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PROPOSED COMMERCIAL DEVELOPMENT
A.P.N 0459-053-56, 57, 58, 08

ADELANTO, CALIFORNIA

Prepared by:

DAVID EVANS AND ASSOCIATES INC.

UPDATED DRAFT REPORT
May 23, 2023

DAVID EVANS
AND ASSOCIATES INC.

May 23, 2023 Job No. LTRI0000-0001

Mr. Gus Otaki
Life Time Realty Investments, Inc
30233 Frontera Del Norte
Highland, CA 92346

RE: UPDATED TRAFFIC IMPACT ANALYSIS—PROPOSED COMMERCIAL DEVELOPMENT LOCATED IN SEC OF HIGHWAY 395 AND AUBURN AVENUE IN ADELANTO, CALIFORNIA – A.P.N 0459-053-56, 57, 58, 08

Dear Mr. Otaki,

David Evans and Associates, Inc. is pleased to submit this updated Traffic Impact Analysis (TIA) report for your proposed commercial development in Adelanto. The proposed project consists of community-oriented retail uses anchored by a supermarket and general retail/service space, and highway-oriented uses including gas station, automated carwash, restaurant pads, and a 100-room hotel located on 11.87-acres in Adelanto, California.

This updated report was prepared in response to changes made to the site plan. The applicant increased the size of the hotel from 60 to 100 rooms and removed a small retail building and a fast-food restaurant. Further, enough time has passed since the November 2022 TIA was submitted, that the opening year was extended from 2024 to the year 2025.

These changes are substantial enough to warrant re-analysis of the opening year background conditions without the project and both project scenarios (opening year and future conditions).

As before, this report has been prepared in accordance with the city's requirements for a Level of Service Assessment for Consistency with General Plan Policies. In addition, this report complies with SB 743 which changes the way transportation impacts are identified under the California Environmental Quality Act (CEQA). CEQA no longer allows vehicular level of service as the metric for identifying significant transportation impacts. Significant impacts are now identified using vehicle miles traveled (VMT) which has been determined to be the most appropriate measure of transportation impacts as VMT can be directly related to air quality and GHG emissions. This updated analysis summarizes the VMT screening assessment used to determine if a VMT analysis is required under CEQA.

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

Respectfully submitted,

DAVID EVANS AND ASSOCIATES, INC.

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

DAVID EVANS AND ASSOCIATES INC.

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY 1
1.1 City of Adelanto and Caltrans Intersection Level of Service Policies 1
1.2 Results of VMT Screening Assessment 5
2 INTRODUCTION 6
2.1 Scenario Definitions 6
3 EXISTING CONDITIONS 9
3.1 City of Adelanto and Caltrans Intersection Level of Service Policies 9
3.2 Local and Major Roadways 9
3.3 Site Access 9
3.4 Study Intersections 9
3.5 Existing Traffic Volumes 9
3.6 Intersection Capacity Analysis Methodology 10
3.7 Existing Traffic Analysis 12
3.8 Traffic Signal Warrant Analysis 12
4 BACKGROUND CONDITIONS 14
4.1 Background Conditions Traffic Analysis 14
4.2 Traffic Signal Warrant Analysis 14
5 PROJECT CONDITIONS 16
5.1 Project Description and Trip Generation 16
5.2 Project Trip Distribution and Assignment 16
5.3 Project Traffic Analysis 22
5.4 Traffic Signal Warrant Analysis 22
5.5 Background Plus Project Traffic Queuing Analysis 25
5.6 Site Access 25
6 FUTURE YEAR 2040 CONDITIONS 26
6.1 Future Year 2040 Conditions Traffic Analysis 26
6.2 Traffic Signal Warrant Analysis 26
7 FUTURE YEAR 2040 PLUS PROJECT CONDITIONS 28
7.1 Future Plus Project Traffic Analysis 28
7.2 Traffic Signal Warrant Analysis 28
7.3 Future Plus Project Traffic Queuing Analysis 30
8 SUMMARY AND IMPROVEMENT MEASURES 31
8.1 Summary of Impacts 31
8.2 Analysis of Recommended Traffic Control at Highway 395 and Auburn Avenue 31
8.3 Recommended Measures to Improve Level of Service at Highway 395 and Auburn Avenue 31
8.4 Level of Service With Recommended Improvements 31
9 APPENDICES 33

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LIST OF FIGURES

Figure ES-1: Conceptual Geometric Plan with Proposed Improvements – Sheet 1 3
Figure ES-2: Conceptual Geometric Plan with Proposed Improvements - Sheet 2 4
Figure 1: Vicinity Map 7
Figure 2: Site Plan 8
Figure 3: Existing Traffic Volumes 11
Figure 4: Existing Intersection Geometrics 13
Figure 5: Background Traffic Volumes 15
Figure 6: Project Trip Distribution 18
Figure 7: Primary Project Trips 19
Figure 8: Pass-by Project Trips 20
Figure 9: Total Combined Project Trips 21
Figure 10: Project Traffic Volumes 23
Figure 11: Project Intersection Geometrics 24
Figure 12: Future Traffic Volumes 27
Figure 13: Future Plus Project Traffic Volumes 29

LIST OF TABLES

Table 1-1: Comparison of Background and Background Plus Project Intersection Level of Service 1
Table 1-2: Comparison of Future and Future Plus Project Intersection Level of Service 2
Table 1-3: SBCTA Low VMT Generating Area Screening for Project by TAZ 5
Table 3-1: HCM 6 – LOS Criteria for Signalized Intersections 10
Table 3-2: HCM 6 – Level of Service Criteria for Two-Way Stop Controlled (TWSC) Intersections 10
Table 3-3: Level of Service Criteria (HCM 6) for All Way Stop Controlled Intersections 10
Table 3-4: Intersection Capacity Analysis – Existing Conditions 12
Table 3-5: Traffic Signal Warrant Analysis of Highway 395 / Auburn Avenue Under Existing Conditions 12
Table 4-1: Intersection Capacity Analysis – Background Conditions 14
Table 5-1: Project Trip Generation 17
Table 5-2: Intersection Capacity Analysis –Project Conditions 22
Table 5-3: Queuing Analysis – Background Plus Project Conditions 25
Table 6-1: Intersection Capacity Analysis – Future Conditions 26
Table 7-1: Intersection Capacity Analysis – Future Plus Project Conditions 28
Table 7-2: Queuing Analysis – Future Plus Project Conditions 30
Table 8-1: Traffic Signal Warrant Analysis of Highway 395 / Auburn Avenue 31
Table 8-2: Mitigated Intersection Levels of Service for Background + Project Conditions with Mitigations 32
Table 8-3: Mitigated Intersection Levels of Service for Future + Project Conditions with Mitigations 32

LIST OF APPENDICES

Appendix A: Approved Traffic Scope
Appendix B: Traffic Counts
Appendix C: Forecast Model Volume Development
Appendix D: Intersection Capacity Analysis
Appendix E: Traffic Signal Warrant Analysis
Appendix F: Design Vehicle Truck Turning Template

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1 EXECUTIVE SUMMARY

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

1.1 City of Adelanto and Caltrans Intersection Level of Service Policies

The City of Adelanto's *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment* (July 2020) outlines the policies and methods for complying with the new CEQA expectations for Vehicle Miles Traveled (VMT) analysis and the applicable Adelanto General Plan consistency requirements, which requires performing intersection level of service (LOS) analysis.

The City of Adelanto has adopted vehicle LOS policies that set standards for which local agency infrastructure will strive to maintain. These policies are contained in the City's General Plan and therefore apply to discretionary approvals of new land use and transportation projects.

The City of Adelanto requires mitigation to maintain the General Plan goal of LOS D on all its roadways. This level of service policy applies to local Adelanto roadways, roads of regional importance as part of the City's Congestion Management Program (CMP) network and State Highways.

The Caltrans' Guide for the Preparation of Traffic Impact Studies (December 2002) states "Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" (see Appendix "C-3") on State Highway facilities. This policy is consistent with Caltrans' practice of setting level of service thresholds for State Highway facilities equal to the threshold of the jurisdiction where the facility is located but no greater than a 45 second average delay per vehicle in the peak hour (mid LOS D). Caltrans acknowledges that this may not always be feasible. For this study, the City's LOS D is assumed to be the minimum level of service criteria for the study intersections.

Level of Service Comparison With and Without the Proposed Project

Table 1-1 compares the weekday peak hour background and background plus project LOS at the study intersection. Background conditions represent the project's opening year of 2025 and include growth in ambient traffic from regional and local development equaling 3.5 percent annually. In background conditions the side-street stop-controlled intersection of Highway 395 at Auburn Avenue operates at LOS C during the AM peak hour and LOS E during the PM peak hour. In background plus project conditions the intersection of Highway 395 at Auburn Avenue intersection operates at LOS F in the AM and PM peak hours. With the implementation of the proposed intersection improvements (installation of a traffic signal) the study intersection improves to a LOS B or better during the peak hours with the project.

Table 1-1: Comparison of Background and Background Plus Project Intersection Level of Service

Intersection	Control Type	Background Conditions				Background + Project Condition				Increase in Delay (Seconds)		Exceed Criteria?	
		AM Peak		PM Peak		AM Peak		PM Peak					
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM	AM	PM
1. Highway 395 / Auburn Avenue	SSSC	16.3	C	38.9	E	[a]	F	[a]	F	< 300	< 300	YES	YES
Improvement: Install signal, reconfigure lanes	TS	Not Applicable				11.5	B	19.1	B	-4.8	-19.8	NO	NO
2. Auburn Avenue / Project Driveway "A"	SSSC	Not Applicable Future Intersection				14.3	B	23.7	C	Not Applicable Future Intersection			
3. Auburn Avenue / Project Driveway "B"	SSSC					10.4	B	12.0	B				
4. Auburn Avenue / Project Driveway "C"	SSSC					9.0	A	9.0	A				

Notes:
[a] Delay > 300 seconds per vehicle. This level of delay represents over-saturated conditions on the minor street at side-street stop-controlled intersections.
Abbreviations:
TS – Traffic signal-controlled intersection, AWSC – All-way stop-controlled intersection, TWSC – Two-way or Side-street stop-controlled intersection

Table 1-2 compares weekday peak hour year 2040 future conditions with year 2040 future plus project conditions at the study intersections. Future year 2040 conditions represent a long-range forecast for addressing the cumulative impacts regional growth in traffic as determined through land use and traffic projections from the San Bernardino Countywide Traffic Analysis Model (SBTAM). In the future conditions the Highway 395 and Auburn Avenue intersection operates at LOS C during the AM peak hour and LOS E during the PM peak hour. In the future plus project conditions the Highway 395 at Auburn Avenue intersection operates at LOS F in the AM and PM peak hours. With the implementation of the proposed intersection improvements (installation of a traffic signal) the Highway 395 / Auburn Avenue intersection is anticipated to operate at LOS B or better during the peak hours with the project.

Table 1-2: Comparison of Future and Future Plus Project Intersection Level of Service

Intersection	Control Type	Future Conditions				Future + Project Condition				Increase in Delay (Seconds)		Exceed Criteria?	
		AM Peak		PM Peak		AM Peak		PM Peak					
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM	AM	PM
5. Highway 395 / Auburn Avenue	SSSC	33.4	D	[a]	F	[a]	F	[a]	F	< 300	< 300	YES	YES
Improvement: Install signal, reconfigure lanes	TS	Not Applicable				12.6	B	19.9	B	-20.8	-751.6	NO	NO
6. Auburn Avenue / Project Driveway "A"	SSSC	Not Applicable Future Intersection				14.8	B	21.9	C	Not Applicable Future Intersection			
7. Auburn Avenue / Project Driveway "B"	SSSC					10.7	B	12.2	B				
8. Auburn Avenue / Project Driveway "C"	SSSC					9.1	A	9.3	A				

Notes:
[a] Delay > 300 seconds per vehicle. This level of delay represents over-saturated conditions on the minor street at side-street stop-controlled intersections.
Abbreviations:
TS – Traffic signal-controlled intersection, AWSC – All-way stop-controlled intersection, TWSC – Two-way or Side-street stop-controlled intersection

Recommended Measures to Improve Level of Service at Highway 395 and Auburn Avenue

Based on the analyses and evaluation of the traffic control strategies contained in this report (Refer to Chapter 8), this study recommends the following measures:

1. Construct site and frontage improvements.
    a. Within the existing Highway 395 right of way along the project's frontage, configure the lanes on the northbound approach as shown on the conceptual geometric plan in **Figure ES-1**. The configuration should accommodate a left turn lane, two through lanes, and an exclusive right turn lane on the northbound approach on Highway 395. In the conceptual geometric plan, a Class II bike lane is provided between the right turn lane and the through lane.
    b. Within the existing Auburn Avenue right of way along the project's frontage, configure the westbound approach as shown on the conceptual geometric plan in **Figure ES-2.** The configuration should accommodate a left turn lane and a shared through-right turn lane on the westbound approach on Auburn Avenue.
    c. Construct Auburn Avenue east of Highway 395 (currently the east leg of Auburn Avenue is unimproved) to include curb, gutter, and sidewalk, one travel lane in each direction, and a two way left turn lane, and the proposed project driveways as shown on the conceptual geometric plan in **Figure ES-2**.
2. Install a traffic signal at the intersection of Highway 395 and Auburn Avenue with northbound-southbound protected left turn phasing, concurrent with the construction of the project.
3. Improvements at the intersection of Highway 395 and Auburn Avenue propose to configure the southbound approach as shown on the conceptual geometric plan in **Figure ES-1** to include a left turn lane, a through lane, and a shared through-right turn lane on Highway 395.

Figure ES- 1: Conceptual Geometric Plan with Proposed Improvements – Sheet 1

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1"= 40'

NO.	DESCRIPTION	DATE	BY

REVISONS

DAVID EVANS AND ASSOCIATES INC.

18484 Outer Highway 18 North Suite 225
Apple Valley California 92307
Phone: 760.524.9100

GUS OTAKI

CONCEPTUAL GEOMETRICS PLAN

DRAWN BY: PDB
DESIGNED BY: RAK
CHECKED BY: RAK

US 395 AT AUBURN AVENUE

ADELANTO COMMERCIAL DEVELOPMENT

JOB NO. LTRI00000001
DATE 10/12/2022
SHT NO. 1 OF 2

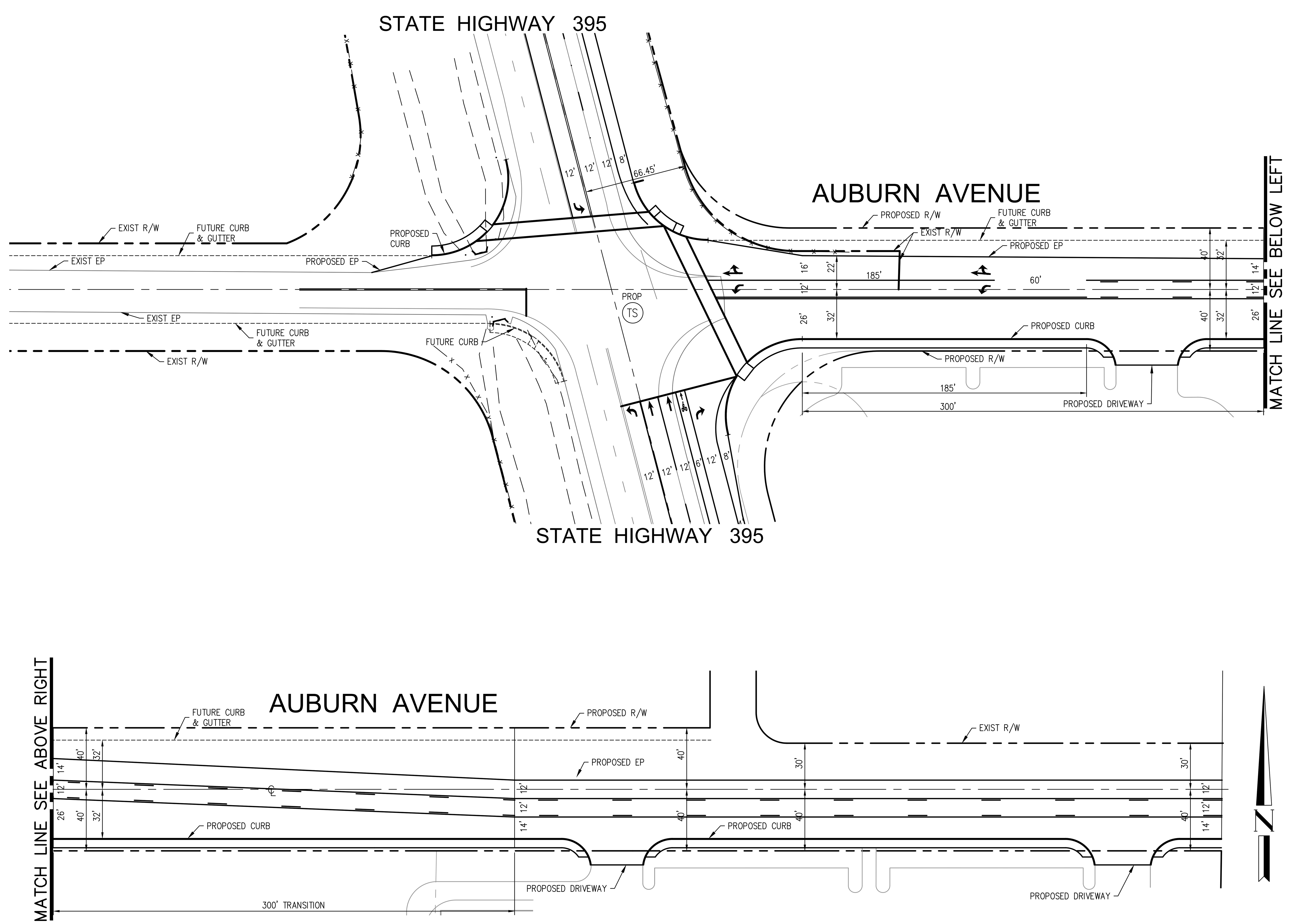

Figure ES- 2: Conceptual Geometric Plan with Proposed Improvements – Sheet 2

40 0 40 80
scale 1"= 40' feet

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18484 Outer Highway 18 North Suite 225
Apple Valley California 92307
Phone: 760.524.9100

GUS OTAKI

CONCEPTUAL GEOMETRICS PLAN

DRAWN BY: PDB
DESIGNED BY: RAK
CHECKED BY: RAK

US 395 AT AUBURN AVENUE

ADELANTO COMMERCIAL DEVELOPMENT

JOB NO. LTRI00000001
DATE: 10/12/2022
SHT NO.: 2 OF 2

1.2 Results of VMT Screening Assessment

The project was screened to determine if a VMT analysis is required under CEQA in accordance with the City of Adelanto's *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment.* The guidelines contain several criteria for screening development of which two are applicable to the proposed project.

Low VMT Generating Traffic Analysis Zone (TAZ) Criterion

The low VMT generating TAZ (Traffic Analysis Zone) criteria was applied to the project for two planning years: 1) the opening year (2025) background plus project scenario, and 2) the cumulative year 2040 plus project scenario. The results of applying this criterion to the project is shown in **Table 1-3** for the two TAZs the project spans in each planning year.

Table 1-3: SBCTA Low VMT Generating Area Screening for Project by TAZ

Planning Year	TAZ Number	Transit Priority Area (TPA)	Metric	TAZ VMT (VMT/Service Population)	Adelanto Adopted Threshold (Countywide Average VMT/Service Population)	Percent Difference
2025 Planning Horizon	53903201	No	VMT / Service Population	67.8	32.7	107%
2040 Planning Horizon	53903201	No	VMT / Service Population	50.5	32.7	54%
Notes: Source: SBCTA VMT screening tool attribution table for TAZ 53903201. VMT presented (TAZ VMT) is calculated from OD VMT per service population for the year 2025 and 2040 planning horizons. Service population = residents + employees						

- In opening year 2025, TAZ 53903201 has a VMT per service population of 67.8 which exceeds the threshold of 32.7 by 107%, therefore this TAZ it is not a low VMT generating TAZ under opening year conditions.
- In future year 2040, TAZ 53903201 has a VMT per service population of 50.5 which exceeds the threshold 32.7 by 54%, therefore this TAZ it is not a low VMT generating TAZ under future year conditions.

The project is not screened from requiring a VMT analysis based on the low VMT generating TAZ criterion.

Annual CO2 Equivalent Emissions Criterion

The Adelanto City Council recently adopted Resolution 20-41-A, which replaces the average daily traffic generation-based criterion with an emissions-based criterion. The new criterion considers development as having a non-significant impact on the environment if it generates less than 3,000 metric tons (MT) of CO2 equivalent emissions annually. The adopted criterion includes a table of common land uses identifying the maximum size (floor area, dwelling units, etc.) that does not exceed the threshold. For retail development projects, the maximum size is 135,000 square feet of floor area.

The project is comprised of retail uses with a total building floor area of about 60,000 square feet (excluding the proposed hotel). Since the retail portion of the project is less than the 135,000 square foot maximum size threshold it is screened from requiring a detailed VMT analysis under CEQA.

The proposed 100-room hotel is a locally serving land use targeting guests doing business in Adelanto and accommodating travelers on Highway 395. This part of the project meets the screening criterion that exempts locally serving retail / service project types.

The retail portion of the proposed project is screened from requiring a VMT analysis based on the recently adopted emissions-based project type screening criterion, and the hotel portion of the project is screened from requiring a VMT analysis based on the locally serving project type screening criterion.

2 INTRODUCTION

This report identifies the traffic impacts and presents recommendations for access and traffic mitigation for the proposed Commercial Development located at the SEC of Highway 395 and Auburn Avenue in the City of Adelanto, California. The proposed project consists of a new construction of community and highway-oriented retail anchored by a supermarket and a locally serving hotel. **Figure 1** provides a vicinity map, and **Figure 2** illustrates the proposed project site plan.

The intent of this report is to evaluate potentially significant traffic impacts caused by the proposed development in accordance with the City of Adelanto's traffic impact study requirements and under the following scenarios:

- Existing Conditions
- Background Conditions (Opening Year 2025)
- Background Plus Project Conditions (Opening Year 2025)
- Future Year 2040 Conditions Without Project
- Future Year 2040 Conditions Plus Project

2.1 Scenario Definitions

Existing Conditions. This scenario represents existing transportation conditions at the time this report was prepared. Data includes traffic counts collected in June 2022 and current roadway and intersection geometries. This scenario is used as the baseline condition from which to measure project-specific impacts.

Background Conditions (Opening Year 2025). This scenario represents conditions at the time the project is anticipated to be constructed and occupied (year 2025) but without traffic generated by the project. Ambient growth in traffic is projected using a rate of growth from overall regional development (assumed to be 3.5% annually for this study).

Background Plus Project Conditions (Opening Year 2025). This scenario adds the project's estimated traffic generation at project buildout (Year 2025) to the background conditions scenario described above. Impacts identified in this scenario are considered "project specific" impacts—impacts for which the project is entirely responsible.

Future Year 2040 Conditions. This scenario represents ambient growth in traffic up to the year 2040. Ambient growth in this scenario is derived from the San Bernardino Transportation Analysis Model (SBTAM).

Future Year 2040 with Project Conditions. This scenario adds the project's estimated traffic generation to the future year 2040 scenario described above. Impacts identified in this scenario are considered "cumulative" impacts—impacts that the project contributes to, but does not solely cause, and may be responsible for a fair-share of the cost to implement any mitigation measures.

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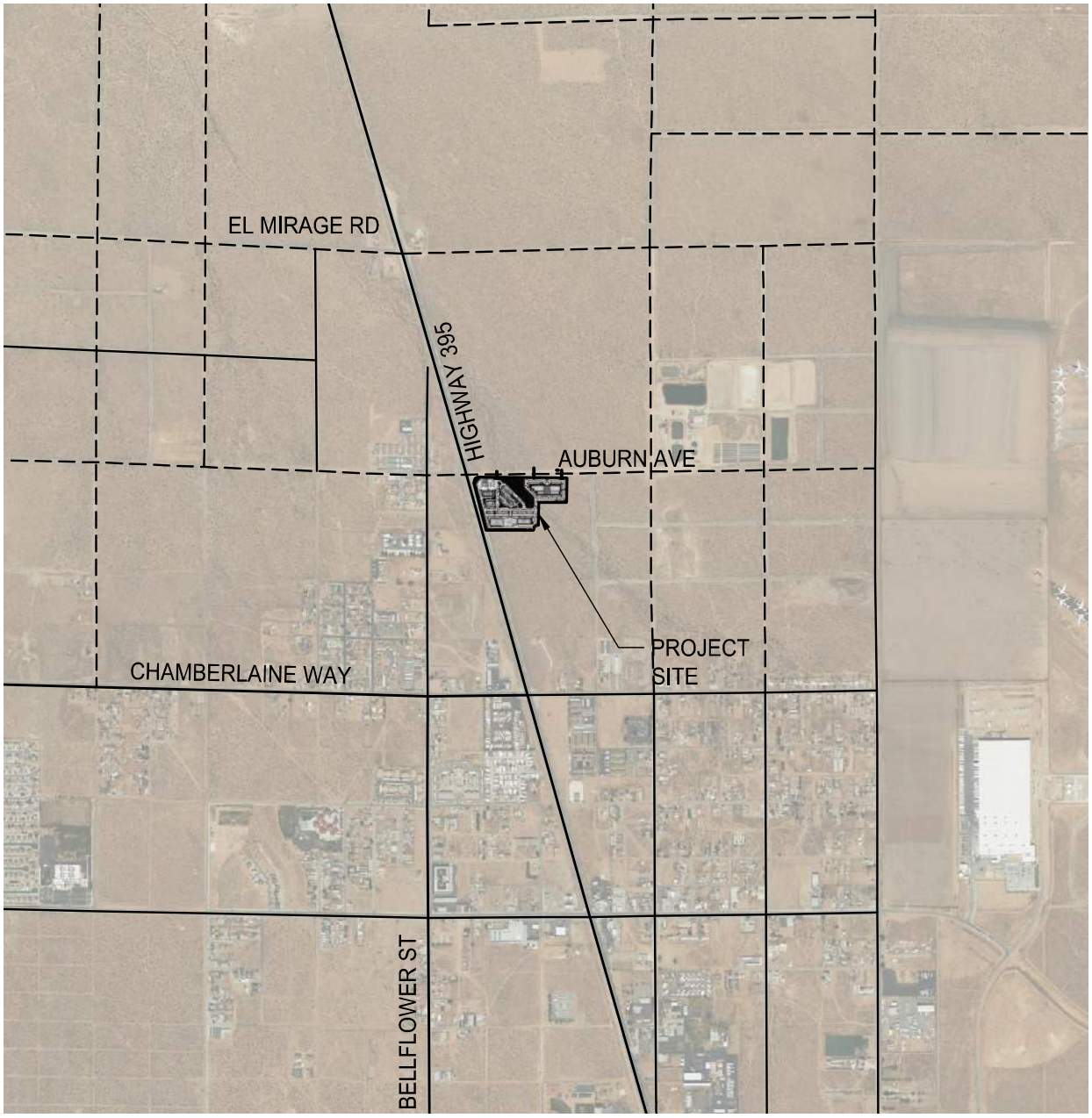

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FIGURE 1: VICINITY MAP
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA

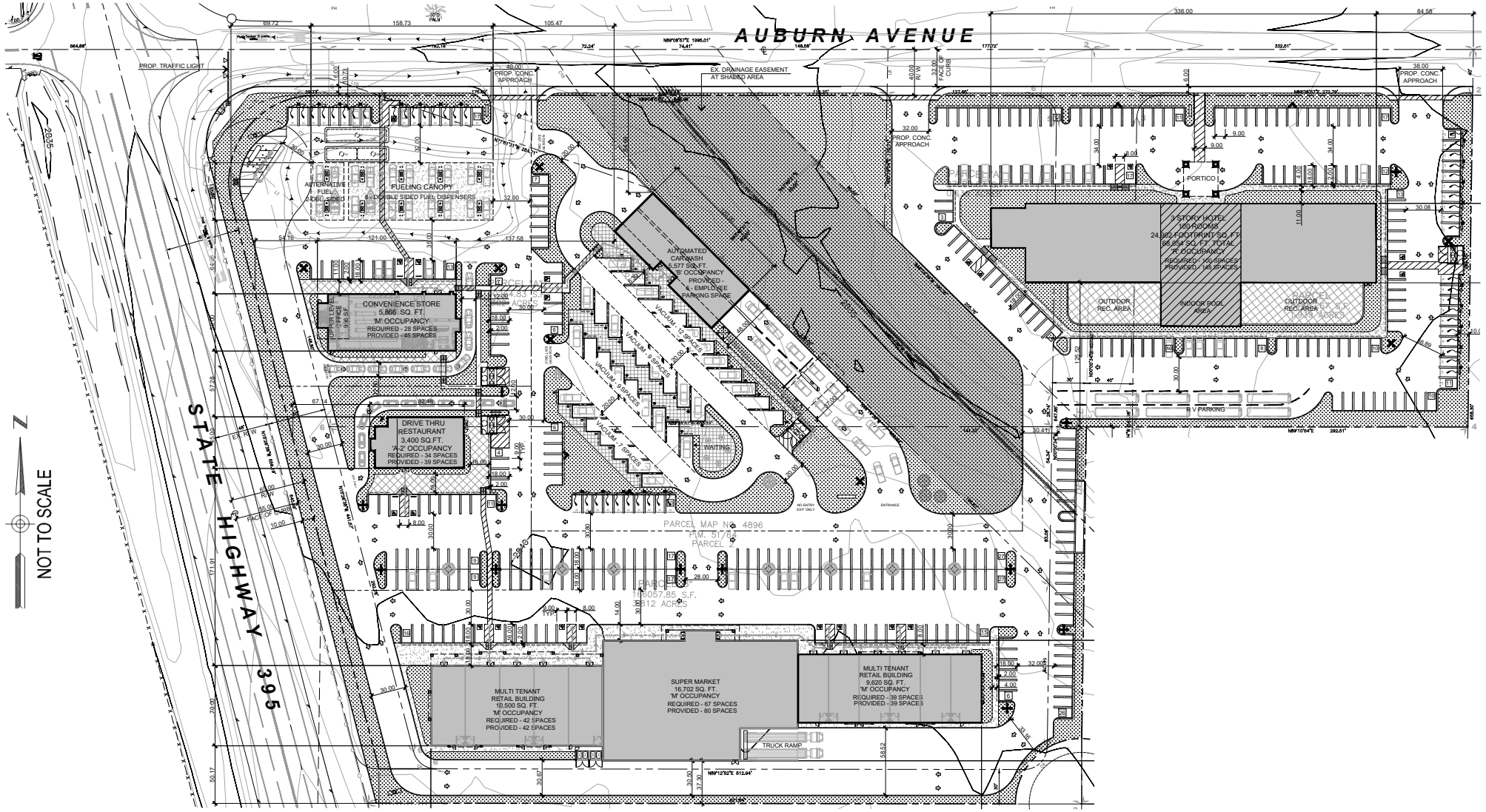

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FIGURE 2: SITE PLAN
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA

3 EXISTING CONDITIONS

This chapter describes current policy related to level of service standards, defines the operational thresholds for measuring level of service, and evaluates existing baseline conditions. The existing traffic counts analyzed in this chapter are used as the basis from which future traffic forecasts are developed in subsequent chapters.

3.1 City of Adelanto and Caltrans Intersection Level of Service Policies

The City of Adelanto's *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment* (July 2020) outlines the policies and methods for complying with the change in CEQA's metric to Vehicle Miles Traveled (VMT) analysis and the applicable Adelanto General Plan level of service policy consistency requirements, which requires performing intersection level of service (LOS) analysis.

The City of Adelanto requires mitigation to maintain the General Plan goal of LOS D on all its roadways. This level of service policy applies to local Adelanto roadways, roads of regional importance as part of the county's Congestion Management Program (CMP) network and State Highways.

The Caltrans' *Guide for the Preparation of Traffic Impact Studies* (December 2002) states "Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" (see Appendix "C-3") on State Highway facilities, however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency (City of Adelanto) consult with Caltrans to determine the appropriate target LOS". This guidance is consistent with Caltrans' practice of setting level of service thresholds for State Highway facilities equal to the threshold of the jurisdiction where the facility is located but no greater than a 45 second average delay per vehicle in the peak hour (mid LOS D). For this study, the city's LOS D is assumed to be the minimum level of service criteria for the study intersections.

3.2 Local and Major Roadways

Highway 395 is a major north-south primarily two-lane road (a single lane in each direction with a with turn pockets at key intersections) in the project area. Highway 395 is identified as a super arterial on the City of Adelanto Circulation Plan. The posted speed limit within the project area is 55 mph.

3.3 Site Access

The project proposes three driveways along Auburn Avenue. Each driveway will be full access driveways. The project's access is evaluated in Chapter 5 of this report.

3.4 Study Intersections

The project would potentially affect one existing intersection and the project's proposed driveways:

1. Highway 395 / Auburn Avenue
2. Auburn Avenue / Project Driveway "A"
3. Auburn Avenue / Project Driveway "B
4. Auburn Avenue / Project Driveway "C

The intersection of Highway 395 at Auburn Avenue is currently side street stop control.

3.5 Existing Traffic Volumes

Turn movement counts were conducted in June 2022 by Newport Traffic Studies, an independent traffic data collection company. These counts were collected during the AM (7:00-9:00 AM) and PM (4:00-6:00 PM) peak periods. The existing turn movement counts, and 24 approach count are included in **Appendix B** of this study. **Figure 3** illustrates the existing peak hour traffic volumes in the study area.

3.6 Intersection Capacity Analysis Methodology

Intersection level of service (LOS) is determined using Synchro software[1] which implements the methodology in Chapter 19, Chapter 20, and Chapter 21 of the Highway Capacity Manual, 6th Edition (HCM 6)[2] and conforms to the procedures and assumptions in the City's Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment (LOS).

The intersection analyses use existing intersection geometrics and existing traffic volumes in determining AM and PM peak hour intersection level of service. **Table 3-2** provides LOS thresholds for signalized intersections as provided in the HCM 6 Chapter 19.

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

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

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

Table 3-2: HCM 6 – Level of Service Criteria for Two-Way Stop Controlled (TWSC) Intersections

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

The level of service for an All-Way Stop Controlled (AWSC) intersection is determined by the computed or measured control delay. The LOS is determined for the intersection by using the criteria provided in **Table 3-3.**

Table 3-3: Level of Service Criteria (HCM 6) for All Way Stop Controlled Intersections

Control Delay (s/veh)	LOS by Volume-to-Capacity Ratio [a]	
	v/c ≤1.0	v/c >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
[a] For approach-based and intersection-wide assessments, LOS is defined solely by control delay. Source: Highway Capacity Manual 6th Edition, Exhibit 21-8.		

1 Trafficware Ltd, version 10.
2 Transportation Research Board, Washington D.C., 2010.

N

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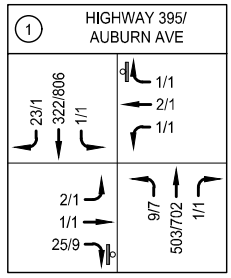
1	HIGHWAY 395/ AUBURN AVE
2	AUBURN AVE/ PROJECT DRIVEWAY "A"
3	AUBURN AVE/ PROJECT DRIVEWAY "B"
4	AUBURN AVE/ PROJECT DRIVEWAY "C"



FUTURE DRIVEWAY

FUTURE DRIVEWAY

FUTURE DRIVEWAY

LEGEND

XX/XX - AM/PM TRAFFIC VOLUMES

(#) - STUDY INTERSECTIONS

- STOP CONTROLLED INTERSECTION

- SIGNAL CONTROLLED INTERSECTION

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FIGURE 3: EXISTING TRAFFIC VOLUMES
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA

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3.7 Existing Traffic Analysis

Existing intersection geometrics and existing AM and PM peak hour traffic counts are used in analyzing existing intersection capacity. **Table 3-4** and **Appendix D** provide the results of the analysis. **Figure 4** illustrates the existing intersection geometrics utilized in the capacity analysis.

