APPENDIX I

Level of Service Deficiency
and Vehicle Miles Traveled Analysis

LEVEL OF SERVICE DEFICIENCY AND VEHICLE MILES TRAVELED ANALYSIS

LOS ANGELES
201 S. Figueroa St, Suite 240
Los Angeles, CA 90012
213.337.3680
Fax :213.337.3679

ONTARIO
4141 E. Inland Empire Blvd, Suite 250
Ontario, CA 91764
909.481.5750
Fax :909.481.5757

SAN DIEGO
600 B St, Suite 1600
San Diego, CA 92101
619.400.0600
Fax:619.400.0599

SANTA CLARITA
25152 Springfield Ct, Suite 350
Santa Clarita, CA 91355
661.284.7400
Fax 661.284.7401

TEMECULA
41951 Remington Ave, Suite 220
Temecula, CA 92590
951.294.9300
Fax: 951.294-9301

TUSTIN
17782 17th St, Suite 200
Tustin, CA 92780
714.665.4500
Fax: 714.665.4501

VICTORVILLE
14297 Cajon Ave, Suite 101
760.524.9100
Fax 760.524.9101

www.deainc

PBP INDUSTRIAL PROJECT

PALMDALE, CALIFORNIA

Prepared by:

DAVID EVANS AND ASSOCIATES INC.

FINAL REPORT

DAVID EVANS
AND ASSOCIATES INC.

November 20, 2023 Job No. PTRT0000-0001

Mr. Robert Sarkissian - President
Patriot Construction and Development
445 W. Palmdale Blvd., Suite C
Palmdale, CA 93551

RE: FINAL LEVEL OF SERVICE DEFICIENCY AND VEHICLE MILES TRAVELED (VMT) ANALYSIS FOR THE PBP INDUSTRIAL PROJECT IN PALMDALE, CALIFORNIA

Dear Mr. Sarkissian,

David Evans and Associates, Inc. is pleased to submit this Final Level of Service Deficiency and Vehicle Miles Traveled (VMT) Analysis report for your proposed PBP Industrial Project (the Project) in the City of Palmdale. The project consists of the construction of industrial and office buildings proposed on four lots located just south of the Lockheed Martin Aeronautics Facility.

This report documents our comprehensive project-level assessment of the proposed development as part of the applicant's entitlement review. It examines existing and project opening year (2024) intersection levels of service (LOS) for deficiencies in the city's standard LOS D with and without the proposed project and presents measures to offset the project's impacts on level of service.

The report includes a summary of the Vehicle Miles Traveled (VMT) Analysis conducted for the proposed project by our modeling specialist General Technologies & Solutions (GTS).

We are pleased to have been of assistance to you in processing and obtaining approval for your 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

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APPENDICES

1. EXECUTIVE SUMMARY

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

A. Project Description

The proposed project consists of four separate lots of land within a block of fourteen lots bound by Rancho Vista Boulevard, Lockheed Way, Blackbird Street, and 10th Street E, as shown in **Figure 1**. The site is located south of the Lockheed Martin Aeronautics facility and southwest of the Palmdale Regional Airport. **Table 1-1** summarizes the most relevant characteristics of the project including proposed land uses, size, estimated trip generation, and points of access.

Table 1-1: Project Characteristics

Lot No.	APN	Lot Size (Acres)	Zoning [a]	Proposed Land Uses [b]	Total Building Floor Area (Square Feet)	Trip Generation in PCEs [c]			Access Points
						Daily	AM Peak Hour	PM Peak Hour	
3	3022-026-003	6.02	Heavy Industrial (HI)	Industrial (LUC 110)	100,000	618	94	82	1. Lockheed Way (right in/right out) 2. Blackbird Lane (full access)
12	3022-026-012	5.94		Industrial (LUC 110)	100,000	618	94	82	1. 10 Street E (full access) 2. Avenue O-12 (via truck access alley)
16	3022-025-004	3.84		Parking / Detention Basin	Not Applicable				1. Avenue O-12 2. Avenue O-12 (via access alley)
20	3022-025-008	4.93		Office (LUC 710)	100,000	1,084	152	145	1. 10th Street E (two full access dwys) 2. Avenue O-12 (via access alley)
					Total PCEs	2,320	340	309	

Notes:
[a] Source: current draft Zoning Map consistent with the city's recent general plan update--Palmdale 2045--adopted by the Palmdale City Council on September 21, 2022.
[b] Proposed land uses are listed by the land use code (LUC) and type published in the Institute of Transportation Engineers' (ITE) Trip Generation manual (11th Edition) which is the source of the trip generation rates used to estimate the project's traffic in this report. Lot 16 is used for parking for buildings on adjacent lots and a water stormwater detention basin and does not generate any trips.
[c] PCE = Passenger Car Equivalent. Source of passenger car / truck mode split used to estimate trip generation: Truck Trip Generation Study. City of Fontana and County of San Bernardino. August 2003. Note: trip generation for office use is not converted to PCEs.
.

Designated Zoning

The draft Palmdale Zoning Map, created to be consistent with the city's recently adopted general plan, designates 12 of the 14 lots as Heavy Industrial (HI) uses possibly due to their proximity to the Lockheed Martin facility—the home of Lockheed Martin's "Skunkworks" a design and production plant for the company's Advanced Development Program which is primarily responsible for designing military aircraft. The project site is part of a concentration of heavy industrial zoned land immediately adjacent to the facility. The remaining two lots are designated Neighborhood Commercial (NC). The commercial lots are the two southernmost lots of the block of fourteen lots and front Rancho Vista Boulevard.

Project Land Use

Only four of the fourteen parcels are included in the application to entitle the proposed development and are the subject of this traffic impact analysis. The land uses proposed for each lot, shown in **Table 1-1**, include:

- Lot 3: two 50,000 square foot industrial / warehouse buildings divided into sixteen individual units.
- Lot 12: one building with approximately 100,000 square feet of office, manufacturing, and warehouse uses.

LEGEND

PROJECT PARCELS

DAVID EVANS AND ASSOCIATES INC.

FIGURE 1
VICINITY MAP

PBP INDUSTRIAL PROJECT
PALMDALE, CA

- Lot 16: located south of the future construction of Avenue O-12, includes a 511-space parking supply shared between the buildings on Lot 12 to the north, and Lot 20 to the south. The remaining portion of Lot 16 is proposed as a detention basin.
- Lot 20: proposed to contain up to 100,000 square feet of office, manufacturing, and warehouse uses in up to three buildings.

Project Trip Generation

The land uses described above generate a mix of automobiles and light to heavy duty trucks. For truck intensive land uses, it is standard practice to convert the estimated number of trucks into "passenger car equivalents (PCEs)" when analyzing intersection capacity and level of service[1]. Therefore, the project's estimated trip generation is presented in PCEs, except the office land use in Lot 20 which is not considered a truck-intensive use. The combined project parcels generate about 2,320 daily PCEs, 340 and 309 PCEs in the AM and PM peak hours respectively. Refer to Chapter V, Section A for a detailed estimate of trip generation.

Project Access

As described earlier in **Table 1-1,** each lot has at least two driveways accessing the site as required by California Fire Code. Access to the lots is provided in several manners:

- Driveway access directly from the adjacent public street.
- Access from Avenue O-12 in which the project proposes to construct the segment from 10th Street E to the western property line of Lots 12, 16, and 20 (the midpoint between Lockheed Way and 10th Street E) , and
- Access from the proposed north-south truck alleyway that parallels the western property line of Lots 12, 16, and 20 (along the alignment of the former public street right of way of 9th Street E).

The traffic analysis in this report assumes that the proposed Lot 3 driveway from Lockheed Way is restricted to right turn in / right turn out because the driveway, located about 208-feet from intersection of Lockheed Way and Blackbird Drive, is within the operational area of the intersection where full access driveways are usually prohibited.

B. City of Palmdale Intersection Level of Service Policies

The criteria for identifying deficiencies in the operation of intersections are the policies adopted in the city's 1993 General Plan[2]. The following policy from the 1993 general plan was used in this report:

Policy C1.4.1: Strive to maintain a Level of Service (LOS) C or better to the extent practical; in some circumstances, a LOS D may be acceptable for a short duration during peak periods.

The intersection level of service (LOS) analyses in this report are based on the methods in the Highway Capacity Manual (6th Edition) which determines intersection LOS based on the peak 15-minutes of the peak hour. Since the LOS using this method represents a short duration during peak periods, a LOS D is the applicable standard for this analysis.

A deficiency is considered project-specific if the addition of project traffic causes the LOS at an intersection to change from a LOS D or better to a LOS E or F. Where a project contributes to a level of service operating at a LOS E or F without the project, any added project traffic to the facility is considered a project deficiency. In this case, the deficiency is considered cumulative, and the project's fair share contribution to the cost of improvements is calculated for the intersection. Alternatively, the project may implement improvements that effectively offset the project's increase in delay and improve the intersection to at least its pre-project condition.

[1] Source of passenger car / truck mode split used to estimate trip generation: Truck Trip Generation Study. City of Fontana and County of San Bernardino. August 2003. Note: trip generation for office use is not converted to PCEs.

[2] The recently adopted Palmdale 2045 General Plan has removed the policy on level of service as a performance measure. Because this report is not intended to identify significant impacts for environmental review as part of CEQA, the standard LOS D is assumed valid for deficiency analyses.

C. Level of Service (LOS) Results for Analysis Scenarios

Table 1-2 compares opening year (2024) background condition levels of service with opening year (2024) background plus project condition levels of service.

Table 1-2: Comparison of Opening Year (2024) Background and Opening Year 2024 Background Plus Project LOS

Intersection	Control Type	Opening Year 2024 Background Conditions Without the Project				Opening Year 2024 Background With Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Blackbird Dr/ Lockheed Way	TWSC	16.8	C	15.9	C	16.8	C	15.9	C
2. Blackbird Dr / 10th Street E	TWSC	8.7	A	9.2	A	8.8	A	9.3	A
3. E Rancho Vista Blvd (Avenue P) / Lockheed Way	TS	113.6	F	93.0	F	132.1	F	120.7	F
4. E Rancho Vista Blvd (Avenue P) / 10th Street E	TS	63.3	E	92.6	F	77.5	E	88.1	F
5. Rancho Vista Blvd / Sierra Hwy	TS	49.6	D	163.5	F	70.3	E	176.3	F
6. Rancho Vista Blvd / SR 14 NB Off Ramp	TS	13	B	13.7	B	13.3	B	13.8	B
7. Rancho Vista Blvd / 10th Street W	TS	64.5	E	102.5	F	65.1	E	107.3	F
8. 10th Street W / SR 14 SB Off Ramp	TS	8.4	A	27.4	C	9	A	28.3	C

Notes:
Shaded cells in the table represent intersection peak hours with LOS deficiencies (LOS E or F).
Abbreviations:
TWSC = Two-way (or side street) stop control, AWSC = All-way stop control, TS = Traffic signal control

As shown in the table, four intersections have one or both peak hours operating at a deficient LOS E or F. These four intersections also operate at a deficient LOS E or F in existing conditions, primarily in the PM peak hour. The addition of project traffic exacerbates the deficient operations by increasing delay and in one case, at the intersection of Rancho Vista Boulevard / Sierra Hwy, increases the delay to change from a LOS D to a LOS E in the AM peak hour.

D. Recommended Measures to Improve Level of Service at Deficient Intersections

Table 1-3 summarizes the recommended measures to improve the deficient intersection levels of service. The following Section E presents the calculation of the projects proportionate share of the growth in traffic at the deficient intersections.

Table 1-3: Recommended Measures to Offset Project Impacts

Measure No. / Deficient Intersection	Recommended Measures to Offset Project's Impact
M1: E Rancho Vista Blvd (Avenue P) / Lockheed Way	• Provide protected east - west left turn signal phasing.
M2: E Rancho Vista Blvd (Avenue P) / 10th Street E	• Increase cycle length / reprogram controller
M3: Rancho Vista Blvd / Sierra Hwy	• Add a second eastbound left turn lane. See Chapter 6.
M4: Rancho Vista Blvd / 10th Street W	• Implement CIP Project STR-026. See Chapter 6.

E. Project Fair Share Contribution to Deficient Intersections

Table 1-4 on the following page, presents the project's fair share percentage of the growth in traffic between existing conditions (2022) and the project's opening year (2024). This is a short time in which little growth was projected to occur—the scenario only represents two years of ambient growth (about 2 percent) and traffic

generated by the project. This low-growth scenario results in high fair share contributions at all the deficient intersections. In essence, based on the city's impact analysis guidelines, the project (being the only development proposed in and around the study for the past two years) is attributed to having a disproportionately high responsibility for existing deficiencies.

Table 1-4: Project Fair Share Calculations

Intersection	Project's Percentage of the Growth in Traffic Under Opening Day (2024) Conditions		Fair Share Cost Calculation	
	AM Peak Hour	PM Peak Hour	Mitigation Cost ($)	Fair Share Cost Contribution
E Rancho Vista Blvd (Avenue P) / Lockheed Way	73%	65%	$30,100	$21,973
E Rancho Vista Blvd (Avenue P) / 10th Street E	75%	69%	$0.00 [a]	$0.00
Rancho Vista Blvd / Sierra Hwy	64%	51%	$45,283	$28,981
Rancho Vista Blvd / 10th Street W	Not Applicable – CIP Project STR-026 is funded through development impact fees and Measure R			
			Total	$50,954

Notes:
[a] The cost to program a traffic signal controller is negligible for the purposes of this study.
The formula used to calculate the project's percentage of the growth in traffic at each intersection is:
FS% = Project Traffic / [(2024 Background + Project) – Existing]

Usually, the cost of mitigating existing deficiencies is absorbed by many developments in the area so that no single development is burdened with a high fair share calculation. There are several potential development projects being considered in and around the study area that will contribute traffic to the deficient intersections, but they were not considered in this traffic impact analysis because they have not been approved. The city should take this into account and devise a method of adjusting fair share contributions to be as proportionately equitable as the city's development impact fee.

F. Project-Specific Frontage and Site Access Improvements

The circulation and mobility element of the recently adopted Palmdale 2045 General Plan includes a roadway classification system and corresponding cross-section right-of-way dimensions. The circulation and mobility element recognizes that the new classifications apply to existing streets with a wide range of right-of-way and provide guidance on configuring the street elements within a given right-of-way.

Municipalities typically require new development to dedicate right-of-way and construct the half-width of the street fronting their property based on an established section for the classification of the street.

Table 1-5 equates the general plan designated street classifications with the streets fronting the project's lots and includes a range of right-of-way to assist the applicant in determining dedication and construction obligations. This information does not represent recommendations for dedication and construction but a summary of the right-of-way extents that affect fronting streets.

Table 1-5: General Plan Classification and Right of Way Range of Project Fronting Streets

Streets with Frontage	Extent	GP Street Classification	Range of Right-of-Way
10th Street East	Blackbird Dr to Rancho Vista Blvd	Crosstown Street	90-feet (min) to 114-feet (max)
Lockheed Way	Blackbird Dr to Rancho Vista Blvd	Connector Street	66-feet (min) to 94-feet (max)
Blackbird Drive	Lockheed Way to 10th St E	Connector Street	66-feet (min) to 94-feet (max)
Local Street (e.g., Avenue O-12)	Not Applicable	Neighborhood	30-feet (min) to 64-feet (max) 40-feet (max) curb-to-curb

Notes:
Source of GP street classifications: Palmdale 2045 General Plan, Circulation and Mobility element, September 2020. Information is from: Table 6.1 Palmdale Roadway Classification Summary Table, Figure 6.1 Typical Street Right-of-Way Dimensions, Figure 6.2 Palmdale Roadway Classification Map, and Table 6.2 Palmdale Roadway Classification Cross-Section Reference table.

G. Summary of Vehicle Miles of Travel (VMT) Analysis

A VMT analysis was conducted for the proposed project in accordance with the *Los Angeles County Public Works Transportation Impact Analysis (TIA) Guidelines* (July 23, 2020). The VMT analysis was conducted using the Southern California Association of Governments (SCAG) RTP / SCS travel demand forecast model and SCAG's land use databases for the years 2020 and 2040. The full VMT analysis report is in the appendices.

The project's building floor area was converted to the model's independent variable for non-residential land use (employees) using conversion factors from SCAG's "Employment Density Study Summary Report" (October 31, 2001) in which 200,000 square feet of industrial and 100,000 square feet of office uses convert to 397 employees. Los Angeles County's criteria for identifying a significant VMT impact under CEQA for office and industrial land uses is:

> *A significant impact would occur if a development project's metric of project-generated VMT[3] per employee is determined to be less than 16.8% below the existing VMT per employee for the baseline area in which the project is located.*

The existing VMT per employee for Palmdale's baseline area (North County) is 19.0 VMT /Employee and a development project needs to generate at least 16.8% below this baseline metric (or 15.8 VMT / Employee) for the project to have a less-than-significant impact on the environment.

Baseline 2020 VMT Analysis

Table 1-6 summarizes the year 2020 baseline VMT analysis. The 397 employees of the project are estimated to generate 5,017 vehicle miles of travel per day. Normalizing the VMT by converting it to a per employee basis results in 12.6 VMT / Employee which is less than the North County baseline area's threshold of 15.8 VMT / Employee (16.8% less than the existing baseline area metric of 19.0 VMT / Employee).

Table 1-6: Year 2020 Baseline Project VMT Per Employee Versus Significance Threshold

Metric	Patriot Business Park (Project)	North County Baseline Area Significance Threshold
Total Employment	397	
Home Based Work (HBW) VMT	5,017	
HBW VMT / Employee	12.6	15.8

Cumulative 2040 VMT Analysis

Table 1-7 summarizes the year 2040 cumulative VMT analysis. In the future, the project is estimated to generate less VMT than in baseline (2020) conditions. There are many reasons for a future reduction in the project's VMT, one example is an increase in housing near the industrial park where the project is located so employees can reside closer to work. The resulting metric of 10.0 VMT / Employee is substantially lower than the baseline area significance threshold.

Table 1-7: Year 2040 Cumulative Project VMT Per Employee Versus Significance Threshold

Metric	Patriot Business Park (Project)	North County Baseline Area Significance Threshold
Total Employment	397	
Home Based Work (HBW) VMT	3,998	
HBW VMT / Employee	10.0	15.8

[3] Employment VMT is the VMT generated by Home-Based Work trip attractions.

Conclusion of the VMT Analysis

The project's metric of VMT / Employee for office and industrial uses derived by extracting the project's Home-Based Work (HBW) trips from the SCAG regional travel demand forecasting model for 2020 baseline and 2040 cumulative conditions results in less VMT / Employee than the North County area baseline threshold of 15.8 VMT / Employee. The analysis concludes, therefore, that the proposed project will create a less-than-significant transportation impact on the environment.

2. INTRODUCTION

This report analyzes the potential traffic impacts of the proposed Patriot Business Park (the project) and recommends improvements for intersection that the project causes, or contributes to, a level of service deficiency. In addition, this report summarizes the results of a vehicle miles traveled (VMT) analysis as required under the California Environmental Quality Act (CEQA).

The individual lots comprising the proposed project are located within a larger tract of land subdivided into fourteen lots. The project application is to develop four of the parcels that the applicant owns. The larger tract of land is bound by Rancho Vista Boulevard, Lockheed Way, Blackbird Street / Lockheed Way, and 10th Street E. The site is located south of the Lockheed Martin Aeronautics facility and southwest of the Palmdale Regional Airport, as shown previously on the vicinity map in **Figure 1**.

Figure *2* identifies the four project-related lots within the context of the larger 14-lot tract of land. The project proposes the following land uses:

- Lot 3: two 50,000 square foot industrial / warehouse buildings divided into fifteen individual units.
- Lot 12: one building with approximately 100,000 square feet of industrial / warehouse uses.
- Lot 16: located south of the future construction of Avenue O-12, includes a 511-space parking supply shared between the buildings on Lot 12 to the north, and Lot 20 to the south. The remaining portion of Lot 16 is proposed as a detention basin.
- Lot 20: up to 100,000 square feet of office, manufacturing, and warehouse uses in up to three buildings.

A. Analysis Scenarios

The intent of this report is to evaluate potentially significant traffic conditions caused by the proposed development in the following scenarios:

- Existing (2022) Conditions
- Opening Year 2024 Background Conditions without the Project
- Opening Year 2024 Background Conditions with the Project

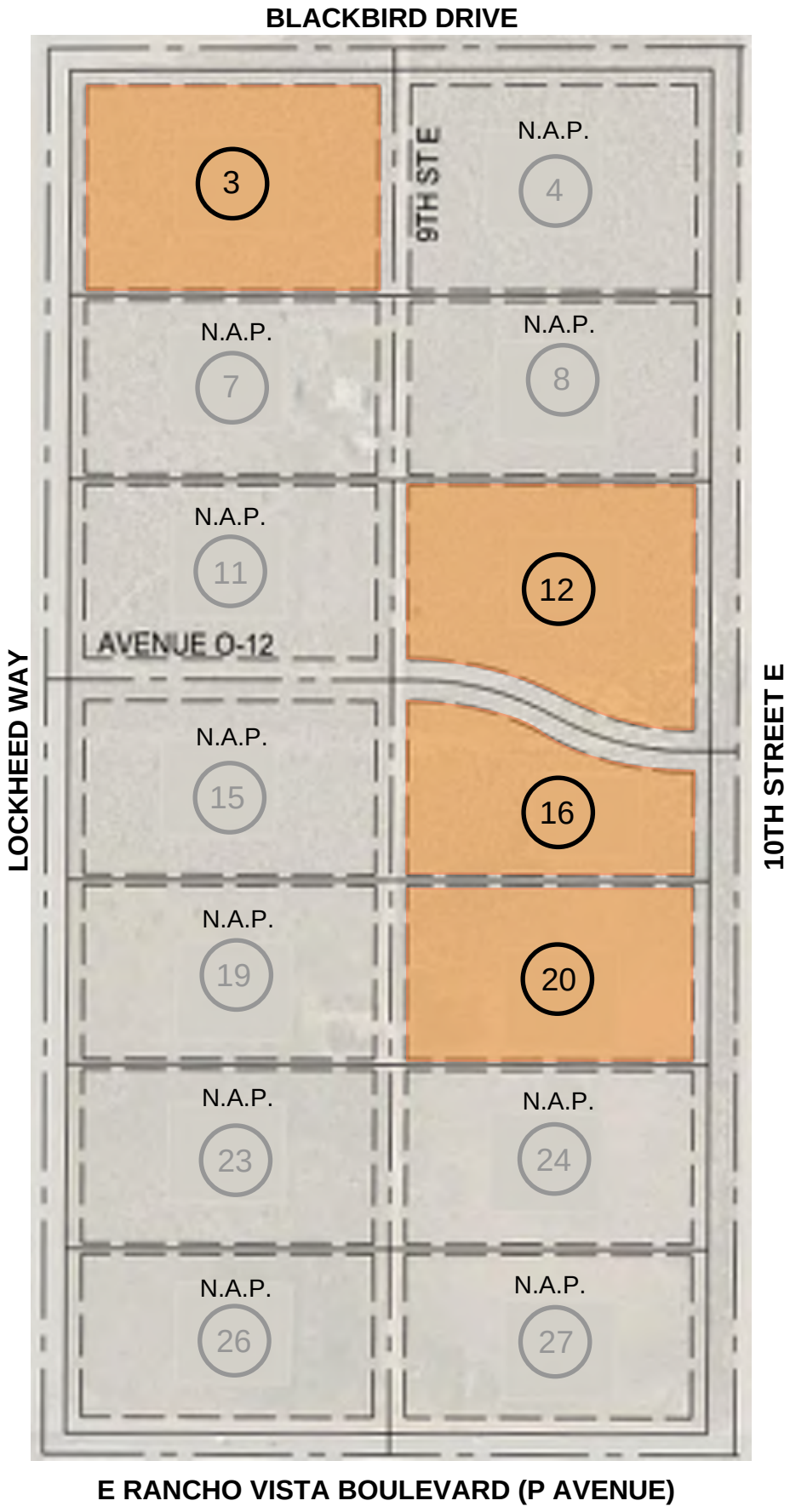
Existing (2022) Conditions. This scenario represents existing transportation conditions at the time this report was prepared. Data includes calibrated traffic counts collected on September 7th and 8th 2022 (while school was in session) and current roadway and intersection geometries. This scenario is used as the baseline condition.

Opening Year 2024 Background Conditions without the Project. This scenario represents conditions at the time the project is anticipated to be fully constructed and occupied (known as opening year which is the year 2024 for this project) but without traffic generated by the project. This scenario is comprised of two components of cumulative traffic growth:

1) Ambient growth—a general rate of growth in traffic from overall regional growth but not specific to any nearby development (assumed to be 2% annually for this study).

2) Traffic generated by other nearby developments, from a list provided by the City of Palmdale, that is planned and/or approved for construction in the very near future, but not yet built.

Opening Year 2024 Background Conditions with the Project. This scenario adds the project's estimated traffic generation at opening year (2024) to the opening year background conditions scenario described above.



LEGEND

(X) = Proposed Project Lots

N.A.P. = Not A Part (of the Project)

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FIGURE 2
OVERALL SITE PLAN

PBP INDUSTRIAL PROJECT
PALMDALE, CA

3. EXISTING (2022) CONDITIONS

A. Existing Street System and Study Intersections

Local and Regional Access to the Project Site

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

SR 14 Freeway is a north-south six-lane divided freeway (three lanes in each direction) which provides regional access for the entire Antelope Valley to the rest of Los Angeles County. SR-14 runs north to Kern County and south to the San Fernando Valley to provide the Palmdale community with regional and inter-regional connectivity.

Rancho Vista Blvd / E Rancho Vista Blvd (Avenue P) is identified as a crosstown street / major arterial on the recently adopted Palmdale 2045 circulation map and is an east-west four-lane road (two in each direction, with turn lanes at key intersection, and raised curbed median or two-way left turn lane median) in the project study area. Rancho Vista Blvd changes to E Rancho Vista Blvd (P Avenue) east of Sierra Highway and provides indirect access to the project site. The posted speed limit is 60 mph.

10th St East is also identified as a crosstown street / major arterial on the Palmdale 2045 circulation map and is a north-south two-lane road (one in each direction) in the project study area. 10th St East provides driveway access to the project's Lot 12 and Lot 20. The posted speed limit is 50 mph.

Lockheed Way is identified as a connecter street / secondary arterial on the Palmdale 2045 circulation map and is a north-south six-lane road (two northbound, three southbound and a two-way-left-turn lane median) in the project study area. Lockheed Way provides driveway access to the project's Lot 3.

Sierra Highway is identified as a regional / major arterial on the Palmdale 2045 circulation map and is a north-south four-lane road (two in each direction with turn lanes at key intersections) in the project study area. Sierra Highway extends from the City of Mojave, in Kern County, through Palmdale. The posted speed limit is 55 mph.

Blackbird Drive is identified as a connector / secondary arterial on the Palmdale 2045 circulation map and is an east-west two-lane road (one in each direction) in the project study area. Blackbird Drive provides driveway access to Lot 3. The posted speed limit is 45 mph.

Avenue O-12 is identified as a neighborhood / local street on the Palmdale 2045 circulation map. This street does not exist today but would be an east-west street connecting Lockheed Way and 10th Street East. The alignment of Avenue O-12 separates the project's Lots 12 and 16 and will provide driveway access to Lot 16. Midway between Lockheed Waya and 10th Street East, Avenue O-12 would intersect a proposed north-south alley (9th Street E) that will provide access to Lots 12, 16, and 20.

10th St West is identified as a regional / arterial on the Palmdale 2045 circulation map and is a north-south six-lane facility where it intersects with Rancho Vista Boulevard. 10th Street West accesses State Route 14 via an interchange from which project generated traffic is likely to use for regional access to/from the project site. The posted speed limit is 45 mph.

Study Intersections

The project study area includes the eight existing intersections shown in **Figure 3** and listed below:

1. Blackbird Dr/ Lockheed Way
2. Blackbird Dr / 10th Street E
3. E Rancho Vista Blvd (Avenue P) / Lockheed Way
4. E Rancho Vista Blvd (Avenue P) / 10th Street E
5. Rancho Vista Blvd / Sierra Hwy
6. Rancho Vista Blvd / SR 14 NB Off Ramp
7. Rancho Vista Blvd / 10th Street W
8. 10th Street W / SR 14 SB Off Ramp

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FIGURE 3
STUDY INTERSECTIONS

PBP INDUSTRIAL PROJECT
PALMDALE, CA

B. Intersection Capacity Analysis Methodology

City of Palmdale Intersection Level of Service Policy

The criteria for identifying deficiencies in the operation of intersections are the policies adopted in the city's 1993 General Plan[2]. The following policy from the 1993 general plan was used in this report:

> ***Policy C1.4.1:*** *Strive to maintain a Level of Service (LOS) C or better to the extent practical; in some circumstances, a LOS D may be acceptable for a short duration during peak periods.*

The intersection level of service (LOS) analyses in this report are based on the methods in the Highway Capacity Manual (6th Edition) which determines intersection LOS based on the peak 15-minutes of the peak hour. Since the LOS using this method represents a short duration during peak periods, a LOS D is the applicable standard for this analysis.

A deficiency is considered project-specific if the addition of project traffic causes the LOS at an intersection to change from a LOS D or better to a LOS E or F. Where a project contributes to a level of service operating at a LOS E or F without the project, any added project traffic to the facility is considered a project deficiency. In this case, the deficiency is considered cumulative, and the project's fair share contribution to the cost of improvements is calculated for the intersection. Alternatively, the project may implement improvements that effectively offset the project's increase in delay and improve the intersection to at least its pre-project condition.

Capacity Analysis Methodology

Intersection capacity analyses were conducted using Synchro software[4], which implements the methods of the Highway Capacity Manual, 6th Edition (HCM 6)[5] used in this report. The traffic analysis methodology concepts presented in Chapter 19, 20, and 21 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 intersections.

Signalized Intersections

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

Table 3-1: Level of Service Criteria for Signalized Intersections

Control Delay (seconds/vehicle)	LOS by Volume-to-Capacity Ratio [a]	
	Volume / Capacity Ratio ≤ 0.99	Volume / Capacity Ratio < 1.0 [b]
≤ 10	A	F
> 10 - 20	B	F
> 20 - 35	C	F
> 35 - 55	D	F
> 55 - 80	E	F
> 80	F	F

Notes:
[a] For approach-based and intersectionwide assessments, LOS is defined solely by control delay.
[b] Intersections with a volume to capacity ratio exceeding 1.0 are saturated regardless of the computed average delay and operate at LOS F.
Source: Highway Capacity Manual 6th Edition, Exhibit 19-8.

[4] Trafficware Ltd, Version 10.

[5] Transportation Research Board, Washington D.C., 2010.

Unsignalized Intersections

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), as major-street left turns, by using the criteria provided in **Table 3-2** referenced from HCM 6 LOS thresholds for TWSC as provided in the HCM 6 Chapter 20.

Table 3-2: Level of Service Criteria for Two-Way Stop Controlled Intersections

Control Delay (seconds/vehicle)	LOS by Volume-to-Capacity Ratio [a]	
	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

Notes:
[a] The LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-Street approaches or for the intersection as a whole. The reported LOS grade (A-F) is that for the worst stop-controlled movement in terms of delay.
Source: Highway Capacity Manual 6th Edition, Exhibit 20-2.

C. Existing Traffic Volumes

Turn movement counts were conducted on September 7 and 8, 2022 by Newport Traffic Studies, an independent traffic data collection company. The counts were conducted 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 A** of this study.

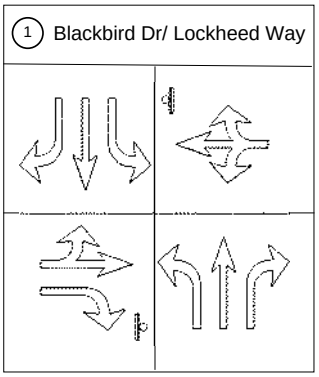
D. Existing Traffic Analysis

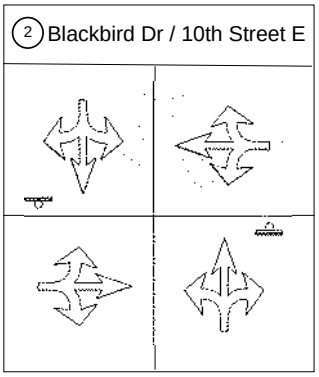
The existing intersection capacity and level of service analyses is based on existing AM and PM peak hour traffic counts and current intersection geometrics. The results of the analysis are shown in **Table 3-3** and provided in **Appendix B**. **Figure 4** illustrates the existing intersection geometrics. Four intersections currently operate with a LOS deficiency in one or more peak hours.

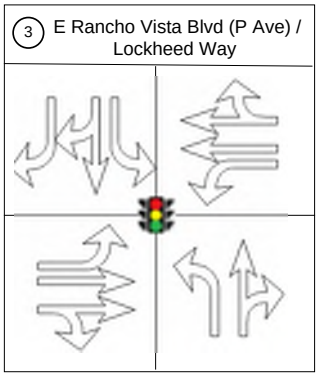
Table 3-3: Existing (2022) Intersection Levels of Service

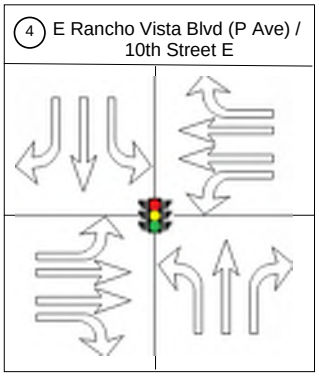
Intersection	Control Type	Existing (2022) Conditions			
		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
1. Blackbird Dr/ Lockheed Way	TWSC	16.1	C	15.2	C
2. Blackbird Dr / 10th Street E	TWSC	8.7	A	9.1	A
3. E Rancho Vista Blvd (Avenue P) / Lockheed Way	TS	100.2	F	82.8	F
4. E Rancho Vista Blvd (Avenue P) / 10th Street E	TS	54.3	D	79.9	E
5. Rancho Vista Blvd / Sierra Highway	TS	44.4	D	149.9	F
6. Rancho Vista Blvd / SR 14 NB Off Ramp	TS	11.8	B	13.7	B
7. Rancho Vista Blvd / 10th Street W	TS	52.7	D	93.9	F
8. 10th Street W / SR 14 SB Off Ramp	TS	8.2	A	25.7	C

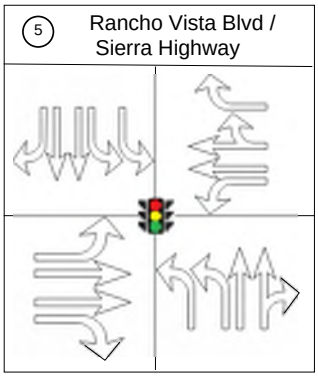
Notes:
Shaded cells in the table represent intersection peak hours with LOS deficiencies (LOS E or F).

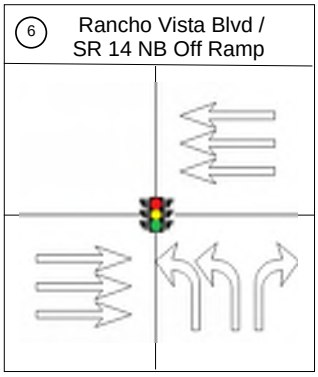


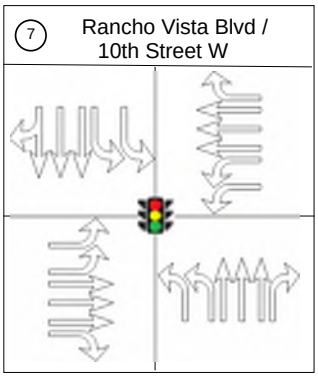












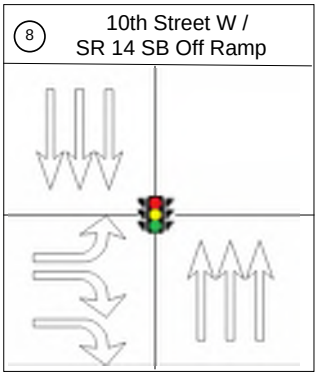


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FIGURE 4
EXISTING INTERSECTION LANE GEOMETRICS

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4. OPENING YEAR (2024) BACKGROUND CONDITIONS (WITHOUT PROJECT)

This scenario represents conditions at the time the Project is anticipated to be fully constructed and occupied (known as opening year which is the year 2024 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 but not specific to any nearby development—and traffic generated by "other" development in the area that has been approved but not yet occupied at the time the traffic counts were conducted.

Ambient growth is estimated as a 2% annual increase. This growth rate is applied to existing traffic volumes and compounded annually.

The City of Palmdale identified one development project near the study area to include in the study as background traffic. This project is identified as Project Smiles—a 1,050,000 square foot ecommerce fulfillment center warehouse building footprint that includes about 20,000 square feet of interior office/employee support space. Project Smiles' 113.69-acre site is located on the southeast corner of West Avenue M and 10th Street West which is outside of the study area of this report, but traffic from Project Smiles does affect the study intersections.

Project Smiles is estimated to generate 2,163 daily passenger car equivalent (PCE) trips, with 159 PCE trips (123 inbound / 36 outbound) during the AM peak hour and 231 PCE trips (91 inbound / 140 outbound) during the PM peak hour. This study accounts for Project Smiles' traffic by adding its vehicle trips to the study intersections based on the distribution and assignment of its traffic in the project's traffic impact study (*Traffic Operational Analysis, Project Smiles, Kimley-Horn and Associates, Inc., December 2021*). The Project Smiles traffic data used in this study is in **Appendix C**.

A. Opening Year Background Conditions Without Project Traffic Analysis

The background condition traffic analysis uses the projected traffic volumes (as described above) and the existing lane geometries to complete the intersection capacity analyses for the study intersections. Planned improvements that affect study intersections were not assumed in the analysis because the improvements would not be constructed by 2024. The results of the analysis are shown in **Table 4-1** and provided in **Appendix B.**

Table 4-1: Opening Year (2024) Background Conditions Without Project Intersection Levels of Service

Intersection	Control Type	Opening Year 2024 Background Conditions Without the Project			
		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
1. Blackbird Dr/ Lockheed Way	TWSC	16.8	C	15.9	C
2. Blackbird Dr / 10th Street E	TWSC	8.7	A	9.2	A
3. E Rancho Vista Blvd (Avenue P) / Lockheed Way	TS	113.6	F	93.0	F
4. E Rancho Vista Blvd (Avenue P) / 10th Street E	TS	63.3	E	92.6	F
5. Rancho Vista Blvd / Sierra Highway	TS	49.6	D	163.5	F
6. Rancho Vista Blvd / SR 14 NB Off Ramp	TS	13	B	13.7	B
7. Rancho Vista Blvd / 10th Street W	TS	64.5	E	102.5	F
8. 10th Street W / SR 14 SB Off Ramp	TS	8.4	A	27.4	C

Notes:
Shaded cells in the table represent intersection peak hours with LOS deficiencies (LOS E or F).

The same four intersections currently operating with a level of service deficiency are projected to continue operating at a LOS deficiency in 2024 but with higher delays and including more AM peak hour deficiencies than occur under existing conditions.

5. OPENING YEAR (2024) BACKGROUND PLUS PROJECT CONDITIONS

This scenario adds the project's estimated traffic generation at opening year (2024) to the Opening Year Background Conditions Without Project Traffic Analysis described in the previous chapter. The following sections describe the steps to develop the traffic projections for this scenario including the project's trip generation, trip distribution, and trip assignment.

A. Project Description

The proposed project consists of four separate lots of land within a tract of fourteen lots bound by Rancho Vista Boulevard, Lockheed Way, Blackbird Street, and 10th Street E. The site is located south of the Lockheed Martin Aeronautics facility and southwest of the Palmdale Regional Airport. **Table 5-1** summarizes the most relevant characteristics of the project including proposed land uses, size, estimated trip generation, and points of access.

Table 5-1: Project Characteristics

Lot No.	APN	Lot Size (Acres)	Zoning [a]	Proposed Land Uses [b]	Total Building Floor Area (Square Feet)	Trip Generation in PCEs (See Table 5-2) [c]			Access Points
						Daily	AM Peak Hour	PM Peak Hour	
3	3022-026-003	6.02	Heavy Industrial (HI)	Industrial (LUC 110)	100,000	618	94	82	1. Lockheed Way (right in/right out) 2. Blackbird Lane (full access)
12	3022-026-012	5.94		Industrial (LUC 110)	100,000	618	94	82	1. 10 Street E (full access) 2. Avenue O-12 (via truck access alley)
16	3022-025-004	3.84		Parking / Detention Basin	Not Applicable				1. Avenue O-12 2. Avenue O-12 (via access alley)
20	3022-025-008	4.93		Office (LUC 710)	100,000	1,084	152	145	1. 10th Street E (two full access dwys) 2. Avenue O-12 (via access alley)
					Total PCEs	2,320	340	309	

Notes:
[a] Source: current draft Zoning Map consistent with the city's recent general plan update--Palmdale 2045--adopted by the Palmdale City Council on September 21, 2022.
[b] Proposed land uses are listed by the land use code (LUC) and type published in the Institute of Transportation Engineers' (ITE) Trip Generation manual (11th Edition) which is the source of the trip generation rates used to estimate the project's traffic in this report. Lot 16 is used for parking for buildings on adjacent lots and a water stormwater detention basin and does generate any trips.
[c] PCE = Passenger Car Equivalent. Source of passenger car / truck mode split used to estimate trip generation: Truck Trip Generation Study. City of Fontana and County of San Bernardino. August 2003. Note: trip generation for office use is not converted to PCEs.
.

Designated Zoning

The draft Palmdale Zoning Map, created to be consistent with the city's recently adopted general plan, designates 12 of the 14 lots as Heavy Industrial (HI) uses possibly due to their proximity to the Lockheed Martin facility—the home of Lockheed Martin's "Skunkworks" a design and production plant for the company's Advanced Development Program which is primarily responsible for designing military aircraft. The project site is part of a concentration of heavy industrial zoned land immediately adjacent to the facility. The remaining two lots within the tract are designated Neighborhood Commercial (NC). The commercial lots are the two southernmost lots of the tract and front Rancho Vista Boulevard.

Project Land Use

Only four of the fourteen parcels are included in the application to entitle the proposed development and are the subject of this traffic impact analysis. The land uses proposed for each lot, shown in **Table 5-1**, are comparable to the land uses contained in the Institute of Transportation Engineers (ITE) Trip Generation (11th Edition) that are the source of the trip generation rates used in this. The proposed land uses in each lot include:

- Lot 3: two 50,000 square foot industrial / warehouse buildings divided into fifteen individual units.
- Lot 12: one building with approximately 100,000 square feet industrial / warehouse uses.
- Lot 16: located south of the future construction of Avenue O-12, includes a 511-space parking supply shared between the buildings on Lot 12 to the north, and Lot 20 to the south. The remaining portion of Lot 16 is proposed as a detention basin. These uses support the land uses on adjoining lots and do not generate traffic in of themselves.
- Lot 20: proposed to contain up to 100,000 square feet of office use in up to three buildings.

Chapter 6 includes site plans and a detailed discussion regarding access to each lot.

B. Project Trip Generation

The land uses described above generate a mix of automobile and light to heavy duty truck traffic. For truck intensive land uses (i.e., industrial and warehousing), it is standard practice to convert the estimated number of trucks into "passenger car equivalents (PCEs)" when analyzing intersection capacity and level of service[6]. Therefore, the project's estimated trip generation presented in **Table 5-2** is in PCEs, except the office land use in Lot 20 which is not considered a truck intensive use.

Table 5-2: Estimated Project Trip Generation

No.	Parcel / Land Use	Quantity (SF of Floor Area)	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
1	**Parcel 3 - Industrial Building Land Use Category (ITE 110)**								
	Rate (Trips per 1,000 Sq. Feet Gross Floor Area)	100,000	4.87	0.65	0.09	0.74	0.09	0.56	0.65
	Trips		487	65	9	74	9	56	65
2	**Parcel 12 - Industrial Building Land Use Category (ITE 110)**								
	Rate (Trips per 1,000 Sq. Feet Gross Floor Area)	100,000	4.87	0.65	0.09	0.74	0.09	0.56	0.65
	Trips		487	65	9	74	9	56	65
3	**Parcel 16 - Retention Basin and Surface Parking**	Not Applicable							
4	**Parcel 20 - Office Buildings Land Use Category (ITE 710)**								
	Rate (Trips per 1,000 Sq. Feet Gross Floor Area)	100,000	10.84	1.34	0.18	1.52	0.24	1.20	1.44
	Trips		1,084	134	18	152	24	120	144
Total Vehicular Trip Generation (Industrial Uses)		200,000	974	130	18	148	18	112	130
Total Vehicular Trip Generation (Office Uses)		100,000	1,084	134	18	152	24	120	144
Total Vehicular Trip Generation (Combined)		300,000	2,058	264	36	300	43	231	274
		Project Trip Generation by Vehicle Type and Passenger Car Equivalents (PCEs)							
	Applied to Industrial Uses Only	Mode Share							
	Passenger Cars (Percent of Total)	78.60%	766	102	14	116	14	88	102
	2-Axle Trucks (Percent of Total)	8.00%	78	10	1	12	1	9	10
	3-Axle Trucks (Percent of Total)	3.90%	38	5	1	6	1	4	5
	4-Axle Trucks (Percent of Total)	9.50%	93	12	2	14	2	11	12
	Subtotal	100.00%	974	130	18	148	18	112	130
		PCE Factor							
	Passenger Cars	1	766	102	14	116	14	88	102
	2-Axle Trucks	1.5	117	16	2	18	2	13	16
	3-Axle Trucks	2	76	10	1	12	1	9	10
	4-Axle Trucks	3	278	37	5	42	5	32	37
Total PCE Trip Generation (Industrial Uses)			1,236	165	23	188	23	142	165
Total PCE Trip Generation (Office Uses)			1,084	134	18	152	24	120	144
Total PCE Trip Generation (Combined Industrial + Office)			**2,320**	**299**	**41**	**340**	**48**	**261**	**309**

Sources:
Trip generation rates are from the Institute of Transportation Engineers (ITE) Trip Generation (11th Edition).
Vehicle type mode share is from the Truck Trip Generation Study, prepared for the City of Fontana, and San Bernardino County, August 2003.

