	0	13	12	12
WB THRU	2204	154	17	2375	19	2394	771	3,146	33	3179	2,588	2621
WB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
EDISON DRIVEWA												
NB LEFT	1	0	0	1	0	1	0	1	0	1	2	2
NB THRU	0	0	0	0	0	0	0	0	0	0	0	0
NB RIGHT	3	0	0	3	0	3	1	4	0	4	4	4
SB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
SB THRU	0	0	0	0	0	0	0	0	0	0	0	0
SB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**4490**	**314**	**32**	**4836**	**48**	**4884**	**1571**	**6407**	**95**	**6502**	**4985**	**5080**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TMO	21-Mar-24	SHIL0000-0001	2	OF 2

E/W STREET : PALMDALE RD (HWY 18) N/S STREET : EDISON DRIVEWAY
CONDITION : PM PEAK HOUR PHF : 0.98

NORTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
2	0	1	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
0	536	1	0	2	2	0	1	0	0	5	0
0	553	1	0	2	1	0	0	1	0	5	0
0	555	1	0	1	1	0	0	0	0	5	0
0	532	0	0	3	0	0	0	1	0	4	0

WEST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
1	563	0	1	1	0	0	1	0	0	8	0
2	575	0	1	0	0	0	3	0	0	6	0
3	567	0	2	1	0	0	1	0	0	7	0
1	519	0	1	0	0	1	1	0	0	7	0

	Truck Volumes	Auto Volumes	Totals	Truck Percentage	Balanced Totals
PALMDALE RD (HWY 18)					
EB LEFT	0	0	**0**	**0%**	**0**
EB THRU	36	2224	**2,260**	**2%**	**2,260**
EB RIGHT	6	7	**13**	**46%**	**13**
WB LEFT	6	3	**9**	**67%**	**9**
WB THRU	28	2176	**2,204**	**1%**	**2,204**
WB RIGHT	0	0	**0**	**0%**	**0**
EDISON DRIVEWAY					
NB LEFT	0	1	**1**	**1%**	**1**
NB THRU	0	0	**0**	**0%**	**0**
NB RIGHT	0	3	**3**	**1%**	**3**
SB LEFT	0	0	**0**	**0%**	**0**
SB THRU	0	0	**0**	**0%**	**0**
SB RIGHT	0	0	**0**	**0%**	**0**

Intersection	
Int Delay, s/veh	0.4

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	2260	13	9	2204	1	3
Future Vol, veh/h	0	2260	13	9	2204	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	350	-	-	350	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98	98
Heavy Vehicles, %	0	2	46	67	1	1	1
Mvmt Flow	0	2306	13	9	2249	1	3

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	2249	0	0	2319	0	3456	1160
Stage 1	-	-	-	-	-	2313	-
Stage 2	-	-	-	-	-	1143	-
Critical Hdwy	6.4	-	-	5.44	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	-	5.82	-
Follow-up Hdwy	2.5	-	-	2.87	-	3.51	3.31
Pot Cap-1 Maneuver	52	-	-	83	-	5	190
Stage 1	-	-	-	-	-	61	-
Stage 2	-	-	-	-	-	268	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	52	-	-	83	-	4	190
Mov Cap-2 Maneuver	-	-	-	-	-	4	-
Stage 1	-	-	-	-	-	61	-
Stage 2	-	-	-	-	-	239	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	$ 318.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	15	52	-	-	83	-
HCM Lane V/C Ratio	0.272	-	-	-	0.111	-
HCM Control Delay (s)	$ 318.3	0	-	-	53.7	-
HCM Lane LOS	F	A	-	-	F	-
HCM 95th %tile Q(veh)	0.7	0	-	-	0.4	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.5

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	2433	14	10	2375	1	3
Future Vol, veh/h	0	2433	14	10	2375	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	350	-	-	350	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98	98
Heavy Vehicles, %	0	2	46	67	1	1	1
Mvmt Flow	0	2483	14	10	2423	1	3

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	2423	0	0	2497	0	3722	1249
Stage 1	-	-	-	-	-	2490	-
Stage 2	-	-	-	-	-	1232	-
Critical Hdwy	6.4	-	-	5.44	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	-	5.82	-
Follow-up Hdwy	2.5	-	-	2.87	-	3.51	3.31
Pot Cap-1 Maneuver	40	-	-	66	-	3	166
Stage 1	-	-	-	-	-	49	-
Stage 2	-	-	-	-	-	240	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	40	-	-	66	-	3	166
Mov Cap-2 Maneuver	-	-	-	-	-	3	-
Stage 1	-	-	-	-	-	49	-
Stage 2	-	-	-	-	-	204	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	$ 464
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	11	40	-	-	66	-
HCM Lane V/C Ratio	0.371	-	-	-	0.155	-
HCM Control Delay (s)	$ 464	0	-	-	69.3	-
HCM Lane LOS	F	A	-	-	F	-
HCM 95th %tile Q(veh)	0.9	0	-	-	0.5	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.5

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	2459	14	10	2394	1	3
Future Vol, veh/h	0	2459	14	10	2394	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	350	-	-	350	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98	98
Heavy Vehicles, %	0	2	46	67	1	1	1
Mvmt Flow	0	2509	14	10	2443	1	3

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	2443	0	0	2523	0	3758	1262
Stage 1	-	-	-	-	-	2516	-
Stage 2	-	-	-	-	-	1242	-
Critical Hdwy	6.4	-	-	5.44	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	-	5.82	-
Follow-up Hdwy	2.5	-	-	2.87	-	3.51	3.31
Pot Cap-1 Maneuver	39	-	-	64	-	3	162
Stage 1	-	-	-	-	-	47	-
Stage 2	-	-	-	-	-	238	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	39	-	-	64	-	3	162
Mov Cap-2 Maneuver	-	-	-	-	-	3	-
Stage 1	-	-	-	-	-	47	-
Stage 2	-	-	-	-	-	201	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	$ 464
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	11	39	-	-	64	-
HCM Lane V/C Ratio	0.371	-	-	-	0.159	-
HCM Control Delay (s)	$ 464	0	-	-	71.6	-
HCM Lane LOS	F	A	-	-	F	-
HCM 95th %tile Q(veh)	0.9	0	-	-	0.5	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.6