Table 3-4: Intersection Capacity Analysis – Existing Conditions

Intersection	Intersection Control Type	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
1. Highway 395 / Auburn Avenue	SSSC	15.8	C	33.2	D

Abbreviations:
TS – Traffic signal-controlled intersection, AWSC – All-way stop-controlled intersection, TWSC (SSSC) – Two-way or side-street stop-controlled intersection

As presented in **Table 3-4***,* under existing conditions, the existing study intersection is currently operating at LOS D or better in the AM and the PM peak hours.

3.8 Traffic Signal Warrant Analysis

Section 4C.01 of the California MUTCD (Studies and Factors for Justifying Traffic Control Signals) provides warrants related to the existing operation and safety at intersections. Warrants applicable to the intersection of Highway 395 / Auburn Avenue include: Warrant 1 (Eight-hour vehicular volume), Warrant 2 (Four-hour vehicular volume), Warrant 3 (Peak hour volume), and Warrant 7 (Crash experience). The results of the warrant analyses are summarized in **Table 3-5** and the signal warrant worksheets are located in **Appendix E.**

Table 3-5: Traffic Signal Warrant Analysis of Highway 395 / Auburn Avenue Under Existing Conditions

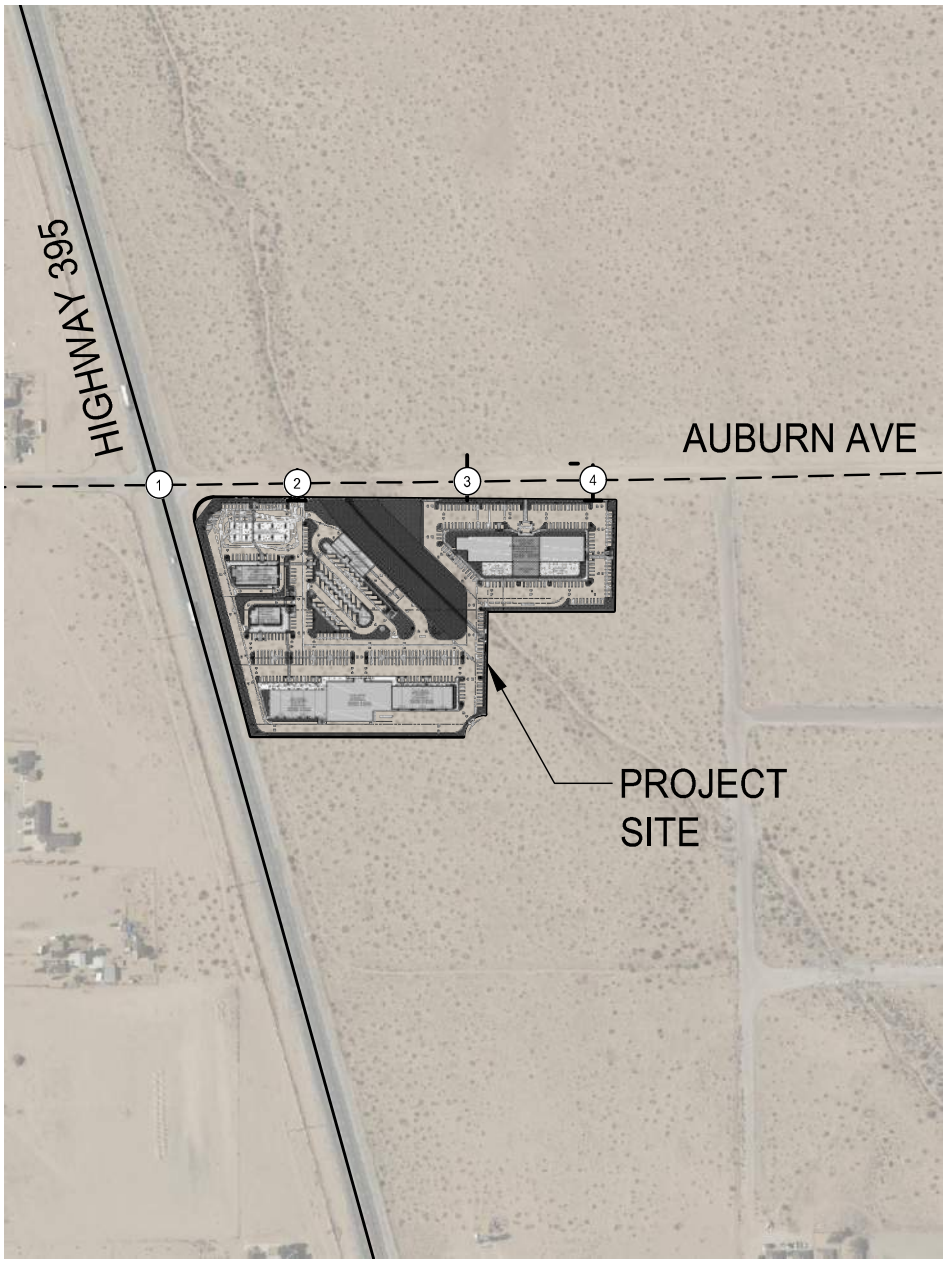
Warrant No.	Warrant [1]	Warrant Satisfied?
		Existing Conditions
1	Eight-hour vehicular volume	NO
2	Four-hour vehicular volume	NO
3	Peak hour volume	NO
7	Crash experience [3]	NO

[1] Remaining MUTCD warrants including Warrant 4 (pedestrian volume), Warrant 5 (school crossing), Warrant 6 (coordinated signal system), Warrant 8 (roadway network), and Warrant 9 (intersection near a grade crossing) are not relevant to the intersection of Highway 395 / Auburn Avenue.

[2] Only Warrant 3 (Peak Hour Volume) applies to future conditions because peak hour traffic volumes can be forecast whereas eight-hour volumes, four-hour volumes, and crash experience cannot be forecast to the level of accuracy needed for signal warrant analysis.

[3] Source: Transportation Injury Mapping System (TIMS), *Safe Transportation Research and Education Center*, *University of California, Berkeley*. 2021.

Under existing conditions, the intersection of Highway 395 and Auburn Avenue does not meet warrants for the installation of a traffic signal.



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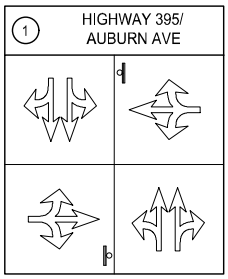

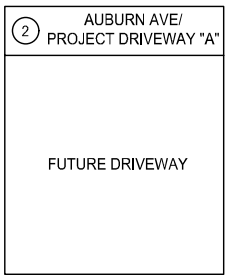

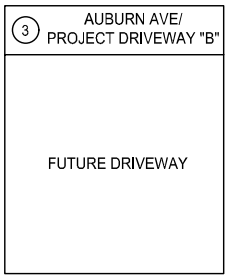

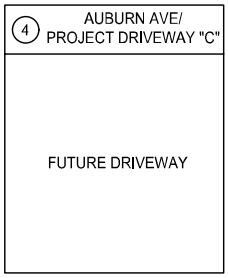

LEGEND

- EXISTING GEOMETRICS
- # - STUDY INTERSECTIONS
- SIGNALIZED INTERSECTION
- STOP CONTROLLED APPROACH

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FIGURE 4: EXISTING INTERSECTION GEOMETRICS
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA

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4 BACKGROUND CONDITIONS

The background conditions scenario evaluates impacts due to ambient growth in traffic and traffic generated by other area development projects within the study area up to the year 2025 when project is expected to be completed and occupied.

The ambient growth is a general rate of growth assumed to be 3.5% annually for this study.

4.1 Background Conditions Traffic Analysis

The background conditions intersection capacity analysis uses existing intersection geometrics and the projected AM and PM peak hour traffic shown in **Figure 5**. **Table 4-1** and **Appendix D** provides the results of the analysis.

Table 4-1: Intersection Capacity Analysis – Background Conditions

Intersection	Intersection Control Type	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
1. Highway 395 / Auburn Avenue	SSSC	16.3	C	38.9	E

Abbreviations:
TS – Traffic signal-controlled intersection, AWSC – All-way stop-controlled intersection, TWSC (SSSC) – Two-way or side-street stop-controlled intersection

As presented in **Table 4-1***,* under background conditions, the study intersection is anticipated to operate at LOS C during the AM peak hour and LOS E in the PM peak hour.

4.2 Traffic Signal Warrant Analysis

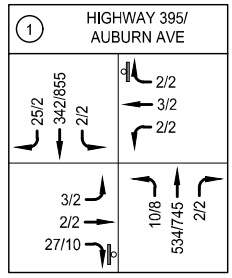
In the background conditions scenario, only Warrant 3 (peak hour volume) is evaluated. The signal warrant worksheets are in **Appendix E.**

Under background conditions, the intersection of Highway 395 and Auburn Avenue does not meet warrants for the installation of a traffic signal.

N

NOT TO SCALE

1	HIGHWAY 395/ AUBURN AVE
2	AUBURN AVE/ PROJECT DRIVEWAY "A"
3	AUBURN AVE/ PROJECT DRIVEWAY "B"
4	AUBURN AVE/ PROJECT DRIVEWAY "C"



FUTURE DRIVEWAY

FUTURE DRIVEWAY

FUTURE DRIVEWAY

LEGEND

XX/XX - AM/PM TRAFFIC VOLUMES

(#) - STUDY INTERSECTIONS

- STOP CONTROLLED INTERSECTION

- SIGNAL CONTROLLED INTERSECTION

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FIGURE 5: BACKGROUND TRAFFIC VOLUMES
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA

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5 PROJECT CONDITIONS

The project conditions scenario evaluates the potential cumulative impacts to the area network due to ambient growth and other area project trips up to the project opening day of 2025 with the addition of project traffic. This scenario adds the project's estimated traffic generation at opening day (2025) to the background conditions scenario. Impacts identified in this near-term scenario are considered "project-specific" impacts—impacts for which the project is entirely responsible.

5.1 Project Description and Trip Generation

Table 5-1 summarizes the estimated trip generation for the proposed project for the peak hours within the AM (7-9 AM) and PM (4-6 PM) peak periods. The trip generation rates for the site including Convenience Store/Gas Station sub-category VFP (16-24) (LU 945), Small Office Building (LU 712), Fast-Food Restaurant with Drive-Through Window (LU 934), Shopping Plaza (40-150k) - sub-category Supermarket - Yes (LU 821), Automated Car Wash (LU 948), and Hotel (LU 310) were obtained from the ITE Trip Generation manual, 11th Edition.

Pass-by factors for the convenience store/gas station, fast-food restaurant with drive-through window, and shopping plaza were obtained from the ITE Trip Generation Manual, 11th Edition Appendices. A reduction in trips of 10% for internal capture is assumed for the development.

As shown in **Table 5-1**, the proposed project is estimated to generate 12,094 primary daily trips, 344 primary AM peak hour trips, and 525 primary PM peak hour trips.

5.2 Project Trip Distribution and Assignment

The distribution of project trips to the surrounding street network is based on assumed origins of the project's employees and customers. The directional distribution patterns (east, west, north, and south) are consistent with area traffic patterns, and the source of the trip (i.e., primary, diverted link or pass-by) then assigned to the street system based on the type of trip or the most direct route on major streets.

The following exhibits illustrate both the directional distribution (percent direction) and the assignment of project traffic (peak hour trips) to the street system. **Figure 6** presents the primary project trips distribution percentages at each study intersection.

Figure 7 presents the primary project trips assigned to each study intersection. **Figure 8** shows the pass-by trips as assigned to each project driveway and study intersection. Finally, **Figure 9** presents the total project trips assigned to each study intersection.

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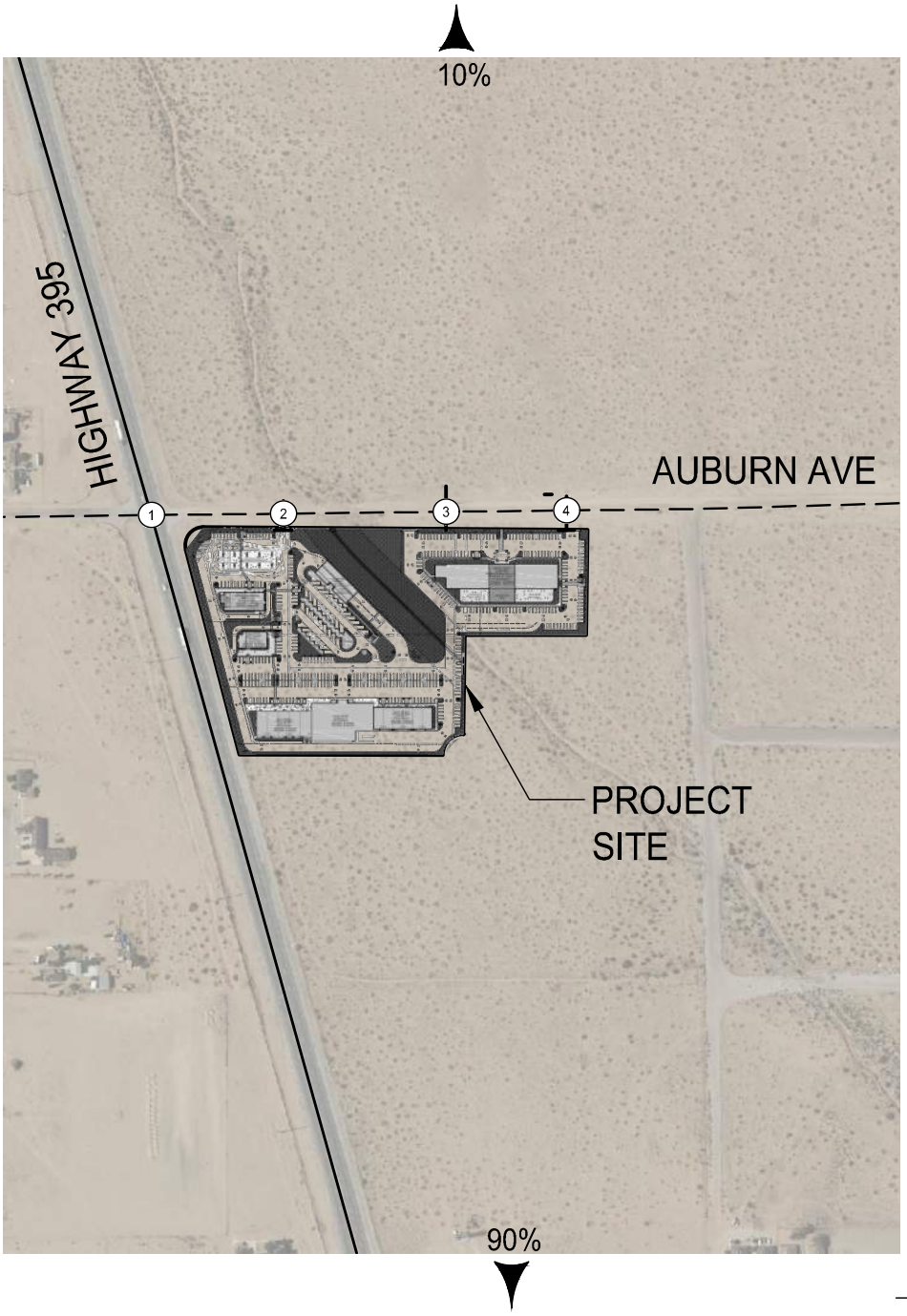
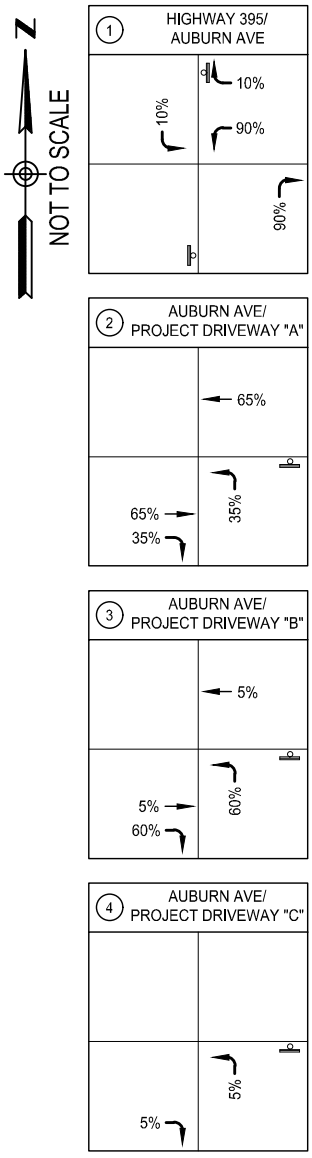
Table 5-1: Project Trip Generation

	Land Use	Size	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
	Convenience Store/Gas Station VFP (16-24) Land Use Category (ITE 945)								
	Rates (per 1,000 Sq. Ft. GFA)		1,283.38	45.68	45.68	91.35	39.48	39.48	78.95
	Trips		7,554	269	269	538	232	233	465
1	Internal Trips (10%)[1]	5,688	756	27	27	54	23	24	47
	Adjusted Trips		6,798	242	242	484	209	209	418
	Pass-By Trips (76%,75%)		0	184	184	368	157	157	314
	Primary Trips (24%, 25%)		6,798	58	58	116	52	52	104
	Small Office Building Land Use Category (ITE 712)								
2	Rates (per 1,000 Sq. Ft. GFA)	956	14.39	1.37	0.30	1.67	0.73	1.43	2.16
	Trips		14	2	1	2	1	2	3
	Fast-Food Restaurant with Drive-Through Window Land Use Category (ITE 934)								
	Rates (per 1,000 Sq. Ft. GFA)		467.48	22.75	21.86	44.61	17.18	15.85	33.03
	Trips		1,590	78	74	152	58	54	112
3	Internal Trips (10%)[1]	3,400	159	8	7	15	6	5	11
	Adjusted Trips		1,431	70	67	137	52	49	101
	Pass-By Trips (50%,55%)		0	35	34	69	29	27	56
	Primary Trips (50%, 45%)		1,431	35	33	68	23	22	45
	Shopping Plaza (40-150k) – With Supermarket - Land Use Category (ITE 821) 3 buildings								
	Rates (per 1,000 Sq. Ft. GFA)		94.49	2.19	1.34	3.53	4.33	4.70	9.03
	Trips		3,480	81	49	130	160	173	333
4	Internal Trips (10%)[1]	36,822	348	8	5	13	16	17	33
	Adjusted Trips		3,132	73	44	117	144	156	300
	Pass-By Trips (0%,40%)		0	0	0	0	58	62	120
	Primary Trips (100%, 60%)		3,132	73	44	117	86	94	180
	Automated Car Wash Land Use Category (ITE 948)								
	Rates (per Car Wash Tunnels)		0.00	0.00	0.00	0.00	38.75	38.75	77.50
5	Trips	2	0	0	0	0	78	78	156
	Internal Trips (10%)[1]		0	0	0	0	8	8	16
	Adjusted Trips		0	0	0	0	70	70	140
	Hotel Land Use Category (ITE 310)								
	Rates (per Rooms)		7.99	0.26	0.20	0.46	0.30	0.29	0.59
6	Trips	100	799	26	20	46	30	29	59
	Internal Trips (10%)[1]		80	3	2	5	3	3	6
	Adjusted Trips		719	23	18	41	27	26	53
	Adjusted Project Trips		12,094	410	372	781	503	512	1,015
	Pass-By Project Trips		0	219	218	437	244	246	490
	Primary Project Trips		**12,094**	191	154	**344**	259	266	**525**

Notes:
Source of trip generation rates and pass-by factors: *Trip Generation*, Institute of Transportation Engineers", 11th Edition.
[1] The internal trip reduction of 10 percent reflects trips between the various uses within the project.





LEGEND

XX% - GENERAL PROJECT TRIP DISTRIBUTION

XX% - SPECIFIC PROJECT TRIP PERCENTAGE

(#) - STUDY INTERSECTIONS

- STOP CONTROLLED INTERSECTION

- SIGNAL CONTROLLED INTERSECTION

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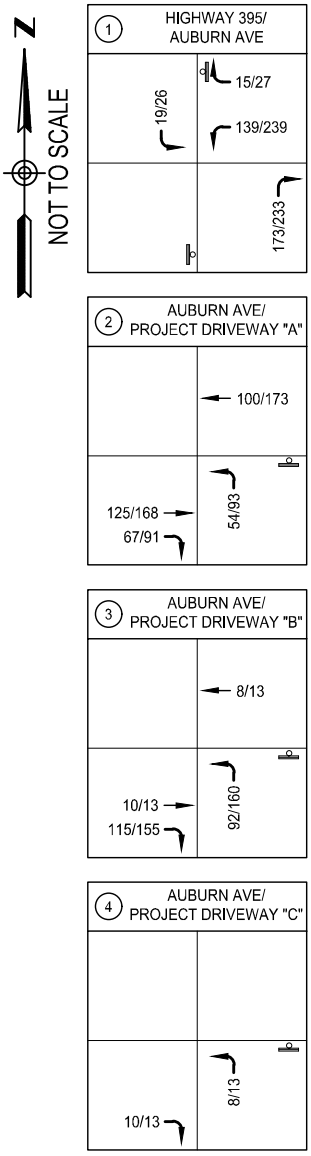
FIGURE 6: PROJECT TRIP DISTRIBUTION
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA



PRIMARY PROJECT TRIPS

AM PEAK PERIOD - 191 IN / 154 OUT
PM PEAK PERIOD - 259 IN / 266 OUT

LEGEND

XX/XX - AM/PM PROJECT TRIPS
(#) - STUDY INTERSECTIONS
- STOP CONTROLLED INTERSECTION
- SIGNAL CONTROLLED INTERSECTION

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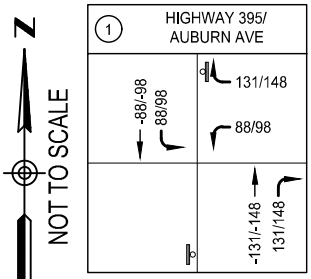
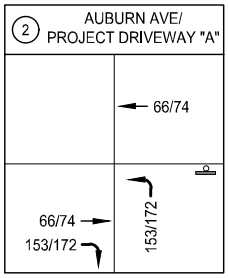
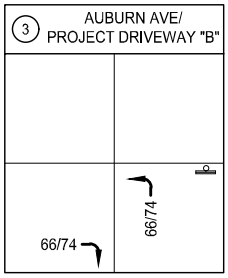
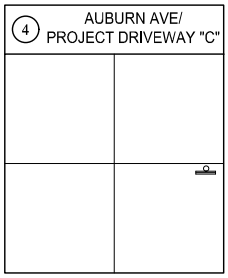
FIGURE 7: PRIMARY PROJECT TRIPS
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA









PASS-BY PROJECT TRIPS

AM PEAK PERIOD - 219 IN / 218 OUT
PM PEAK PERIOD - 244 IN / 246 OUT

LEGEND

XX/XX - AM/PM PROJECT TRIPS
(#) - STUDY INTERSECTIONS
- STOP CONTROLLED INTERSECTION
- SIGNAL CONTROLLED INTERSECTION

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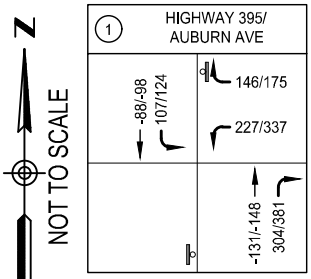
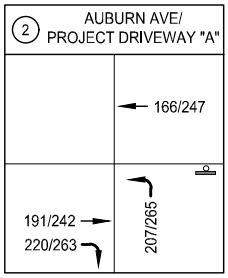
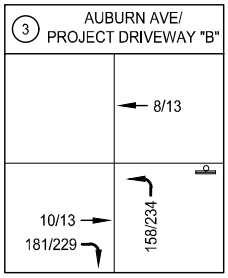
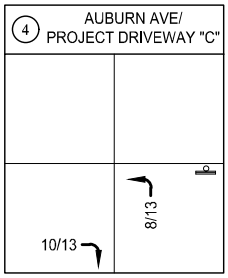
FIGURE 8: PASS-BY PROJECT TRIPS
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA









TOTAL PROJECT TRIPS

AM PEAK PERIOD - 410 IN / 372 OUT
PM PEAK PERIOD - 503 IN / 512 OUT

LEGEND

XX/XX - AM/PM PROJECT TRIPS
(#) - STUDY INTERSECTIONS
- STOP CONTROLLED INTERSECTION
- SIGNAL CONTROLLED INTERSECTION

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FIGURE 9: TOTAL PROJECT TRIPS
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA

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5.3 Project Traffic Analysis

The intersection capacity analysis of Project Conditions uses the AM and PM peak hour traffic volumes shown in **Figure 10** and the existing intersection geometrics shown in **Figure 11. Table 5-4** and **Appendix D** provide the results of the analysis.

Table 5-2: Intersection Capacity Analysis –Project Conditions

Intersection		Intersection Control	Background Conditions				Background plus Project Conditions			
			AM Peak		PM Peak		AM Peak		PM Peak	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Highway 395 / Auburn Avenue	SSSC	16.3	C	38.9	E	[a]	F	[a]	F
	Intersection Improvements: Install signal, reconfigure lanes	TS	Not Applicable				11.5	B	19.1	B
2	Auburn Avenue / Driveway "A"	SSSC	Not Applicable Future Driveway				14.3	B	23.7	C
3	Auburn Avenue / Driveway "B"	SSSC					10.4	B	12.0	B
4	Auburn Avenue / Driveway "C"	SSSC					9.0	A	9.0	A

Notes:
[a] Delay > 300 seconds per vehicle. This level of delay represents over-saturated conditions on the minor street at side-street stop-controlled intersections.
Abbreviations:
TS – Traffic signal-controlled intersection, AWSC – All-way stop-controlled intersection, TWSC – Two-way or Side-street stop-controlled intersection

As presented in **Table 5-4**, under Project Conditions, the project driveways, are projected to operate at LOS C or better during the AM and the PM peak hours. The intersection of Highway 395 and Auburn Avenue is projected to operate at LOS F during the AM and the PM peak hours.

Project Specific Improvements

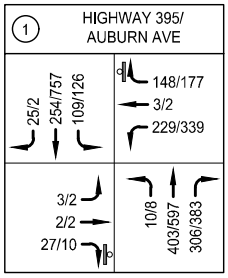
1. Construct site and frontage improvements.
    a. Within the existing Highway 395 right of way along the project's frontage, configure the northbound approach (refer to the conceptual geometric plan in **Figure ES-1**). The configuration should accommodate a left turn lane, two through lanes, and an exclusive right turn lane on the northbound approach to Highway 395 / Auburn Avenue. In the conceptual geometric plan, a Class II bike lane is provided between the right turn lane and the through lane.
    b. Within the existing Auburn Avenue right of way along the project's frontage, configure the westbound approach (refer to the conceptual geometric plan in **Figure ES-2**). The configuration should accommodate a left turn lane and a shared through-right turn lane on the westbound approach to Highway 395 / Auburn Avenue.
    c. Construct Auburn Avenue east of Highway 395 (currently the east leg of Auburn Avenue is unimproved) to include curb, gutter, and sidewalk, one travel lane in each direction, and a two way left turn lane, and the proposed project driveways.
2. Install a traffic signal at the intersection of Highway 395 and Auburn Avenue with northbound-southbound protected left turn phasing, concurrent with the construction of the project.
3. Improvements at the intersection of Highway 395 and Auburn Avenue propose to configure the southbound approach as shown on the conceptual geometric plan (refer to **Figure ES-1**) to include a left turn lane, a through lane, and a shared through-right turn lane on Highway 395.

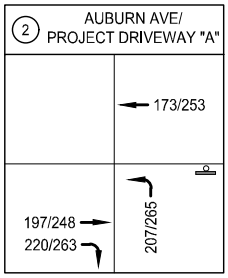
5.4 Traffic Signal Warrant Analysis

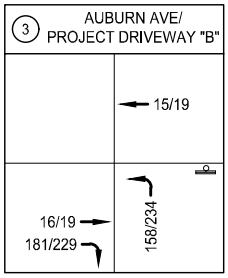
In the project conditions scenario, only Warrant 3 (peak hour volume) is evaluated. The signal warrant worksheets are in **Appendix E.** Under background plus project conditions, the intersection of Highway 395 and Auburn Avenue satisfies Warrant 3. Warrant 3 is satisfied based on approach volume and total delay experienced by traffic on the minor stop-controlled approach of Auburn Avenue.

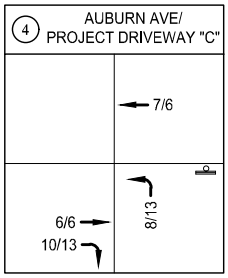
N

NOT TO SCALE









LEGEND

XX/XX - AM/PM TRAFFIC VOLUMES

(#) - STUDY INTERSECTIONS

- STOP CONTROLLED INTERSECTION

- SIGNAL CONTROLLED INTERSECTION

DAVID EVANS AND ASSOCIATES INC.

FIGURE 10: PROJECT TRAFFIC VOLUMES
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA

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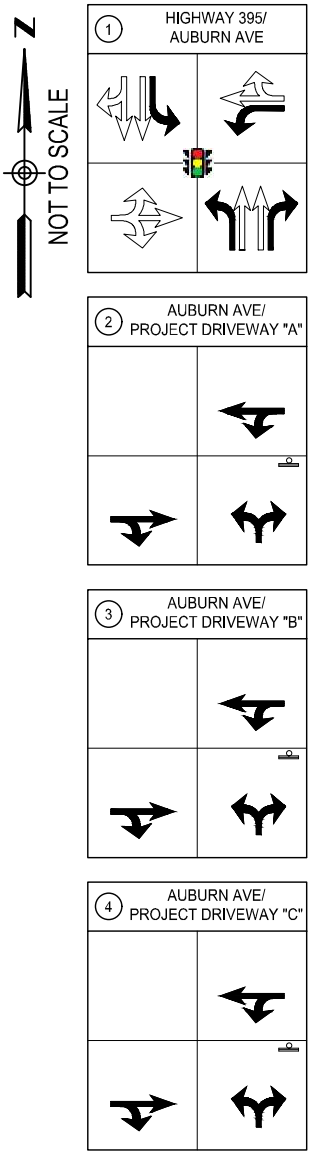

LEGEND

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

DAVID EVANS AND ASSOCIATES INC.

FIGURE 11: PROJECT INTERSECTION GEOMETRICS
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA

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5.5 Background Plus Project Traffic Queuing Analysis

A queuing analysis for background plus project conditions was performed for the intersection of Highway 395 and Auburn Avenue utilizing Trafficware's SimTraffic (Version 11) software. The 95th percentile maximum queue length results for background plus project conditions are shown in **Table 5-3**.

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

Intersection	Movement	Storage Length (Feet)	Background + Project Condition		Background + Project Condition with Proposed Improvements	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
1. Highway 395 / Auburn Avenue	EBLTR		35	36	33	19
	WBL	(185)	-	-	122	177
	WBLTR/WBTR		331	279	43	132
	NBL	(300)	-	-	20	14
	NBLT/NBT		12	46	134	212
	NBTR/NBT		25	16	64	174
	NBR	(300)	-	-	78	101
	SBL	(300)	-	-	93	110
	SBLT/SBT		159	417	90	224
	SBTR		72	338	62	178
"-" – Not applicable to the scenario Vehicular queue – in Feet 95% - 95th percentile queue length						

As presented in **Table 5-3**, under background plus project conditions with proposed improvements (traffic signal) the proposed turn bay lengths will accommodate the AM or PM peak hour 95th percentile queues.

5.6 Site Access

As shown in the site plan (refer to **Figure 2**) and the conceptual geometric plan (refer to **Figure ES-2**) access to the site is provided by three driveways:

1. Driveway A is proposed as a full access driveway is located on Auburn Avenue located approximately 250 feet east of Highway 395 (centerline to centerline). A two way left turn lane will be provide along the project frontage.
2. Driveway B is proposed as a full access driveway is located on Auburn Avenue located approximately 740 feet east of Highway 395 (centerline to centerline). A two way left turn lane will be provide along the project frontage.
3. Driveway C is proposed as a full access driveway is located on Auburn Avenue located approximately 1070 feet east of Highway 395 (centerline to centerline). A two way left turn lane will be provide along the project frontage. The improved portion of Auburn Avenue terminates at this driveway.

6 FUTURE YEAR 2040 CONDITIONS

The future year 2040 conditions scenario represents regional ambient growth in traffic up to the year 2040. Ambient growth is derived from forecasts from the San Bernardino Transportation Analysis Model (SBTAM). Intersection turn movements were developed from post processing model forecasted approach volumes and balancing the turn movement volumes for each study intersection.

The SBTAM traffic model plots are provided in **Appendix C**.

6.1 Future Year 2040 Conditions Traffic Analysis

The future conditions intersection capacity analysis uses existing intersection geometrics and the projected AM and PM peak hour traffic shown in **Figure 12**. **Table 6-1** and **Appendix D** provides the results of the analysis.

Table 6-1: Intersection Capacity Analysis – Future Conditions

Intersection	Intersection Control Type	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
1. Highway 395 / Auburn Avenue	SSSC	33.4	D	[a]	F

Notes:
[a] Delay > 300 seconds per vehicle. This level of delay represents over-saturated conditions on the minor street at side-street stop-controlled intersections.
Abbreviations:
TS – Traffic signal-controlled intersection, AWSC – All-way stop-controlled intersection, TWSC (SSSC) – Two-way or side-street stop-controlled intersection

As presented in **Table 6-1**, under future conditions, the study intersection is anticipated to operate at LOS D during the AM peak hour and LOS F in the PM peak hour.

6.2 Traffic Signal Warrant Analysis

In the future year 2040 scenario, only Warrant 3 (peak hour volume) is evaluated. The signal warrant worksheets are in **Appendix E.**

In this scenario, the intersection of Highway 395 and Auburn Avenue satisfies Warrant 3. Warrant 3 is satisfied based on approach volume and total delay experienced by traffic on the minor stop-controlled approaches.

N

NOT TO SCALE

① HIGHWAY 395/ AUBURN AVE	
54/16 694/809 11/13	3/12 7/27 4/12
14/7 16/18 191/59	19/115 600/1013 11/13

② AUBURN AVE/ PROJECT DRIVEWAY "A"
FUTURE DRIVEWAY

③ AUBURN AVE/ PROJECT DRIVEWAY "B"
FUTURE DRIVEWAY

④ AUBURN AVE/ PROJECT DRIVEWAY "C"
FUTURE DRIVEWAY

LEGEND

XX/XX - AM/PM TRAFFIC VOLUMES

(#) - STUDY INTERSECTIONS

- STOP CONTROLLED INTERSECTION

- SIGNAL CONTROLLED INTERSECTION

DAVID EVANS AND ASSOCIATES INC.

FIGURE 12: FUTURE TRAFFIC VOLUMES
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA

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Last Opened: May 19, 2023 - 1:30am by: Tmm

7 FUTURE YEAR 2040 PLUS PROJECT CONDITIONS

The future year 2040 plus project conditions scenario adds the project's estimated traffic generation to the future year 2040 without project scenario. As described in the previous section, the forecasted future year 2040 traffic intersection turn movements were derived from post processing forecasted approach volumes and balancing the turn movement volumes for each study intersection. The SBTAM traffic model plots are provided in **Appendix C**.