[6] Source of passenger car / truck mode split used to estimate trip generation: Truck Trip Generation Study. City of Fontana and County of San Bernardino. August 2003. Note: trip generation for office use is not converted to PCEs.

The combined project lots generate about 2,320 daily PCEs, 340 and 309 PCEs in the AM and PM peak hours respectively.

C. Project Trip Distribution and Assignment

The distribution of project trips is based on assumed origins of the project's employees and visitors. The directional distribution patterns (east, west, north, and south) are consistent with concentrations of housing and commercial uses (primarily in the Palmdale and Lancaster areas) then assigned to the street system based on the most direct route on major streets.

Figure 5 illustrates the directional distribution (percent direction) to the street system. Figures showing the AM and PM peak hour PCE trip assignment to the study intersections is in **Appendix D**.

D. Opening Year (2024) Background + Project Conditions Traffic Analysis

The addition of project traffic to the opening year (2024) background conditions scenario increases the delay at the same four deficient intersections presented in the existing conditions scenario and the opening year (2024) background without project conditions, as shown in **Table 5-3**. At the intersection of Rancho Vista Boulevard and Sierra Highway, the addition of project traffic changes the AM peak hour level of service from a LOS D to a LOS E.

Table 5-3: Comparison of LOS between Opening Year (2024) Background Conditions Without and With the Project

Intersection	Control Type	Opening Year 2024 Background Conditions Without the Project				Opening Year 2024 Background With Project Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Blackbird Dr/ Lockheed Way	TWSC	16.8	C	15.9	C	16.8	C	15.9	C
2. Blackbird Dr / 10th Street E	TWSC	8.7	A	9.2	A	8.8	A	9.3	A
3. E Rancho Vista Blvd (Avenue P) / Lockheed Way	TS	113.6	F	93.0	F	132.1	F	120.7	F
4. E Rancho Vista Blvd (Avenue P) / 10th Street E	TS	63.3	E	92.6	F	77.5	E	88.1	F
5. Rancho Vista Blvd / Sierra Hwy	TS	49.6	D	163.5	F	70.3	E	176.3	F
6. Rancho Vista Blvd / SR 14 NB Off Ramp	TS	13	B	13.7	B	13.3	B	13.8	B
7. Rancho Vista Blvd / 10th Street W	TS	64.5	E	102.5	F	65.1	E	107.3	F
8. 10th Street W / SR 14 SB Off Ramp	TS	8.4	A	27.4	C	9	A	28.3	C

Notes:
Shaded cells in the table represent intersection peak hours with LOS deficiencies (LOS E or F).
Abbreviations:
TWSC = Two-way (or side street) stop control, AWSC = All-way stop control, TS = Traffic signal control

Summary and Conclusion of Level of Service Analysis

In summary, the addition of project traffic exacerbates the deficient operations at four study intersections by increasing delay at three intersections operating at LOS E and LOS F and, in one case, at the intersection of Rancho Vista Boulevard / Sierra Hwy, changes the level of service from a LOS D to a LOS E in the AM peak hour. Because the project does not cause these four intersections to change from conforming with the city's level of service policy to a deficiency, the project is not responsible for improving level of service to conform with city policy (LOS D or better) but should be responsible for improvements that offset its increase in delay.

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FIGURE 5
TRIP DISTRIBUTION
PBP INDUSTRIAL PROJECT
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6. RECOMMENDED MEASURES TO IMPROVE LEVEL OF SERVICE AT DEFICIENT INTERSECTIONS

*Note: this chapter was included verbatim in the Executive Summary in Chapter 1. No additional information is provided except for the project location map (**Figure 6**).*

This section summarizes the recommended intersection measures to improve the deficient intersection levels of service and presents the improved levels of service at intersections where the recommended measures could be modeled and analyzed. Finally, this section describes projects in the city's five-year capital improvement plan that are relevant to the impacted intersections.

A. Recommended Improvement Measures

Table 6-1 summarizes the recommended intersection measures to improve the deficient intersection levels of service.

Table 6-1: Recommended Measures to Offset Project Impacts

Measure No. / Deficient Intersection	Recommended Measures to Offset Project's Impact
M1: E Rancho Vista Blvd (Avenue P) / Lockheed Way	• Provide protected east - west left turn signal phasing.
M2: E Rancho Vista Blvd (Avenue P) / 10th Street E	• Increase cycle length / reprogram controller
M3: Rancho Vista Blvd / Sierra Hwy	• Add a second eastbound left turn lane. See discussion and Diagram 1 in Section C.
M4: Rancho Vista Blvd / 10th Street W	• Implement city CIP project STR-026 to widen 10th Street W to eight lanes

B. Improvements Evaluated at E Rancho Vista Boulevard (Avenue P) and Lockheed Way (M1)

This intersection is currently controlled with a traffic signal that requires left turns from either direction of Rancho Vista Boulevard to yield to oncoming traffic. The proposed measure to mitigate the deficient level of service is to provide protected left turn phasing in the east-west direction of Rancho Vista Boulevard. This improvement would require a minimal amount of signal equipment because the westbound approach appears to have the appropriate number of signal heads including two five-lens signal heads that can accommodate protected left turn phasing.

The eastbound direction will require an additional signal head aligned with the eastbound left turn lane. The addition of another head on the mast arm will require a new mast arm and pole designed for the additional wind load on the arm caused by the additional signal head. This mitigation assumes that the existing signal controller can be programmed to implement this recommendation.

Estimated Cost: $30,100 (See **Appendix F** for cost estimation worksheet.)

C. Improvements Evaluated at Rancho Vista Boulevard and Sierra Highway (M3)

Measures to improve the level of service deficiencies at this intersection were determined by reviewing level of service calculations and identifying the critical movements that cause, or contribute, to the deficiency. Improvement concepts evaluated at Rancho Vista Boulevard and Sierra Highway included:

1. Dual Eastbound Left Turn Lanes (see Diagram 1 on following page). In this mitigation concept, a second eastbound left turn is added to the intersection by adding the lane to the north of the existing single left turn lane. This improvement requires removing the raised median on the west leg of the intersections, shifting the westbound departure through lanes northward, and realigning signal heads. This mitigation concept avoids the need to acquire land from the private property fronting the south side of Rancho Vista Boulevard and negatively impacts the front entrance and parking supply of two businesses.

   This measure improves the AM peak hour level of service from LOS E under opening year 2024 background plus project conditions to a LOS D (48.8.sec/veh).

In the PM peak hour, the measure only improves the level of service from a LOS F (176.3 sec/veh) to a LOS F (152.0 sec/veh), but it does offset the increase in delay caused by the project.

Estimated Cost: $45,283 (See **Appendix F** for cost estimation worksheet.)

2. Exclusive Northbound Right Turn Lane (see Diagram 2 on following page). This mitigation concept is comprised of widening the east side of the northbound approach of Sierra Highway to add an exclusive right turn lane. The widening can be accommodated within the existing right of way of Sierra Highway but would displace the existing bi-directional Class I off-street trail which utilizes the right of way between the traveled way and the right of way for the railroad corridor. Relocating the trail within the railroad right of way is prohibited.

   Because this mitigation measure would displace an existing Class I trail with no practical alignment to relocate the trail, this mitigation measures in infeasible.

3. Other Mitigation Measures Considered at Rancho Vista / Sierra Highway - Critical movements at the Rancho Vista Boulevard / Sierra Highway intersection in the opening year 2024 background plus project scenario with existing geometrics included the EB left turn volume conflicting with the WB through volume and the SB left volume conflicting with the NB through volume.

   Conceptual mitigation #1 addresses the eastbound left turn critical movement. Alternatively, an additional westbound through lane might have had the same effect. However, any proposed alteration to the east leg of the intersection that widens the at-grade railroad crossing requires approval from the California Public Utilities Commission (CPUC)—a lengthy and potentially futile endeavor.

   Conceptual mitigation #2 would remove a small volume of traffic from the critical northbound through movement but not enough to substantially improve the deficiency.

   This leaves adding capacity to the conflicting pair of critical movements comprised of the SB left and the NB through movements with options for either triple southbound left turn lanes or three northbound through lanes, neither of which are feasible for the following reasons:

   - There are only two receiving lanes on the eastbound departure of Rancho Vista Boulevard and widening this departure to accept three left turn lanes would again require widening of the railroad crossing and approval from the CPUC. This eliminates the southbound triple left turn lane concept.
   - Adding a northbound through lane requires widening the east side of Sierra Highway both north and south of Rancho Vista Boulevard which would impact the off-street trail in the right of way on the east side of Sierra Highway. This study assumes the City of Palmdale prefers to maintain the of-street trail.

D. Improvements Evaluated at Rancho Vista Boulevard and 10th Street W (M4)

Interim mitigation measures were considered to improve conditions until implementation of the city's Capital Improvement Program (CIP) STR-026 which, among other improvements, widens 10th Street W to eight lanes. Even low to moderately effective interim mitigation measures would have high construction costs and possibly land acquisition costs only to be replaced with the CIP project in a few years. The city has identified CIP project STR-026 as the preferred mitigation measure for the level of service deficit at this intersection.

Estimated Cost: See Chapter 7, Section C.2 for the cost of CIP project STR-026.

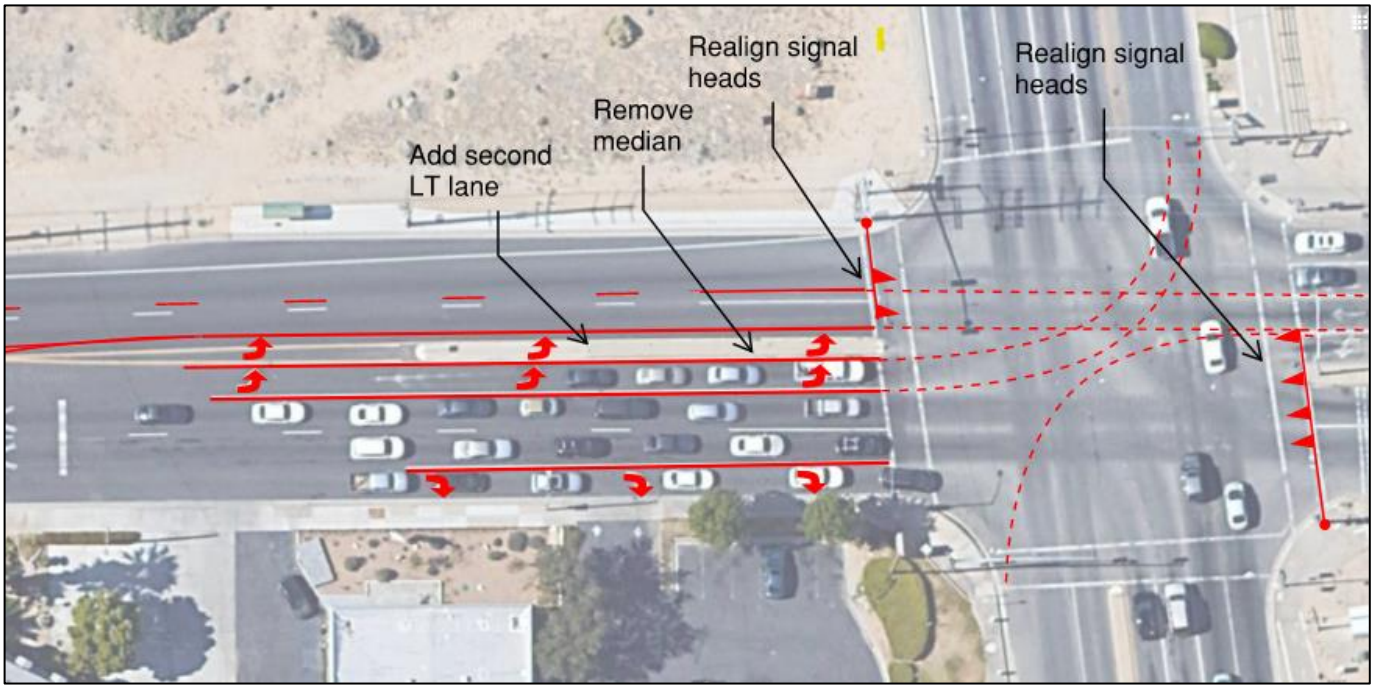


Diagram 1: Conceptual mitigation to add a second eastbound left turn lane at Rancho Vista Boulevard and Sierra Highway.

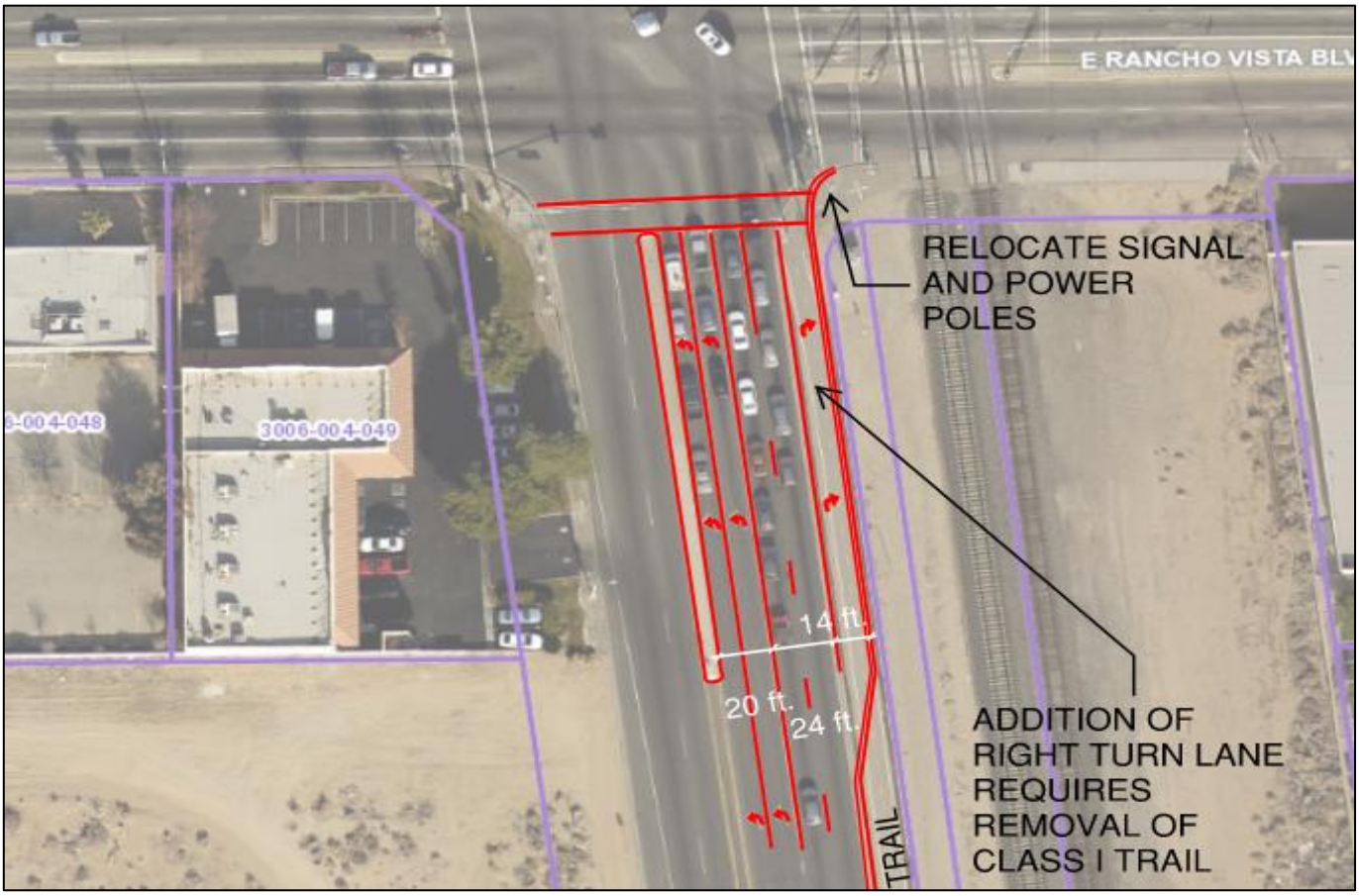


Diagram 2: This potential mitigation measure is deemed infeasible because widening the east side of Sierra Highway would displace an existing off-street trail.

7. MITIGATED LEVEL OF SERVICE AND FAIR SHARE CONTRIBUTION

A. Level of Service Comparison With and Without Recommended Improvements

Table 7-1 presents the resulting level of service at the four deficient intersections. At Rancho Vista Boulevard / Lockheed Way and Rancho Vista Boulevard / 10th Street E, the proposed modifications to traffic signal operations effectively offset the project's impacts without the need to increase capacity through widening. At the intersection of Rancho Vista Boulevard / Sierra Highway, a capacity increase was the only measure to offset the project's impacts. At Rancho Vista Boulevard / 10 Street W, additional capacity was required but achieved by a lane conversion without the need to widen any of the approaches.

Table 7-1: 7Level of Service with Recommended Improvements

Intersection	Opening Year 2024 Background + Project with Improvements				Increase in Delay with the Addition of Project Traffic		Reduction in Delay with Improvements	
	AM Peak Hour		PM Peak Hour					
	Delay	LOS	Delay	LOS	AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
E Rancho Vista Blvd (Ave P) / Lockheed Way	85.6	F	28.2	C	18.5	27.7	(28.0)	(64.8)
E Rancho Vista Blvd (Ave P) / 10th Street E	51.2	D	42.5	D	14.2	(4.5)	(12.1)	(50.1)
Rancho Vista Blvd / Sierra Hwy	[a]		152.0	F	[a]	12.8	[a]	(24.3)
Rancho Vista Blvd / 10th Street W	[b]							

Notes:
[a] The mitigated AM peak hour results are not presented. At this intersection, the PM peak hour operates at a worse deficiency than the AM peak hour and represents the worst-case scenario.
[b] The City of Palmdale 2045 General Plan Draft EIR Technical Appendices prepared in July 2022 includes year 2045 corridor level of service analysis for the major streets in Palmdale. The segments on 10th Street W (between SR 14 and Technology Drive) and Rancho Vista Boulevard (between 15th Street and SWR 14) are projected to operate at LOS C or better under the 2045 Preferred Plan. It is assumed the General Plan analysis incorporated the current CIP projects into its 2045 planning horizon.

B. Project Fair Share Contribution to Deficient Intersections

Table 7-2 presents the project's fair share percentage of the growth in traffic between existing conditions (2022) and the project's opening year (2024). This is a short time in which little growth was projected to occur—the scenario only represents two years of ambient growth (about 2 percent) and traffic generated by the project. This low-growth scenario results in high fair share contributions at all the deficient intersections. In essence, based on the city's impact analysis guidelines, the project (being the only development proposed in and around the study for the past two years) is attributed to having a disproportionately high responsibility for existing deficiencies.

Table 7-2: Project Fair Share Calculations

Intersection	Project's Percentage of the Growth in Traffic Under Opening Day (2024) Conditions		Fair Share Cost Calculation	
	AM Peak Hour	PM Peak Hour	Mitigation Cost ($)	Fair Share Cost Contribution
E Rancho Vista Blvd (Ave P) / Lockheed Way	73%	65%	$30,100	$21,973
E Rancho Vista Blvd (Ave P) / 10th Street E	75%	69%	0% [a]	$0.00
Rancho Vista Blvd / Sierra Hwy	64%	51%	$45,283	$28,981
Rancho Vista Blvd / 10th Street W	Not Applicable - STR-026 is funded through development impact fees and Measure R			
			Total	$50,954

Notes:
[a] The cost to program a traffic signal controller is negligible for the purposes of this study.
The formula used to calculate the project's percentage of the growth in traffic at each intersection is:
FS% = Project Traffic / [(2024 Background + Project) – Existing]

Usually, the cost of mitigating existing deficiencies is absorbed by many developments in the area so that no single development is burdened with a high fair share calculation. There are several potential development projects being considered in and around the study area that will contribute traffic to the deficient intersections, but they were not considered in this traffic impact analysis because they have not been approved. The city should take this into account and devise a method of adjusting fair share contributions to be as proportionately equitable as the city's development impact fee.

C. Relevant Projects in the City of Palmdale Capital Improvement Program

The City of Palmdale 2022 Five-Year Capital Improvement Plan (CIP), approved by the City Council on June 1, 2022, includes improvement projects that affect two of the deficient intersections as described below.

1) Capital project (STR-019) - Rancho Vista Grade Separation Project. This project entails construction of an underpass for a six-lane Rancho Vista Boulevard to cross under the railroad tracks and adjacent Sierra Highway with access ramps connecting Rancho Vista Boulevard and Sierra Highway. This $70,010.00 project is to be funded by unidentified grant funds and is included in the CIP's FY 26-27 scheduled timeframe. Grade separating these two major roadways would eliminate the existing intersection and allow for uncontrolled through movements. Funding this project through grants will be challenging and may need to be supplemented by other sources of funding. This should be considered a long-range capital improvement.

2) Capital project (STR-026) - SR 14 – 10th Street W Widening / Interchange Project. This project entails widening 10th Street W to eight-lanes between Rancho Vista Boulevard and West Avenue O-8 and includes modifying existing traffic signals and modifying and signalizing the SR-14 on and off-ramp. The estimated total cost of this project is $24,223,00 to be funded primarily through Measure R. The CIP for project STR-026 includes expenditure of the Measure R funds starting in FY 24-25 and ending in FY 26-27. The widening of 10th Street W and signal modifications at the intersection of Rancho Vista Boulevard and 10th Street W is designed to increase capacity and improve level of service. This should be considered a near-term capital improvement.

Figure 6 illustrates the location and extent of the recommended project-specific measures and the projects in the city's Five-Year Capital Improvement Plan described above.

LEGEND

MX = Recommended Improvements

STR-XXX = City Five Year CIP Project

DAVID EVANS AND ASSOCIATES INC.

FIGURE 6
LOCATION OF RECOMMENDED IMPROVEMENTS AND RELATED CIP PROJECTS

PBP INDUSTRIAL PROJECT
PALMDALE, CA

8. SITE ACCESS AND PROJECT-SPECIFIC FRONTAGE IMPROVEMENTS

This section provides additional detail regarding overall site access, recommended turn restrictions, and the applicant's proposed permanent and temporary improvements to provide adequate truck and automobile access, as well as meeting emergency access requirements. The second part of this section addresses the project's obligatory frontage improvements.

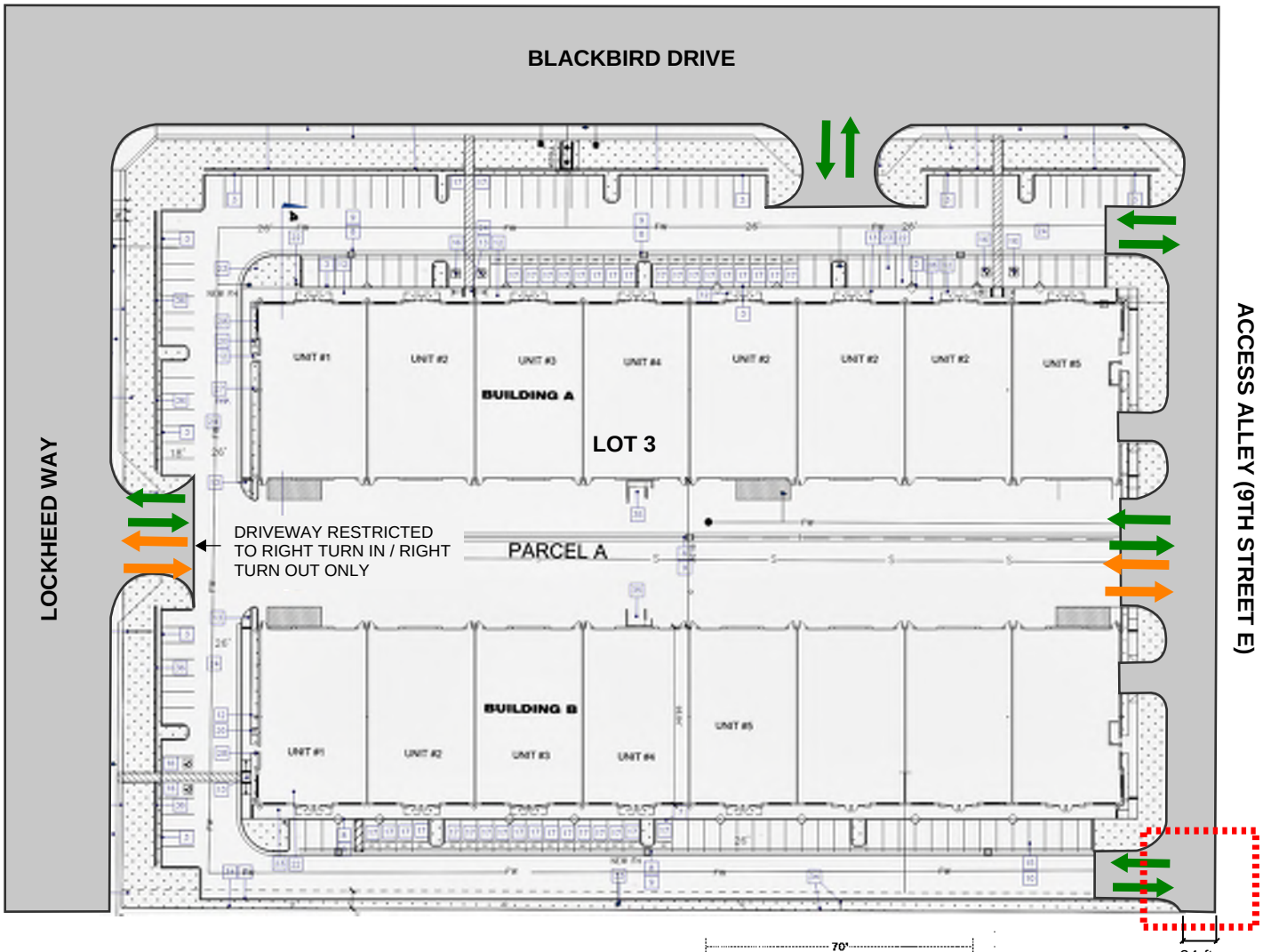
A. Site Access Driveways.

Figure 7 shows the site plan for Lot 3 and identifies the access driveways described below:

- **Lockheed Way driveway** – provides access for automobiles to enter the parking areas around the perimeter of the building. This driveway also provides access for trucks entering the central loading area for the sixteen industrial / warehouse units comprising lot 3's land use. This study recommends that this driveway be restricted to right turns in / right turns out only because it is about 210-feet from Lockheed Way and within the operational area of the Lockheed Way/Lockheed Way intersection. Further, Lockheed Way has a six-lane cross-section at this point (the driveway is placed at the point between where the northbound approach turning lanes begin and the 130-foot-long transition where northbound vehicles jockey into position for entering the turning lanes). The restriction is being recommended for safety reasons.
- **Lockheed Way / Blackbird Drive driveway** – this full access driveway provides access for automobiles to enter the parking areas around the perimeter of the building.
- **Access Alley (9th Street E)** – the project proposes to construct the segment of the access alley adjacent to their eastern property line. The construction of these access lanes (which also provide access for emergency response vehicles) will be include full improvements on the project's frontage and 24-feet of alley pavement without edge improvements on the east side to allow for two-way traffic. The alley's driveway connection to Lockheed Way / Blackbird Drive is proposed as a two-way full access driveway. The dead-end southern end of the access alley will require a fire apparatus turnaround approved by the Los Angeles County Fire District. The dimensions of acceptable turnaround configurations are shown Figure 7.
- **Alley driveways** – the 9th Street E access alley provides three primary driveways into Lot 3. The driveways located at the north and south ends of the site provide access for automobiles to enter the parking areas around the perimeter of the building. The midpoint driveway provides access for trucks entering the central loading area for the sixteen industrial / warehouse units.

Figure 8 shows the site plans for Lots 12, 26, and 20 and identifies the access driveways described below:

- **10th Street East driveways** – three full access driveways on 10th Street E provide access for automobiles to enter the parking areas of the building. Two of these driveways also provide access for trucks entering the loading areas in the rear of the buildings on Lots 12 and 20.
- **Avenue O-12** - The project proposes to construct Avenue O-12 from 10th Street E to the 9th Street E alley which trucks and automobiles use to access the rear or side of buildings for loading or parking. Avenue O-12 will eventually provide a through connection between Lockheed Way and 10th Street E when the lots west of the 9th Street E alley develop. Avenue O-12 has one automobile driveway accessing the shared parking lot on Lot 16.
- **Access Alley (9th Street E)** – the project proposes to construct the segment of the access alley adjacent to their western property lines of Lots 12, 16, and 20. Seven driveways are proposed on this segment of alley for automobiles, trucks, and shared driveways, as well as for emergency response vehicles. Because this segment of alley is isolated from existing streets and the north and south end points exceed fire district code requiring turnarounds on dead-end fire access roads longer than the 150-feet. The dead-end end points of the 9th Street E access alley will require a fire apparatus turnaround approved by the Los Angeles County Fire District. The dimensions of acceptable turnaround configurations are shown Figure 8.

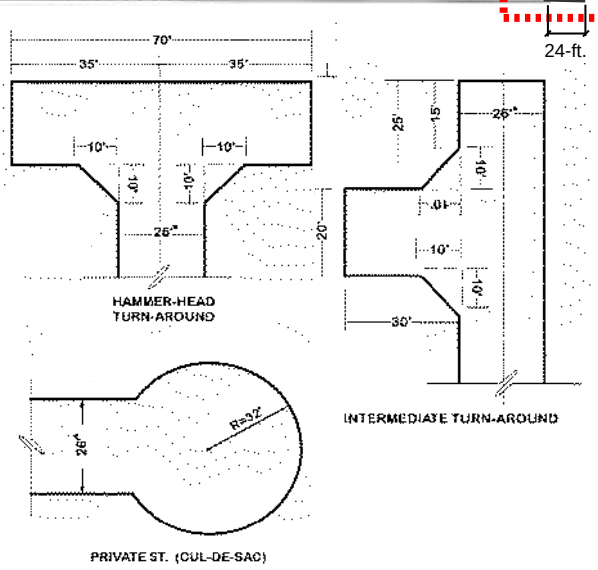


LEGEND

= Driveway for Truck and Automobile Access
(Full Access Unless Otherwise Noted)

= Driveway for Automobile Access
(Full Access Unless Otherwise Noted)

= Requires Fire District Approved Turnaround

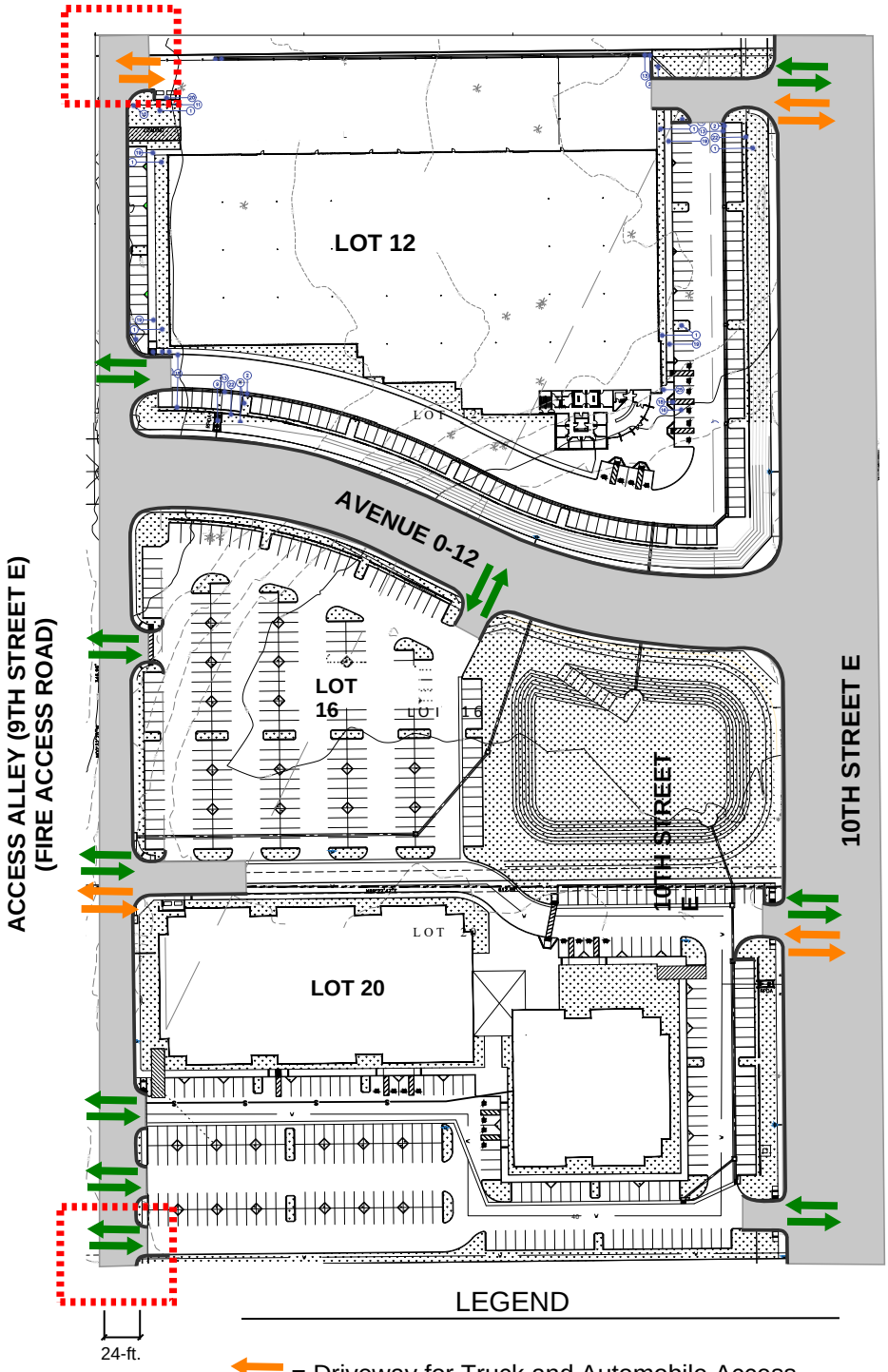


FIRE DISTRICT APPROVED
TURNAROUND CONFIGURATIONS

DAVID EVANS
AND ASSOCIATES INC.

FIGURE 7
SITE ACCESS FOR LOT 3

PBP INDUSTRIAL PROJECT
PALMDALE, CA



CONSTRUCTION OF AVENUE O-12 and ACCESS ALLEY (9TH STREET E)

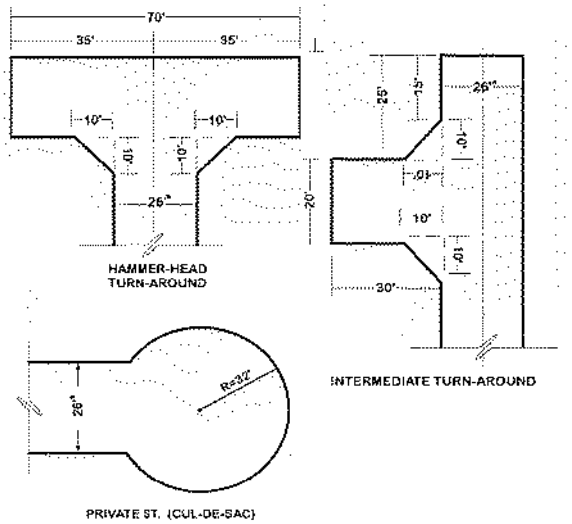
The project proposes to construct Avenue O-12 from 10th Street E to the 9th Street E alley which trucks and automobiles use to access the rear or side of buildings for loading or parking.

Construction of the 9th Street E alley is also proposed by the project. The construction of these access lanes (which also provide access for emergency response vehicles) will be limited to the project's property lines and frontages.

The extension of Avenue O-12 to 8th Street E would be constructed by the development of the lots west of the alley. Similarly, extension of the alley to Lockheed Way or Rancho Vista Blvd would occur with development of the remaining lots within the tract.

In accordance with the Los Angeles County Fire Code Section 503.2.5 (Dead-ends) fire access roads in excess of 150 ft. shall provide an approved turnaround. The turnaround should remain until development of the remaining lots extend the alley to existing streets.

Avenue O-12 may serve as an intermediate turnaround (see diagram below) with fire district approval without having to construct two turnarounds at the alley's endpoints and obtain easements from adjacent property owners. .



FIRE DISTRICT APPROVED
TURNAROUND CONFIGURATIONS

DAVID EVANS AND ASSOCIATES INC.

FIGURE 8
SITE ACCESS FOR LOTS 12, 16, AND 20
PBP INDUSTRIAL PROJECT
PALMDALE, CA

B. Project Frontage Improvements

Lockheed Way

The existing right of way of is 80-feet from back of sidewalk to back of sidewalk. This width is within the maximum right of way width of 94 feet for a connector street per the current general plan. Since additional lanes are not required on Lockheed Way the project proposes a 2-foot-wide dedication of land and to construct half-width improvements including curb, gutter, sidewalk, landscaping, and 24-feet of pavement along its approximate 440 feet of frontage, and provide the right turn in / right turn only driveway as shown on the site plan.

Lockheed Way / Blackbird Drive

Lockheed Way / Blackbird Drive is classified as a connector street with a right of way range between a minimum of 66-feet and a maximum 94-feet. The existing right of way is 80-feet. Along its nearly 610-feet of frontage, the project proposes to dedicate 2-feet of land to create an 82-foot right of way and construct new sidewalk (5.5 feet), curb and gutter (2 feet), and new paving (24 feet).

10th Street East

The general plan designates 10th Street East as a crosstown street with a right of way range between a minimum of 90-feet and a maximum 114-feet and specifies a 114-foot right of way for 10th Street E between Blackbird Drive to Palmdale Boulevard (SR 138). The project proposes to dedicate an unknown amount of land equal to a 52-foot half-width (104-foot right of way) and construct half-width improvements including a 2.5-foot easement, a 5.5-foot sidewalk, 2-feet of curb and gutter, a 5.5-foot-wide sidewalk, and about 42-feet of new pavement.

Avenue O-12

This street is currently unimproved and falls under the general plan classification of a neighborhood (or local) street with a right of way range between a minimum of 30-feet and a maximum 64-feet. The project's Lots 12 and 16 front Avenue O-12 between 10th Street E and the 9th Street E alley. The project proposes to dedicate land to accommodate a 76-foot right of way and construct the full width of Avenue O-12 which includes 60-feet of pavement, and an 8-foot-wide roadside with a 5.5-foot sidewalk and 2-foot curb and gutter along its approximate 616-foot-long frontage.

9. SUMMARY OF THE VEHICLE MILES TRAVELED (VMT) ANALYSIS

A VMT analysis was conducted for the proposed project in accordance with the *Los Angeles County Public Works Transportation Impact Analysis (TIA) Guidelines* (July 23, 2020). The VMT analysis was conducted using the Southern California Association of Governments (SCAG) RTP / SCS travel demand forecast model and SCAG's land use databases for the years 2020 and 2040. The full VMT analysis report is in **Appendix D**.

The project's building floor area was converted to the model's independent variable for non-residential land use (employees) using conversion factors from SCAG's "Employment Density Study Summary Report" (October 31, 2001) in which 200,000 square feet of industrial and 100,000 square feet of office uses convert to 397 employees.

Los Angeles County's criteria for identifying a significant VMT impact under CEQA for office and industrial land uses is:

> *A significant impact would occur if a development project's metric of project-generated VMT[7] per employee is determined to be less than 16.8% below the existing VMT per employee for the baseline area in which the project is located.*

The existing VMT per employee for Palmdale's baseline area (North County) is 19.0 VMT /Employee and a development project needs to generate at least 16.8% below this baseline metric (or 15.8 VMT / Employee) for the project to have a less-than-significant impact on the environment.

Baseline 2020 VMT Analysis

Table 9-1 summarizes the year 2020 baseline VMT analysis. The 397 employees of the project are estimated to generate 5,017 vehicle miles of travel per day. Normalizing the VMT by converting it to a per employee basis results in 12.6 VMT / Employee which is less than the North County baseline area's threshold of 15.8 VMT / Employee (16.8% less than the existing baseline area metric of 19.0 VMT / Employee).

Table 9-1: Year 2020 Baseline Project VMT Per Employee Versus Significance Threshold

Metric	Rancho Vista Industrial Park (Project)	North County Baseline Area Significance Threshold
Total Employment	397	
Home Based Work (HBW) VMT	5,017	
HBW VMT / Employee	12.6	15.8

Cumulative 2040 VMT Analysis

Table 9-2 summarizes the year 2040 cumulative VMT analysis. In the future, the project is estimated to generate less VMT than in baseline (2020) conditions. The are many reasons for a future reduction in the project's VMT, one example is an increase in housing near the industrial park where the project is located so employees can reside closer to work. The resulting metric of 10.0 VMT / Employee is substantially lower than the baseline area significance threshold.

Table 9-2: Year 2040 Cumulative Project VMT Per Employee Versus Significance Threshold

Metric	Rancho Vista Industrial Park (Project)	North County Baseline Area Significance Threshold
Total Employment	397	
Home Based Work (HBW) VMT	3,998	
HBW VMT / Employee	10.0	15.8

[7] Employment VMT is the VMT generated by Home-Based Work trip attractions.

Conclusion of the VMT Analysis

The project's metric of VMT / Employee for office and industrial uses derived by extracting the project's Home-Based Work (HBW) trips from the SCAG regional travel demand forecasting model for 2020 baseline and 2040 cumulative conditions results in less VMT / Employee than the North County area baseline threshold of 15.8 VMT / Employee. The analysis concludes, therefore, that the proposed project will create a less-than-significant transportation impact on the environment.

