Appendix H-1

Focused Traffic Impact Analysis Report,
Abbey Lane Industrial Development

David Evans and Associates

March 17, 2022

FOCUSED TRAFFIC IMPACT ANALYSIS REPORT

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

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

SAN DIEGO
3530 Camino Del Rio North,
Suite 105
San Diego, CA 92108
619.400.0600
Fax: 619.400.0599

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

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

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

VICTORVILLE
18484 Outer Highway 18 North, Suite 225
Apple Valley, CA 92307
760.524.9100
Fax 760.524.9101

www.deainc

ABBEY LANE INDUSTRIAL DEVELOPMENT

VICTORVILLE, CALIFORNIA

Prepared by:

DAVID EVANS AND ASSOCIATES INC.

FINAL REPORT
August 9, 2022
ADDENDUM
April 25, 2022

DAVID EVANS
AND ASSOCIATES INC.

August 9, 2022 Job No. MOAI0000-0001

Mr. Robert A. Martinez Architect, AIA, CASp, CASI
Martinez + Okamoto Architects, Inc.
15487 Seneca Road, Suite 203
Victorville, CA. 92392

RE: FINAL FOCUSED TRAFFIC IMPACT ANALYSIS OF THE ABBEY LANE INDUSTRIAL DEVELOPMENT LOCATED AT STODDARD WELLS ROAD / ABBEY LANE IN VICTORVILLE, CALIFORNIA

Dear Mr. Martinez,

David Evans and Associates, Inc. is pleased to submit this Final Focused Traffic Impact Analysis Report (TIA) for your proposed Abbey Lane Industrial Development project in the City of Victorville. The project is located on the southwest corner of Stoddard Wells Road at Abbey Lane and consists of an industrial building.

This final report is comprised of two documents:

1) The **Draft Final Focused Traffic Impact Analysis Report (TIA)** dated August 9, 2022, incorporating the City of Victorville's comments received on the same day. Responses to the comments were integrated into the draft final report and consist of correcting typographic errors and summarizing the VMT screening analysis in the report's executive summary chapter.
2) An **Addendum to the Draft Focused Traffic Impact Analysis Report (TIA)** dated April 25, 2022. The addendum was prepared in response to a relatively small change to the project's site plan resulting in a 3,180 square foot increase in the size of the building. The addendum shows that the trips generated by the change in building size are negligible and would not change the findings and recommendations of the study if it were redone to incorporate the change.

Combined, these two documents represent the **Final Focused Traffic Impact Analysis Report (TIA)**. The documents are organized in a reverse chronological order with the addendum presented first, followed by the draft final report.

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 Transportation Project Manager / Associate

Addendum to the Draft Focused Traffic Impact Analysis Report

April 25, 2022 Job No. MOAI0000-0001

Mr. Robert A. Martinez Architect, AIA, CASp, CASI
Martinez + Okamoto Architects, Inc.
15487 Seneca Road, Suite 203
Victorville, CA. 92392

RE: ADDENDUM TO DRAFT FOCUSED TRAFFIC IMPACT ANALYSIS OF THE ABBEY LANE INDUSTRIAL DEVELOPMENT LOCATED AT STODDARD WELLS ROAD / ABBEY LANE IN VICTORVILLE, CALIFORNIA

Dear Mr. Martinez,

David Evans and Associates, Inc. (DEA) has prepared this addendum to the March 17, 2022, Draft Focused Traffic Impact Analysis Report (TIA) for your proposed Abbey Lane Industrial Development project in the City of Victorville. This addendum is in response to a site plan modification that occurred after the completion of the Draft TIA. While the site plan modification resulted in a small increase in the floor area of the proposed warehouse development, DEA does not believe the incremental increase would affect the findings and recommendations of the draft TIA and prepared this addendum to quantitatively address the increase in trip generation and qualitatively address its potential impacts.

Site Plan Modification Related to Trip Generation

The change to the site plan used in preparing the Draft TIA of interest to this addendum modifies the parking area located on the south side of the proposed warehouse building which allows an extension of the building to slightly increase the project's floor area. On a gross floor area (GSF) basis the modification increases the warehouse (and mezzanines) from the 823,980 square feet analyzed in the Draft TIA to 827,160 square feet, an increase of 3,180 square feet.

Increase in Trip Generation

Table 1 presents the trip generation and conversion to Passenger Car Equivalents (PCEs) consistent with the trip generation presented in the Draft TIA. The increase in 3,180 square feet of High-Cube Fulfillment Center Warehouse results in the addition of 20 daily trips, 3 AM peak hour trips, and 4 PM peak hour trips, the majority of which are passenger cars.

When converted to Passenger Car Equivalents (PCEs) the trip generation results in an additional 16 passenger cars and 11 trucks daily. In the AM peak hour, conversion to PCEs equals an additional 2 passenger cars, one 3-axle truck, and one 4-axle truck. In the PM peak hour, conversion to PCEs equals an additional 3 passenger cars, and one each of 2-axle, 3-axle, 4-axle trucks.

Effect of Additional Trips on Draft TIA Findings and Recommendations

In summary, the additional peak hour passenger cars and trucks generated by the increase in project floor area has a negligible impact of the study's findings and recommendations. Under the worst-case conditions (Future (Year 2034) + Project Conditions), the study intersections at Stoddard Wells Road / Abbey Lane and Stoddard Wells Road / Project Driveway "A" operate at LOS B or better in both peak hours with afternoon delays nearing the threshold of LOS C (an average of 15 seconds per vehicle). Even if the additional traffic from the 3,180 square foot increase did cause the level of service at the study intersections to exceed the LOS B/C threshold, both study intersections would operate more than one level of service grade below the City of Victorville's LOS D standard.

DAVID EVANS AND ASSOCIATES INC.