7.1 Future Plus Project Traffic Analysis

The intersection capacity analysis of future plus project conditions uses existing intersection geometrics and the projected AM and PM peak hour traffic volumes shown in **Figure 13**. **Table 7-1** and **Appendix D** provide the results of the analysis.

Table 7-1: Intersection Capacity Analysis – Future Plus Project Conditions

Intersection		Intersection Control	Future Year 2040 Conditions				Future Year 2040 + Project Conditions			
			AM Peak		PM Peak		AM Peak		PM Peak	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Highway 395 / Auburn Avenue	SSSC	33.4	D	[a]	F	[a]	F	[a]	F
	Intersection Improvements: Install signal, reconfigure lanes	TS	Not Applicable				12.6	B	19.9	B
2	Auburn Avenue / Driveway "A"	SSSC	Not Applicable Future Driveway				14.8	B	21.9	C
3	Auburn Avenue / Driveway "B"	SSSC					10.7	B	12.2	B
4	Auburn Avenue / Driveway "C"	SSSC					9.1	A	9.3	A

Notes:
[a] Delay > 300 seconds per vehicle. This level of delay represents over-saturated conditions on the minor street at side-street stop-controlled intersections.
Abbreviations:
TS – Traffic signal-controlled intersection, AWSC – All-way stop-controlled intersection, TWSC – Two-way or Side-street stop-controlled intersection

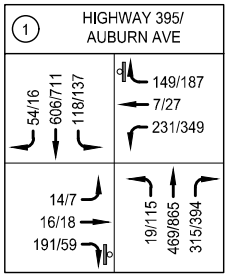
As presented in **Table 7-1**, under future plus project conditions, the project driveways, are projected to operate at LOS C or better during the AM and the PM peak hours. The intersection of Highway 395 and Auburn Avenue is anticipated to operate at LOS F during the AM and the PM peak hours.

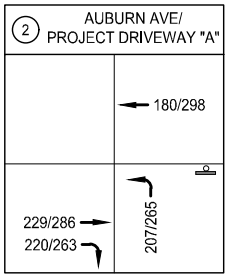
7.2 Traffic Signal Warrant Analysis

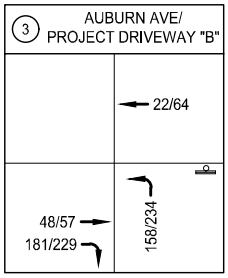
In the future plus project conditions scenario, only Warrant 3 (peak hour volume) is evaluated. The signal warrant worksheets are in **Appendix E**. In this scenario, the intersection of Highway 395 and Auburn Avenue satisfies Warrant 3. Warrant 3 is satisfied based on approach volume and total delay experienced by traffic on the minor stop-controlled approaches.

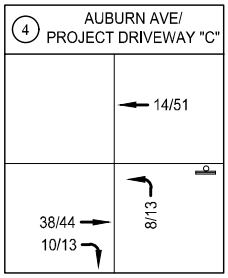
N

NOT TO SCALE









LEGEND

XX/XX - AM/PM TRAFFIC VOLUMES

(#) - STUDY INTERSECTIONS

- STOP CONTROLLED INTERSECTION

- SIGNAL CONTROLLED INTERSECTION

DAVID EVANS AND ASSOCIATES INC.

FIGURE 13: FUTURE + PROJECT TRAFFIC VOLUMES
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA

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Last Opened: May 19, 2023 - 1:30am by: Tmm

7.3 Future Plus Project Traffic Queuing Analysis

A queuing analysis for future plus project conditions was performed for the intersection of Highway 395 and Auburn Avenue utilizing Trafficware's SimTraffic (Version 11) software. The 95th percentile maximum queue length results for background plus project conditions are shown in **Table 7-2**.

Table 7-2: Queuing Analysis – Future Plus Project Conditions

Intersection	Movement	Storage Length (Feet)	Background + Project Condition		Background + Project Condition with Proposed Improvements	
			AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
2. Highway 395 / Auburn Avenue	EBLTR		329	321	94	54
	WBL	(185)	-	-	130	187
	WBLTR/WBTR		282	270	74	150
	NBL	(300)	-	-	27	131
	NBLT/NBT		35	189	171	307
	NBTR/NBT		31	97	114	231
	NBR	(300)	-	-	98	152
	SBL	(300)	-	-	119	156
	SBLT/SBT		334	473	191	271
	SBTR		280	413	156	206
"-" – Not applicable to the scenario Vehicular queue – in Feet 95% - 95th percentile queue length						

As presented in Error! Reference source not found., under future plus project conditions the proposed turn bay lengths will accommodate the AM or PM peak 95th percentile queues.

8 SUMMARY AND IMPROVEMENT MEASURES

8.1 Summary of Impacts

The intersection of Highway 395 at Auburn Avenue operates at LOS F during the AM and the PM peak hours under project conditions. This level of service exceeds the City of Adelanto's level of service policy standard of LOS D.

8.2 Analysis of Recommended Traffic Control at Highway 395 and Auburn Avenue

Section 4C.01 (Studies and Factors for Justifying Traffic Control Signals) of the MUTCD provides warrants related to the existing operation and safety at a study intersection and the potential to improve conditions. Warrants applicable to the intersection of Highway 395 / Auburn Avenue include: Warrant 1 (Eight-hour vehicular volume), Warrant 2 (Four-hour vehicular volume), Warrant 3 (Peak hour volume), and Warrant 7 (Crash experience). The results of the warrant analyses are summarized in **Table 8-1**.

Table 8-1: Traffic Signal Warrant Analysis of Highway 395 / Auburn Avenue

<table>
<tr><th rowspan="2">Warrant No.</th><th rowspan="2">Warrant [1]</th><th colspan="5">Warrant Satisfied?</th></tr>
<tr><th>Existing Condition</th><th>Background Condition</th><th>Background + Project</th><th>Future Condition</th><th>Future + Project</th></tr>
<tr><td>1</td><td>Eight-hour vehicular volume</td><td>NO</td><td colspan="4" rowspan="2">Not Applicable
Data Not Available for Future Conditions [2]</td></tr>
<tr><td>2</td><td>Four-hour vehicular volume</td><td>NO</td></tr>
<tr><td>3</td><td>Peak hour volume</td><td>NO</td><td>NO</td><td>YES</td><td>YES</td><td>YES</td></tr>
<tr><td>7</td><td>Crash experience [3]</td><td>NO</td><td colspan="4">Not Applicable
Data Not Available for Future Conditions</td></tr>
<tr><td colspan="7">[1] Remaining MUTCD warrants including Warrant 4 (pedestrian volume), Warrant 5 (school crossing), Warrant 6 (coordinated signal system), Warrant 8 (roadway network), and Warrant 9 (intersection near a grade crossing) are not relevant to the intersection of HIGHWAY 395 / Auburn Avenue.
[2] Only Warrant 3 (Peak Hour Volume) applies to future conditions because peak hour traffic volumes can be forecast whereas eight-hour volumes, four-hour volumes, and crash experience cannot be forecast to the level of accuracy needed for signal warrant analysis.
[3] Source: Transportation Injury Mapping System (TIMS), Safe Transportation Research and Education Center, University of California, Berkeley. 2021.</td></tr>
</table>

Under background + project conditions, future conditions, and future + project conditions the intersection of Highway 395 and Auburn Avenue meets the Warrant 3 (peak hour volume). Warrant 3 is satisfied based on approach volume and the total delay experienced by traffic on the minor stop-controlled approaches.

Based on the analyses described above and engineering judgement, the intersection of Highway 395 and Auburn Avenue meets the criteria for installation of a traffic signal and this measure mitigates the General Plan consistency impacts at the intersection by reducing project-related delays to less than, or equal to, conditions without the project as summarized in Table 8-2 and Table 8-3.

8.3 Recommended Measures to Improve Level of Service at Highway 395 and Auburn Avenue

Refer to the Project-Specific Improvements section in Chapter 5.

8.4 Level of Service With Recommended Improvements

The proposed intersection improvements referenced in previous sections bring the level of service at the intersection of Highway 395 and Auburn Avenue to a LOS B in both the AM and PM peak hours effectively mitigating the project's increase in delay.

Table 8-2 shows the intersection level of service under background plus project conditions with the proposed improvements implemented.

Table 8-3 shows the intersection level of service under future year 2040 plus project conditions with the proposed improvements implemented.

Table 8-2: Mitigated Intersection Levels of Service for Background + Project Conditions with Mitigations

Intersection		Intersection Control	Background Conditions				Background + Project Conditions			
			AM Peak		PM Peak		AM Peak		PM Peak	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Highway 395 / Auburn Avenue	SSSC	16.3	C	38.9	E	[a]	F	[a]	F
	Intersection Improvements: Install signal, reconfigure lanes	TS	Not Applicable				11.5	B	19.1	B
2	Auburn Avenue / Driveway "A"	SSSC	Not Applicable Future Driveway				14.3	B	23.7	C
3	Auburn Avenue / Driveway "B"	SSSC					10.4	B	12.0	B
4	Auburn Avenue / Driveway "C"	SSSC					9.0	A	9.0	A

Notes:
[a] Delay > 300 seconds per vehicle. This level of delay represents over-saturated conditions on the minor street at side-street stop-controlled intersections.
Abbreviations:
TS – Traffic signal-controlled intersection, AWSC – All-way stop-controlled intersection, TWSC – Two-way or Side-street stop-controlled intersection

Table 8-3: Mitigated Intersection Levels of Service for Future + Project Conditions with Mitigations

Intersection		Intersection Control	Future Year 2040 Conditions				Future Year 2040 + Project Conditions			
			AM Peak		PM Peak		AM Peak		PM Peak	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Highway 395 / Auburn Avenue	SSSC	33.4	D	[a]	F	[a]	F	[a]	F
	Intersection Improvements: Install signal, reconfigure lanes	TS	Not Applicable				12.6	B	19.9	B
2	Auburn Avenue / Driveway "A"	SSSC	Not Applicable Future Driveway				14.8	B	21.9	C
3	Auburn Avenue / Driveway "B"	SSSC					10.7	B	12.2	B
4	Auburn Avenue / Driveway "C"	SSSC					9.1	A	9.3	A

Notes:
[a] Delay > 300 seconds per vehicle. This level of delay represents over-saturated conditions on the minor street at side-street stop-controlled intersections.
Abbreviations:
TS – Traffic signal-controlled intersection, AWSC – All-way stop-controlled intersection, TWSC – Two-way or Side-street stop-controlled intersection

9 APPENDICES

Appendix A: Approved Traffic Scope
Appendix B: Traffic Counts
Appendix C: Forecast Model Volume Development
Appendix D: Intersection Capacity Analysis
Appendix E: Traffic Signal Warrant Analysis
Appendix F: Design Vehicle Truck Turning Template

DAVID EVANS AND ASSOCIATES INC.

Appendix A: Approved Traffic Scope

From: Brian Wolfe <BWolfe@ci.adelanto.ca.us>
Sent: Friday, May 20, 2022 10:09 AM
To: Jim Daisa
Cc: Robert Kilpatrick; petroleumrealty@gmail.com; Sophie (Sophie@steenodesign.com); tom steeno (tom@steenodesign.com); Trisha Munoz
Subject: RE: Adelanto Commercial Center - Traffic Impact Study Scoping Agreement

That is correct Jim, the 110 daily trip threshold has been replaced by the 3,000 MT of CO2 threshold. I have no further comments.

Regards,

Brian D. Wolfe
Contract City Engineer
Adelanto

From: Jim Daisa <Jim.Daisa@deainc.com>
Sent: Friday, May 20, 2022 8:46 AM
To: Brian Wolfe <BWolfe@ci.adelanto.ca.us>
Cc: Robert Kilpatrick <RKilpatrick@deainc.com>; petroleumrealty@gmail.com; Sophie (Sophie@steenodesign.com) <Sophie@steenodesign.com>; tom steeno (tom@steenodesign.com) <tom@steenodesign.com>; Trisha Munoz <TMunoz@deainc.com>
Subject: RE: Adelanto Commercial Center - Traffic Impact Study Scoping Agreement

Brian,

We did apply the new CO2 threshold in our VMT screening in the scoping memo…the project is under the 135,000 SF of retail threshold…and the proposed hotel on the site is screened out as a local serving land use.

I interpreted the new screening threshold as a replacement of the previous 110 daily trip threshold, but the other screening criteria (e.g., local serving land use, transit priority area, low VMT generating area) remain valid. Is this correct?

James M. Daisa, PE | Sr. Project Manager, Transportation
David Evans and Associates, Inc.
4141 E. Inland Empire Boulevard, Suite 250 | Ontario, CA, 91764 | www.deainc.com
d: 909.912.7304 | c: 925.586.7075 | cisco: 7304 | jim.daisa@deainc.com

From: Brian Wolfe <BWolfe@ci.adelanto.ca.us>
Sent: Thursday, May 19, 2022 4:07 PM
To: Trisha Munoz <TMunoz@deainc.com>
Cc: Jim Daisa <Jim.Daisa@deainc.com>; Robert Kilpatrick <RKilpatrick@deainc.com>; petroleumrealty@gmail.com; Sophie (Sophie@steenodesign.com) <Sophie@steenodesign.com>; tom steeno (tom@steenodesign.com) <tom@steenodesign.com>
Subject: RE: Adelanto Commercial Center - Traffic Impact Study Scoping Agreement

Trisha,

Adelanto recently adopted a 3,000 MT of CO2 equivalents as our screening threshold. Please see the attached. I have no other comments or questions except if you have any thoughts about when this development could potentially break ground?

Regards,

Brian D. Wolfe
Contract City Engineer
Adelanto

From: Trisha Munoz <TMunoz@deainc.com>
Sent: Thursday, May 19, 2022 12:18 PM
To: Brian Wolfe <BWolfe@ci.adelanto.ca.us>
Cc: Jim Daisa <Jim.Daisa@deainc.com>; Robert Kilpatrick <RKilpatrick@deainc.com>; petroleumrealty@gmail.com; Sophie (Sophie@steenodesign.com) <Sophie@steenodesign.com>; tom steeno (tom@steenodesign.com) <tom@steenodesign.com>
Subject: Adelanto Commercial Center - Traffic Impact Study Scoping Agreement

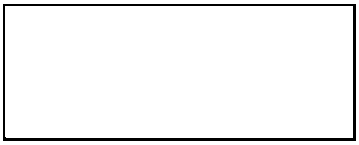
Brian,

Please find attached our scoping memorandum for the Adelanto Commercial Center Project. The proposed project is to be located at the southeast corner of Highway 395 and Auburn Avenue. This memorandum provides our assumptions for completing the traffic impact study, consistent with the City of Adelanto's Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment (LOS).

The Traffic Impact Study Scoping Agreement with Attachments are provided for review and approval (or commenting) by the affected jurisdictions including the City of Adelanto and Caltrans District 8 IGR Planning. The Memorandum is concurrently submitted to Caltrans District 8 IGR Planning.

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

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



DAVID EVANS
AND ASSOCIATES INC.

May 17, 2022 Job No. LTRI0000-0001

MEMORANDUM

To: Mr. Gus Otaki
Life Time Realty Investments, Inc
30233 Frontera Del Norte
Highland, CA 92346

From: James Daisa, PE
Senior Transportation Project Manager

RE: TRAFFIC IMPACT STUDY SCOPING AGREEMENT – PROPOSED ADELANTO COMMERCIAL DEVELOPMENT LOCATED AT HIGHWAY 395 AND AUBURN AVENUE IN ADELANTO, CALIFORNIA

This memorandum presents key elements of the proposed Focused Traffic Impact Study Report (TIS Report) scope of work for the above referenced development project. The purpose of this memorandum is to inform the City of Adelanto of our traffic study assumptions and methodologies prior to preparing the study. We will incorporate any changes specified by the city, and once approved, this document will serve as our notification to proceed.

In addition to the information provided below and attached exhibits, a standard Project Traffic Analysis Scoping Form, consistent with City of Adelanto Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment, is included with this memorandum (see **Attachment 1**).

A. Project Description

The proposed project consists of a convenience store/gas station, a small office building, two drive-thru restaurants, a shopping plaza with supermarket, an automated carwash, a strip retail plaza, and a 3-story 60 room hotel located on 11.81-acres in the City of Adelanto.

The proposed project is located at the southeast corner of Highway 395 and Auburn Avenue, as illustrated in **Exhibit A**. The development site is bounded to the north by undeveloped land and Auburn Avenue (currently a dirt road), to the south by undeveloped land, to the east by undeveloped land, and to the west by Highway 395. **Exhibit B** shows the proposed site plan. Access to the site will be from three full access driveways on Auburn Avenue.

B. Project Trip Generation

Table 1 summarizes the estimated trip generation for the proposed project for the peak hours within the AM (7-9 AM) and PM (4-6 PM) peak periods. The trip generation rates for the site including Convenience Store/Gas Station sub-category VFP (9-15) (LU 945), Small Office Building (LU 712), Fast-Food Restaurant with Drive-Through Window (LU 934), Shopping Plaza (40-150k) - sub-category Supermarket - Yes (LU 821), Automated Car Wash (LU 948), Strip Retail Plaza (<40k) (LU 822), and Hotel (LU 310) were obtained from the ITE Trip Generation Manual, 11th Edition.

Pass-by factors for the convenience store/gas station, fast-food restaurant with drive-through window, and shopping plaza were obtained from the ITE Trip Generation Manual, 11th Edition Appendices. A reduction in trips of 10% for internal capture is assumed for the development.

Table 1: Project Trip Generation

	Land Use	Size	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
	Convenience Store/Gas Station VFP (9-15) Land Use Category (ITE 945)								
	Rates (per 1,000 Sq. Ft. GFA)		700.43	28.26	28.26	56.52	27.26	27.26	54.52
	Trips		3,984	161	161	322	156	156	311
1	Internal Trips (10%)[1]	5,687	399	17	17	33	16	16	32
	Adjusted Trips		3,585	144	144	289	140	140	279
	Pass-By Trips (76%,75%)		0	110	110	220	105	105	210
	Primary Trips (24%, 25%)		3,585	34	34	69	35	35	69
	Small Office Building Land Use Category (ITE 712)								
2	Rates (per 1,000 Sq. Ft. GFA)	1,000	14.39	1.37	0.30	1.67	0.73	1.43	2.16
	Trips		15	2	1	2	1	2	3
	Fast-Food Restaurant with Drive-Through Window Land Use Category (ITE 934)								
	Rates (per 1,000 Sq. Ft. GFA)		467.48	22.75	21.86	44.61	17.18	15.85	33.03
	Trips		1,590	78	75	152	59	54	113
3	Internal Trips (10%)[1]	3,400	159	8	8	16	6	6	12
	Adjusted Trips		1,431	70	67	136	53	48	101
	Pass-By Trips (50%,55%)		0	35	34	69	29	27	56
	Primary Trips (50%, 45%)		1,431	35	33	67	24	21	45
	Shopping Plaza (40-150k) - Supermarket - Yes Land Use Category (ITE 821) 3 buildings								
	Rates (per 1,000 Sq. Ft. GFA)		94.49	2.19	1.34	3.53	4.33	4.70	9.03
	Trips		3,480	81	50	130	160	173	333
4	Internal Trips (10%)[1]	36,822	348	9	5	13	16	18	34
	Adjusted Trips		3,132	72	45	117	144	155	299
	Pass-By Trips (0%,40%)		0	0	0	0	58	63	120
	Primary Trips (100%, 60%)		3,132	72	45	117	86	92	179
	Automated Car Wash Land Use Category (ITE 948)								
	Rates (per Car Wash Tunnels)		0.00	0.00	0.00	0.00	38.75	38.75	77.50
5	Trips	2	0	0	0	0	78	78	155
	Internal Trips (10%)[1]		0	0	0	0	8	8	16
	Adjusted Trips		0	0	0	0	70	70	139
	Strip Retail Plaza (<40k) Land Use Category (ITE 822) 3 units								
	Rates (per 1,000 Sq. Ft. GFA)		54.45	1.42	0.94	2.36	3.30	3.30	6.59
6	Trips	5,000	273	8	5	12	17	17	33
	Internal Trips (10%)[1]		28	1	1	2	2	2	4
	Adjusted Trips		245	7	4	10	15	15	29
	Fast-Food Restaurant with Drive-Through Window Land Use Category (ITE 934)								
	Rates (per 1,000 Sq. Ft. GFA)		467.48	22.75	21.86	44.61	17.18	15.85	33.03
	Trips		1,052	52	50	101	39	36	75
7	Internal Trips (10%)[1]	2,250	106	6	5	11	4	4	8
	Adjusted Trips		946	46	45	90	35	32	67
	Pass-By Trips (50%,55%)		0	24	23	46	20	18	37
	Primary Trips (50%, 45%)		946	22	22	44	15	14	30
	Hotel Land Use Category (ITE 310)								
	Rates (per Rooms)		7.99	0.26	0.20	0.46	0.30	0.29	0.59
8	Trips	60	480	16	13	28	19	18	36
	Internal Trips (10%)[1]		48	2	2	3	2	2	4
	Adjusted Trips		432	14	11	25	17	16	32
	Adjusted Project Trips		9,786	355	317	669	475	478	949
	Pass-By Project Trips		0	169	167	335	212	213	423
	Primary Project Trips		**9,786**	186	150	**334**	263	265	**526**

Notes:
Source of trip generation rates and pass-by factors: *Trip Generation*, Institute of Transportation Engineers", 11th Edition.
[1] The internal trip reduction of 10 percent reflects trips between the various uses within the project.

As presented in **Table 1**, the proposed project is estimated to generate 9,786 daily trips, 334 primary AM peak hour trips, and 526 primary PM peak hour trips.

C. Project Trip Distribution and Assignment

Project traffic was distributed by general direction (east, west, north, and south) based on where the project's customers are likely to reside (e.g., concentration of residential neighborhoods), or major roadways and highways customers would likely use to access the project. Once the directional distribution pattern was established, project trips were assigned to the area streets that provide the most direct route to these directions.

Exhibit C illustrates the distribution of project trips in percentages by movement and direction. **Exhibit D-1** illustrates the assignment of the primary project trips to the study intersections. **Exhibit D-2** illustrates the assignment of the pass-by project trips to the study intersections. **Exhibit D-3** illustrates the assignment of the total project trips to the study intersections. The estimated trip generation and distribution is also included in the Project Traffic Analysis Scoping Form (**Attachment 1**).

D. Study Intersections

Focused traffic studies evaluate project access driveways and nearby intersections that project traffic use to access the driveways. This scope proposes to include one existing intersection and three proposed driveways for inclusion in the study.

1. Highway 395 / Auburn Avenue
2. Auburn Avenue / Driveway "A"
3. Auburn Avenue / Driveway "B"
4. Auburn Avenue / Driveway "C"

The intersection of Highway 395 at Auburn Avenue is currently side street stop controlled.

E. Traffic Study Scenarios

The traffic study analysis scenarios, consistent with the city's impact analysis guidelines, include:

1. Existing Conditions AM (7-9 AM) and PM (4-6 PM)
2. Background Conditions (forecast year 2023 with ambient growth, without project):
    a. Growth (conservative estimate of the combined area growth and traffic to be generated by nearby development, 3.5% ambient growth.)
3. Project Conditions (Opening Year 2023 with project)
    a. Project traffic added to background condition forecasts
4. Future Year 2040 (Horizon Year 2040 without project)
    a. Forecasts from the San Bernardino Transportation Analysis Model (SBTAM)
5. Future Year 2040 (Horizon Year 2040 with project)
    a. Project traffic added to the forecasts developed for future year 2040 conditions

F. Vehicle Miles of Travel (VMT) Screening

The City of Adelanto has developed guidelines for analyzing a development project's VMT in conformance with SB 743 effective as of July 1, 2020. According to the guidelines a VMT analysis would apply to projects that have the potential to increase the average VMT per service population (e.g., population plus employment) compared to the current County of San Bernardino VMT threshold of 32.7 VMT/Service Population.

Project Screening from Conducting VMT Analyses

There are three screening criteria that Adelanto has adopted to effectively screen projects from requiring a project-level VMT analysis, of which only two are applicable to the proposed project.

1. Low VMT Area Screening

SBCTA's VMT screening tool evaluates project sites for being located within a "low VMT generating area". These are areas in the which the existing land uses (or the projected land uses) generate low levels of VMT due to the characteristic of the land uses in the area or due to the area's geographic location near other areas with a mix of land uses so people need not drive far for work, shopping, or school. The tool identifies the average VMT for the land uses in each of the SBCTA model's traffic analysis zones (TAZ's) by horizon year. The average VMT metric for a TAZ is compared against the County's average VMT threshold of 32.7 VMT / service population as adopted by the City of Adelanto.

If the land uses in the TAZ in which the proposed project is located generates VMT less than the threshold, the project is in a low VMT generating area. The project may then be presumed to have a non-significant impact on VMT as long as the project's land use is consistent with the existing and/or planned land use within the TAZ that was found to generate low levels of VMT. If the project land use is substantially different than the land use assumed in the SBCTA model, then the project cannot be presumed to have the same low VMT characteristics.

Low VMT Generating Area Screening of Proposed Project

The visual output of the project area is shown in **Figure A**. The Adelanto Commercial Development project is located within TAZ 53903201. The outcome of the VMT screening tool for the project is shown in **Table 2.**

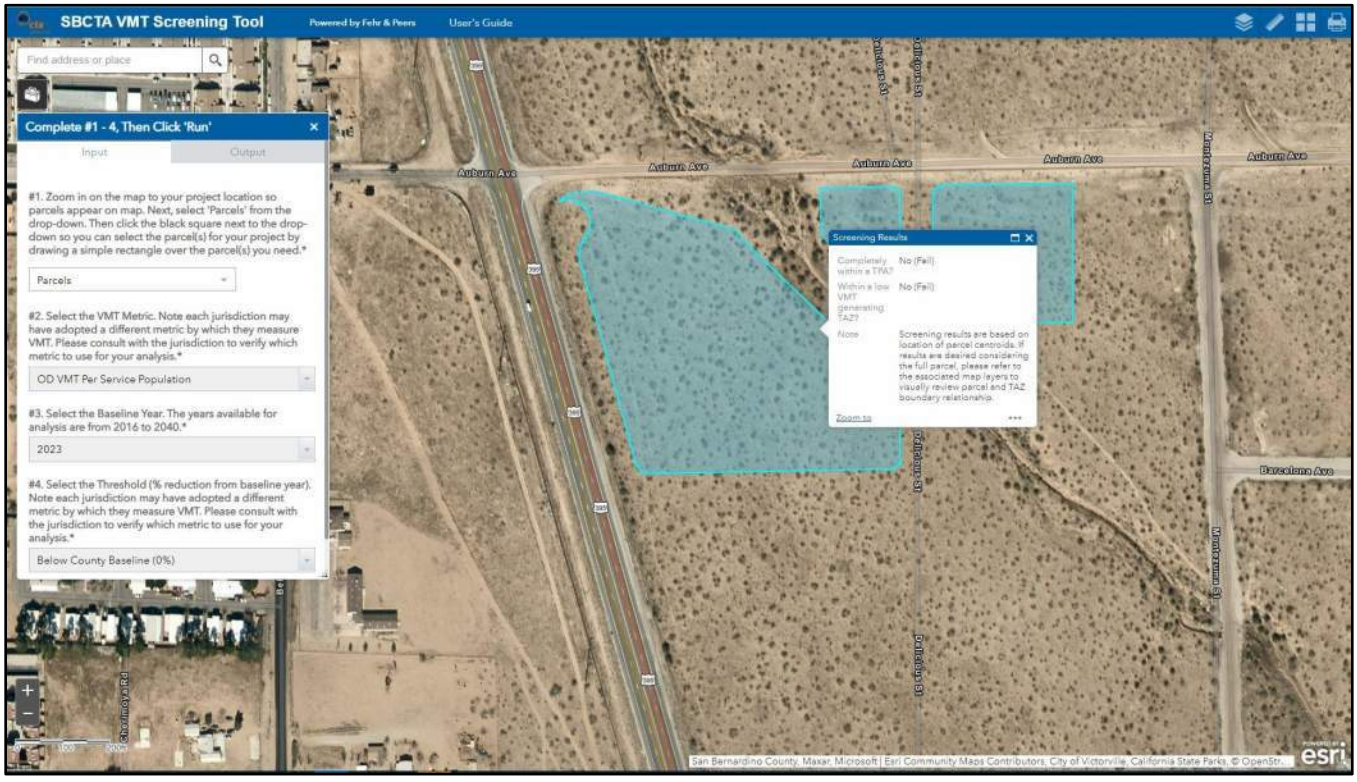


Figure A: *SBCTA Low VMT Area screening tool output indicating that the project is not located within a low VMT generating Traffic Analysis Zone (TAZ).*

2. Project Type Screening

In the current city guidelines *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment (July 2020)* the second applicable screening criteria, project type, has two components. The first component to screen small development projects is based on daily traffic generation, whereas a development generating less than 110 daily trips can be presumed to have a non-significant impact on VMT. The second component screens development projects defined as locally

serving, which includes commercial retail under 50,000 square feet and other locally serving land uses listed in the guidelines.

On April 27, 2022, Adelanto's City Council approved a resolution that replaces the first component of the project type screening based on daily traffic with a threshold based on CO2 emissions. Resolution No. 20-41-A adopts a carbon dioxide equivalent threshold of significance for purposes of analyzing transportation impacts under CEQA. Based on analysis supporting the resolution, the project type screening includes a list of common land uses and the maximum size of development (dwelling units or square feet) that would generate less than the threshold established for CO2 emissions (3,000 MT). This list includes retail at a threshold of 135,000 square feet (non-locally serving).

Results of VMT Screening Assessment

The project was assessed under the low VMT generating criteria for two planning years: 1) the background conditions opening year of 2023, and 2) the cumulative year 2040. The results in **Table 2** are shown for the two TAZs the project spans in each planning year.

Table 2: SBCTA Low VMT Generating Area Screening for Project by TAZ

Planning Year	TAZ Number	Transit Priority Area (TPA)	Metric	TAZ VMT (VMT/Service Population)	County Threshold (VMT/Service Population)	Percent Difference
2023 Planning Horizon	53903201	No	VMT / Service Population	70.2	32.7	115%
2040 Planning Horizon	53903201	No	VMT / Service Population	50.5	32.7	54%
Notes: Source: SBCTA VMT screening tool attribution table for TAZ 53903201. VMT presented (TAZ VMT) is calculated from OD VMT per service population for the year 2023 and 2040 planning horizons. Service population = residents + employees						

- TAZ 53903201 is not in a Transit Priority Area and its VMT per service population of 70.2 exceeds the threshold 32.7 by 115%, therefore it is not a low VMT area.
- TAZ 53903201 is not in a Transit Priority Area and its VMT per service population of 50.5 exceeds the threshold 32.7 by 54%, therefore it is not a low VMT area.

The project is not screened from requiring a VMT analysis based on the low VMT generating area criterion.

The new project type screening criterion adopted in Resolution 20-41-A, considers retail under 135,000 square feet of floor area as having a non-significant impact on air quality because it would generate CO2 emissions less than 3,000 metric tons (MT) per day.

The project is comprised of five retail buildings as part of a non-locally serving shopping center with a total building floor area of about 60,000 square feet (excluding the proposed hotel). Since the retail portion of the project is less than the 135,000 square foot maximum size threshold it is screened from being required to conduct a VMT analysis.

The proposed 60-room hotel is a locally serving land use targeting guests doing business in Adelanto and accommodating travelers on Highway 395. This part of the project meets the screening criterion for locally serving project types.

The retail portion of the proposed project is screened from requiring a VMT analysis based on the recently adopted emissions-based project type screening criterion.

The hotel portion of the project is screened from requiring a VMT analysis based on the locally serving project type screening criterion.

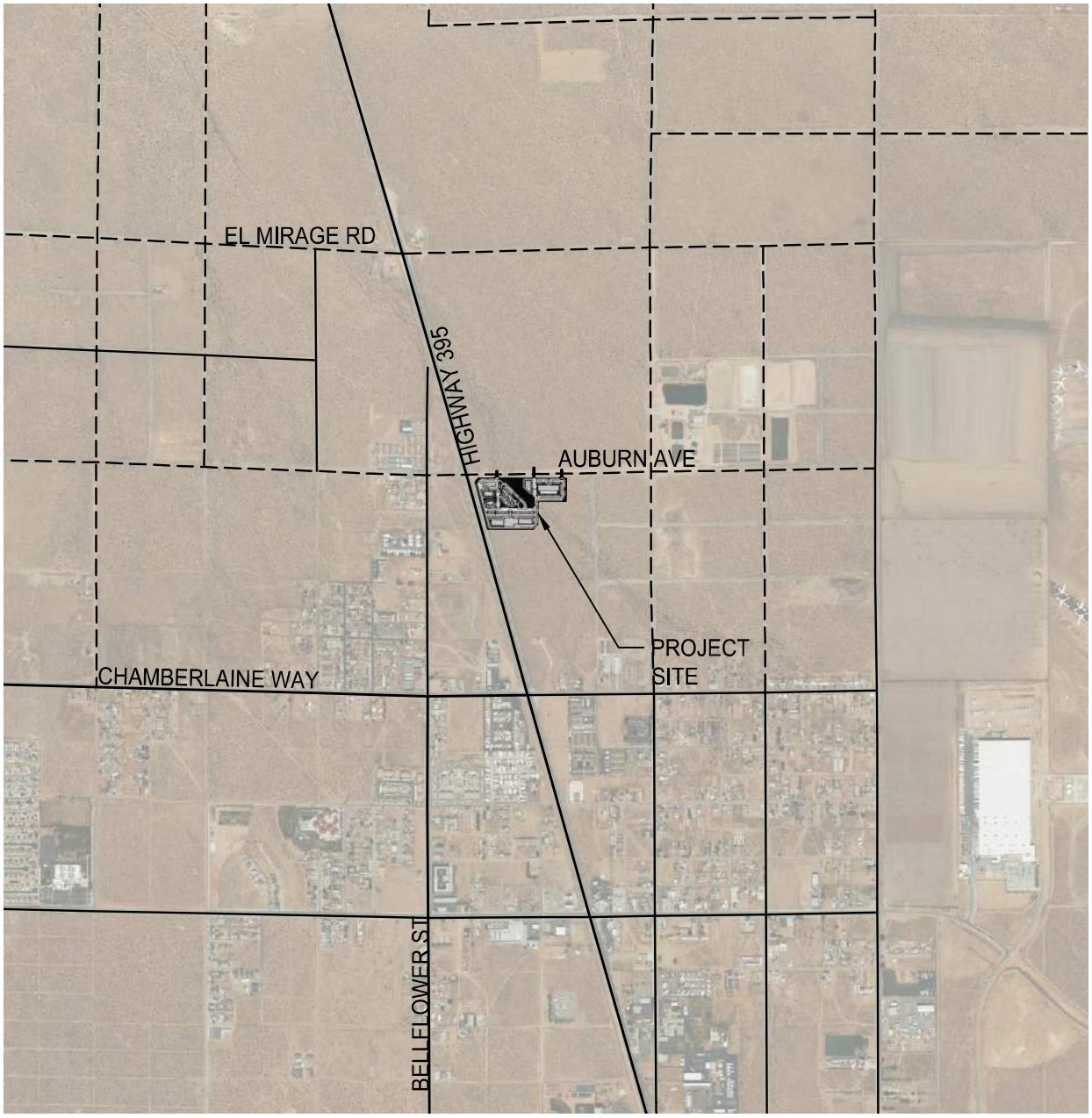
If you have any questions or comments, please feel free to contact me at (909) 912-7304.