APPENDICES

Appendix A: Existing Traffic Counts

Appendix B: Capacity Analysis Worksheets

Appendix C: Project Smiles Traffic Data for Background Scenario

Appendix D: Project Trip Assignment Figures

Appendix E: Project Vehicle Miles Traveled Analysis

Appendix F: Planning Level Cost Estimates of Improvements

APPENDIX A
EXISTING TRAFFIC COUNTS

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: LOCKHEED/8TH
EAST-WEST STREET: BLACKBIRD
JURISDICTION: PALMDALE

DATE: 09-08-22

PEAK HOUR: 07:15AM

NORTH LEG

TOTAL: 44

Rt	Thru	Lt	
3	35	6	Total
2	9	1	1st
1	10	3	2nd
0	9	2	3rd
0	7	0	4th

EAST LEG TOTAL: 25

	1st	2nd	3rd	4th	Total
Rt	9	4	3	4	20
Thru	1	2	1	0	4
Lt	0	1	0	0	1

WEST LEG TOTAL: 14

Total	1st	2nd	3rd	4th	
1	1	0	0	0	Lt
1	0	0	1	0	Thru
12	3	2	3	4	Rt

PEAK HOUR FACTORS

NORTH LEG = 0.79
SOUTH LEG = 0.83
EAST LEG = 0.63
WEST LEG = 0.88

ALL LEGS = 0.84

SOUTH LEG

	Lt	Thru	Rt
1st	22	89	8
2nd	16	125	2
3rd	9	88	3
4th	10	94	6
Total	57	396	19

TOTAL: 472

HOUR TOTAL: 555

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : LOCKHEED/8TH
EAST-WEST STREET : BLACKBIRD

PALMDALE
09-08-22

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
PCEs:			1.5									
NORTH LEG											6	
1	3	1	0	0	0	0	0	0	0	0	0	5
1	8	1	1	0	0	0	0	0	0	1	0	12
1	10	3	0	0	0	0	0	0	0	0	0	14
0	9	2	0	0	0	0	0	0	0	0	0	11
0	6	0	0	0	0	0	0	0	0	1	0	7
1	7	1	0	0	0	0	0	0	0	0	1	10
2	7	1	0	0	0	0	0	0	0	1	0	11
2	6	4	0	0	0	0	0	0	0	0	0	12
8	56	13	1	0	0	0	0	0	0	3	1	82
SOUTH LEG								2			6	
2	77	15	0	0	2	0	0	0	0	0	0	96
8	89	21	0	0	0	0	0	0	0	0	1	119
2	125	15	0	0	0	0	0	1	0	0	0	143
3	88	9	0	0	0	0	0	0	0	0	0	100
6	94	9	0	0	0	0	0	0	0	0	1	110
2	70	16	0	0	0	0	0	0	0	0	0	88
1	49	5	0	0	1	0	0	0	0	0	1	57
1	50	5	0	0	0	0	0	0	0	0	0	56
25	642	95	0	0	3	0	0	1	0	0	3	769
EAST LEG				3						3		
3	0	0	0	0	0	0	0	0	0	0	0	3
8	0	0	1	1	0	0	0	0	0	0	0	10
4	2	1	0	0	0	0	0	0	0	0	0	7
3	1	0	0	0	0	0	0	0	0	0	0	4
3	0	0	0	0	0	0	0	0	1	0	0	4
5	0	0	0	0	0	0	0	0	1	0	0	6
5	0	1	0	0	0	0	0	0	0	0	0	6
4	2	2	0	0	0	0	0	0	0	0	0	8
35	5	4	1	1	0	0	0	0	2	0	0	48
WEST LEG				3						6		
4	0	1	0	0	0	0	0	0	0	0	0	5
2	0	1	1	0	0	0	0	0	0	0	0	4
2	0	0	0	0	0	0	0	0	0	0	0	2
2	1	0	1	0	0	0	0	0	0	0	0	4
1	0	0	0	0	0	1	0	0	2	0	0	4
3	0	0	0	0	0	0	0	0	0	0	0	3
3	0	0	0	0	0	0	0	0	0	0	0	3
2	0	0	0	0	0	0	0	0	0	0	0	2
19	1	2	2	0	0	1	0	0	2	0	0	27

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: LOCKHEED/8TH

EAST-WEST STREET: BLACKBIRD

TIME: 07:00AM-08:00AM DATE: 09-08-22

NORTH LEG

Rt	Thru	Lt	
4	31	7	Total
1	3	1	1st
2	9	1	2nd
1	10	3	3rd
0	9	2	4th

	1st	2nd	3rd	4th	Total
Rt	3	9	4	3	19
Thru	0	1	2	1	4
Lt	0	0	1	0	1

Total	1st	2nd	3rd	4th	
2	1	1	0	0	Lt
1	0	0	0	1	Thru
12	4	3	2	3	Rt

	Lt	Thru	Rt
1st	17	77	2
2nd	22	89	8
3rd	16	125	2
4th	9	88	3
Total	64	379	15

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: LOCKHEED/8TH

EAST-WEST STREET: BLACKBIRD

TIME: 08:00AM-09:00AM DATE: 09-08-22

NORTH LEG

Rt	Thru	Lt	
5	28	7	Total
0	7	0	1st
1	7	2	2nd
2	8	1	3rd
2	6	4	4th

	1st	2nd	3rd	4th	Total
Rt	4	6	5	4	19
Thru	0	0	0	2	2
Lt	0	0	1	2	3

Total	1st	2nd	3rd	4th	
0	0	0	0	0	Lt
0	0	0	0	0	Thru
12	4	3	3	2	Rt

	Lt	Thru	Rt
1st	10	94	6
2nd	16	70	2
3rd	7	49	1
4th	5	50	1
Total	38	263	10

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: LOCKHEED/8TH
EAST-WEST STREET: BLACKBIRD
JURISDICTION: PALMDALE

DATE: 09-08-22

PEAK HOUR: 04:00PM

NORTH LEG

TOTAL: 561

Rt	Thru	Lt	
3	533	25	Total
0	120	5	1st
0	140	10	2nd
0	151	8	3rd
3	122	2	4th

EAST LEG TOTAL: 9

	1st	2nd	3rd	4th	Total
Rt	0	1	1	0	2
Thru	0	0	1	0	1
Lt	0	1	2	3	6

WEST LEG TOTAL: 160

Total	1st	2nd	3rd	4th	
	0	0	0	0	Lt
1	0	1	0	0	Thru
159	51	19	42	47	Rt

PEAK HOUR FACTORS

NORTH LEG = 0.88
SOUTH LEG = 0.69
EAST LEG = 0.56
WEST LEG = 0.78

ALL LEGS = 0.91

SOUTH LEG

TOTAL: 22

	Lt	Thru	Rt
1st	2	1	2
2nd	3	4	1
3rd	1	0	1
4th	3	3	1
Total	9	8	5

HOUR TOTAL: 752

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : LOCKHEED/8TH

EAST-WEST STREET : BLACKBIRD

PALMDALE

09-08-22

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	120	5	0	0	0	0	0	0	0	0	0	125
0	140	10	0	0	0	0	0	0	0	0	0	150
0	151	7	0	0	0	0	0	0	0	0	1	159
3	122	2	0	0	0	0	0	0	0	0	0	127
1	122	5	0	0	0	0	0	0	0	0	0	128
0	114	6	0	0	0	0	0	0	0	0	0	120
0	65	0	0	0	0	0	0	0	0	0	0	65
2	86	4	0	0	0	0	0	0	0	0	0	92
6	920	39	0	0	0	0	0	0	0	0	1	966
					SOUTH LEG							
2	1	2	0	0	0	0	0	0	0	0	0	5
1	4	3	0	0	0	0	0	0	0	0	0	8
1	0	1	0	0	0	0	0	0	0	0	0	2
1	3	3	0	0	0	0	0	0	0	0	0	7
1	12	8	0	0	0	0	0	0	0	0	0	21
1	10	9	0	1	0	0	0	0	0	0	0	21
1	6	7	0	0	0	0	0	0	0	0	0	14
0	2	3	0	0	0	0	0	0	0	0	0	5
8	38	36	0	1	0	0	0	0	0	0	0	83
					EAST LEG							
0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	0	0	0	0	0	0	0	0	0	2
1	1	2	0	0	0	0	0	0	0	0	0	4
0	0	3	0	0	0	0	0	0	0	0	0	3
1	0	3	0	0	0	0	0	0	0	0	0	4
1	0	4	0	0	0	0	0	0	0	0	0	5
0	0	1	0	0	0	0	0	0	0	0	0	1
0	0	2	0	0	0	0	0	0	0	0	0	2
4	1	16	0	0	0	0	0	0	0	0	0	21
					WEST LEG							
51	0	0	0	0	0	0	0	0	0	0	0	51
19	1	0	0	0	0	0	0	0	0	0	0	20
42	0	0	0	0	0	0	0	0	0	0	0	42
47	0	0	0	0	0	0	0	0	0	0	0	47
7	1	3	0	0	0	0	0	0	0	0	0	11
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	7
173	2	3	0	0	0	0	0	0	0	0	0	178

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: LOCKHEED/8TH

EAST-WEST STREET: BLACKBIRD

TIME: 04:00PM-05:00PM DATE: 09-08-22

NORTH LEG

Rt	Thru	Lt	
3	533	25	Total
0	120	5	1st
0	140	10	2nd
0	151	8	3rd
3	122	2	4th

	1st	2nd	3rd	4th	Total
Rt	0	1	1	0	2
Thru	0	0	1	0	1
Lt	0	1	2	3	6

Total	1st	2nd	3rd	4th	
0	0	0	0	0	Lt
1	0	1	0	0	Thru
159	51	19	42	47	Rt

	Lt	Thru	Rt
1st	2	1	2
2nd	3	4	1
3rd	1	0	1
4th	3	3	1
Total	9	8	5

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: LOCKHEED/8TH

EAST-WEST STREET: BLACKBIRD

TIME: 05:00PM-06:00PM DATE: 09-08-22

NORTH LEG

Rt	Thru	Lt	
3	387	15	Total
1	122	5	1st
0	114	6	2nd
0	65	0	3rd
2	86	4	4th

	1st	2nd	3rd	4th	Total
Rt	1	1	0	0	2
Thru	0	0	0	0	0
Lt	3	4	1	2	10

Total	1st	2nd	3rd	4th	
3	3	0	0	0	Lt
1	1	0	0	0	Thru
14	7	0	0	7	Rt

	Lt	Thru	Rt
1st	8	12	1
2nd	9	11	1
3rd	7	6	1
4th	3	2	0
Total	27	31	3

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: 10TH ST
EAST-WEST STREET: BLACKBIRD
JURISDICTION: PALMDALE

DATE: 09-08-22

PEAK HOUR: 08:00AM

NORTH LEG

TOTAL: 0

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

EAST LEG TOTAL: 19

	1st	2nd	3rd	4th	Total
Rt					
Thru	5	6	6	2	19
Lt	0	0	0	0	

WEST LEG TOTAL: 8

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

SOUTH LEG

	Lt	Thru	Rt
1st	1		0
2nd	2		1
3rd	1		0
4th	4		0
Total	8		1

TOTAL: 9

PEAK HOUR FACTORS

NORTH LEG =
SOUTH LEG = 0.56
EAST LEG = 0.79
WEST LEG = 0.40

ALL LEGS = 0.82

HOUR TOTAL: 36

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : 10TH ST
EAST-WEST STREET : BLACKBIRD
BEGINNING TIME : 07:00AM

PALMDALE
09-08-22

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	10	0	0	0	0	0	0	0	0	0	10
0	0	2	0	0	1	0	0	0	0	0	0	3
0	0	1	0	0	0	0	0	0	0	0	0	1
0	0	1	0	0	0	0	0	0	0	0	0	1
0	0	1	0	0	0	0	0	0	0	0	0	1
1	0	2	0	0	0	0	0	0	0	0	0	3
0	0	1	0	0	0	0	0	0	0	0	0	1
0	0	4	0	0	0	0	0	0	0	0	0	4
1	0	22	0	0	1	0	0	0	0	0	0	24
						EAST LEG				9		
0	0	0	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	0	0	0	0	0	0	0	0	0	2
0	4	0	0	0	0	0	0	0	0	0	0	4
0	4	0	0	0	0	0	0	0	0	1	0	5
0	5	0	0	0	0	0	0	0	0	1	0	6
0	5	0	0	0	0	0	0	0	0	1	0	6
0	2	0	0	0	0	0	0	0	0	0	0	2
0	22	0	0	0	0	0	0	0	0	3	0	25
						WEST LEG				3		
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	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
1	0	0	0	0	0	0	0	0	0	1	0	2
0	1	0	0	0	0	0	0	0	0	0	0	1
4	1	0	0	0	0	0	0	0	0	0	0	5
5	3	0	0	0	0	0	0	0	0	1	0	9

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 10TH ST

EAST-WEST STREET: BLACKBIRD

TIME: 07:00AM-08:00AM DATE: 09-08-22

NORTH LEG

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

Rt					
Thru	0	0	2	4	6
Lt	0	0	0	0	0
	1st	2nd	3rd	4th	Total

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

	Lt	Thru	Rt
1st	10		0
2nd	3		0
3rd	1		0
4th	1		0
Total	15		0

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 10TH ST

EAST-WEST STREET: BLACKBIRD

TIME: 08:00AM-09:00AM DATE: 09-08-22

NORTH LEG

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

Rt					
Thru	5	6	6	2	19
Lt	0	0	0	0	0
	1st	2nd	3rd	4th	Total

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

	Lt	Thru	Rt
1st	1		0
2nd	2		1
3rd	1		0
4th	4		0
Total	8		1

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: 10TH ST
EAST-WEST STREET: BLACKBIRD
JURISDICTION: PALMDALE

DATE: 09-08-22

PEAK HOUR: 04:00PM

NORTH LEG

TOTAL: 0

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

EAST LEG TOTAL: 2

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

WEST LEG TOTAL: 30

Total	1st	2nd	3rd	4th	
					Lt
13	0	5	5	3	Thru
17	9	5	3	0	Rt

SOUTH LEG

	Lt	Thru	Rt
1st	5		0
2nd	2		0
3rd	3		1
4th	0		0
Total	10		1

TOTAL: 11

PEAK HOUR FACTORS

NORTH LEG =
SOUTH LEG = 0.55
EAST LEG = 0.50
WEST LEG = 0.75

ALL LEGS = 0.72

HOUR TOTAL: 43

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : 10TH ST
EAST-WEST STREET : BLACKBIRD

PALMDALE
09-08-22

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												
									3			
0	0	5	0	0	0	0	0	0	0	0	0	5
0	0	2	0	0	0	0	0	0	0	0	0	2
0	0	3	0	0	0	0	0	0	1	0	0	4
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	0	0	0	0	1
0	0	2	0	0	0	0	0	0	0	0	0	2
0	0	15	0	0	0	0	0	0	1	0	0	16
EAST LEG												
0	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	1	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	1	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	2	1	0	0	0	0	0	0	0	0	0	3
WEST LEG												
9	0	0	0	0	0	0	0	0	0	0	0	9
5	5	0	0	0	0	0	0	0	0	0	0	10
2	5	0	0	0	0	0	0	0	1	0	0	8
0	3	0	0	0	0	0	0	0	0	0	0	3
1	4	0	0	0	0	0	0	0	0	0	0	5
0	6	0	0	0	0	0	0	0	0	0	0	6
1	0	0	0	0	0	0	0	0	0	0	0	1
0	4	0	0	0	0	0	0	0	0	0	0	4
18	27	0	0	0	0	0	0	0	1	0	0	46

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 10TH ST

EAST-WEST STREET: BLACKBIRD

TIME: 04:00PM-05:00PM DATE: 09-08-22

NORTH LEG

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

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

Total	1st	2nd	3rd	4th	
					Lt
13	0	5	5	3	Thru
17	9	5	3	0	Rt

	Lt	Thru	Rt
1st	5		0
2nd	2		0
3rd	3		1
4th	0		0
Total	10		1

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 10TH ST

EAST-WEST STREET: BLACKBIRD

TIME: 05:00PM-06:00PM DATE: 09-08-22

NORTH LEG

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

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

Total	1st	2nd	3rd	4th	
					Lt
14	4	6	0	4	Thru
2	1	0	1	0	Rt

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

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: 8TH ST
EAST-WEST STREET: RANCHO VISTA
JURISDICTION: PALMDALE

DATE: 09-08-22

PEAK HOUR: 07:30AM

NORTH LEG

TOTAL: 47

Rt	Thru	Lt	
37	3	7	Total
12	1	1	1st
10	1	1	2nd
6	1	4	3rd
9	0	1	4th

EAST LEG TOTAL: 1,272

	1st	2nd	3rd	4th	Total
Rt	11	10	4	31	56
Thru	301	307	323	275	1206
Lt	2	4	1	3	10

WEST LEG TOTAL: 1,089

Total	1st	2nd	3rd	4th	
374	132	89	104	49	Lt
646	129	180	202	135	Thru
69	20	24	13	12	Rt

PEAK HOUR FACTORS

NORTH LEG = 0.84
SOUTH LEG = 0.58
EAST LEG = 0.97
WEST LEG = 0.85

ALL LEGS = 0.92

SOUTH LEG

TOTAL: 49

	Lt	Thru	Rt
1st	3	1	0
2nd	6	1	6
3rd	5	2	4
4th	8	8	5
Total	22	12	15

HOUR TOTAL: 2,457

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : 8TH ST
EAST-WEST STREET : RANCHO VISTA

PALMDALE
09-08-22

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
					1.5		NORTH LEG	2			9	
3	0	4	0	0	0	0	0	0	0	0	0	7
9	1	0	0	0	1	0	0	0	0	0	1	12
12	1	1	0	0	0	0	0	0	0	0	0	14
10	1	0	0	0	1	0	0	0	0	0	0	12
6	1	0	0	0	0	0	0	1	0	0	3	11
9	0	1	0	0	0	0	0	0	0	0	0	10
14	0	0	0	0	0	0	0	0	0	0	0	14
10	0	1	0	0	0	0	0	0	0	0	0	11
73	4	7	0	0	2	0	0	1	0	0	4	91
							SOUTH LEG					
3	2	1	0	0	0	0	0	0	0	0	0	6
1	2	5	0	0	0	0	0	0	0	0	0	8
0	1	3	0	0	0	0	0	0	0	0	0	4
6	1	6	0	0	0	0	0	0	0	0	0	13
4	2	5	0	0	0	0	0	0	0	0	0	11
5	8	8	0	0	0	0	0	0	0	0	0	21
2	2	11	0	0	0	0	0	0	0	0	0	15
0	1	3	0	0	0	0	0	0	0	0	0	4
21	19	42	0	0	0	0	0	0	0	0	0	82
				12			EAST LEG	8		33	3	
4	208	1	0	5	0	0	3	0	0	1	0	222
5	231	0	0	3	0	0	6	0	0	1	0	246
11	296	2	0	0	0	0	1	0	0	4	0	314
10	300	4	0	4	0	0	1	0	0	2	0	321
4	317	0	0	2	0	0	2	0	0	2	1	328
31	270	3	0	2	0	0	0	0	0	3	0	309
3	258	1	0	3	0	0	0	0	0	3	0	268
10	331	3	0	0	0	0	2	0	0	5	0	351
78	2211	14	0	19	0	0	15	0	0	21	1	2359
				14			WEST LEG	2	2	27	3	
4	75	88	0	0	2	0	1	0	0	2	0	172
18	87	110	0	1	0	0	2	0	0	2	1	221
20	125	131	0	3	0	0	1	1	0	0	0	281
24	174	89	0	1	0	0	0	0	0	5	0	293
13	197	103	0	3	0	0	0	0	0	2	1	319
12	131	49	0	2	0	0	0	0	0	2	0	196
4	129	50	0	2	1	0	1	0	0	1	1	189
10	99	45	0	1	0	0	1	0	0	4	0	160
105	1017	665	0	13	3	0	6	1	0	18	3	1831

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 8TH ST

EAST-WEST STREET: RANCHO VISTA

TIME: 07:00AM-08:00AM DATE: 09-08-22

NORTH LEG

34	3	8	Total
3	0	4	1st
9	1	2	2nd
12	1	1	3rd
10	1	1	4th
Rt	Thru	Lt	

Rt	4	5	11	10	30
Thru	217	241	301	307	1066
Lt	1	0	2	4	7
	1st	2nd	3rd	4th	Total

Total	1st	2nd	3rd	4th	
422	90	111	132	89	Lt
479	78	92	129	180	Thru
66	4	18	20	24	Rt

	Lt	Thru	Rt
1st	1	2	3
2nd	5	2	1
3rd	3	1	0
4th	6	1	6
Total	15	6	10

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 8TH ST

EAST-WEST STREET: RANCHO VISTA

TIME: 08:00AM-09:00AM DATE: 09-08-22

NORTH LEG

Rt	Thru	Lt	
39	1	6	Total
6	1	4	1st
9	0	1	2nd
14	0	0	3rd
10	0	1	4th

	1st	2nd	3rd	4th	Total
Rt	4	31	3	10	48
Thru	323	275	264	338	1200
Lt	1	3	1	3	8

Total	1st	2nd	3rd	4th	
250	104	49	52	45	Lt
575	202	135	133	105	Thru
39	13	12	4	10	Rt

	Lt	Thru	Rt
1st	5	2	4
2nd	8	8	5
3rd	11	2	2
4th	3	1	0
Total	27	13	11

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: 8TH ST
EAST-WEST STREET: RANCHO VISTA
JURISDICTION: PALMDALE

DATE: 09-08-22

PEAK HOUR: 04:15PM

NORTH LEG

TOTAL: 648

Rt	Thru	Lt	
564	25	59	Total
129	6	20	1st
170	10	12	2nd
154	4	11	3rd
111	5	16	4th

EAST LEG TOTAL: 1,116

	1st	2nd	3rd	4th	Total
Rt	0	0	0	1	1
Thru	296	282	244	293	1115
Lt	0	0	0	0	

WEST LEG TOTAL: 1,386

Total	1st	2nd	3rd	4th	
30	6	1	6	17	Lt
1314	289	330	305	390	Thru
42	12	8	19	3	Rt

PEAK HOUR FACTORS

NORTH LEG = 0.84
SOUTH LEG = 0.55
EAST LEG = 0.94
WEST LEG = 0.85

ALL LEGS = 0.93

SOUTH LEG

TOTAL: 75

	Lt	Thru	Rt
1st	6	2	0
2nd	18	1	4
3rd	7	1	2
4th	21	3	10
Total	52	7	16

HOUR TOTAL: 3,225

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : 8TH ST
EAST-WEST STREET : RANCHO VISTA

PALMDALE
09-08-22

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							
153	10	13	0	0	0	0	0	0	0	0	0	176
129	6	20	0	0	0	0	0	0	0	0	0	155
170	10	12	0	0	0	0	0	0	0	0	0	192
154	4	11	0	0	0	0	0	0	0	0	0	169
111	5	16	0	0	0	0	0	0	0	0	0	132
89	9	17	0	0	0	0	0	0	0	0	0	115
60	0	7	0	0	0	0	0	0	0	0	0	67
71	9	15	0	0	0	0	0	0	0	0	0	95
937	53	111	0	0	0	0	0	0	0	0	0	1101
					SOUTH LEG							
3	2	2	0	0	0	0	0	0	0	0	0	7
0	2	6	0	0	0	0	0	0	0	0	0	8
4	1	18	0	0	0	0	0	0	0	0	0	23
2	1	7	0	0	0	0	0	0	0	0	0	10
10	3	21	0	0	0	0	0	0	0	0	0	34
4	0	37	0	0	0	0	0	0	0	0	0	41
3	0	13	0	0	0	0	0	0	0	0	0	16
9	4	4	0	0	0	0	0	0	0	0	0	17
35	13	108	0	0	0	0	0	0	0	0	0	156
				11			8			12		
					EAST LEG							
1	197	0	0	0	0	0	0	0	0	1	0	199
0	289	0	0	3	0	0	3	0	0	1	0	296
0	279	0	0	1	0	0	1	0	0	1	0	282
0	241	0	0	2	0	0	0	0	0	1	0	244
1	291	0	0	1	0	0	0	0	0	1	0	294
0	259	0	1	1	0	0	1	0	0	0	0	262
0	241	0	0	0	0	0	2	0	0	1	0	244
0	199	3	0	2	0	0	2	0	0	1	0	207
2	1996	3	1	10	0	0	9	0	0	7	0	2028
				12			8			21		
					WEST LEG							
5	178	2	0	2	0	0	3	0	0	2	0	192
12	284	6	0	2	0	0	1	0	0	2	0	307
8	327	1	0	1	0	0	1	0	0	1	0	339
19	298	6	0	2	0	0	1	0	0	4	0	330
3	386	17	0	3	0	0	1	0	0	0	0	410
14	294	20	0	2	0	0	1	0	0	1	0	332
10	279	14	0	2	0	0	4	0	0	1	0	310
7	284	1	0	0	0	0	2	0	0	2	0	296
78	2330	67	0	14	0	0	14	0	0	13	0	2516

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 8TH ST

EAST-WEST STREET: RANCHO VISTA

TIME: 04:00PM-05:00PM DATE: 09-08-22

NORTH LEG

Rt	Thru	Lt	
606	30	56	Total
153	10	13	1st
129	6	20	2nd
170	10	12	3rd
154	4	11	4th

	1st	2nd	3rd	4th	Total
Rt	1	0	0	0	1
Thru	198	296	282	244	1020
Lt	0	0	0	0	0

Total	1st	2nd	3rd	4th	
15	2	6	1	6	Lt
1109	185	289	330	305	Thru
44	5	12	8	19	Rt

	Lt	Thru	Rt
1st	2	2	3
2nd	6	2	0
3rd	18	1	4
4th	7	1	2
Total	33	6	9

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 8TH ST

EAST-WEST STREET: RANCHO VISTA

TIME: 05:00PM-06:00PM DATE: 09-08-22

NORTH LEG

Rt	Thru	Lt	
331	23	55	Total
111	5	16	1st
89	9	17	2nd
60	0	7	3rd
71	9	15	4th

	1st	2nd	3rd	4th	Total
Rt	1	1	0	0	2
Thru	293	261	244	204	1002
Lt	0	0	0	3	3

Total	1st	2nd	3rd	4th	
52	17	20	14	1	Lt
1262	390	298	286	288	Thru
34	3	14	10	7	Rt

	Lt	Thru	Rt
1st	21	3	10
2nd	37	0	4
3rd	13	0	3
4th	4	4	9
Total	75	7	26

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: 10TH ST (E)
EAST-WEST STREET: RANCHO VISTA
JURISDICTION: PALMDALE

DATE: 09-08-22

PEAK HOUR: 07:30AM

NORTH LEG

TOTAL: 1

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

EAST LEG TOTAL: 1,215

	1st	2nd	3rd	4th	Total
Rt	1	1	1	2	5
Thru	283	314	314	287	1198
Lt	0	6	5	1	12

WEST LEG TOTAL: 672

Total	1st	2nd	3rd	4th	
	0	0	0	0	Lt
594	118	156	185	135	Thru
78	11	35	23	9	Rt

PEAK HOUR FACTORS

NORTH LEG = 0.25
SOUTH LEG = 0.76
EAST LEG = 0.95
WEST LEG = 0.81

ALL LEGS = 0.91

SOUTH LEG

TOTAL: 85

	Lt	Thru	Rt
1st	26	0	2
2nd	24	0	0
3rd	10	0	3
4th	16	1	3
Total	76	1	8

HOUR TOTAL: 1,973

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : 10TH ST (E)
EAST-WEST STREET : RANCHO VISTA
BEGINNING TIME : 07:00AM

PALMDALE
09-08-22

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	1	0	0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0	0	0	0	0
2	2	0	0	0	0	0	0	0	0	0	0	4
2	2	1	0	0	0	0	0	0	0	0	0	5
			3				SOUTH LEG	2			3	
1	0	21	0	0	0	0	0	1	0	0	0	23
2	0	21	1	0	0	0	0	1	0	0	0	25
2	0	25	0	0	0	0	0	0	0	0	1	28
0	0	24	0	0	0	0	0	0	0	0	0	24
2	0	9	1	0	0	0	0	1	0	0	0	13
2	1	16	1	0	0	0	0	0	0	0	0	20
2	0	34	0	0	0	1	0	0	0	0	1	38
3	1	12	0	0	0	0	0	1	0	0	0	17
14	2	162	3	0	0	1	0	4	0	0	2	188
				14			EAST LEG	6		33		
10	192	2	0	5	0	0	2	0	0	1	0	212
1	216	1	0	3	1	0	5	0	0	1	0	228
1	279	0	0	0	0	0	1	0	0	3	0	284
1	307	6	0	4	0	0	1	0	0	2	0	321
1	307	4	0	3	0	0	1	1	0	3	0	320
2	282	1	0	2	0	0	0	0	0	3	0	290
0	235	1	0	3	0	0	0	0	0	2	0	241
3	332	0	0	0	0	0	1	0	0	5	0	341
19	2150	15	0	20	1	0	11	1	0	20	0	2237
			3	12			WEST LEG	4		36		
20	62	0	0	0	0	0	1	0	0	2	0	85
9	76	1	0	1	1	0	2	0	0	3	0	93
11	114	0	0	3	0	0	1	0	0	0	0	129
34	150	0	1	1	0	0	0	0	0	5	0	191
22	177	0	1	2	0	0	1	0	0	5	0	208
9	131	0	0	2	0	0	0	0	0	2	0	144
13	117	1	1	1	0	0	1	0	0	2	0	136
3	95	0	0	1	0	0	1	0	0	4	0	104
121	922	2	3	11	1	0	7	0	0	23	0	1090

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 10TH ST (E)

EAST-WEST STREET: RANCHO VISTA

TIME: 07:00AM-08:00AM DATE: 09-08-22

NORTH LEG

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

	1st	2nd	3rd	4th	Total
Rt	10	1	1	1	13
Thru	200	225	283	314	1022
Lt	2	2	0	6	10

Total	1st	2nd	3rd	4th	
2	0	2	0	0	Lt
421	65	82	118	156	Thru
75	20	9	11	35	Rt

	Lt	Thru	Rt
1st	22	0	1
2nd	22	0	3
3rd	26	0	2
4th	24	0	0
Total	94	0	6

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 10TH ST (E)

EAST-WEST STREET: RANCHO VISTA

TIME: 08:00AM-09:00AM DATE: 09-08-22

NORTH LEG

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

	1st	2nd	3rd	4th	Total
Rt	1	2	0	3	6
Thru	314	287	240	338	1179
Lt	5	1	1	0	7

Total	1st	2nd	3rd	4th	
1	0	0	1	0	Lt
542	185	135	121	101	Thru
49	23	9	14	3	Rt

	Lt	Thru	Rt
1st	10	0	3
2nd	16	1	3
3rd	35	0	3
4th	13	1	3
Total	74	2	12

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: 10TH ST (E)
EAST-WEST STREET: RANCHO VISTA
JURISDICTION: PALMDALE

DATE: 09-08-22

PEAK HOUR: 04:15PM

NORTH LEG

TOTAL: 9

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

EAST LEG TOTAL: 1,018

	1st	2nd	3rd	4th	Total
Rt	1	1	0	2	4
Thru	275	225	230	274	1004
Lt	2	2	2	4	10

WEST LEG TOTAL: 1,393

Total	1st	2nd	3rd	4th	
3	0	3	0	0	Lt
1293	282	325	291	395	Thru
97	30	17	31	19	Rt

PEAK HOUR FACTORS

NORTH LEG = 0.45
SOUTH LEG = 0.80
EAST LEG = 0.91
WEST LEG = 0.84

ALL LEGS = 0.87

SOUTH LEG

	Lt	Thru	Rt
1st	14	1	6
2nd	26	0	2
3rd	13	0	4
4th	22	0	8
Total	75	1	20

TOTAL: 96

HOUR TOTAL: 2,516

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : 10TH ST (E)
EAST-WEST STREET : RANCHO VISTA

PALMDALE
09-08-22

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				3		
7	2	1	0	0	0	0	0	0	0	0	0	10
4	0	1	0	0	0	0	0	0	0	0	0	5
1	0	1	0	0	0	0	0	0	1	0	0	3
0	0	0	0	0	0	0	0	0	0	0	0	0
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
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
14	2	3	0	0	0	0	0	0	1	0	0	20
						SOUTH LEG						
4	0	34	0	0	0	0	0	0	0	0	0	38
6	1	14	0	0	0	0	0	0	0	0	0	21
2	0	26	0	0	0	0	0	0	0	0	0	28
4	0	13	0	0	0	0	0	0	0	0	0	17
8	0	22	0	0	0	0	0	0	0	0	0	30
5	0	16	0	0	0	0	0	0	0	0	0	21
3	0	19	1	0	0	0	0	1	0	0	0	24
2	2	8	0	0	0	0	0	0	0	0	0	12
34	3	152	1	0	0	0	0	1	0	0	0	191
				11		EAST LEG	8			9		
2	163	4	0	0	0	0	0	0	0	1	0	170
1	268	2	0	3	0	0	3	0	0	1	0	278
1	223	2	0	1	0	0	1	0	0	0	0	228
0	227	2	0	2	0	0	0	0	0	1	0	232
2	272	4	0	1	0	0	0	0	0	1	0	280
0	244	4	0	2	0	0	1	0	0	0	0	251
1	222	0	0	0	0	0	1	0	0	1	0	225
0	194	2	0	2	0	0	2	0	0	1	0	201
7	1813	20	0	11	0	0	8	0	0	6	0	1865
				11		WEST LEG	6		3	18	3	
47	144	3	0	2	0	1	2	0	0	2	0	201
30	277	0	0	2	0	0	1	0	0	2	0	312
17	322	2	0	1	0	0	1	0	0	1	1	345
29	286	0	0	2	0	1	0	0	1	3	0	322
18	392	0	1	2	0	0	1	0	0	0	0	414
34	283	0	1	1	0	0	1	0	1	0	0	321
21	268	0	1	1	0	0	4	0	0	1	0	296
8	299	0	0	0	0	0	2	0	1	1	0	311
204	2271	5	3	11	0	2	12	0	3	10	1	2522

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 10TH ST (E)

EAST-WEST STREET: RANCHO VISTA

TIME: 04:00PM-05:00PM DATE: 09-08-22

NORTH LEG

Rt	Thru	Lt	
13	2	3	Total
7	2	1	1st
4	0	1	2nd
2	0	1	3rd
0	0	0	4th

	1st	2nd	3rd	4th	Total
Rt	2	1	1	0	4
Thru	164	275	225	230	894
Lt	4	2	2	2	10

Total	1st	2nd	3rd	4th	
6	3	0	3	0	Lt
1048	150	282	325	291	Thru
126	48	30	17	31	Rt

	Lt	Thru	Rt
1st	34	0	4
2nd	14	1	6
3rd	26	0	2
4th	13	0	4
Total	87	1	16

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 10TH ST (E)

EAST-WEST STREET: RANCHO VISTA

TIME: 05:00PM-06:00PM DATE: 09-08-22

NORTH LEG

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

	1st	2nd	3rd	4th	Total
Rt	2	0	1	0	3
Thru	274	247	224	199	944
Lt	4	4	0	2	10

Total	1st	2nd	3rd	4th	
0	0	0	0	0	Lt
1256	395	285	274	302	Thru
86	19	36	22	9	Rt

	Lt	Thru	Rt
1st	22	0	8
2nd	16	0	5
3rd	20	0	4
4th	8	2	2
Total	66	2	19

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: SIERRA HWY
EAST-WEST STREET: RANCHO VISTA
JURISDICTION: PALMDALE

DATE: 09-08-22

PEAK HOUR: 07:30AM

NORTH LEG

TOTAL: 569

Rt	Thru	Lt	
63	490	16	Total
16	113	2	1st
13	116	5	2nd
19	136	6	3rd
15	125	3	4th

EAST LEG TOTAL: 1,288

	1st	2nd	3rd	4th	Total
Rt	136	149	125	90	500
Thru	171	165	189	195	720
Lt	16	20	22	10	68

WEST LEG TOTAL: 1,217

Total	1st	2nd	3rd	4th	
106	30	26	28	22	Lt
1048	271	283	306	188	Thru
63	14	15	16	18	Rt

PEAK HOUR FACTORS

NORTH LEG = 0.88
SOUTH LEG = 0.90
EAST LEG = 0.96
WEST LEG = 0.87

ALL LEGS = 0.91

SOUTH LEG

TOTAL: 598

	Lt	Thru	Rt
1st	13	111	4
2nd	16	123	4
3rd	20	142	5
4th	21	133	6
Total	70	509	19

HOUR TOTAL: 3,672

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : SIERRA HWY
EAST-WEST STREET : RANCHO VISTA

PALMDALE
09-08-22

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								
13	88	0	1	1	1	0	1	1	0	3	2	111
10	101	0	0	2	0	0	2	1	0	0	2	118
14	112	0	2	0	2	0	0	0	0	1	0	131
12	114	2	0	2	0	1	0	0	0	0	3	134
18	131	2	0	0	2	1	3	0	0	2	2	161
14	122	2	1	2	1	0	0	0	0	1	0	143
9	119	1	0	0	1	0	1	1	0	0	2	134
12	92	1	0	2	1	0	0	1	0	2	2	113
102	879	8	4	9	8	2	7	4	0	9	13	1045
				SOUTH LEG								
4	92	10	0	0	0	0	1	0	0	3	1	111
4	103	19	0	1	0	0	1	0	1	0	0	129
3	105	10	1	3	2	0	0	1	0	3	0	128
3	122	14	0	1	0	0	0	0	1	0	2	143
4	135	20	0	4	0	0	2	0	1	1	0	167
3	128	21	1	2	0	0	2	0	2	1	0	160
3	115	15	2	0	0	0	0	0	0	1	0	136
3	114	11	0	1	0	0	3	0	0	2	0	134
27	914	120	4	12	2	0	9	1	5	11	3	1108
				EAST LEG								
47	157	10	3	2	0	2	1	0	1	0	0	223
83	162	11	2	1	0	3	3	0	1	0	0	266
134	170	14	0	0	0	0	0	1	2	1	1	323
145	163	19	2	1	1	0	1	0	2	0	0	334
120	187	22	2	1	0	2	0	0	1	1	0	336
89	193	8	0	2	0	0	0	0	1	0	2	295
80	197	15	2	1	0	0	0	0	0	2	1	298
95	229	9	0	0	0	1	1	0	3	1	1	340
793	1458	108	11	8	1	8	6	1	11	5	5	2415
				WEST LEG								
10	166	24	0	0	0	0	0	1	0	0	0	201
4	213	21	2	1	1	0	1	0	0	0	0	243
13	269	30	0	0	0	1	2	0	0	0	0	315
15	281	26	0	1	0	0	0	0	0	1	0	324
16	305	26	0	1	0	0	0	2	0	0	0	350
14	188	22	1	0	0	1	0	0	2	0	0	228
10	180	16	0	0	0	0	0	0	0	0	0	206
12	149	19	0	0	2	0	0	0	0	2	0	184
94	1751	184	3	3	3	2	3	3	2	3	0	2051

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: SIERRA HWY

EAST-WEST STREET: RANCHO VISTA

TIME: 07:00AM-08:00AM DATE: 09-08-22

NORTH LEG

Rt	Thru	Lt	
53	427	14	Total
14	93	4	1st
10	105	3	2nd
16	113	2	3rd
13	116	5	4th

	1st	2nd	3rd	4th	Total
Rt	53	89	136	149	427
Thru	160	166	171	165	662
Lt	10	11	16	20	57

Total	1st	2nd	3rd	4th	
103	25	22	30	26	Lt
935	166	215	271	283	Thru
45	10	6	14	15	Rt

	Lt	Thru	Rt
1st	11	96	4
2nd	19	105	5
3rd	13	111	4
4th	16	123	4
Total	59	435	17

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: SIERRA HWY

EAST-WEST STREET: RANCHO VISTA

TIME: 08:00AM-09:00AM DATE: 09-08-22

NORTH LEG

Rt	Thru	Lt	
55	477	19	Total
19	136	6	1st
15	125	3	2nd
9	120	5	3rd
12	96	5	4th

	1st	2nd	3rd	4th	Total
Rt	125	90	82	99	396
Thru	189	195	200	231	815
Lt	22	10	16	10	58

Total	1st	2nd	3rd	4th	
87	28	22	16	21	Lt
825	306	188	180	151	Thru
56	16	18	10	12	Rt

	Lt	Thru	Rt
1st	20	142	5
2nd	21	133	6
3rd	15	116	5
4th	11	120	3
Total	67	511	19

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: SIERRA HWY
EAST-WEST STREET: RANCHO VISTA
JURISDICTION: PALMDALE

DATE: 09-08-22

PEAK HOUR: 04:45PM

NORTH LEG

TOTAL: 1,870

Rt	Thru	Lt	
213	1017	640	Total
54	243	110	1st
51	319	193	2nd
35	238	147	3rd
73	217	190	4th

EAST LEG TOTAL: 1,475

	1st	2nd	3rd	4th	Total
Rt	147	232	184	197	760
Thru	254	173	168	109	704
Lt	1	3	4	3	11

WEST LEG TOTAL: 1,265

Total	1st	2nd	3rd	4th	
253	70	62	43	78	Lt
731	222	210	180	119	Thru
281	40	100	70	71	Rt

PEAK HOUR FACTORS

NORTH LEG = 0.83
SOUTH LEG = 0.65
EAST LEG = 0.90
WEST LEG = 0.85

ALL LEGS = 0.88

SOUTH LEG

TOTAL: 1,283

	Lt	Thru	Rt
1st	17	196	16
2nd	17	306	4
3rd	20	217	0
4th	60	425	5
Total	114	1144	25

HOUR TOTAL: 5,893

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : SIERRA HWY — PALMDALE

EAST-WEST STREET : RANCHO VISTA — 09-08-22

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
				8	6	NORTH LEG				3		
40	116	96	0	0	0	0	0	0	0	0	0	252
42	121	157	0	2	1	0	0	0	0	2	0	325
111	182	102	0	4	0	0	0	0	0	0	0	399
54	241	109	0	1	1	0	1	0	0	0	0	407
51	314	191	0	0	2	0	4	0	0	1	0	563
35	235	146	0	2	1	0	1	0	0	0	0	420
73	213	190	0	2	0	0	2	0	0	0	0	480
48	117	135	0	3	0	0	4	0	0	1	0	308
454	1539	1126	0	14	5	0	12	0	0	4	0	3154
				8	2	SOUTH LEG				6	9	
8	166	42	0	0	0	0	0	0	0	0	0	216
4	218	49	2	0	1	0	0	0	0	0	1	275
9	146	33	1	0	0	0	0	0	0	2	0	191
16	194	16	0	1	0	0	1	0	0	0	1	229
4	301	16	0	1	0	0	3	0	0	1	1	327
0	213	19	0	2	1	0	2	0	0	0	0	237
5	422	59	0	1	0	0	1	0	0	1	1	490
15	160	20	0	2	0	0	0	0	0	0	0	197
61	1820	254	3	7	2	0	7	0	0	4	4	2162
			5	3		EAST LEG			3	6		
174	168	10	0	0	0	0	4	0	0	1	0	353
207	201	12	2	1	0	0	3	0	0	1	0	427
145	302	2	0	1	0	0	1	0	0	1	0	452
146	252	1	1	1	0	0	0	0	0	1	0	402
230	172	3	1	1	0	0	0	0	1	0	0	408
183	167	4	1	0	0	0	1	0	0	0	0	356
196	107	3	0	0	0	1	1	0	0	1	0	309
118	148	3	2	0	0	1	0	1	0	1	0	274
1399	1517	38	7	4	0	2	6	1	1	6	0	2981
			6	8		WEST LEG			3	15		
71	81	28	0	2	0	0	3	0	1	2	0	188
94	122	38	0	1	0	2	1	0	0	2	1	261
85	224	63	0	1	0	0	1	0	0	1	0	375
38	216	70	1	1	0	1	1	0	0	4	0	332
98	208	60	1	1	0	0	1	2	1	0	0	372
69	177	43	1	1	0	0	1	0	0	1	0	293
70	112	78	1	2	0	0	4	0	0	1	0	268
37	140	25	0	0	0	0	2	0	1	2	0	207
562	1280	405	4	9	0	3	14	2	3	13	1	2296

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: SIERRA HWY

EAST-WEST STREET: RANCHO VISTA

TIME: 04:00PM-05:00PM DATE: 09-08-22

NORTH LEG

Rt	Thru	Lt	
247	670	466	Total
40	116	96	1st
42	125	158	2nd
111	186	102	3rd
54	243	110	4th

	1st	2nd	3rd	4th	Total
Rt	174	209	145	147	675
Thru	169	206	305	254	934
Lt	10	12	2	1	25

Total	1st	2nd	3rd	4th	
200	28	39	63	70	Lt
663	88	126	227	222	Thru
293	72	96	85	40	Rt

	Lt	Thru	Rt
1st	42	166	8
2nd	51	218	6
3rd	33	148	10
4th	17	196	16
Total	143	728	40

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: SIERRA HWY

EAST-WEST STREET: RANCHO VISTA

TIME: 05:00PM-06:00PM DATE: 09-08-22

NORTH LEG

Rt	Thru	Lt	
207	899	665	Total
51	319	193	1st
35	238	147	2nd
73	217	190	3rd
48	125	135	4th

	1st	2nd	3rd	4th	Total
Rt	232	184	197	121	734
Thru	173	168	109	149	599
Lt	3	4	3	4	14

Total	1st	2nd	3rd	4th	
208	62	43	78	25	Lt
653	210	180	119	144	Thru
279	100	70	71	38	Rt

	Lt	Thru	Rt
1st	17	306	4
2nd	20	217	0
3rd	60	425	5
4th	20	162	15
Total	117	1110	24

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: I-14 OFF RAMP
EAST-WEST STREET: RANCHO VISTA
JURISDICTION: PALMDALE

DATE: 09-07-22

PEAK HOUR: 07:00AM

NORTH LEG

TOTAL: 0

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

EAST LEG TOTAL: 1,148

	1st	2nd	3rd	4th	Total
Rt					
Thru	242	403	300	203	1148
Lt					

WEST LEG TOTAL: 738

Total	1st	2nd	3rd	4th	
					Lt
738	143	283	129	183	Thru
					Rt

PEAK HOUR FACTORS

NORTH LEG =
SOUTH LEG = 0.83
EAST LEG = 0.71
WEST LEG = 0.65

ALL LEGS = 0.75

SOUTH LEG

TOTAL: 454

	Lt	Thru	Rt
1st	72		21
2nd	63		33
3rd	94		35
4th	88		48
Total	317		137

HOUR TOTAL: 2,340

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : I-14 OFF RAMP

EAST-WEST STREET : RANCHO VISTA

PALMDALE

09-07-22

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						
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
			5		4	SOUTH LEG 6		2	3		3	
20	0	72	0	0	0	1	0	0	0	0	0	93
30	0	61	2	0	2	0	0	0	1	0	0	96
33	0	89	0	0	3	2	0	1	0	0	1	129
47	0	87	1	0	1	0	0	0	0	0	0	136
51	0	98	0	0	1	0	0	0	0	0	0	150
43	0	83	3	0	0	0	0	0	1	0	0	130
21	0	76	1	0	1	1	0	0	0	0	0	100
25	0	70	0	0	2	0	0	0	0	0	1	98
270	0	636	7	0	10	4	0	1	2	0	2	932
				12		EAST LEG	4			6		
0	240	0	0	2	0	0	0	0	0	0	0	242
0	396	0	0	4	0	0	1	0	0	2	0	403
0	297	0	0	2	0	0	1	0	0	0	0	300
0	203	0	0	0	0	0	0	0	0	0	0	203
0	89	0	0	3	0	0	0	0	0	1	0	93
0	129	0	0	2	0	0	1	0	0	1	0	133
0	133	0	0	3	0	0	1	0	0	1	0	138
0	261	0	0	4	0	0	0	0	0	1	0	266
0	1748	0	0	20	0	0	4	0	0	6	0	1778
				11		WEST LEG	8			18		
0	138	0	0	2	0	0	1	0	0	2	0	143
0	278	0	0	3	0	0	1	0	0	1	0	283
0	127	0	0	0	0	0	0	0	0	2	0	129
0	178	0	0	2	0	0	2	0	0	1	0	183
0	157	0	0	4	0	0	1	0	0	0	0	162
0	183	0	0	2	0	0	3	0	0	1	0	189
0	160	0	0	4	0	0	1	0	0	1	0	166
0	249	0	0	3	0	0	1	0	0	2	0	255
0	1470	0	0	20	0	0	10	0	0	10	0	1510

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: I-14 OFF RAMP

EAST-WEST STREET: RANCHO VISTA

TIME: 07:00AM-08:00AM DATE: 09-07-22

NORTH LEG

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

	1st	2nd	3rd	4th	Total
Rt					
Thru	242	403	300	203	1148
Lt					

Total	1st	2nd	3rd	4th	
					Lt
738	143	283	129	183	Thru
					Rt

	Lt	Thru	Rt
1st	72		21
2nd	63		33
3rd	94		35
4th	88		48
Total	317		137

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: I-14 OFF RAMP

EAST-WEST STREET: RANCHO VISTA

TIME: 08:00AM-09:00AM DATE: 09-07-22

NORTH LEG

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

	1st	2nd	3rd	4th	Total
Rt					
Thru	93	133	138	266	630
Lt					

Total	1st	2nd	3rd	4th	
					Lt
772	162	189	166	255	Thru
					Rt

	Lt	Thru	Rt
1st	99		51
2nd	83		47
3rd	77		23
4th	73		25
Total	332		146

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: I-14 OFF RAMP
EAST-WEST STREET: RANCHO VISTA
JURISDICTION: PALMDALE