Table 1: Trip Generation Estimate of Incremental Increase in Project Floor Area

Use	Size/ Quantity	Daily	AM Peak Hour			PM Peak Hour		
High-Cube Fulfillment Center Warehouse - Sort Land Use Category (ITE 155)								
Per 1,000 Sq. Ft. GLA	3,180	6.44	0.70	0.17	0.87	0.47	0.73	1.20
Trips		20	2	1	3	1	2	4
	Mode Share	**Total Project Trip Generation by Vehicle Type**						
Passenger Cars (Percent of Total)	79.57%	16	2	0	2	1	2	3
2-Axle Trucks (Percent of Total)	3.46%	1	0	0	0	0	0	0
3-Axle Trucks (Percent of Total)	4.64%	1	0	0	0	0	0	0
4-Axle Trucks (Percent of Total)	12.33%	3	0	0	0	0	0	0
Total		20	2	1	3	1	2	4
	PCE Factor	**Total Project Trip Generation in Passenger Car Equivalents (PCE)**						
Passenger Cars)	1	16	2	0	2	1	2	3
2-Axle Trucks	1.5	1	0	0	0	0	0	0
3-Axle Trucks (Percent of Total)	2	2	0	0	1	1	1	1
4-Axle Trucks (Percent of Total)	3	8	1	0	1	1	1	1
Total		27	3	1	4	2	3	6

Notes:
Some totals may not equal the sum of the individual values due to rounding.
KSF = Thousands of Square Feet.
AM / PM Peak Hour of Adjacent Street Traffic = Trip generation coinciding with the highest hourly volumes of traffic on the adjacent streets during the AM (7:00 AM and 9:00 AM) and PM (4:00 PM and 6:00 PM) commuter peak periods.
Source of trip generation rates: Institute of Transportation Engineers (ITE) Trip Generation (11th Edition). Average rates for land use category 155 (High-Cube Fulfillment Center Warehouse - Sort).
Source of passenger car / truck mode share (percentage of total): Fontana Truck Trip Generation Study for Heavy Warehouse Uses (August 2003).
Passenger Car Equivalents (PCE) factors: Industry standard values utilized in neighboring jurisdictions.

Further, since the Future + Project intersection queuing analysis in the Draft TIA indicates the project would utilize less than half of the proposed northbound left turn lane storage at both study intersections, the additional peak hour passenger cars and trucks generated by the increase in project floor area would have a negligible affect on the project's queuing and the proposed left turn storage.

Conclusion

DEA concludes that the additional traffic generated by the small increase in the project's floor area (3,180 square feet) does not change the findings or recommendations of the March 17, 2022, Draft Focused Traffic Impact Analysis Report prepared for the Abbey Lane Industrial Development.

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 Transportation Project Manager / Associate

August 9, 2022 Job No. MOAI0000-0001

Mr. Robert A. Martinez Architect, AIA, CASp, CASI
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RE: FOCUSED TRAFFIC IMPACT ANALYSIS OF THE ABBEY LANE INDUSTRIAL DEVELOPMENT LOCATED AT STODDARD WELLS ROAD / ABBEY LANE IN VICTORVILLE, CALIFORNIA

Dear Mr. Martinez,

David Evans and Associates, Inc. is pleased to submit this Focused Traffic Impact Analysis Report (TIA) for your proposed Abbey Lane Industrial Development project in the City of Victorville. The project is located on the southwest corner of Stoddard Wells Road at Abbey Lane and consists of an industrial building.

The study documented in this report evaluates the potential traffic impacts of the project and recommends roadway improvements to provide access to the project and to maintain the City's level of service policy. This study was prepared in accordance with the City of Victorville's Guidelines for Conducting Traffic Studies and Determination of Intersection Level of Service and Improvement Needs (January 2005) and Resolution No.20-031 adopting local guidelines for vehicle miles traveled (VMT) and thresholds of significance for purposes of analyzing transportation impacts under the California Environmental Quality Act (CEQA) (May 2020). The study's scope of work was approved by City staff as required in the referenced guidelines.

This study incorporated the City's Engineering Department comments on the Focused Traffic Study Scope and Vehicle Miles Traveled (VMT) Screening (December 29, 2021) received January 25, 2022.

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 Transportation Project Manager / Associate

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1 EXECUTIVE SUMMARY

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

1.1 Project Description

The proposed project is on a 39.83-acre site located in the southwest corner of southwest corner of Stoddard Wells Road at Abbey Lane in the City of Victorville. The site is zoned as Light Industrial (M1). The project proposes to construct an industrial building comprised of 823,980 gross square feet of floor area.

Access to the site is proposed via three driveways. On Stoddard Wells Road, a full access driveway is proposed approximately 950-feet south of Abbey Lane (measured from centerline to centerline), this Driveway "A" will be the only access point for truck traffic. On Abbey Lane, two full access driveways are proposed approximately 250-feet and 1,275-feet west of Stoddard Wells Road (measured from centerline to centerline).

1.2 City of Victorville Level of Service Standard

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

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

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

The project includes right-of-way dedication on its Stoddard Wells Road and Abbey Lane frontages to meet city cross-section standards for each road's functional classification and access driveways including turning lanes as needed to safely accommodate entering traffic.

The proposed improvements would be constructed concurrently with the project, and the analysis of project conditions assumes the improvements in place at off-site intersections and site access driveways.

The proposed project-specific access, roadway, and off-site intersection improvements are described below.

Project Access

Primary access to the site (for trucks) is proposed via a driveway along Stoddard Wells Road. The proposed Stoddard Wells Road driveway includes:

- A full access driveway is proposed at Project Driveway "A" on Stoddard Wells Road located about 950 feet south of Abbey Lane. This Driveway "A" will provide the only access point for truck traffic.

  Proposed improvements to Stoddard Wells Road include striping a northbound left turn lane into the Project Driveway "A".

Secondary access to the site (for passenger cars) is proposed vis two driveways on Abbey Lane. These driveways are located approximately 250 feet, and 1,275 feet, west of Stoddard Wells Road respectively. These driveways are not included in the level of service analysis.