Attachments:

1. Exhibit A – Vicinity Map
2. Exhibit B – Site Plan
3. Exhibit C – Project Trip Distribution
4. Exhibit D -1– Primary Project Trips
5. Exhibit D -2– Pass-By Project Trips
6. Exhibit D -3 – Total Project Trips
7. Attachment 1 – Standard Traffic Analysis Scoping Form

N

NOT TO SCALE



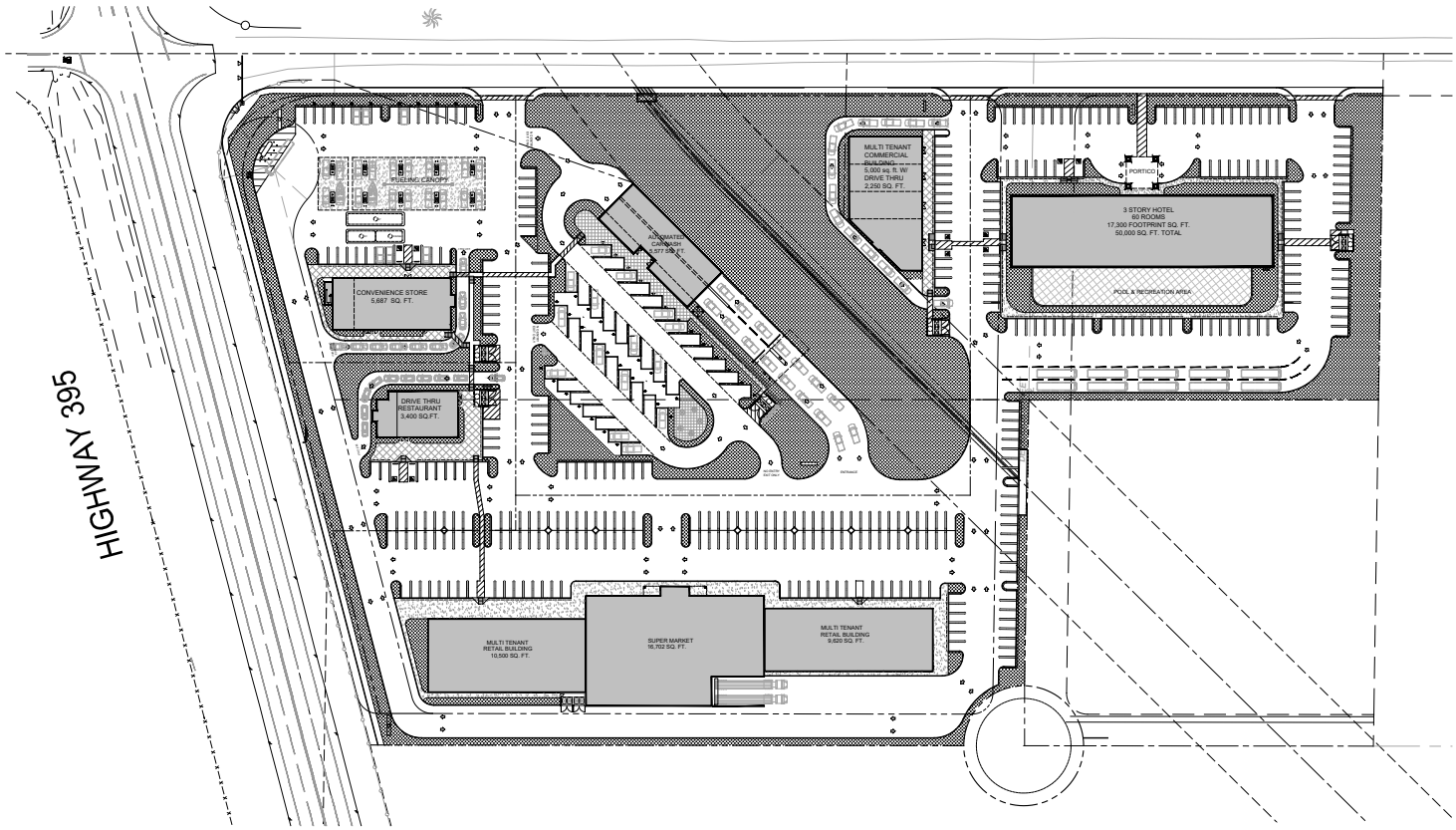
DAVID EVANS AND ASSOCIATES INC.

EXHIBIT A: VICINITY MAP
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA

N

NOT TO SCALE

AUBURN AVE



DAVID EVANS AND ASSOCIATES INC.

EXHIBIT B: SITE PLAN
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA

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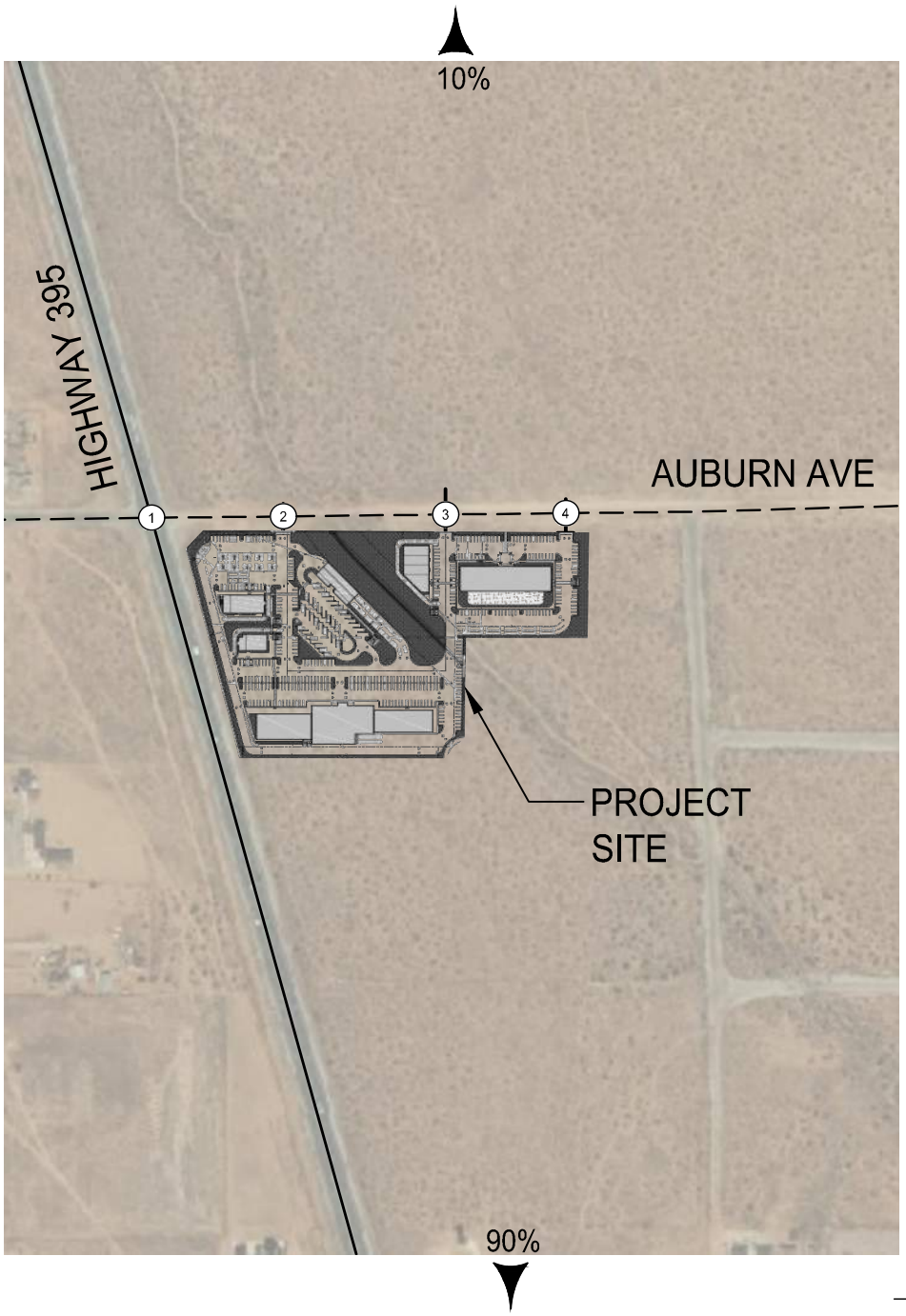

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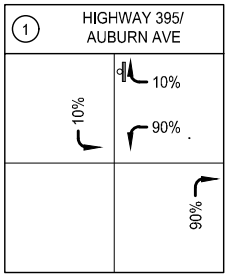
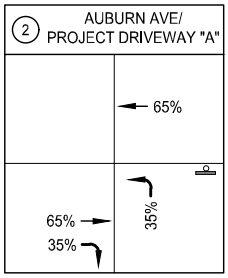
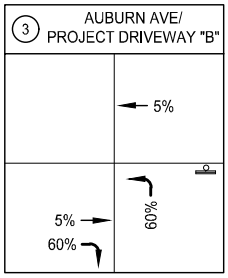
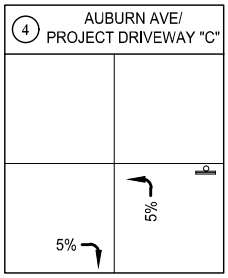








LEGEND

XX% - GENERAL PROJECT TRIP DISTRIBUTION

XX% - SPECIFIC PROJECT TRIP PERCENTAGE

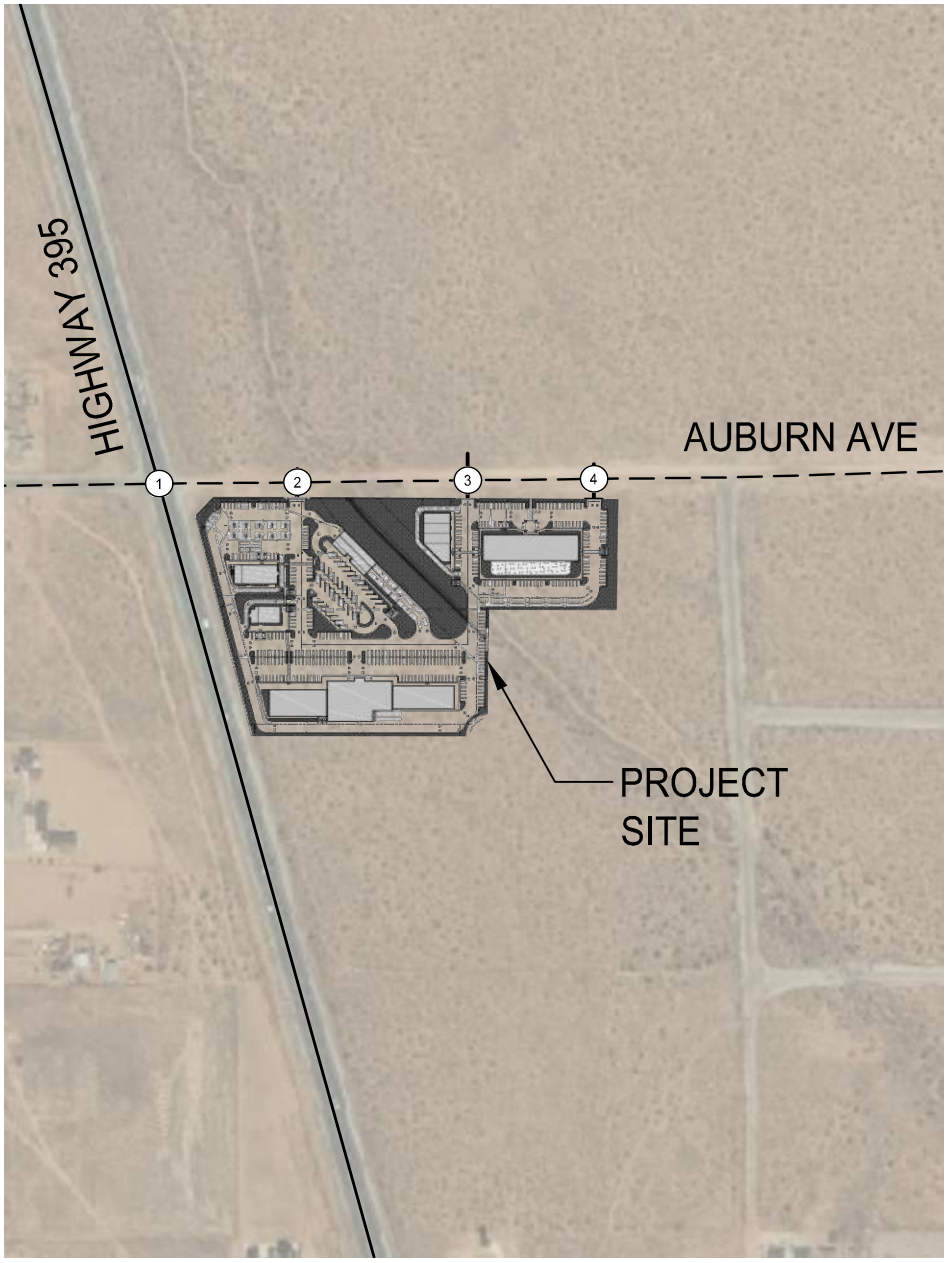
(#) - STUDY INTERSECTIONS

- STOP CONTROLLED INTERSECTION

- SIGNAL CONTROLLED INTERSECTION

DAVID EVANS AND ASSOCIATES INC.

EXHIBIT C: PROJECT TRIP DISTRIBUTION
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA



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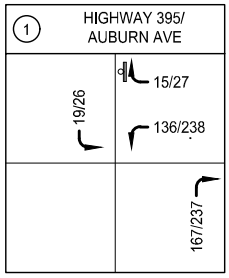

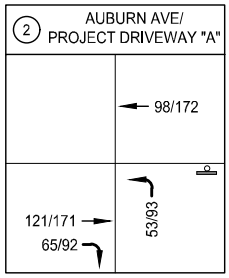

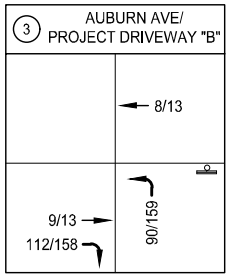

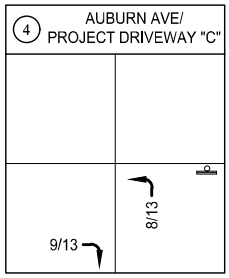

PRIMARY PROJECT TRIPS

AM PEAK PERIOD - 186 IN / 150 OUT
PM PEAK PERIOD - 263 IN / 265 OUT

LEGEND

XX/XX - AM/PM PROJECT TRIPS

(#) - STUDY INTERSECTIONS

- STOP CONTROLLED INTERSECTION

- SIGNAL CONTROLLED INTERSECTION

DAVID EVANS AND ASSOCIATES INC.

EXHIBIT D-1: PRIMARY PROJECT TRIPS
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA

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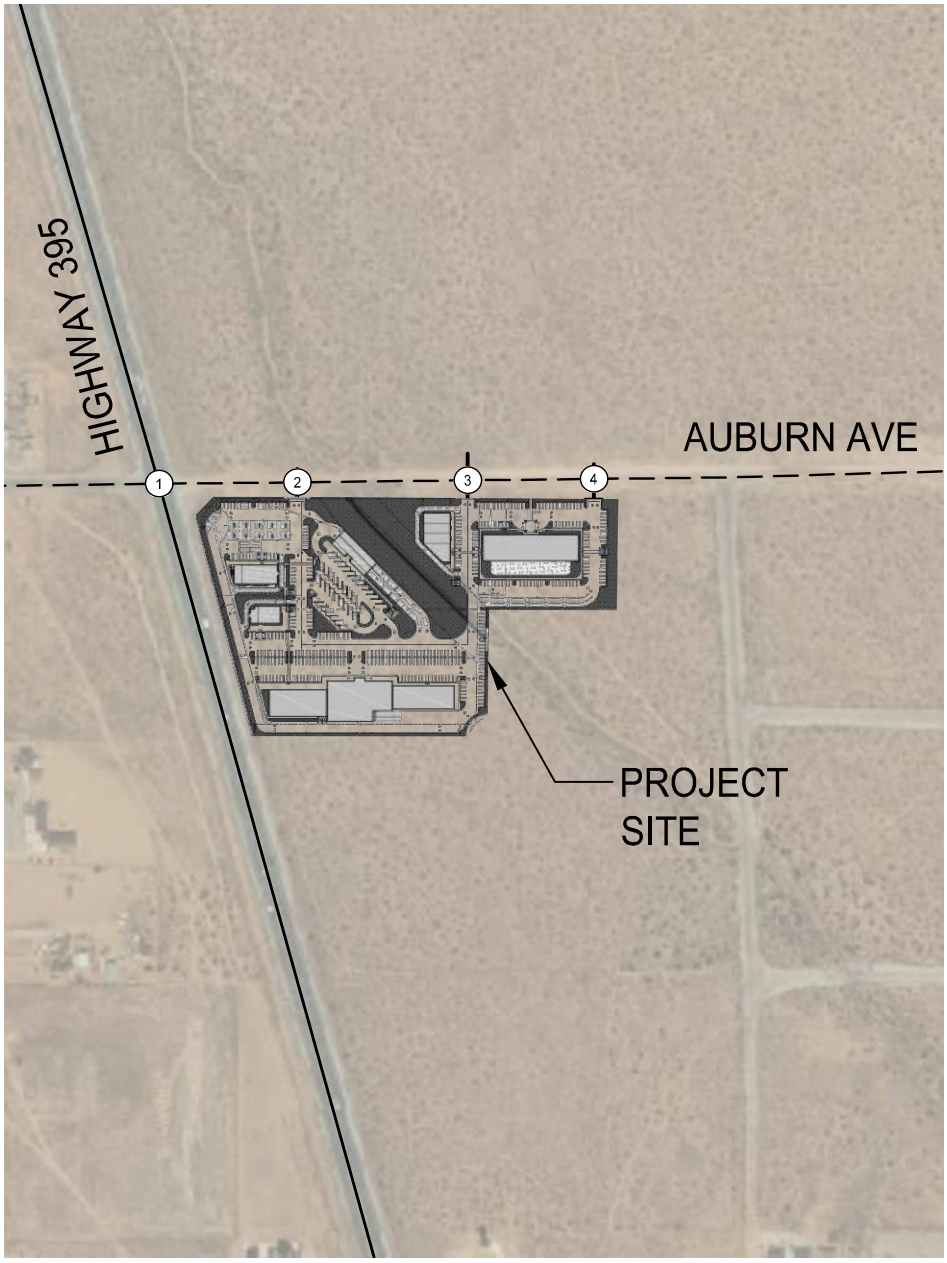

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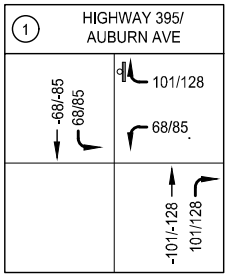
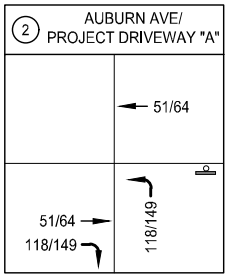
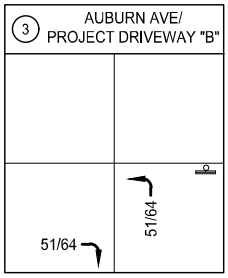
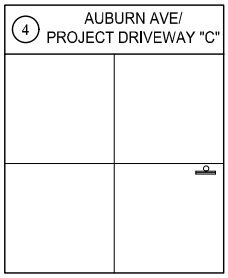








PASS-BY PROJECT TRIPS

AM PEAK PERIOD - 169 IN / 167 OUT
PM PEAK PERIOD - 212 IN / 213 OUT

LEGEND

XX/XX - AM/PM PROJECT TRIPS

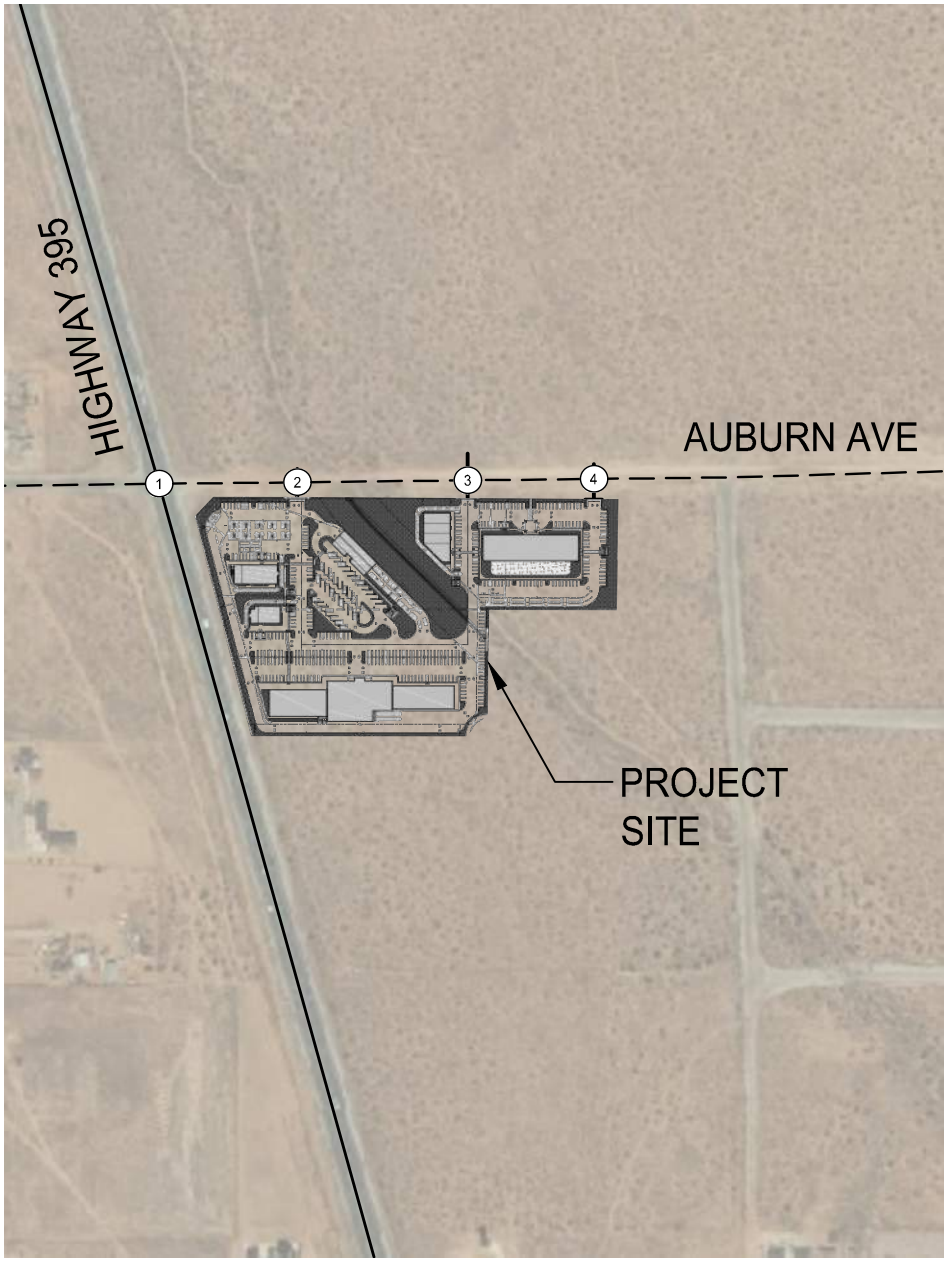
(#) - STUDY INTERSECTIONS

- STOP CONTROLLED INTERSECTION

- SIGNAL CONTROLLED INTERSECTION

DAVID EVANS AND ASSOCIATES INC.

EXHIBIT D-2: PASS-BY PROJECT TRIPS
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA



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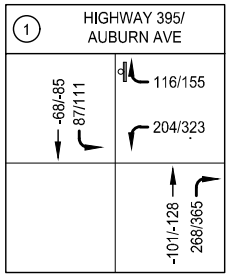

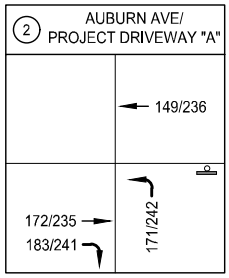

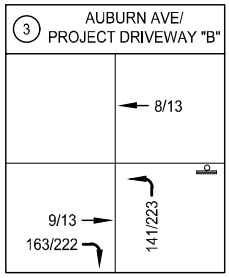

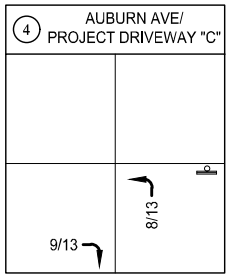

TOTAL PROJECT TRIPS

AM PEAK PERIOD - 355 IN / 317 OUT
PM PEAK PERIOD - 475 IN / 478 OUT

LEGEND

XX/XX - AM/PM PROJECT TRIPS

(#) - STUDY INTERSECTIONS

- STOP CONTROLLED INTERSECTION

- SIGNAL CONTROLLED INTERSECTION

DAVID EVANS AND ASSOCIATES INC.

EXHIBIT D-3: TOTAL PROJECT TRIPS
ADELANTO COMMERCIAL DEVELOPMENT
ADELANTO, CA

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Last Opened: May 16, 2022 - 4:20pm by: Tmm

Project Scoping Form

This scoping form shall be submitted to the City of Adelanto to assist in identifying infrastructure improvements that may be required to support traffic from the proposed project.

Project Identification:

Case Number:	
Related Cases:	
SP No.	
EIR No.	
GPA No.	
CZ No.	
Project Name:	Adelanto Commercial Development
Project Address:	Highway 395 and Auburn Ave
Project Opening Year:	2023
Project Description:	The proposed project consists of convenience store/gas station, small office, two drive-thru restaurants, shopping plaza with supermarket, automated carwash, strip retail plaza, and a 3 - story hotel located on 11.81-acres parcel in the City of Adelanto.

	Consultant:	**Developer:**
Name:	Jim Daisa **David Evans and Associates**	Mr. Gus Otaki **Life Time Realty Investments, Inc**
Address:	4141 E. Inland Empire Blvd, Suite 250 Ontario, CA	30233 Frontera Del Norte Highland, CA 92346
Telephone:	(909)912-7304	(909) 793-4904
Fax/Email:	Jim.daisa@deainc.com	petroleumrealty@gmail.com

Trip Generation Information:

Trip Generation Data Source: Institute of Transportation Engineers (ITE) Trip Generation, 11th Edition

Current General Plan Land Use:

_____

Proposed General Plan Land Use:

- Convenience Store/Gas Station sub-category VFP (9-15) (LU 945)
- Small Office Building (LU 712)
- Fast-Food Restaurant with Drive-Through Window (LU 934),
- Shopping Plaza (40-150k) - sub-category Supermarket - Yes (LU 821),
- Automated Car Wash (LU 948),
- Strip Retail Plaza (<40k) (LU 822)
- Hotel (LU 310)

Current Zoning:

Airport Development District (ADD)

Proposed Zoning:

_____

	Existing Trip Generation			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips	0	0	0	186	150	334
PM Trips	0	0	0	263	265	526

Trip Internalization: ■ Yes ☐ No (10% Trip Discount)

Pass-By Allowance: ■ Yes ☐ No (LU 821 (0%,40%) Trip Discount
LU 934 (50%,55%) Trip Discount
LU 945 (76%,75%) Trip Discount)

Potential Screening Checks

Is your project screened from specific analyses (see Page 11 of the guidelines related to LOS assessment and Pages 24-26).

Is the project screened from LOS assessment? ☐ Yes ■ No

LOS screening justification (see Page 11 of the guidelines): _____

Is the project screened from VMT assessment? ■ Yes ☐ No

VMT screening justification (see Pages 24-26 of the guidelines): _____

Level of Service Scoping

- Proposed Trip Distribution (See Exhibits C and D for Detailed Distribution):

North	South	East	West
10%	90%		

- Attach list of Approved and Pending Projects that need to be considered (provided by the City Traffic Engineer and adjacent agencies) As outlined in the Traffic Impact Study Scoping Agreement a conservative estimate of the combined area growth and traffic to be generated by nearby development, 3.5% ambient growth.
- Attach list of study intersections/roadway segments – See Traffic Impact Study Scoping Agreement Exhibit C and Exhibit D
- Attach site plan– See Traffic Impact Study Scoping Agreement Exhibit B
- Note other specific items to be addressed:
    - Site access
    - On-site circulation- NO
    - Parking- NO
    - Consistency with Plans supporting Bikes/Peds/Transit- NO
    - Other _____
- Date of Traffic Counts _____
- Attach proposed analysis scenarios (years plus proposed forecasting approach) – See Traffic Impact Study Scoping Agreement
- Attach proposed phasing approach (if the project is phased) – Not applicable

VMT Scoping

For projects that are not screened, identify the following:

- Travel Demand Forecasting Model Used _____
- Attach SBCTA Screening VMT Assessment output or describe why it is not appropriate for use
- Attach proposed Model Land Use Inputs and Assumed Conversion Factors (attach)

DAVID EVANS AND ASSOCIATES INC.

Appendix B: Traffic Counts

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: HWY 395
EAST-WEST STREET: AUBURN
JURISDICTION: ADELANTO

DATE: 06-01-22

PEAK HOUR: 07:30AM

NORTH LEG

TOTAL: 327

Rt	Thru	Lt	
5	322		Total
2	101	0	1st
0	64	0	2nd
0	73	0	3rd
3	84	0	4th

EAST LEG TOTAL: 2

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

WEST LEG TOTAL: 28

Total	1st	2nd	3rd	4th	
2	1	1	0	0	Lt
1	0	1	0	0	Thru
25	9	6	6	4	Rt

PEAK HOUR FACTORS

NORTH LEG = 0.79
SOUTH LEG = 0.82
EAST LEG = 0.25
WEST LEG = 0.70

ALL LEGS = 0.95

SOUTH LEG

TOTAL: 512

	Lt	Thru	Rt
1st	2	93	0
2nd	3	153	0
3rd	0	131	0
4th	4	126	0
Total	9	503	

HOUR TOTAL: 869

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : HWY 395
EAST-WEST STREET : AUBURN

ADELANTO
06-01-22

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	69	0	0	0	0	0	0	0	0	10	0	79
1	53	0	0	1	0	0	2	0	0	7	0	64
2	87	0	0	1	0	0	1	0	0	12	0	103
0	38	0	0	3	0	0	2	0	0	21	0	64
0	49	0	0	2	0	0	2	0	0	20	0	73
3	58	0	0	4	0	0	2	0	0	20	0	87
0	31	0	0	1	0	0	1	0	0	18	0	51
0	24	0	0	0	0	0	1	0	0	32	0	57
6	409	0	0	12	0	0	11	0	0	140	0	578
						SOUTH LEG						
0	77	1	0	1	0	0	0	0	0	15	0	94
0	97	1	0	3	0	0	1	0	0	17	0	119
0	67	2	0	3	0	0	1	0	0	22	0	95
0	135	3	0	2	0	0	0	0	0	16	0	156
0	114	0	0	0	0	0	2	0	0	15	0	131
0	114	4	0	1	0	0	1	0	0	10	0	130
0	69	1	0	1	0	0	1	0	0	18	0	90
0	61	1	0	3	0	0	2	0	0	24	0	91
0	734	13	0	14	0	0	8	0	0	137	0	906
						EAST LEG						
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	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	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	3	0	0	0	0	0	0	0	0	0	0	3
						WEST LEG						
7	1	0	0	0	0	0	0	0	0	0	0	8
3	0	0	0	0	0	0	0	0	0	0	0	3
9	0	1	0	0	0	0	0	0	0	0	0	10
6	1	1	0	0	0	0	0	0	0	0	0	8
5	0	0	0	0	0	1	0	0	0	0	0	6
4	0	0	0	0	0	0	0	0	0	0	0	4
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
39	2	2	0	0	0	1	0	0	0	0	0	44

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: HWY 395

EAST-WEST STREET: AUBURN

TIME: 07:00AM-08:00AM DATE: 06-01-22

NORTH LEG

Rt	Thru	Lt	
3	307	0	Total
0	79	0	1st
1	63	0	2nd
2	101	0	3rd
0	64	0	4th

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

Total	1st	2nd	3rd	4th	
2	0	0	1	1	Lt
2	1	0	0	1	Thru
25	7	3	9	6	Rt

	Lt	Thru	Rt
1st	1	93	0
2nd	1	118	0
3rd	2	93	0
4th	3	153	0
Total	7	457	0

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: HWY 395

EAST-WEST STREET: AUBURN

TIME: 08:00AM-09:00AM DATE: 06-01-22

NORTH LEG

Rt	Thru	Lt	
3	265	0	Total
0	73	0	1st
3	84	0	2nd
0	51	0	3rd
0	57	0	4th

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

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

	Lt	Thru	Rt
1st	0	131	0
2nd	4	126	0
3rd	1	89	0
4th	1	90	0
Total	6	436	0

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURN COUNT

PEAK HOUR

NORTH-SOUTH STREET: HWY 395
EAST-WEST STREET: AUBURN
JURISDICTION: ADELANTO

DATE: 06-01-22

PEAK HOUR: 04:15PM

NORTH LEG

TOTAL: 806

Rt	Thru	Lt	
	806		Total
0	202	0	1st
0	189	0	2nd
0	180	0	3rd
0	235	0	4th

EAST LEG TOTAL: 0

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

WEST LEG TOTAL: 10

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

PEAK HOUR FACTORS

NORTH LEG = 0.86
SOUTH LEG = 0.68
EAST LEG =
WEST LEG = 0.63

ALL LEGS = 0.86

SOUTH LEG

TOTAL: 709

	Lt	Thru	Rt
1st	0	142	0
2nd	5	169	0
3rd	0	260	0
4th	2	131	0
Total	7	702	

HOUR TOTAL: 1,525

Prepared by NEWPORT TRAFFIC STUDIES

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : HWY 395

EAST-WEST STREET : AUBURN

ADELANTO

06-01-22

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	140	0	0	2	0	0	1	0	0	29	0	172
0	168	0	0	1	0	0	4	0	0	29	0	202
0	169	0	0	0	0	0	0	0	0	20	0	189
0	158	0	0	0	0	0	1	0	0	21	0	180
0	204	0	0	4	0	0	0	0	0	27	0	235
0	153	0	0	2	0	0	1	0	0	27	0	183
0	145	0	0	2	0	0	2	0	0	15	0	164
0	153	0	0	4	0	0	2	0	0	17	0	176
0	1290	0	0	15	0	0	11	0	0	185	0	1501
						SOUTH LEG						
0	103	1	0	3	0	0	0	0	0	27	0	134
0	119	0	0	1	0	0	2	0	0	20	0	142
0	154	5	0	0	0	0	0	0	0	15	0	174
0	234	0	0	1	0	0	0	0	0	25	0	260
0	108	2	0	2	0	0	0	0	0	21	0	133
0	117	1	0	1	0	0	1	0	0	15	0	135
0	89	2	0	2	0	0	2	0	0	16	0	111
0	102	3	0	1	0	0	0	0	0	15	0	121
0	1026	14	0	11	0	0	5	0	0	154	0	1210
						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	1	0	0	0	0	0	0	0	0	0	0	1
0	1	0	0	0	0	0	0	0	0	0	0	1
						WEST LEG						
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
0	0	1	0	0	0	0	0	0	0	0	0	1
2	0	0	0	0	0	0	0	0	0	0	0	2
4	0	0	0	0	0	0	0	0	0	0	0	4
1	0	0	0	0	0	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0	0	0	0	0	3
6	0	0	0	0	0	0	0	0	0	0	0	6
22	0	1	0	0	0	0	0	0	0	0	0	23