DATE: 09-07-22

PEAK HOUR: 04:45PM

NORTH LEG

TOTAL: 0

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

EAST LEG TOTAL: 1,191

	1st	2nd	3rd	4th	Total
Rt					
Thru	277	300	299	315	1191
Lt					

Total	1st	2nd	3rd	4th	
					Lt
1278	314	382	315	267	Thru
					Rt

WEST LEG TOTAL: 1,278

PEAK HOUR FACTORS

NORTH LEG =
SOUTH LEG = 0.92
EAST LEG = 0.95
WEST LEG = 0.84

ALL LEGS = 0.92

	Lt	Thru	Rt
1st	85		20
2nd	90		20
3rd	83		16
4th	102		16
Total	360		72

TOTAL: 432

SOUTH LEG

HOUR TOTAL: 2,901

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : I-14 OFF RAMP

EAST-WEST STREET : RANCHO VISTA

PALMDALE

09-07-22

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						
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
			6		5	SOUTH LEG 6		2			3	
11	0	55	0	0	2	1	0	0	2	0	0	71
20	0	71	2	0	0	0	0	0	0	0	0	93
14	0	83	0	0	0	0	0	0	2	0	0	99
17	0	85	1	0	0	2	0	0	0	0	0	105
18	0	87	2	0	2	0	0	1	0	0	0	110
15	0	83	1	0	0	0	0	0	0	0	0	99
15	0	100	0	0	1	1	0	0	0	0	1	118
10	0	88	0	0	0	0	0	0	1	0	1	100
120	0	652	6	0	5	4	0	1	5	0	2	795
				9		EAST LEG				9		
0	273	0	0	2	0	0	1	0	0	0	0	276
0	243	0	0	1	0	0	0	0	0	1	0	245
0	321	0	0	2	0	0	1	0	0	1	0	325
0	273	0	0	3	0	0	0	0	0	1	0	277
0	299	0	0	1	0	0	0	0	0	0	0	300
0	298	0	0	1	0	0	0	0	0	0	0	299
0	312	0	0	1	0	0	0	0	0	2	0	315
0	320	0	0	2	0	0	0	0	0	0	0	322
0	2339	0	0	13	0	0	2	0	0	5	0	2359
				6		WEST LEG 4				6		
0	240	0	0	1	0	0	1	0	0	3	0	245
0	313	0	0	2	0	0	0	0	0	1	0	316
0	252	0	0	1	0	0	2	0	0	0	0	255
0	314	0	0	0	0	0	0	0	0	0	0	314
0	377	0	0	3	0	0	1	0	0	1	0	382
0	313	0	0	1	0	0	1	0	0	0	0	315
0	266	0	0	0	0	0	0	0	0	1	0	267
0	222	0	0	1	0	0	0	0	0	0	0	223
0	2297	0	0	9	0	0	5	0	0	6	0	2317

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: I-14 OFF RAMP

EAST-WEST STREET: RANCHO VISTA

TIME: 04:00PM-05:00PM DATE: 09-07-22

NORTH LEG

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

	1st	2nd	3rd	4th	Total
Rt					
Thru	276	245	325	277	1123
Lt					

Total	1st	2nd	3rd	4th	
					Lt
1130	245	316	255	314	Thru
					Rt

	Lt	Thru	Rt
1st	57		14
2nd	71		22
3rd	83		16
4th	85		20
Total	296		72

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: I-14 OFF RAMP

EAST-WEST STREET: RANCHO VISTA

TIME: 05:00PM-06:00PM DATE: 09-07-22

NORTH LEG

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

Rt					
Thru	300	299	315	322	1236
Lt					
	1st	2nd	3rd	4th	Total

Total	1st	2nd	3rd	4th	
					Lt
1187	382	315	267	223	Thru
					Rt

	Lt	Thru	Rt
1st	90		20
2nd	83		16
3rd	102		16
4th	89		11
Total	364		63

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: 10TH ST (W)
EAST-WEST STREET: RANCHO VISTA
JURISDICTION: PALMDALE

DATE: 09-07-22

PEAK HOUR: 07:00AM

NORTH LEG

TOTAL: 886

Rt	Thru	Lt	
182	565	139	Total
36	111	30	1st
63	182	49	2nd
42	148	22	3rd
41	124	38	4th

EAST LEG TOTAL: 1,557

	1st	2nd	3rd	4th	Total
Rt	86	166	139	97	488
Thru	233	322	240	197	992
Lt	14	21	24	18	77

WEST LEG TOTAL: 1,041

Total	1st	2nd	3rd	4th	
142	19	33	52	38	Lt
606	136	219	99	152	Thru
293	66	102	73	52	Rt

SOUTH LEG

TOTAL: 879

	Lt	Thru	Rt
1st	68	101	22
2nd	84	107	59
3rd	66	128	26
4th	102	94	22
Total	320	430	129

PEAK HOUR FACTORS

NORTH LEG = 0.75
SOUTH LEG = 0.88
EAST LEG = 0.76
WEST LEG = 0.74

ALL LEGS = 0.78

HOUR TOTAL: 4,363

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : 10TH ST (W)
EAST-WEST STREET : RANCHO VISTA

PALMDALE
09-07-22

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
				17	24	NORTH LEG		3			18	
							6					
36	108	29	0	2	1	0	1	0	0	0	0	177
63	179	46	0	3	2	0	0	0	0	0	1	294
42	145	19	0	2	2	0	1	0	0	0	1	212
41	119	29	0	4	4	0	1	1	0	0	4	203
44	88	36	0	2	3	1	1	0	0	5	3	183
51	76	30	0	5	3	1	0	0	0	1	0	167
30	105	30	0	3	5	0	3	0	0	0	1	177
51	206	45	0	0	2	0	2	0	0	0	1	307
358	1026	264	0	21	22	2	9	1	0	6	11	1720
				2	18	SOUTH LEG	15	4		12	9	
22	99	68	0	1	0	0	0	0	0	1	0	191
59	104	83	0	1	0	0	1	1	0	1	0	250
26	121	63	0	4	0	0	2	1	0	1	2	220
21	88	101	1	3	0	0	2	0	0	1	1	218
33	60	83	1	1	3	0	3	0	1	4	0	189
52	89	76	0	2	1	0	3	2	0	1	0	226
39	71	46	0	3	1	0	2	2	0	1	1	166
48	151	87	2	6	1	0	2	1	0	0	0	298
300	783	607	4	21	6	0	15	7	1	10	4	1758
				9	12	EAST LEG	6			9		
84	233	14	2	0	0	0	0	0	0	0	0	333
164	315	21	2	4	0	0	1	0	0	2	0	509
137	234	24	2	3	0	0	2	0	0	1	0	403
97	196	18	0	1	0	0	0	0	0	0	0	312
44	95	29	2	2	0	0	0	0	1	0	0	173
74	134	7	1	1	0	0	0	1	0	0	1	219
80	108	24	2	1	1	0	1	0	0	1	0	218
97	189	41	2	2	2	0	0	0	2	0	0	335
777	1504	178	13	14	3	0	4	1	3	4	1	2502
				5	8	8	WEST LEG	6	2	3	12	12
66	136	19	0	0	0	0	0	0	0	0	0	221
101	211	30	0	5	1	0	1	0	1	2	2	354
72	98	48	1	0	2	0	0	1	0	1	1	224
50	149	35	2	0	2	0	2	0	0	1	1	242
66	68	42	0	6	0	0	2	0	0	0	2	186
45	115	60	1	1	0	0	3	0	0	1	0	226
63	88	36	1	3	1	0	1	0	0	1	1	195
56	163	69	0	2	1	0	2	0	0	2	0	295
519	1028	339	5	17	7	0	11	1	1	8	7	1943

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 10TH ST (W)

EAST-WEST STREET: RANCHO VISTA

TIME: 07:00AM-08:00AM DATE: 09-07-22

NORTH LEG

Rt	Thru	Lt	
182	565	139	Total
36	111	30	1st
63	182	49	2nd
42	148	22	3rd
41	124	38	4th

	1st	2nd	3rd	4th	Total
Rt	86	166	139	97	488
Thru	233	322	240	197	992
Lt	14	21	24	18	77

Total	1st	2nd	3rd	4th	
142	19	33	52	38	Lt
606	136	219	99	152	Thru
293	66	102	73	52	Rt

	Lt	Thru	Rt
1st	68	101	22
2nd	84	107	59
3rd	66	128	26
4th	102	94	22
Total	320	430	129

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 10TH ST (W)

EAST-WEST STREET: RANCHO VISTA

TIME: 08:00AM-09:00AM DATE: 09-07-22

NORTH LEG

Rt	Thru	Lt	
178	497	159	Total
45	96	42	1st
52	82	33	2nd
30	111	36	3rd
51	208	48	4th

	1st	2nd	3rd	4th	Total
Rt	47	75	82	101	305
Thru	97	135	111	191	534
Lt	29	9	25	43	106

Total	1st	2nd	3rd	4th	
212	44	60	38	70	Lt
458	76	120	93	169	Thru
232	66	46	64	56	Rt

	Lt	Thru	Rt
1st	86	68	35
2nd	79	95	52
3rd	50	77	39
4th	89	159	50
Total	304	399	176

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: 10TH ST (W)
EAST-WEST STREET: RANCHO VISTA
JURISDICTION: PALMDALE

DATE: 09-07-22

PEAK HOUR: 05:00PM

NORTH LEG

TOTAL: 1,777

Rt	Thru	Lt	
278	1057	442	Total
60	230	147	1st
53	303	100	2nd
68	265	103	3rd
97	259	92	4th

EAST LEG TOTAL: 1,598

	1st	2nd	3rd	4th	Total
Rt	207	184	171	159	721
Thru	169	167	212	197	745
Lt	28	27	24	53	132

WEST LEG TOTAL: 1,284

Total	1st	2nd	3rd	4th	
426	106	69	133	118	Lt
633	185	205	125	118	Thru
225	52	55	61	57	Rt

SOUTH LEG

TOTAL: 1,724

	Lt	Thru	Rt
1st	162	144	122
2nd	191	205	74
3rd	189	161	91
4th	119	233	33
Total	661	743	320

PEAK HOUR FACTORS

NORTH LEG = 0.97
SOUTH LEG = 0.92
EAST LEG = 0.98
WEST LEG = 0.94

ALL LEGS = 0.98

HOUR TOTAL: 6,383

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : 10TH ST (W)
EAST-WEST STREET : RANCHO VISTA

PALMDALE
09-07-22

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							
85	255	46	0	3	2	0	1	0	0	5	2	399
89	259	116	0	2	2	0	0	0	0	1	0	469
25	185	117	1	1	2	0	0	0	0	0	0	331
56	162	82	0	2	2	1	2	0	0	1	0	308
60	226	147	0	2	0	0	1	0	0	1	0	437
53	303	99	0	0	1	0	0	0	0	0	0	456
68	261	103	0	3	0	0	1	0	0	0	0	436
97	256	92	0	3	0	0	0	0	0	0	0	448
533	1907	802	1	16	9	1	5	0	0	8	2	3284
					SOUTH LEG							
90	232	113	0	2	0	0	1	0	3	1	1	443
129	285	103	0	2	0	0	0	0	0	1	1	521
58	223	109	0	3	0	0	0	0	0	0	0	393
70	102	106	0	4	0	0	0	0	0	0	1	283
122	142	162	0	2	0	0	0	0	0	0	0	428
74	204	190	0	1	0	0	0	1	0	0	0	470
91	157	188	0	3	0	0	0	1	0	1	0	441
33	229	119	0	4	0	0	0	0	0	0	0	385
667	1574	1090	0	21	0	0	1	2	3	3	3	3364
					EAST LEG							
82	189	58	1	3	0	0	1	0	0	0	0	334
166	111	24	0	1	0	0	0	0	0	1	0	303
163	190	60	1	1	0	0	1	0	1	0	0	417
162	161	37	1	2	0	0	0	0	0	1	0	364
206	167	27	1	2	0	0	0	1	0	0	0	404
184	166	26	0	1	0	0	0	0	0	0	1	378
167	212	24	2	0	0	0	0	0	2	0	0	407
157	196	53	1	1	0	0	0	0	1	0	0	409
1287	1392	309	7	11	0	0	2	1	4	2	1	3016
					WEST LEG							
66	163	68	0	1	0	0	0	0	0	0	0	298
47	134	47	0	0	0	0	1	0	0	0	0	229
40	105	94	0	0	0	0	0	0	0	0	0	239
34	196	82	1	0	0	0	0	0	0	0	0	313
52	185	104	0	0	0	0	0	1	0	0	1	343
55	203	69	0	2	0	0	0	0	0	0	0	329
60	124	131	0	0	1	0	0	1	1	1	0	319
57	117	117	0	1	0	0	0	0	0	0	1	293
411	1227	712	1	4	1	0	1	2	1	1	2	2363

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 10TH ST (W)

EAST-WEST STREET: RANCHO VISTA

TIME: 04:00PM-05:00PM DATE: 09-07-22

NORTH LEG

Rt	Thru	Lt	
257	879	371	Total
85	264	50	1st
89	262	118	2nd
26	186	119	3rd
57	167	84	4th

	1st	2nd	3rd	4th	Total
Rt	83	166	165	163	577
Thru	193	113	192	164	662
Lt	58	24	60	37	179

Total	1st	2nd	3rd	4th	
291	68	47	94	82	Lt
600	164	135	105	196	Thru
188	66	47	40	35	Rt

	Lt	Thru	Rt
1st	114	236	93
2nd	104	288	129
3rd	109	226	58
4th	107	106	70
Total	434	856	350

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 10TH ST (W)

EAST-WEST STREET: RANCHO VISTA

TIME: 05:00PM-06:00PM DATE: 09-07-22

NORTH LEG

Rt	Thru	Lt	
278	1057	442	Total
60	230	147	1st
53	303	100	2nd
68	265	103	3rd
97	259	92	4th

	1st	2nd	3rd	4th	Total
Rt	207	184	171	159	721
Thru	169	167	212	197	745
Lt	28	27	24	53	132

Total	1st	2nd	3rd	4th	
426	106	69	133	118	Lt
633	185	205	125	118	Thru
225	52	55	61	57	Rt

	Lt	Thru	Rt
1st	162	144	122
2nd	191	205	74
3rd	189	161	91
4th	119	233	33
Total	661	743	320

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: 10TH ST (W)
EAST-WEST STREET: I-14 OFF RAMP
JURISDICTION: PALMDALE

DATE: 09-07-22

PEAK HOUR: 07:15AM

NORTH LEG

TOTAL: 554

Rt	Thru	Lt	
	554		Total
	162		1st
	169		2nd
	138		3rd
	85		4th

EAST LEG TOTAL: 0

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

WEST LEG TOTAL: 711

Total	1st	2nd	3rd	4th	
283	42	50	97	94	Lt
					Thru
428	122	89	113	104	Rt

SOUTH LEG

TOTAL: 1,001

Lt	Thru	Rt	
	301		1st
	297		2nd
	237		3rd
	166		4th
	1001		Total

PEAK HOUR FACTORS

NORTH LEG = 0.82
SOUTH LEG = 0.83
EAST LEG =
WEST LEG = 0.85

ALL LEGS = 0.90

HOUR TOTAL: 2,266

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : 10TH ST (W)
EAST-WEST STREET : I-14 OFF RAMP
BEGINNING TIME : 07:00AM

PALMDALE
09-07-22

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						
				18			6			18		
0	112	0	0	3	0	0	1	0	0	0	0	116
0	157	0	0	5	0	0	0	0	0	0	0	162
0	167	0	0	1	0	0	0	0	0	1	0	169
0	130	0	0	5	0	0	1	0	0	2	0	138
0	79	0	0	1	0	0	2	0	0	3	0	85
0	116	0	0	3	0	0	0	0	0	0	0	119
0	102	0	0	4	0	0	1	0	0	1	0	108
0	198	0	0	1	0	0	0	0	0	0	0	199
0	1061	0	0	23	0	0	5	0	0	7	0	1096
						SOUTH LEG						
				30			18			42		
0	196	0	0	3	0	0	0	0	0	1	0	200
0	293	0	0	4	0	0	1	0	0	3	0	301
0	284	0	0	8	0	0	3	0	0	2	0	297
0	228	0	0	5	0	0	2	0	0	2	0	237
0	153	0	0	3	0	0	3	0	0	7	0	166
0	234	0	0	4	0	0	3	0	0	1	0	242
0	200	0	0	6	0	0	2	0	0	2	0	210
0	286	0	0	9	0	0	2	0	0	2	0	299
0	1874	0	0	42	0	0	16	0	0	20	0	1952
						EAST 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
						WEST LEG						
			14		2				24			
62	0	25	0	0	0	40	0	0	0	0	0	87
121	0	42	0	0	0	0	0	0	1	0	0	164
85	0	48	3	0	2	1	0	0	0	0	0	139
107	0	97	3	0	0	1	0	0	2	0	0	210
96	0	94	3	0	0	0	0	0	5	0	0	198
46	0	68	5	0	0	1	0	0	1	0	1	122
60	0	42	4	0	0	2	0	1	0	0	0	109
94	0	43	1	0	1	2	0	0	1	0	0	142
671	0	459	19	0	3	7	0	1	10	0	1	1171

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 10TH ST (W)

EAST-WEST STREET: I-14 OFF RAMP

TIME: 07:00AM-08:00AM DATE: 09-07-22

NORTH LEG

	585		Total
	116		1st
	162		2nd
	169		3rd
	138		4th
Rt	Thru	Lt	

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

Total	1st	2nd	3rd	4th	
214	25	42	50	97	Lt
					Thru
386	62	122	89	113	Rt

	Lt	Thru	Rt
1st		200	
2nd		301	
3rd		297	
4th		237	
Total		1035	

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 10TH ST (W)

EAST-WEST STREET: I-14 OFF RAMP

TIME: 08:00AM-09:00AM DATE: 09-07-22

NORTH LEG

	511		Total
	85		1st
	119		2nd
	108		3rd
	199		4th
Rt	Thru	Lt	

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

Total	1st	2nd	3rd	4th	
250	94	69	43	44	Lt
					Thru
321	104	53	66	98	Rt

	Lt	Thru	Rt
1st		166	
2nd		242	
3rd		210	
4th		299	
Total		917	

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: 10TH ST (W)
EAST-WEST STREET: I-14 OFF RAMP
JURISDICTION: PALMDALE

DATE: 09-07-22

PEAK HOUR: 05:00PM

NORTH LEG

TOTAL: 986

	986		Total
	172		1st
	257		2nd
	303		3rd
	254		4th
Rt	Thru	Lt	

EAST LEG TOTAL: 0

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

Total	1st	2nd	3rd	4th	
561	190	113	130	128	Lt
					Thru
827	254	210	157	206	Rt

WEST LEG TOTAL: 1,388

PEAK HOUR FACTORS

NORTH LEG = 0.81
SOUTH LEG = 0.90
EAST LEG =
WEST LEG = 0.78

ALL LEGS = 0.96

	Lt	Thru	Rt
1st		438	
2nd		423	
3rd		425	
4th		495	
Total		1781	

SOUTH LEG

TOTAL: 1,781

HOUR TOTAL: 4,155

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : 10TH ST (W)
EAST-WEST STREET : I-14 OFF RAMP
BEGINNING TIME : 04:00PM

PALMDALE
09-07-22

AUTOS			LARGE 2 AXLE			3 AXLE			4(+) AXLE			TOTALS
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	
NORTH LEG												
				8								
0	216	0	0	3	0	0	0	0	0	2	0	221
0	211	0	0	2	0	0	0	0	0	1	0	214
0	154	0	0	4	0	0	0	0	0	0	0	158
0	127	0	0	3	0	0	1	0	0	1	0	132
0	171	0	0	1	0	0	0	0	0	0	0	172
0	256	0	0	1	0	0	0	0	0	0	0	257
0	301	0	0	2	0	0	0	0	0	0	0	303
0	253	0	0	1	0	0	0	0	0	0	0	254
0	1689	0	0	17	0	0	1	0	0	4	0	1711
SOUTH LEG												
				27			4			15		
0	437	0	0	3	0	0	1	0	0	1	0	442
0	497	0	0	2	0	0	0	0	0	1	0	500
0	451	0	0	4	0	0	0	0	0	1	0	456
0	355	0	0	5	0	0	0	0	0	0	0	360
0	433	0	0	3	0	0	1	0	0	1	0	438
0	419	0	0	4	0	0	0	0	0	0	0	423
0	415	0	0	6	0	0	1	0	0	3	0	425
0	489	0	0	5	0	0	0	0	0	1	0	495
0	3496	0	0	32	0	0	3	0	0	8	0	3539
EAST 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
WEST LEG												
			6		3	4			3			
202	0	122	2	0	0	1	0	0	5	0	1	333
264	0	183	2	0	0	0	0	0	0	0	0	449
193	0	198	0	0	0	0	0	0	0	0	0	391
196	0	124	2	0	0	2	0	0	0	0	0	324
251	0	190	1	0	0	1	0	0	1	0	0	444
210	0	113	0	0	0	0	0	0	0	0	0	323
155	0	128	1	0	2	1	0	0	0	0	0	287
204	0	128	2	0	0	0	0	0	0	0	0	334
1675	0	1186	10	0	2	5	0	0	6	0	1	2885

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 10TH ST (W)

EAST-WEST STREET: I-14 OFF RAMP

TIME: 04:00PM-05:00PM DATE: 09-07-22

NORTH LEG

	725		Total
	221		1st
	214		2nd
	158		3rd
	132		4th
Rt	Thru	Lt	

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

Total	1st	2nd	3rd	4th	
628	123	183	198	124	Lt
					Thru
869	210	266	193	200	Rt

	Lt	Thru	Rt
1st		442	
2nd		500	
3rd		456	
4th		360	
Total		1758	

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: 10TH ST (W)

EAST-WEST STREET: I-14 OFF RAMP

TIME: 05:00PM-06:00PM DATE: 09-07-22

NORTH LEG

	986		Total
	172		1st
	257		2nd
	303		3rd
	254		4th
Rt	Thru	Lt	

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

Total	1st	2nd	3rd	4th	
561	190	113	130	128	Lt
					Thru
827	254	210	157	206	Rt

	Lt	Thru	Rt
1st		438	
2nd		423	
3rd		425	
4th		495	
Total		1781	

Prepared by NEWPORT TRAFFIC STUDIES

APPENDIX B
INTERSECTION CAPACITY WORKSHEETS

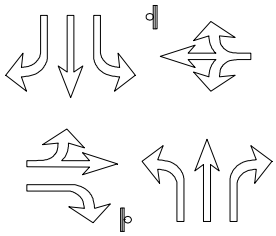
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	21-Dec-22	PTRT0000-0001	1 OF 2

E/W STREET : BLACKBIRD WAY
N/S STREET : 8TH ST E
CONDITION : AM PEAK HOUR

INTERSECTION : 1
PROJECTED GROWTH PER YEAR : 2%

CONDITION DIAGRAMS



EXISTING GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Year 2022 to 2024 Ambient Growth	Adjacent Project Trips	Opening Year 2024 Background Conditions	Project Trips	Opening Year 2024 Background + Project Conditions
	1			3		5
BLACKBIRD WAY						
EB Left	1	1	0	2	0	2
EB Thru	1	1	0	2	0	2
EB Right	18	1	0	19	0	19
WB Left	1	1	0	2	7	9
WB Thru	3	1	0	4	0	4
WB Right	21	1	0	22	0	22
8TH ST E						
NB Left	62	3	0	65	0	65
NB Thru	396	16	0	412	0	412
NB Right	19	1	0	20	0	20
SB Left	6	1	0	7	0	7
SB Thru	39	2	0	41	0	41
SB Right	4	1	0	5	0	5
TOTALS	**571**	**30**	**0**	**601**	**7**	**608**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	21-Dec-22	PTRT0000-0001	2 OF 2

E/W STREET : BLACKBIRD WAY
CONDITION : AM PEAK HOUR
N/S STREET : 8TH ST E
PHF : 0.84

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
1	8	1	1	0	0	0	0	0	0	1	0
1	10	3	0	0	0	0	0	0	0	0	0
0	9	2	0	0	0	0	0	0	0	0	0
0	6	0	0	0	0	0	0	0	0	1	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
8	89	21	0	0	0	0	0	0	0	0	1
2	125	15	0	0	0	0	0	1	0	0	0
3	88	9	0	0	0	0	0	0	0	0	0
6	94	9	0	0	0	0	0	0	0	0	1

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
8	0	0	1	1	0	0	0	0	0	0	0
4	2	1	0	0	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	1	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
2	0	1	1	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0
2	1	0	1	0	0	0	0	0	0	0	0
1	0	0	0	0	0	1	0	0	2	0	0

	Truck Volumes	Auto Volumes	Vehicle Totals	PCE Totals	Balanced PCE Totals
BLACKBIRD WAY					
EBL	0	1	**1**	**1**	**1**
EBTH	0	1	**1**	**1**	**1**
EBR	5	7	**12**	**18**	**18**
WBL	0	1	**1**	**1**	**1**
WBTH	1	3	**4**	**3**	**3**
WBR	2	18	**20**	**21**	**21**
8TH ST E					
NBL	3	54	**57**	**62**	**62**
NBTH	0	396	**396**	**396**	**396**
NBR	0	19	**19**	**19**	**19**
SBL	0	6	**6**	**6**	**6**
SBTH	2	33	**35**	**39**	**39**
SBR	1	2	**3**	**4**	**4**

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	18	1	3	21	62	396	19	6	39	4
Future Vol, veh/h	1	1	18	1	3	21	62	396	19	6	39	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	-	250	-	0	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	1	21	1	4	25	74	471	23	7	46	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	708	705	-	657	684	471	51	0	0	494	0	0
Stage 1	63	63	-	619	619	-	-	-	-	-	-	-
Stage 2	645	642	-	38	65	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.5	-	7.3	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	-	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	339	363	0	367	374	597	1568	-	-	1080	-	-
Stage 1	946	846	0	480	483	-	-	-	-	-	-	-
Stage 2	464	472	0	978	845	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	309	344	-	351	354	597	1568	-	-	1080	-	-
Mov Cap-2 Maneuver	309	344	-	351	354	-	-	-	-	-	-	-
Stage 1	902	841	-	457	460	-	-	-	-	-	-	-
Stage 2	420	450	-	970	840	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.1	12.1	1	1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1568	-	-	326	-	538	1080	-	-
HCM Lane V/C Ratio	0.047	-	-	0.007	-	0.055	0.007	-	-
HCM Control Delay (s)	7.4	-	-	16.1	0	12.1	8.4	-	-
HCM Lane LOS	A	-	-	C	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-	0.2	0	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	2	19	2	4	22	65	412	20	7	41	5
Future Vol, veh/h	2	2	19	2	4	22	65	412	20	7	41	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	-	250	-	0	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	2	2	23	2	5	26	77	490	24	8	49	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	740	736	-	686	715	490	55	0	0	514	0	0
Stage 1	68	68	-	644	644	-	-	-	-	-	-	-
Stage 2	672	668	-	42	71	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.5	-	7.3	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	-	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	322	349	0	351	359	582	1563	-	-	1062	-	-
Stage 1	940	842	0	465	471	-	-	-	-	-	-	-
Stage 2	449	459	0	973	840	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	291	329	-	334	339	582	1563	-	-	1062	-	-
Mov Cap-2 Maneuver	291	329	-	334	339	-	-	-	-	-	-	-
Stage 1	894	835	-	442	448	-	-	-	-	-	-	-
Stage 2	403	437	-	963	833	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.8	12.6	1	1.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1563	-	-	309	-	504	1062	-	-
HCM Lane V/C Ratio	0.05	-	-	0.015	-	0.066	0.008	-	-
HCM Control Delay (s)	7.4	-	-	16.8	0	12.6	8.4	-	-
HCM Lane LOS	A	-	-	C	A	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-	0.2	0	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	2	19	9	4	22	65	412	20	7	41	5
Future Vol, veh/h	2	2	19	9	4	22	65	412	20	7	41	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	-	250	-	0	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	2	2	23	11	5	26	77	490	24	8	49	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	740	736	-	686	715	490	55	0	0	514	0	0
Stage 1	68	68	-	644	644	-	-	-	-	-	-	-
Stage 2	672	668	-	42	71	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.5	-	7.3	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	-	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	322	349	0	351	359	582	1563	-	-	1062	-	-
Stage 1	940	842	0	465	471	-	-	-	-	-	-	-
Stage 2	449	459	0	973	840	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	291	329	-	334	339	582	1563	-	-	1062	-	-
Mov Cap-2 Maneuver	291	329	-	334	339	-	-	-	-	-	-	-
Stage 1	894	835	-	442	448	-	-	-	-	-	-	-
Stage 2	403	437	-	963	833	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.8	13.7	1	1.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1563	-	-	309	-	457	1062	-	-
HCM Lane V/C Ratio	0.05	-	-	0.015	-	0.091	0.008	-	-
HCM Control Delay (s)	7.4	-	-	16.8	0	13.7	8.4	-	-
HCM Lane LOS	A	-	-	C	A	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-	0.3	0	-	-

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	21-Dec-22	PTRT0000-0001	1 OF 2

E/W STREET : BLACKBIRD WAY
N/S STREET : 8TH ST E
CONDITION : PM PEAK HOUR

INTERSECTION : 1
PROJECTED GROWTH PER YEAR : 2%

TURN MOVEMENTS

Condition	Existing Condition Traffic	Year 2022 to 2024 Ambient Growth	Adjacent Project Trips	Opening Year 2024 Background Conditions	Project Trips	Opening Year 2024 Background + Project Conditions
	2			6		8
BLACKBIRD WAY						
EB Left	1	1	0	2	0	2
EB Thru	1	1	0	2	0	2
EB Right	159	7	0	166	0	166
WB Left	6	1	0	7	45	52
WB Thru	1	1	0	2	0	2
WB Right	2	1	0	3	0	3
8TH ST E						
NB Left	9	1	0	10	0	10
NB Thru	8	1	0	9	0	9
NB Right	5	1	0	6	0	6
SB Left	27	2	0	29	0	29
SB Thru	533	22	0	555	0	555
SB Right	3	1	0	4	0	4
TOTALS	**755**	**40**	**0**	**795**	**45**	**840**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	21-Dec-22	PTRT0000-0001	2 OF 2

E/W STREET : BLACKBIRD WAY
CONDITION : PM PEAK HOUR
N/S STREET : 8TH ST E
PHF : 0.91

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	120	5	0	0	0	0	0	0	0	0	0
0	140	10	0	0	0	0	0	0	0	0	0
0	151	7	0	0	0	0	0	0	0	0	1
3	122	2	0	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
2	1	2	0	0	0	0	0	0	0	0	0
1	4	3	0	0	0	0	0	0	0	0	0
1	0	1	0	0	0	0	0	0	0	0	0
1	3	3	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	0	0	0	0	0	0	0	0	0
1	1	2	0	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
51	0	0	0	0	0	0	0	0	0	0	0
19	1	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0	0	0

	Truck Volumes	Auto Volumes	Vehicle Totals	PCE Totals	Balanced PCE Totals
BLACKBIRD WAY					
EBL	0	0	**0**	**0**	**1**
EBTH	0	1	**1**	**1**	**1**
EBR	0	159	**159**	**159**	**159**
WBL	0	6	**6**	**6**	**6**
WBTH	0	1	**1**	**1**	**1**
WBR	0	2	**2**	**2**	**2**
8TH ST E					
NBL	0	9	**9**	**9**	**9**
NBTH	0	8	**8**	**8**	**8**
NBR	0	5	**5**	**5**	**5**
SBL	1	24	**25**	**27**	**27**
SBTH	0	533	**533**	**533**	**533**
SBR	0	3	**3**	**3**	**3**

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	159	6	1	2	9	8	5	27	533	3
Future Vol, veh/h	1	1	159	6	1	2	9	8	5	27	533	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	-	250	-	0	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	1	1	175	7	1	2	10	9	5	30	586	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	681	682	-	383	678	9	589	0	0	14	0	0
Stage 1	648	648	-	29	29	-	-	-	-	-	-	-
Stage 2	33	34	-	354	649	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.5	-	7.3	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	-	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	353	375	0	567	377	1079	996	-	-	1617	-	-
Stage 1	430	469	0	993	875	-	-	-	-	-	-	-
Stage 2	988	871	0	642	469	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	344	364	-	553	366	1079	996	-	-	1617	-	-
Mov Cap-2 Maneuver	344	364	-	553	366	-	-	-	-	-	-	-
Stage 1	426	460	-	983	866	-	-	-	-	-	-	-
Stage 2	975	862	-	629	460	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.2	11.3	3.5	0.3
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	996	-	-	354	-	583	1617	-	-
HCM Lane V/C Ratio	0.01	-	-	0.006	-	0.017	0.018	-	-
HCM Control Delay (s)	8.7	-	-	15.2	0	11.3	7.3	-	-
HCM Lane LOS	A	-	-	C	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	2	166	7	2	3	10	9	6	29	555	4
Future Vol, veh/h	2	2	166	7	2	3	10	9	6	29	555	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	-	250	-	0	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	2	2	182	8	2	3	11	10	7	32	610	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	714	715	-	402	710	10	614	0	0	17	0	0
Stage 1	676	676	-	32	32	-	-	-	-	-	-	-
Stage 2	38	39	-	370	678	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.5	-	7.3	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	-	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	335	359	0	550	361	1077	975	-	-	1613	-	-
Stage 1	414	456	0	990	872	-	-	-	-	-	-	-
Stage 2	982	866	0	628	455	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	325	348	-	535	350	1077	975	-	-	1613	-	-
Mov Cap-2 Maneuver	325	348	-	535	350	-	-	-	-	-	-	-
Stage 1	409	447	-	979	862	-	-	-	-	-	-	-
Stage 2	965	856	-	613	446	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.9	11.6	3.5	0.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	975	-	-	336	-	556	1613	-	-
HCM Lane V/C Ratio	0.011	-	-	0.013	-	0.024	0.02	-	-
HCM Control Delay (s)	8.7	-	-	15.9	0	11.6	7.3	-	-
HCM Lane LOS	A	-	-	C	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	2	166	52	2	3	10	9	6	29	555	4
Future Vol, veh/h	2	2	166	52	2	3	10	9	6	29	555	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Free	-	-	None	-	-	None	-	-	None
Storage Length	-	-	100	-	-	-	250	-	0	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	2	2	182	57	2	3	11	10	7	32	610	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	714	715	-	402	710	10	614	0	0	17	0	0
Stage 1	676	676	-	32	32	-	-	-	-	-	-	-
Stage 2	38	39	-	370	678	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.5	-	7.3	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	-	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	335	359	0	550	361	1077	975	-	-	1613	-	-
Stage 1	414	456	0	990	872	-	-	-	-	-	-	-
Stage 2	982	866	0	628	455	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	325	348	-	535	350	1077	975	-	-	1613	-	-
Mov Cap-2 Maneuver	325	348	-	535	350	-	-	-	-	-	-	-
Stage 1	409	447	-	979	862	-	-	-	-	-	-	-
Stage 2	965	856	-	613	446	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.9	12.6	3.5	0.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	975	-	-	336	-	539	1613	-	-
HCM Lane V/C Ratio	0.011	-	-	0.013	-	0.116	0.02	-	-
HCM Control Delay (s)	8.7	-	-	15.9	0	12.6	7.3	-	-
HCM Lane LOS	A	-	-	C	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0.4	0.1	-	-

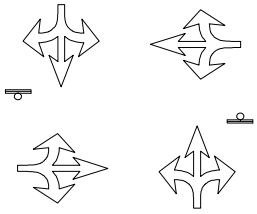
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	21-Dec-22	PTRT0000-0001	1 OF 2

E/W STREET : BLACKBIRD WAY
N/S STREET : 10TH ST E
CONDITION : AM PEAK HOUR

INTERSECTION : 2
PROJECTED GROWTH PER YEAR : 2%

CONDITION DIAGRAMS



EXISTING GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Year 2022 to 2024 Ambient Growth	Adjacent Project Trips	Opening Year 2024 Background Conditions	Project Trips	Opening Year 2024 Background + Project Conditions
	1			3		5
BLACKBIRD WAY						
EB Left	0	0	0	0	0	0
EB Thru	5	1	0	6	0	6
EB Right	5	1	0	6	2	8
WB Left	0	0	0	0	0	0
WB Thru	25	1	0	26	0	26
WB Right	0	0	0	0	0	0
10TH ST E						
NB Left	8	1	0	9	12	21
NB Thru	0	0	0	0	0	0
NB Right	1	1	0	2	0	2
SB Left	0	0	0	0	0	0
SB Thru	0	0	0	0	0	0
SB Right	0	0	0	0	0	0
TOTALS	**44**	**5**	**0**	**49**	**14**	**63**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	21-Dec-22	PTRT0000-0001	2 OF 2

E/W STREET : BLACKBIRD WAY
CONDITION : AM PEAK HOUR
N/S STREET : 10TH ST E
PHF : 0.82

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	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											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	1	0	0	0	0	0	0	0	0	0
1	0	2	0	0	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	0	0	0	0
0	0	4	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	4	0	0	0	0	0	0	0	0	1	0
0	5	0	0	0	0	0	0	0	0	1	0
0	5	0	0	0	0	0	0	0	0	1	0
0	2	0	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	1	0
0	1	0	0	0	0	0	0	0	0	0	0
4	1	0	0	0	0	0	0	0	0	0	0

	Truck Volumes	Auto Volumes	Vehicle Totals	PCE Totals	Balanced PCE Totals
BLACKBIRD WAY					
EBL	0	0	**0**	**0**	**0**
EBTH	1	2	**3**	**5**	**5**
EBR	0	5	**5**	**5**	**5**
WBL	0	0	**0**	**0**	**0**
WBTH	3	16	**19**	**25**	**25**
WBR	0	0	**0**	**0**	**0**
10TH ST E					
NBL	0	8	**8**	**8**	**8**
NBTH	0	0	**0**	**0**	**0**
NBR	0	1	**1**	**1**	**1**
SBL	0	0	**0**	**0**	**0**
SBTH	0	0	**0**	**0**	**0**
SBR	0	0	**0**	**0**	**0**

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	5	5	0	25	0	8	0	1	0	0	0
Future Vol, veh/h	0	5	5	0	25	0	8	0	1	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	6	6	0	30	0	10	0	1	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	30	0	0	12	0	0	39	39	9	40	42	30
Stage 1	-	-	-	-	-	-	9	9	-	30	30	-
Stage 2	-	-	-	-	-	-	30	30	-	10	12	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1596	-	-	1620	-	-	971	857	1079	969	854	1050
Stage 1	-	-	-	-	-	-	1017	892	-	992	874	-
Stage 2	-	-	-	-	-	-	992	874	-	1016	890	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1596	-	-	1620	-	-	971	857	1079	968	854	1050
Mov Cap-2 Maneuver	-	-	-	-	-	-	971	857	-	968	854	-
Stage 1	-	-	-	-	-	-	1017	892	-	992	874	-
Stage 2	-	-	-	-	-	-	992	874	-	1015	890	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	982	1596	-	-	1620	-	-	-
HCM Lane V/C Ratio	0.011	-	-	-	-	-	-	-
HCM Control Delay (s)	8.7	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	6	6	0	26	0	9	0	2	0	0	0
Future Vol, veh/h	0	6	6	0	26	0	9	0	2	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	7	7	0	32	0	11	0	2	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	32	0	0	14	0	0	43	43	11	44	46	32
Stage 1	-	-	-	-	-	-	11	11	-	32	32	-
Stage 2	-	-	-	-	-	-	32	32	-	12	14	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1593	-	-	1617	-	-	965	853	1076	963	850	1048
Stage 1	-	-	-	-	-	-	1015	890	-	990	872	-
Stage 2	-	-	-	-	-	-	990	872	-	1014	888	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1593	-	-	1617	-	-	965	853	1076	961	850	1048
Mov Cap-2 Maneuver	-	-	-	-	-	-	965	853	-	961	850	-
Stage 1	-	-	-	-	-	-	1015	890	-	990	872	-
Stage 2	-	-	-	-	-	-	990	872	-	1012	888	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	983	1593	-	-	1617	-	-	-
HCM Lane V/C Ratio	0.014	-	-	-	-	-	-	-
HCM Control Delay (s)	8.7	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	6	8	0	26	0	21	0	2	0	0	0
Future Vol, veh/h	0	6	8	0	26	0	21	0	2	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	7	10	0	32	0	26	0	2	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	32	0	0	17	0	0	44	44	12	45	49	32
Stage 1	-	-	-	-	-	-	12	12	-	32	32	-
Stage 2	-	-	-	-	-	-	32	32	-	13	17	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1593	-	-	1613	-	-	963	852	1074	962	846	1048
Stage 1	-	-	-	-	-	-	1014	890	-	990	872	-
Stage 2	-	-	-	-	-	-	990	872	-	1013	885	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1593	-	-	1613	-	-	963	852	1074	960	846	1048
Mov Cap-2 Maneuver	-	-	-	-	-	-	963	852	-	960	846	-
Stage 1	-	-	-	-	-	-	1014	890	-	990	872	-
Stage 2	-	-	-	-	-	-	990	872	-	1011	885	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	8.8	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	972	1593	-	-	1613	-	-	-
HCM Lane V/C Ratio	0.029	-	-	-	-	-	-	-
HCM Control Delay (s)	8.8	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	21-Dec-22	PTRT0000-0001	1 OF 2

E/W STREET : BLACKBIRD WAY
N/S STREET : 10TH ST E
CONDITION : PM PEAK HOUR

INTERSECTION : 2
PROJECTED GROWTH PER YEAR : 2%

TURN MOVEMENTS

Condition	Existing Condition Traffic	Year 2022 to 2024 Ambient Growth	Adjacent Project Trips	Opening Year 2024 Background Conditions	Project Trips	Opening Year 2024 Background + Project Conditions
	2			6		8
BLACKBIRD WAY						
EB Left	0	0	0	0	0	0
EB Thru	1	1	0	2	0	2
EB Right	159	7	0	166	11	177
WB Left	1	1	0	2	0	2
WB Thru	1	1	0	2	0	2
WB Right	0	0	0	0	0	0
10TH ST E						
NB Left	10	1	0	11	2	13
NB Thru	0	0	0	0	0	0
NB Right	3	1	0	4	0	4
SB Left	0	0	0	0	0	0
SB Thru	0	0	0	0	0	0
SB Right	0	0	0	0	0	0
TOTALS	**175**	**12**	**0**	**187**	**13**	**200**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	21-Dec-22	PTRT0000-0001	2 OF 2

E/W STREET : BLACKBIRD WAY
CONDITION : PM PEAK HOUR
N/S STREET : 10TH ST E
PHF : 0.76

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	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											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	0	5	0	0	0	0	0	0	0	0	0
0	0	2	0	0	0	0	0	0	0	0	0
0	0	3	0	0	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
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	1	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
51	0	0	0	0	0	0	0	0	0	0	0
19	1	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0	0	0

	Truck Volumes	Auto Volumes	Vehicle Totals	PCE Totals	Balanced PCE Totals
BLACKBIRD WAY					
EBL	0	0	**0**	**0**	**0**
EBTH	0	1	**1**	**1**	**1**
EBR	0	159	**159**	**159**	**159**
WBL	0	1	**1**	**1**	**1**
WBTH	0	1	**1**	**1**	**1**
WBR	0	0	**0**	**0**	**0**
10TH ST E					
NBL	0	10	**10**	**10**	**10**
NBTH	0	0	**0**	**0**	**0**
NBR	1	0	**1**	**3**	**3**
SBL	0	0	**0**	**0**	**0**
SBTH	0	0	**0**	**0**	**0**
SBR	0	0	**0**	**0**	**0**

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	1	159	1	1	0	10	0	3	0	0	0
Future Vol, veh/h	0	1	159	1	1	0	10	0	3	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	1	209	1	1	0	13	0	4	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1	0	0	210	0	0	109	109	106	111	213	1
Stage 1	-	-	-	-	-	-	106	106	-	3	3	-
Stage 2	-	-	-	-	-	-	3	3	-	108	210	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1635	-	-	1373	-	-	874	785	954	872	688	1090
Stage 1	-	-	-	-	-	-	905	811	-	1025	897	-
Stage 2	-	-	-	-	-	-	1025	897	-	902	732	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1635	-	-	1373	-	-	873	784	954	868	687	1090
Mov Cap-2 Maneuver	-	-	-	-	-	-	873	784	-	868	687	-
Stage 1	-	-	-	-	-	-	905	811	-	1025	896	-
Stage 2	-	-	-	-	-	-	1024	896	-	898	732	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.8	9.1	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	890	1635	-	-	1373	-	-	-
HCM Lane V/C Ratio	0.019	-	-	-	0.001	-	-	-
HCM Control Delay (s)	9.1	0	-	-	7.6	0	-	0
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	166	2	2	0	11	0	4	0	0	0
Future Vol, veh/h	0	2	166	2	2	0	11	0	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	3	218	3	3	0	14	0	5	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	3	0	0	221	0	0	121	121	112	124	230	3
Stage 1	-	-	-	-	-	-	112	112	-	9	9	-
Stage 2	-	-	-	-	-	-	9	9	-	115	221	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1632	-	-	1360	-	-	859	773	947	855	673	1087
Stage 1	-	-	-	-	-	-	898	807	-	1017	892	-
Stage 2	-	-	-	-	-	-	1017	892	-	895	724	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1632	-	-	1360	-	-	857	771	947	849	672	1087
Mov Cap-2 Maneuver	-	-	-	-	-	-	857	771	-	849	672	-
Stage 1	-	-	-	-	-	-	898	807	-	1017	890	-
Stage 2	-	-	-	-	-	-	1015	890	-	890	724	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.8	9.2	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	879	1632	-	-	1360	-	-	-
HCM Lane V/C Ratio	0.022	-	-	-	0.002	-	-	-
HCM Control Delay (s)	9.2	0	-	-	7.7	0	-	0
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	177	2	2	0	13	0	4	0	0	0
Future Vol, veh/h	0	2	177	2	2	0	13	0	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	76	76	76	76	76	76	76	76	76	76	76	76
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	3	233	3	3	0	17	0	5	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	3	0	0	236	0	0	129	129	120	131	245	3
Stage 1	-	-	-	-	-	-	120	120	-	9	9	-
Stage 2	-	-	-	-	-	-	9	9	-	122	236	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1632	-	-	1343	-	-	849	765	937	846	661	1087
Stage 1	-	-	-	-	-	-	889	800	-	1017	892	-
Stage 2	-	-	-	-	-	-	1017	892	-	887	713	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1632	-	-	1343	-	-	847	763	937	840	660	1087
Mov Cap-2 Maneuver	-	-	-	-	-	-	847	763	-	840	660	-
Stage 1	-	-	-	-	-	-	889	800	-	1017	890	-
Stage 2	-	-	-	-	-	-	1015	890	-	882	713	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.8	9.3	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	867	1632	-	-	1343	-	-	-
HCM Lane V/C Ratio	0.026	-	-	-	0.002	-	-	-
HCM Control Delay (s)	9.3	0	-	-	7.7	0	-	0
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-