Project-Specific Roadway Improvements

1. Frontage Improvements on Stoddard Wells Road. The project will be conditioned to improve its frontage along Stoddard Wells Road. The project proposes to dedicate the necessary right-of-way and construct the following improvements:

a. Dedicate the right-of-way to accommodate the half-width of the 98-foot right-of-way for a designated arterial (49-feet) per the city's Standard Drawings for Public Improvements (Standard S-21 Street Geometric Cross-Sections).

b. Construct curb/gutter, sidewalk, planting strips, and pavement along the project's frontage per city standards.

c. Construct the Stoddard Wells Road driveway at the location specified on the site plan per the city's commercial/industrial driveway standards.

d. Stripe a northbound left turn lane on Stoddard Wells Road to Project Driveway "A", approximately 200 feet in length plus a 120-foot-long transition.

2. Frontage Improvements on Abbey Lane. The project will be conditioned to improve its frontage along Abbey Lane. The project proposes to dedicate the necessary right-of-way and construct the following improvements:

a. Dedicate the right-of-way to accommodate the half-width of the 60-foot right-of-way for a local street (30-feet) per the city's Standard Drawings for Public Improvements (Standard S-21 Street Geometric Cross-Sections)

b. Construct curb/gutter, sidewalk, planting strips, and pavement along the project's frontage per city standards.

c. Construct both Abbey Lane driveways at locations specified on the site plan per the city's commercial driveway standards.

1.4 Level of Service Comparison With and Without the Proposed Project

1.4.1 Determination of Project-Specific Impacts

A comparison of level of service between existing and existing plus project conditions is used to identify impacts that are solely caused by the project and for which the project is responsible for mitigating. These two scenarios exclude any estimated traffic from planned and approved, but not yet built, developments allowing for an unadulterated assessment of project impacts.

Table 1-1 compares existing and existing plus project conditions (see Chapters 3 and 4) weekday peak hour level of service at the study intersections. The intersections operate at a LOS B or better for the worst movement from each stop-controlled intersection during the peak hours with the project.

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

Intersection	Intersection Control Type	Existing Conditions				Existing + Project Conditions			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Stoddard Wells Road / Abbey Lane	SSSC	8.9	A	8.9	A	11.4	B	14.2	B
2. Stoddard Wells Road / Project Driveway "A"	SSSC	N/A				9.4	A	14.8	B
Abbreviations: SSSC – Side Street Stop Controlled Intersection N/A – Not Applicable Future Intersection. Delay – seconds per vehicle LOS – Level of Service									

Table 1-2 compares the background and project conditions weekday peak hour background plus project level of service at the study intersections. Background conditions represent the project's opening year of 2024 and includes growth in ambient traffic from regional and local development equaling 3.5 percent

annually. In this year 2024 scenario, the intersections would operate at a LOS B or better during the peak hours with the project.

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

Intersection	Intersection Control Type	Background Conditions				Project Conditions			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Stoddard Wells Road / Abbey Lane	SSSC	8.9	A	8.9	A	11.5	B	14.4	B
2. Stoddard Wells Road / Project Driveway "A"	SSSC/Driveway	N/A				9.4	A	14.9	B
Abbreviations: SSSC – Side Street Stop Controlled Intersection N/A – Not Applicable Future Intersection. Delay – seconds per vehicle LOS – Level of Service									

Table 1-3 compares the future and future plus project conditions weekday peak hour level of service at the study intersections. Future conditions represent the horizon year of 2034 and includes growth in ambient traffic from regional and local development equaling 3.5 percent annually. In this year 2034 scenario, the intersections would operate at a LOS B or better during the peak hours with the project.

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

Intersection	Intersection Control Type	Future Conditions				Future + Project Conditions			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Stoddard Wells Road / Abbey Lane	SSSC	9.0	A	9.1	A	11.5	B	14.4	B
2. Stoddard Wells Road / Project Driveway "A"	SSSC/Driveway	N/A				9.4	A	14.9	B
Abbreviations: SSSC – Side Street Stop Controlled Intersection N/A – Not Applicable Future Intersection. Delay – seconds per vehicle LOS – Level of Service									

1.5 Vehicle Miles Traveled (VMT) Screening

The City of Victorville's Vehicle Miles Traveled (VMT) Analysis Guidelines adopted by the City in June of 2020 in conformance with SB 743 provides a list of specific land uses types and a maximum size threshold in terms of dwelling units for residential projects and floor area for non-residential projects. The listed types of land uses are deemed too small to cause a significant increase in VMT or they are considered "locally-serving" types of land uses that reduce VMT by providing nearby opportunities for employment, shopping, and services. Proposed projects matching the "project type" and falling within the size thresholds are exempt from a VMT analysis.

The proposed project is comprised of **High-Cube Fulfillment Center Warehouse** building square footage of approximately 827,160 (includes office mezzanine floor area) is below the City's warehousing size threshold of 829,000 square feet of floor area. Based on this criterion, the project is screened from being required to conduct a VMT analysis.

2 INTRODUCTION

This report identifies traffic impacts and recommends traffic improvements for the proposed development project located at the southwest corner of southwest corner of Stoddard Wells Road at Abbey Lane in the City of Victorville, California. The project consists of 823,980 gross square feet of Industrial building. **Figure 1** illustrates the 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 Victorville's traffic impact study requirements and under the following scenarios as outlined in the traffic scope approved by the City's Department of Public Works:

- Existing Conditions - **Chapter 3**
- Existing Plus Project Conditions - **Chapter 4**
- Background Conditions (Year 2024) - **Chapter 5**
- Project Conditions- **Chapter 6**
- Future Conditions (Year 2034) - **Chapter 7**
- Future Plus Project Conditions (Year 2034) - **Chapter 8**

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 February 2022. This scenario is used as the baseline condition from which to measure project-specific impacts.