Prepared by Newport Traffic Studies

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: HWY 395

EAST-WEST STREET: AUBURN

TIME: 04:00PM-05:00PM DATE: 06-01-22

NORTH LEG

Rt	Thru	Lt	
0	743	0	Total
0	172	0	1st
0	202	0	2nd
0	189	0	3rd
0	180	0	4th

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

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

	Lt	Thru	Rt
1st	1	133	0
2nd	0	142	0
3rd	5	169	0
4th	0	260	0
Total	6	704	0

Prepared by NEWPORT TRAFFIC STUDIES

INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: HWY 395

EAST-WEST STREET: AUBURN

TIME: 05:00PM-06:00PM DATE: 06-01-22

NORTH LEG

Rt	Thru	Lt	
0	758	0	Total
0	235	0	1st
0	183	0	2nd
0	164	0	3rd
0	176	0	4th

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

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

	Lt	Thru	Rt
1st	2	131	0
2nd	1	134	0
3rd	2	109	0
4th	3	118	0
Total	8	492	0

Prepared by NEWPORT TRAFFIC STUDIES

24 HOUR INTERSECTION VOLUME

NORTH-SOUTH ST : HWY 395
EAST-WEST ST : AUBURN
DATE : 06-08-22

		NORTH LEG	SOUTH LEG	EAST LEG	WEST LEG	TOTAL
AM	12:00	95	119	7	0	221
	1:00	95	103	7	0	205
	2:00	57	64	1	0	122
	3:00	126	71	3	0	200
	4:00	171	178	1	0	350
	5:00	133	163	5	0	301
	6:00	372	365	19	3	759
	7:00	387	460	37	7	891
	8:00	481	493	13	5	992
	9:00	501	540	30	3	1,074
	10:00	461	589	15	7	1,072
	11:00	492	445	28	1	966
PM	12:00	399	586	20	9	1,014
	1:00	580	566	18	3	1,167
	2:00	583	500	25	3	1,111
	3:00	484	480	33	7	1,004
	4:00	500	421	36	5	962
	5:00	391	329	31	3	754
	6:00	317	261	25	6	609
	7:00	241	239	18	3	501
	8:00	265	261	14	1	541
	9:00	277	267	14	1	559
	10:00	241	272	12	0	525
	11:00	180	160	8	1	349
	12:00	7,829	7,932	420	68	16,249

Prepared by NEWPORT TRAFFIC STUDIES

15 MINUTE COUNTS

NORTH-SOUTH ST : HWY 395

EAST-WEST ST : AUBURN

DATE : 06-08-22

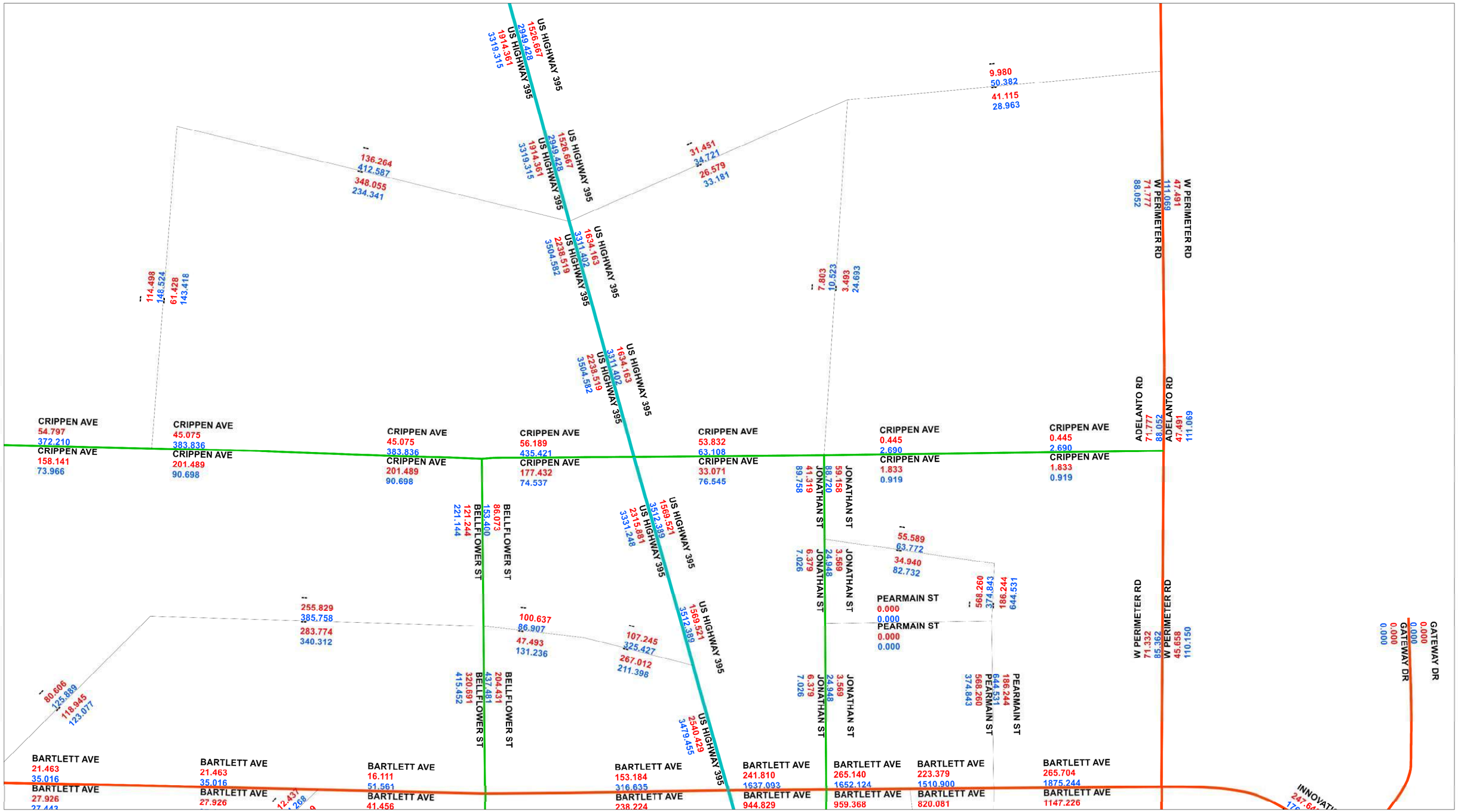
AM						PM				
NORTH LEG	SOUTH LEG	EAST LEG	WEST LEG	TOTAL		NORTH LEG	SOUTH LEG	EAST LEG	WEST LEG	TOTAL
28	23	3	0	54	12:00	122	132	5	1	260
23	32	0	0	55		97	180	6	1	284
24	40	0	0	64		101	137	0	4	242
20	24	4	0	48		79	137	9	3	228
19	24	4	0	47	1:00	79	117	3	0	199
13	40	3	0	56		126	152	4	1	283
28	19	0	0	47		165	136	3	1	305
35	20	0	0	55		210	161	8	1	380
13	35	1	0	49	2:00	110	136	7	1	254
11	9	0	0	20		188	106	5	0	299
13	9	0	0	22		148	132	4	0	284
20	11	0	0	31		137	126	9	2	274
28	15	0	0	43	3:00	140	141	9	3	293
24	15	1	0	40		113	83	7	1	204
39	13	0	0	52		113	167	9	1	290
35	28	2	0	65		118	89	8	2	217
31	31	0	0	62	4:00	117	120	10	1	248
28	31	0	0	59		137	87	9	0	233
50	62	1	0	113		136	113	9	1	259
62	54	0	0	116		110	101	8	3	222
39	39	0	0	78	5:00	101	70	4	2	177
31	28	3	0	62		109	109	15	0	233
28	42	2	0	72		110	110	4	0	224
35	54	0	0	89		71	40	8	1	120
62	74	1	0	137	6:00	87	93	9	1	190
91	102	2	2	197		78	67	5	1	151
113	67	5	0	185		74	59	7	3	143
106	122	11	1	240		78	42	4	1	125
120	110	1	0	231	7:00	62	52	3	0	117
101	120	10	0	231		59	67	9	0	135
83	120	19	2	224		58	50	4	2	114
83	110	7	5	205		62	70	2	1	135
110	97	8	0	215	8:00	62	87	4	1	154
117	132	0	1	250		58	74	4	0	136
118	93	4	4	219		62	42	2	0	106
136	171	1	0	308		83	58	4	0	145
122	98	12	1	233	9:00	58	89	4	0	151
109	145	7	1	262		62	74	4	0	140
130	140	6	1	277		83	42	1	0	126
140	157	5	0	302		74	62	5	1	142
113	136	5	1	255	10:00	71	81	4	0	156
128	156	5	3	292		50	63	0	0	113
110	175	2	1	288		62	54	5	0	121
110	122	3	2	237		58	74	3	0	135
126	122	7	0	255	11:00	50	32	3	1	86
110	91	4	0	205		42	52	4	0	98
130	130	12	0	272		44	52	1	0	97
126	102	5	1	234		44	24	0	0	68

Prepared by NEWPORT TRAFFIC STUDIES

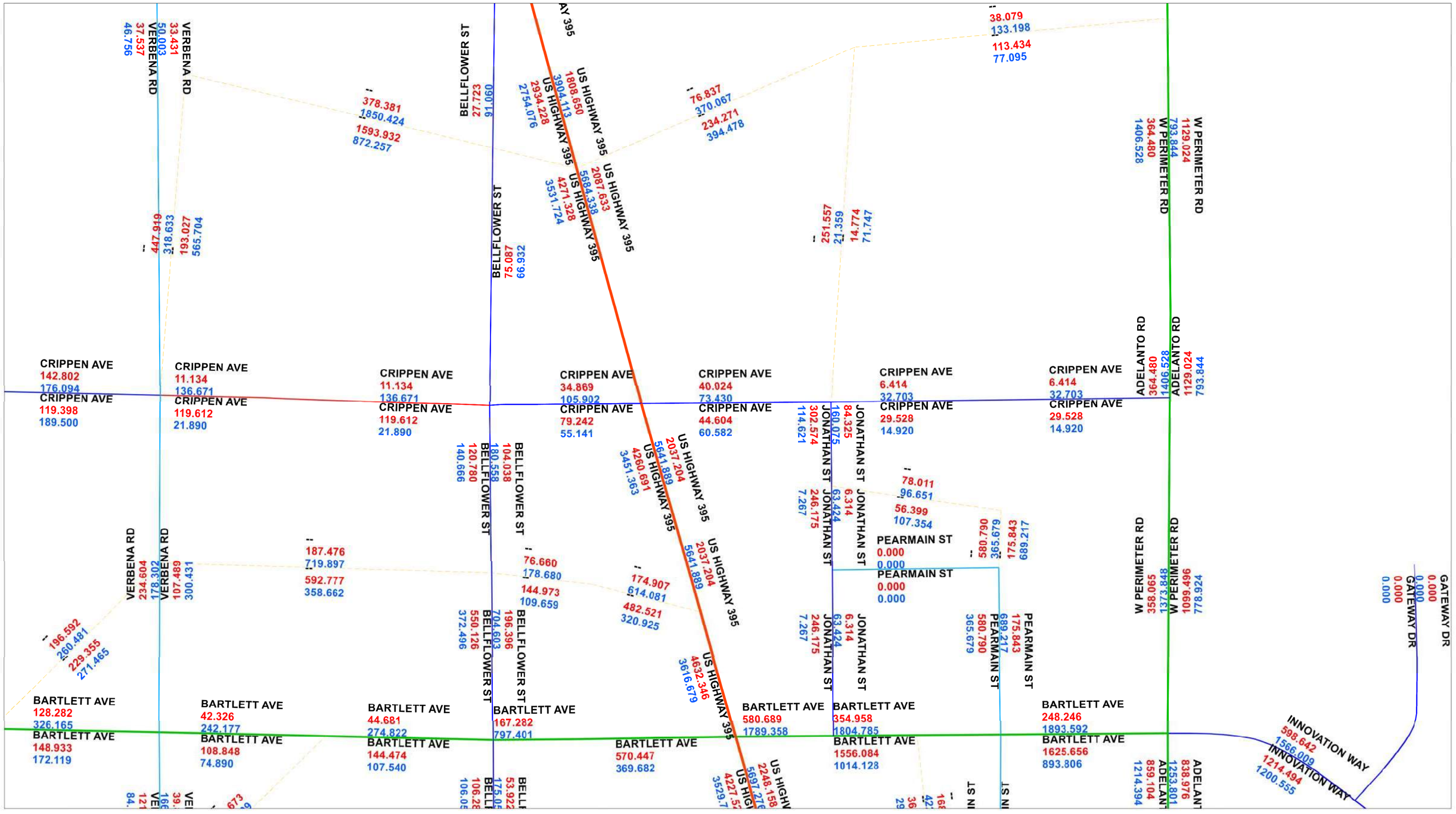
DAVID EVANS AND ASSOCIATES INC.

Appendix C: Forecast Model Volume Development

Adelanto -SBTAM 2016 AM/PM Volumes



Adelanto -SBTAM 2040 AM/PM Volumes



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

Intersection No.: 1
North/South Street: HIGHWAY 395
East/West Street: AUBURN AVE

Analysis Condition: YEAR 2040 FUTURE TRAFFIC

A.M. Peak Hour

Approach Direction		Base Year Count	Forecast Future Year Link Volume			Turn Volume	Balanced Volume
South leg	Left	9	Approach	633	Left	31	19
NB	Through	503	Departure	882	Through	568	600
	Right	1			Right	9	11
North leg	Left	1	Approach	613	Left	7	11
SB	Through	322	Departure	581	Through	568	694
	Right	23			Right	58	54
West leg	Left	2	Approach	355	Left	12	14
EB	Through	1	Departure	98	Through	43	16
	Right	25			Right	311	191
East leg	Left	1	Approach	16	Left	4	4
WB	Through	2	Departure	57	Through	11	7
	Right	1			Right	2	3

P.M. Peak Hour

Approach Direction		Base Year Count	Forecast Future Year Link Volume			Turn Volume	Balanced Volume
South leg	Left	7	Approach	1,156	Left	207	115
NB	Through	702	Departure	821	Through	877	1,013
	Right	1			Right	13	13
North leg	Left	1	Approach	808	Left	7	13
SB	Through	806	Departure	884	Through	751	809
	Right	1			Right	16	16
West leg	Left	1	Approach	131	Left	6	7
EB	Through	1	Departure	279	Through	53	18
	Right	9			Right	68	59
East leg	Left	1	Approach	66	Left	4	12
WB	Through	1	Departure	71	Through	57	27
	Right	1			Right	3	12

DAVID EVANS AND ASSOCIATES INC.

Appendix D: Intersection Capacity Analysis

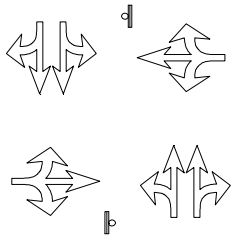
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	12-May-23	LTRI0000-0001	1 OF 2

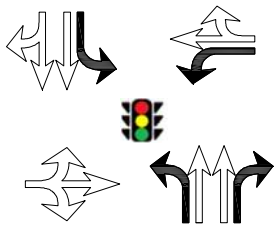
E/W STREET : AUBURN AVE
N/S STREET : HIGHWAY 395
CONDITION : AM PEAK HOUR

INTERSECTION : 1
PROJECTED GROWTH PER YEAR : 2.0%

CONDITION DIAGRAMS



EXISTING GEOMETRICS



PROJECT GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition	Ambient Growth	Background Condition	Project Trips	Project Condition	Future Condition	Future + Project Condition
Scenario #	1		3		5	7	9
AUBURN AVE							
EB LEFT	2	1	3	0	3	14	14
EB THRU	1	1	2	0	2	16	16
EB RIGHT	25	1	26	0	26	191	191
WB LEFT	1	1	2	227	229	4	231
WB THRU	2	1	3	0	3	7	7
WB RIGHT	1	1	2	146	148	3	149
HIGHWAY 395							
NB LEFT	9	1	10	0	10	19	19
NB THRU	503	21	524	-131	393	600	469
NB RIGHT	1	1	2	304	306	11	315
SB LEFT	1	1	2	107	109	11	118
SB THRU	322	13	335	-88	247	694	606
SB RIGHT	23	1	24	0	24	54	54
TOTALS	**891**	**44**	**935**	**565**	**1500**	**1624**	**2189**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TM	12-May-23	LTRI0000-0001	2	OF 2

E/W STREET : AUBURN AVE
CONDITION : AM PEAK HOUR
N/S STREET : HIGHWAY 395
PHF : 0.97

NORTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
20	87	0	0	1	0	0	1	0	0	12	0
0	38	0	0	3	0	0	2	0	0	21	0
0	49	0	0	2	0	0	2	0	0	20	0
3	58	0	0	4	0	0	2	0	0	20	0

SOUTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
0	67	2	0	3	0	0	1	0	0	22	0
0	135	3	0	2	0	0	0	0	0	16	0
0	114	0	0	0	0	0	2	0	0	15	0
0	114	4	0	1	0	0	1	0	0	10	0

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

WEST LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
9	0	1	0	0	0	0	0	0	0	0	0
6	1	1	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	1	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0

	Truck Volumes	Auto Volumes	Totals	Truck Percentage	Balanced Totals
AUBURN AVE					
EB LEFT	0	2	**2**	**1%**	**2**
EB THRU	0	1	**1**	**1%**	**1**
EB RIGHT	1	24	**25**	**4%**	**25**
WB LEFT	0	0	**1**	**1%**	**1**
WB THRU	0	2	**2**	**1%**	**2**
WB RIGHT	0	0	**1**	**1%**	**1**
HIGHWAY 395					
NB LEFT	0	9	**9**	**1%**	**9**
NB THRU	73	430	**503**	**15%**	**503**
NB RIGHT	0	0	**1**	**1%**	**1**
SB LEFT	0	0	**1**	**1%**	**1**
SB THRU	90	232	**322**	**28%**	**322**
SB RIGHT	0	23	**23**	**1%**	**23**

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Traffic Vol, veh/h	2	1	25	1	2	1	9	503	1	1	322	23
Future Vol, veh/h	2	1	25	1	2	1	9	503	1	1	322	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	1	4	1	1	1	1	1	15	1	1	28	1
Mvmt Flow	2	1	26	1	2	1	9	519	1	1	332	24

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	625	884	178	707	896	260	356	0	0	520	0	0
Stage 1	346	346	-	538	538	-	-	-	-	-	-	-
Stage 2	279	538	-	169	358	-	-	-	-	-	-	-
Critical Hdwy	7.52	6.58	6.92	7.52	6.52	6.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.52	5.58	-	6.52	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.52	5.58	-	6.52	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.51	4.04	3.31	3.51	4.01	3.31	2.21	-	-	2.21	-	-
Pot Cap-1 Maneuver	371	279	837	324	280	742	1207	-	-	1049	-	-
Stage 1	646	629	-	497	523	-	-	-	-	-	-	-
Stage 2	707	516	-	819	629	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	365	276	837	310	277	742	1207	-	-	1049	-	-
Mov Cap-2 Maneuver	365	276	-	310	277	-	-	-	-	-	-	-
Stage 1	640	628	-	492	518	-	-	-	-	-	-	-
Stage 2	696	511	-	792	628	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	15.8	0.1	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1207	-	-	718	339	1049	-	-
HCM Lane V/C Ratio	0.008	-	-	0.04	0.012	0.001	-	-
HCM Control Delay (s)	8	0	-	10.2	15.8	8.4	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

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	3	2	26	2	3	2	10	524	2	2	335	24
Future Vol, veh/h	3	2	26	2	3	2	10	524	2	2	335	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	1	4	1	1	1	1	1	15	1	1	28	1
Mvmt Flow	3	2	27	2	3	2	10	540	2	2	345	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	654	924	185	739	935	271	370	0	0	542	0	0
Stage 1	362	362	-	561	561	-	-	-	-	-	-	-
Stage 2	292	562	-	178	374	-	-	-	-	-	-	-
Critical Hdwy	7.52	6.58	6.92	7.52	6.52	6.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.52	5.58	-	6.52	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.52	5.58	-	6.52	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.51	4.04	3.31	3.51	4.01	3.31	2.21	-	-	2.21	-	-
Pot Cap-1 Maneuver	354	264	829	307	266	730	1192	-	-	1030	-	-
Stage 1	632	619	-	482	511	-	-	-	-	-	-	-
Stage 2	695	503	-	809	619	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	346	260	829	292	262	730	1192	-	-	1030	-	-
Mov Cap-2 Maneuver	346	260	-	292	262	-	-	-	-	-	-	-
Stage 1	624	618	-	476	505	-	-	-	-	-	-	-
Stage 2	681	497	-	779	618	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.8	16.1	0.2	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1192	-	-	650	333	1030	-	-
HCM Lane V/C Ratio	0.009	-	-	0.049	0.022	0.002	-	-
HCM Control Delay (s)	8	0	-	10.8	16.1	8.5	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	74.7

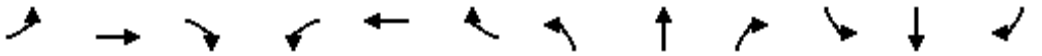
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	2	26	229	3	148	10	393	306	109	247	24
Future Vol, veh/h	3	2	26	229	3	148	10	393	306	109	247	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	1	4	1	1	1	1	1	15	1	1	28	1
Mvmt Flow	3	2	27	236	3	153	10	405	315	112	255	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	716	1232	140	936	1087	360	280	0	0	720	0	0
Stage 1	492	492	-	583	583	-	-	-	-	-	-	-
Stage 2	224	740	-	353	504	-	-	-	-	-	-	-
Critical Hdwy	7.52	6.58	6.92	7.52	6.52	6.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.52	5.58	-	6.52	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.52	5.58	-	6.52	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.51	4.04	3.31	3.51	4.01	3.31	2.21	-	-	2.21	-	-
Pot Cap-1 Maneuver	319	173	886	~ 221	216	639	1287	-	-	884	-	-
Stage 1	530	541	-	468	499	-	-	-	-	-	-	-
Stage 2	761	417	-	640	542	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	210	145	886	~ 186	181	639	1287	-	-	884	-	-
Mov Cap-2 Maneuver	210	145	-	~ 186	181	-	-	-	-	-	-	-
Stage 1	523	460	-	461	492	-	-	-	-	-	-	-
Stage 2	568	411	-	525	461	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.1	290.4	0.2	3
HCM LOS	B	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1287	-	-	540	257	884	-	-
HCM Lane V/C Ratio	0.008	-	-	0.059	1.524	0.127	-	-
HCM Control Delay (s)	7.8	0.1	-	12.1	290.4	9.7	0.4	-
HCM Lane LOS	A	A	-	B	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	23.2	0.4	-	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	2	26	229	3	148	10	393	306	109	247	24
Future Volume (veh/h)	3	2	26	229	3	148	10	393	306	109	247	24
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	1786	1744	1786	1786	1786	1786	1786	1589	1857	1786	1407	1786
Adj Flow Rate, veh/h	3	2	27	236	3	153	10	405	315	112	255	25
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	4	1	1	1	1	1	15	1	1	28	1
Cap, veh/h	124	48	318	561	7	374	18	975	508	140	971	94
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.01	0.32	0.32	0.08	0.39	0.39
Sat Flow, veh/h	43	191	1263	1392	29	1489	1701	3020	1574	1701	2461	239
Grp Volume(v), veh/h	32	0	0	236	0	156	10	405	315	112	137	143
Grp Sat Flow(s),veh/h/ln	1497	0	0	1392	0	1518	1701	1510	1574	1701	1337	1364
Q Serve(g_s), s	0.0	0.0	0.0	4.6	0.0	3.0	0.2	3.7	5.9	2.3	2.4	2.5
Cycle Q Clear(g_c), s	0.6	0.0	0.0	5.2	0.0	3.0	0.2	3.7	5.9	2.3	2.4	2.5
Prop In Lane	0.09		0.84	1.00		0.98	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	489	0	0	561	0	382	18	975	508	140	527	538
V/C Ratio(X)	0.07	0.00	0.00	0.42	0.00	0.41	0.56	0.42	0.62	0.80	0.26	0.26
Avail Cap(c_a), veh/h	1754	0	0	1766	0	1695	292	2681	1397	390	1263	1289
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	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.0	0.0	0.0	11.7	0.0	10.9	17.2	9.2	10.0	15.7	7.1	7.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.5	0.0	0.7	24.1	0.3	1.2	10.1	0.3	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	0.2	0.0	0.0	1.3	0.0	0.8	0.2	0.6	1.2	1.0	0.3	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.1	0.0	0.0	12.2	0.0	11.6	41.3	9.5	11.3	25.8	7.4	7.4
LnGrp LOS	B	A	A	B	A	B	D	A	B	C	A	A
Approach Vol, veh/h		32			392			730			392	
Approach Delay, s/veh		10.1			12.0			10.7			12.7	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	15.3		12.8	4.4	17.8		12.8				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	8.0	31.0		39.0	6.0	33.0		39.0				
Max Q Clear Time (g_c+I1), s	4.3	7.9		2.6	2.2	4.5		7.2				
Green Ext Time (p_c), s	0.1	3.4		0.1	0.0	1.4		1.7				

Intersection Summary			
HCM 6th Ctrl Delay		11.5	
HCM 6th LOS		B	

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	16	191	4	7	3	19	600	11	11	694	54
Future Vol, veh/h	14	16	191	4	7	3	19	600	11	11	694	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	1	4	1	1	1	1	1	15	1	1	28	1
Mvmt Flow	14	16	197	4	7	3	20	619	11	11	715	56

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1118	1435	386	1053	1458	315	771	0	0	630	0	0
Stage 1	765	765	-	665	665	-	-	-	-	-	-	-
Stage 2	353	670	-	388	793	-	-	-	-	-	-	-
Critical Hdwy	7.52	6.58	6.92	7.52	6.52	6.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.52	5.58	-	6.52	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.52	5.58	-	6.52	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.51	4.04	3.31	3.51	4.01	3.31	2.21	-	-	2.21	-	-
Pot Cap-1 Maneuver	163	130	615	182	130	684	846	-	-	955	-	-
Stage 1	364	406	-	418	458	-	-	-	-	-	-	-
Stage 2	640	449	-	610	401	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	148	123	615	106	123	684	846	-	-	955	-	-
Mov Cap-2 Maneuver	148	123	-	106	123	-	-	-	-	-	-	-
Stage 1	351	398	-	403	442	-	-	-	-	-	-	-
Stage 2	604	433	-	390	393	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	23.9	33.4	0.5	0.2
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	846	-	-	413	141	955	-	-
HCM Lane V/C Ratio	0.023	-	-	0.552	0.102	0.012	-	-
HCM Control Delay (s)	9.4	0.2	-	23.9	33.4	8.8	0.1	-
HCM Lane LOS	A	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	3.2	0.3	0	-	-

Intersection	
Int Delay, s/veh	303.7

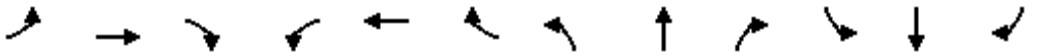
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	16	191	231	7	149	19	469	315	118	606	54
Future Vol, veh/h	14	16	191	231	7	149	19	469	315	118	606	54
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	1	4	1	1	1	1	1	15	1	1	28	1
Mvmt Flow	14	16	197	238	7	154	20	484	325	122	625	56

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1183	1746	341	1252	1612	405	681	0	0	809	0	0
Stage 1	897	897	-	687	687	-	-	-	-	-	-	-
Stage 2	286	849	-	565	925	-	-	-	-	-	-	-
Critical Hdwy	7.52	6.58	6.92	7.52	6.52	6.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.52	5.58	-	6.52	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.52	5.58	-	6.52	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.51	4.04	3.31	3.51	4.01	3.31	2.21	-	-	2.21	-	-
Pot Cap-1 Maneuver	146	84	658	~ 130	104	598	914	-	-	819	-	-
Stage 1	303	352	-	406	448	-	-	-	-	-	-	-
Stage 2	700	371	-	479	348	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	80	61	658	~ 57	76	598	914	-	-	819	-	-
Mov Cap-2 Maneuver	80	61	-	~ 57	76	-	-	-	-	-	-	-
Stage 1	290	267	-	389	429	-	-	-	-	-	-	-
Stage 2	490	355	-	239	264	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	45.2	$ 1687	0.3	2.2
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	914	-	-	304	88	819	-	-
HCM Lane V/C Ratio	0.021	-	-	0.749	4.534	0.149	-	-
HCM Control Delay (s)	9	0.2	-	45.2	$ 1687	10.2	0.9	-
HCM Lane LOS	A	A	-	E	F	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	5.6	42.4	0.5	-	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	16	191	231	7	149	19	469	315	118	606	54
Future Volume (veh/h)	14	16	191	231	7	149	19	469	315	118	606	54
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	1786	1744	1786	1786	1786	1786	1786	1589	1786	1786	1407	1786
Adj Flow Rate, veh/h	14	16	197	238	7	154	20	484	325	122	625	56
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	4	1	1	1	1	1	15	1	1	28	1
Cap, veh/h	108	43	352	517	18	396	34	1003	503	154	999	89
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.02	0.33	0.33	0.09	0.40	0.40
Sat Flow, veh/h	38	159	1296	1178	66	1457	1701	3020	1514	1701	2481	222
Grp Volume(v), veh/h	227	0	0	238	0	161	20	484	325	122	336	345
Grp Sat Flow(s),veh/h/ln	1494	0	0	1178	0	1524	1701	1510	1514	1701	1337	1367
Q Serve(g_s), s	0.0	0.0	0.0	1.6	0.0	3.4	0.5	5.0	7.2	2.8	7.9	7.9
Cycle Q Clear(g_c), s	5.1	0.0	0.0	6.7	0.0	3.4	0.5	5.0	7.2	2.8	7.9	7.9
Prop In Lane	0.06		0.87	1.00		0.96	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	503	0	0	517	0	414	34	1003	503	154	538	550
V/C Ratio(X)	0.45	0.00	0.00	0.46	0.00	0.39	0.59	0.48	0.65	0.79	0.62	0.63
Avail Cap(c_a), veh/h	1566	0	0	1367	0	1513	260	2384	1195	346	1123	1148
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	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.3	0.0	0.0	12.8	0.0	11.6	19.1	10.4	11.2	17.5	9.4	9.4
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.6	0.0	0.6	15.2	0.4	1.4	8.8	1.2	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	1.4	0.0	0.0	1.6	0.0	1.0	0.3	1.0	1.6	1.2	1.3	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.9	0.0	0.0	13.4	0.0	12.2	34.3	10.8	12.6	26.3	10.6	10.5
LnGrp LOS	B	A	A	B	A	B	C	B	B	C	B	B
Approach Vol, veh/h		227			399			829			803	
Approach Delay, s/veh		12.9			12.9			12.1			12.9	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	17.0		14.7	4.8	19.8		14.7				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	8.0	31.0		39.0	6.0	33.0		39.0				
Max Q Clear Time (g_c+I1), s	4.8	9.2		7.1	2.5	9.9		8.7				
Green Ext Time (p_c), s	0.1	3.9		1.6	0.0	3.7		2.0				

Intersection Summary			
HCM 6th Ctrl Delay		12.6	
HCM 6th LOS		B	

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	12-May-23	LTRI0000-0001	1 OF 2

E/W STREET : AUBURN AVE
N/S STREET : HIGHWAY 395
CONDITION : PM PEAK HOUR

INTERSECTION : 1
PROJECTED GROWTH PER YEAR : 2.0%

TURN MOVEMENTS

Condition	Existing Condition	Ambient Growth	Background Condition	Project Trips	Project Condition	Future Condition	Future + Project Condition
Scenario #	2		4		6	8	10
AUBURN AVE							
EB LEFT	1	1	2	0	2	7	7
EB THRU	1	1	2	0	2	18	18
EB RIGHT	9	1	10	0	10	59	59
WB LEFT	1	1	2	337	339	12	349
WB THRU	1	1	2	0	2	27	27
WB RIGHT	1	1	2	175	177	12	187
HIGHWAY 395							
NB LEFT	7	1	8	0	8	115	115
NB THRU	702	29	731	-148	583	1013	865
NB RIGHT	1	1	2	381	383	13	394
SB LEFT	1	1	2	124	126	13	137
SB THRU	806	33	839	-98	741	809	711
SB RIGHT	1	1	2	0	2	16	16
TOTALS	**1532**	**72**	**1604**	**771**	**2375**	**2114**	**2885**

YEAR 2022 FAIR SHARE	**771**	**843**	**91%**
YEAR 2045 FAIR SHARE	**771**	**1353**	**57%**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TNM	12-May-23	LTRI0000-0001	2	OF 2

E/W STREET : AUBURN AVE
CONDITION : PM PEAK HOUR
N/S STREET : HIGHWAY 395
PHF : 0.86

NORTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
0	168	0	0	1	0	0	4	0	0	29	0
0	169	0	0	0	0	0	0	0	0	20	0
0	158	0	0	0	0	0	1	0	0	21	0
0	204	0	0	4	0	0	0	0	0	27	0

SOUTH LEG											
AUTO			LARGE 2 AXLE			LARGE 3 AXLE			LARGE 4(+) AXLE		
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT
0	119	0	0	1	0	0	2	0	0	20	0
0	154	5	0	0	0	0	0	0	0	15	0
0	234	0	0	1	0	0	0	0	0	25	0
0	108	2	0	2	0	0	0	0	0	21	0

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

	Truck Volumes	Auto Volumes	Totals	Truck Percentage	Balanced Totals
AUBURN AVE					
EB LEFT	0	1	**1**	**1%**	**1**
EB THRU	0	0	**1**	**1%**	**1**
EB RIGHT	0	9	**9**	**1%**	**9**
WB LEFT	0	0	**1**	**1%**	**1**
WB THRU	0	0	**1**	**1%**	**1**
WB RIGHT	0	0	**1**	**1%**	**1**
HIGHWAY 395					
NB LEFT	0	7	**7**	**1%**	**7**
NB THRU	87	615	**702**	**12%**	**702**
NB RIGHT	0	0	**1**	**1%**	**1**
SB LEFT	0	0	**1**	**1%**	**1**
SB THRU	107	699	**806**	**13%**	**806**
SB RIGHT	0	0	**1**	**1%**	**1**