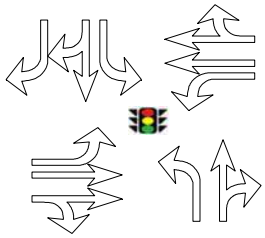
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	21-Dec-22	PTRT0000-0001	1 OF 2

E/W STREET : RANCHO VISTA BLVD
N/S STREET : 8TH ST E
CONDITION : AM PEAK HOUR

INTERSECTION : 3
PROJECTED GROWTH PER YEAR : 2%

CONDITION DIAGRAMS



EXISTING GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Year 2022 to 2024 Ambient Growth	Adjacent Project Trips	Opening Year 2024 Background Conditions	Project Trips	Opening Year 2024 Background + Project Conditions
	1			3		5
RANCHO VISTA BLVD						
EB Left	377	16	0	393	71	464
EB Thru	670	27	0	697	190	887
EB Right	69	3	0	72	0	72
WB Left	12	1	0	13	0	13
WB Thru	1,224	49	0	1,273	26	1,299
WB Right	56	3	0	59	0	59
8TH ST E						
NB Left	22	1	0	23	0	23
NB Thru	12	1	0	13	0	13
NB Right	15	1	0	16	0	16
SB Left	15	1	0	16	0	16
SB Thru	3	1	0	4	0	4
SB Right	37	2	0	39	6	45
TOTALS	**2,512**	**106**	**0**	**2,618**	**293**	**2,911**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	21-Dec-22	PTRT0000-0001	2 OF 2

E/W STREET : RANCHO VISTA BLVD
N/S STREET : 8TH ST E
CONDITION : AM PEAK HOUR
PHF : 0.92

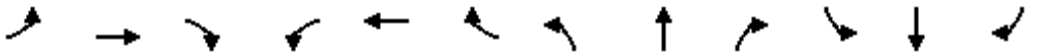
NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
12	1	1	0	0	0	0	0	0	0	0	0
10	1	0	0	0	1	0	0	0	0	0	0
6	1	0	0	0	0	0	0	1	0	0	3
9	0	1	0	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	1	3	0	0	0	0	0	0	0	0	0
6	1	6	0	0	0	0	0	0	0	0	0
4	2	5	0	0	0	0	0	0	0	0	0
5	8	8	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
11	296	2	0	0	0	0	1	0	0	4	0
10	300	4	0	4	0	0	1	0	0	2	0
4	317	0	0	2	0	0	2	0	0	2	1
31	270	3	0	2	0	0	0	0	0	3	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
20	125	131	0	3	0	0	1	1	0	0	0
24	174	89	0	1	0	0	0	0	0	5	0
13	197	103	0	3	0	0	0	0	0	2	1
12	131	49	0	2	0	0	0	0	0	2	0

	Truck Volumes	Auto Volumes	Vehicle Totals	PCE Totals	Balanced PCE Totals
RANCHO VISTA BLVD					
EBL	2	372	**374**	**377**	**377**
EBTH	19	627	**646**	**670**	**670**
EBR	0	69	**69**	**69**	**69**
WBL	1	9	**10**	**12**	**12**
WBTH	23	1183	**1206**	**1224**	**1224**
WBR	0	56	**56**	**56**	**56**
8TH ST E					
NBL	0	22	**22**	**22**	**22**
NBTH	0	12	**12**	**12**	**12**
NBR	0	15	**15**	**15**	**15**
SBL	5	2	**7**	**15**	**15**
SBTH	0	3	**3**	**3**	**3**
SBR	0	37	**37**	**37**	**37**



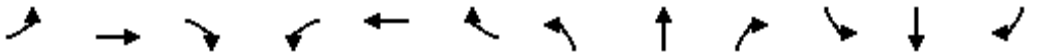
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	377	670	69	12	1224	56	22	12	15	15	3	37
Future Volume (veh/h)	377	670	69	12	1224	56	22	12	15	15	3	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	410	728	75	13	1330	61	24	13	16	16	0	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	312	1632	168	314	1145	52	345	148	182	163	0	759
Arrive On Green	0.17	0.59	0.59	0.39	0.39	0.39	0.23	0.23	0.23	0.11	0.00	0.11
Sat Flow, veh/h	1524	2782	286	689	2960	136	1524	652	803	1524	0	2712
Grp Volume(v), veh/h	410	398	405	13	682	709	24	0	29	16	0	42
Grp Sat Flow(s),veh/h/ln	1524	1520	1548	689	1520	1576	1524	0	1455	1524	0	1356
Q Serve(g_s), s	26.0	22.0	22.0	1.8	58.0	58.0	1.9	0.0	2.4	1.4	0.0	1.7
Cycle Q Clear(g_c), s	26.0	22.0	22.0	1.8	58.0	58.0	1.9	0.0	2.4	1.4	0.0	1.7
Prop In Lane	1.00		0.18	1.00		0.09	1.00		0.55	1.00		1.00
Lane Grp Cap(c), veh/h	312	892	908	314	588	609	345	0	330	163	0	759
V/C Ratio(X)	1.31	0.45	0.45	0.04	1.16	1.16	0.07	0.00	0.09	0.10	0.00	0.06
Avail Cap(c_a), veh/h	312	892	908	314	588	609	345	0	330	163	0	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.33	0.33	0.33	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.2	17.4	17.4	28.8	46.0	46.0	45.6	0.0	45.8	60.5	0.0	39.5
Incr Delay (d2), s/veh	143.2	0.1	0.1	0.1	78.9	80.0	0.4	0.0	0.5	1.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.3	7.1	7.3	0.3	33.5	35.0	0.7	0.0	0.9	0.6	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	193.4	17.5	17.5	28.8	124.9	126.0	46.0	0.0	46.3	61.7	0.0	39.6
LnGrp LOS	F	B	B	C	F	F	D	A	D	E	A	D
Approach Vol, veh/h		1213			1404			53			58	
Approach Delay, s/veh		77.0			124.6			46.1			45.7	
Approach LOS		E			F			D			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		92.0		20.0	30.0	62.0		38.0				
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s		88.0		16.0	26.0	58.0		34.0				
Max Q Clear Time (g_c+I1), s		24.0		3.7	28.0	60.0		4.4				
Green Ext Time (p_c), s		4.8		0.1	0.0	0.0		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	100.2
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.



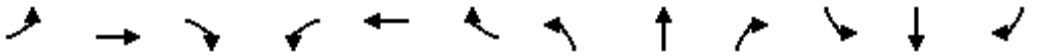
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	393	697	72	13	1273	59	23	13	16	16	4	39
Future Volume (veh/h)	393	697	72	13	1273	59	23	13	16	16	4	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	427	758	78	14	1384	64	25	14	17	17	0	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	312	1632	168	306	1144	53	345	149	181	163	0	759
Arrive On Green	0.17	0.59	0.59	0.39	0.39	0.39	0.23	0.23	0.23	0.11	0.00	0.11
Sat Flow, veh/h	1524	2782	286	668	2959	137	1524	658	799	1524	0	2712
Grp Volume(v), veh/h	427	414	422	14	710	738	25	0	31	17	0	45
Grp Sat Flow(s),veh/h/ln	1524	1520	1548	668	1520	1575	1524	0	1456	1524	0	1356
Q Serve(g_s), s	26.0	23.2	23.2	2.0	58.0	58.0	1.9	0.0	2.5	1.5	0.0	1.8
Cycle Q Clear(g_c), s	26.0	23.2	23.2	2.0	58.0	58.0	1.9	0.0	2.5	1.5	0.0	1.8
Prop In Lane	1.00		0.18	1.00		0.09	1.00		0.55	1.00		1.00
Lane Grp Cap(c), veh/h	312	892	908	306	588	609	345	0	330	163	0	759
V/C Ratio(X)	1.37	0.46	0.46	0.05	1.21	1.21	0.07	0.00	0.09	0.10	0.00	0.06
Avail Cap(c_a), veh/h	312	892	908	306	588	609	345	0	330	163	0	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.25	0.25	0.25	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.2	17.6	17.6	28.8	46.0	46.0	45.6	0.0	45.8	60.5	0.0	39.5
Incr Delay (d2), s/veh	167.5	0.2	0.2	0.1	97.7	99.4	0.4	0.0	0.6	1.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.4	7.5	7.7	0.3	36.6	38.2	0.8	0.0	1.0	0.6	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	217.7	17.8	17.8	28.9	143.7	145.4	46.0	0.0	46.4	61.8	0.0	39.7
LnGrp LOS	F	B	B	C	F	F	D	A	D	E	A	D
Approach Vol, veh/h		1263			1462			56			62	
Approach Delay, s/veh		85.4			143.5			46.2			45.8	
Approach LOS		F			F			D			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		92.0		20.0	30.0	62.0		38.0				
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s		88.0		16.0	26.0	58.0		34.0				
Max Q Clear Time (g_c+I1), s		25.2		3.8	28.0	60.0		4.5				
Green Ext Time (p_c), s		5.0		0.1	0.0	0.0		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	113.6
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.



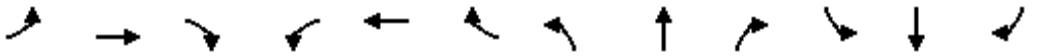
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	464	887	72	13	1299	59	23	13	16	16	4	45
Future Volume (veh/h)	464	887	72	13	1299	59	23	13	16	16	4	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	504	964	78	14	1412	64	25	14	17	17	0	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	312	1671	135	254	1145	52	345	149	181	163	0	759
Arrive On Green	0.17	0.59	0.59	0.39	0.39	0.39	0.23	0.23	0.23	0.11	0.00	0.11
Sat Flow, veh/h	1524	2848	230	550	2962	134	1524	658	799	1524	0	2712
Grp Volume(v), veh/h	504	514	528	14	723	753	25	0	31	17	0	52
Grp Sat Flow(s),veh/h/ln	1524	1520	1559	550	1520	1576	1524	0	1456	1524	0	1356
Q Serve(g_s), s	26.0	31.7	31.7	2.4	58.0	58.0	1.9	0.0	2.5	1.5	0.0	2.1
Cycle Q Clear(g_c), s	26.0	31.7	31.7	4.2	58.0	58.0	1.9	0.0	2.5	1.5	0.0	2.1
Prop In Lane	1.00		0.15	1.00		0.09	1.00		0.55	1.00		1.00
Lane Grp Cap(c), veh/h	312	892	914	254	588	609	345	0	330	163	0	759
V/C Ratio(X)	1.61	0.58	0.58	0.06	1.23	1.24	0.07	0.00	0.09	0.10	0.00	0.07
Avail Cap(c_a), veh/h	312	892	914	254	588	609	345	0	330	163	0	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.13	0.13	0.13	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.2	19.4	19.4	30.0	46.0	46.0	45.6	0.0	45.8	60.5	0.0	39.6
Incr Delay (d2), s/veh	278.0	0.2	0.2	0.1	105.8	107.9	0.4	0.0	0.6	1.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	31.0	10.3	10.6	0.3	37.9	39.7	0.8	0.0	1.0	0.6	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	328.1	19.6	19.6	30.1	151.8	153.9	46.0	0.0	46.4	61.8	0.0	39.8
LnGrp LOS	F	B	B	C	F	F	D	A	D	E	A	D
Approach Vol, veh/h		1546			1490			56			69	
Approach Delay, s/veh		120.2			151.7			46.2			45.2	
Approach LOS		F			F			D			D	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		92.0		20.0	30.0	62.0		38.0				
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s		88.0		16.0	26.0	58.0		34.0				
Max Q Clear Time (g_c+I1), s		33.7		4.1	28.0	60.0		4.5				
Green Ext Time (p_c), s		6.9		0.1	0.0	0.0		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	132.1
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	464	887	72	13	1299	59	23	13	16	16	4	45
Future Volume (veh/h)	464	887	72	13	1299	59	23	13	16	16	4	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	504	964	78	14	1412	64	25	14	17	17	0	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	410	1892	153	23	1226	55	372	154	187	355	0	636
Arrive On Green	0.27	0.66	0.66	0.01	0.41	0.41	0.23	0.23	0.23	0.23	0.00	0.23
Sat Flow, veh/h	1524	2848	230	1524	2962	134	1374	658	799	1400	0	2712
Grp Volume(v), veh/h	504	514	528	14	723	753	25	0	31	17	0	52
Grp Sat Flow(s),veh/h/ln	1524	1520	1559	1524	1520	1576	1374	0	1456	1400	0	1356
Q Serve(g_s), s	39.0	24.9	24.9	1.3	60.0	60.0	2.1	0.0	2.4	1.4	0.0	2.2
Cycle Q Clear(g_c), s	39.0	24.9	24.9	1.3	60.0	60.0	2.1	0.0	2.4	3.8	0.0	2.2
Prop In Lane	1.00		0.15	1.00		0.09	1.00		0.55	1.00		1.00
Lane Grp Cap(c), veh/h	410	1010	1036	23	629	652	372	0	341	355	0	636
V/C Ratio(X)	1.23	0.51	0.51	0.62	1.15	1.15	0.07	0.00	0.09	0.05	0.00	0.08
Avail Cap(c_a), veh/h	410	1010	1036	65	629	652	372	0	341	355	0	636
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.25	0.25	0.25	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.0	12.3	12.3	71.0	42.5	42.5	43.3	0.0	43.4	44.9	0.0	43.3
Incr Delay (d2), s/veh	105.4	0.2	0.2	6.7	72.5	74.3	0.3	0.0	0.5	0.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	26.3	7.4	7.6	0.5	33.7	35.3	0.7	0.0	0.9	0.5	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	158.4	12.5	12.5	77.7	115.0	116.8	43.6	0.0	43.9	45.2	0.0	43.6
LnGrp LOS	F	B	B	E	F	F	D	A	D	D	A	D
Approach Vol, veh/h		1546			1490			56			69	
Approach Delay, s/veh		60.1			115.6			43.8			44.0	
Approach LOS		E			F			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	100.3		38.0	43.0	64.0		38.0				
Change Period (Y+Rc), s	4.5	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	6.2	92.3		34.0	39.0	60.0		34.0				
Max Q Clear Time (g_c+I1), s	3.3	26.9		5.8	41.0	62.0		4.4				
Green Ext Time (p_c), s	0.0	6.9		0.2	0.0	0.0		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	85.6
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	21-Dec-22	PTRT0000-0001	1 OF 2

E/W STREET : RANCHO VISTA BLVD
N/S STREET : 8TH ST E
CONDITION : PM PEAK HOUR

INTERSECTION : 3
PROJECTED GROWTH PER YEAR : 2%

TURN MOVEMENTS

Condition	Existing Condition Traffic	Year 2022 to 2024 Ambient Growth	Adjacent Project Trips	Opening Year 2024 Background Conditions	Project Trips	Opening Year 2024 Background + Project Conditions
	2			6		8
RANCHO VISTA BLVD						
EB Left	30	2	0	32	9	41
EB Thru	1,336	54	0	1,390	31	1,421
EB Right	42	2	0	44	0	44
WB Left	1	1	0	2	0	2
WB Thru	1,120	45	0	1,165	166	1,331
WB Right	1	1	0	2	0	2
8TH ST E						
NB Left	52	3	0	55	0	55
NB Thru	7	1	0	8	0	8
NB Right	16	1	0	17	0	17
SB Left	59	3	0	62	0	62
SB Thru	25	1	0	26	0	26
SB Right	564	23	0	587	59	646
TOTALS	**3,253**	**137**	**0**	**3,390**	**265**	**3,655**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	21-Dec-22	PTRT0000-0001	2 OF 2

E/W STREET : RANCHO VISTA BLVD
N/S STREET : 8TH ST E
CONDITION : PM PEAK HOUR
PHF : 0.93

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
129	6	20	0	0	0	0	0	0	0	0	0
170	10	12	0	0	0	0	0	0	0	0	0
154	4	11	0	0	0	0	0	0	0	0	0
111	5	16	0	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	2	6	0	0	0	0	0	0	0	0	0
4	1	18	0	0	0	0	0	0	0	0	0
2	1	7	0	0	0	0	0	0	0	0	0
10	3	21	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	289	0	0	3	0	0	3	0	0	1	0
0	279	0	0	1	0	0	1	0	0	1	0
0	241	0	0	2	0	0	0	0	0	1	0
1	291	0	0	1	0	0	0	0	0	1	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
12	284	6	0	2	0	0	1	0	0	2	0
8	327	1	0	1	0	0	1	0	0	1	0
19	298	6	0	2	0	0	1	0	0	4	0
3	386	17	0	3	0	0	1	0	0	0	0

	Truck Volumes	Auto Volumes	Vehicle Totals	PCE Totals	Balanced PCE Totals
RANCHO VISTA BLVD					
EBL	0	30	**30**	**30**	**30**
EBTH	19	1295	**1314**	**1336**	**1336**
EBR	0	42	**42**	**42**	**42**
WBL	0	0	**0**	**0**	**1**
WBTH	15	1100	**1115**	**1120**	**1120**
WBR	0	1	**1**	**1**	**1**
8TH ST E					
NBL	0	52	**52**	**52**	**52**
NBTH	0	7	**7**	**7**	**7**
NBR	0	16	**16**	**16**	**16**
SBL	0	59	**59**	**59**	**59**
SBTH	0	25	**25**	**25**	**25**
SBR	0	564	**564**	**564**	**564**

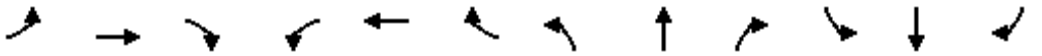
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	1336	42	1	1120	1	52	7	16	59	25	564
Future Volume (veh/h)	30	1336	42	1	1120	1	52	7	16	59	25	564
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	32	1437	45	1	1204	1	56	8	17	63	0	624
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	125	1454	45	64	1334	1	432	129	275	203	0	421
Arrive On Green	0.02	0.48	0.48	0.43	0.43	0.43	0.28	0.28	0.28	0.13	0.00	0.13
Sat Flow, veh/h	1524	3009	94	362	3117	3	1524	456	969	1524	0	2712
Grp Volume(v), veh/h	32	725	757	1	587	618	56	0	25	63	0	624
Grp Sat Flow(s),veh/h/ln	1524	1520	1583	362	1520	1600	1524	0	1426	1524	0	1356
Q Serve(g_s), s	1.4	56.5	56.8	0.3	43.2	43.2	3.3	0.0	1.5	4.5	0.0	16.0
Cycle Q Clear(g_c), s	1.4	56.5	56.8	50.5	43.2	43.2	3.3	0.0	1.5	4.5	0.0	16.0
Prop In Lane	1.00		0.06	1.00		0.00	1.00		0.68	1.00		1.00
Lane Grp Cap(c), veh/h	125	735	765	64	651	685	432	0	404	203	0	421
V/C Ratio(X)	0.26	0.99	0.99	0.02	0.90	0.90	0.13	0.00	0.06	0.31	0.00	1.48
Avail Cap(c_a), veh/h	168	735	765	64	651	685	432	0	404	203	0	421
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.50	0.50	0.50	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.6	30.6	30.7	59.0	32.0	32.0	32.0	0.0	31.4	47.0	0.0	50.7
Incr Delay (d2), s/veh	0.1	7.3	7.6	0.2	10.3	9.9	0.6	0.0	0.3	3.9	0.0	229.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	19.8	20.8	0.0	16.3	17.0	1.2	0.0	0.5	1.9	0.0	19.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.7	38.0	38.3	59.2	42.3	41.9	32.6	0.0	31.7	50.9	0.0	280.3
LnGrp LOS	C	D	D	E	D	D	C	A	C	D	A	F
Approach Vol, veh/h		1514			1206			81			687	
Approach Delay, s/veh		37.9			42.1			32.3			259.3	
Approach LOS		D			D			C			F	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		62.0		20.0	6.6	55.4		38.0				
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s		58.0		16.0	6.0	48.0		34.0				
Max Q Clear Time (g_c+I1), s		58.8		18.0	3.4	52.5		5.3				
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		0.2				

Intersection Summary		
HCM 6th Ctrl Delay	82.8	
HCM 6th LOS	F	

Notes

User approved volume balancing among the lanes for turning movement.



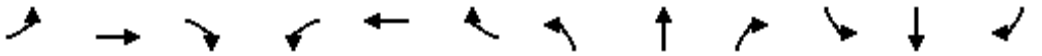
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1390	44	2	1165	2	55	8	17	62	26	587
Future Volume (veh/h)	32	1390	44	2	1165	2	55	8	17	62	26	587
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	34	1495	47	2	1253	2	59	9	18	67	0	650
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	113	1454	46	60	1331	2	432	135	270	203	0	423
Arrive On Green	0.02	0.48	0.48	0.43	0.43	0.43	0.28	0.28	0.28	0.13	0.00	0.13
Sat Flow, veh/h	1524	3009	94	341	3114	5	1524	476	952	1524	0	2712
Grp Volume(v), veh/h	34	754	788	2	612	643	59	0	27	67	0	650
Grp Sat Flow(s),veh/h/ln	1524	1520	1583	341	1520	1599	1524	0	1429	1524	0	1356
Q Serve(g_s), s	1.5	58.0	58.0	0.0	46.3	46.3	3.5	0.0	1.7	4.8	0.0	16.0
Cycle Q Clear(g_c), s	1.5	58.0	58.0	51.3	46.3	46.3	3.5	0.0	1.7	4.8	0.0	16.0
Prop In Lane	1.00		0.06	1.00		0.00	1.00		0.67	1.00		1.00
Lane Grp Cap(c), veh/h	113	735	765	60	650	683	432	0	405	203	0	423
V/C Ratio(X)	0.30	1.03	1.03	0.03	0.94	0.94	0.14	0.00	0.07	0.33	0.00	1.54
Avail Cap(c_a), veh/h	155	735	765	60	650	683	432	0	405	203	0	423
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.44	0.44	0.44	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.0	31.0	31.0	60.0	32.9	32.9	32.1	0.0	31.4	47.1	0.0	50.6
Incr Delay (d2), s/veh	0.1	17.6	18.7	0.5	13.1	12.6	0.7	0.0	0.3	4.3	0.0	253.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	22.4	23.6	0.1	17.8	18.7	1.3	0.0	0.6	2.0	0.0	21.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.1	48.6	49.7	60.5	46.0	45.5	32.7	0.0	31.7	51.4	0.0	304.0
LnGrp LOS	C	F	F	E	D	D	C	A	C	D	A	F
Approach Vol, veh/h		1576			1257			86			717	
Approach Delay, s/veh		48.7			45.8			32.4			280.4	
Approach LOS		D			D			C			F	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		62.0		20.0	6.7	55.3		38.0				
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s		58.0		16.0	6.0	48.0		34.0				
Max Q Clear Time (g_c+I1), s		60.0		18.0	3.5	53.3		5.5				
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	93.0
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.



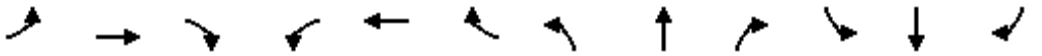
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	1421	44	2	1331	2	55	8	17	62	26	646
Future Volume (veh/h)	41	1421	44	2	1331	2	55	8	17	62	26	646
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	44	1528	47	2	1431	2	59	9	18	67	0	714
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	99	1455	45	60	1322	2	432	135	270	203	0	431
Arrive On Green	0.03	0.48	0.48	0.42	0.42	0.42	0.28	0.28	0.28	0.13	0.00	0.13
Sat Flow, veh/h	1524	3011	92	331	3115	4	1524	476	952	1524	0	2712
Grp Volume(v), veh/h	44	770	805	2	698	735	59	0	27	67	0	714
Grp Sat Flow(s),veh/h/ln	1524	1520	1583	331	1520	1599	1524	0	1429	1524	0	1356
Q Serve(g_s), s	1.9	58.0	58.0	0.0	50.9	50.9	3.5	0.0	1.7	4.8	0.0	16.0
Cycle Q Clear(g_c), s	1.9	58.0	58.0	50.9	50.9	50.9	3.5	0.0	1.7	4.8	0.0	16.0
Prop In Lane	1.00		0.06	1.00		0.00	1.00		0.67	1.00		1.00
Lane Grp Cap(c), veh/h	99	735	765	60	645	679	432	0	405	203	0	431
V/C Ratio(X)	0.44	1.05	1.05	0.03	1.08	1.08	0.14	0.00	0.07	0.33	0.00	1.66
Avail Cap(c_a), veh/h	136	735	765	60	645	679	432	0	405	203	0	431
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.48	0.48	0.48	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.2	31.0	31.0	60.0	34.5	34.5	32.1	0.0	31.4	47.1	0.0	50.5
Incr Delay (d2), s/veh	0.3	25.6	27.1	0.5	50.2	49.7	0.7	0.0	0.3	4.3	0.0	305.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	24.0	25.3	0.1	26.0	27.3	1.3	0.0	0.6	2.0	0.0	24.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.5	56.6	58.1	60.5	84.7	84.2	32.7	0.0	31.7	51.4	0.0	355.9
LnGrp LOS	C	F	F	E	F	F	C	A	C	D	A	F
Approach Vol, veh/h		1619			1435			86			781	
Approach Delay, s/veh		56.6			84.4			32.4			329.8	
Approach LOS		E			F			C			F	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		62.0		20.0	7.1	54.9		38.0				
Change Period (Y+Rc), s		4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s		58.0		16.0	6.0	48.0		34.0				
Max Q Clear Time (g_c+I1), s		60.0		18.0	3.9	52.9		5.5				
Green Ext Time (p_c), s		0.0		0.0	0.0	0.0		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	120.7
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	1421	44	2	1331	2	55	8	17	62	26	646
Future Volume (veh/h)	41	1421	44	2	1331	2	55	8	17	62	26	646
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	44	1528	47	2	1431	2	59	9	18	67	0	714
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	53	1669	51	4	1643	2	311	154	308	505	0	972
Arrive On Green	0.03	0.55	0.55	0.00	0.53	0.53	0.32	0.32	0.32	0.32	0.00	0.32
Sat Flow, veh/h	1524	3011	92	1524	3115	4	748	476	952	1405	0	2712
Grp Volume(v), veh/h	44	770	805	2	698	735	59	0	27	67	0	714
Grp Sat Flow(s),veh/h/ln	1524	1520	1583	1524	1520	1599	748	0	1429	1405	0	1356
Q Serve(g_s), s	3.0	48.0	48.4	0.1	42.2	42.2	6.1	0.0	1.4	3.6	0.0	24.1
Cycle Q Clear(g_c), s	3.0	48.0	48.4	0.1	42.2	42.2	6.1	0.0	1.4	5.0	0.0	24.1
Prop In Lane	1.00		0.06	1.00		0.00	1.00		0.67	1.00		1.00
Lane Grp Cap(c), veh/h	53	843	878	4	802	843	311	0	463	505	0	972
V/C Ratio(X)	0.84	0.91	0.92	0.49	0.87	0.87	0.19	0.00	0.06	0.13	0.00	0.73
Avail Cap(c_a), veh/h	87	843	878	73	802	843	311	0	463	505	0	972
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	0.64	0.64	0.64	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.4	21.1	21.2	52.3	21.7	21.7	26.1	0.0	24.5	26.2	0.0	29.3
Incr Delay (d2), s/veh	3.4	1.9	1.9	47.5	8.5	8.1	1.4	0.0	0.2	0.5	0.0	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	14.5	15.2	0.1	14.5	15.2	1.1	0.0	0.5	1.2	0.0	7.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	23.1	23.1	99.8	30.2	29.8	27.4	0.0	24.7	26.7	0.0	34.3
LnGrp LOS	D	C	C	F	C	C	C	A	C	C	A	C
Approach Vol, veh/h		1619			1435			86			781	
Approach Delay, s/veh		23.9			30.1			26.6			33.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.8	62.2		38.0	7.6	59.4		38.0				
Change Period (Y+Rc), s	4.5	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	5.0	53.5		34.0	6.0	53.0		34.0				
Max Q Clear Time (g_c+I1), s	2.1	50.4		26.1	5.0	44.2		8.1				
Green Ext Time (p_c), s	0.0	2.3		2.1	0.0	5.2		0.5				

Intersection Summary	
HCM 6th Ctrl Delay	28.2
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

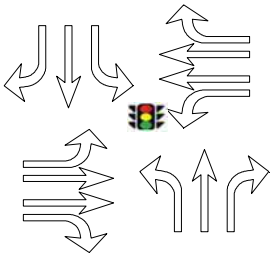
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	21-Dec-22	PTRT0000-0001	1 OF 2

E/W STREET : RANCHO VISTA BLVD
N/S STREET : 10TH ST E
CONDITION : AM PEAK HOUR

INTERSECTION : 4
PROJECTED GROWTH PER YEAR : 2%

CONDITION DIAGRAMS



EXISTING GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Year 2022 to 2024 Ambient Growth	Adjacent Project Trips	Opening Year 2024 Background Conditions	Project Trips	Opening Year 2024 Background + Project Conditions
	1			3		5
RANCHO VISTA BLVD						
EB Left	1	1	0	2	190	192
EB Thru	624	25	0	649	0	649
EB Right	79	4	0	83	0	83
WB Left	13	1	0	14	0	14
WB Thru	1,214	49	0	1,263	0	1,263
WB Right	5	1	0	6	45	51
10TH ST E						
NB Left	79	4	0	83	0	83
NB Thru	1	1	0	2	0	2
NB Right	9	1	0	10	0	10
SB Left	1	1	0	2	7	9
SB Thru	1	1	0	2	0	2
SB Right	1	1	0	2	26	28
TOTALS	**2,028**	**90**	**0**	**2,118**	**268**	**2,386**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	21-Dec-22	PTRT0000-0001	2 OF 2

E/W STREET : RANCHO VISTA BLVD
N/S STREET : 10TH ST E
CONDITION : AM PEAK HOUR
PHF : 0.91

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	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	1	0	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
2	0	25	0	0	0	0	0	0	0	0	1
0	0	24	0	0	0	0	0	0	0	0	0
2	0	9	1	0	0	0	0	1	0	0	0
2	1	16	1	0	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
1	279	0	0	0	0	0	1	0	0	3	0
1	307	6	0	4	0	0	1	0	0	2	0
1	307	4	0	3	0	0	1	1	0	3	0
2	282	1	0	2	0	0	0	0	0	3	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
11	114	0	0	3	0	0	1	0	0	0	0
34	150	0	1	1	0	0	0	0	0	5	0
22	177	0	1	2	0	0	1	0	0	5	0
9	131	0	0	2	0	0	0	0	0	2	0

	Truck Volumes	Auto Volumes	Vehicle Totals	PCE Totals	Balanced PCE Totals
RANCHO VISTA BLVD					
EBL	0	0	**0**	**0**	**1**
EBTH	22	572	**594**	**624**	**624**
EBR	2	76	**78**	**79**	**79**
WBL	1	11	**12**	**13**	**13**
WBTH	23	1175	**1198**	**1214**	**1214**
WBR	0	5	**5**	**5**	**5**
10TH ST E					
NBL	2	74	**76**	**79**	**79**
NBTH	0	1	**1**	**1**	**1**
NBR	2	6	**8**	**9**	**9**
SBL	0	1	**1**	**1**	**1**
SBTH	0	0	**0**	**0**	**1**
SBR	0	0	**0**	**0**	**1**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	624	79	13	1214	5	79	1	9	1	1	1
Future Volume (veh/h)	1	624	79	13	1214	5	79	1	9	1	1	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	1	686	87	14	1334	5	87	1	10	1	1	1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	157	1271	567	157	1271	567	106	524	583	9	422	497
Arrive On Green	0.10	0.42	0.42	0.10	0.42	0.42	0.07	0.33	0.33	0.01	0.26	0.26
Sat Flow, veh/h	1524	3040	1356	1524	3040	1356	1524	1600	1356	1524	1600	1356
Grp Volume(v), veh/h	1	686	87	14	1334	5	87	1	10	1	1	1
Grp Sat Flow(s),veh/h/ln	1524	1520	1356	1524	1520	1356	1524	1600	1356	1524	1600	1356
Q Serve(g_s), s	0.1	18.7	4.4	0.9	46.0	0.2	6.2	0.0	0.0	0.1	0.1	0.0
Cycle Q Clear(g_c), s	0.1	18.7	4.4	0.9	46.0	0.2	6.2	0.0	0.0	0.1	0.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	157	1271	567	157	1271	567	106	524	583	9	422	497
V/C Ratio(X)	0.01	0.54	0.15	0.09	1.05	0.01	0.82	0.00	0.02	0.11	0.00	0.00
Avail Cap(c_a), veh/h	157	1271	567	157	1271	567	180	524	583	83	422	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.3	24.0	19.9	44.7	32.0	18.7	50.5	24.9	18.0	54.4	29.8	22.1
Incr Delay (d2), s/veh	0.0	1.5	0.5	0.2	39.2	0.0	14.0	0.0	0.1	4.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.4	1.4	0.3	22.0	0.1	2.7	0.0	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.3	25.5	20.4	44.9	71.2	18.7	64.5	24.9	18.0	59.2	29.9	22.1
LnGrp LOS	D	C	C	D	F	B	E	C	B	E	C	C
Approach Vol, veh/h		774			1353			98			3	
Approach Delay, s/veh		25.0			70.8			59.3			37.1	
Approach LOS		C			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	50.0	11.7	33.0	15.3	50.0	4.7	40.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.6	46.0	13.0	29.0	6.0	46.0	6.0	36.0
Max Q Clear Time (g_c+I1), s	2.9	20.7	8.2	2.1	2.1	48.0	2.1	2.0
Green Ext Time (p_c), s	0.0	4.4	0.1	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	54.3
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	649	83	14	1263	6	83	2	10	2	2	2
Future Volume (veh/h)	2	649	83	14	1263	6	83	2	10	2	2	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	2	713	91	15	1388	7	91	2	11	2	2	2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	152	1271	567	152	1271	567	111	524	579	14	422	493
Arrive On Green	0.10	0.42	0.42	0.10	0.42	0.42	0.07	0.33	0.33	0.01	0.26	0.26
Sat Flow, veh/h	1524	3040	1356	1524	3040	1356	1524	1600	1356	1524	1600	1356
Grp Volume(v), veh/h	2	713	91	15	1388	7	91	2	11	2	2	2
Grp Sat Flow(s),veh/h/ln	1524	1520	1356	1524	1520	1356	1524	1600	1356	1524	1600	1356
Q Serve(g_s), s	0.1	19.6	4.6	1.0	46.0	0.3	6.5	0.1	0.0	0.1	0.1	0.0
Cycle Q Clear(g_c), s	0.1	19.6	4.6	1.0	46.0	0.3	6.5	0.1	0.0	0.1	0.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	1271	567	152	1271	567	111	524	579	14	422	493
V/C Ratio(X)	0.01	0.56	0.16	0.10	1.09	0.01	0.82	0.00	0.02	0.14	0.00	0.00
Avail Cap(c_a), veh/h	152	1271	567	152	1271	567	180	524	579	83	422	493
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	24.3	20.0	45.0	32.0	18.7	50.3	24.9	18.2	54.1	29.9	22.3
Incr Delay (d2), s/veh	0.0	1.6	0.5	0.3	54.2	0.0	14.1	0.0	0.1	4.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	6.7	1.4	0.4	24.6	0.1	2.8	0.0	0.2	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.6	25.9	20.5	45.3	86.2	18.8	64.4	24.9	18.3	58.6	29.9	22.3
LnGrp LOS	D	C	C	D	F	B	E	C	B	E	C	C
Approach Vol, veh/h		806			1410			104			6	
Approach Delay, s/veh		25.3			85.4			58.8			36.9	
Approach LOS		C			F			E			D	

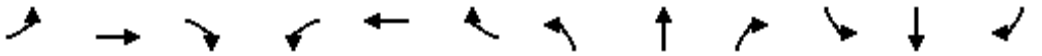
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	50.0	12.0	33.0	15.0	50.0	5.0	40.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	46.0	13.0	29.0	6.0	46.0	6.0	36.0
Max Q Clear Time (g_c+I1), s	3.0	21.6	8.5	2.1	2.1	48.0	2.1	2.1
Green Ext Time (p_c), s	0.0	4.6	0.1	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	63.3
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	649	83	14	1263	51	83	2	10	9	2	28
Future Volume (veh/h)	192	649	83	14	1263	51	83	2	10	9	2	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	211	713	91	15	1388	56	91	2	11	10	2	31
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	152	1271	567	152	1271	567	112	524	579	15	422	492
Arrive On Green	0.10	0.42	0.42	0.10	0.42	0.42	0.07	0.33	0.33	0.01	0.26	0.26
Sat Flow, veh/h	1524	3040	1356	1524	3040	1356	1524	1600	1356	1524	1600	1356
Grp Volume(v), veh/h	211	713	91	15	1388	56	91	2	11	10	2	31
Grp Sat Flow(s),veh/h/ln	1524	1520	1356	1524	1520	1356	1524	1600	1356	1524	1600	1356
Q Serve(g_s), s	10.9	19.6	4.6	1.0	46.0	2.8	6.5	0.1	0.0	0.7	0.1	0.0
Cycle Q Clear(g_c), s	10.9	19.6	4.6	1.0	46.0	2.8	6.5	0.1	0.0	0.7	0.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	152	1271	567	152	1271	567	112	524	579	15	422	492
V/C Ratio(X)	1.39	0.56	0.16	0.10	1.09	0.10	0.82	0.00	0.02	0.69	0.00	0.06
Avail Cap(c_a), veh/h	152	1271	567	152	1271	567	180	524	579	83	422	492
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.79	0.79	0.79	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.5	24.3	20.0	45.0	32.0	19.4	50.2	24.9	18.2	54.3	29.9	22.8
Incr Delay (d2), s/veh	204.8	1.4	0.5	0.3	54.2	0.3	13.7	0.0	0.1	44.3	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	6.7	1.4	0.4	24.6	0.9	2.8	0.0	0.2	0.4	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	254.3	25.7	20.4	45.3	86.2	19.8	64.0	24.9	18.3	98.6	29.9	23.1
LnGrp LOS	F	C	C	D	F	B	E	C	B	F	C	C
Approach Vol, veh/h		1015			1459			104			43	
Approach Delay, s/veh		72.8			83.2			58.4			40.9	
Approach LOS		E			F			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.9	50.0	12.1	33.0	14.9	50.0	5.1	40.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.9	46.0	13.0	29.0	6.0	46.0	6.0	36.0
Max Q Clear Time (g_c+I1), s	13.0	21.6	8.5	2.1	12.9	48.0	2.7	2.1
Green Ext Time (p_c), s	0.0	4.6	0.1	0.1	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	77.5
HCM 6th LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	192	649	83	14	1263	51	83	2	10	9	2	28
Future Volume (veh/h)	192	649	83	14	1263	51	83	2	10	9	2	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	211	713	91	15	1388	56	91	2	11	10	2	31
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	258	1650	845	117	1368	610	123	411	452	14	297	481
Arrive On Green	0.17	0.54	0.54	0.08	0.45	0.45	0.08	0.26	0.26	0.01	0.19	0.19
Sat Flow, veh/h	1524	3040	1356	1524	3040	1356	1524	1600	1356	1524	1600	1356
Grp Volume(v), veh/h	211	713	91	15	1388	56	91	2	11	10	2	31
Grp Sat Flow(s),veh/h/ln	1524	1520	1356	1524	1520	1356	1524	1600	1356	1524	1600	1356
Q Serve(g_s), s	18.7	19.6	0.0	1.3	63.0	3.3	8.2	0.1	0.0	0.9	0.1	0.0
Cycle Q Clear(g_c), s	18.7	19.6	0.0	1.3	63.0	3.3	8.2	0.1	0.0	0.9	0.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	258	1650	845	117	1368	610	123	411	452	14	297	481
V/C Ratio(X)	0.82	0.43	0.11	0.13	1.01	0.09	0.74	0.00	0.02	0.71	0.01	0.06
Avail Cap(c_a), veh/h	258	1650	845	117	1368	610	174	411	452	65	297	481
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	56.1	19.1	10.6	60.3	38.5	22.1	62.9	38.7	31.3	69.2	46.5	29.8
Incr Delay (d2), s/veh	16.1	0.7	0.2	0.5	28.0	0.3	9.7	0.0	0.1	49.7	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.1	6.6	1.1	0.5	26.9	1.1	3.4	0.1	0.3	0.5	0.1	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.1	19.8	10.9	60.8	66.5	22.4	72.6	38.7	31.4	118.9	46.5	30.1
LnGrp LOS	E	B	B	E	F	C	E	D	C	F	D	C
Approach Vol, veh/h		1015			1459			104			43	
Approach Delay, s/veh		29.9			64.8			67.6			51.5	
Approach LOS		C			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.7	80.0	15.3	30.0	27.7	67.0	5.3	40.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	76.0	16.0	26.0	19.0	63.0	6.0	36.0
Max Q Clear Time (g_c+I1), s	3.3	21.6	10.2	2.1	20.7	65.0	2.9	2.1
Green Ext Time (p_c), s	0.0	5.0	0.1	0.1	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	51.2
HCM 6th LOS	D

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	21-Dec-22	PTRT0000-0001	1 OF 2

E/W STREET : RANCHO VISTA BLVD
N/S STREET : 10TH ST E
CONDITION : PM PEAK HOUR

INTERSECTION : 4
PROJECTED GROWTH PER YEAR : 2%

TURN MOVEMENTS

Condition	Existing Condition Traffic	Year 2022 to 2024 Ambient Growth	Adjacent Project Trips	Opening Year 2024 Background Conditions	Project Trips	Opening Year 2024 Background + Project Conditions
	2			6		8
RANCHO VISTA BLVD						
EB Left	5	1	0	6	31	37
EB Thru	1,312	53	0	1,365	0	1,365
EB Right	101	5	0	106	0	106
WB Left	10	1	0	11	0	11
WB Thru	1,007	41	0	1,048	0	1,048
WB Right	4	1	0	5	8	13
10TH ST E						
NB Left	75	3	0	78	0	78
NB Thru	1	1	0	2	0	2
NB Right	20	1	0	21	0	21
SB Left	2	1	0	3	41	44
SB Thru	1	1	0	2	0	2
SB Right	9	1	0	10	166	176
TOTALS	**2,547**	**110**	**0**	**2,657**	**246**	**2,903**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	21-Dec-22	PTRT0000-0001	2 OF 2

E/W STREET : RANCHO VISTA BLVD
N/S STREET : 10TH ST E
CONDITION : PM PEAK HOUR
PHF : 0.87

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
4	0	1	0	0	0	0	0	0	0	0	0
1	0	1	0	0	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
6	1	14	0	0	0	0	0	0	0	0	0
2	0	26	0	0	0	0	0	0	0	0	0
4	0	13	0	0	0	0	0	0	0	0	0
8	0	22	0	0	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
1	268	2	0	3	0	0	3	0	0	1	0
1	223	2	0	1	0	0	1	0	0	0	0
0	227	2	0	2	0	0	0	0	0	1	0
2	272	4	0	1	0	0	0	0	0	1	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
30	277	0	0	2	0	0	1	0	0	2	0
17	322	2	0	1	0	0	1	0	0	1	1
29	286	0	0	2	0	1	0	0	1	3	0
18	392	0	1	2	0	0	1	0	0	0	0