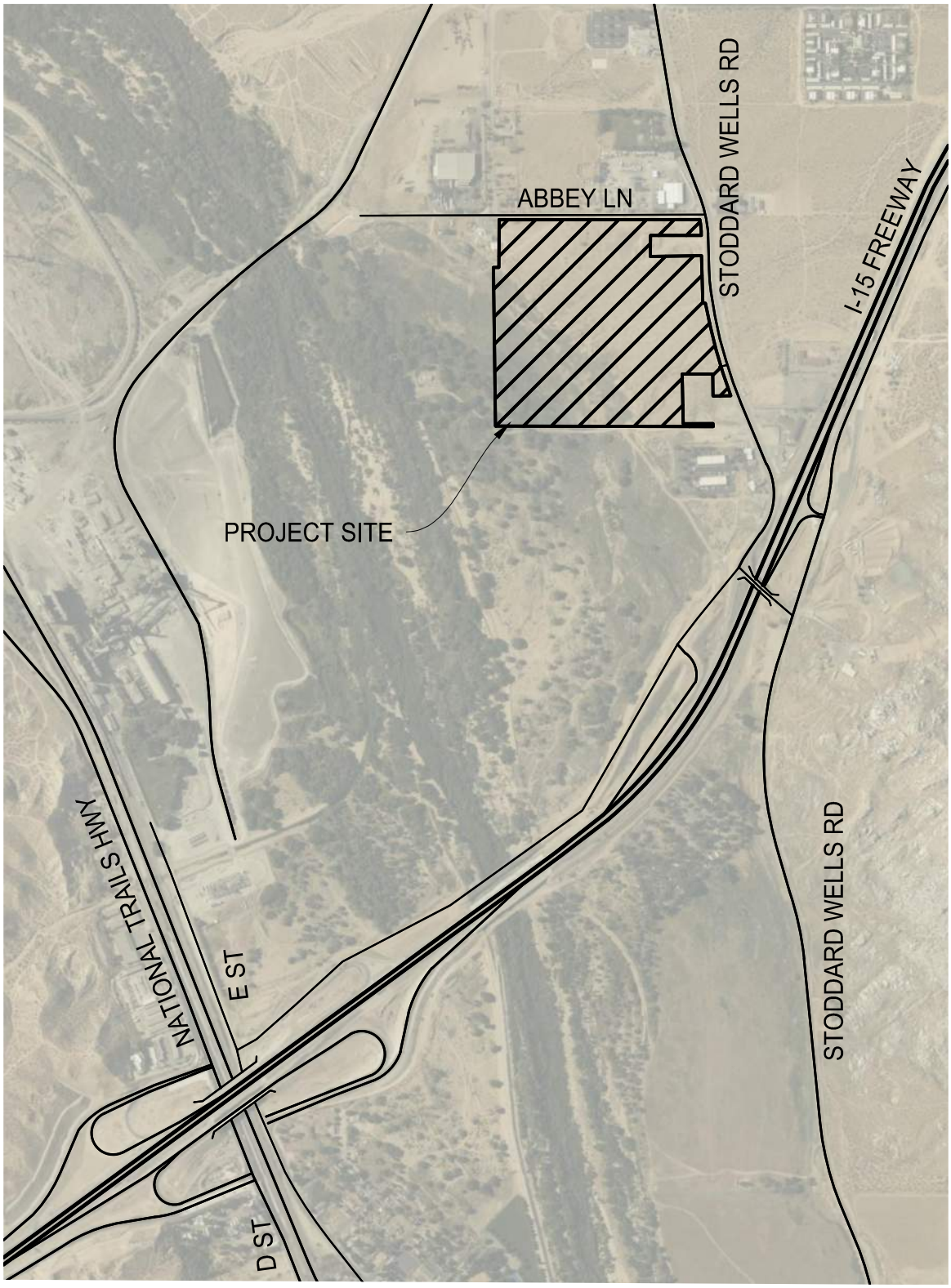
Existing Plus Project Conditions. This scenario represents transportation conditions as if the project were built and occupied today. This scenario is intended to identify potentially significant impact (requiring improvements) when compared to Existing Conditions without any unrelated transportation system improvements or other development. Impacts identified in this scenario are considered "project-specific"—impacts that are the sole responsibility of the project to mitigate.

Background Conditions (Year 2024). This scenario represents conditions at the time the project is anticipated to be fully constructed and occupied (known as buildout year 2024) but without traffic generated by the project. This scenario is comprised of an ambient growth, a general rate of growth in traffic from overall regional growth but not specific to any nearby development (assumed to be 3.5% annually for this study).

Project Conditions (Year 2024). This scenario adds the project's estimated traffic generation at buildout (2024) to the Background Conditions scenario described above. Impacts identified in this near-term scenario are considered "cumulative" impacts—impacts that the project contributes to, but does not solely cause, and may be responsible for a fair-share of the cost to implement any improvement measures.

Future Conditions (Year 2034). This scenario represents conditions at the horizon year 2034 but without traffic generated by the project. This scenario is comprised of an ambient growth, a general rate of growth in traffic from overall regional growth but not specific to any nearby development (assumed to be 3.5% annually for this study).

Future Plus Project Conditions (Year 2034). This scenario adds the project's estimated traffic generation to the Future Conditions scenario described above. Impacts identified in this scenario are considered "cumulative" impacts—impacts that the project contributes to, but does not solely cause, and may be responsible for a fair-share of the cost to implement any improvement measures.



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NOT TO SCALE

DAVID EVANS AND ASSOCIATES INC.