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	3224	19	13	3146	1	4
Future Vol, veh/h	0	3224	19	13	3146	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	350	-	-	350	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98	98
Heavy Vehicles, %	0	2	46	67	1	1	1
Mvmt Flow	0	3290	19	13	3210	1	4

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	3210	0	0	3309	0	4931	1655
Stage 1	-	-	-	-	-	3300	-
Stage 2	-	-	-	-	-	1631	-
Critical Hdwy	6.4	-	-	5.44	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	-	5.82	-
Follow-up Hdwy	2.5	-	-	2.87	-	3.51	3.31
Pot Cap-1 Maneuver	12	-	-	24	-	0	88
Stage 1	-	-	-	-	-	17	-
Stage 2	-	-	-	-	-	147	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	12	-	-	24	-	0	88
Mov Cap-2 Maneuver	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	17	-
Stage 2	-	-	-	-	-	67	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	48.4
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	88	12	-	-	24	-
HCM Lane V/C Ratio	0.058	-	-	-	0.553	-
HCM Control Delay (s)	48.4	0	-	-	272.2	-
HCM Lane LOS	E	A	-	-	F	-
HCM 95th %tile Q(veh)	0.2	0	-	-	1.7	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	3281	19	13	3179	1	4
Future Vol, veh/h	0	3281	19	13	3179	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	350	-	-	350	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98	98
Heavy Vehicles, %	0	2	46	67	1	1	1
Mvmt Flow	0	3348	19	13	3244	1	4

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	3244	0	0	3367	0	5006	1684
Stage 1	-	-	-	-	-	3358	-
Stage 2	-	-	-	-	-	1648	-
Critical Hdwy	6.4	-	-	5.44	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	-	5.82	-
Follow-up Hdwy	2.5	-	-	2.87	-	3.51	3.31
Pot Cap-1 Maneuver	11	-	-	22	-	0	84
Stage 1	-	-	-	-	-	15	-
Stage 2	-	-	-	-	-	144	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	11	-	-	22	-	0	84
Mov Cap-2 Maneuver	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	15	-
Stage 2	-	-	-	-	-	59	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	50.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	84	11	-	-	22	-
HCM Lane V/C Ratio	0.061	-	-	-	0.603	-
HCM Control Delay (s)	50.6	0	-	-	$ 308.2	-
HCM Lane LOS	F	A	-	-	F	-
HCM 95th %tile Q(veh)	0.2	0	-	-	1.8	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	2364	15	12	2588	2	4
Future Vol, veh/h	0	2364	15	12	2588	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	350	-	-	350	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98	98
Heavy Vehicles, %	0	2	46	67	1	1	1
Mvmt Flow	0	2412	15	12	2641	2	4

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	2641	0	0	2427	0	3765	1214
Stage 1	-	-	-	-	-	2420	-
Stage 2	-	-	-	-	-	1345	-
Critical Hdwy	6.4	-	-	5.44	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	-	5.82	-
Follow-up Hdwy	2.5	-	-	2.87	-	3.51	3.31
Pot Cap-1 Maneuver	29	-	-	72	-	3	175
Stage 1	-	-	-	-	-	53	-
Stage 2	-	-	-	-	-	209	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	29	-	-	72	-	~ 2	175
Mov Cap-2 Maneuver	-	-	-	-	-	~ 2	-
Stage 1	-	-	-	-	-	53	-
Stage 2	-	-	-	-	-	174	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	$ 1134.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	6	29	-	-	72	-
HCM Lane V/C Ratio	1.02	-	-	-	0.17	-
HCM Control Delay (s)	$ 1134.5	0	-	-	65	-
HCM Lane LOS	F	A	-	-	F	-
HCM 95th %tile Q(veh)	1.5	0	-	-	0.6	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.5

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	0	2421	15	12	2621	2	4
Future Vol, veh/h	0	2421	15	12	2621	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	350	-	-	350	-	0	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98	98
Heavy Vehicles, %	0	2	46	67	1	1	1
Mvmt Flow	0	2470	15	12	2674	2	4

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	2674	0	0	2485	0	3839	1243
Stage 1	-	-	-	-	-	2478	-
Stage 2	-	-	-	-	-	1361	-
Critical Hdwy	6.4	-	-	5.44	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	-	5.82	-
Follow-up Hdwy	2.5	-	-	2.87	-	3.51	3.31
Pot Cap-1 Maneuver	27	-	-	67	-	3	167
Stage 1	-	-	-	-	-	50	-
Stage 2	-	-	-	-	-	205	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	27	-	-	67	-	~ 2	167
Mov Cap-2 Maneuver	-	-	-	-	-	~ 2	-
Stage 1	-	-	-	-	-	50	-
Stage 2	-	-	-	-	-	168	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	$ 1134.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBU	EBT	EBR	WBL	WBT
Capacity (veh/h)	6	27	-	-	67	-
HCM Lane V/C Ratio	1.02	-	-	-	0.183	-
HCM Control Delay (s)	$ 1134.5	0	-	-	70.4	-
HCM Lane LOS	F	A	-	-	F	-
HCM 95th %tile Q(veh)	1.5	0	-	-	0.6	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

CALCULATION OF FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES (NCHRP 255)

Intersection No.: 2
North/South Street: EDISON DRIVEWAY
East/West Street: PALMDALE RD (HWY 18)