	Truck Volumes	Auto Volumes	Vehicle Totals	PCE Totals	Balanced PCE Totals
RANCHO VISTA BLVD					
EBL	1	2	**3**	**5**	**5**
EBTH	16	1277	**1293**	**1312**	**1312**
EBR	3	94	**97**	**101**	**101**
WBL	0	10	**10**	**10**	**10**
WBTH	14	990	**1004**	**1007**	**1007**
WBR	0	4	**4**	**4**	**4**
10TH ST E					
NBL	0	75	**75**	**75**	**75**
NBTH	0	1	**1**	**1**	**1**
NBR	0	20	**20**	**20**	**20**
SBL	0	2	**2**	**2**	**2**
SBTH	0	0	**0**	**0**	**1**
SBR	1	6	**7**	**9**	**9**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	1312	101	10	1007	4	75	1	20	2	1	9
Future Volume (veh/h)	5	1312	101	10	1007	4	75	1	20	2	1	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	6	1508	116	11	1157	5	86	1	23	2	1	10
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	158	1271	567	158	1271	567	105	524	584	8	422	498
Arrive On Green	0.10	0.42	0.42	0.10	0.42	0.42	0.07	0.33	0.33	0.01	0.26	0.26
Sat Flow, veh/h	1524	3040	1356	1524	3040	1356	1524	1600	1356	1524	1600	1356
Grp Volume(v), veh/h	6	1508	116	11	1157	5	86	1	23	2	1	10
Grp Sat Flow(s),veh/h/ln	1524	1520	1356	1524	1520	1356	1524	1600	1356	1524	1600	1356
Q Serve(g_s), s	0.4	46.0	6.0	0.7	39.3	0.2	6.1	0.0	0.0	0.1	0.1	0.0
Cycle Q Clear(g_c), s	0.4	46.0	6.0	0.7	39.3	0.2	6.1	0.0	0.0	0.1	0.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	158	1271	567	158	1271	567	105	524	584	8	422	498
V/C Ratio(X)	0.04	1.19	0.20	0.07	0.91	0.01	0.82	0.00	0.04	0.24	0.00	0.02
Avail Cap(c_a), veh/h	158	1271	567	158	1271	567	180	524	584	83	422	498
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.13	0.13	0.13	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.4	32.0	20.4	44.5	30.1	18.7	50.5	24.9	18.1	54.5	29.8	22.2
Incr Delay (d2), s/veh	0.0	85.0	0.1	0.2	11.2	0.0	14.1	0.0	0.1	14.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	30.0	1.8	0.3	14.8	0.1	2.7	0.0	0.3	0.1	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.4	117.0	20.5	44.7	41.3	18.7	64.6	24.9	18.2	69.0	29.9	22.3
LnGrp LOS	D	F	C	D	D	B	E	C	B	E	C	C
Approach Vol, veh/h		1630			1173			110			13	
Approach Delay, s/veh		109.8			41.2			54.6			30.0	
Approach LOS		F			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	50.0	11.6	33.0	15.4	50.0	4.6	40.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.6	46.0	13.0	29.0	6.0	46.0	6.0	36.0
Max Q Clear Time (g_c+I1), s	2.7	48.0	8.1	2.1	2.4	41.3	2.1	2.0
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.0	2.8	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	79.9
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	1365	106	11	1048	5	78	2	21	3	2	10
Future Volume (veh/h)	6	1365	106	11	1048	5	78	2	21	3	2	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	7	1569	122	13	1205	6	90	2	24	3	2	11
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	153	1271	567	153	1271	567	110	524	580	13	422	494
Arrive On Green	0.10	0.42	0.42	0.10	0.42	0.42	0.07	0.33	0.33	0.01	0.26	0.26
Sat Flow, veh/h	1524	3040	1356	1524	3040	1356	1524	1600	1356	1524	1600	1356
Grp Volume(v), veh/h	7	1569	122	13	1205	6	90	2	24	3	2	11
Grp Sat Flow(s),veh/h/ln	1524	1520	1356	1524	1520	1356	1524	1600	1356	1524	1600	1356
Q Serve(g_s), s	0.5	46.0	6.3	0.9	42.0	0.3	6.4	0.1	0.0	0.2	0.1	0.0
Cycle Q Clear(g_c), s	0.5	46.0	6.3	0.9	42.0	0.3	6.4	0.1	0.0	0.2	0.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	153	1271	567	153	1271	567	110	524	580	13	422	494
V/C Ratio(X)	0.05	1.23	0.22	0.08	0.95	0.01	0.82	0.00	0.04	0.23	0.00	0.02
Avail Cap(c_a), veh/h	153	1271	567	153	1271	567	180	524	580	83	422	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.7	32.0	20.5	44.9	30.8	18.7	50.3	24.9	18.3	54.2	29.9	22.4
Incr Delay (d2), s/veh	0.0	106.1	0.1	0.2	15.5	0.0	13.7	0.0	0.1	9.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	33.8	1.9	0.3	16.5	0.1	2.8	0.0	0.4	0.1	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	138.1	20.5	45.1	46.3	18.7	64.1	24.9	18.5	63.2	29.9	22.5
LnGrp LOS	D	F	C	D	D	B	E	C	B	E	C	C
Approach Vol, veh/h		1698			1224			116			16	
Approach Delay, s/veh		129.2			46.2			54.0			31.0	
Approach LOS		F			D			D			C	

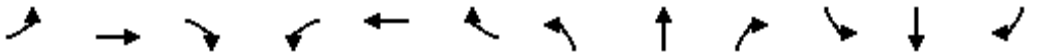
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	50.0	11.9	33.0	15.1	50.0	4.9	40.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	46.0	13.0	29.0	6.0	46.0	6.0	36.0
Max Q Clear Time (g_c+I1), s	2.9	48.0	8.4	2.1	2.5	44.0	2.2	2.1
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.0	1.3	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	92.6
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	1365	106	11	1048	13	78	2	21	44	2	176
Future Volume (veh/h)	37	1365	106	11	1048	13	78	2	21	44	2	176
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	43	1569	122	13	1205	15	90	2	24	51	2	202
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	104	1271	567	104	1271	567	159	524	537	62	422	450
Arrive On Green	0.07	0.42	0.42	0.07	0.42	0.42	0.10	0.33	0.33	0.04	0.26	0.26
Sat Flow, veh/h	1524	3040	1356	1524	3040	1356	1524	1600	1356	1524	1600	1356
Grp Volume(v), veh/h	43	1569	122	13	1205	15	90	2	24	51	2	202
Grp Sat Flow(s),veh/h/ln	1524	1520	1356	1524	1520	1356	1524	1600	1356	1524	1600	1356
Q Serve(g_s), s	3.0	46.0	6.3	0.9	42.0	0.7	6.2	0.1	0.0	3.7	0.1	5.3
Cycle Q Clear(g_c), s	3.0	46.0	6.3	0.9	42.0	0.7	6.2	0.1	0.0	3.7	0.1	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	104	1271	567	104	1271	567	159	524	537	62	422	450
V/C Ratio(X)	0.41	1.23	0.22	0.12	0.95	0.03	0.57	0.00	0.04	0.82	0.00	0.45
Avail Cap(c_a), veh/h	104	1271	567	104	1271	567	180	524	537	83	422	450
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.1	32.0	20.5	48.1	30.8	18.8	46.9	24.9	20.4	52.4	29.9	28.8
Incr Delay (d2), s/veh	0.2	106.1	0.1	0.5	15.5	0.1	3.2	0.0	0.2	36.7	0.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	33.8	1.9	0.3	16.5	0.2	2.4	0.0	0.4	2.0	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.3	138.1	20.5	48.7	46.3	18.9	50.1	24.9	20.6	89.1	29.9	32.0
LnGrp LOS	D	F	C	D	D	B	D	C	C	F	C	C
Approach Vol, veh/h		1734			1233			116			255	
Approach Delay, s/veh		127.6			46.0			43.5			43.4	
Approach LOS		F			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.5	50.0	15.5	33.0	11.5	50.0	8.5	40.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	46.0	13.0	29.0	6.0	46.0	6.0	36.0
Max Q Clear Time (g_c+I1), s	2.9	48.0	8.2	7.3	5.0	44.0	5.7	2.1
Green Ext Time (p_c), s	0.0	0.0	0.1	0.6	0.0	1.3	0.0	0.1

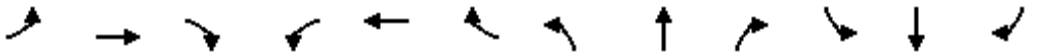
Intersection Summary	
HCM 6th Ctrl Delay	88.1
HCM 6th LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	1365	106	11	1048	13	78	2	21	44	2	176
Future Volume (veh/h)	37	1365	106	11	1048	13	78	2	21	44	2	176
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	43	1569	122	13	1205	15	90	2	24	51	2	202
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	78	1543	838	78	1543	688	168	443	445	62	332	351
Arrive On Green	0.05	0.51	0.51	0.05	0.51	0.51	0.11	0.28	0.28	0.04	0.21	0.21
Sat Flow, veh/h	1524	3040	1356	1524	3040	1356	1524	1600	1356	1524	1600	1356
Grp Volume(v), veh/h	43	1569	122	13	1205	15	90	2	24	51	2	202
Grp Sat Flow(s),veh/h/ln	1524	1520	1356	1524	1520	1356	1524	1600	1356	1524	1600	1356
Q Serve(g_s), s	3.6	66.0	0.0	1.1	42.0	0.7	7.3	0.1	0.0	4.3	0.1	10.2
Cycle Q Clear(g_c), s	3.6	66.0	0.0	1.1	42.0	0.7	7.3	0.1	0.0	4.3	0.1	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	78	1543	838	78	1543	688	168	443	445	62	332	351
V/C Ratio(X)	0.55	1.02	0.15	0.17	0.78	0.02	0.54	0.00	0.05	0.82	0.01	0.57
Avail Cap(c_a), veh/h	78	1543	838	78	1543	688	176	443	445	70	332	351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.38	0.38	0.38	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.2	32.0	10.4	59.0	26.1	15.9	54.7	34.0	29.9	61.9	40.9	41.9
Incr Delay (d2), s/veh	3.1	18.5	0.1	1.0	4.0	0.1	2.9	0.0	0.2	47.0	0.0	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	25.5	1.4	0.4	14.6	0.2	2.8	0.0	0.5	2.4	0.1	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.2	50.5	10.6	60.0	30.1	16.0	57.6	34.0	30.1	108.9	40.9	48.6
LnGrp LOS	E	F	B	E	C	B	E	C	C	F	D	D
Approach Vol, veh/h		1734			1233			116			255	
Approach Delay, s/veh		48.0			30.2			51.5			60.6	
Approach LOS		D			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	70.0	18.3	31.0	10.7	70.0	9.3	40.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	66.0	15.0	27.0	6.0	66.0	6.0	36.0
Max Q Clear Time (g_c+I1), s	3.1	68.0	9.3	12.2	5.6	44.0	6.3	2.1
Green Ext Time (p_c), s	0.0	0.0	0.1	0.5	0.0	8.1	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	42.5
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	1365	106	11	1048	13	78	2	21	44	2	176
Future Volume (veh/h)	37	1365	106	11	1048	13	78	2	21	44	2	176
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	43	1569	122	13	1205	15	90	2	24	51	2	202
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	78	1543	838	78	1543	688	168	443	445	62	332	351
Arrive On Green	0.05	0.51	0.51	0.05	0.51	0.51	0.11	0.28	0.28	0.04	0.21	0.21
Sat Flow, veh/h	1524	3040	1356	1524	3040	1356	1524	1600	1356	1524	1600	1356
Grp Volume(v), veh/h	43	1569	122	13	1205	15	90	2	24	51	2	202
Grp Sat Flow(s),veh/h/ln	1524	1520	1356	1524	1520	1356	1524	1600	1356	1524	1600	1356
Q Serve(g_s), s	3.6	66.0	0.0	1.1	42.0	0.7	7.3	0.1	0.0	4.3	0.1	10.2
Cycle Q Clear(g_c), s	3.6	66.0	0.0	1.1	42.0	0.7	7.3	0.1	0.0	4.3	0.1	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	78	1543	838	78	1543	688	168	443	445	62	332	351
V/C Ratio(X)	0.55	1.02	0.15	0.17	0.78	0.02	0.54	0.00	0.05	0.82	0.01	0.57
Avail Cap(c_a), veh/h	78	1543	838	78	1543	688	176	443	445	70	332	351
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.38	0.38	0.38	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.2	32.0	10.4	59.0	26.1	15.9	54.7	34.0	29.9	61.9	40.9	41.9
Incr Delay (d2), s/veh	3.1	18.5	0.1	1.0	4.0	0.1	2.9	0.0	0.2	47.0	0.0	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	25.5	1.4	0.4	14.6	0.2	2.8	0.0	0.5	2.4	0.1	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.2	50.5	10.6	60.0	30.1	16.0	57.6	34.0	30.1	108.9	40.9	48.6
LnGrp LOS	E	F	B	E	C	B	E	C	C	F	D	D
Approach Vol, veh/h		1734			1233			116			255	
Approach Delay, s/veh		48.0			30.2			51.5			60.6	
Approach LOS		D			C			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	70.0	18.3	31.0	10.7	70.0	9.3	40.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	66.0	15.0	27.0	6.0	66.0	6.0	36.0
Max Q Clear Time (g_c+I1), s	3.1	68.0	9.3	12.2	5.6	44.0	6.3	2.1
Green Ext Time (p_c), s	0.0	0.0	0.1	0.5	0.0	8.1	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	42.5
HCM 6th LOS	D

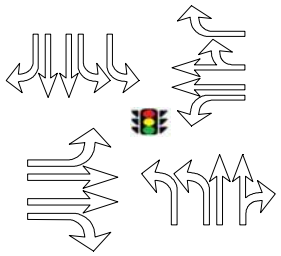
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	21-Dec-22	PTRT0000-0001	1 OF 2

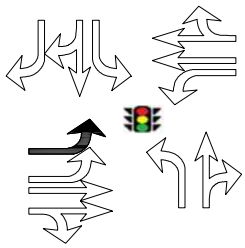
E/W STREET : RANCHO VISTA BLVD
N/S STREET : SIERRA HIGHWAY
CONDITION : AM PEAK HOUR

INTERSECTION : 5
PROJECTED GROWTH PER YEAR : 2%

CONDITION DIAGRAMS



EXISTING GEOMETRICS



PROJECT GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Year 2022 to 2024 Ambient Growth	Adjacent Project Trips	Opening Year 2024 Background Conditions	Project Trips	Opening Year 2024 Background + Project Conditions
	1			3		5
RANCHO VISTA BLVD						
EB Left	108	5	0	113	0	113
EB Thru	1,053	43	0	1,096	154	1,250
EB Right	69	3	0	72	0	72
WB Left	76	4	0	80	3	83
WB Thru	721	29	0	750	20	770
WB Right	522	21	0	543	12	555
SIERRA HIGHWAY						
NB Left	76	4	0	80	0	80
NB Thru	528	22	5	555	0	555
NB Right	28	2	0	30	15	45
SB Left	29	2	0	31	92	123
SB Thru	503	21	1	525	0	525
SB Right	67	3	0	70	0	70
TOTALS	**3,780**	**159**	**6**	**3,945**	**296**	**4,241**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	21-Dec-22	PTRT0000-0001	2 OF 2

E/W STREET : RANCHO VISTA BLVD
N/S STREET : SIERRA HIGHWAY
CONDITION : AM PEAK HOUR
PHF : 0.91

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
14	112	0	2	0	2	0	0	0	0	1	0
12	114	2	0	2	0	1	0	0	0	0	3
18	131	2	0	0	2	1	3	0	0	2	2
14	122	2	1	2	1	0	0	0	0	1	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
3	105	10	1	3	2	0	0	1	0	3	0
3	122	14	0	1	0	0	0	0	1	0	2
4	135	20	0	4	0	0	2	0	1	1	0
3	128	21	1	2	0	0	2	0	2	1	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
134	170	14	0	0	0	0	0	1	2	1	1
145	163	19	2	1	1	0	1	0	2	0	0
120	187	22	2	1	0	2	0	0	1	1	0
89	193	8	0	2	0	0	0	0	1	0	2

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
13	269	30	0	0	0	1	2	0	0	0	0
15	281	26	0	1	0	0	0	0	0	1	0
16	305	26	0	1	0	0	0	2	0	0	0
14	188	22	1	0	0	1	0	0	2	0	0

	Truck Volumes	Auto Volumes	Vehicle Totals	PCE Totals	Balanced PCE Totals
RANCHO VISTA BLVD					
EBL	2	104	**106**	**108**	**108**
EBTH	5	1043	**1048**	**1053**	**1053**
EBR	5	58	**63**	**69**	**69**
WBL	5	63	**68**	**76**	**76**
WBTH	7	713	**720**	**721**	**721**
WBR	12	488	**500**	**522**	**522**
SIERRA HIGHWAY					
NBL	5	65	**70**	**76**	**76**
NBTH	19	490	**509**	**528**	**528**
NBR	6	13	**19**	**28**	**28**
SBL	10	6	**16**	**29**	**29**
SBTH	11	479	**490**	**503**	**503**
SBR	5	58	**63**	**67**	**67**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	108	1053	69	76	721	522	76	528	28	29	503	67
Future Volume (veh/h)	108	1053	69	76	721	522	76	528	28	29	503	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	119	1157	76	84	970	455	84	580	31	32	553	74
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	122	1094	569	91	1088	542	177	1057	56	177	1094	597
Arrive On Green	0.08	0.36	0.36	0.06	0.34	0.34	0.06	0.36	0.36	0.06	0.36	0.36
Sat Flow, veh/h	1524	3040	1356	1524	3200	1356	2956	2935	157	2956	3040	1356
Grp Volume(v), veh/h	119	1157	76	84	970	455	84	300	311	32	553	74
Grp Sat Flow(s),veh/h/ln	1524	1520	1356	1524	1600	1356	1478	1520	1572	1478	1520	1356
Q Serve(g_s), s	7.8	36.0	0.0	5.5	28.7	20.3	2.7	15.7	15.8	1.0	14.2	2.2
Cycle Q Clear(g_c), s	7.8	36.0	0.0	5.5	28.7	20.3	2.7	15.7	15.8	1.0	14.2	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	122	1094	569	91	1088	542	177	547	566	177	1094	597
V/C Ratio(X)	0.98	1.06	0.13	0.92	0.89	0.84	0.47	0.55	0.55	0.18	0.51	0.12
Avail Cap(c_a), veh/h	122	1094	569	91	1088	542	177	547	566	177	1094	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.9	32.0	17.8	46.8	31.3	18.2	45.5	25.5	25.5	44.7	25.0	8.2
Incr Delay (d2), s/veh	73.8	43.7	0.1	12.9	1.0	1.1	2.0	3.9	3.8	0.5	1.7	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	18.4	1.0	2.3	10.1	5.1	1.0	5.7	5.9	0.4	4.9	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	119.7	75.7	17.9	59.7	32.2	19.3	47.4	29.4	29.3	45.1	26.7	8.6
LnGrp LOS	F	F	B	E	C	B	D	C	C	D	C	A
Approach Vol, veh/h		1352			1509			695			659	
Approach Delay, s/veh		76.3			29.9			31.6			25.6	
Approach LOS		E			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	40.0	10.0	40.0	10.0	40.0	12.0	38.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	36.0	6.0	36.0	6.0	36.0	8.0	34.0
Max Q Clear Time (g_c+I1), s	13.8	17.8	7.5	38.0	4.7	16.2	9.8	30.7
Green Ext Time (p_c), s	0.0	2.9	0.0	0.0	0.0	3.3	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	44.4
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	1096	72	80	750	543	80	555	30	31	525	70
Future Volume (veh/h)	113	1096	72	80	750	543	80	555	30	31	525	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	124	1204	79	88	1009	474	88	610	33	34	577	77
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	122	1094	569	91	1088	542	177	1056	57	177	1094	597
Arrive On Green	0.08	0.36	0.36	0.06	0.34	0.34	0.06	0.36	0.36	0.06	0.36	0.36
Sat Flow, veh/h	1524	3040	1356	1524	3200	1356	2956	2933	159	2956	3040	1356
Grp Volume(v), veh/h	124	1204	79	88	1009	474	88	316	327	34	577	77
Grp Sat Flow(s),veh/h/ln	1524	1520	1356	1524	1600	1356	1478	1520	1571	1478	1520	1356
Q Serve(g_s), s	8.0	36.0	0.0	5.8	30.4	21.9	2.9	16.8	16.8	1.1	15.0	2.3
Cycle Q Clear(g_c), s	8.0	36.0	0.0	5.8	30.4	21.9	2.9	16.8	16.8	1.1	15.0	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	122	1094	569	91	1088	542	177	547	566	177	1094	597
V/C Ratio(X)	1.02	1.10	0.14	0.96	0.93	0.87	0.50	0.58	0.58	0.19	0.53	0.13
Avail Cap(c_a), veh/h	122	1094	569	91	1088	542	177	547	566	177	1094	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	32.0	17.9	46.9	31.8	18.7	45.5	25.9	25.9	44.7	25.3	8.2
Incr Delay (d2), s/veh	86.2	58.9	0.1	19.7	1.6	1.6	2.1	4.4	4.3	0.5	1.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	20.7	1.0	2.6	10.8	5.6	1.1	6.2	6.4	0.4	5.2	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	132.2	90.9	18.0	66.6	33.4	20.3	47.7	30.2	30.1	45.2	27.1	8.6
LnGrp LOS	F	F	B	E	C	C	D	C	C	D	C	A
Approach Vol, veh/h		1407			1571			731			688	
Approach Delay, s/veh		90.4			31.3			32.3			25.9	
Approach LOS		F			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	40.0	10.0	40.0	10.0	40.0	12.0	38.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	36.0	6.0	36.0	6.0	36.0	8.0	34.0
Max Q Clear Time (g_c+I1), s	7.1	18.8	7.8	38.0	4.9	17.0	10.0	32.4
Green Ext Time (p_c), s	0.0	3.0	0.0	0.0	0.0	3.4	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	49.6
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	1250	72	83	770	555	80	555	45	123	525	70
Future Volume (veh/h)	113	1250	72	83	770	555	80	555	45	123	525	70
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	124	1374	79	91	1033	485	88	610	49	135	577	77
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	122	1094	569	91	1088	542	177	1026	82	177	1094	597
Arrive On Green	0.08	0.36	0.36	0.06	0.34	0.34	0.06	0.36	0.36	0.06	0.36	0.36
Sat Flow, veh/h	1524	3040	1356	1524	3200	1356	2956	2850	229	2956	3040	1356
Grp Volume(v), veh/h	124	1374	79	91	1033	485	88	325	334	135	577	77
Grp Sat Flow(s),veh/h/ln	1524	1520	1356	1524	1600	1356	1478	1520	1559	1478	1520	1356
Q Serve(g_s), s	8.0	36.0	0.0	6.0	31.5	23.0	2.9	17.4	17.5	4.5	15.0	2.3
Cycle Q Clear(g_c), s	8.0	36.0	0.0	6.0	31.5	23.0	2.9	17.4	17.5	4.5	15.0	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.15	1.00		1.00
Lane Grp Cap(c), veh/h	122	1094	569	91	1088	542	177	547	561	177	1094	597
V/C Ratio(X)	1.02	1.26	0.14	1.00	0.95	0.89	0.50	0.59	0.60	0.76	0.53	0.13
Avail Cap(c_a), veh/h	122	1094	569	91	1088	542	177	547	561	177	1094	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	32.0	17.9	47.0	32.2	19.0	45.5	26.0	26.1	46.3	25.3	8.2
Incr Delay (d2), s/veh	86.2	122.5	0.1	27.0	2.3	2.0	2.1	4.7	4.6	17.4	1.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	30.4	1.0	2.8	11.3	5.9	1.1	6.4	6.6	2.0	5.2	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	132.2	154.5	18.0	74.0	34.5	21.1	47.7	30.7	30.7	63.7	27.1	8.6
LnGrp LOS	F	F	B	E	C	C	D	C	C	E	C	A
Approach Vol, veh/h		1577			1609			747			789	
Approach Delay, s/veh		145.9			32.7			32.7			31.6	
Approach LOS		F			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	40.0	10.0	40.0	10.0	40.0	12.0	38.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	36.0	6.0	36.0	6.0	36.0	8.0	34.0
Max Q Clear Time (g_c+I1), s	6.5	19.5	8.0	38.0	4.9	17.0	10.0	33.5
Green Ext Time (p_c), s	0.0	3.1	0.0	0.0	0.0	3.4	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	70.3
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	21-Dec-22	PTRT0000-0001	1 OF 2

E/W STREET : RANCHO VISTA BLVD
N/S STREET : SIERRA HIGHWAY
CONDITION : PM PEAK HOUR

INTERSECTION : 5
PROJECTED GROWTH PER YEAR : 2%

TURN MOVEMENTS

Condition	Existing Condition Traffic	Year 2022 to 2024 Ambient Growth	Adjacent Project Trips	Opening Year 2024 Background Conditions	Project Trips	Opening Year 2024 Background + Project Conditions
	2			6		8
RANCHO VISTA BLVD						
EB Left	255	11	0	266	0	266
EB Thru	753	31	0	784	23	807
EB Right	286	12	0	298	0	298
WB Left	11	1	0	12	14	26
WB Thru	708	29	0	737	133	870
WB Right	784	32	0	816	78	894
SIERRA HIGHWAY						
NB Left	121	5	0	126	0	126
NB Thru	1,158	47	3	1,208	0	1,208
NB Right	25	1	0	26	3	29
SB Left	642	26	0	668	14	682
SB Thru	1,030	42	5	1,077	0	1,077
SB Right	213	9	0	222	0	222
TOTALS	**5,986**	**246**	**8**	**6,240**	**265**	**6,505**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	21-Dec-22	PTRT0000-0001	2 OF 2

E/W STREET : RANCHO VISTA BLVD
CONDITION : PM PEAK HOUR

N/S STREET : SIERRA HIGHWAY
PHF : 0.88

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
54	241	109	0	1	1	0	1	0	0	0	0
51	314	191	0	0	2	0	4	0	0	1	0
35	235	146	0	2	1	0	1	0	0	0	0
73	213	190	0	2	0	0	2	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
16	194	16	0	1	0	0	1	0	0	0	1
4	301	16	0	1	0	0	3	0	0	1	1
0	213	19	0	2	1	0	2	0	0	0	0
5	422	59	0	1	0	0	1	0	0	1	1

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
146	252	1	1	1	0	0	0	0	0	1	0
230	172	3	1	1	0	0	0	0	1	0	0
183	167	4	1	0	0	0	1	0	0	0	0
196	107	3	0	0	0	1	1	0	0	1	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
38	216	70	1	1	0	1	1	0	0	4	0
98	208	60	1	1	0	0	1	2	1	0	0
69	177	43	1	1	0	0	1	0	0	1	0
70	112	78	1	2	0	0	4	0	0	1	0

	Truck Volumes	Auto Volumes	Vehicle Totals	PCE Totals	Balanced PCE Totals
RANCHO VISTA BLVD					
EBL	2	251	**253**	**255**	**255**
EBTH	18	713	**731**	**753**	**753**
EBR	6	275	**281**	**286**	**286**
WBL	0	11	**11**	**11**	**11**
WBTH	6	698	**704**	**708**	**708**
WBR	5	755	**760**	**784**	**784**
SIERRA HIGHWAY					
NBL	4	110	**114**	**121**	**121**
NBTH	14	1130	**1144**	**1158**	**1158**
NBR	0	25	**25**	**25**	**25**
SBL	4	636	**640**	**642**	**642**
SBTH	14	1003	**1017**	**1030**	**1030**
SBR	0	213	**213**	**213**	**213**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	753	286	11	708	784	121	1158	25	642	1030	213
Future Volume (veh/h)	255	753	286	11	708	784	121	1158	25	642	1030	213
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	290	856	325	12	728	942	138	1316	28	730	1170	242
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	203	943	529	137	427	1157	236	1015	22	473	1257	741
Arrive On Green	0.13	0.31	0.31	0.09	0.27	0.27	0.08	0.33	0.33	0.16	0.41	0.41
Sat Flow, veh/h	1524	3040	1356	1524	1600	2712	2956	3044	65	2956	3040	1356
Grp Volume(v), veh/h	290	856	325	12	728	942	138	657	687	730	1170	242
Grp Sat Flow(s),veh/h/ln	1524	1520	1356	1524	1600	1356	1478	1520	1588	1478	1520	1356
Q Serve(g_s), s	20.0	40.6	16.8	1.1	40.0	17.5	6.8	50.0	50.0	24.0	55.1	9.6
Cycle Q Clear(g_c), s	20.0	40.6	16.8	1.1	40.0	17.5	6.8	50.0	50.0	24.0	55.1	9.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	203	943	529	137	427	1157	236	507	529	473	1257	741
V/C Ratio(X)	1.43	0.91	0.61	0.09	1.71	0.81	0.58	1.30	1.30	1.54	0.93	0.33
Avail Cap(c_a), veh/h	203	1034	569	137	427	1157	236	507	529	473	1257	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.34	0.34	0.34	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	49.7	36.7	62.6	55.0	20.0	66.6	50.0	50.0	63.0	42.0	8.9
Incr Delay (d2), s/veh	218.4	10.9	1.8	0.1	321.2	1.6	3.6	147.5	147.5	254.9	13.5	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.8	16.2	4.9	0.4	53.5	8.2	2.6	38.8	40.6	25.5	21.8	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	283.4	60.5	38.4	62.7	376.2	21.6	70.2	197.5	197.5	317.9	55.5	10.1
LnGrp LOS	F	E	D	E	F	C	E	F	F	F	E	B
Approach Vol, veh/h		1471			1682			1482			2142	
Approach Delay, s/veh		99.6			175.4			185.6			139.8	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	54.0	17.5	50.5	16.0	66.0	24.0	44.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	24.0	50.0	9.0	51.0	12.0	62.0	20.0	40.0
Max Q Clear Time (g_c+I1), s	26.0	52.0	3.1	42.6	8.8	57.1	22.0	42.0
Green Ext Time (p_c), s	0.0	0.0	0.0	4.0	0.1	3.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	149.9
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	266	784	298	12	737	816	126	1208	26	668	1077	222
Future Volume (veh/h)	266	784	298	12	737	816	126	1208	26	668	1077	222
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	302	891	339	14	758	981	143	1373	30	759	1224	252
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	203	970	541	123	427	1157	236	1014	22	473	1257	741
Arrive On Green	0.13	0.32	0.32	0.08	0.27	0.27	0.08	0.33	0.33	0.16	0.41	0.41
Sat Flow, veh/h	1524	3040	1356	1524	1600	2712	2956	3042	66	2956	3040	1356
Grp Volume(v), veh/h	302	891	339	14	758	981	143	686	717	759	1224	252
Grp Sat Flow(s),veh/h/ln	1524	1520	1356	1524	1600	1356	1478	1520	1588	1478	1520	1356
Q Serve(g_s), s	20.0	42.4	18.1	1.3	40.0	20.2	7.0	50.0	50.0	24.0	59.3	10.0
Cycle Q Clear(g_c), s	20.0	42.4	18.1	1.3	40.0	20.2	7.0	50.0	50.0	24.0	59.3	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	203	970	541	123	427	1157	236	507	529	473	1257	741
V/C Ratio(X)	1.49	0.92	0.63	0.11	1.78	0.85	0.60	1.35	1.36	1.60	0.97	0.34
Avail Cap(c_a), veh/h	203	1034	569	123	427	1157	236	507	529	473	1257	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.27	0.27	0.27	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	49.2	36.1	63.9	55.0	21.2	66.7	50.0	50.0	63.0	43.2	9.0
Incr Delay (d2), s/veh	243.2	12.3	2.0	0.1	352.0	1.7	4.3	171.6	171.9	281.9	19.9	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.3	17.0	5.3	0.5	57.2	8.7	2.7	42.2	44.1	27.2	24.4	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	308.2	61.5	38.1	64.0	407.0	22.9	71.0	221.6	221.9	344.9	63.1	10.2
LnGrp LOS	F	E	D	E	F	C	E	F	F	F	E	B
Approach Vol, veh/h		1532			1753			1546			2235	
Approach Delay, s/veh		105.0			189.3			207.8			152.8	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	54.0	16.2	51.8	16.0	66.0	24.0	44.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	24.0	50.0	9.0	51.0	12.0	62.0	20.0	40.0
Max Q Clear Time (g_c+I1), s	26.0	52.0	3.3	44.4	9.0	61.3	22.0	42.0
Green Ext Time (p_c), s	0.0	0.0	0.0	3.5	0.1	0.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	163.5
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

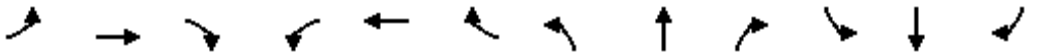
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	266	807	298	26	870	894	126	1208	29	682	1077	222
Future Volume (veh/h)	266	807	298	26	870	894	126	1208	29	682	1077	222
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	302	917	339	30	842	1114	143	1373	33	775	1224	252
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	203	987	549	115	427	1157	236	1011	24	473	1257	741
Arrive On Green	0.13	0.32	0.32	0.08	0.27	0.27	0.08	0.33	0.33	0.16	0.41	0.41
Sat Flow, veh/h	1524	3040	1356	1524	1600	2712	2956	3034	73	2956	3040	1356
Grp Volume(v), veh/h	302	917	339	30	842	1114	143	687	719	775	1224	252
Grp Sat Flow(s),veh/h/ln	1524	1520	1356	1524	1600	1356	1478	1520	1587	1478	1520	1356
Q Serve(g_s), s	20.0	43.7	17.8	2.8	40.0	30.4	7.0	50.0	50.0	24.0	59.3	10.0
Cycle Q Clear(g_c), s	20.0	43.7	17.8	2.8	40.0	30.4	7.0	50.0	50.0	24.0	59.3	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	203	987	549	115	427	1157	236	507	529	473	1257	741
V/C Ratio(X)	1.49	0.93	0.62	0.26	1.97	0.96	0.60	1.36	1.36	1.64	0.97	0.34
Avail Cap(c_a), veh/h	203	1034	569	115	427	1157	236	507	529	473	1257	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	49.0	35.4	65.4	55.0	25.1	66.7	50.0	50.0	63.0	43.2	9.0
Incr Delay (d2), s/veh	243.2	13.7	1.9	0.1	438.8	2.9	4.3	173.0	173.4	296.8	19.9	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.3	17.7	5.2	1.1	67.5	8.1	2.7	42.4	44.3	28.2	24.4	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	308.2	62.7	37.3	65.5	493.8	28.0	71.0	223.0	223.4	359.8	63.1	10.2
LnGrp LOS	F	E	D	E	F	C	E	F	F	F	E	B
Approach Vol, veh/h		1558			1986			1549			2251	
Approach Delay, s/veh		104.8			226.0			209.1			159.3	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	54.0	15.3	52.7	16.0	66.0	24.0	44.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	24.0	50.0	9.0	51.0	12.0	62.0	20.0	40.0
Max Q Clear Time (g_c+I1), s	26.0	52.0	4.8	45.7	9.0	61.3	22.0	42.0
Green Ext Time (p_c), s	0.0	0.0	0.0	3.0	0.1	0.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	176.3
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	266	807	298	26	870	894	126	1208	29	682	1077	222
Future Volume (veh/h)	266	807	298	26	870	894	126	1208	29	682	1077	222
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	302	917	339	30	842	1114	143	1373	33	775	1224	252
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	236	961	512	87	469	1229	181	1092	26	473	1394	730
Arrive On Green	0.08	0.32	0.32	0.06	0.29	0.29	0.06	0.36	0.36	0.16	0.46	0.46
Sat Flow, veh/h	2956	3040	1356	1524	1600	2712	2956	3034	73	2956	3040	1356
Grp Volume(v), veh/h	302	917	339	30	842	1114	143	687	719	775	1224	252
Grp Sat Flow(s),veh/h/ln	1478	1520	1356	1524	1600	1356	1478	1520	1587	1478	1520	1356
Q Serve(g_s), s	12.0	44.3	24.3	2.8	44.0	40.4	7.2	54.0	54.0	24.0	54.7	3.0
Cycle Q Clear(g_c), s	12.0	44.3	24.3	2.8	44.0	40.4	7.2	54.0	54.0	24.0	54.7	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	236	961	512	87	469	1229	181	547	571	473	1394	730
V/C Ratio(X)	1.28	0.95	0.66	0.34	1.79	0.91	0.79	1.26	1.26	1.64	0.88	0.35
Avail Cap(c_a), veh/h	236	973	517	87	469	1229	217	547	571	473	1394	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.39	0.39	0.39	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.0	50.2	24.3	68.0	53.0	20.5	69.4	48.0	48.0	63.0	36.8	10.1
Incr Delay (d2), s/veh	153.2	18.7	3.1	0.9	360.7	4.3	14.9	129.6	129.9	296.8	8.1	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	18.6	7.8	1.1	63.9	12.2	3.0	39.0	40.8	28.2	20.6	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	222.2	68.9	27.4	68.9	413.7	24.7	84.4	177.6	177.9	359.8	44.9	11.4
LnGrp LOS	F	E	C	E	F	C	F	F	F	F	D	B
Approach Vol, veh/h		1558			1986			1549			2251	
Approach Delay, s/veh		89.6			190.3			169.1			149.6	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	58.0	12.6	51.4	13.2	72.8	16.0	48.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	24.0	54.0	8.0	48.0	11.0	67.0	12.0	44.0
Max Q Clear Time (g_c+I1), s	26.0	56.0	4.8	46.3	9.2	56.7	14.0	46.0
Green Ext Time (p_c), s	0.0	0.0	0.0	1.1	0.1	5.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	152.0
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

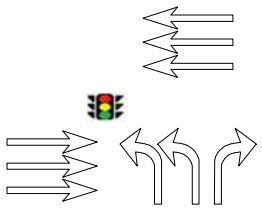
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	21-Dec-22	PTRT0000-0001	1 OF 2

E/W STREET : RANCHO VISTA BLVD
N/S STREET : SR 14 NB OFF
CONDITION : AM PEAK HOUR

INTERSECTION : 6
PROJECTED GROWTH PER YEAR : 2%

CONDITION DIAGRAMS



EXISTING GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Year 2022 to 2024 Ambient Growth	Adjacent Project Trips	Opening Year 2024 Background Conditions	Project Trips	Opening Year 2024 Background + Project Conditions
	1			3		5
RANCHO VISTA BLVD						
EB Left	0	0	0	0	0	0
EB Thru	758	31	0	789	92	881
EB Right	0	0	0	0	0	0
WB Left	0	0	0	0	0	0
WB Thru	1,146	46	0	1,192	20	1,212
WB Right	0	0	0	0	0	0
SR 14 NB OFF						
NB Left	323	13	0	336	0	336
NB Thru	0	0	0	0	0	0
NB Right	144	6	0	150	62	212
SB Left	0	0	0	0	0	0
SB Thru	0	0	0	0	0	0
SB Right	0	0	0	0	0	0
TOTALS	**2,371**	**96**	**0**	**2,467**	**174**	**2,641**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	21-Dec-22	PTRT0000-0001	2 OF 2

E/W STREET : RANCHO VISTA BLVD
N/S STREET : SR 14 NB OFF
CONDITION : AM PEAK HOUR
PHF : 0.75

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	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											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
20	0	72	0	0	0	1	0	0	0	0	0
30	0	61	2	0	2	0	0	0	1	0	0
33	0	89	0	0	3	2	0	1	0	0	1
47	0	87	1	0	1	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	240	0	0	2	0	0	0	0	0	0	0
0	396	0	0	4	0	0	1	0	0	2	0
0	297	0	0	2	0	0	1	0	0	0	0
0	203	0	0	0	0	0	0	0	0	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	138	0	0	2	0	0	1	0	0	2	0
0	278	0	0	3	0	0	1	0	0	1	0
0	127	0	0	0	0	0	0	0	0	2	0
0	178	0	0	2	0	0	2	0	0	1	0

	Truck Volumes	Auto Volumes	Vehicle Totals	PCE Totals	Balanced PCE Totals
RANCHO VISTA BLVD					
EBL	0	0	**0**	**0**	**0**
EBTH	17	721	**738**	**758**	**758**
EBR	0	0	**0**	**0**	**0**
WBL	0	0	**0**	**0**	**0**
WBTH	12	1136	**1148**	**1146**	**1146**
WBR	0	0	**0**	**0**	**0**
SR 14 NB OFF					
NBL	8	309	**317**	**323**	**323**
NBTH	0	0	**0**	**0**	**0**
NBR	7	130	**137**	**144**	**144**
SBL	0	0	**0**	**0**	**0**
SBTH	0	0	**0**	**0**	**0**
SBR	0	0	**0**	**0**	**0**

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↰↰	↱
Traffic Volume (veh/h)	758	0	0	1146	323	144
Future Volume (veh/h)	758	0	0	1146	323	144
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	1600	0	0	1600	1600	1600
Adj Flow Rate, veh/h	1011	0	0	1528	431	192
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2057	0	0	2057	1170	537
Arrive On Green	0.63	0.00	0.00	0.47	0.40	0.40
Sat Flow, veh/h	4656	0	0	4656	2956	1356
Grp Volume(v), veh/h	1011	0	0	1528	431	192
Grp Sat Flow(s),veh/h/ln	1456	0	0	1456	1478	1356
Q Serve(g_s), s	7.5	0.0	0.0	17.1	6.2	6.0
Cycle Q Clear(g_c), s	7.5	0.0	0.0	17.1	6.2	6.0
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2057	0	0	2057	1170	537
V/C Ratio(X)	0.49	0.00	0.00	0.74	0.37	0.36
Avail Cap(c_a), veh/h	2621	0	0	2621	1170	537
HCM Platoon Ratio	1.33	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	7.3	0.0	0.0	12.9	12.8	12.8
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.9	0.9	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	4.1	2.0	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.5	0.0	0.0	13.8	13.7	14.6
LnGrp LOS	A	A	A	B	B	B
Approach Vol, veh/h	1011			1528	623	
Approach Delay, s/veh	7.5			13.8	14.0	
Approach LOS	A			B	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	27.7	32.3	32.3
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	36.0	36.0
Max Q Clear Time (g_c+I1), s	8.2	9.5	19.1
Green Ext Time (p_c), s	1.6	6.9	9.2

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

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↰↰	↱
Traffic Volume (veh/h)	789	0	0	1192	336	150
Future Volume (veh/h)	789	0	0	1192	336	150
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	1600	0	0	1600	1600	1600
Adj Flow Rate, veh/h	1052	0	0	1589	448	200
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2117	0	0	2117	1136	521
Arrive On Green	0.48	0.00	0.00	0.48	0.38	0.38
Sat Flow, veh/h	4656	0	0	4656	2956	1356
Grp Volume(v), veh/h	1052	0	0	1589	448	200
Grp Sat Flow(s),veh/h/ln	1456	0	0	1456	1478	1356
Q Serve(g_s), s	10.0	0.0	0.0	18.0	6.7	6.5
Cycle Q Clear(g_c), s	10.0	0.0	0.0	18.0	6.7	6.5
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2117	0	0	2117	1136	521
V/C Ratio(X)	0.50	0.00	0.00	0.75	0.39	0.38
Avail Cap(c_a), veh/h	2649	0	0	2649	1136	521
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.7	0.0	0.0	12.7	13.6	13.6
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.9	1.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	0.0	4.3	2.2	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.8	0.0	0.0	13.7	14.7	15.7
LnGrp LOS	B	A	A	B	B	B
Approach Vol, veh/h	1052			1589	648	
Approach Delay, s/veh	10.8			13.7	15.0	
Approach LOS	B			B	B	

Timer - Assigned Phs	2		4		8
Phs Duration (G+Y+Rc), s	27.4		33.6		33.6
Change Period (Y+Rc), s	4.0		4.0		4.0
Max Green Setting (Gmax), s	16.0		37.0		37.0
Max Q Clear Time (g_c+I1), s	8.7		12.0		20.0
Green Ext Time (p_c), s	1.6		7.1		9.6

Intersection Summary	
HCM 6th Ctrl Delay	13.0
HCM 6th LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↰↰	↱
Traffic Volume (veh/h)	881	0	0	1212	336	212
Future Volume (veh/h)	881	0	0	1212	336	212
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	1600	0	0	1600	1600	1600
Adj Flow Rate, veh/h	1175	0	0	1616	448	283
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2142	0	0	2142	1119	513
Arrive On Green	0.49	0.00	0.00	0.49	0.38	0.38
Sat Flow, veh/h	4656	0	0	4656	2956	1356
Grp Volume(v), veh/h	1175	0	0	1616	448	283
Grp Sat Flow(s),veh/h/ln	1456	0	0	1456	1478	1356
Q Serve(g_s), s	11.4	0.0	0.0	18.3	6.8	10.0
Cycle Q Clear(g_c), s	11.4	0.0	0.0	18.3	6.8	10.0
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2142	0	0	2142	1119	513
V/C Ratio(X)	0.55	0.00	0.00	0.75	0.40	0.55
Avail Cap(c_a), veh/h	2649	0	0	2649	1119	513
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.8	0.0	0.0	12.6	13.9	14.9
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.0	1.1	4.2
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	0.0	0.0	4.3	2.2	3.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.0	0.0	0.0	13.6	15.0	19.1
LnGrp LOS	B	A	A	B	B	B
Approach Vol, veh/h	1175			1616	731	
Approach Delay, s/veh	11.0			13.6	16.6	
Approach LOS	B			B	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	27.1	33.9	33.9
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	37.0	37.0
Max Q Clear Time (g_c+I1), s	12.0	13.4	20.3
Green Ext Time (p_c), s	1.2	8.0	9.7

Intersection Summary	
HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	21-Dec-22	PTRT0000-0001	1 OF 2

E/W STREET : RANCHO VISTA BLVD
N/S STREET : SR 14 NB OFF
CONDITION : PM PEAK HOUR

INTERSECTION : 6
PROJECTED GROWTH PER YEAR : 2%

TURN MOVEMENTS

Condition	Existing Condition Traffic	Year 2022 to 2024 Ambient Growth	Adjacent Project Trips	Opening Year 2024 Background Conditions	Project Trips	Opening Year 2024 Background + Project Conditions
	2			6		8
RANCHO VISTA BLVD						
EB Left	0	0	0	0	0	0
EB Thru	1,286	52	0	1,338	14	1,352
EB Right	0	0	0	0	0	0
WB Left	0	0	0	0	0	0
WB Thru	1,191	48	0	1,239	133	1,372
WB Right	0	0	0	0	0	0
SR 14 NB OFF						
NB Left	365	15	0	380	0	380
NB Thru	0	0	0	0	0	0
NB Right	77	4	0	81	9	90
SB Left	0	0	0	0	0	0
SB Thru	0	0	0	0	0	0
SB Right	0	0	0	0	0	0
TOTALS	**2,919**	**119**	**0**	**3,038**	**156**	**3,194**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	21-Dec-22	PTRT0000-0001	2 OF 2

E/W STREET : RANCHO VISTA BLVD
N/S STREET : SR 14 NB OFF
CONDITION : PM PEAK HOUR
PHF : 0.92

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	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											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
17	0	85	1	0	0	2	0	0	0	0	0
18	0	87	2	0	2	0	0	1	0	0	0
15	0	83	1	0	0	0	0	0	0	0	0
15	0	100	0	0	1	1	0	0	0	0	1

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	273	0	0	3	0	0	0	0	0	1	0
0	299	0	0	1	0	0	0	0	0	0	0
0	298	0	0	1	0	0	0	0	0	0	0
0	312	0	0	1	0	0	0	0	0	2	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	314	0	0	0	0	0	0	0	0	0	0
0	377	0	0	3	0	0	1	0	0	1	0
0	313	0	0	1	0	0	1	0	0	0	0
0	266	0	0	0	0	0	0	0	0	1	0