FIGURE 1: VICINITY MAP
ABBEY LANE INDUSTRIAL DEVELOPMENT
VICTORVILLE, CALIFORNIA

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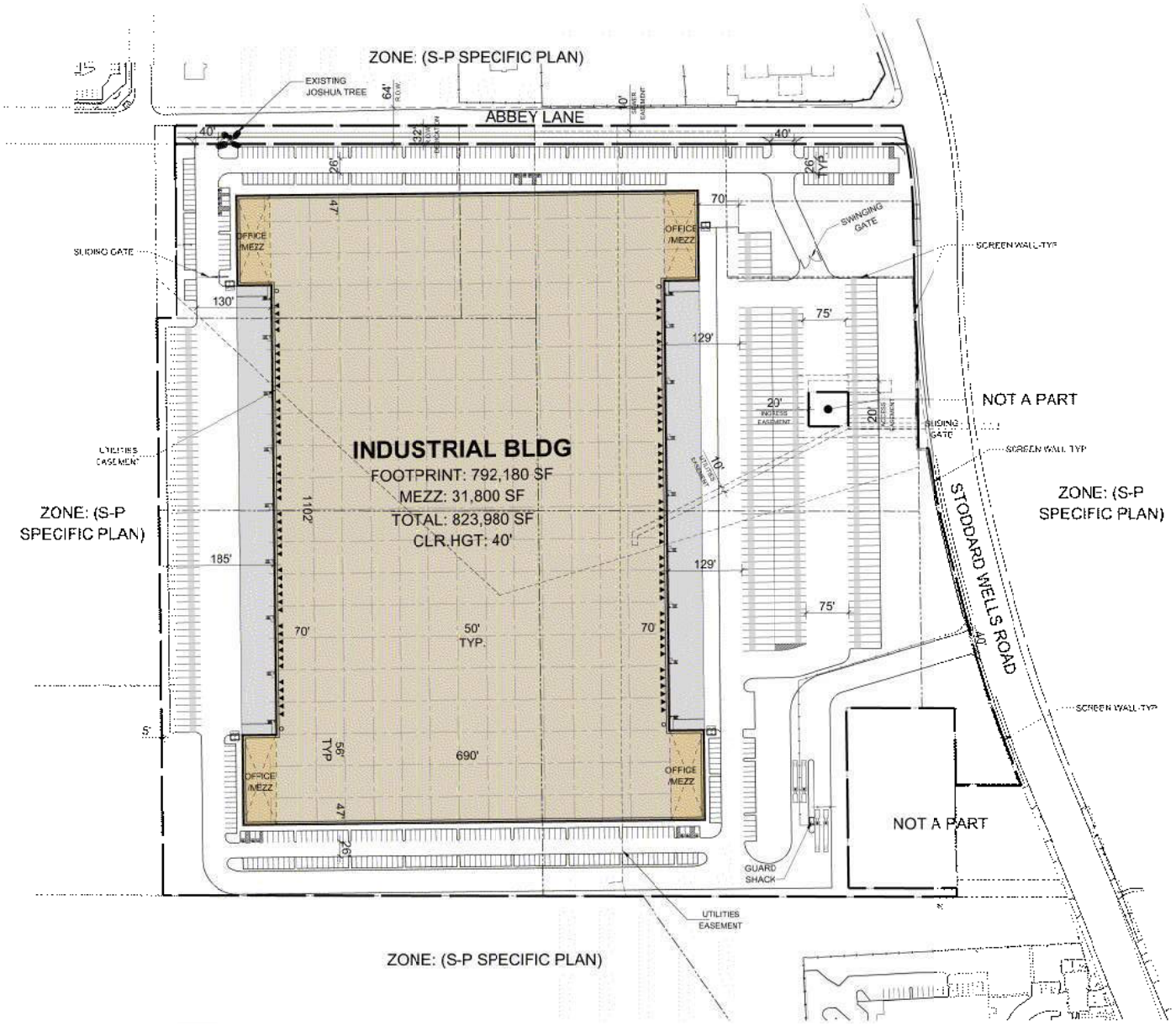

DAVID EVANS AND ASSOCIATES INC.

FIGURE 2: SITE PLAN
ABBEY LANE INDUSTRIAL DEVELOPMENT
VICTORVILLE, CALIFORNIA

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3 EXISTING CONDITIONS

The proposed project is bounded to the north by Abbey Lane and an existing recycling facility, to the south by vacant and undeveloped properties and a motel 6, to the east by Stoddard Wells Rd and vacant/undeveloped properties and hotels, and to the west by vacant/undeveloped properties.

3.1 Existing Street System

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

Stoddard Wells Rd is identified as an arterial street on the City of Victorville circulation map. It is a north-south five-lane road (two in each direction, a two-way-left-turn center lane, and turn pockets at key intersections) in the project area study area. Posted speed limit of 55 mph in the project area study area. Stoddard Wells Road will provide direct access to the project site.

Abbey Lane is a local east-west two-lane (one in each direction) street, which dead-ends about 2,200 feet west of Stoddard Wells Road, Abbey Lane will provide direct access to the project site.

3.2 Site Access and Study Intersections

Access to the site is proposed with three driveways. On Stoddard Wells Road, a full access driveway is proposed approximately 950-feet south of Abbey Lane (measured from centerline to centerline). On Abbey Lane, two full access driveways are proposed approximately 250-feet and 1,275-feet west of Stoddard Wells Road (measured from centerline to centerline).

The proposed Stoddard Wells Road driveway includes:

- A full access driveway is proposed at Project Driveway “A” on Stoddard Wells Road located about 950 feet south of Abbey Lane. This Driveway “A” will provide the only access point for truck traffic.

  Proposed improvements to Stoddard Wells Road include frontage improvements and striping a northbound left turn lane into the Project Driveway “A”.