Analysis Condition: YEAR 2045 FUTURE TRAFFIC

A.M. Peak Hour

			Forecast Future Year				
Approach Direction		**Base Year Count**		**Link Volume**		**Turn Volume**	**Balanced Volume**
South leg	Left	7	Approach	21	Left	10	10
NB	Through	0	Departure	7	Through	0	0
	Right	9			Right	12	12
North leg	Left	0	Approach	0	Left	0	0
SB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0
West leg	Left	0	Approach	1,547	Left	0	0
EB	Through	1,194	Departure	1,349	Through	1,543	1,543
	Right	2			Right	4	4
East leg	Left	3	Approach	1,345	Left	4	4
WB	Through	1,216	Departure	1,554	Through	1,340	1,364
	Right	0			Right	0	0

P.M. Peak Hour

			Forecast Future Year				
Approach Direction		**Base Year Count**		**Link Volume**		**Turn Volume**	**Balanced Volume**
South leg	Left	1	Approach	5	Left	2	2
NB	Through	0	Departure	26	Through	0	0
	Right	3			Right	4	4
North leg	Left	0	Approach	0	Left	0	0
SB	Through	0	Departure	0	Through	0	0
	Right	0			Right	0	0
West leg	Left	0	Approach	2,342	Left	0	0
EB	Through	2,260	Departure	2,556	Through	2,329	2,349
	Right	13			Right	15	15
East leg	Left	9	Approach	2,564	Left	12	12
WB	Through	2,204	Departure	2,332	Through	2,555	2,571
	Right	0			Right	0	0

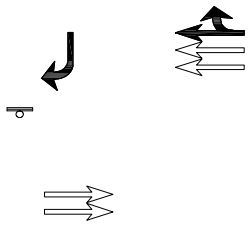
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TMO	21-Mar-24	SHIL0000-0001	1 OF 2

E/W STREET : PALMDALE RD (HWY 18)
N/S STREET : EASTERN PROJECT DRIVEWAY
CONDITION : AM PEAK HOUR

INTERSECTION : 3
PROJECTED GROWTH PER YEAR : 3.5%

CONDITION DIAGRAMS



PROJECT GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition	Year 2025 Ambient Growth	Adjacent Property Trips	Background Condition	Phase I Project Trips	Background + Project Condition	Year 2035 Ambient Growth	Future Condition	Total Phase I&II Project Trips	Future + Project Condition	Future Condition	Future + Project Condition
Scenario #	1			3		5		7		9	11	13
PALMDALE RD (HWY 18)												
EB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
EB THRU	1198	84	11	1293	39	1332	419	1,712	51	1763	1,558	1609
EB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
WB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
WB THRU	1222	85	12	1319	0	1319	427	1,746	0	1746	1,386	1386
WB RIGHT	0	0	0	0	48	48	0	0	81	81	0	81
EASTERN PROJECT DRIVEWAY												
NB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
NB THRU	0	0	0	0	0	0	0	0	0	0	0	0
NB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
SB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
SB THRU	0	0	0	0	0	0	0	0	0	0	0	0
SB RIGHT	0	0	0	0	27	27	0	0	33	33	0	33
TOTALS	**2420**	**169**	**23**	**2612**	**114**	**2726**	**846**	**3458**	**165**	**3623**	**2944**	**3109**

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↱			↱
Traffic Vol, veh/h	0	1332	1319	48	0	27
Future Vol, veh/h	0	1332	1319	48	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	5	3	0	0	0
Mvmt Flow	0	1417	1403	51	0	29

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	727
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	371
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	371
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	371
HCM Lane V/C Ratio	-	-	-	0.077
HCM Control Delay (s)	-	-	-	15.5
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.2

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↱			↱
Traffic Vol, veh/h	0	1763	1746	81	0	33
Future Vol, veh/h	0	1763	1746	81	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	5	3	0	0	0
Mvmt Flow	0	1876	1857	86	0	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	972
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	256
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	256
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	21.3
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	256
HCM Lane V/C Ratio	-	-	-	0.137
HCM Control Delay (s)	-	-	-	21.3
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.5

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↱			↱
Traffic Vol, veh/h	0	1609	1386	81	0	33
Future Vol, veh/h	0	1609	1386	81	0	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	5	3	0	0	0
Mvmt Flow	0	1712	1474	86	0	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	780
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	342
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	342
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	16.7
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	342
HCM Lane V/C Ratio	-	-	-	0.103
HCM Control Delay (s)	-	-	-	16.7
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.3

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TMO	21-Mar-24	SHIL0000-0001	1 OF 2

E/W STREET : PALMDALE RD (HWY 18)
N/S STREET : EASTERN PROJECT DRIVEV
CONDITION : PM PEAK HOUR

INTERSECTION : 3
PROJECTED GROWTH PER YEAR : 3.5%

TURN MOVEMENTS

Condition	Existing Condition	Year 2025 Ambient Growth	Adjacent Property Trips	Background Condition	Phase I Project Trips	Background + Project Condition	Year 2035 Ambient Growth	Future Condition	Total Phase I&II Project Trips	Future + Project Condition	Future Condition	Future + Project Condition
Scenario #	2			4		6		8		10	12	14
PALMDALE RD (HWY 18)												
EB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
EB THRU	2273	159	15	2447	29	2476	796	3,243	62	3305	2,379	2441
EB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
WB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
WB THRU	2205	154	17	2376	0	2376	772	3,148	0	3148	2,590	2590
WB RIGHT	0	0	0	0	22	22	0	0	38	38	0	38
EASTERN PROJECT DRIVEWAY												
NB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
NB THRU	0	0	0	0	0	0	0	0	0	0	0	0
NB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
SB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
SB THRU	0	0	0	0	0	0	0	0	0	0	0	0
SB RIGHT	0	0	0	0	22	22	0	0	48	48	0	48
TOTALS	**4478**	**313**	**32**	**4823**	**73**	**4896**	**1568**	**6391**	**148**	**6539**	**4969**	**5117**