	Truck Volumes	Auto Volumes	Vehicle Totals	PCE Totals	Balanced PCE Totals
RANCHO VISTA BLVD					
EBL	0	0	**0**	**0**	**0**
EBTH	8	1270	**1278**	**1286**	**1286**
EBR	0	0	**0**	**0**	**0**
WBL	0	0	**0**	**0**	**0**
WBTH	9	1182	**1191**	**1191**	**1191**
WBR	0	0	**0**	**0**	**0**
SR 14 NB OFF					
NBL	5	355	**360**	**365**	**365**
NBTH	0	0	**0**	**0**	**0**
NBR	7	65	**72**	**77**	**77**
SBL	0	0	**0**	**0**	**0**
SBTH	0	0	**0**	**0**	**0**
SBR	0	0	**0**	**0**	**0**

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↰↰	↱
Traffic Volume (veh/h)	1286	0	0	1191	365	77
Future Volume (veh/h)	1286	0	0	1191	365	77
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	1600	0	0	1600	1600	1600
Adj Flow Rate, veh/h	1398	0	0	1295	397	84
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1928	0	0	1928	1257	577
Arrive On Green	0.44	0.00	0.00	0.44	0.43	0.43
Sat Flow, veh/h	4656	0	0	4656	2956	1356
Grp Volume(v), veh/h	1398	0	0	1295	397	84
Grp Sat Flow(s),veh/h/ln	1456	0	0	1456	1478	1356
Q Serve(g_s), s	15.8	0.0	0.0	14.1	5.3	2.3
Cycle Q Clear(g_c), s	15.8	0.0	0.0	14.1	5.3	2.3
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1928	0	0	1928	1257	577
V/C Ratio(X)	0.73	0.00	0.00	0.67	0.32	0.15
Avail Cap(c_a), veh/h	2621	0	0	2621	1257	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.78	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.8	0.0	0.0	13.3	11.4	10.6
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.4	0.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	0.0	3.5	1.7	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.3	0.0	0.0	13.7	12.1	11.1
LnGrp LOS	B	A	A	B	B	B
Approach Vol, veh/h	1398			1295	481	
Approach Delay, s/veh	14.3			13.7	11.9	
Approach LOS	B			B	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	29.5	30.5	30.5
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	36.0	36.0
Max Q Clear Time (g_c+I1), s	7.3	17.8	16.1
Green Ext Time (p_c), s	1.2	8.7	8.3

Intersection Summary	
HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↰↰	↱
Traffic Volume (veh/h)	1338	0	0	1239	380	81
Future Volume (veh/h)	1338	0	0	1239	380	81
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	1600	0	0	1600	1600	1600
Adj Flow Rate, veh/h	1454	0	0	1347	413	88
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	1986	0	0	1986	1224	562
Arrive On Green	0.45	0.00	0.00	0.45	0.41	0.41
Sat Flow, veh/h	4656	0	0	4656	2956	1356
Grp Volume(v), veh/h	1454	0	0	1347	413	88
Grp Sat Flow(s),veh/h/ln	1456	0	0	1456	1478	1356
Q Serve(g_s), s	16.6	0.0	0.0	14.8	5.8	2.5
Cycle Q Clear(g_c), s	16.6	0.0	0.0	14.8	5.8	2.5
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	1986	0	0	1986	1224	562
V/C Ratio(X)	0.73	0.00	0.00	0.68	0.34	0.16
Avail Cap(c_a), veh/h	2649	0	0	2649	1224	562
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.75	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.6	0.0	0.0	13.1	12.2	11.2
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.4	0.7	0.6
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	0.0	0.0	3.6	1.9	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.1	0.0	0.0	13.6	12.9	11.8
LnGrp LOS	B	A	A	B	B	B
Approach Vol, veh/h	1454			1347	501	
Approach Delay, s/veh	14.1			13.6	12.7	
Approach LOS	B			B	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	29.3	31.7	31.7
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	37.0	37.0
Max Q Clear Time (g_c+I1), s	7.8	18.6	16.8
Green Ext Time (p_c), s	1.3	9.1	8.8

Intersection Summary	
HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑↑			↑↑↑	↰↰	↱
Traffic Volume (veh/h)	1352	0	0	1372	380	90
Future Volume (veh/h)	1352	0	0	1372	380	90
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	1600	0	0	1600	1600	1600
Adj Flow Rate, veh/h	1470	0	0	1491	413	98
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	2023	0	0	2023	1199	550
Arrive On Green	0.46	0.00	0.00	0.46	0.41	0.41
Sat Flow, veh/h	4656	0	0	4656	2956	1356
Grp Volume(v), veh/h	1470	0	0	1491	413	98
Grp Sat Flow(s),veh/h/ln	1456	0	0	1456	1478	1356
Q Serve(g_s), s	16.6	0.0	0.0	17.0	5.9	2.8
Cycle Q Clear(g_c), s	16.6	0.0	0.0	17.0	5.9	2.8
Prop In Lane		0.00	0.00		1.00	1.00
Lane Grp Cap(c), veh/h	2023	0	0	2023	1199	550
V/C Ratio(X)	0.73	0.00	0.00	0.74	0.34	0.18
Avail Cap(c_a), veh/h	2649	0	0	2649	1199	550
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.75	0.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.2	0.0	0.0	13.3	12.5	11.6
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.8	0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	0.0	4.1	1.9	0.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.8	0.0	0.0	14.1	13.3	12.3
LnGrp LOS	B	A	A	B	B	B
Approach Vol, veh/h	1470			1491	511	
Approach Delay, s/veh	13.8			14.1	13.1	
Approach LOS	B			B	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	28.7	32.3	32.3
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	16.0	37.0	37.0
Max Q Clear Time (g_c+I1), s	7.9	18.6	19.0
Green Ext Time (p_c), s	1.3	9.2	9.3

Intersection Summary	
HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B

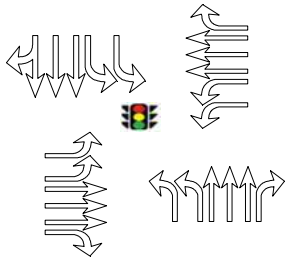
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	21-Dec-22	PTRT0000-0001	1 OF 2

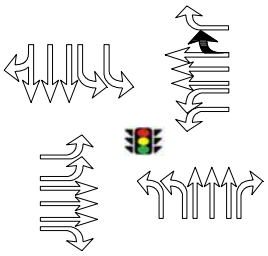
E/W STREET : RANCHO VISTA BLVD
N/S STREET : 10TH ST W
CONDITION : AM PEAK HOUR

INTERSECTION : 7
PROJECTED GROWTH PER YEAR : 2%

CONDITION DIAGRAMS



EXISTING GEOMETRICS



PROJECT GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Year 2022 to 2024 Ambient Growth	Adjacent Project Trips	Opening Year 2024 Background Conditions	Project Trips	Opening Year 2024 Background + Project Conditions
	1			3		5
RANCHO VISTA BLVD						
EB Left	154	7	0	161	0	161
EB Thru	620	25	0	645	30	675
EB Right	297	12	0	309	0	309
WB Left	77	4	0	81	0	81
WB Thru	1,057	43	0	1,100	4	1,104
WB Right	530	22	0	552	8	560
10TH ST W						
NB Left	328	14	0	342	0	342
NB Thru	448	18	0	466	0	466
NB Right	130	6	0	136	0	136
SB Left	157	7	0	164	62	226
SB Thru	574	23	0	597	0	597
SB Right	182	8	0	190	0	190
TOTALS	**4,554**	**189**	**0**	**4,743**	**104**	**4,847**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	21-Dec-22	PTRT0000-0001	2 OF 2

E/W STREET : RANCHO VISTA BLVD
CONDITION : AM PEAK HOUR
N/S STREET : 10TH ST W
PHF : 0.78

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
36	108	29	0	2	1	0	1	0	0	0	0
63	179	46	0	3	2	0	0	0	0	0	1
42	145	19	0	2	2	0	1	0	0	0	1
41	119	29	0	4	4	0	1	1	0	0	4

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
22	99	68	0	1	0	0	0	0	0	1	0
59	104	83	0	1	0	0	1	1	0	1	0
26	121	63	0	4	0	0	2	1	0	1	2
21	88	101	1	3	0	0	2	0	0	1	1

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
84	233	14	2	0	0	0	0	0	0	0	0
164	315	21	2	4	0	0	1	0	0	2	0
137	234	24	2	3	0	0	2	0	0	1	0
97	196	18	0	1	0	0	0	0	0	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
66	136	19	0	0	0	0	0	0	0	0	0
101	211	30	0	5	1	0	1	0	1	2	2
72	98	48	1	0	2	0	0	1	0	1	1
50	149	35	2	0	2	0	2	0	0	1	1

	Truck Volumes	Auto Volumes	Vehicle Totals	PCE Totals	Balanced PCE Totals
RANCHO VISTA BLVD					
EBL	10	132	**142**	**154**	**154**
EBTH	12	594	**606**	**620**	**620**
EBR	4	289	**293**	**297**	**297**
WBL	0	77	**77**	**77**	**77**
WBTH	14	978	**992**	**1057**	**1057**
WBR	6	482	**488**	**530**	**530**
10TH ST W					
NBL	5	315	**320**	**328**	**328**
NBTH	18	412	**430**	**448**	**448**
NBR	1	128	**129**	**130**	**130**
SBL	16	123	**139**	**157**	**157**
SBTH	14	551	**565**	**574**	**574**
SBR	0	182	**182**	**182**	**182**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	154	620	297	77	1057	530	328	448	130	157	574	182
Future Volume (veh/h)	154	620	297	77	1057	530	328	448	130	157	574	182
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	197	795	381	99	1355	679	421	574	167	201	736	233
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	222	1540	659	140	1420	555	394	1672	519	248	1098	344
Arrive On Green	0.08	0.35	0.35	0.09	0.65	0.65	0.13	0.38	0.38	0.11	0.44	0.44
Sat Flow, veh/h	2956	4368	1356	2956	4368	1356	2956	4368	1356	2956	3295	1031
Grp Volume(v), veh/h	197	795	381	99	1355	679	421	574	167	201	649	320
Grp Sat Flow(s),veh/h/ln	1478	1456	1356	1478	1456	1356	1478	1456	1356	1478	1456	1414
Q Serve(g_s), s	7.9	17.3	24.1	3.9	34.3	39.0	16.0	11.2	10.4	8.0	21.2	21.6
Cycle Q Clear(g_c), s	7.9	17.3	24.1	3.9	34.3	39.0	16.0	11.2	10.4	8.0	21.2	21.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.73
Lane Grp Cap(c), veh/h	222	1540	659	140	1420	555	394	1672	519	248	971	471
V/C Ratio(X)	0.89	0.52	0.58	0.71	0.95	1.22	1.07	0.34	0.32	0.81	0.67	0.68
Avail Cap(c_a), veh/h	222	1540	659	148	1420	555	394	1672	519	296	971	471
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.75	1.00	1.00	1.00	0.94	0.94	0.94
Uniform Delay (d), s/veh	55.0	30.7	22.0	53.5	20.2	20.8	52.0	26.3	26.1	52.4	28.2	28.3
Incr Delay (d2), s/veh	32.4	1.2	3.7	10.4	12.4	112.9	64.6	0.6	1.6	12.6	3.4	7.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	5.9	7.9	1.6	6.8	26.8	9.3	3.8	3.5	3.2	6.8	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.4	32.0	25.7	63.9	32.6	133.7	116.6	26.9	27.7	64.9	31.6	35.5
LnGrp LOS	F	C	C	E	C	F	F	C	C	E	C	D
Approach Vol, veh/h		1373			2133			1162			1170	
Approach Delay, s/veh		38.2			66.2			59.5			38.4	
Approach LOS		D			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.7	46.3	20.0	44.0	13.0	43.0	14.1	49.9
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	42.0	16.0	40.0	9.0	39.0	12.0	44.0
Max Q Clear Time (g_c+I1), s	5.9	26.1	18.0	23.6	9.9	41.0	10.0	13.2
Green Ext Time (p_c), s	0.0	5.7	0.0	5.5	0.0	0.0	0.1	4.4

Intersection Summary	
HCM 6th Ctrl Delay	52.7
HCM 6th LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	645	309	81	1100	552	342	466	136	164	597	190
Future Volume (veh/h)	161	645	309	81	1100	552	342	466	136	164	597	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	206	827	396	104	1410	708	438	597	174	210	765	244
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	222	1530	656	147	1420	558	394	1659	515	257	1096	346
Arrive On Green	0.08	0.35	0.35	0.05	0.32	0.32	0.13	0.38	0.38	0.12	0.44	0.44
Sat Flow, veh/h	2956	4368	1356	2956	4368	1356	2956	4368	1356	2956	3287	1038
Grp Volume(v), veh/h	206	827	396	104	1410	708	438	597	174	210	677	332
Grp Sat Flow(s),veh/h/ln	1478	1456	1356	1478	1456	1356	1478	1456	1356	1478	1456	1413
Q Serve(g_s), s	8.3	18.2	25.6	4.2	38.6	39.0	16.0	11.8	11.0	8.3	22.5	22.8
Cycle Q Clear(g_c), s	8.3	18.2	25.6	4.2	38.6	39.0	16.0	11.8	11.0	8.3	22.5	22.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.73
Lane Grp Cap(c), veh/h	222	1530	656	147	1420	558	394	1659	515	257	971	471
V/C Ratio(X)	0.93	0.54	0.60	0.71	0.99	1.27	1.11	0.36	0.34	0.82	0.70	0.71
Avail Cap(c_a), veh/h	222	1530	656	148	1420	558	394	1659	515	296	971	471
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	0.74	0.74	0.74	1.00	1.00	1.00	0.93	0.93	0.93
Uniform Delay (d), s/veh	55.2	31.2	22.6	56.2	40.4	35.3	52.0	26.7	26.5	52.1	28.5	28.6
Incr Delay (d2), s/veh	41.2	1.4	4.1	10.8	19.0	130.9	79.0	0.6	1.8	13.7	3.9	8.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	6.3	8.4	1.7	15.5	35.5	10.1	4.0	3.7	3.4	7.3	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	96.4	32.6	26.7	67.0	59.4	166.2	131.0	27.3	28.3	65.8	32.4	36.6
LnGrp LOS	F	C	C	E	E	F	F	C	C	E	C	D
Approach Vol, veh/h		1429			2222			1209			1219	
Approach Delay, s/veh		40.2			93.8			65.0			39.3	
Approach LOS		D			F			E			D	

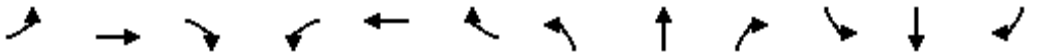
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	46.0	20.0	44.0	13.0	43.0	14.4	49.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	42.0	16.0	40.0	9.0	39.0	12.0	44.0
Max Q Clear Time (g_c+I1), s	6.3	27.6	18.0	24.8	10.3	41.0	10.3	13.8
Green Ext Time (p_c), s	0.0	5.7	0.0	5.5	0.0	0.0	0.1	4.6

Intersection Summary	
HCM 6th Ctrl Delay	64.5
HCM 6th LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	675	309	81	1104	560	342	466	136	226	597	190
Future Volume (veh/h)	161	675	309	81	1104	560	342	466	136	226	597	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	206	865	396	104	1415	718	438	597	174	290	765	244
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	222	1530	656	147	1420	576	394	1602	497	296	1096	346
Arrive On Green	0.08	0.35	0.35	0.05	0.32	0.32	0.13	0.37	0.37	0.13	0.44	0.44
Sat Flow, veh/h	2956	4368	1356	2956	4368	1356	2956	4368	1356	2956	3287	1038
Grp Volume(v), veh/h	206	865	396	104	1415	718	438	597	174	290	677	332
Grp Sat Flow(s),veh/h/ln	1478	1456	1356	1478	1456	1356	1478	1456	1356	1478	1456	1413
Q Serve(g_s), s	8.3	19.3	25.6	4.2	38.8	39.0	16.0	12.0	11.2	11.7	22.5	22.8
Cycle Q Clear(g_c), s	8.3	19.3	25.6	4.2	38.8	39.0	16.0	12.0	11.2	11.7	22.5	22.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.73
Lane Grp Cap(c), veh/h	222	1530	656	147	1420	576	394	1602	497	296	971	471
V/C Ratio(X)	0.93	0.57	0.60	0.71	1.00	1.25	1.11	0.37	0.35	0.98	0.70	0.71
Avail Cap(c_a), veh/h	222	1530	656	148	1420	576	394	1602	497	296	971	471
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33
Upstream Filter(I)	1.00	1.00	1.00	0.73	0.73	0.73	1.00	1.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	55.2	31.6	22.6	56.2	40.4	34.5	52.0	27.9	27.6	51.9	28.5	28.6
Incr Delay (d2), s/veh	41.2	1.5	4.1	10.7	19.7	121.2	79.0	0.7	1.9	44.6	3.8	7.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	6.6	8.4	1.7	15.6	35.0	10.1	4.1	3.8	5.9	7.3	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	96.4	33.1	26.7	66.9	60.1	155.7	131.0	28.5	29.5	96.5	32.3	36.5
LnGrp LOS	F	C	C	E	E	F	F	C	C	F	C	D
Approach Vol, veh/h		1467			2237			1209			1299	
Approach Delay, s/veh		40.3			91.1			65.8			47.7	
Approach LOS		D			F			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.0	46.0	20.0	44.0	13.0	43.0	16.0	48.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	6.0	42.0	16.0	40.0	9.0	39.0	12.0	44.0
Max Q Clear Time (g_c+I1), s	6.3	27.6	18.0	24.8	10.3	41.0	13.7	14.0
Green Ext Time (p_c), s	0.0	5.9	0.0	5.5	0.0	0.0	0.0	4.6

Intersection Summary	
HCM 6th Ctrl Delay	65.1
HCM 6th LOS	E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	675	309	81	1104	560	342	466	136	226	597	190
Future Volume (veh/h)	161	675	309	81	1104	560	342	466	136	226	597	190
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	206	865	396	104	1415	718	438	597	174	290	765	244
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	185	1938	797	185	1349	1321	425	1241	385	324	822	260
Arrive On Green	0.06	0.44	0.44	0.06	0.44	0.44	0.14	0.28	0.28	0.11	0.25	0.25
Sat Flow, veh/h	2956	4368	1356	2956	3040	2386	2956	4368	1356	2956	3287	1038
Grp Volume(v), veh/h	206	865	396	104	1415	718	438	597	174	290	677	332
Grp Sat Flow(s),veh/h/ln	1478	1456	1356	1478	1520	1193	1478	1456	1356	1478	1456	1413
Q Serve(g_s), s	10.0	22.0	18.2	5.5	71.0	30.7	23.0	18.1	14.2	15.5	36.3	36.9
Cycle Q Clear(g_c), s	10.0	22.0	18.2	5.5	71.0	30.7	23.0	18.1	14.2	15.5	36.3	36.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.73
Lane Grp Cap(c), veh/h	185	1938	797	185	1349	1321	425	1241	385	324	728	353
V/C Ratio(X)	1.11	0.45	0.50	0.56	1.05	0.54	1.03	0.48	0.45	0.89	0.93	0.94
Avail Cap(c_a), veh/h	185	1938	797	185	1349	1321	425	1241	385	333	728	353
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.73	0.73	0.73	1.00	1.00	1.00	0.91	0.91	0.91
Uniform Delay (d), s/veh	75.0	30.9	9.4	72.9	44.5	22.8	68.5	47.5	33.4	70.3	58.6	58.8
Incr Delay (d2), s/veh	100.4	0.7	2.2	2.8	35.1	1.2	51.8	1.3	3.8	23.0	18.7	32.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	7.7	5.3	2.1	31.9	8.6	11.6	6.7	5.0	6.8	15.0	16.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	175.4	31.6	11.6	75.7	79.6	24.0	120.3	48.8	37.2	93.3	77.3	91.7
LnGrp LOS	F	C	B	E	F	C	F	D	D	F	E	F
Approach Vol, veh/h		1467			2237			1209			1299	
Approach Delay, s/veh		46.4			61.6			73.0			84.6	
Approach LOS		D			E			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	75.0	27.0	44.0	14.0	75.0	21.6	49.4
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	71.0	23.0	40.0	10.0	71.0	18.0	45.0
Max Q Clear Time (g_c+I1), s	7.5	24.0	25.0	38.9	12.0	73.0	17.5	20.1
Green Ext Time (p_c), s	0.1	8.3	0.0	0.7	0.0	0.0	0.1	4.4

Intersection Summary	
HCM 6th Ctrl Delay	65.0
HCM 6th LOS	E

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	21-Dec-22	PTRT0000-0001	1 OF 2

E/W STREET : RANCHO VISTA BLVD
N/S STREET : 10TH ST W
CONDITION : PM PEAK HOUR

INTERSECTION : 7
PROJECTED GROWTH PER YEAR : 2%

TURN MOVEMENTS

Condition	Existing Condition Traffic	Year 2022 to 2024 Ambient Growth	Adjacent Project Trips	Opening Year 2024 Background Conditions	Project Trips	Opening Year 2024 Background + Project Conditions
	2			6		8
RANCHO VISTA BLVD						
EB Left	433	18	0	451	0	451
EB Thru	637	26	0	663	5	668
EB Right	227	10	0	237	0	237
WB Left	135	6	0	141	0	141
WB Thru	749	30	0	779	27	806
WB Right	743	30	0	773	53	826
10TH ST W						
NB Left	663	27	0	690	0	690
NB Thru	750	30	0	780	0	780
NB Right	320	13	0	333	0	333
SB Left	443	18	0	461	6	467
SB Thru	1,065	43	0	1,108	0	1,108
SB Right	278	12	0	290	0	290
TOTALS	**6,443**	**263**	**0**	**6,706**	**91**	**6,797**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	21-Dec-22	PTRT0000-0001	2 OF 2

E/W STREET : RANCHO VISTA BLVD
N/S STREET : 10TH ST W
CONDITION : PM PEAK HOUR
PHF : 0.98

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
60	226	147	0	2	0	0	1	0	0	1	0
53	303	99	0	0	1	0	0	0	0	0	0
68	261	103	0	3	0	0	1	0	0	0	0
97	256	92	0	3	0	0	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
122	142	162	0	2	0	0	0	0	0	0	0
74	204	190	0	1	0	0	0	1	0	0	0
91	157	188	0	3	0	0	0	1	0	1	0
33	229	119	0	4	0	0	0	0	0	0	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
206	167	27	1	2	0	0	0	1	0	0	0
184	166	26	0	1	0	0	0	0	0	0	1
167	212	24	2	0	0	0	0	0	2	0	0
157	196	53	1	1	0	0	0	0	1	0	0

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
52	185	104	0	0	0	0	0	1	0	0	1
55	203	69	0	2	0	0	0	0	0	0	0
60	124	131	0	0	1	0	0	1	1	1	0
57	117	117	0	1	0	0	0	0	0	0	1

	Truck Volumes	Auto Volumes	Vehicle Totals	PCE Totals	Balanced PCE Totals
RANCHO VISTA BLVD					
EBL	5	421	**426**	**433**	**433**
EBTH	4	629	**633**	**637**	**637**
EBR	1	224	**225**	**227**	**227**
WBL	2	130	**132**	**135**	**135**
WBTH	4	741	**745**	**749**	**749**
WBR	7	714	**721**	**743**	**743**
10TH ST W					
NBL	2	659	**661**	**663**	**663**
NBTH	11	732	**743**	**750**	**750**
NBR	0	320	**320**	**320**	**320**
SBL	1	441	**442**	**443**	**443**
SBTH	11	1046	**1057**	**1065**	**1065**
SBR	0	278	**278**	**278**	**278**

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	433	637	227	135	749	743	663	750	320	443	1065	278
Future Volume (veh/h)	433	637	227	135	749	743	663	750	320	443	1065	278
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	442	650	232	138	764	758	677	765	327	452	1087	284
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	394	1486	750	177	1165	591	631	1417	440	499	966	252
Arrive On Green	0.13	0.34	0.34	0.06	0.27	0.27	0.21	0.32	0.32	0.17	0.28	0.28
Sat Flow, veh/h	2956	4368	1356	2956	4368	1356	2956	4368	1356	2956	3449	901
Grp Volume(v), veh/h	442	650	232	138	764	758	677	765	327	452	918	453
Grp Sat Flow(s),veh/h/ln	1478	1456	1356	1478	1456	1356	1478	1456	1356	1478	1456	1438
Q Serve(g_s), s	20.0	17.3	13.8	6.9	23.3	40.0	32.0	21.5	32.2	22.5	42.0	42.0
Cycle Q Clear(g_c), s	20.0	17.3	13.8	6.9	23.3	40.0	32.0	21.5	32.2	22.5	42.0	42.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.63
Lane Grp Cap(c), veh/h	394	1486	750	177	1165	591	631	1417	440	499	815	403
V/C Ratio(X)	1.12	0.44	0.31	0.78	0.66	1.28	1.07	0.54	0.74	0.91	1.13	1.13
Avail Cap(c_a), veh/h	394	1486	750	236	1165	591	631	1417	440	591	815	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00	0.74	0.74	0.74
Uniform Delay (d), s/veh	65.0	38.4	18.0	69.5	48.9	42.3	59.0	41.5	45.1	61.2	54.0	54.0
Incr Delay (d2), s/veh	82.5	0.9	1.1	9.4	2.4	138.1	57.2	1.5	10.8	12.5	68.6	78.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	6.2	4.4	2.8	8.5	43.5	16.7	7.8	11.9	9.1	22.7	23.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	147.5	39.3	19.1	78.9	51.3	180.4	116.2	43.0	55.9	73.6	122.6	132.1
LnGrp LOS	F	D	B	E	D	F	F	D	E	E	F	F
Approach Vol, veh/h		1324			1660			1769			1823	
Approach Delay, s/veh		71.9			112.5			73.4			112.8	
Approach LOS		E			F			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	55.0	36.0	46.0	24.0	44.0	29.3	52.7
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.0	48.0	32.0	42.0	20.0	40.0	30.0	44.0
Max Q Clear Time (g_c+I1), s	8.9	19.3	34.0	44.0	22.0	42.0	24.5	34.2
Green Ext Time (p_c), s	0.1	5.1	0.0	0.0	0.0	0.0	0.8	4.2

Intersection Summary	
HCM 6th Ctrl Delay	93.9
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	451	663	237	141	779	773	690	780	333	461	1108	290
Future Volume (veh/h)	451	663	237	141	779	773	690	780	333	461	1108	290
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	460	677	242	144	795	789	704	796	340	470	1131	296
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	394	1477	748	183	1165	598	631	1393	432	516	965	253
Arrive On Green	0.13	0.34	0.34	0.06	0.27	0.27	0.21	0.32	0.32	0.17	0.28	0.28
Sat Flow, veh/h	2956	4368	1356	2956	4368	1356	2956	4368	1356	2956	3447	902
Grp Volume(v), veh/h	460	677	242	144	795	789	704	796	340	470	955	472
Grp Sat Flow(s),veh/h/ln	1478	1456	1356	1478	1456	1356	1478	1456	1356	1478	1456	1438
Q Serve(g_s), s	20.0	18.2	14.6	7.2	24.5	40.0	32.0	22.8	34.2	23.4	42.0	42.0
Cycle Q Clear(g_c), s	20.0	18.2	14.6	7.2	24.5	40.0	32.0	22.8	34.2	23.4	42.0	42.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.63
Lane Grp Cap(c), veh/h	394	1477	748	183	1165	598	631	1393	432	516	815	403
V/C Ratio(X)	1.17	0.46	0.32	0.79	0.68	1.32	1.12	0.57	0.79	0.91	1.17	1.17
Avail Cap(c_a), veh/h	394	1477	748	236	1165	598	631	1393	432	591	815	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00	0.71	0.71	0.71
Uniform Delay (d), s/veh	65.0	38.9	18.4	69.4	49.3	41.9	59.0	42.5	46.4	60.8	54.0	54.0
Incr Delay (d2), s/veh	99.3	1.0	1.1	10.3	2.6	153.1	72.2	1.7	13.4	13.0	86.8	94.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.8	6.5	4.7	2.9	9.0	46.5	18.0	8.3	12.9	9.6	24.8	25.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	164.3	39.9	19.5	79.7	51.9	195.0	131.2	44.3	59.9	73.8	140.8	148.9
LnGrp LOS	F	D	B	E	D	F	F	D	E	E	F	F
Approach Vol, veh/h		1379			1728			1840			1897	
Approach Delay, s/veh		77.8			119.6			80.4			126.2	
Approach LOS		E			F			F			F	

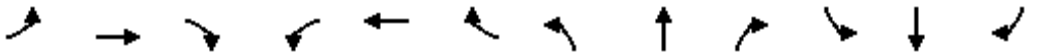
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	54.7	36.0	46.0	24.0	44.0	30.2	51.8
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.6	48.0	32.0	42.0	20.0	40.0	30.0	44.0
Max Q Clear Time (g_c+I1), s	9.2	20.2	34.0	44.0	22.0	42.0	25.4	36.2
Green Ext Time (p_c), s	0.1	5.3	0.0	0.0	0.0	0.0	0.8	3.7

Intersection Summary	
HCM 6th Ctrl Delay	102.5
HCM 6th LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	451	668	237	141	806	826	690	780	333	467	1108	290
Future Volume (veh/h)	451	668	237	141	806	826	690	780	333	467	1108	290
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	460	682	242	144	822	843	704	796	340	477	1131	296
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	394	1477	748	183	1165	601	631	1383	429	522	965	253
Arrive On Green	0.13	0.34	0.34	0.06	0.27	0.27	0.21	0.32	0.32	0.18	0.28	0.28
Sat Flow, veh/h	2956	4368	1356	2956	4368	1356	2956	4368	1356	2956	3447	902
Grp Volume(v), veh/h	460	682	242	144	822	843	704	796	340	477	955	472
Grp Sat Flow(s),veh/h/ln	1478	1456	1356	1478	1456	1356	1478	1456	1356	1478	1456	1438
Q Serve(g_s), s	20.0	18.4	14.6	7.2	25.5	40.0	32.0	22.8	34.3	23.8	42.0	42.0
Cycle Q Clear(g_c), s	20.0	18.4	14.6	7.2	25.5	40.0	32.0	22.8	34.3	23.8	42.0	42.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.63
Lane Grp Cap(c), veh/h	394	1477	748	183	1165	601	631	1383	429	522	815	403
V/C Ratio(X)	1.17	0.46	0.32	0.79	0.71	1.40	1.12	0.58	0.79	0.91	1.17	1.17
Avail Cap(c_a), veh/h	394	1477	748	236	1165	601	631	1383	429	591	815	403
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	1.00	1.00	0.70	0.70	0.70
Uniform Delay (d), s/veh	65.0	38.9	18.4	69.4	49.7	41.8	59.0	42.8	46.7	60.6	54.0	54.0
Incr Delay (d2), s/veh	99.3	1.0	1.1	9.7	2.8	188.8	72.2	1.7	13.9	13.3	86.7	94.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.8	6.6	4.7	2.9	9.3	52.7	18.0	8.3	13.0	9.7	24.8	25.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	164.3	40.0	19.5	79.1	52.4	230.5	131.2	44.6	60.6	73.9	140.7	148.7
LnGrp LOS	F	D	B	E	D	F	F	D	E	E	F	F
Approach Vol, veh/h		1384			1809			1840			1904	
Approach Delay, s/veh		77.7			137.5			80.7			125.9	
Approach LOS		E			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	54.7	36.0	46.0	24.0	44.0	30.5	51.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	12.6	48.0	32.0	42.0	20.0	40.0	30.0	44.0
Max Q Clear Time (g_c+I1), s	9.2	20.4	34.0	44.0	22.0	42.0	25.8	36.3
Green Ext Time (p_c), s	0.1	5.3	0.0	0.0	0.0	0.0	0.7	3.7

Intersection Summary	
HCM 6th Ctrl Delay	107.3
HCM 6th LOS	F



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	451	668	237	141	806	826	690	780	333	467	1108	290
Future Volume (veh/h)	451	668	237	141	806	826	690	780	333	467	1108	290
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Adj Flow Rate, veh/h	460	682	242	144	822	843	704	796	340	477	1131	296
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	0	0	0
Cap, veh/h	406	1453	739	181	779	1035	628	1436	446	525	1013	265
Arrive On Green	0.14	0.33	0.33	0.06	0.26	0.26	0.21	0.33	0.33	0.18	0.29	0.29
Sat Flow, veh/h	2956	4368	1356	2956	3040	2386	2956	4368	1356	2956	3447	902
Grp Volume(v), veh/h	460	682	242	144	822	843	704	796	340	477	955	472
Grp Sat Flow(s),veh/h/ln	1478	1456	1356	1478	1520	1193	1478	1456	1356	1478	1456	1438
Q Serve(g_s), s	22.0	19.8	15.8	7.7	41.0	30.9	34.0	23.9	35.9	25.3	47.0	47.0
Cycle Q Clear(g_c), s	22.0	19.8	15.8	7.7	41.0	30.9	34.0	23.9	35.9	25.3	47.0	47.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.63
Lane Grp Cap(c), veh/h	406	1453	739	181	779	1035	628	1436	446	525	855	422
V/C Ratio(X)	1.13	0.47	0.33	0.80	1.06	0.81	1.12	0.55	0.76	0.91	1.12	1.12
Avail Cap(c_a), veh/h	406	1453	739	240	779	1035	628	1436	446	647	855	422
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	1.00	1.00	0.70	0.70	0.70
Uniform Delay (d), s/veh	69.0	42.2	20.2	74.1	59.5	18.7	63.0	44.1	48.1	64.5	56.5	56.5
Incr Delay (d2), s/veh	85.6	1.1	1.2	9.9	43.9	5.4	73.9	1.5	11.7	11.1	64.1	73.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.0	7.1	5.1	3.1	20.1	8.7	19.0	8.7	13.4	10.2	24.5	25.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	154.6	43.3	21.3	84.0	103.4	24.2	136.9	45.6	59.8	75.6	120.6	129.6
LnGrp LOS	F	D	C	F	F	C	F	D	E	E	F	F
Approach Vol, veh/h		1384			1809			1840			1904	
Approach Delay, s/veh		76.5			64.9			83.2			111.6	
Approach LOS		E			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.8	57.2	38.0	51.0	26.0	45.0	32.4	56.6
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	50.0	34.0	47.0	22.0	41.0	35.0	46.0
Max Q Clear Time (g_c+I1), s	9.7	21.8	36.0	49.0	24.0	43.0	27.3	37.9
Green Ext Time (p_c), s	0.1	5.3	0.0	0.0	0.0	0.0	1.1	3.8

Intersection Summary	
HCM 6th Ctrl Delay	84.9
HCM 6th LOS	F

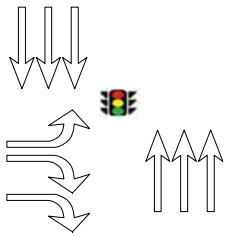
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	21-Dec-22	PTRT0000-0001	1 OF 2

E/W STREET : SR 14 SB OFF
N/S STREET : 10TH ST W
CONDITION : AM PEAK HOUR

INTERSECTION : 8
PROJECTED GROWTH PER YEAR : 2%

CONDITION DIAGRAMS



EXISTING GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition Traffic	Year 2022 to 2024 Ambient Growth	Adjacent Project Trips	Opening Year 2024 Background Conditions	Project Trips	Opening Year 2024 Background + Project Conditions
	1			3		5
SR 14 SB OFF						
EB Left	284	12	0	296	0	296
EB Thru	0	0	0	0	0	0
EB Right	450	18	0	468	62	530
WB Left	0	0	0	0	0	0
WB Thru	0	0	0	0	0	0
WB Right	0	0	0	0	0	0
10TH ST W						
NB Left	0	0	0	0	0	0
NB Thru	1,048	42	0	1,090	8	1,098
NB Right	0	0	0	0	0	0
SB Left	0	0	0	0	0	0
SB Thru	575	23	0	598	0	598
SB Right	0	0	0	0	0	0
TOTALS	**2,357**	**95**	**0**	**2,452**	**70**	**2,522**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	21-Dec-22	PTRT0000-0001	2 OF 2

E/W STREET : SR 14 SB OFF
CONDITION : AM PEAK HOUR
N/S STREET : 10TH ST W
PHF : 0.90

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	157	0	0	5	0	0	0	0	0	0	0
0	167	0	0	1	0	0	0	0	0	1	0
0	130	0	0	5	0	0	1	0	0	2	0
0	79	0	0	1	0	0	2	0	0	3	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	293	0	0	4	0	0	1	0	0	3	0
0	284	0	0	8	0	0	3	0	0	2	0
0	228	0	0	5	0	0	2	0	0	2	0
0	153	0	0	3	0	0	3	0	0	7	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	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

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
121	0	42	0	0	0	0	0	0	1	0	0
85	0	48	3	0	2	1	0	0	0	0	0
107	0	97	3	0	0	1	0	0	2	0	0
96	0	94	3	0	0	0	0	0	5	0	0

	Truck Volumes	Auto Volumes	Vehicle Totals	PCE Totals	Balanced PCE Totals
SR 14 SB OFF					
EBL	2	281	**283**	**284**	**284**
EBTH	0	0	**0**	**0**	**0**
EBR	19	409	**428**	**450**	**450**
WBL	0	0	**0**	**0**	**0**
WBTH	0	0	**0**	**0**	**0**
WBR	0	0	**0**	**0**	**0**
10TH ST W					
NBL	0	0	**0**	**0**	**0**
NBTH	43	958	**1001**	**1048**	**1048**
NBR	0	0	**0**	**0**	**0**
SBL	0	0	**0**	**0**	**0**
SBTH	21	533	**554**	**575**	**575**
SBR	0	0	**0**	**0**	**0**

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	284	450	0	1048	575	0
Future Volume (veh/h)	284	450	0	1048	575	0
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	1600	1600	0	1600	1600	0
Adj Flow Rate, veh/h	316	500	0	1164	639	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	559	875	0	2184	2184	0
Arrive On Green	0.37	0.37	0.00	1.00	0.50	0.00
Sat Flow, veh/h	1524	2386	0	4656	4656	0
Grp Volume(v), veh/h	316	500	0	1164	639	0
Grp Sat Flow(s),veh/h/ln	1524	1193	0	1456	1456	0
Q Serve(g_s), s	9.9	10.1	0.0	0.0	5.1	0.0
Cycle Q Clear(g_c), s	9.9	10.1	0.0	0.0	5.1	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	559	875	0	2184	2184	0
V/C Ratio(X)	0.57	0.57	0.00	0.53	0.29	0.00
Avail Cap(c_a), veh/h	559	875	0	2184	2184	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.62	1.00	0.00
Uniform Delay (d), s/veh	15.2	15.2	0.0	0.0	8.8	0.0
Incr Delay (d2), s/veh	4.1	2.7	0.0	0.6	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	2.8	0.0	0.1	1.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.3	17.9	0.0	0.6	9.1	0.0
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	816			1164	639	
Approach Delay, s/veh	18.5			0.6	9.1	
Approach LOS	B			A	A	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	26.0	34.0	34.0
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	12.1	7.1	2.0
Green Ext Time (p_c), s	2.5	4.0	8.7

Intersection Summary	
HCM 6th Ctrl Delay	8.2
HCM 6th LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	296	468	0	1090	598	0
Future Volume (veh/h)	296	468	0	1090	598	0
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	1600	1600	0	1600	1600	0
Adj Flow Rate, veh/h	329	520	0	1211	664	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	559	875	0	2184	2184	0
Arrive On Green	0.37	0.37	0.00	1.00	0.50	0.00
Sat Flow, veh/h	1524	2386	0	4656	4656	0
Grp Volume(v), veh/h	329	520	0	1211	664	0
Grp Sat Flow(s),veh/h/ln	1524	1193	0	1456	1456	0
Q Serve(g_s), s	10.5	10.6	0.0	0.0	5.4	0.0
Cycle Q Clear(g_c), s	10.5	10.6	0.0	0.0	5.4	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	559	875	0	2184	2184	0
V/C Ratio(X)	0.59	0.59	0.00	0.55	0.30	0.00
Avail Cap(c_a), veh/h	559	875	0	2184	2184	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.57	1.00	0.00
Uniform Delay (d), s/veh	15.3	15.4	0.0	0.0	8.8	0.0
Incr Delay (d2), s/veh	4.5	3.0	0.0	0.6	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	3.0	0.0	0.1	1.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.9	18.4	0.0	0.6	9.2	0.0
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	849			1211	664	
Approach Delay, s/veh	18.9			0.6	9.2	
Approach LOS	B			A	A	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	26.0	34.0	34.0
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	12.6	7.4	2.0
Green Ext Time (p_c), s	2.5	4.2	9.1

Intersection Summary	
HCM 6th Ctrl Delay	8.4
HCM 6th LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	296	530	0	1098	598	0
Future Volume (veh/h)	296	530	0	1098	598	0
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	1600	1600	0	1600	1600	0
Adj Flow Rate, veh/h	329	589	0	1220	664	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	559	875	0	2184	2184	0
Arrive On Green	0.37	0.37	0.00	1.00	0.50	0.00
Sat Flow, veh/h	1524	2386	0	4656	4656	0
Grp Volume(v), veh/h	329	589	0	1220	664	0
Grp Sat Flow(s),veh/h/ln	1524	1193	0	1456	1456	0
Q Serve(g_s), s	10.5	12.5	0.0	0.0	5.4	0.0
Cycle Q Clear(g_c), s	10.5	12.5	0.0	0.0	5.4	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	559	875	0	2184	2184	0
V/C Ratio(X)	0.59	0.67	0.00	0.56	0.30	0.00
Avail Cap(c_a), veh/h	559	875	0	2184	2184	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.55	1.00	0.00
Uniform Delay (d), s/veh	15.3	16.0	0.0	0.0	8.8	0.0
Incr Delay (d2), s/veh	4.5	4.1	0.0	0.6	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	3.6	0.0	0.1	1.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.9	20.1	0.0	0.6	9.2	0.0
LnGrp LOS	B	C	A	A	A	A
Approach Vol, veh/h	918			1220	664	
Approach Delay, s/veh	20.0			0.6	9.2	
Approach LOS	C			A	A	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	26.0	34.0	34.0
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	22.0	30.0	30.0
Max Q Clear Time (g_c+I1), s	14.5	7.4	2.0
Green Ext Time (p_c), s	2.4	4.2	9.2

Intersection Summary	
HCM 6th Ctrl Delay	9.0
HCM 6th LOS	A

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	21-Dec-22	PTRT0000-0001	1 OF 2

E/W STREET : SR 14 SB OFF
N/S STREET : 10TH ST W
CONDITION : PM PEAK HOUR

INTERSECTION : 8
PROJECTED GROWTH PER YEAR : 2%

TURN MOVEMENTS

Condition	Existing Condition Traffic	Year 2022 to 2024 Ambient Growth	Adjacent Project Trips	Opening Year 2024 Background Conditions	Project Trips	Opening Year 2024 Background + Project Conditions
	2			6		8
SR 14 SB OFF						
EB Left	562	23	0	585	0	585
EB Thru	0	0	0	0	0	0
EB Right	832	34	0	866	9	875
WB Left	0	0	0	0	0	0
WB Thru	0	0	0	0	0	0
WB Right	0	0	0	0	0	0
10TH ST W						
NB Left	0	0	0	0	0	0
NB Thru	1,802	73	0	1,875	53	1,928
NB Right	0	0	0	0	0	0
SB Left	0	0	0	0	0	0
SB Thru	989	40	0	1,029	0	1,029
SB Right	0	0	0	0	0	0
TOTALS	**4,185**	**170**	**0**	**4,355**	**62**	**4,417**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TNM	21-Dec-22	PTRT0000-0001	2 OF 2

E/W STREET : SR 14 SB OFF
CONDITION : PM PEAK HOUR

N/S STREET : 10TH ST W
PHF : 0.96

NORTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	171	0	0	1	0	0	0	0	0	0	0
0	256	0	0	1	0	0	0	0	0	0	0
0	301	0	0	2	0	0	0	0	0	0	0
0	253	0	0	1	0	0	0	0	0	0	0

SOUTH LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
0	433	0	0	3	0	0	1	0	0	1	0
0	419	0	0	4	0	0	0	0	0	0	0
0	415	0	0	6	0	0	1	0	0	3	0
0	489	0	0	5	0	0	0	0	0	1	0

EAST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	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

WEST LEG											
AUTOS			2 AXLE			3 AXLE			4(+) AXLE		
RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
251	0	190	1	0	0	1	0	0	1	0	0
210	0	113	0	0	0	0	0	0	0	0	0
155	0	128	1	0	2	1	0	0	0	0	0
204	0	128	2	0	0	0	0	0	0	0	0

	Truck Volumes	Auto Volumes	Vehicle Totals	PCE Totals	Balanced PCE Totals
SR 14 SB OFF					
EBL	2	559	**561**	**562**	**562**
EBTH	0	0	**0**	**0**	**0**
EBR	7	820	**827**	**832**	**832**
WBL	0	0	**0**	**0**	**0**
WBTH	0	0	**0**	**0**	**0**
WBR	0	0	**0**	**0**	**0**
10TH ST W					
NBL	0	0	**0**	**0**	**0**
NBTH	25	1756	**1781**	**1802**	**1802**
NBR	0	0	**0**	**0**	**0**
SBL	0	0	**0**	**0**	**0**
SBTH	5	981	**986**	**989**	**989**
SBR	0	0	**0**	**0**	**0**