The study area for determining level of service impacts includes one existing intersection and oner future project driveway intersection:

1. Stoddard Wells Road at Abbey Lane
2. Stoddard Wells Rd at Driveway “A” (future intersection)

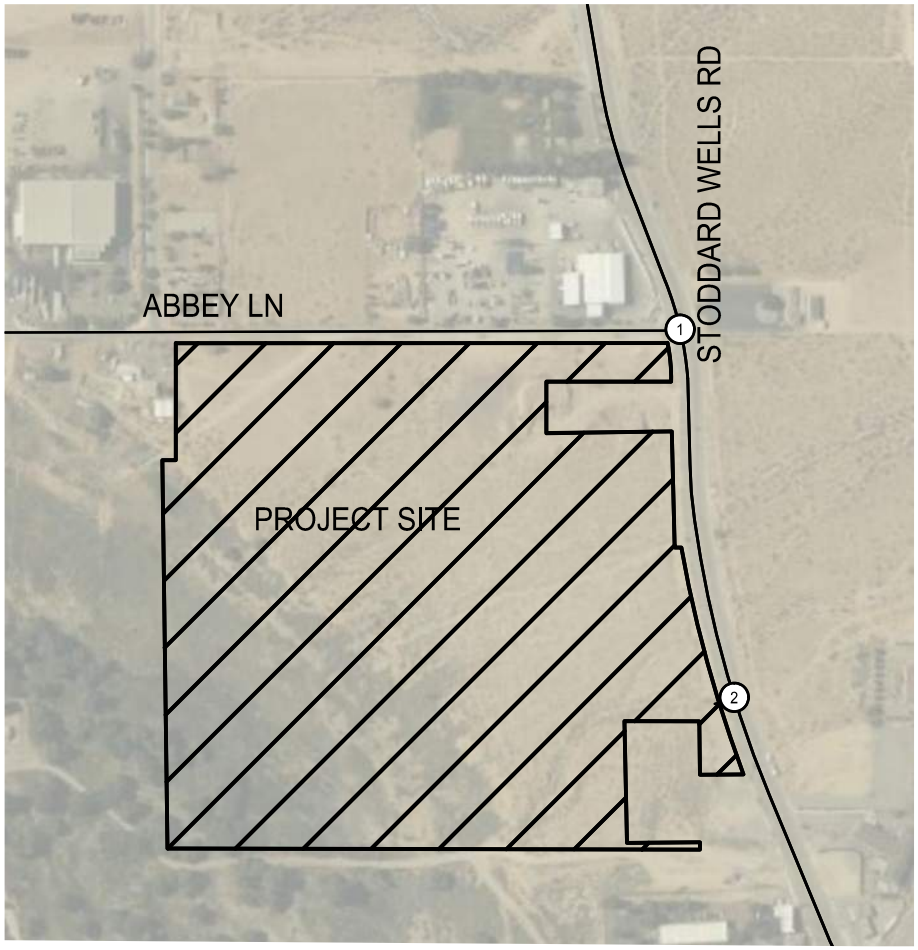
The intersection of Stoddard Wells Road at Abbey Lane is a side-street-stop-controlled intersection, with Abbey Lane being stop-controlled.

3.3 Existing Traffic Volumes

Turn movement counts were conducted in February 2022 by Newport Traffic Studies, an independent traffic data collection company. Due to the industrial nature of the traffic within the study area the peak hours were extended. These counts were collected during the AM (6:00-9:00 AM) and PM (3:00-6:00 PM) peak periods. The raw turning movement counts are included in **Appendix A** of this study.

As requested by the City of Victorville staff, Passenger Car Equivalent (PCE) factors were applied to the truck traffic by vehicle type. The conversion of trucks to PCEs was utilized to capture the heavy truck usage on Abbey Lane and the capacity they use when converted to an equivalent number of passenger cars.

Figure 3 illustrates the rounded existing passenger car equivalent peak hour traffic volumes in the study area.



LEGEND

XX/XX - AM/PM PEAK HOUR PCE VOLUMES

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

DAVID EVANS AND ASSOCIATES INC.

FIGURE 3: EXISTING TRAFFIC PCE VOLUMES
ABBEY LANE INDUSTRIAL DEVELOPMENT
VICTORVILLE, CALIFORNIA

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3.4 Capacity Analysis Methodology

Intersection capacity analyses were conducted using Synchro software[1], which implements the methods of the Highway Capacity Manual, 6th Edition (HCM 6)[2] used in this report. The intersection capacity analyses utilize existing intersection geometrics and existing and forecasted traffic volumes in analyzing AM and PM peak hour intersection operating conditions. The traffic analysis methodology concepts presented in Chapter 20 of the Highway Capacity Manual (HCM 6) were utilized to calculate intersection Level of Service (LOS) based on the average control delay (in seconds per vehicle) of vehicles utilizing the intersections.

The LOS for a Two-Way Stop Controlled (TWSC) intersection is determined by the computed or measured control delay. The LOS is determined for each minor street movement (or shared movement) by using the criteria provided in **Table 3-1** referenced from HCM 6 Chapter 20.

Table 3-1: HCM 6 – LOS Criteria for TWSC

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

3.5 Current City Policy on Intersection Performance

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

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

3.6 Existing Traffic Analysis

Existing intersection capacity and LOS analyses are based on the existing intersection geometrics and the AM and PM peak hour traffic volumes discussed earlier. The results of the analysis are shown in **Table 3-2** and provided in **Appendix B**.

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

Table 3-2: Intersection Capacity Analysis – Existing Conditions

Intersection	Intersection Control Type	AM Peak		PM Peak	
		Delay	LOS	Delay	LOS
1. Stoddard Wells Road / Abbey Lane	SSSC	8.9	A	8.9	A
2. Stoddard Wells Road / Project Driveway "A"	SSSC/Driveway	N/A			
Abbreviations: SSSC – Side Street Stop Controlled Intersection N/A – Not Applicable Future Intersection. Delay – seconds per vehicle LOS – Level of Service					

As shown in **Table 3-2** under existing conditions, the study intersections operates at LOS A during the AM and PM peak hours with the existing geometrics illustrated in **Figure 4**.