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↱			↱
Traffic Vol, veh/h	0	2476	2376	22	0	22
Future Vol, veh/h	0	2476	2376	22	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	2	1	0	0	0
Mvmt Flow	0	2553	2449	23	0	23

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1236
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	171
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	171
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	29.2
HCM LOS			D

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	171
HCM Lane V/C Ratio	-	-	-	0.133
HCM Control Delay (s)	-	-	-	29.2
HCM Lane LOS	-	-	-	D
HCM 95th %tile Q(veh)	-	-	-	0.4

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↱
Traffic Vol, veh/h	0	3305	3148	38	0	48
Future Vol, veh/h	0	3305	3148	38	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	2	1	0	0	0
Mvmt Flow	0	3407	3245	39	0	49

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1642
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	91
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	91
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	84.1
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	91
HCM Lane V/C Ratio	-	-	-	0.544
HCM Control Delay (s)	-	-	-	84.1
HCM Lane LOS	-	-	-	F
HCM 95th %tile Q(veh)	-	-	-	2.4

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↱			↱
Traffic Vol, veh/h	0	2441	2590	38	0	48
Future Vol, veh/h	0	2441	2590	38	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	2	1	0	0	0
Mvmt Flow	0	2516	2670	39	0	49

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	1355
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	-	0	142
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	142
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	43.3
HCM LOS			E

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	142
HCM Lane V/C Ratio	-	-	-	0.348
HCM Control Delay (s)	-	-	-	43.3
HCM Lane LOS	-	-	-	E
HCM 95th %tile Q(veh)	-	-	-	1.4

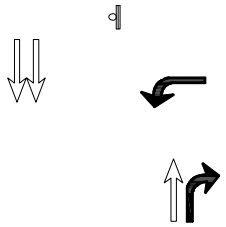
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TMO	21-Mar-24	SHIL0000-0001	1 OF 2

E/W STREET : ASTER RD
N/S STREET : CANTINA ST
CONDITION : AM PEAK HOUR

INTERSECTION : 4
PROJECTED GROWTH PER YEAR : 3.5%

CONDITION DIAGRAMS



PROJECT GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition	Year 2025 Ambient Growth	Adjacent Property Trips	Background Condition	Phase I Project Trips	Background + Project Condition	Year 2035 Ambient Growth	Future Condition	Total Phase I&II Project Trips	Future + Project Condition	Future Condition	Future + Project Condition
Scenario #	1			3		5		7		9	11	13
ASTER RD												
EB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
EB THRU	0	0	0	0	0	0	0	0	0	0	0	0
EB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
WB LEFT	0	0	56	56	27	83	0	56	33	89	56	89
WB THRU	0	0	0	0	0	0	0	0	0	0	0	0
WB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
CANTINA ST												
NB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
NB THRU	180	12	0	192	0	192	63	255	0	255	234	234
NB RIGHT	0	0	40	40	20	60	0	40	34	74	40	74
SB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
SB THRU	141	10	0	151	0	151	49	200	0	200	183	183
SB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**321**	**22**	**96**	**439**	**47**	**486**	**112**	**551**	**67**	**618**	**513**	**580**

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	83	0	192	60	0	151
Future Vol, veh/h	83	0	192	60	0	151
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	-	-	130	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	87	0	202	63	0	159

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	282	202	0	0	-	-
Stage 1	202	-	-	-	-	-
Stage 2	80	-	-	-	-	-
Critical Hdwy	6.615	6.215	-	-	-	-
Critical Hdwy Stg 1	5.415	-	-	-	-	-
Critical Hdwy Stg 2	5.815	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3095	-	-	-	-
Pot Cap-1 Maneuver	699	841	-	-	0	-
Stage 1	834	-	-	-	0	-
Stage 2	937	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	699	841	-	-	-	-
Mov Cap-2 Maneuver	717	-	-	-	-	-
Stage 1	834	-	-	-	-	-
Stage 2	937	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	717	-
HCM Lane V/C Ratio	-	-	0.122	-
HCM Control Delay (s)	-	-	10.7	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.4	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	89	0	255	74	0	200
Future Vol, veh/h	89	0	255	74	0	200
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	-	-	130	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	94	0	268	78	0	211

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	374	268	0	0	-	-
Stage 1	268	-	-	-	-	-
Stage 2	106	-	-	-	-	-
Critical Hdwy	6.615	6.215	-	-	-	-
Critical Hdwy Stg 1	5.415	-	-	-	-	-
Critical Hdwy Stg 2	5.815	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3095	-	-	-	-
Pot Cap-1 Maneuver	616	773	-	-	0	-
Stage 1	779	-	-	-	0	-
Stage 2	910	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	616	773	-	-	-	-
Mov Cap-2 Maneuver	658	-	-	-	-	-
Stage 1	779	-	-	-	-	-
Stage 2	910	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	658	-
HCM Lane V/C Ratio	-	-	0.142	-
HCM Control Delay (s)	-	-	11.4	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.5	-

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	89	0	234	74	0	183
Future Vol, veh/h	89	0	234	74	0	183
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	-	-	130	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	94	0	246	78	0	193

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	343	246	0	0	-	-
Stage 1	246	-	-	-	-	-
Stage 2	97	-	-	-	-	-
Critical Hdwy	6.615	6.215	-	-	-	-
Critical Hdwy Stg 1	5.415	-	-	-	-	-
Critical Hdwy Stg 2	5.815	-	-	-	-	-
Follow-up Hdwy	3.5095	3.3095	-	-	-	-
Pot Cap-1 Maneuver	643	795	-	-	0	-
Stage 1	797	-	-	-	0	-
Stage 2	919	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	643	795	-	-	-	-
Mov Cap-2 Maneuver	677	-	-	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	919	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	677	-
HCM Lane V/C Ratio	-	-	0.138	-
HCM Control Delay (s)	-	-	11.2	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.5	-