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Traffic Vol, veh/h	1	1	9	1	1	1	7	702	1	1	806	1
Future Vol, veh/h	1	1	9	1	1	1	7	702	1	1	806	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	1	1	1	1	1	1	1	12	1	1	13	1
Mvmt Flow	1	1	10	1	1	1	8	816	1	1	937	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1365	1773	469	1304	1773	409	938	0	0	817	0	0
Stage 1	940	940	-	833	833	-	-	-	-	-	-	-
Stage 2	425	833	-	471	940	-	-	-	-	-	-	-
Critical Hdwy	7.52	6.52	6.92	7.52	6.52	6.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.52	5.52	-	6.52	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.52	5.52	-	6.52	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.51	4.01	3.31	3.51	4.01	3.31	2.21	-	-	2.21	-	-
Pot Cap-1 Maneuver	107	83	544	119	83	594	732	-	-	813	-	-
Stage 1	285	343	-	331	384	-	-	-	-	-	-	-
Stage 2	580	384	-	545	343	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	104	81	544	113	81	594	732	-	-	813	-	-
Mov Cap-2 Maneuver	104	81	-	113	81	-	-	-	-	-	-	-
Stage 1	279	342	-	324	376	-	-	-	-	-	-	-
Stage 2	566	376	-	531	342	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.2	33.2	0.2	0
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	732	-	-	286	131	813	-	-
HCM Lane V/C Ratio	0.011	-	-	0.045	0.027	0.001	-	-
HCM Control Delay (s)	10	0.1	-	18.2	33.2	9.4	0	-
HCM Lane LOS	A	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Traffic Vol, veh/h	2	2	10	2	2	2	8	731	2	2	839	2
Future Vol, veh/h	2	2	10	2	2	2	8	731	2	2	839	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	1	1	1	1	1	1	1	12	1	1	13	1
Mvmt Flow	2	2	12	2	2	2	9	850	2	2	976	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1425	1851	489	1362	1851	426	978	0	0	852	0	0
Stage 1	981	981	-	869	869	-	-	-	-	-	-	-
Stage 2	444	870	-	493	982	-	-	-	-	-	-	-
Critical Hdwy	7.52	6.52	6.92	7.52	6.52	6.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.52	5.52	-	6.52	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.52	5.52	-	6.52	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.51	4.01	3.31	3.51	4.01	3.31	2.21	-	-	2.21	-	-
Pot Cap-1 Maneuver	97	74	528	108	74	580	707	-	-	789	-	-
Stage 1	270	328	-	315	370	-	-	-	-	-	-	-
Stage 2	565	369	-	529	328	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	92	72	528	101	72	580	707	-	-	789	-	-
Mov Cap-2 Maneuver	92	72	-	101	72	-	-	-	-	-	-	-
Stage 1	264	326	-	307	361	-	-	-	-	-	-	-
Stage 2	546	360	-	511	326	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.1	37.4	0.2	0
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	707	-	-	205	118	789	-	-
HCM Lane V/C Ratio	0.013	-	-	0.079	0.059	0.003	-	-
HCM Control Delay (s)	10.2	0.1	-	24.1	37.4	9.6	0	-
HCM Lane LOS	B	A	-	C	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-	-

Intersection	
Int Delay, s/veh	1009.3

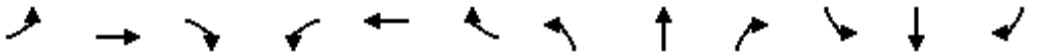
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	2	10	339	2	177	8	583	383	126	741	2
Future Vol, veh/h	2	2	10	339	2	177	8	583	383	126	741	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	1	1	1	1	1	1	1	12	1	1	13	1
Mvmt Flow	2	2	12	394	2	206	9	678	445	147	862	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1515	2298	432	1645	2077	562	864	0	0	1123	0	0
Stage 1	1157	1157	-	919	919	-	-	-	-	-	-	-
Stage 2	358	1141	-	726	1158	-	-	-	-	-	-	-
Critical Hdwy	7.52	6.52	6.92	7.52	6.52	6.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.52	5.52	-	6.52	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.52	5.52	-	6.52	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.51	4.01	3.31	3.51	4.01	3.31	2.21	-	-	2.21	-	-
Pot Cap-1 Maneuver	83	39	574	~ 66	54	473	781	-	-	624	-	-
Stage 1	210	271	-	~ 294	350	-	-	-	-	-	-	-
Stage 2	635	276	-	~ 384	271	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	28	21	574	~ 38	29	473	781	-	-	624	-	-
Mov Cap-2 Maneuver	28	21	-	~ 38	29	-	-	-	-	-	-	-
Stage 1	203	148	-	~ 284	338	-	-	-	-	-	-	-
Stage 2	344	266	-	~ 203	148	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	64.8	$ 4619.5	0.2	3.6
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	781	-	-	76	55	624	-	-
HCM Lane V/C Ratio	0.012	-	-	0.214	10.951	0.235	-	-
HCM Control Delay (s)	9.7	0.2	-	64.8	$ 4619.5	12.5	2.1	-
HCM Lane LOS	A	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7	71.6	0.9	-	-

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	2	10	339	2	177	8	583	383	126	741	2
Future Volume (veh/h)	2	2	10	339	2	177	8	583	383	126	741	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	1786	1786	1786	1786	1786	1786	1786	1632	1857	1786	1617	1786
Adj Flow Rate, veh/h	2	2	12	394	2	206	9	678	445	147	862	2
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	1	1	1	1	1	1	1	12	1	1	13	1
Cap, veh/h	97	97	381	588	5	498	112	1125	571	184	1274	3
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.07	0.36	0.36	0.11	0.41	0.41
Sat Flow, veh/h	91	293	1150	1411	15	1501	1701	3100	1574	1701	3145	7
Grp Volume(v), veh/h	16	0	0	394	0	208	9	678	445	147	421	443
Grp Sat Flow(s),veh/h/ln	1533	0	0	1411	0	1516	1701	1550	1574	1701	1537	1616
Q Serve(g_s), s	0.0	0.0	0.0	15.2	0.0	6.5	0.3	10.8	15.3	5.1	13.6	13.6
Cycle Q Clear(g_c), s	0.4	0.0	0.0	15.6	0.0	6.5	0.3	10.8	15.3	5.1	13.6	13.6
Prop In Lane	0.12		0.75	1.00		0.99	1.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	575	0	0	588	0	503	112	1125	571	184	622	655
V/C Ratio(X)	0.03	0.00	0.00	0.67	0.00	0.41	0.08	0.60	0.78	0.80	0.68	0.68
Avail Cap(c_a), veh/h	1037	0	0	1026	0	973	252	1581	803	224	759	798
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	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.7	0.0	0.0	18.8	0.0	15.7	26.7	15.8	17.2	26.5	14.8	14.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.3	0.0	0.5	0.3	0.5	3.2	15.5	1.8	1.7
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	0.1	0.0	0.0	4.8	0.0	2.1	0.1	3.0	4.7	2.6	3.8	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.7	0.0	0.0	20.1	0.0	16.3	27.0	16.3	20.4	42.0	16.6	16.5
LnGrp LOS	B	A	A	C	A	B	C	B	C	D	B	B
Approach Vol, veh/h		16			602			1132			1011	
Approach Delay, s/veh		13.7			18.8			18.0			20.3	
Approach LOS		B			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.6	26.1		24.2	8.0	28.6		24.2				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	8.0	31.0		39.0	9.0	30.0		39.0				
Max Q Clear Time (g_c+I1), s	7.1	17.3		2.4	2.3	15.6		17.6				
Green Ext Time (p_c), s	0.0	4.8		0.1	0.0	4.0		2.5				

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

Intersection	
Int Delay, s/veh	20.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	18	59	12	27	12	115	1013	13	13	809	16
Future Vol, veh/h	7	18	59	12	27	12	115	1013	13	13	809	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1	1	12	1	1	13	1
Mvmt Flow	7	19	62	13	28	13	121	1066	14	14	852	17

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1678	2211	435	1779	2212	540	869	0	0	1080	0	0
Stage 1	889	889	-	1315	1315	-	-	-	-	-	-	-
Stage 2	789	1322	-	464	897	-	-	-	-	-	-	-
Critical Hdwy	7.52	6.52	6.92	7.52	6.52	6.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.52	5.52	-	6.52	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.52	5.52	-	6.52	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.51	4.01	3.31	3.51	4.01	3.31	2.21	-	-	2.21	-	-
Pot Cap-1 Maneuver	63	44	572	53	44	489	777	-	-	647	-	-
Stage 1	307	362	-	168	228	-	-	-	-	-	-	-
Stage 2	352	226	-	550	359	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	26	572	14	~ 26	489	777	-	-	647	-	-
Mov Cap-2 Maneuver	-	26	-	14	~ 26	-	-	-	-	-	-	-
Stage 1	187	347	-	102	139	-	-	-	-	-	-	-
Stage 2	166	138	-	444	344	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		$ 771.5	2.6	0.4
HCM LOS	-	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	777	-	-	-	27	647	-	-
HCM Lane V/C Ratio	0.156	-	-	-	1.988	0.021	-	-
HCM Control Delay (s)	10.5	1.7	-	-	$ 771.5	10.7	0.2	-
HCM Lane LOS	B	A	-	-	F	B	A	-
HCM 95th %tile Q(veh)	0.6	-	-	-	6.5	0.1	-	-

Notes

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

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↕			↕	
Traffic Vol, veh/h	7	18	59	349	27	187	115	865	394	137	711	16
Future Vol, veh/h	7	18	59	349	27	187	115	865	394	137	711	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1	1	12	1	1	13	1
Mvmt Flow	7	19	62	367	28	197	121	911	415	144	748	17

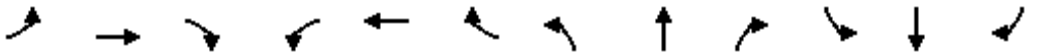
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1757	2613	383	2033	2414	663	765	0	0	1326	0	0
Stage 1	1045	1045	-	1361	1361	-	-	-	-	-	-	-
Stage 2	712	1568	-	672	1053	-	-	-	-	-	-	-
Critical Hdwy	7.52	6.52	6.92	7.52	6.52	6.92	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.52	5.52	-	6.52	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.52	5.52	-	6.52	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.51	4.01	3.31	3.51	4.01	3.31	2.21	-	-	2.21	-	-
Pot Cap-1 Maneuver	55	24	618	~ 34	33	406	851	-	-	522	-	-
Stage 1	246	306	-	~ 157	216	-	-	-	-	-	-	-
Stage 2	392	172	-	414	303	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	~ 4	618	-	~ 6	406	851	-	-	522	-	-
Mov Cap-2 Maneuver	-	~ 4	-	-	~ 6	-	-	-	-	-	-	-
Stage 1	85	159	-	~ 54	75	-	-	-	-	-	-	-
Stage 2	44	60	-	~ 170	157	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s			2.5	4.4
HCM LOS	-	-		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	851	-	-	-	-	522	-	-
HCM Lane V/C Ratio	0.142	-	-	-	-	0.276	-	-
HCM Control Delay (s)	9.9	2.6	-	-	-	14.5	2.5	-
HCM Lane LOS	A	A	-	-	-	B	A	-
HCM 95th %tile Q(veh)	0.5	-	-	-	-	1.1	-	-

Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	18	59	349	27	187	115	865	394	137	711	16
Future Volume (veh/h)	7	18	59	349	27	187	115	865	394	137	711	16
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	1786	1786	1786	1786	1786	1786	1786	1632	1786	1786	1617	1786
Adj Flow Rate, veh/h	7	19	62	367	28	197	121	911	415	144	748	17
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	12	1	1	13	1
Cap, veh/h	76	134	352	555	61	432	153	1185	578	180	1222	28
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.09	0.38	0.38	0.11	0.40	0.40
Sat Flow, veh/h	42	420	1103	1328	192	1351	1701	3100	1514	1701	3072	70
Grp Volume(v), veh/h	88	0	0	367	0	225	121	911	415	144	374	391
Grp Sat Flow(s),veh/h/ln	1565	0	0	1328	0	1543	1701	1550	1514	1701	1537	1605
Q Serve(g_s), s	0.0	0.0	0.0	12.7	0.0	7.2	4.3	16.0	14.5	5.2	12.1	12.1
Cycle Q Clear(g_c), s	2.5	0.0	0.0	15.2	0.0	7.2	4.3	16.0	14.5	5.2	12.1	12.1
Prop In Lane	0.08		0.70	1.00		0.88	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	562	0	0	555	0	493	153	1185	578	180	611	638
V/C Ratio(X)	0.16	0.00	0.00	0.66	0.00	0.46	0.79	0.77	0.72	0.80	0.61	0.61
Avail Cap(c_a), veh/h	1031	0	0	962	0	966	246	1543	753	218	740	773
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	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.3	0.0	0.0	19.3	0.0	16.9	27.8	16.8	16.4	27.2	14.9	14.9
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.4	0.0	0.7	8.7	1.8	2.3	15.9	1.0	1.0
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	0.8	0.0	0.0	4.6	0.0	2.4	1.9	4.6	4.2	2.6	3.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.4	0.0	0.0	20.7	0.0	17.5	36.5	18.6	18.7	43.1	16.0	15.9
LnGrp LOS	B	A	A	C	A	B	D	B	B	D	B	B
Approach Vol, veh/h		88			592			1447			909	
Approach Delay, s/veh		15.4			19.5			20.1			20.3	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.6	27.8		23.9	9.6	28.8		23.9				
Change Period (Y+Rc), s	4.0	4.0		4.0	4.0	4.0		4.0				
Max Green Setting (Gmax), s	8.0	31.0		39.0	9.0	30.0		39.0				
Max Q Clear Time (g_c+I1), s	7.2	18.0		4.5	6.3	14.1		17.2				
Green Ext Time (p_c), s	0.0	5.8		0.5	0.1	3.7		2.7				

Intersection Summary			
HCM 6th Ctrl Delay		19.9	
HCM 6th LOS		B	

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

Intersection No.: 1
North/South Street: HIGHWAY 395
East/West Street: AUBURN AVE

Analysis Condition: YEAR 2040 FUTURE TRAFFIC

A.M. Peak Hour

Approach Direction		Base Year Count	Forecast Future Year Link Volume			Turn Volume	Balanced Volume
South leg	Left	9	Approach	633	Left	31	19
NB	Through	503	Departure	882	Through	568	600
	Right	1			Right	9	11
North leg	Left	1	Approach	613	Left	7	11
SB	Through	322	Departure	581	Through	568	694
	Right	23			Right	58	54
West leg	Left	2	Approach	355	Left	12	14
EB	Through	1	Departure	98	Through	43	16
	Right	25			Right	311	191
East leg	Left	1	Approach	16	Left	4	4
WB	Through	2	Departure	57	Through	11	7
	Right	1			Right	2	3

P.M. Peak Hour

Approach Direction		Base Year Count	Forecast Future Year Link Volume			Turn Volume	Balanced Volume
South leg	Left	7	Approach	1,156	Left	207	115
NB	Through	702	Departure	821	Through	877	1,013
	Right	1			Right	13	13
North leg	Left	1	Approach	808	Left	7	13
SB	Through	806	Departure	884	Through	751	809
	Right	1			Right	16	16
West leg	Left	1	Approach	131	Left	6	7
EB	Through	1	Departure	279	Through	53	18
	Right	9			Right	68	59
East leg	Left	1	Approach	66	Left	4	12
WB	Through	1	Departure	71	Through	57	27
	Right	1			Right	3	12

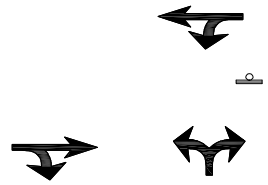
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	12-May-23	LTRI0000-0001	1 OF 2

E/W STREET : AUBURN AVE
N/S STREET : PROJECT DRIVEWAY "A"
CONDITION : AM PEAK HOUR

INTERSECTION : 2
PROJECTED GROWTH PER YEAR : 2.0%

CONDITION DIAGRAMS



PROJECT GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition	Ambient Growth	Background Condition	Project Trips	Project Condition	Future Condition	Future + Project Condition
Scenario #	1		3		5	7	9
AUBURN AVE							
EB LEFT	0	0	0	0	0	0	0
EB THRU	3	3	6	191	197	38	229
EB RIGHT	0	0	0	220	220	0	220
WB LEFT	0	0	0	0	0	0	0
WB THRU	4	3	7	166	173	14	180
WB RIGHT	0	0	0	0	0	0	0
PROJECT DRIVEWAY "A"							
NB LEFT	0	0	0	207	207	0	207
NB THRU	0	0	0	0	0	0	0
NB RIGHT	0	0	0	0	0	0	0
SB LEFT	0	0	0	0	0	0	0
SB THRU	0	0	0	0	0	0	0
SB RIGHT	0	0	0	0	0	0	0
TOTALS	**7**	**6**	**13**	**784**	**797**	**52**	**836**

Intersection	
Int Delay, s/veh	3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	197	220	0	173	207	0
Future Vol, veh/h	197	220	0	173	207	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	203	227	0	178	213	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	430	0	495	317
Stage 1	-	-	-	-	317	-
Stage 2	-	-	-	-	178	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1129	-	534	724
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	853	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1129	-	534	724
Mov Cap-2 Maneuver	-	-	-	-	601	-
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	853	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	601	-	-	1129	-
HCM Lane V/C Ratio	0.355	-	-	-	-
HCM Control Delay (s)	14.3	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.6	-	-	0	-

Intersection	
Int Delay, s/veh	3.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	229	220	0	180	207	0
Future Vol, veh/h	229	220	0	180	207	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	236	227	0	186	213	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	463	0	536	350
Stage 1	-	-	-	-	350	-
Stage 2	-	-	-	-	186	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1098	-	505	693
Stage 1	-	-	-	-	713	-
Stage 2	-	-	-	-	846	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1098	-	505	693
Mov Cap-2 Maneuver	-	-	-	-	579	-
Stage 1	-	-	-	-	713	-
Stage 2	-	-	-	-	846	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	579	-	-	1098	-
HCM Lane V/C Ratio	0.369	-	-	-	-
HCM Control Delay (s)	14.8	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.7	-	-	0	-

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	12-May-23	LTRI0000-0001	1 OF 2

E/W STREET : AUBURN AVE
N/S STREET : PROJECT DRIVEWAY "A"
CONDITION : PM PEAK HOUR

INTERSECTION : 2
PROJECTED GROWTH PER YEAR : 2.0%

TURN MOVEMENTS

Condition	Existing Condition	Ambient Growth	Background Condition	Project Trips	Project Condition	Future Condition	Future + Project Condition
Scenario #	2		4		6	8	10
AUBURN AVE							
EB LEFT	0	0	0	0	0	0	0
EB THRU	3	3	6	242	248	44	286
EB RIGHT	0	0	0	263	263	0	263
WB LEFT	0	0	0	0	0	0	0
WB THRU	3	3	6	247	253	51	298
WB RIGHT	0	0	0	0	0	0	0
PROJECT DRIVEWAY "A"							
NB LEFT	0	0	0	265	265	0	265
NB THRU	0	0	0	0	0	0	0
NB RIGHT	0	0	0	0	0	0	0
SB LEFT	0	0	0	0	0	0	0
SB THRU	0	0	0	0	0	0	0
SB RIGHT	0	0	0	0	0	0	0
TOTALS	**6**	**6**	**12**	**1017**	**1029**	**95**	**1112**

Intersection	
Int Delay, s/veh	6.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	248	263	0	253	265	0
Future Vol, veh/h	248	263	0	253	265	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	288	306	0	294	308	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	594	0	735	441
Stage 1	-	-	-	-	441	-
Stage 2	-	-	-	-	294	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	982	-	387	616
Stage 1	-	-	-	-	648	-
Stage 2	-	-	-	-	756	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	982	-	387	616
Mov Cap-2 Maneuver	-	-	-	-	493	-
Stage 1	-	-	-	-	648	-
Stage 2	-	-	-	-	756	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	23.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	493	-	-	982	-
HCM Lane V/C Ratio	0.625	-	-	-	-
HCM Control Delay (s)	23.7	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	4.2	-	-	0	-

Intersection	
Int Delay, s/veh	5.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	286	263	0	298	265	0
Future Vol, veh/h	286	263	0	298	265	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	301	277	0	314	279	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	578	0	754	440
Stage 1	-	-	-	-	440	-
Stage 2	-	-	-	-	314	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	996	-	377	617
Stage 1	-	-	-	-	649	-
Stage 2	-	-	-	-	741	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	996	-	377	617
Mov Cap-2 Maneuver	-	-	-	-	486	-
Stage 1	-	-	-	-	649	-
Stage 2	-	-	-	-	741	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	486	-	-	996	-
HCM Lane V/C Ratio	0.574	-	-	-	-
HCM Control Delay (s)	21.9	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	3.6	-	-	0	-

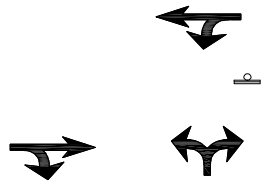
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	12-May-23	LTRI0000-0001	1 OF 2

E/W STREET : AUBURN AVE
N/S STREET : PROJECT DRIVEWAY "B"
CONDITION : AM PEAK HOUR

INTERSECTION : 3
PROJECTED GROWTH PER YEAR : 2.0%

CONDITION DIAGRAMS



PROJECT GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition	Ambient Growth	Background Condition	Project Trips	Project Condition	Future Condition	Future + Project Condition
Scenario #	1		3		5	7	9
AUBURN AVE							
EB LEFT	0	0	0	0	0	0	0
EB THRU	3	3	6	10	16	38	48
EB RIGHT	0	0	0	181	181	0	181
WB LEFT	0	0	0	0	0	0	0
WB THRU	4	3	7	8	15	14	22
WB RIGHT	0	0	0	0	0	0	0
PROJECT DRIVEWAY "B"							
NB LEFT	0	0	0	158	158	0	158
NB THRU	0	0	0	0	0	0	0
NB RIGHT	0	0	0	0	0	0	0
SB LEFT	0	0	0	0	0	0	0
SB THRU	0	0	0	0	0	0	0
SB RIGHT	0	0	0	0	0	0	0
TOTALS	**7**	**6**	**13**	**357**	**370**	**52**	**409**

Intersection	
Int Delay, s/veh	4.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	16	181	0	15	158	0
Future Vol, veh/h	16	181	0	15	158	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	187	0	15	163	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	203	0	125	110
Stage 1	-	-	-	-	110	-
Stage 2	-	-	-	-	15	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1369	-	870	943
Stage 1	-	-	-	-	915	-
Stage 2	-	-	-	-	1008	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1369	-	870	943
Mov Cap-2 Maneuver	-	-	-	-	825	-
Stage 1	-	-	-	-	915	-
Stage 2	-	-	-	-	1008	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	825	-	-	1369	-
HCM Lane V/C Ratio	0.197	-	-	-	-
HCM Control Delay (s)	10.4	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	48	181	0	22	158	0
Future Vol, veh/h	48	181	0	22	158	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	187	0	23	163	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	236	0	166	143
Stage 1	-	-	-	-	143	-
Stage 2	-	-	-	-	23	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1331	-	824	905
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	1000	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1331	-	824	905
Mov Cap-2 Maneuver	-	-	-	-	793	-
Stage 1	-	-	-	-	884	-
Stage 2	-	-	-	-	1000	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	793	-	-	1331	-
HCM Lane V/C Ratio	0.205	-	-	-	-
HCM Control Delay (s)	10.7	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.8	-	-	0	-

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	12-May-23	LTRI0000-0001	1 OF 2

E/W STREET : AUBURN AVE
N/S STREET : PROJECT DRIVEWAY "B"
CONDITION : PM PEAK HOUR

INTERSECTION : 3
PROJECTED GROWTH PER YEAR : 2.0%

TURN MOVEMENTS

Condition	Existing Condition	Ambient Growth	Background Condition	Project Trips	Project Condition	Future Condition	Future + Project Condition
Scenario #	2		4		6	8	10
AUBURN AVE							
EB LEFT	0	0	0	0	0	0	0
EB THRU	3	3	6	13	19	44	57
EB RIGHT	0	0	0	229	229	0	229
WB LEFT	0	0	0	0	0	0	0
WB THRU	3	3	6	13	19	51	64
WB RIGHT	0	0	0	0	0	0	0
PROJECT DRIVEWAY "B"							
NB LEFT	0	0	0	234	234	0	234
NB THRU	0	0	0	0	0	0	0
NB RIGHT	0	0	0	0	0	0	0
SB LEFT	0	0	0	0	0	0	0
SB THRU	0	0	0	0	0	0	0
SB RIGHT	0	0	0	0	0	0	0
TOTALS	**6**	**6**	**12**	**489**	**501**	**95**	**584**

Intersection	
Int Delay, s/veh	5.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	19	229	0	19	234	0
Future Vol, veh/h	19	229	0	19	234	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	266	0	22	272	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	288	0	177	155
Stage 1	-	-	-	-	155	-
Stage 2	-	-	-	-	22	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1274	-	813	891
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	1001	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1274	-	813	891
Mov Cap-2 Maneuver	-	-	-	-	784	-
Stage 1	-	-	-	-	873	-
Stage 2	-	-	-	-	1001	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	784	-	-	1274	-
HCM Lane V/C Ratio	0.347	-	-	-	-
HCM Control Delay (s)	12	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.6	-	-	0	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	57	229	0	64	234	0
Future Vol, veh/h	57	229	0	64	234	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	241	0	67	246	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	301	0	248	181
Stage 1	-	-	-	-	181	-
Stage 2	-	-	-	-	67	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1260	-	740	862
Stage 1	-	-	-	-	850	-
Stage 2	-	-	-	-	956	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1260	-	740	862
Mov Cap-2 Maneuver	-	-	-	-	742	-
Stage 1	-	-	-	-	850	-
Stage 2	-	-	-	-	956	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	742	-	-	1260	-
HCM Lane V/C Ratio	0.332	-	-	-	-
HCM Control Delay (s)	12.2	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.5	-	-	0	-

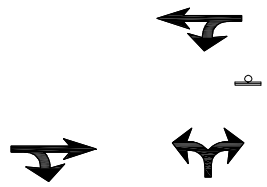
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	12-May-23	LTRI0000-0001	1 OF 2

E/W STREET : AUBURN AVE
N/S STREET : PROJECT DRIVEWAY "C"
CONDITION : AM PEAK HOUR

INTERSECTION : 4
PROJECTED GROWTH PER YEAR : 2.0%

CONDITION DIAGRAMS



PROJECT GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition	Ambient Growth	Background Condition	Project Trips	Project Condition	Future Condition	Future + Project Condition
Scenario #	1		3		5	7	9
AUBURN AVE							
EB LEFT	0	0	0	0	0	0	0
EB THRU	3	3	6	0	6	38	38
EB RIGHT	0	0	0	10	10	0	10
WB LEFT	0	0	0	0	0	0	0
WB THRU	4	3	7	0	7	14	14
WB RIGHT	0	0	0	0	0	0	0
PROJECT DRIVEWAY "C"							
NB LEFT	0	0	0	8	8	0	8
NB THRU	0	0	0	0	0	0	0
NB RIGHT	0	0	0	0	0	0	0
SB LEFT	0	0	0	0	0	0	0
SB THRU	0	0	0	0	0	0	0
SB RIGHT	0	0	0	0	0	0	0
TOTALS	**7**	**6**	**13**	**18**	**31**	**52**	**70**

Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	6	10	0	7	8	0
Future Vol, veh/h	6	10	0	7	8	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	10	0	7	8	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	16	0	18	11
Stage 1	-	-	-	-	11	-
Stage 2	-	-	-	-	7	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1602	-	1000	1070
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	1016	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1602	-	1000	1070
Mov Cap-2 Maneuver	-	-	-	-	919	-
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	1016	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	919	-	-	1602	-
HCM Lane V/C Ratio	0.009	-	-	-	-
HCM Control Delay (s)	9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	38	10	0	14	8	0
Future Vol, veh/h	38	10	0	14	8	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	10	0	14	8	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	49	0	58	44
Stage 1	-	-	-	-	44	-
Stage 2	-	-	-	-	14	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1558	-	949	1026
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	1009	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1558	-	949	1026
Mov Cap-2 Maneuver	-	-	-	-	884	-
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	1009	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	884	-	-	1558	-
HCM Lane V/C Ratio	0.009	-	-	-	-
HCM Control Delay (s)	9.1	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TNM	12-May-23	LTRI0000-0001	1 OF 2

E/W STREET : AUBURN AVE
N/S STREET : PROJECT DRIVEWAY "C"
CONDITION : PM PEAK HOUR

INTERSECTION : 4
PROJECTED GROWTH PER YEAR : 2.0%

TURN MOVEMENTS

Condition	Existing Condition	Ambient Growth	Background Condition	Project Trips	Project Condition	Future Condition	Future + Project Condition
Scenario #	2		4		6	8	10
AUBURN AVE							
EB LEFT	0	0	0	0	0	0	0
EB THRU	3	3	6	0	6	44	44
EB RIGHT	0	0	0	13	13	0	13
WB LEFT	0	0	0	0	0	0	0
WB THRU	3	3	6	0	6	51	51
WB RIGHT	0	0	0	0	0	0	0
PROJECT DRIVEWAY "C"							
NB LEFT	0	0	0	13	13	0	13
NB THRU	0	0	0	0	0	0	0
NB RIGHT	0	0	0	0	0	0	0
SB LEFT	0	0	0	0	0	0	0
SB THRU	0	0	0	0	0	0	0
SB RIGHT	0	0	0	0	0	0	0
TOTALS	**6**	**6**	**12**	**26**	**38**	**95**	**121**

Intersection	
Int Delay, s/veh	3.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	6	13	0	6	13	0
Future Vol, veh/h	6	13	0	6	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	15	0	7	15	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	22	0	22	15
Stage 1	-	-	-	-	15	-
Stage 2	-	-	-	-	7	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1593	-	995	1065
Stage 1	-	-	-	-	1008	-
Stage 2	-	-	-	-	1016	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1593	-	995	1065
Mov Cap-2 Maneuver	-	-	-	-	916	-
Stage 1	-	-	-	-	1008	-
Stage 2	-	-	-	-	1016	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	916	-	-	1593	-
HCM Lane V/C Ratio	0.017	-	-	-	-
HCM Control Delay (s)	9	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	44	13	0	51	13	0
Future Vol, veh/h	44	13	0	51	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	14	0	54	14	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	60	0	107	53
Stage 1	-	-	-	-	53	-
Stage 2	-	-	-	-	54	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1544	-	891	1014
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	969	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1544	-	891	1014
Mov Cap-2 Maneuver	-	-	-	-	849	-
Stage 1	-	-	-	-	970	-
Stage 2	-	-	-	-	969	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	849	-	-	1544	-
HCM Lane V/C Ratio	0.016	-	-	-	-
HCM Control Delay (s)	9.3	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

DAVID EVANS AND ASSOCIATES INC.

Appendix E: Traffic Signal Warrant Analysis

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

DIST ____ CO ____ RTE ____ PM ____

COUNT DATE 06-08-22
CALC TNM DATE 10-25-22
CHK TNM DATE 5-15-23

Major St: HIGHWAY 395 Critical Approach Speed 65 mph
Minor St: AUBURN AVENUE Critical Approach Speed ____ mph

Speed limit or critical speed on major street traffic > 40 mph..... ☒
or
In built up area of isolated community of < 10,000 population..... ☐ } RURAL (R)
☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☒
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				1:00–2:00 PM	2:00–3:00 PM	9:00–10:00 AM	10:00–11:00 AM	12:00–1:00 PM	3:00–4:00 PM	8:00–9:00 AM	11:00 AM–12:00 PM
	U	R	U	R								Hour
APPROACH LANES	1		2 or More									
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	1146	1083	1041	1050	985	964	974	937
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	~~18~~	~~25~~	~~30~~	~~15~~	~~20~~	~~33~~	~~13~~	~~28~~

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				1:00–2:00 PM	2:00–3:00 PM	9:00–10:00 AM	10:00–11:00 AM	12:00–1:00 PM	3:00–4:00 PM	8:00–9:00 AM	11:00 AM–12:00 PM
	U	R	U	R								Hour
APPROACH LANES	1		2 or More									
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)	1146	1083	1041	1050	985	964	974	937
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)	~~18~~	~~25~~	~~30~~	~~15~~	~~20~~	~~33~~	~~13~~	~~28~~

Combination of Conditions A & B SATISFIED YES ☐ NO ☒

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☒
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☒

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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day

APPROACH LANES	One	2 or More	1:00 – 2:00 PM	2:00 – 3:00 PM	9:00 – 10:00 AM	10:00 – 11:00 AM
			Hour			
Both Approaches - Major Street		X	1146	1083	1041	1050
Higher Approach - Minor Street	X		~~18~~	~~25~~	~~30~~	~~15~~

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☒

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☒**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐ No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒ No ☐

PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	1:00 – 2:00 PM
			Hour
Both Approaches - Major Street		X	1146
Higher Approach - Minor Street	X		~~18~~

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐ No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐ No ☒

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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 3 of 5)

WARRANT 4 - Pedestrian Volume
(Parts 1 and 2 Must Be Satisfied)

SATISFIED YES ☐ NO ☐ N/A

Part 1 (Parts A or B must be satisfied)

	Hours - - ->				
A.	Vehicles per hour for any 4 hours				
	Pedestrians per hour for any 4 hours				

Figure 4C-5 or Figure 4C-6
SATISFIED YES ☐ NO ☐

	Hours - - ->				
B.	Vehicles per hour for any 1 hour				
	Pedestrians per hour for any 1 hour				

Figure 4C-7 or Figure 4C-8
SATISFIED YES ☐ NO ☐

Part 2 **SATISFIED YES ☐ NO ☐**

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☐ No ☐
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street.	Yes ☐ No ☐

WARRANT 5 - School Crossing
(Parts A and B Must Be Satisfied)

SATISFIED YES ☐ NO ☐ N/A

Part A
Gap/Minutes and # of Children

SATISFIED YES ☐ NO ☐

Gaps vs Minutes	Hour
Minutes Children Using Crossing	
Number of Adequate Gaps	
School Age Pedestrians Crossing Street / hr	

Gaps < Minutes YES ☐ NO ☐
AND Children > 20/hr YES ☐ NO ☐

AND, Consideration has been given to less restrictive remedial measures.	Yes ☐ No ☐

Part B **SATISFIED YES ☐ NO ☐**

The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☐ No ☐
OR, The proposed signal will not restrict the progressive movement of traffic.	Yes ☐ No ☐

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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 4 of 5)

WARRANT 6 - Coordinated Signal System **SATISFIED YES ☐ NO ☐** N/A
(All Parts Must Be Satisfied)

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	
≥ 1000 ft	N _____ ft, S _____ ft, E _____ ft, W _____ ft	Yes ☐ No ☐
On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.		Yes ☐ No ☐
OR, On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.		

WARRANT 7 - Crash Experience Warrant **SATISFIED YES ☐ NO ☒**
(All Parts Must Be Satisfied)

Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency.			Yes ☐ No ☒
REQUIREMENTS	Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reportable crash.		Yes ☐ No ☒
5 OR MORE			
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		Yes ☐ No ☒
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		
	OR, Warrant 4, Pedestrian Volume Condition Ped Vol ≥ 80% of Figure 4C-5 through Figure 4C-8		

WARRANT 8 - Roadway Network **SATISFIED YES ☐ NO ☐** N/A
(All Parts Must Be Satisfied)

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour _____ Veh/Hr and has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.		Yes ☐ No ☐
	OR During Each of Any 5 Hrs. of a Sat. or Sun _____ Veh/Hr		

CHARACTERISTICS OF MAJOR ROUTES	MAJOR ROUTE A	MAJOR ROUTE B	
Hwy. System Serving as Principal Network for Through Traffic			
Rural or Suburban Highway Outside Of, Entering, or Traversing a City			
Appears as Major Route on an Official Plan			
Any Major Route Characteristics Met, Both Streets			Yes ☐ No ☐

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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 5 of 5)

WARRANT 9 - Intersection Near a Grade Crossing **SATISFIED YES ☐ NO ☐** N/A
(Both Parts A and B Must Be Satisfied)

PART A A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach. Track Center Line to Limit Line _____ ft	Yes ☐ No ☐
PART B **There is one minor street approach lane at the track crossing -** During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-9. Major Street - Total of both approaches: _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calculate AF) = _____ VPH	Yes ☐ No ☐
OR, There are two or more minor street approach lanes at the track crossing - During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-10. Major Street - Total of both approaches : _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calcualte AF) = _____ VPH	

The minor street approach volume may be multiplied by up to three following adjustment factors (AF) as described in Section 4C.10.