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	562	832	0	1802	989	0
Future Volume (veh/h)	562	832	0	1802	989	0
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	1600	1600	0	1600	1600	0
Adj Flow Rate, veh/h	585	867	0	1877	1030	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	677	1061	0	2038	2038	0
Arrive On Green	0.44	0.44	0.00	0.47	0.47	0.00
Sat Flow, veh/h	1524	2386	0	4656	4656	0
Grp Volume(v), veh/h	585	867	0	1877	1030	0
Grp Sat Flow(s),veh/h/ln	1524	1193	0	1456	1456	0
Q Serve(g_s), s	31.2	28.5	0.0	36.2	14.8	0.0
Cycle Q Clear(g_c), s	31.2	28.5	0.0	36.2	14.8	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	677	1061	0	2038	2038	0
V/C Ratio(X)	0.86	0.82	0.00	0.92	0.51	0.00
Avail Cap(c_a), veh/h	677	1061	0	2038	2038	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.31	1.00	0.00
Uniform Delay (d), s/veh	22.5	21.8	0.0	22.4	16.7	0.0
Incr Delay (d2), s/veh	13.8	7.0	0.0	2.9	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.2	8.7	0.0	11.3	4.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.3	28.8	0.0	25.4	17.6	0.0
LnGrp LOS	D	C	A	C	B	A
Approach Vol, veh/h	1452			1877	1030	
Approach Delay, s/veh	31.8			25.4	17.6	
Approach LOS	C			C	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	44.0	46.0	46.0
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	40.0	42.0	42.0
Max Q Clear Time (g_c+I1), s	33.2	16.8	38.2
Green Ext Time (p_c), s	3.6	7.2	3.2

Intersection Summary	
HCM 6th Ctrl Delay	25.7
HCM 6th LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	585	866	0	1875	1029	0
Future Volume (veh/h)	585	866	0	1875	1029	0
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	1600	1600	0	1600	1600	0
Adj Flow Rate, veh/h	609	902	0	1953	1072	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	677	1061	0	2038	2038	0
Arrive On Green	0.44	0.44	0.00	0.47	0.47	0.00
Sat Flow, veh/h	1524	2386	0	4656	4656	0
Grp Volume(v), veh/h	609	902	0	1953	1072	0
Grp Sat Flow(s),veh/h/ln	1524	1193	0	1456	1456	0
Q Serve(g_s), s	33.3	30.4	0.0	38.8	15.6	0.0
Cycle Q Clear(g_c), s	33.3	30.4	0.0	38.8	15.6	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	677	1061	0	2038	2038	0
V/C Ratio(X)	0.90	0.85	0.00	0.96	0.53	0.00
Avail Cap(c_a), veh/h	677	1061	0	2038	2038	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.23	1.00	0.00
Uniform Delay (d), s/veh	23.1	22.3	0.0	23.2	17.0	0.0
Incr Delay (d2), s/veh	17.2	8.6	0.0	3.9	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.6	9.4	0.0	12.2	4.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.3	30.9	0.0	27.0	17.9	0.0
LnGrp LOS	D	C	A	C	B	A
Approach Vol, veh/h	1511			1953	1072	
Approach Delay, s/veh	34.7			27.0	17.9	
Approach LOS	C			C	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	44.0	46.0	46.0
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	40.0	42.0	42.0
Max Q Clear Time (g_c+I1), s	35.3	17.6	40.8
Green Ext Time (p_c), s	2.8	7.5	1.1

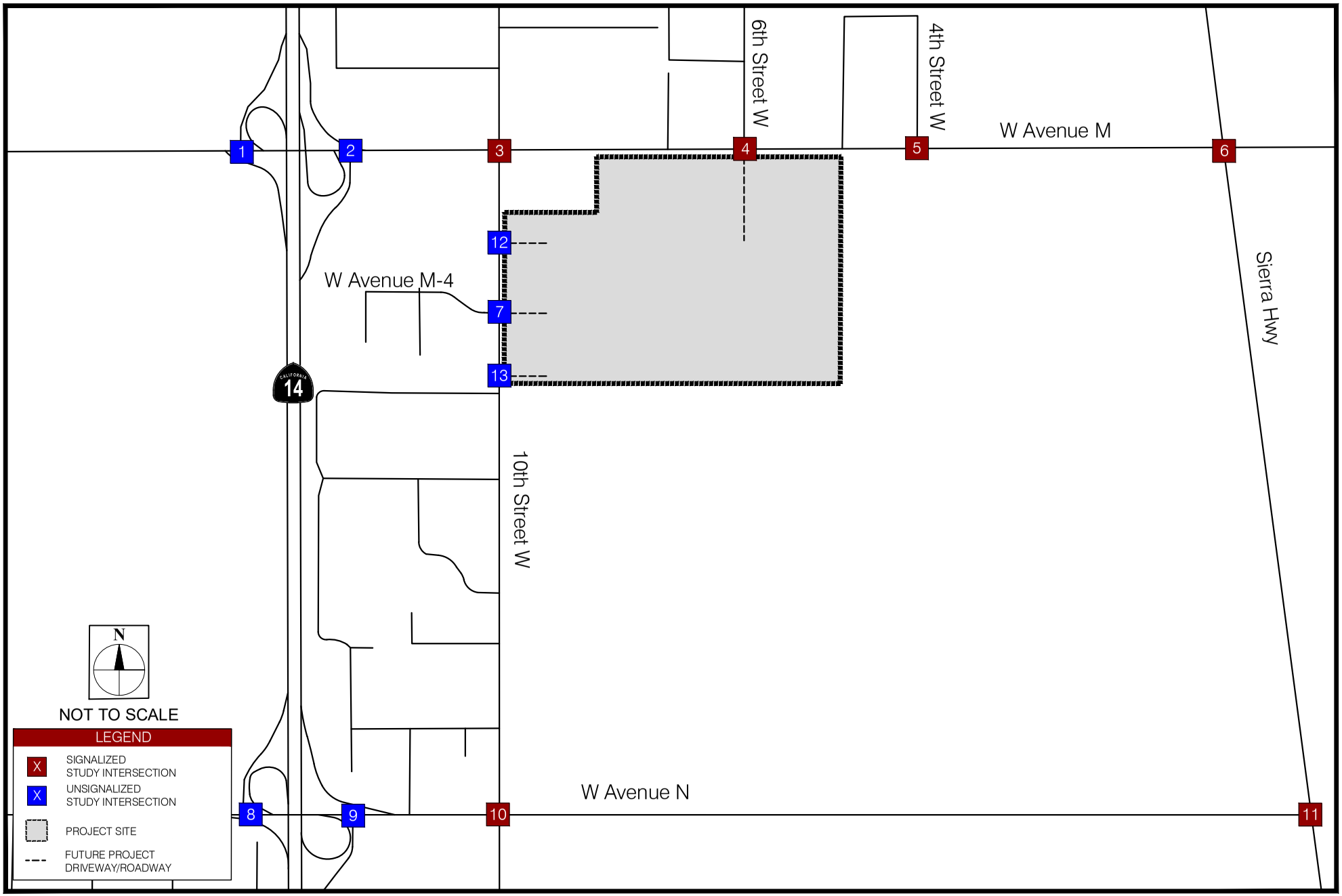
Intersection Summary	
HCM 6th Ctrl Delay	27.4
HCM 6th LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	585	875	0	1928	1029	0
Future Volume (veh/h)	585	875	0	1928	1029	0
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	1600	1600	0	1600	1600	0
Adj Flow Rate, veh/h	609	911	0	2008	1072	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	0	0	0	0	0
Cap, veh/h	677	1061	0	2038	2038	0
Arrive On Green	0.44	0.44	0.00	0.47	0.47	0.00
Sat Flow, veh/h	1524	2386	0	4656	4656	0
Grp Volume(v), veh/h	609	911	0	2008	1072	0
Grp Sat Flow(s),veh/h/ln	1524	1193	0	1456	1456	0
Q Serve(g_s), s	33.3	30.9	0.0	40.8	15.6	0.0
Cycle Q Clear(g_c), s	33.3	30.9	0.0	40.8	15.6	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	677	1061	0	2038	2038	0
V/C Ratio(X)	0.90	0.86	0.00	0.99	0.53	0.00
Avail Cap(c_a), veh/h	677	1061	0	2038	2038	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.15	1.00	0.00
Uniform Delay (d), s/veh	23.1	22.5	0.0	23.7	17.0	0.0
Incr Delay (d2), s/veh	17.2	9.0	0.0	5.0	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.6	9.6	0.0	13.0	4.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.3	31.5	0.0	28.7	17.9	0.0
LnGrp LOS	D	C	A	C	B	A
Approach Vol, veh/h	1520			2008	1072	
Approach Delay, s/veh	35.0			28.7	17.9	
Approach LOS	D			C	B	

Timer - Assigned Phs	2	4	8
Phs Duration (G+Y+Rc), s	44.0	46.0	46.0
Change Period (Y+Rc), s	4.0	4.0	4.0
Max Green Setting (Gmax), s	40.0	42.0	42.0
Max Q Clear Time (g_c+I1), s	35.3	17.6	42.8
Green Ext Time (p_c), s	2.8	7.5	0.0

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

APPENDIX C
PROJECT SMILES TRAFFIC DATA FOR BACKGROUND SCENARIO



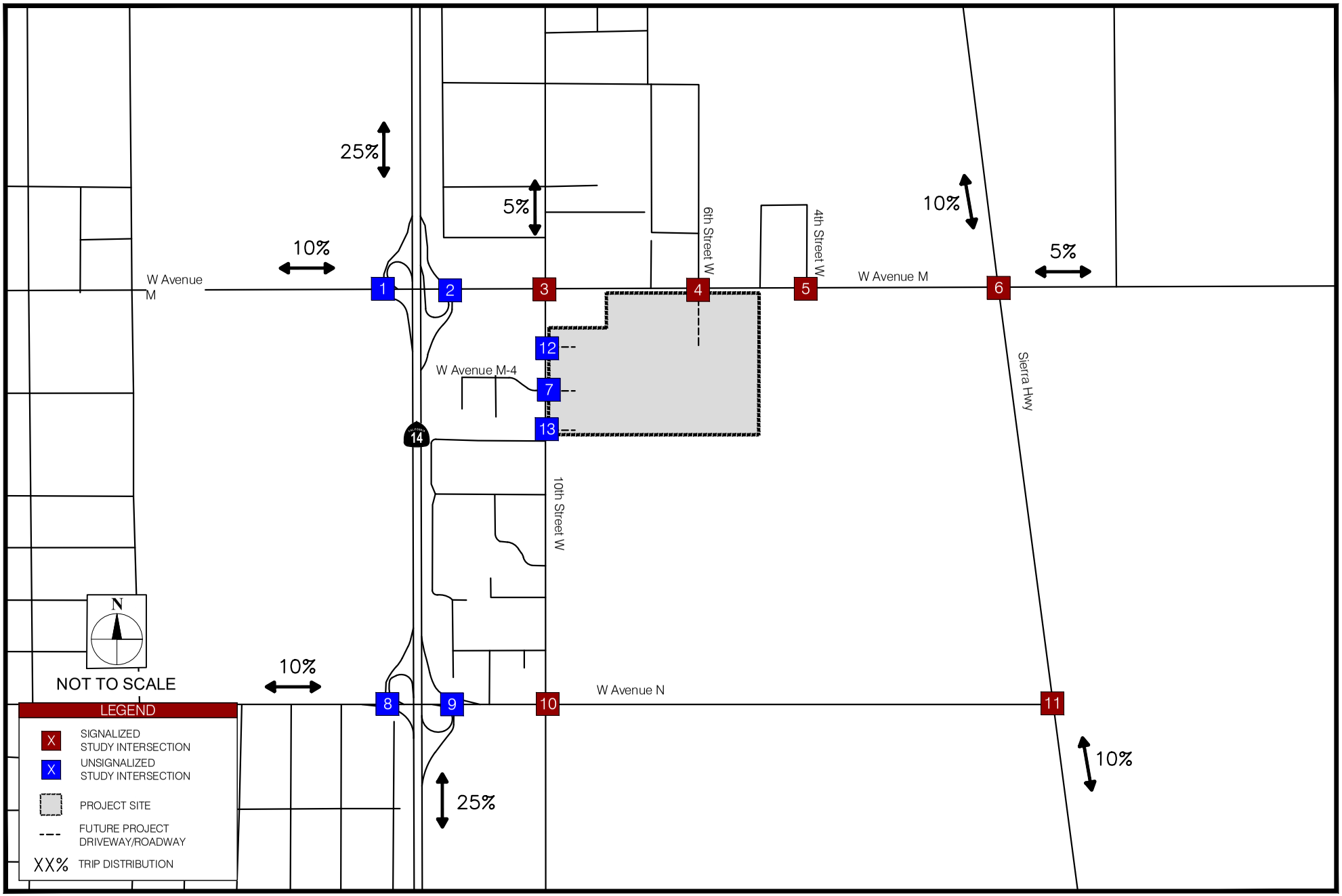
Kimley»Horn

FIGURE 1

PROJECT LOCATION AND STUDY INTERSECTIONS

195170010 DECEMBER 2021

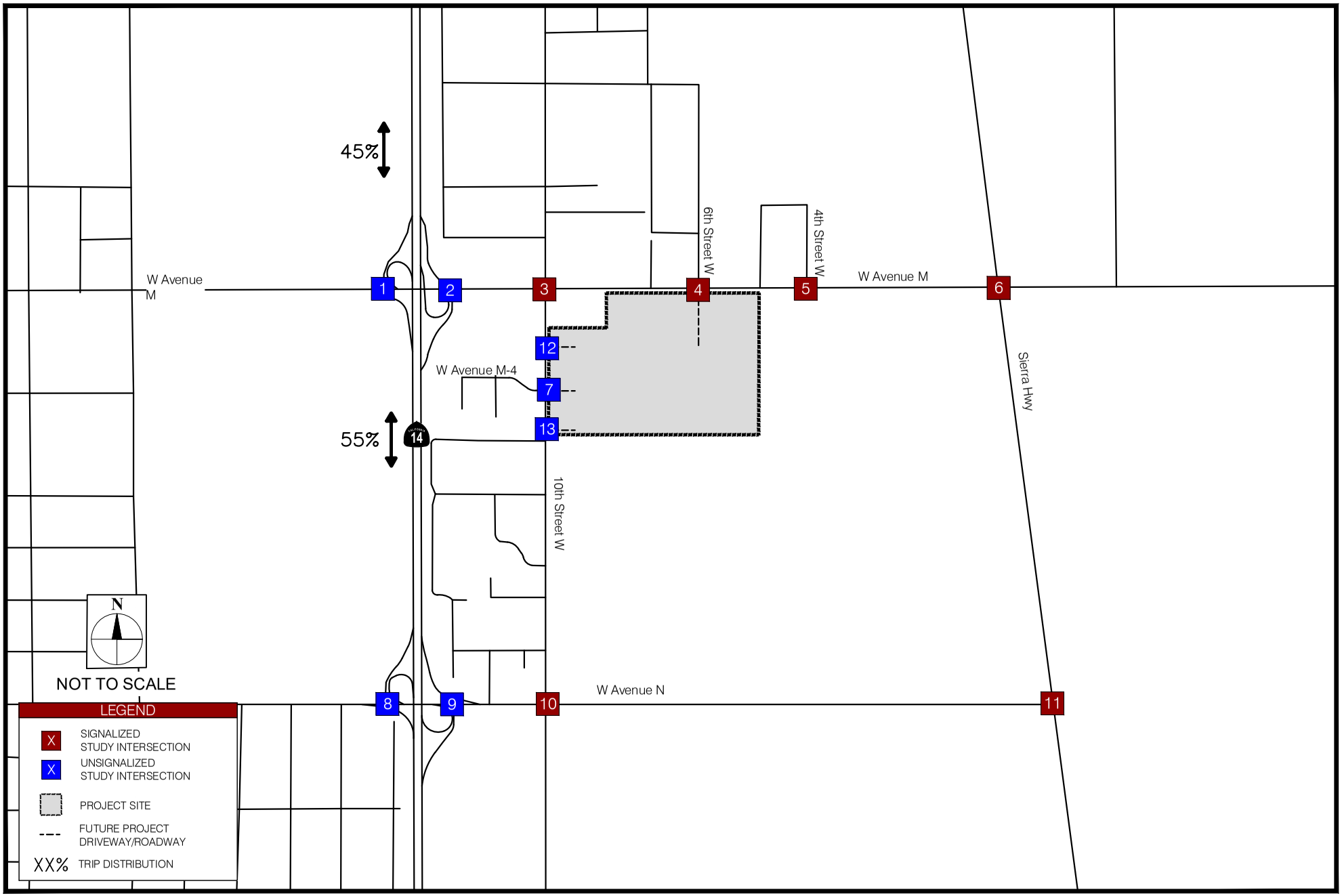
PROJECT SMILES TA



Kimley»Horn

FIGURE 5

PROJECT PASSENGER VEHICLE TRIP DISTRIBUTION



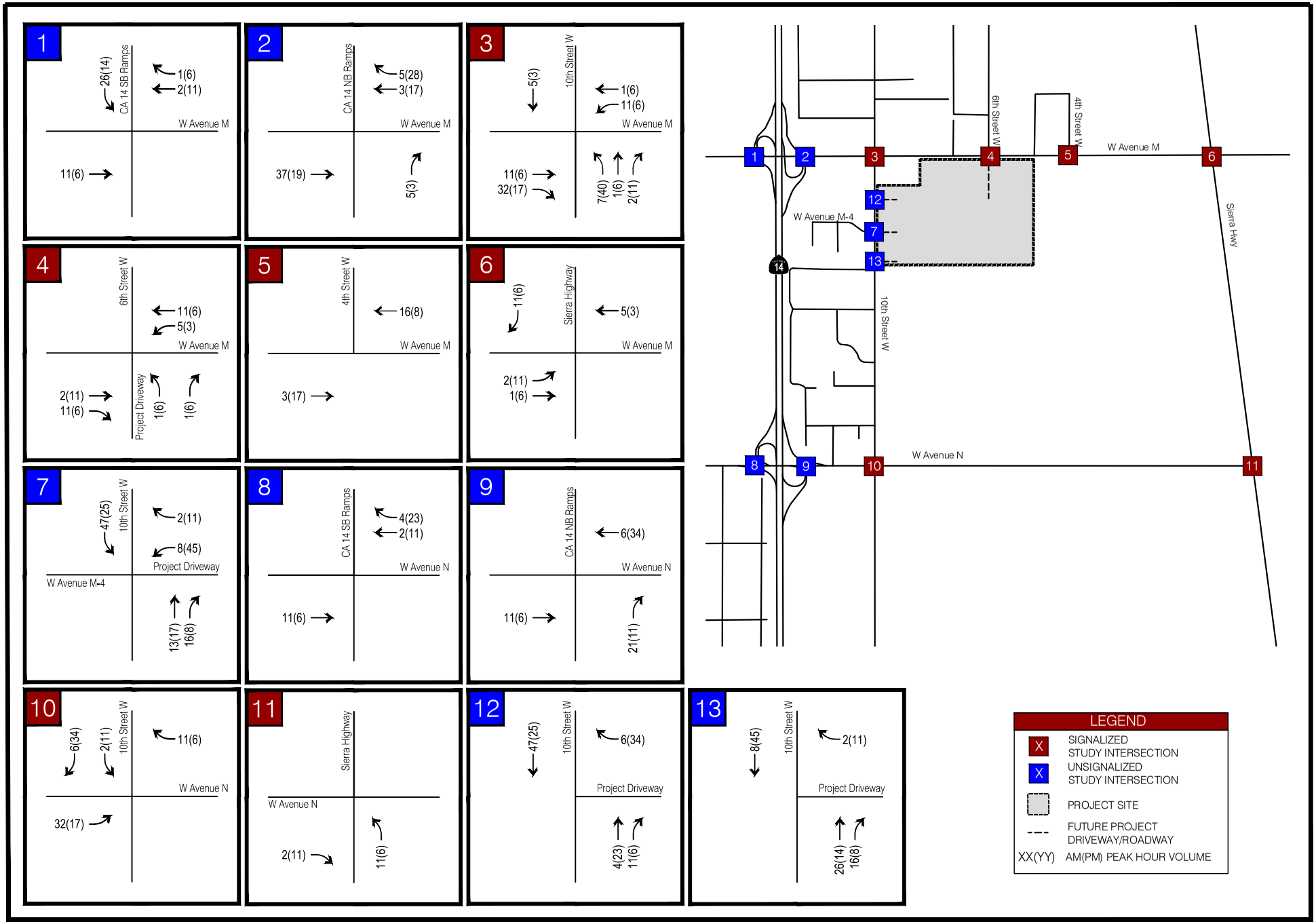
Kimley»Horn

FIGURE 6

PROJECT TRUCK TRIP DISTRIBUTION

195170010 DECEMBER 2021

PROJECT SMILES TA

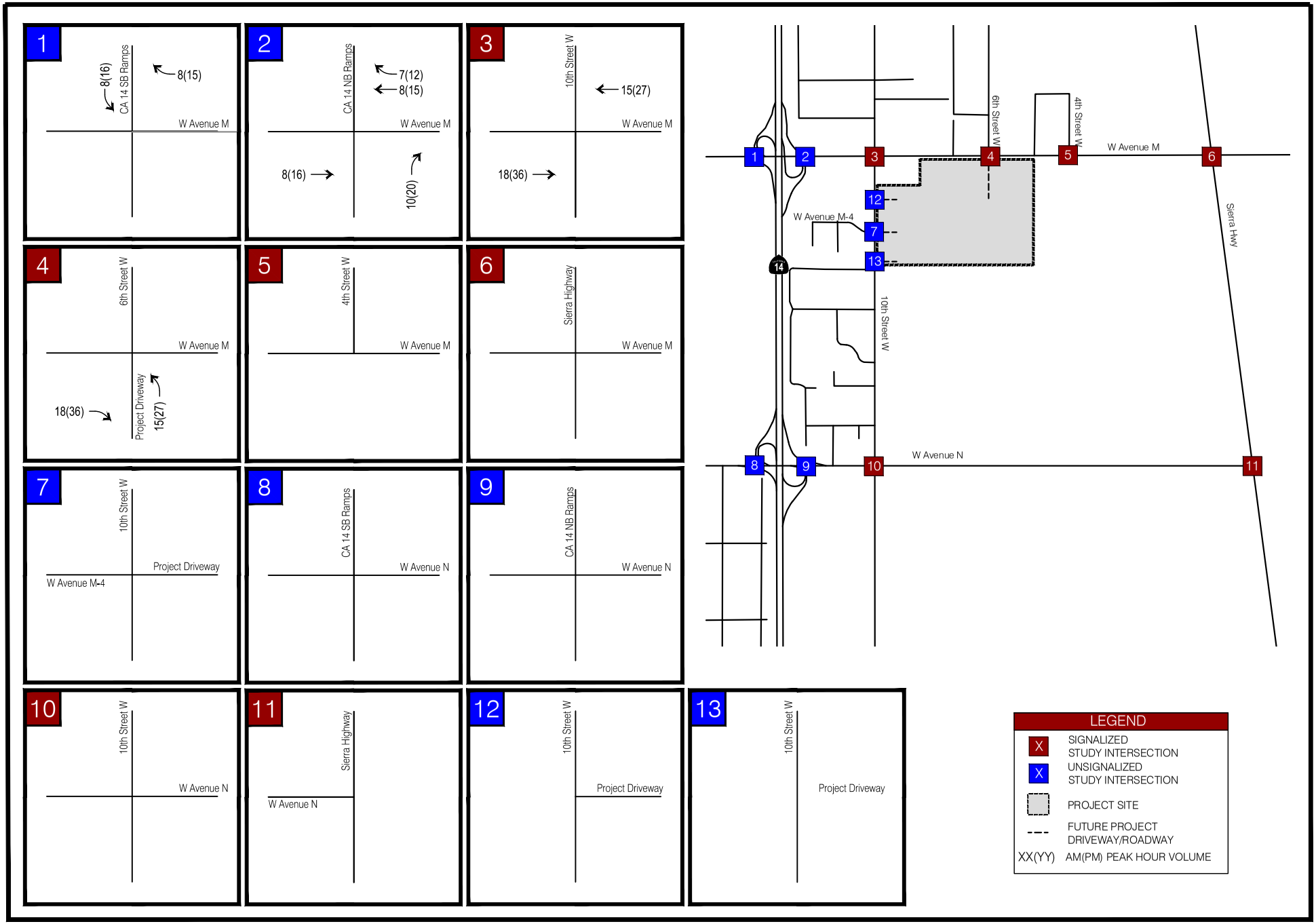


Kimley»Horn

NOT TO SCALE

FIGURE 7

PROJECT GENERATED PASSENGER CAR PEAK HOUR TURNING MOVEMENT VOLUMES



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NOT TO SCALE

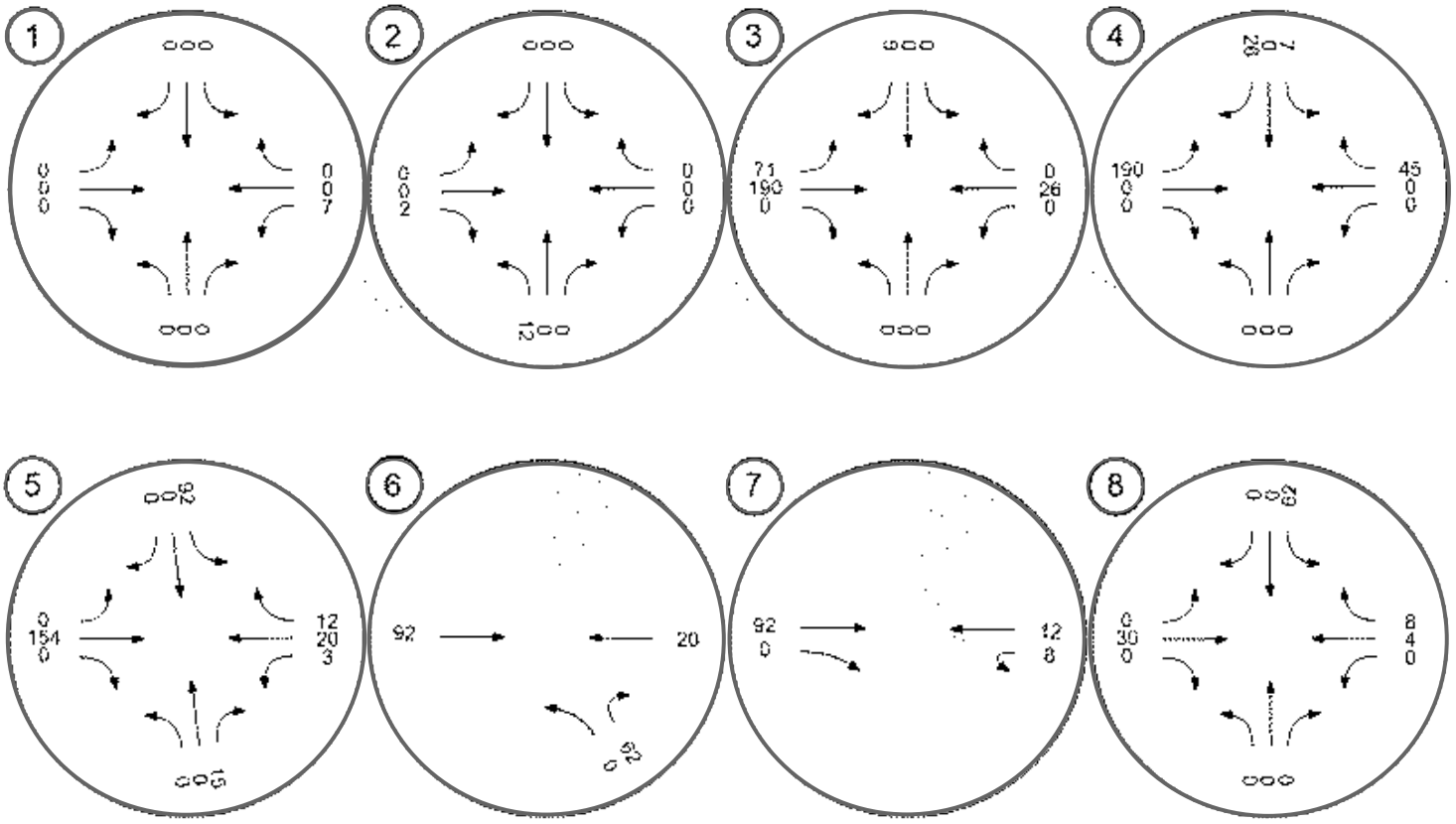
FIGURE 8

PROJECT GENERATED TRUCK PCE PEAK HOUR TURNING MOVEMENT VOLUMES

195170010 DECEMBER 2021

PROJECT SMILES TA

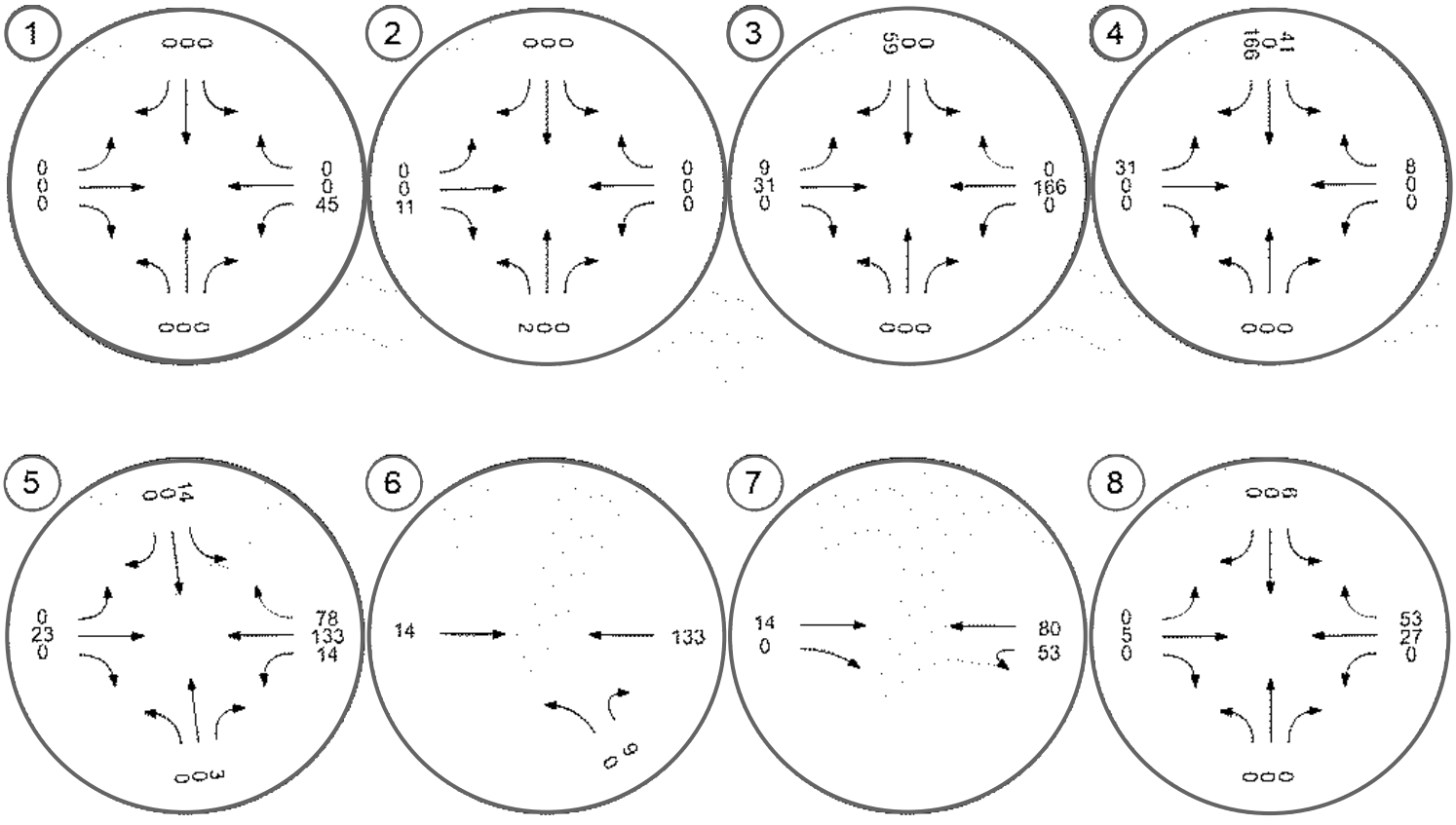
APPENDIX D
PROJECT TRIP ASSIGNMENT TO STUDY INTERSECTIONS



DAVID EVANS AND ASSOCIATES INC.

FIGURE C-1
PROJECT ONLY PCE TRIPS (AM PEAK HOUR)

PBP INDUSTRIAL PROJECT
PALMDALE, CA



DAVID EVANS AND ASSOCIATES INC.

FIGURE C-2
PROJECT ONLY PCE TRIPS (PM PEAK HOUR)

PBP INDUSTRIAL PROJECT
PALMDALE, CA

APPENDIX E
PROJECT VEHICLE MILES TRAVELED ANALYSIS REPORT

t +1 213 267 2332 | **f** +1 213 318 0744
info@gentecsol.com | www.gentecsol.com
11900 W Olympic Blvd #450, Los Angeles, CA 90017
GTS | General Technologies and Solutions

MEMORANDUM

Date:	October 19, 2022	**GTS:** 201211.02
To:	Robert Sarkissian (Patriot Construction and Development) James M. Daisa (DEA)	
From:	Rawad Hani (GTS)	
Subject:	**Vehicle Miles Traveled (VMT) Analysis - Rancho Vista Industrial Park, Palmdale, CA**	

This memorandum describes the development of vehicle miles traveled (VMT) analysis for the proposed Rancho Vista Industrial Park in the City of Palmdale, Los Angeles County, CA (City). The project location is bounded by Rancho Vista Boulevard/E Ave P, 10th Street East, Lockheed way/Blackbird Dr, and 8th Street in the City of Palmdale. A VMT analysis was conducted previously for the project where the project consisted of two phases of industrial development for approximately 234,660 SF and 409,480 SF. However, changes to the project description necessitated an updated VMT analysis. The current project description consists of approximately 200,000 SF of industrial use and 100,000 SF of office space. The entire project is anticipated to be completed in one phase. The VMT analysis was conducted using the 2020 and 2040 model years obtained from Southern California Association of Governments (SCAG), similar to previous effort.

Background

On December 28, 2018, the California Office of Administrative Law cleared the revised California Environmental Quality Act (CEQA) guidelines for use. Among the changes to the guidelines was removal of vehicle delay and level of service from consideration under CEQA. With the adopted guidelines, transportation impacts are to be evaluated based on a project's effect on vehicle miles traveled (VMT).

Methodology

GTS used "*Los Angeles County Public Works – Transportation Impact Analysis (TIA) Guidelines - dated July 23, 2020*" as a guide in the VMT analysis of this project.

The TIA guidelines provide multiple screening criteria for land use development projects. This project was compared with the screening criteria established in the guidelines to check if the project can be screened out for VMT analysis. The TIA guidelines identify a threshold of 110 daily trips as the screening criteria for non-retail projects. Based on trip generation presented in the "*Traffic Impact Analysis Scope of Work for the Rancho Vista Industrial Park Project, Palmdale, California, October 3, 2022*", the project is estimated to generate 2,058 daily vehicle trips and so a detailed VMT analysis was conducted to evaluate the project using the "*SCAG RTP/SCS Travel Demand Forecast Model*" as suggested in the TIA guidelines.

SCAG RTP/SCS model is a socioeconomic data based model and so GTS converted the project land use into model socioeconomic categories using conversion factors from SCAG's "*Employment Density Study Summary Report – dated October 31, 2001*".

Table1 summarizes the employment estimates for the project.

Table 1: Project Land use to employment conversion

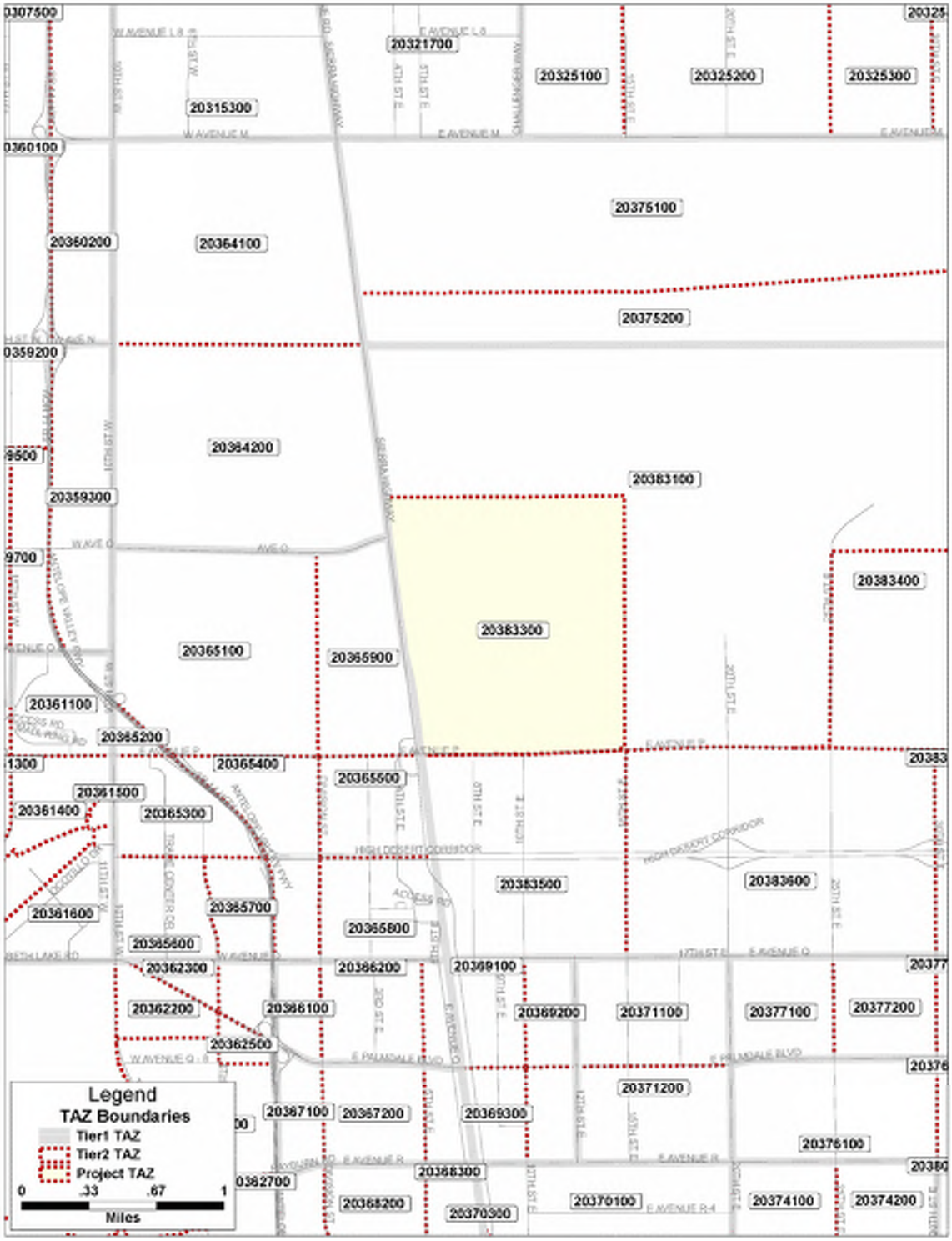
Land Use Type	Square Footage (SF)	SF/Employee *	Total Employees
Industrial	200,000	1,040	**192**
Office	100,000	487	**205**
Total	**300,000**		**397**

**Source: SCAG Employment Density Study Summary Report, October 31, 2001*

The SCAG RTP model uses a two-tier TAZ system – Tier 1 zones and Tier 2 zones. Two or more Tier 2 zones make up a Tier 1 zone. The model utilizes Tier 2 zone system for modeling steps such as trip generation, trip distribution, and mode choice while it uses Tier 1 zone system for assignment purposes.

The project area is contained inside 1 Tier 2 zone. Given the inability to perform zone splits in the SCAG RTP model, GTS modified the socioeconomic data for Tier 2 zones to isolate the project from all other uses within the project zone. Two Tier 2 Zones were borrowed to model both project land uses – industrial and office. Existing socioeconomic data from the borrowed zones was shifted to an adjacent zones for this purpose. Data for project location Tier1 zone was updated accordingly as well. The project is located in Tier2 TAZ 20383300, so TAZ 20383300 and TAZ 20383100 were used to model the project. Non-project related socioeconomic data from TAZ 20383300 was moved to 20383500 and data from TAZ 20383100 was moved to 20383600. TAZ 20383500 and 20383600 were chosen given the location of centroid connectors for both borrowed project zones (20383300, 20383100) and combined zones (20383500, 20383600) are close (on to E Avenue P) which will minimize the effects of any traffic shift. The following figure illustrates the TAZ structure in the project area.

Figure 1: Tier 1 and Tier 2 TAZs in the project area



VMT Analysis

The TIA guidelines advise use of "VMT per employee" to evaluate non-retail, non-residential land use projects (Section 3.1.3 – Impact Criteria, page 8 of 34). The project VMT metric should be less than the appropriate metric for the Baseline Area to show no significant impact. The "North County" area is identified as the baseline area for project VMT comparison (Table 3.1.3 – 2 VMT Impact Criteria (16.8% Below Area Baseline)).

As indicated above, the project employment was added to the borrowed project TAZs while non-project related socioeconomic data was shifted to adjacent zones to isolate project VMT. Project VMT for both base (2020) and horizon year (2040) scenarios was estimated using the model runs. No project specific network modifications were conducted for the model scenarios. Full model runs with 5 feedback loops were conducted for all of the project scenarios. It should be noted that the project land use was included in the model as additional land use in the cumulative (2040) scenarios and no shifting of land use from other TAZs was used.

The travel model doesn't retain trip purposes during the final step (traffic assignment) of the model that produces traffic volumes. In order to estimate VMT by trip purpose, outputs from mode choice step were used as trips and the trip lengths were derived from the skimming step.

Mode choice outputs include person trips by trip purpose and mode. Only auto modes were considered for VMT estimation purposes. The person trip tables were appropriately converted to vehicle trips by using average auto occupancy factors from the model.

The trip length or distance was obtained using the model outputs from the "Skimming" step. The model skim outputs include peak and off-peak skim matrices by mode, similar to trip outputs from the model.

Different trip purposes in the model are used in the estimation of different VMT metrics. VMT per capita estimates include all homebased trip purposes whereas VMT per employee includes VMT from homebased work trip purpose only. Given, the project land use is non-residential, VMT per employee metric was used to evaluate the project. VMT per employee for the project was estimated using the Tier 2 zone system. Homebased Work VMT for the project zone was divided by the total project employment to derive the VMT per employee for the project.

The following tables summarize the project VMT and compares it to the thresholds identified in the TIA guidelines. Table 2 and Table 3 show the project VMT estimates for 2020 and 2040 respectively. As illustrated in Table 2 and Table 3, the project doesn't constitute a significant impact in either the base (2020) or forecast scenario (2040).

Table 2: 2020 Project VMT per employee and regional Threshold

2020	Rancho Vista Industrial Park (Project)	Baseline North LA County Threshold (16.8% below regional average)
Total Employment	397	
Homebased Work (HBW) VMT	5,017	
HBW VMT per employee	12.6	15.8

Table 3: 2040 Project VMT per employee and regional Threshold

2040	Rancho Vista Industrial Park (Project)	Baseline North LA County Threshold (16.8% below regional average)
Total Employment	397	
Homebased Work (HBW) VMT	3,988	
HBW VMT per employee	10.0	15.8

GTS understands that the project construction is estimated to be completed in the near future. Given the project completion year is in the near future, it would appropriate to use interpolation to estimate the VMT and VMT per employee for that specific year. However, the project shows no significant impact for both baseline and cumulative scenarios. Hence no interpolation was conducted to evaluate the project impact in the intermediate years. **Based on the VMT analysis using SCAG RTP/SCS model, the project does not indicate significant VMT impacts.**

APPENDIX F
PLANNING LEVEL COST ESTIMATES

Planning Level Cost Estimate for Rancho Vista Boulevard and Sierra Highway

	Item	Unit Cost	Units	Qty	Cost
1	Remove Concrete Median	$279.00	per CY	17	$4,722.33
2	Remove Thermoplastic Traffic Stripe	$0.75	Per LF	1049	$787.10
3	Remove Thermoplastic Pavement Marking	$6.67	per sq.ft.	60	$400.00
4	Install 4" or 6" Thermoplastic Traffic Stripe (Double Yellow)	$1.00	per LF	1000	$1,000.00
5	Install 8" Thermoplastic Traffic Stripe (White Lines)	$2.00	per LF	1285	$2,570.00
6	Install Thermoplastic Pavement Marking (Arrows)	$6.00	per sq.ft.	135	$810.00
7	Install Thermoplastic Crosswalk and Pvmt Marking	$3.75	per sq.ft.	148	$555.00
	Subtotal Street Elements				**$10,844.44**
8	Extend EB Mast Arm (70 ft.) (Ex. 50 ft.)				
8.A	New Pole	$12,000.00			
8.B	New Mast Arm	$4,500.00			
8.C	Intall New Signal Head (wiring, permits, inspection, etc.)	$5,000.00			
	Subtotal Signal Elements	**$21,500.00**			**$21,500.00**
	Total Construction Costs				**$32,344.44**
	Contingency	10%			$3,234.44
	Planning & Design	25%			$8,086.11
	Program and Construction Management	5%			$1,617.22
	Grand Total				**$45,282.21**

Planning Level Cost Estimate for Rancho Vista Boulevard and Lockheed Way

	Item	Unit Cost	Units	Qty	Cost
1	Extend EB Mast Arm for New Signal Head Aligned with EB LT Lane				
2	New Pole	$12,000.00			
3	New Mast Arm	$4,500.00			
4	Intall New Signal Head (wiring, permits, inspection, etc.)	$5,000.00			
	Subtotal Signal Elements	**$21,500.00**			**$21,500.00**
	Contingency	10%			$2,150.00
	Planning & Design	25%			$5,375.00
	Program and Construction Management	5%			$1,075.00
	Grand Total				**$30,100.00**