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TMO	21-Mar-24	SHIL0000-0001	1 OF 2

E/W STREET : ASTER RD
N/S STREET : CANTINA ST
CONDITION : PM PEAK HOUR

INTERSECTION : 4
PROJECTED GROWTH PER YEAR : 3.5%

TURN MOVEMENTS

Condition	Existing Condition	Year 2025 Ambient Growth	Adjacent Property Trips	Background Condition	Phase I Project Trips	Background + Project Condition	Year 2035 Ambient Growth	Future Condition	Total Phase I&II Project Trips	Future + Project Condition	Future Condition	Future + Project Condition
Scenario #	2			4		6		8		10	12	14
ASTER RD												
EB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
EB THRU	0	0	0	0	0	0	0	0	0	0	0	0
EB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
WB LEFT	0	0	66	66	22	88	0	66	48	114	66	114
WB THRU	0	0	0	0	0	0	0	0	0	0	0	0
WB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
CANTINA ST												
NB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
NB THRU	342	24	0	366	0	366	119	485	0	485	404	404
NB RIGHT	0	0	52	52	9	61	0	52	16	68	52	68
SB LEFT	0	0	0	0	0	0	0	0	0	0	0	0
SB THRU	390	28	0	418	0	418	137	555	0	555	453	453
SB RIGHT	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	**732**	**52**	**118**	**902**	**31**	**933**	**256**	**1158**	**64**	**1222**	**975**	**1039**

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	88	0	366	61	0	418
Future Vol, veh/h	88	0	366	61	0	418
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	-	-	130	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	1	1	1	3	3
Mvmt Flow	91	0	377	63	0	431

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	593	377	0	0	-	-
Stage 1	377	-	-	-	-	-
Stage 2	216	-	-	-	-	-
Critical Hdwy	6.645	6.215	-	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3095	-	-	-	-
Pot Cap-1 Maneuver	450	671	-	-	0	-
Stage 1	690	-	-	-	0	-
Stage 2	797	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	450	671	-	-	-	-
Mov Cap-2 Maneuver	540	-	-	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	797	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	540	-
HCM Lane V/C Ratio	-	-	0.168	-
HCM Control Delay (s)	-	-	13	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.6	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	114	0	485	68	0	555
Future Vol, veh/h	114	0	485	68	0	555
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	-	-	130	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	1	1	1	3	3
Mvmt Flow	118	0	500	70	0	572

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	786	500	0	0	-	-
Stage 1	500	-	-	-	-	-
Stage 2	286	-	-	-	-	-
Critical Hdwy	6.645	6.215	-	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3095	-	-	-	-
Pot Cap-1 Maneuver	343	572	-	-	0	-
Stage 1	606	-	-	-	0	-
Stage 2	735	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	343	572	-	-	-	-
Mov Cap-2 Maneuver	457	-	-	-	-	-
Stage 1	606	-	-	-	-	-
Stage 2	735	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	457	-
HCM Lane V/C Ratio	-	-	0.257	-
HCM Control Delay (s)	-	-	15.6	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	1	-

Intersection	
Int Delay, s/veh	1.5

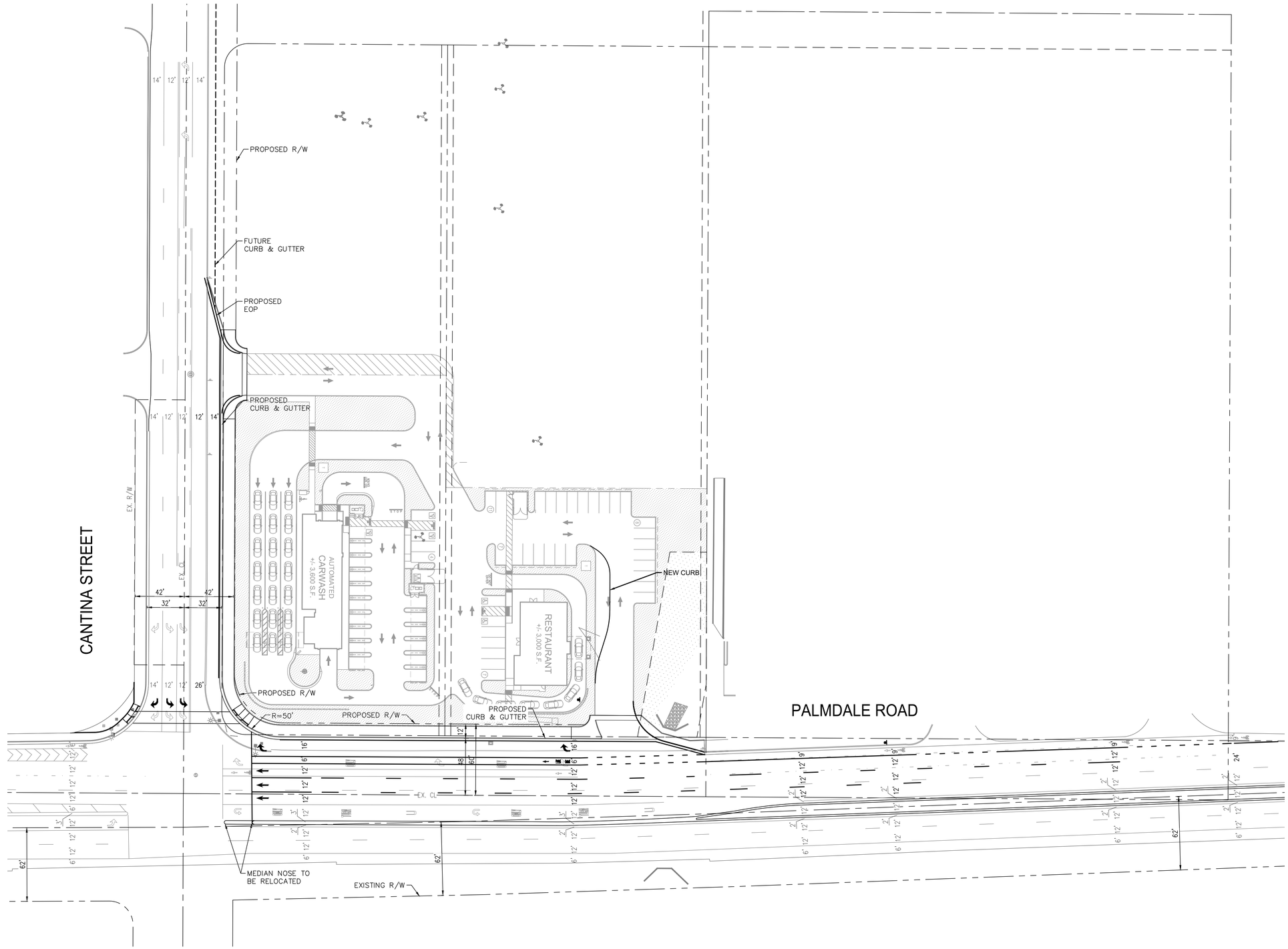
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	114	0	404	68	0	453
Future Vol, veh/h	114	0	404	68	0	453
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	130	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	3	1	1	1	3	3
Mvmt Flow	118	0	416	70	0	467