3.6.1 Existing Traffic Signal Warrant Analysis

A traffic signal warrant analysis was completed for the side street stop-controlled intersection of Stoddard Wells Road at Abbey Lane. This study reviewed Warrant 3 (Peak Hour) and Warrant 7 (Crash Experience Warrant) included in the most recent California Manual on Uniform Traffic Control Manual (CA MUTCD, 2014). The intersection of Stoddard Wells Road at Abbey Lane does not meet the peak hour warrant for the installation of a traffic signal. The traffic signal warrant analysis is provided in **Appendix C**.

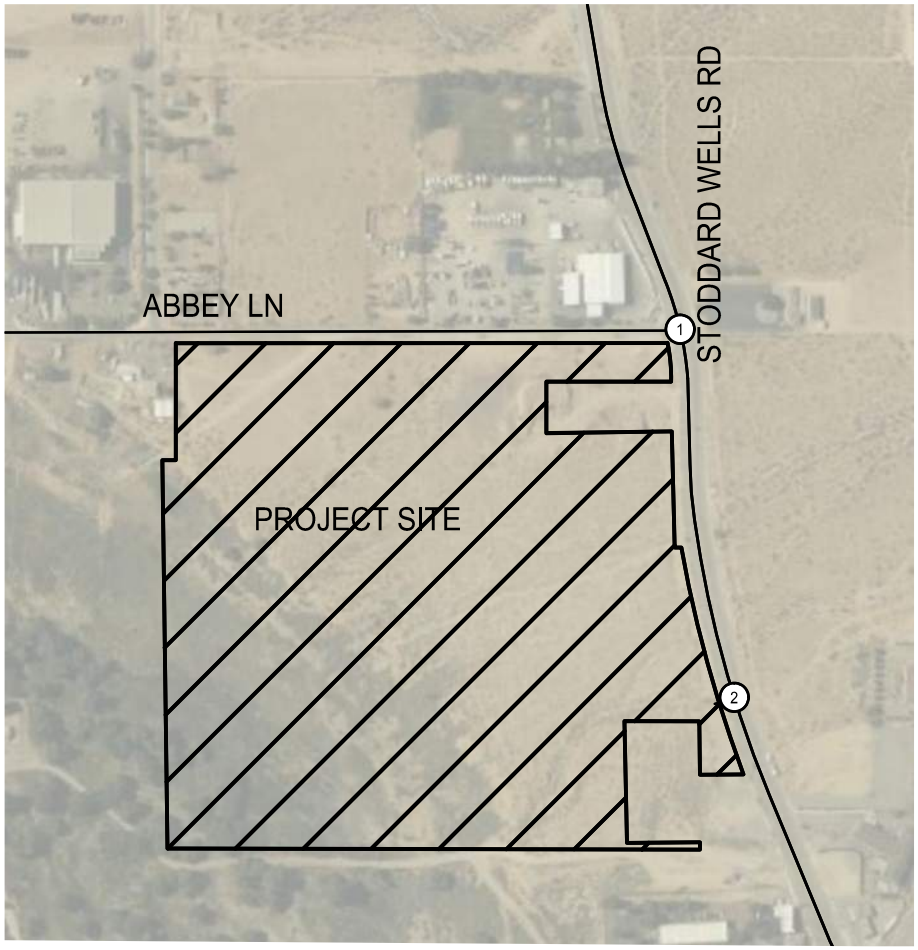
3.6.2 Existing Traffic Queuing Analysis

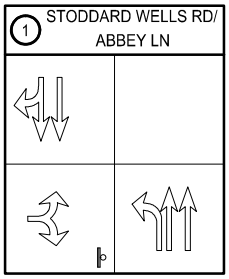
A queuing analysis for the Existing Conditions was performed for the northbound left turn from Stoddard Wells Road to Abbey Lane. The queuing analysis was performed utilizing the Trafficware SimTraffic Version 11 software package. The 95th percentile maximum queue length results for the Existing Conditions are shown in **Table 3-3** and provided in **Appendix D**.

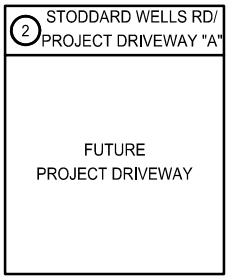
Table 3-3: Queuing Analysis – Existing Conditions

Intersection	Movement	Storage Length (Feet)	Vehicle Queue (Feet)	
			AM Peak	PM Peak
1. Stoddard Wells Road / Abbey Lane	NBL	130	13	11
Queue – In Feet 95% - 95 Percentile Queue Length				

As presented in **Table 3-3** , under Existing Conditions the existing turn bay lengths can accommodate the AM or PM peak 95th percentile traffic flows.







LEGEND

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

DAVID EVANS AND ASSOCIATES INC.

FIGURE 4: EXISTING INTERSECTION GEOMETRICS
ABBEY LANE INDUSTRIAL DEVELOPMENT
VICTORVILLE, CALIFORNIA

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4 EXISTING PLUS PROJECT CONDITIONS

Existing Plus Project Conditions identifies impacts to the City's level of service standards when compared to Existing Conditions without any unrelated transportation system improvements or other development. Impacts identified in this scenario are considered "project-specific"—impacts that are the sole responsibility of the project to mitigate.

4.1 Site Access and Project-Specific Roadway Improvements

The analysis of intersection level of service in the future project scenarios includes site access and roadway and off-site intersection improvements as part of the project. These improvements are described in the following sections.

Project Access

Primary access to the site (for trucks) is proposed via a driveway along Stoddard Wells Road. The proposed Stoddard Wells Road driveway includes:

- A full access driveway is proposed at Project Driveway "A" on Stoddard Wells Road located about 950 feet south of Abbey Lane. This Driveway "A" will provide the only access point for truck traffic.

  Proposed improvements to Stoddard Wells Road include striping a northbound left turn lane into the Project Driveway "A".

Secondary access to the site (for passenger cars) is proposed vis two driveways on Abbey Lane. These driveways are located approximately 250 feet, and 1,275 feet, west of Stoddard Wells Road respectively. These driveways are not included in the level of service analysis.