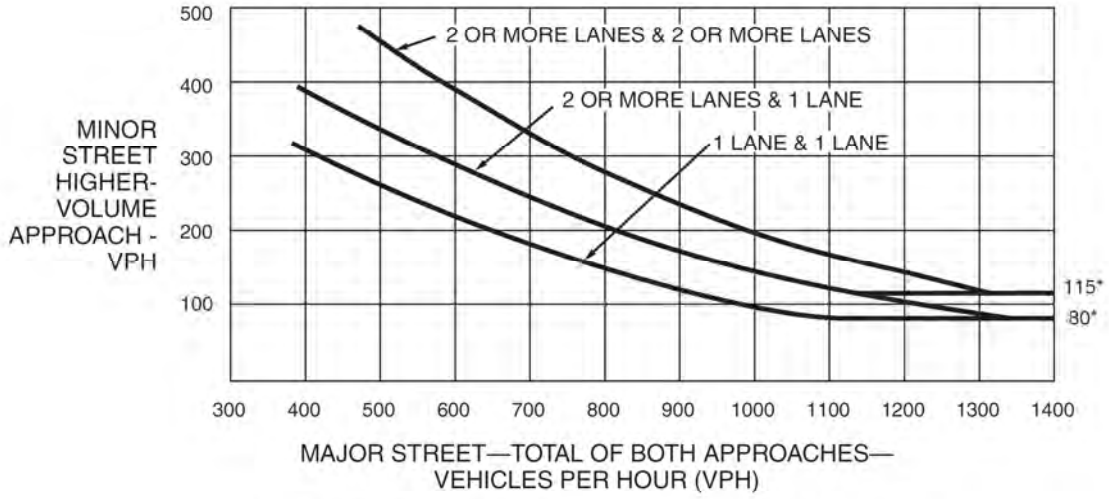
1- Number of Rail Traffic per Day_____ Adjustment factor from table 4C-2____

2- Percentage of High-Occupancy Buses on Minor Street Approach_____ Adjustment factor from table 4C-3____

3- Percentage of Tractor-Trailer Trucks on Minor Street Approach_____ Adjustment factor from table 4C-4____

NOTE: If no data is availale or known, then use AF = 1 (no adjustment)

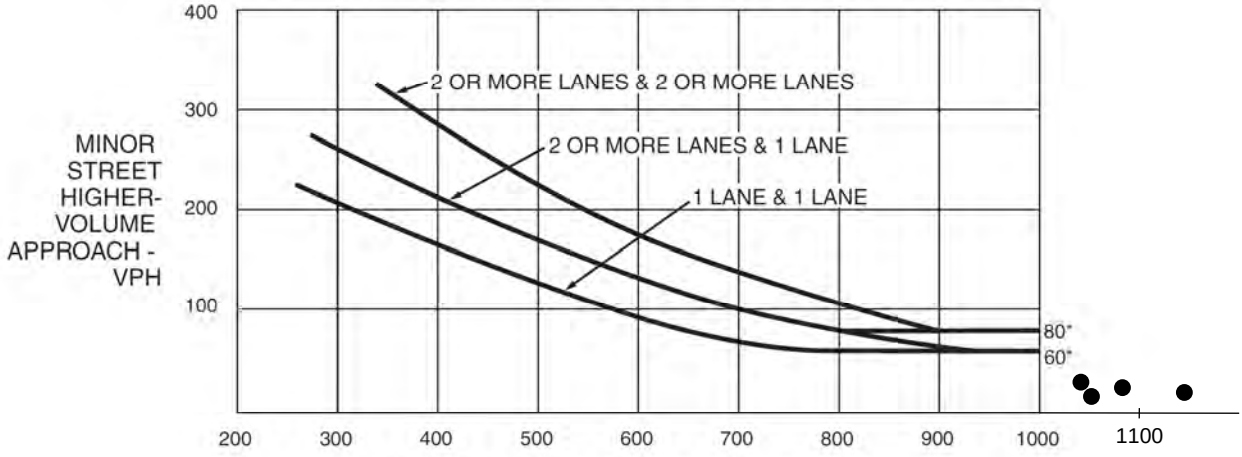
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

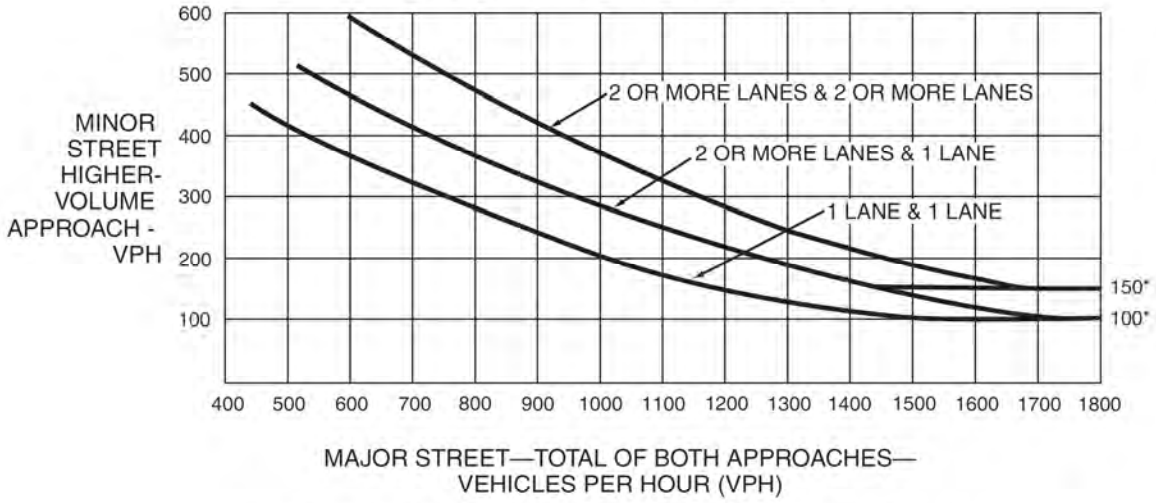
Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

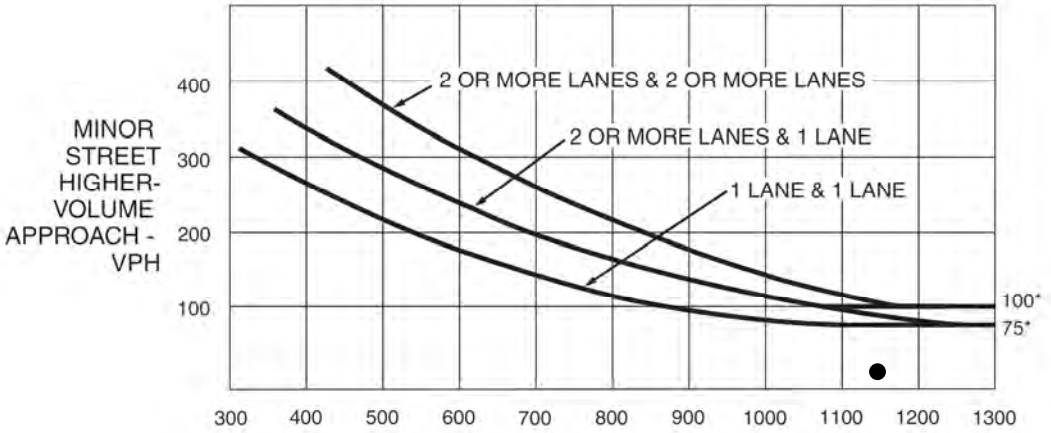
Figure 4C-3. Warrant 3, Peak Hour



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

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

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☐ N/A**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More				Hour
Both Approaches - Major Street						
Higher Approach - Minor Street						

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☐

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☒**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐ No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐ No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒ No ☐

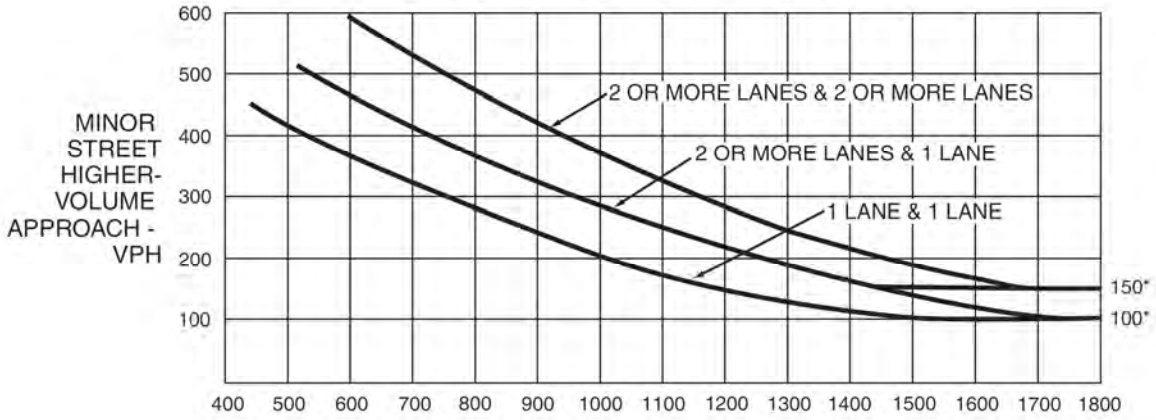
PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	4:15–5:15 PM Hour
Both Approaches - Major Street		X	1614
Higher Approach - Minor Street	X		~~14~~

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐ No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐ No ☒

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

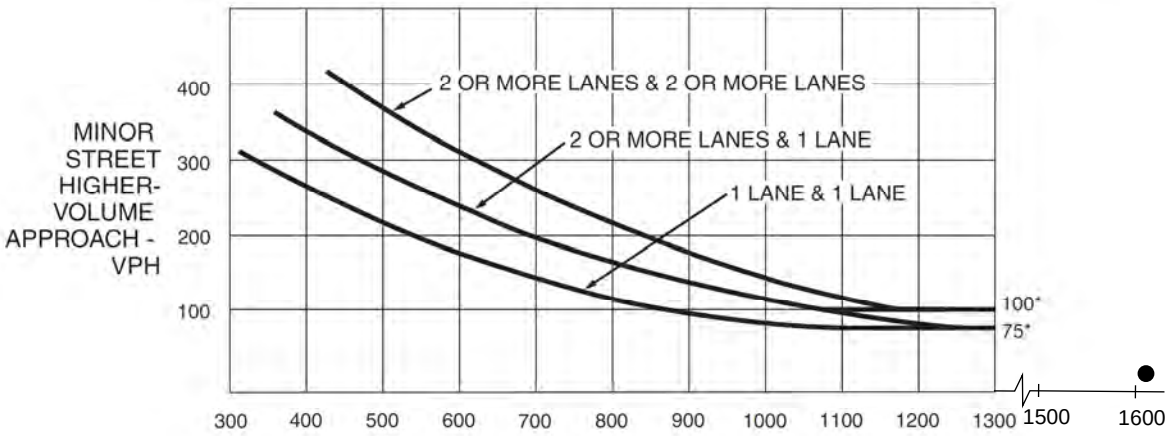
Figure 4C-3. Warrant 3, Peak Hour



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

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

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☐ N/A**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	Hour			
Both Approaches - Major Street						
Higher Approach - Minor Street						

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☐

WARRANT 3 - Peak Hour **SATISFIED YES ☒ NO ☐**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☒ NO ☐**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☒ No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒ No ☐

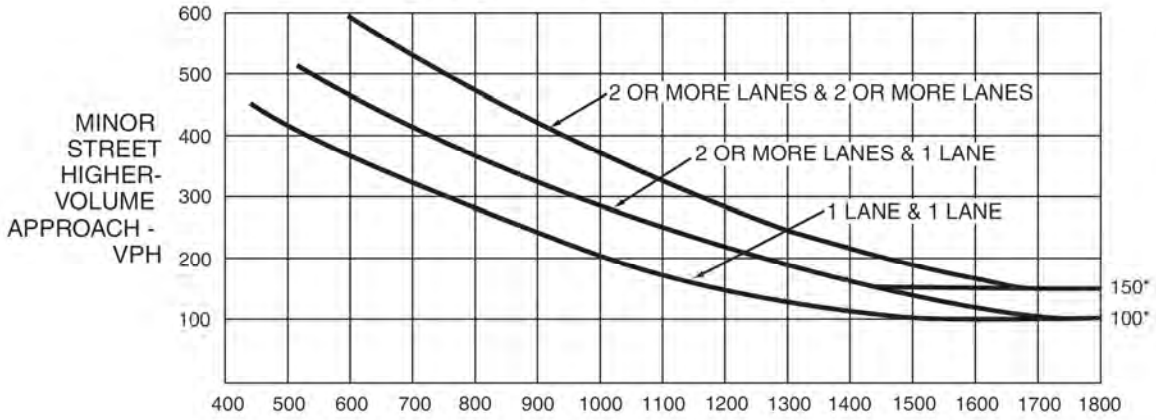
PART B **SATISFIED YES ☒ NO ☐**

APPROACH LANES	One	2 or More	4:15- 5:15 PM Hour
Both Approaches - Major Street		X	1873
Higher Approach - Minor Street	X		518

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐ No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☒ No ☐

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

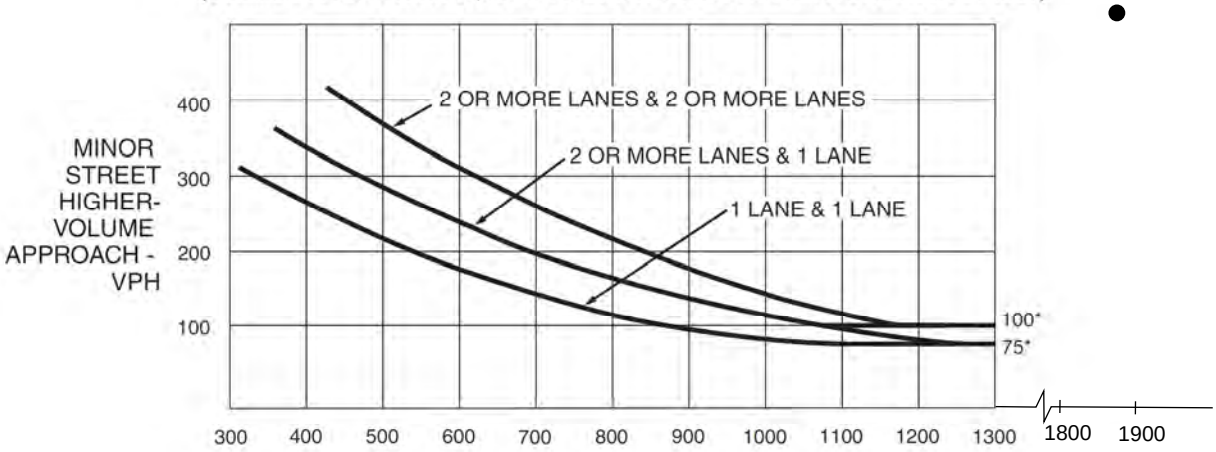
Figure 4C-3. Warrant 3, Peak Hour



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

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

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☐ N/A**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More				Hour
Both Approaches - Major Street						
Higher Approach - Minor Street						

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☐

WARRANT 3 - Peak Hour **SATISFIED YES ☒ NO ☐**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☒ No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐ No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒ No ☐

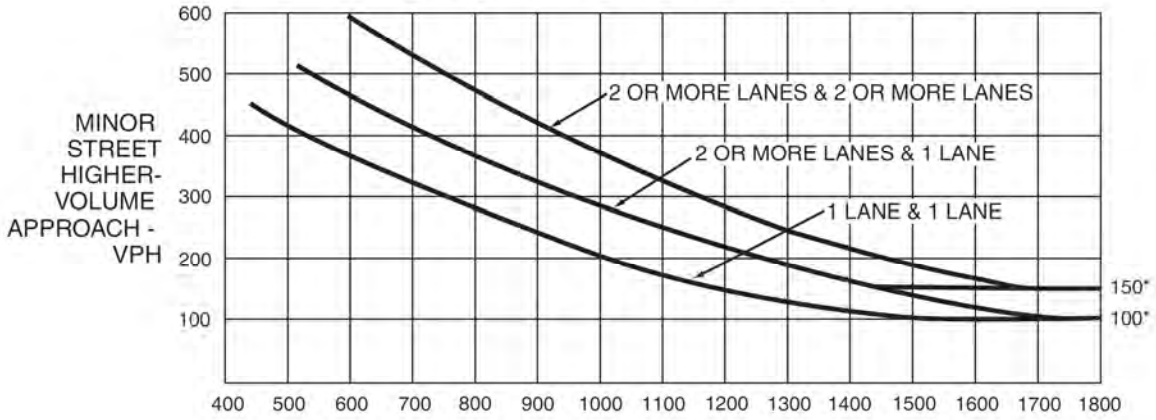
PART B **SATISFIED YES ☒ NO ☐**

APPROACH LANES	One	2 or More	4:15- 5:15 PM Hour
Both Approaches - Major Street		X	1979
Higher Approach - Minor Street	X		84

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐ No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☒ No ☐

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

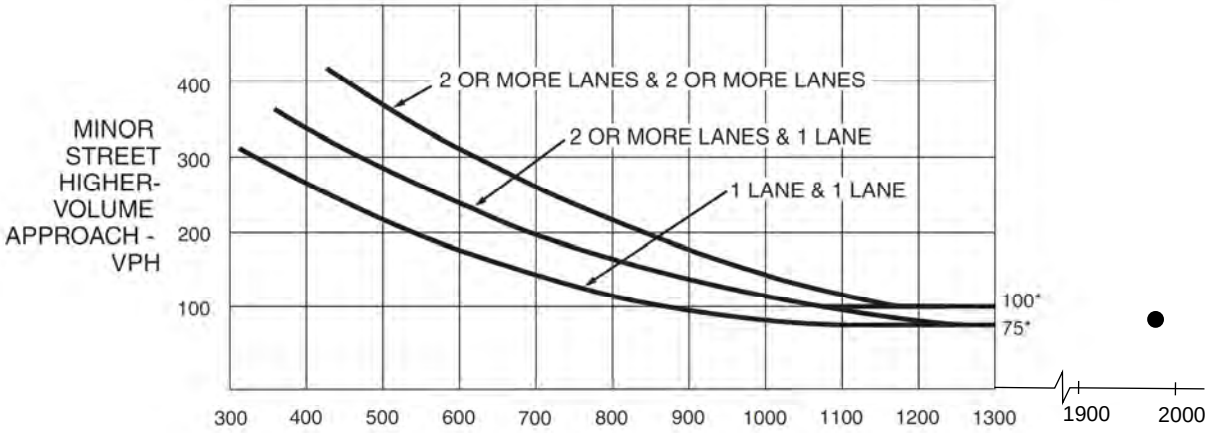
Figure 4C-3. Warrant 3, Peak Hour



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

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

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☐ N/A**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	Hour			
Both Approaches - Major Street						
Higher Approach - Minor Street						

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐ No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐ No ☐

WARRANT 3 - Peak Hour **SATISFIED YES ☒ NO ☐**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☒ NO ☐**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☒ No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒ No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒ No ☐

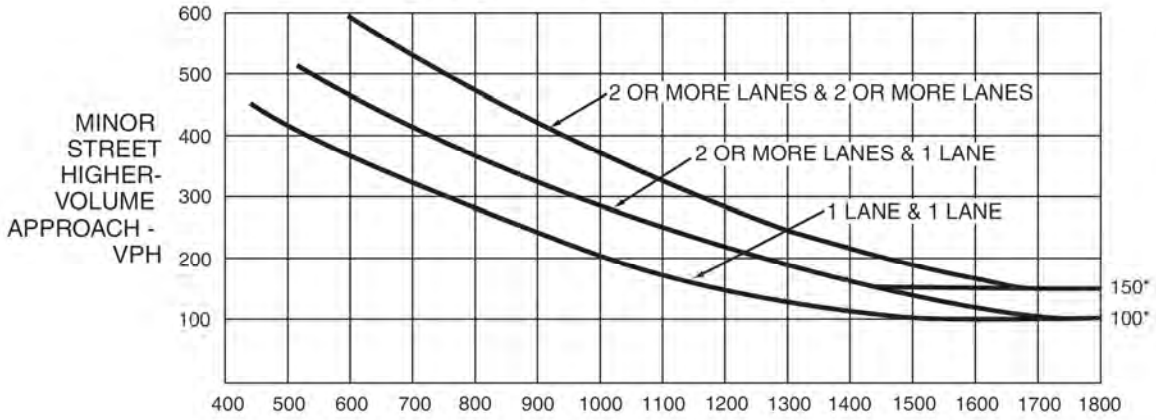
PART B **SATISFIED YES ☒ NO ☐**

APPROACH LANES	One	2 or More	4:15- 5:15 PM Hour
Both Approaches - Major Street		X	2238
Higher Approach - Minor Street	X		563

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐ No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☒ No ☐

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

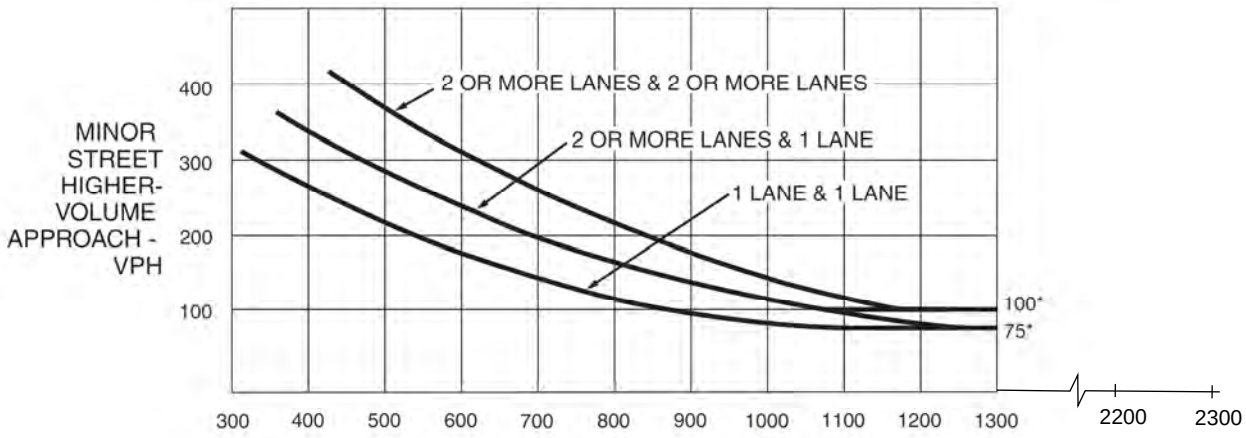
Figure 4C-3. Warrant 3, Peak Hour



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

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

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



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

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
APPROACH VOLUMES	TNM	11/2/2022	LTRI0000-0001	1 OF 1

E/W STREET : AUBURN AVE N/S STREET : HIGHWAY 395

DIRECTION	N	S	TOTAL	E	W	MAX	8 HOURS
12:00 AM	95	119	214	7	0	7	
1:00 AM	95	103	198	7	0	7	
2:00 AM	57	64	121	1	0	1	
3:00 AM	126	71	197	3	0	3	
4:00 AM	171	178	349	1	0	1	
5:00 AM	133	163	296	5	0	5	
6:00 AM	372	365	737	19	3	19	
7:00 AM	387	460	847	37	7	37	
8:00 AM	481	493	974	13	5	13	7
9:00 AM	501	540	1041	30	3	30	3
10:00 AM	461	589	1050	15	7	15	4
11:00 AM	492	445	937	28	1	28	8
12:00 PM	399	586	985	20	9	20	5
1:00 PM	580	566	1146	18	3	18	1
2:00 PM	583	500	1083	25	3	25	2
3:00 PM	484	480	964	33	7	33	6
4:00 PM	500	421	921	36	5	36	
5:00 PM	391	329	720	31	3	31	
6:00 PM	317	261	578	25	6	25	
7:00 PM	241	239	480	18	3	18	
8:00 PM	265	261	526	14	1	14	
9:00 PM	277	267	544	14	1	14	
10:00 PM	241	272	513	12	0	12	
11:00 PM	180	160	340	8	1	8	
TOTALS	7,829	7,932	15,761	420	68	420	

DIRECTION	8 HOURS	MULTIWAY WARRANT		TRAFFIC SIGNAL CONDITION A		TRAFFIC SIGNAL CONDITION B		TRAFFIC SIGNAL CONDITION C			
		MAJ	MIN	MAJ	MIN	MAJ	MIN	MAJ	MIN	MAJ	MIN
		210	140	420	105	630	53	336	84	504	43
1:00 PM	1	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
2:00 PM	2	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
9:00 AM	3	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
10:00 AM	4	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
12:00 PM	5	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
3:00 PM	6	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
8:00 AM	7	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
11:00 AM	8	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO

Date	Primary	Secondary	Distance	PCF	Type	Severity	Lighting
11/22/2017	RT 395	Auburn Av	0	Lane Change	Sideswipe	PDO	Dark
1/27/2019	RT 395	Auburn Av	0	R-O-W AUTO	Rear End	Injury-Complaint of Pain	Dusk
2/7/2020	RT 395	Auburn Av	350	Unsafe Speed	Hit Object	Injury-Complaint of Pain	Dark
10/20/2020	RT 395	Auburn Av	6	Unknown	Sideswipe	PDO	Daylight
10/30/2020	RT 395	Auburn Av	0	Too Close	Head-On	Injury-Complaint of Pain	Daylight
9/9/2021	RT 395	Auburn Av	0	Unknown	Sideswipe	PDO	Daylight
9/24/2022	RT 395	Auburn Av	0	Unsafe Speed	Rear End	Injury-Visible	Daylight

Primary Rd **RT 395** *Distance (ft)* **0.00** *Direction* *Secondary Rd* **AIR EXPWY** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **15.707** *Side of Hwy* **S**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD107** *Beat* **AD1** *Type* **0** *CalTrans* **8** *Badge* **G8586** *Collision Date* **20180703** *Time* **1535** *Day* **TUE**
Primary Collision Factor **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20190108**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* **H** *Ramp/Int* **-**

Party Info																	Victim Info							
Party	*Type*	*Age*	*Sex*	*Race*	*Sobriety1*	*Sobriety2*	*Move Pre*	*Dir*	*SW Veh*	*CHP Veh*	*Make*	*Year*	*SP Info*	*OAF1*	*Viol*	*OAF2*	*Safety Equip*		*ROLE*	*Ext Of Inj*	*AGE*	*Sex*	*Seat Pos*	*Safety*	*EQUIP*	*Ejected*
1F	DRVR	31	M	W	HNBD		PROC ST	S	D	7200	FORD	2014	-	3	M	-	M	W								
2	DRVR	66	M	W	HNBD		STOPPED	S	A	0700	FORD	2013	-	3	N	-	M	W	PASS		51	F	2	0	-	Y

Primary Rd **RT 395** *Distance (ft)* **0.00** *Direction* *Secondary Rd* **AIR EXPWY** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **15.707** *Side of Hwy* **N**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD107** *Beat* **002** *Type* **0** *CalTrans* **8** *Badge* **C8720** *Collision Date* **20180804** *Time* **1905** *Day* **SAT**
Primary Collision Factor **STOP SGN|SIG** *Violation* **21453A** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20181024**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* **I** *Ramp/Int* **5**

Party Info																	Victim Info							
Party	*Type*	*Age*	*Sex*	*Race*	*Sobriety1*	*Sobriety2*	*Move Pre*	*Dir*	*SW Veh*	*CHP Veh*	*Make*	*Year*	*SP Info*	*OAF1*	*Viol*	*OAF2*	*Safety Equip*		*ROLE*	*Ext Of Inj*	*AGE*	*Sex*	*Seat Pos*	*Safety*	*EQUIP*	*Ejected*
1F	DRVR	31	M	O	HNBD		PROC ST	N	F	2500	FREIG	2015	-	3	N	-	M	G								
2	DRVR	65	M	W	HNBD		PROC ST	W	A	0100	SATUR	2007	-	3	N	-	M	G	DRVR	SEVERE	65	M	1	0	G	-

Primary Rd **RT 395** *Distance (ft)* **0.00** *Direction* **N** *Secondary Rd* **AUBURN AV** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **17.280** *Side of Hwy* **S**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD106** *Beat* **AD1** *Type* **0** *CalTrans* **8** *Badge* **G4513** *Collision Date* **20171122** *Time* **0336** *Day* **WED**
Primary Collision Factor **LANE CHANGE** *Violation* **21658A** *Collision Type* **SIDESWIPE** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20180706**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run **MSDMNR** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - NO** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* **H** *Ramp/Int* **-**

Party Info																	Victim Info							
Party	*Type*	*Age*	*Sex*	*Race*	*Sobriety1*	*Sobriety2*	*Move Pre*	*Dir*	*SW Veh*	*CHP Veh*	*Make*	*Year*	*SP Info*	*OAF1*	*Viol*	*OAF2*	*Safety Equip*		*ROLE*	*Ext Of Inj*	*AGE*	*Sex*	*Seat Pos*	*Safety*	*EQUIP*	*Ejected*
1F	DRVR	998	M	W			PASSING	-	-	0000	DODGE		-	-	-	-	-	-								
2	DRVR	39	F	W	HNBD		PROC ST	S	A	0100	DODGE	2017	-	3	-	-	M	G	PASS		21	M	2	0	G	-

Primary Rd **RT 395** *Distance (ft)* **0.00** *Direction* *Secondary Rd* **BARTLETT AV** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **16.250** *Side of Hwy* **S**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD106** *Beat* **AD1** *Type* **0** *CalTrans* **8** *Badge* **B4570** *Collision Date* **20171108** *Time* **0900** *Day* **WED**
Primary Collision Factor **UNSAFE SPEED** *Violation* **22350** *Collision Type* **SIDESWIPE** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20180626**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* **H** *Ramp/Int* **-**

Party Info																	Victim Info							
Party	*Type*	*Age*	*Sex*	*Race*	*Sobriety1*	*Sobriety2*	*Move Pre*	*Dir*	*SW Veh*	*CHP Veh*	*Make*	*Year*	*SP Info*	*OAF1*	*Viol*	*OAF2*	*Safety Equip*		*ROLE*	*Ext Of Inj*	*AGE*	*Sex*	*Seat Pos*	*Safety*	*EQUIP*	*Ejected*
1F	DRVR	36	M	W	HNBD		PROC ST	S	A	0100	HONDA	2016	-	3	N	-	M	G								
2	DRVR	38	F	H	HNBD		STOPPED	S	A	0100	TOYOT	2009	-	3	F	-	M	G								

Primary Rd **RT 395** *Distance (ft)* **0.00** *Direction* *Secondary Rd* **BARTLETT AV** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **16.210** *Side of Hwy* **N**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD106** *Beat* **24R11** *Type* **0** *CalTrans* **8** *Badge* **C5162** *Collision Date* **20171211** *Time* **2338** *Day* **MON**
Primary Collision Factor **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20180628**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* **H** *Ramp/Int* **-**

Party Info																	Victim Info							
Party	*Type*	*Age*	*Sex*	*Race*	*Sobriety1*	*Sobriety2*	*Move Pre*	*Dir*	*SW Veh*	*CHP Veh*	*Make*	*Year*	*SP Info*	*OAF1*	*Viol*	*OAF2*	*Safety Equip*		*ROLE*	*Ext Of Inj*	*AGE*	*Sex*	*Seat Pos*	*Safety*	*EQUIP*	*Ejected*
1F	DRVR	57	M	O	HNBD		PROC ST	N	-	0031	FREIG	2010	-	3	F	K	M	G								
2	DRVR	19	M	H	HNBD		STOPPED	N	A	0700	FORD	2000	-	3	A	12500	-	M	G							

Primary Rd **RT 395** *Distance (ft)* **0.00** *Direction* *Secondary Rd* **AIR EXPWY** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **15.610** *Side of Hwy* **N**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD107** *Beat* **AD2** *Type* **0** *CalTrans* **8** *Badge* **F7807** *Collision Date* **20190418** *Time* **1722** *Day* **THU**
Primary Collision Factor **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20190826**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* **H** *Ramp/Int* **-**

Party Info

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	OAF1	Viol	OAF2	Safety	Equip
1F	DRVR	66	F	W	HNBD		PROC ST	N	A	0100	NISSA	2015	-	3	N	-	L	G
2	DRVR	63	M	W	HNBD		STOPPED	N	A	0800	DODGE	2019	-	3	N	-	M	G

Victim Info

ROLE	Ext Of Inj	AGE	Sex	Seat Pos	Safety	EQUIP	Ejected

Primary Rd **RT 395** *Distance (ft)* **0.00** *Direction* *Secondary Rd* **AUBURN AV** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **17.240** *Side of Hwy* **S**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD206** *Beat* **AD1** *Type* **0** *CalTrans* **8** *Badge* **G9443** *Collision Date* **20190127** *Time* **1823** *Day* **SUN**
Primary Collision Factor **R-O-W AUTO** *Violation* **21802A** *Collision Type* **REAR END** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20190508**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DUSK/DAWN** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* **H** *Ramp/Int* **-**

Party Info

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	OAF1	Viol	OAF2	Safety	Equip
1F	DRVR	27	F	B			PROC ST	S	-	0000	VOLKS	2009	-	-	N	-	M	G
2	DRVR	20	M	H			PROC ST	S	-	0000	MAZDA	2018	-	-	N	-	M	G

Victim Info

ROLE	Ext Of Inj	AGE	Sex	Seat Pos	Safety	EQUIP	Ejected
DRVR	COMP PN	27	F	1	0	G	-
PASS		19	F	2	0	G	-

Primary Rd **RT 395** *Distance (ft)* **207.** *Direction* **S** *Secondary Rd* **BARTLETT AV** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **16.190** *Side of Hwy* **S**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD107** *Beat* **AD1** *Type* **0** *CalTrans* **8** *Badge* **D3560** *Collision Date* **20181206** *Time* **0637** *Day* **THU**
Primary Collision Factor **IMPROP TURN** *Violation* **22107** *Collision Type* **SIDESWIPE** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20190220**
Weather1 **RAINING** *Weather2* *Rdwy Surface* **WET** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DUSK/DAWN** *Ped Action* *Cntrl Dev* **NT FNCT** *Loc Type* **H** *Ramp/Int* **-**

Party Info

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	OAF1	Viol	OAF2	Safety	Equip
1F	DRVR	55	M	O	HNBD		MERGING	S	-	0000	FREIG	2011	-	3	N	-	M	G
2	DRVR	38	M	B	HNBD		PROC ST	S	-	0000	-		-	3	N	-	M	G

Victim Info

ROLE	Ext Of Inj	AGE	Sex	Seat Pos	Safety	EQUIP	Ejected

Primary Rd **RT 395** *Distance (ft)* **0.00** *Direction* *Secondary Rd* **BARTLETT AV** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **16.210** *Side of Hwy* **N**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD105** *Beat* **AD1** *Type* **0** *CalTrans* **8** *Badge* **F4496** *Collision Date* **20190715** *Time* **1700** *Day* **MON**
Primary Collision Factor **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20200225**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run **MSDMNR** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* **H** *Ramp/Int* **-**

Party Info

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	OAF1	Viol	OAF2	Safety	Equip
1F	DRVR	998	-				PROC ST	S	D	2200	OTHER		-	-	F	-	-	-
2	DRVR	47	F	B	HNBD		STOPPED	S	A	0700	HONDA	2016	-	3	N	-	N	-

Victim Info

ROLE	Ext Of Inj	AGE	Sex	Seat Pos	Safety	EQUIP	Ejected

Primary Rd **RT 395** *Distance (ft)* **300.** *Direction* **S** *Secondary Rd* **CACTUS DR** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **13.050** *Side of Hwy* **S**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD311** *Beat* **AD2** *Type* **0** *CalTrans* **8** *Badge* **F7812** *Collision Date* **20181107** *Time* **1112** *Day* **WED**
Primary Collision Factor **IMPROP PASS** *Violation* **21755A** *Collision Type* **SIDESWIPE** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20190117**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run **MSDMNR** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* **H** *Ramp/Int* **-**