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	650	416	0	0	-	-
Stage 1	416	-	-	-	-	-
Stage 2	234	-	-	-	-	-
Critical Hdwy	6.645	6.215	-	-	-	-
Critical Hdwy Stg 1	5.445	-	-	-	-	-
Critical Hdwy Stg 2	5.845	-	-	-	-	-
Follow-up Hdwy	3.5285	3.3095	-	-	-	-
Pot Cap-1 Maneuver	416	638	-	-	0	-
Stage 1	662	-	-	-	0	-
Stage 2	781	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	416	638	-	-	-	-
Mov Cap-2 Maneuver	514	-	-	-	-	-
Stage 1	662	-	-	-	-	-
Stage 2	781	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	514	-
HCM Lane V/C Ratio	-	-	0.229	-
HCM Control Delay (s)	-	-	14.1	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.9	-

Appendix D: Palmdale Road Retail Development Project Trips and Improvements



DIGALERT
DIAL BEFORE YOU DIG
TWO WORKING DAYS BEFORE YOU DIG
TOLL FREE 1-800-227-2600
A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

NO.	DESCRIPTION	DATE	BY
	REVISONS		

DAVID EVANS AND ASSOCIATES INC.
18484 Outer Highway 18 North Suite 225
Apple Valley California 92307
Phone: 760.524.9100

CITY OF VICTORVILLE

PROPOSED CONCEPTUAL GEOMETRIC PLAN

CANTINA STREET AT
PALMDALE ROAD

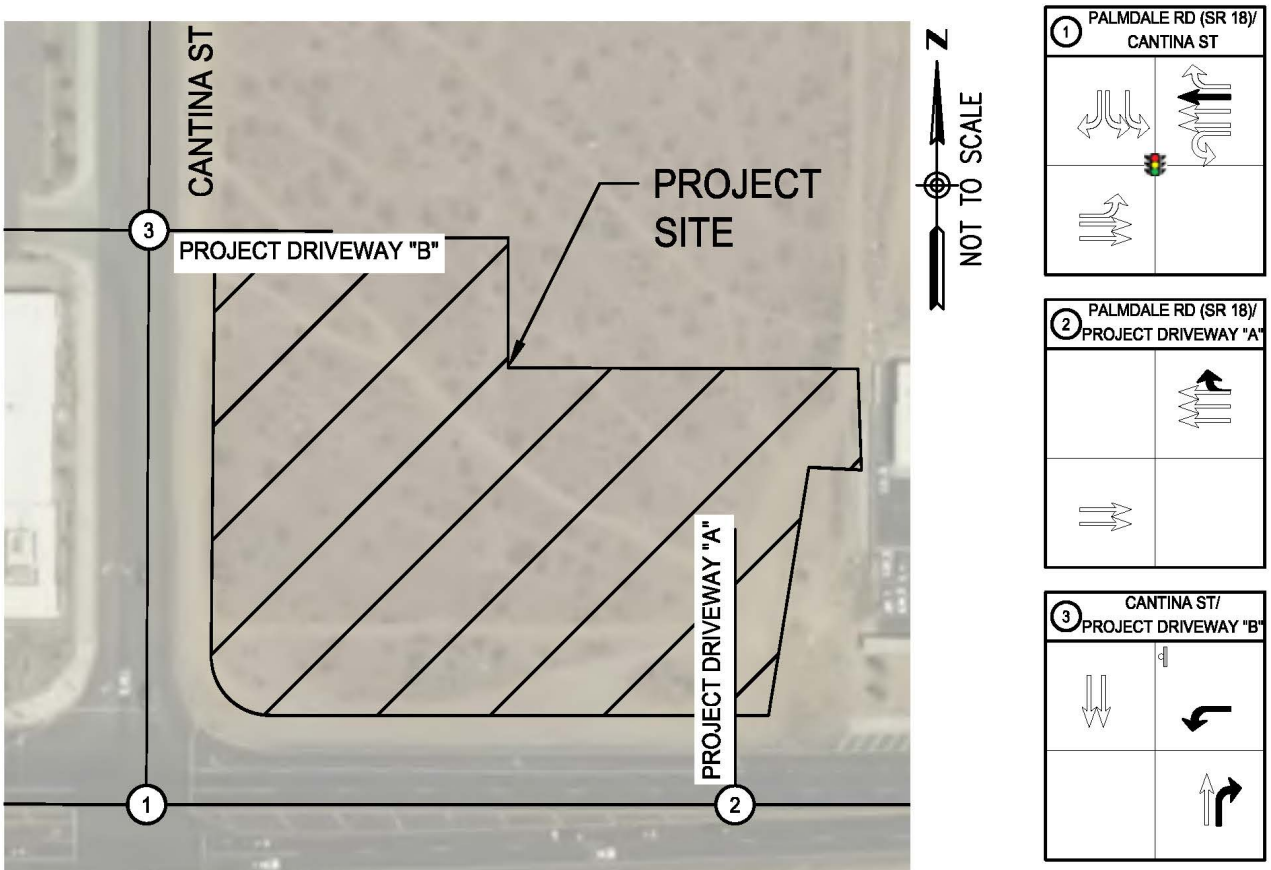
PALMDALE ROAD RETAIL DEVELOPMENT

DRAWN BY:
DESIGNED BY:
CHECKED BY:

DATE: 10/18/2021

SHT NO.: 1 OF 1

Drawing Name: P:\VR\DEV00000\DEV04\DCAD\EXHIBITS\CONCEPTUAL GEOMETRIC PLAN\TI-SI-RDEV00000005.dwg
Last Opened: Apr 25, 2022 - 10:17am By: pdb



LEGEND

- EXISTING GEOMETRICS
- PROPOSED GEOMETRICS
- (#) - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

FIGURE 10: EXISTING PLUS PROJECT INTERSECTION GEOMETRICS PALMDALE ROAD RETAIL DEVELOPMENT VICTORVILLE, CALIFORNIA

DAVID EVANS AND ASSOCIATES INC.

Drawing Name: P:\RRDEV\000000\0400CA\DEX\HBIT\STUDY\Figure 10.dwg
Last Opened: Apr 12, 2022 - 2:56pm by: Tim

Appendix E: Queuing Analysis

Queuing and Blocking Report

Intersection: 1: Palmdale Rd (SR 18) & Cantina St

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	U	T	T	R	L	L	R
Maximum Queue (ft)	207	163	125	31	180	209	45	56	88	50
Average Queue (ft)	145	107	78	12	133	150	25	22	64	34
95th Queue (ft)	249	179	143	36	196	226	55	61	98	56
Link Distance (ft)		729	729	304	304	304	304		240	240
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	675							90		
Storage Blk Time (%)								0	3	
Queuing Penalty (veh)								0	2	

Intersection: 2: Edison Driveway & Palmdale Rd (SR 18)

Movement	WB	WB	NB
Directions Served	L	T	LR
Maximum Queue (ft)	6	16	87
Average Queue (ft)	2	4	48
95th Queue (ft)	13	24	110
Link Distance (ft)		1465	77
Upstream Blk Time (%)			31
Queuing Penalty (veh)			0
Storage Bay Dist (ft)	350		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 2

Queuing and Blocking Report

Intersection: 1: Palmdale Rd (SR 18) & Cantina St

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	U	T	T	R	L	L	R
Maximum Queue (ft)	314	231	216	10	284	307	57	186	239	60
Average Queue (ft)	249	157	133	3	216	245	25	165	211	40
95th Queue (ft)	463	283	254	16	306	326	67	214	272	68
Link Distance (ft)		729	729	304	304	304	304		240	240
Upstream Blk Time (%)					1	1			9	
Queuing Penalty (veh)					4	7			24	
Storage Bay Dist (ft)	675							90		
Storage Blk Time (%)								33	67	
Queuing Penalty (veh)								62	125	

Intersection: 2: Edison Driveway & Palmdale Rd (SR 18)

Movement	WB	WB	WB	NB
Directions Served	L	T	T	LR
Maximum Queue (ft)	445	1316	1368	12
Average Queue (ft)	301	857	921	4
95th Queue (ft)	596	1646	1701	19
Link Distance (ft)		1465	1465	77
Upstream Blk Time (%)		5	11	
Queuing Penalty (veh)		0	0	
Storage Bay Dist (ft)	350			
Storage Blk Time (%)	1	14		
Queuing Penalty (veh)	13	1		

Zone Summary

Zone wide Queuing Penalty: 236

Queuing and Blocking Report

Intersection: 1: Palmdale Rd (SR 18) & Cantina St

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	U	T	T	R	L	L	R
Maximum Queue (ft)	202	227	188	31	254	269	46	71	109	61
Average Queue (ft)	152	152	123	12	182	207	25	31	73	40
95th Queue (ft)	281	249	208	36	272	297	57	85	115	65
Link Distance (ft)		729	729	304	304	304	304		240	240
Upstream Blk Time (%)					1	0				
Queuing Penalty (veh)					2	2				
Storage Bay Dist (ft)	675							90		
Storage Blk Time (%)								0	4	
Queuing Penalty (veh)								0	4	

Intersection: 2: Edison Driveway & Palmdale Rd (SR 18)

Movement	WB	WB	WB	NB
Directions Served	L	T	T	LR
Maximum Queue (ft)	42	72	93	91
Average Queue (ft)	9	23	35	59
95th Queue (ft)	55	127	126	112
Link Distance (ft)		1465	1465	77
Upstream Blk Time (%)				39
Queuing Penalty (veh)				0
Storage Bay Dist (ft)	350			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 8

Queuing and Blocking Report

Intersection: 1: Palmdale Rd (SR 18) & Cantina St

Movement	EB	EB	EB	WB	WB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	U	T	T	T	R	L	L	R
Maximum Queue (ft)	175	210	187	22	182	171	162	51	60	104	74
Average Queue (ft)	130	149	124	9	137	132	118	25	27	76	42
95th Queue (ft)	199	235	217	27	194	183	176	60	76	123	82
Link Distance (ft)		729	729	304	304	304	304	304		235	235
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	675								90		
Storage Blk Time (%)									0	7	
Queuing Penalty (veh)									0	6	

Queuing and Blocking Report

Intersection: 1: Palmdale Rd (SR 18) & Cantina St

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	U	T	T	R	L	L	R
Maximum Queue (ft)	598	712	708	32	295	323	49	190	249	77
Average Queue (ft)	378	564	567	13	218	240	20	186	242	50
95th Queue (ft)	737	850	842	37	315	344	55	199	259	82
Link Distance (ft)		729	729	304	304	304	304		240	240
Upstream Blk Time (%)	0	6	8		1	3			41	
Queuing Penalty (veh)	0	0	0		4	21			136	
Storage Bay Dist (ft)	675							90		
Storage Blk Time (%)		7						70	82	
Queuing Penalty (veh)		13						176	207	

Intersection: 2: Edison Driveway & Palmdale Rd (SR 18)

Movement	WB	WB	WB	NB
Directions Served	L	T	T	LR
Maximum Queue (ft)	449	1498	1493	27
Average Queue (ft)	411	1406	1434	11
95th Queue (ft)	546	1789	1752	38
Link Distance (ft)		1465	1465	77
Upstream Blk Time (%)		48	72	
Queuing Penalty (veh)		0	0	
Storage Bay Dist (ft)	350			
Storage Blk Time (%)	2	22		
Queuing Penalty (veh)	28	3		

Zone Summary

Zone wide Queuing Penalty: 588

Queuing and Blocking Report

Intersection: 1: Palmdale Rd (SR 18) & Cantina St

Movement	EB	EB	EB	WB	WB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	U	T	T	T	R	L	L	R
Maximum Queue (ft)	583	721	701	27	225	224	200	56	190	247	103
Average Queue (ft)	321	581	585	11	176	175	152	30	184	243	73
95th Queue (ft)	727	900	902	32	245	246	224	70	206	250	132
Link Distance (ft)		729	729	304	304	304	304	304		235	235
Upstream Blk Time (%)	0	9	12				0			43	
Queuing Penalty (veh)	0	0	0				0			144	
Storage Bay Dist (ft)	675								90		
Storage Blk Time (%)		11							71	82	
Queuing Penalty (veh)		22							178	205	

Queuing and Blocking Report

Intersection: 1: Palmdale Rd (SR 18) & Cantina St

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	U	T	T	R	L	L	R
Maximum Queue (ft)	224	159	135	22	196	217	38	90	124	52
Average Queue (ft)	161	112	85	6	147	167	21	39	80	38
95th Queue (ft)	273	179	152	25	206	226	46	105	143	61
Link Distance (ft)		729	729	304	304	304	304		240	240
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	675							90		
Storage Blk Time (%)								1	8	
Queuing Penalty (veh)								0	7	

Intersection: 2: Edison Driveway & Palmdale Rd (SR 18)

Movement	EB	WB	WB	WB	NB
Directions Served	TR	L	T	T	LR
Maximum Queue (ft)	2	3	8	15	100
Average Queue (ft)	0	1	2	4	64
95th Queue (ft)	5	11	12	24	129
Link Distance (ft)	612		1465	1465	77
Upstream Blk Time (%)					45
Queuing Penalty (veh)					0
Storage Bay Dist (ft)		350			
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

Zone wide Queuing Penalty: 7

Queuing and Blocking Report

Intersection: 1: Palmdale Rd (SR 18) & Cantina St

Movement	EB	EB	EB	WB	WB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	U	T	T	T	R	L	L	R
Maximum Queue (ft)	185	180	158	22	147	154	123	34	81	110	62
Average Queue (ft)	122	119	96	6	113	110	92	20	35	75	38
95th Queue (ft)	208	199	175	30	165	167	137	47	86	123	68
Link Distance (ft)		729	729	304	304	304	304	304		235	235
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	675								90		
Storage Blk Time (%)									1	8	
Queuing Penalty (veh)									1	7	

Queuing and Blocking Report

Intersection: 1: Palmdale Rd (SR 18) & Cantina St

Movement	EB	EB	EB	WB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	U	T	T	R	L	L	R
Maximum Queue (ft)	240	282	255	40	283	307	48	190	245	68
Average Queue (ft)	198	201	185	17	217	244	24	170	229	45
95th Queue (ft)	297	329	309	45	312	340	61	217	273	75
Link Distance (ft)		729	729	304	304	304	304		240	240
Upstream Blk Time (%)					1	2			18	
Queuing Penalty (veh)					4	11			52	
Storage Bay Dist (ft)	675							90		
Storage Blk Time (%)								54	76	
Queuing Penalty (veh)								110	155	

Intersection: 2: Edison Driveway & Palmdale Rd (SR 18)

Movement	EB	EB	WB	WB	WB	NB
Directions Served	T	TR	L	T	T	LR
Maximum Queue (ft)	8	5	449	1448	1475	25
Average Queue (ft)	2	1	385	1222	1264	11
95th Queue (ft)	13	13	582	1899	1896	37
Link Distance (ft)	612	612		1465	1465	77
Upstream Blk Time (%)				30	50	
Queuing Penalty (veh)				0	0	
Storage Bay Dist (ft)			350			
Storage Blk Time (%)			1	15		
Queuing Penalty (veh)			14	2		

Zone Summary

Zone wide Queuing Penalty: 348

Queuing and Blocking Report

Intersection: 1: Palmdale Rd (SR 18) & Cantina St

Movement	EB	EB	EB	WB	WB	WB	WB	WB	SB	SB	SB
Directions Served	L	T	T	U	T	T	T	R	L	L	R
Maximum Queue (ft)	236	270	245	37	223	214	189	74	189	246	118
Average Queue (ft)	176	180	162	17	176	172	146	33	175	228	67
95th Queue (ft)	306	322	303	44	248	240	215	84	212	266	128
Link Distance (ft)		729	729	304	304	304	304	304		235	235
Upstream Blk Time (%)					0					21	
Queuing Penalty (veh)					0					60	
Storage Bay Dist (ft)	675								90		
Storage Blk Time (%)									55	79	
Queuing Penalty (veh)									111	161	