Party Info

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	OAF1	Viol	OAF2	Safety	Equip
1F	DRVR	34	M		IMP UNK	IMP UNK	PASSING	S	A	0100	HONDA	2011	-	-	G	-	M	G
2	DRVR	998	-		HNBD		STOPPED	-	A	0700	CHEVR		-	-	G	-	-	-

Victim Info

ROLE	Ext Of Inj	AGE	Sex	Seat Pos	Safety	EQUIP	Ejected

Primary Rd **RT 395** *Distance (ft)* **497.** *Direction* **S** *Secondary Rd* **AIR EXPWY** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **15.620** *Side of Hwy* **N**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD107** *Beat* **AD2** *Type* **0** *CalTrans* **8** *Badge* **C8720** *Collision Date* **20200131** *Time* **1944** *Day* **FRI**
Primary Collision Factor **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20201114**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **CONS ZONE** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run **MSDMNR** *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* **H** *Ramp/Int* **-**

Party Info

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	OAF1	Viol	OAF2	Safety Equip
1F	DRVR	998	-		IMP UNK	IMP UNK	PROC ST	N	-	9900	-		-	3	A	21801	- - -
2	DRVR	20	F	W	HNBD		PROC ST	N	A	0100	SCION	2011	-	3	N		- M G
3	DRVR	24	M	B	HNBD		PROC ST	N	J	4800	FORD	2016	-	3	I		- M G

Victim Info

Party	ROLE	Ext Of Inj	AGE	Sex	Seat Pos	Safety	EQUIP	Ejected

Primary Rd **RT 395** *Distance (ft)* **0.00** *Direction* *Secondary Rd* **AIR EXPWY** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **15.707** *Side of Hwy* **S**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD107** *Beat* **0D2** *Type* **0** *CalTrans* **8** *Badge* **13987** *Collision Date* **20200805** *Time* **0920** *Day* **WED**
Primary Collision Factor **UNKNOWN** *Violation* **24153** *Collision Type* **SIDESWIPE** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20201125**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* **I** *Ramp/Int* **5**

Party Info

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	OAF1	Viol	OAF2	Safety Equip
1F	DRVR	57	M	B	IMP UNK	IMP UNK	RAN OFF RD	E	A	0100	-	1962	-	-	-	-	B -
2	DRVR	72	M	H	HNBD		STOPPED	-	A	0100	-	2004	-	3	-	-	B G

Victim Info

Party	ROLE	Ext Of Inj	AGE	Sex	Seat Pos	Safety	EQUIP	Ejected

Primary Rd **RT 395** *Distance (ft)* **350.** *Direction* **N** *Secondary Rd* **AUBURN AV** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **17.330** *Side of Hwy* **S**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD322** *Beat* **001** *Type* **0** *CalTrans* **8** *Badge* **H7587** *Collision Date* **20200207** *Time* **1758** *Day* **FRI**
Primary Collision Factor **UNSAFE SPEED** *Violation* **22350A** *Collision Type* **HIT OBJECT** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20201020**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **FIXED OBJ** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* **H** *Ramp/Int* **-**

Party Info

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	OAF1	Viol	OAF2	Safety Equip
1F	DRVR	49	F	H	HNBD		PROC ST	S	J	4100	-	2008	-	3	N		- Y N

Victim Info

Party	ROLE	Ext Of Inj	AGE	Sex	Seat Pos	Safety	EQUIP	Ejected
1F	PASS	COMP PN	15	M	2	0	Y	-

Primary Rd **RT 395** *Distance (ft)* **754.** *Direction* **S** *Secondary Rd* **BARTLETT AV** *NCIC* **3600** *State Hwy?* **N** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD107** *Beat* **AD2** *Type* **0** *CalTrans* *Badge* **F5489** *Collision Date* **20200316** *Time* **2220** *Day* **MON**
Primary Collision Factor **DRVR ALC|DRG** *Violation* **23152A** *Collision Type* **REAR END** *Severity* **INJURY** *#Killed* **0** *#Injured* **2** *Tow Away?* **Y** *Process Date* **20200721**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* *Ramp/Int*

Party Info

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	OAF1	Viol	OAF2	Safety Equip
1F	DRVR	54	M	B	HBD-UI		PROC ST	S	A	0100	-	2001	-	3	A	22350	- L G
2	DRVR	54	M	H	HNBD		PROC ST	S	A	0100	FORD	2002	-	3	N		- M G

Victim Info

Party	ROLE	Ext Of Inj	AGE	Sex	Seat Pos	Safety	EQUIP	Ejected
1F	DRVR	COMP PN	54	M	1	0	L	-
2	DRVR	OTH VIS	54	M	1	0	M	-

Primary Rd **RT 395** *Distance (ft)* **15.0** *Direction* **S** *Secondary Rd* **BARTLETT AV** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **16.210** *Side of Hwy* **N**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **ADELA** *Beat* **AD1** *Type* **0** *CalTrans* **8** *Badge* **G3248** *Collision Date* **20200412** *Time* **1349** *Day* **SUN**
Primary Collision Factor **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20200924**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **CONS ZONE** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* **H** *Ramp/Int* **-**

Party Info

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	OAF1	Viol	OAF2	Safety Equip
1F	DRVR	53	F	B		PHYS	PROC ST	N	A	0800	-	2002	-	-	N		- M G
2	DRVR	51	M	H	HNBD		STOPPED	N	A	0100	-	2017	-	-	N		- M G

Victim Info

Party	ROLE	Ext Of Inj	AGE	Sex	Seat Pos	Safety	EQUIP	Ejected
1F	PASS		14	F	3	0	G	-
2	PASS	COMP PN	44	F	3	0	G	-

Primary Rd **RT 395** *Distance (ft)* **6.00** *Direction* **N** *Secondary Rd* **AUBURN AV** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **17.940** *Side of Hwy* **N**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD202** *Beat* **AD2** *Type* **0** *CalTrans* **8** *Badge* **E2262** *Collision Date* **20201020** *Time* **1003** *Day* **TUE**
Primary Collision Factor **UNKNOWN** *Violation* *Collision Type* **SIDESWIPE** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20201221**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* **H** *Ramp/Int* **-**

Party Info

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	OAF1	Viol	OAF2	Safety	Equip
1	DRVR	25	M	W	HNBD		PROC ST	N	A	0100	-	2004	-	3	-		-	M	G
2	DRVR	26	F	H			PROC ST	N	A	0100	-	2020	-	3	-		-	M	G

Victim Info

ROLE	Ext Of Inj	AGE	Sex	Seat Pos	Safety	EQUIP	Ejected
PASS		23	F	-	-	G	0

Primary Rd **RT 395** *Distance (ft)* **0.00** *Direction* *Secondary Rd* **AUBURN AV** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **17.256** *Side of Hwy* **S**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD206** *Beat* **AD1** *Type* **0** *CalTrans* **8** *Badge* **H8264** *Collision Date* **20201030** *Time* **1629** *Day* **FRI**
Primary Collision Factor **TOO CLOSE** *Violation* **21703** *Collision Type* **HEAD-ON** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20210305**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* **I** *Ramp/Int* **5**

Party Info

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	OAF1	Viol	OAF2	Safety	Equip
1F	DRVR	61	M	W	HNBD		RAN OFF RD	N	G	2533	-	2019	-	3	A	22107	N	B	G
2	DRVR	39	M	H	HNBD		RAN OFF RD	S	D	2200	-	2020	-	3	N		-	L	G

Victim Info

ROLE	Ext Of Inj	AGE	Sex	Seat Pos	Safety	EQUIP	Ejected
PASS	COMP PN	27	M	2	0	L	G

Primary Rd **RT 395** *Distance (ft)* **0.00** *Direction* *Secondary Rd* **AUBURN AV** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **17.250** *Side of Hwy* **S**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD206** *Beat* **AD1** *Type* **0** *CalTrans* **8** *Badge* **B5934** *Collision Date* **20210909** *Time* **0555** *Day* **THU**
Primary Collision Factor **UNKNOWN** *Violation* **23103** *Collision Type* **SIDESWIPE** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20220207**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* **H** *Ramp/Int* **-**

Party Info

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	OAF1	Viol	OAF2	Safety	Equip
1F	DRVR	998	-				STOPPED	-	-	9900	-		-	-	-	-	-	-
2	DRVR	43	M	H	HBD-NUI		PROC ST	S	A	0100	-	2019	-	-	N		-	M	G
3	DRVR	50	M	H	HBD-NUI		PROC ST	S	G	2533	-	2021	-	-	N		-	M	G

Victim Info

ROLE	Ext Of Inj	AGE	Sex	Seat Pos	Safety	EQUIP	Ejected

Primary Rd **RT 395** *Distance (ft)* **60.0** *Direction* **S** *Secondary Rd* **BARTLETT AV** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **16.200** *Side of Hwy* **N**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD106** *Beat* **AD1** *Type* **0** *CalTrans* **8** *Badge* **H8981** *Collision Date* **20201112** *Time* **1132** *Day* **THU**
Primary Collision Factor **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **N** *Process Date* **20210301**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* **H** *Ramp/Int* **-**

Party Info

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	OAF1	Viol	OAF2	Safety	Equip
1F	DRVR	64	M	H			SLOWING	N	D	2200	-	2006	-	3	N		-	M	G
2	DRVR	998	-				STOPPED	N	A	0700	-		-	3	N		-	-	-

Victim Info

ROLE	Ext Of Inj	AGE	Sex	Seat Pos	Safety	EQUIP	Ejected

Primary Rd **RT 395** *Distance (ft)* **0.00** *Direction* *Secondary Rd* **BARTLETT AV** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **16.225** *Side of Hwy* **S**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD106** *Beat* **AD1** *Type* **0** *CalTrans* **8** *Badge* **H89811** *Collision Date* **20201113** *Time* **1544** *Day* **FRI**
Primary Collision Factor **R-O-W AUTO** *Violation* **21800D** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20210305**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **NT FNCT** *Loc Type* **I** *Ramp/Int* **5**

Party Info

Party	Type	Age	Sex	Race	Sobriety1	Sobriety2	Move Pre	Dir	SW Veh	CHP Veh	Make	Year	SP Info	OAF1	Viol	OAF2	Safety	Equip
1F	DRVR	46	M	H			PROC ST	-	A	0100	-	2019	-	3	N		-	L	G
2	DRVR	38	F	H			PROC ST	-	I	2000	-		-	3	N		-	M	G

Victim Info

ROLE	Ext Of Inj	AGE	Sex	Seat Pos	Safety	EQUIP	Ejected
PASS		32	F	-	0	P	-
PASS		57	M	-	0	P	-
PASS	POSSIBL	67	M	-	0	P	-

Primary Rd **RT 395** *Distance (ft)* **0.00** *Direction* *Secondary Rd* **AIR EXPRESS WY** *NCIC* **3600** *State Hwy?* **Y** *Route* **18** *Postmile Prefix* **-** *Postmile* **15.707** *Side of Hwy* **N**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD107** *Beat* **AD1** *Type* **0** *CalTrans* **8** *Badge* **C8720** *Collision Date* **20220221** *Time* **2326** *Day* **MON**
Primary Collision Factor **STOP SGN|SIG** *Violation* **21453A** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20220818**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* **I** *Ramp/Int* **5**

Party Info																	Victim Info							
Party	*Type*	*Age*	*Sex*	*Race*	*Sobriety1*	*Sobriety2*	*Move Pre*	*Dir*	*SW Veh*	*CHP Veh*	*Make*	*Year*	*SP Info*	*OAF1*	*Viol*	*OAF2*	*Safety Equip*		*ROLE*	*Ext Of Inj*	*AGE*	*Sex*	*Seat Pos*	*Safety*	*EQUIP*	*Ejected*
1F	DRVR	30	M	H	HNBD		PROC ST	N	E	2235	-	2018	-	3	N	-	M	G	DRVR	POSSIBL	24	M	1	0	M	G
2	DRVR	24	M	B	HNBD		PROC ST	W	A	0100	-	2018	-	3	N	-	M	G								

Primary Rd **RT 395** *Distance (ft)* **365.** *Direction* **S** *Secondary Rd* **AIR EXPRESS WY** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **15.420** *Side of Hwy* **S**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD107** *Beat* **AD2** *Type* **0** *CalTrans* **8** *Badge* **I4817** *Collision Date* **20220312** *Time* **0453** *Day* **SAT**
Primary Collision Factor **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **INJURY** *#Killed* **0** *#Injured* **1** *Tow Away?* **Y** *Process Date* **20220818**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - NO** *Ped Action* *Cntrl Dev* **NT PRS/FCTR** *Loc Type* **H** *Ramp/Int* **-**

Party Info																	Victim Info							
Party	*Type*	*Age*	*Sex*	*Race*	*Sobriety1*	*Sobriety2*	*Move Pre*	*Dir*	*SW Veh*	*CHP Veh*	*Make*	*Year*	*SP Info*	*OAF1*	*Viol*	*OAF2*	*Safety Equip*		*ROLE*	*Ext Of Inj*	*AGE*	*Sex*	*Seat Pos*	*Safety*	*EQUIP*	*Ejected*
1F	DRVR	26	M	B	IMP UNK	IMP UNK	STOPPED	S	A	0100	-	2017	-	3	N	-	L	G	DRVR	MINOR	26	M	1	-	L	G
2	DRVR	52	M	W	HNBD		PROC ST	S	G	2531	-	2021	-	3	N	-	M	G								

Primary Rd **RT 395** *Distance (ft)* **0.00** *Direction* *Secondary Rd* **AIR EXPRESS WY** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **15.707** *Side of Hwy* **N**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **SBCSD** *Beat* **AD1** *Type* **0** *CalTrans* **8** *Badge* **I5432** *Collision Date* **20220425** *Time* **0715** *Day* **MON**
Primary Collision Factor **STOP SGN|SIG** *Violation* **21453A** *Collision Type* **BROADSIDE** *Severity* **INJURY** *#Killed* **0** *#Injured* **2** *Tow Away?* **Y** *Process Date* **20220818**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run **MSDMNR** *Motor Vehicle Involved With* **MV ON OTHER RD** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* **I** *Ramp/Int* **5**

Party Info																	Victim Info							
Party	*Type*	*Age*	*Sex*	*Race*	*Sobriety1*	*Sobriety2*	*Move Pre*	*Dir*	*SW Veh*	*CHP Veh*	*Make*	*Year*	*SP Info*	*OAF1*	*Viol*	*OAF2*	*Safety Equip*		*ROLE*	*Ext Of Inj*	*AGE*	*Sex*	*Seat Pos*	*Safety*	*EQUIP*	*Ejected*
1F	DRVR	71	M	O	HNBD		PROC ST	N	G	2531	-	2017	-	3	N	-	M	G								
2	DRVR	29	F	B	HNBD		PROC ST	W	A	0700	-	2011	-	3	N	-	L	G	DRVR	POSSIBL	29	F	1	0	L	G
																			PASS	POSSIBL	5	M	5	0	P	G

Primary Rd **RT 395** *Distance (ft)* **0.00** *Direction* *Secondary Rd* **AIR EXPWY** *NCIC* **3600** *State Hwy?* **Y** *Route* **395** *Postmile Prefix* **-** *Postmile* **15.690** *Side of Hwy* **N**
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD107** *Beat* **AD2** *Type* **0** *CalTrans* **8** *Badge* **C8720** *Collision Date* **20211024** *Time* **1902** *Day* **SUN**
Primary Collision Factor **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **PDO** *#Killed* **0** *#Injured* **0** *Tow Away?* **Y** *Process Date* **20220211**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DARK - ST** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* **H** *Ramp/Int* **-**

Party Info																	Victim Info							
Party	*Type*	*Age*	*Sex*	*Race*	*Sobriety1*	*Sobriety2*	*Move Pre*	*Dir*	*SW Veh*	*CHP Veh*	*Make*	*Year*	*SP Info*	*OAF1*	*Viol*	*OAF2*	*Safety Equip*		*ROLE*	*Ext Of Inj*	*AGE*	*Sex*	*Seat Pos*	*Safety*	*EQUIP*	*Ejected*
1F	DRVR	60	M	B	HNBD		PROC ST	N	A	0800	-	1999	-	3	N	-	M	G								
2	DRVR	49	M	W	HNBD		STOPPED	N	A	0700	JEEP	2014	-	3	N	-	M	G								

Primary Rd **RT 395** *Distance (ft)* **0.00** *Direction* *Secondary Rd* **AUBURN AV** *NCIC* **3600** *State Hwy?* **Y** *Route* *Postmile Prefix* *Postmile* *Side of Hwy*
City **Adelanto** *County* **San Bernardino** *Population* **3** *Rpt Dist* **AD206** *Beat* **AD01** *Type* **0** *CalTrans* *Badge* **J1908** *Collision Date* **20220924** *Time* **1157** *Day* **SAT**
Primary Collision Factor **UNSAFE SPEED** *Violation* **22350** *Collision Type* **REAR END** *Severity* **INJURY** *#Killed* **0** *#Injured* **2** *Tow Away?* **Y** *Process Date* **20221019**
Weather1 **CLEAR** *Weather2* *Rdwy Surface* **DRY** *Rdwy Cond1* **NO UNUSL CND** *Rdwy Cond2* *Spec Cond* **0**
Hit and Run *Motor Vehicle Involved With* **OTHER MV** *Lighting* **DAYLIGHT** *Ped Action* *Cntrl Dev* **FNCTNG** *Loc Type* *Ramp/Int*

Party Info																	Victim Info							
Party	*Type*	*Age*	*Sex*	*Race*	*Sobriety1*	*Sobriety2*	*Move Pre*	*Dir*	*SW Veh*	*CHP Veh*	*Make*	*Year*	*SP Info*	*OAF1*	*Viol*	*OAF2*	*Safety Equip*		*ROLE*	*Ext Of Inj*	*AGE*	*Sex*	*Seat Pos*	*Safety*	*EQUIP*	*Ejected*
1F	DRVR	32	M	H	HNBD		PROC ST	S	A	0100	-	2008	-	3	N	-	L	G	DRVR	POSSIBL	2	M	1	0	L	G
																			PASS	MINOR	61	F	3	0	L	G
2	DRVR	29	F	W	HNBD		STOPPED	S	D	2200	-	2004	-	3	N	-	M	G								

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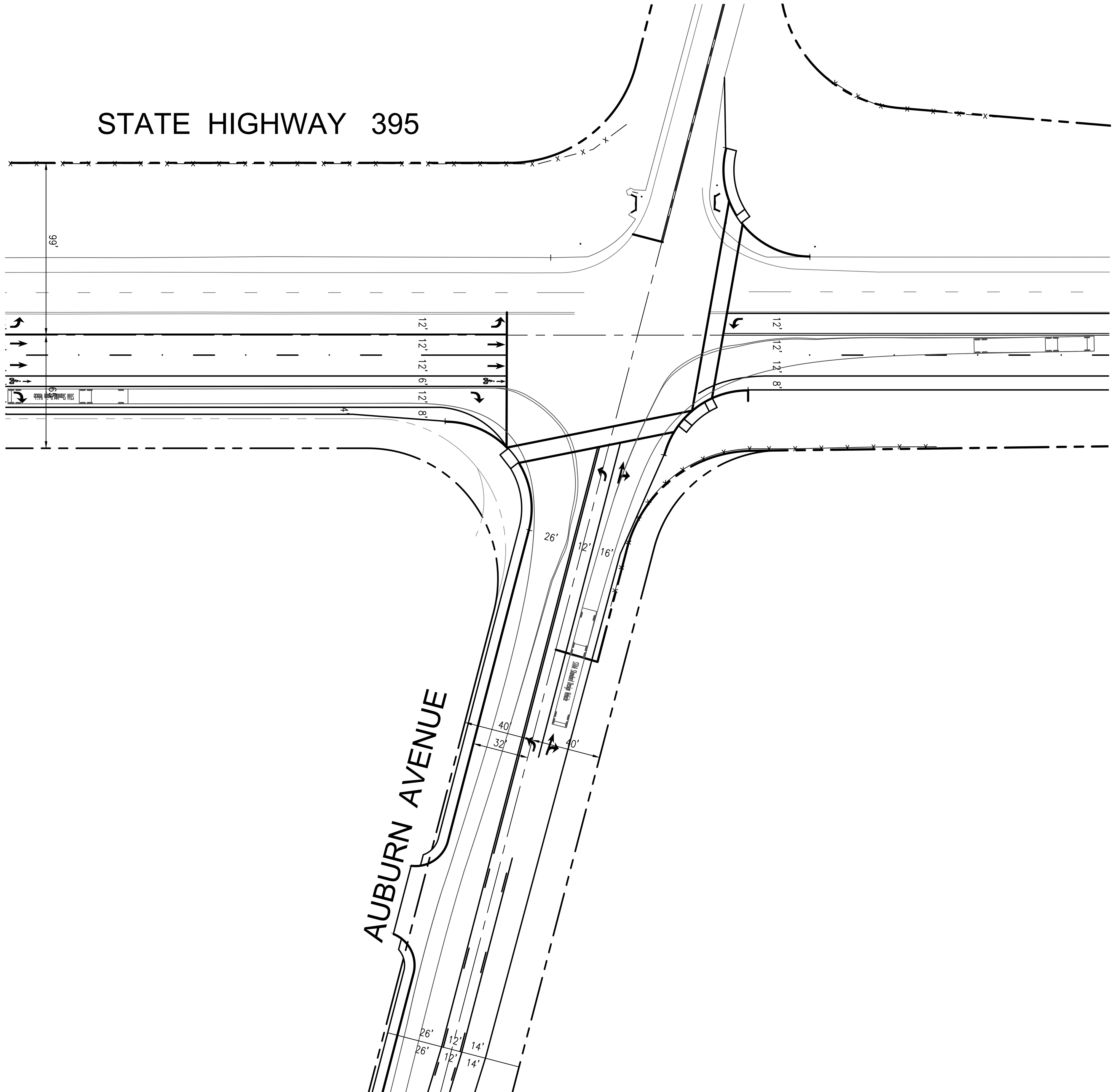
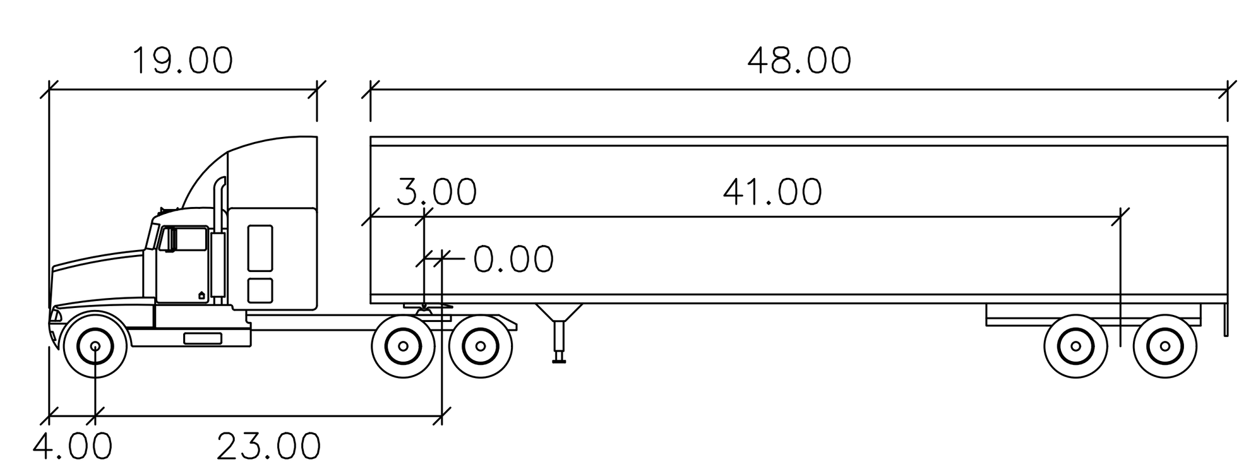
Appendix F: Design Vehicle Truck Turning Template



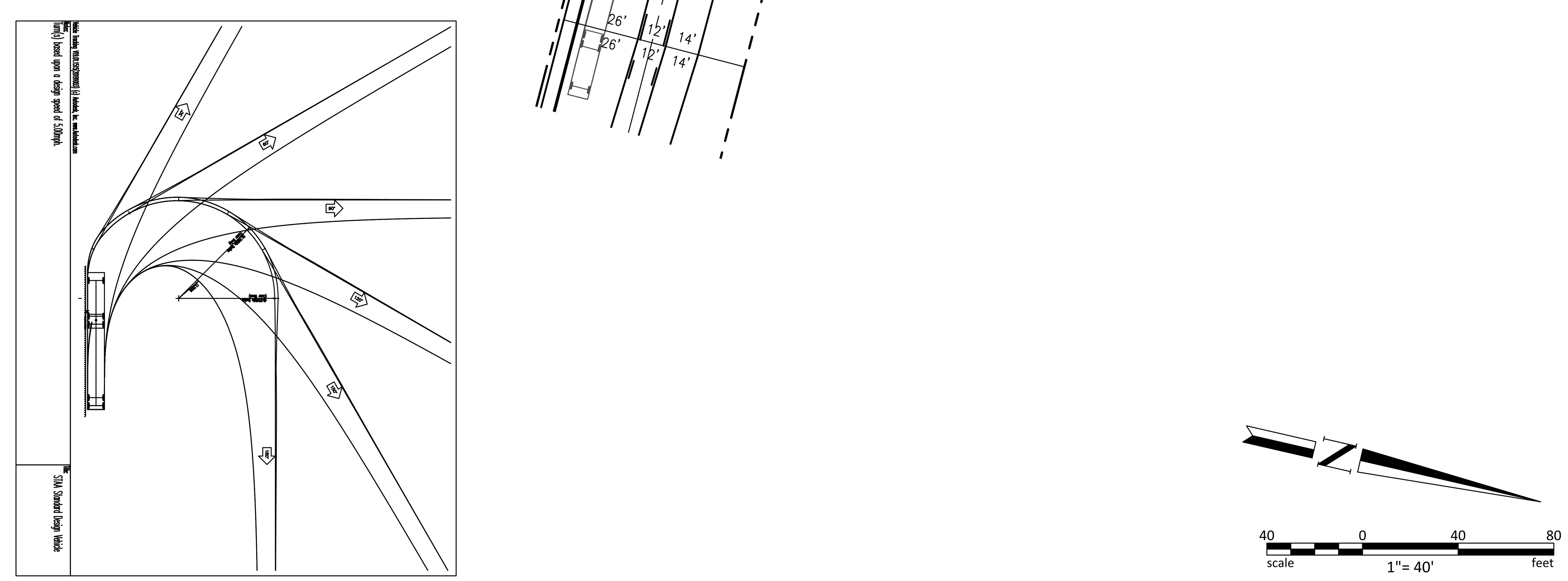


STAA Design Vehicle (56 FT RADIUS)

feet

Tractor Width	: 8.50	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 26.1
Tractor Track	: 8.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		

STAA TRUCK DETAIL



scale 1"= 40' feet

Know what's below. Call 811 before you dig

NO.	DESCRIPTION	DATE	BY

REVISONS

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

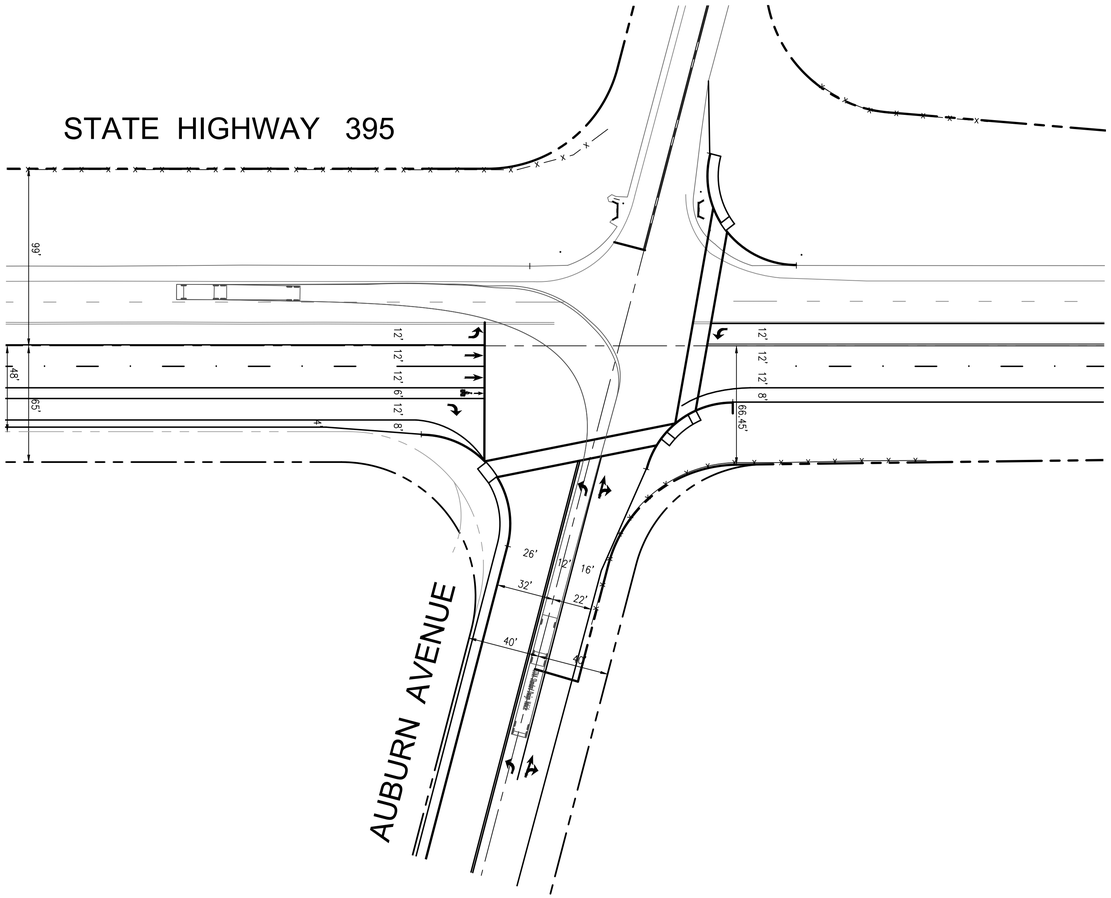
GUS OTAKI

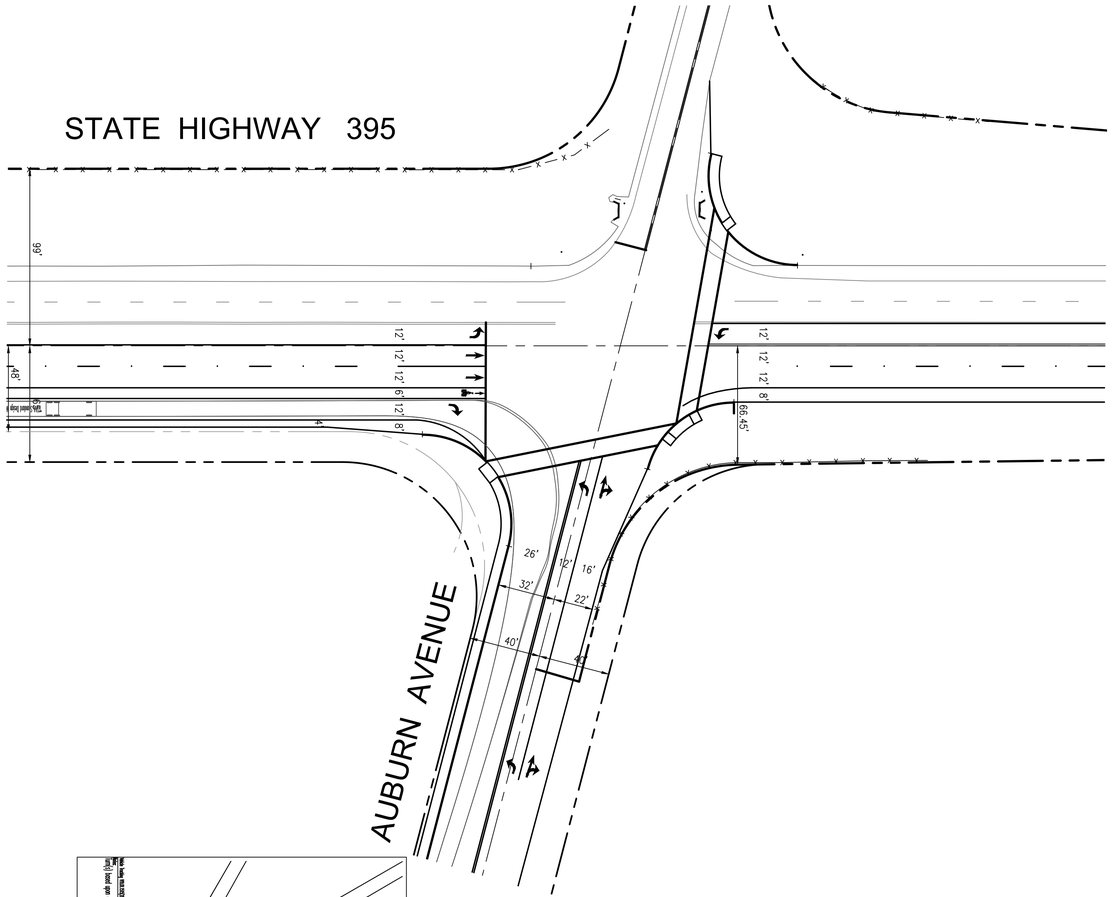
TRUCK TURN TEMPLATE PLAN

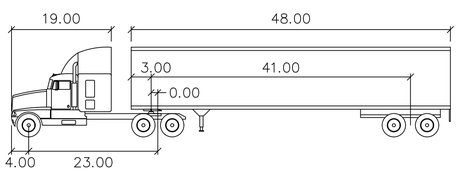
US 395 AT AUBURN AVENUE

ADELANTO COMMERCIAL DEVELOPMENT

DRAWN BY:	PDB
DESIGNED BY:	RAK
CHECKED BY:	RAK
JOB NO.	LTRI00000001
DATE	10/12/2022
SHT NO.	1 OF 2





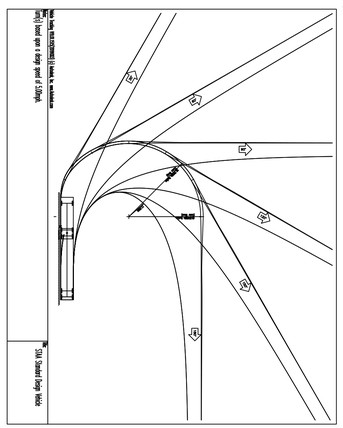


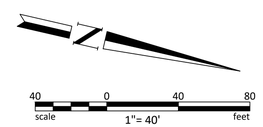
STAA Design Vehicle (56 FT RADIUS)

feet

Tractor Width	: 8.50	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 26.1
Tractor Track	: 8.50	Articulating Angle	: 70.0
Trailer Track	: 8.50		

STAA TRUCK DETAIL





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TRUCK TURN TEMPLATE PLAN

DRAWN BY: PDB	US 395 AT AUBURN AVENUE	JOB NO. LTRI00000001
DESIGNED BY: RAK		DATE 10/12/2022
CHECKED BY: RAK	ADELANTO COMMERCIAL DEVELOPMENT	SHT NO. 2 OF 2