Project-Specific Roadway Improvements

3. Frontage Improvements on Stoddard Wells Road. The project will be conditioned to improve its frontage along Stoddard Wells Road. The project proposes to dedicate the necessary right-of-way and construct the following improvements:
    a. Dedicate the right-of-way to accommodate the half-width of the 98-foot right-of-way for a designated arterial (49-feet) per the city's General Plan Circulation Map (September 2020).
    b. Construct curb/gutter, sidewalk, planting strips, and pavement along the project's frontage per city standards.
    c. Construct the Stoddard Wells Road driveway at the location specified on the site plan per the city's commercial/industrial driveway standards.
    d. Stripe a northbound left turn lane on Stoddard Wells Road to Project Driveway "A", approximately 200 feet in length plus a 120-foot-long transition.
4. Frontage Improvements on Abbey Lane. The project will be conditioned to improve its frontage along Abbey Lane. The project proposes to dedicate the necessary right-of-way and construct the following improvements:
    a. Dedicate the right-of-way to accommodate the half-width of the 60-foot right-of-way for a local street (30-feet) per the city's General Plan Street Cross-Sections (September 2020).
    b. Construct curb/gutter, sidewalk, planting strips, and pavement along the project's frontage per city standards.
    c. Construct both Abbey Lane driveways at locations specified on the site plan per the city's commercial driveway standards.

4.2 Project Trip Generation

The trip generation rates for the site were obtained from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. The rates selected for the proposed land use is a **High-Cube Fulfillment Center Warehouse Building** (ITE Land Use Category 155) subcategory Sort.

As noted in the ITE Trip Generation manual, 11th Edition, a high-cube warehouse (HCW) may contain a mezzanine. In a HCW setting, a mezzanine is a free-standing, semi-permanent structure that is commonly supported by structural steel columns and that is lined with racks or shelves. The gross floor area (GFA) utilized for the proposed project includes the floor area of the mezzanine.

The source of the mode share split between passenger cars and trucks is the Fontana Truck Trip Generation Study3. The mode share split is provided for Warehouse Uses (ITE Land Use Category 150).

The Passenger Car Equivalent (PCE) factors are from the City of Hesperia's (a neighboring City to Victorville) Traffic Impact Analysis Report Guidelines for Vehicle Miles Traveled (VMT) and Level of Service (LOS) Assessment dated July 2020. The Passenger Car Equivalents (PCE) factors are provided by vehicle type. The conversion of trucks to PCEs is required for the calculation of intersection level of service.

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

Table 4-1: Project Trip Generation

Use	Size/ Quantity	Daily	AM			PM		
			In	Out	Total	In	Out	Total
High-Cube Fulfillment Center Warehouse - Sort Land Use Category (ITE 155)								
Per 1,000 Sq. Ft. GLA	823,980	6.44	0.70	0.17	0.87	0.47	0.73	1.20
Trips		5,307	581	136	717	386	604	990
	Mode Share	**Total Project Trip Generation by Vehicle Type**						
Passenger Cars (Percent of Total)	79.57%	4,223	463	108	571	307	480	787
2-Axle Trucks (Percent of Total)	3.46%	184	20	5	25	13	21	34
3-Axle Trucks (Percent of Total)	4.64%	247	27	6	33	18	28	46
4-Axle Trucks (Percent of Total)	12.33%	655	72	17	89	48	74	122
Total		5,309	582	136	718	386	603	989
	PCE Factor	**Total Project Trip Generation in Passenger Car Equivalents (PCE)**						
Passenger Cars)	1	4,223	463	108	571	307	480	787
2-Axle Trucks	1.5	276	30	8	38	20	32	52
3-Axle Trucks (Percent of Total)	2	494	54	12	66	36	56	92
4-Axle Trucks (Percent of Total)	3	1,965	216	51	267	144	222	366

[3] Fontana Truck Trip Generation Study. City of Fontana, County of San Bernardino, and the State of California. August 2003. This study evaluated vehicle trip generation characteristics of several land use categories that typically generate significant volumes of truck traffic. The study collected data at numerous industrial facilities including mix of vehicles by axle. The data from this study has been integrated into ITE's Trip Generation manual.

Total		**6,958**	763	179	**942**	507	790	**1,297**

Notes:
KSF = Thousands of Square Feet.
AM / PM Peak Hour of Adjacent Street Traffic = Trip generation coinciding with the highest hourly volumes of traffic on the adjacent streets during the AM (7:00 AM and 9:00 AM) and PM (4:00 PM and 6:00 PM) commuter peak periods.
Source of trip generation rates: Institute of Transportation Engineers (ITE) Trip Generation (11th Edition).
Average rates for land use category 155 (High-Cube Fulfillment Center Warehouse - Sort).
Source of passenger car / truck mode share (percentage of total): Fontana Truck Trip Generation Study for Heavy Warehouse Uses (August 2003).
Passenger Car Equivalents (PCE) factors: Industry standard values utilized in neighboring jurisdictions

As presented in **Table 4-1** , the proposed project is estimated to generate 6,958 PCE daily trips, 942 PCE AM peak hour trips, and 1,297 PCE PM peak hour trips during the adjacent street peak hours. trips.

4.3 Project Trip Distribution and Assignment

To address the impacts of the estimated project traffic, the trips were distributed by direction towards` major commute routes and concentrations of residential and commercial / employment centers and access to the I-15 freeway. Once the distribution pattern was established, project trips were assigned to the streets that serve the project. **Figure 5** distribution of the auto project trips. **Figure 6** distribution of the auto project trips. **Figure 7** illustrates the assignment of the auto project trips to study intersections. **Figure 8** illustrates the assignment of the truck project trips to study intersections. **Figure 9** illustrates the assignment of total project trips to study intersections.

4.4 Existing Plus Project Traffic Analysis

The project trip generation, traffic distribution and assignment patterns were used in the intersection capacity analyses to assess potential project impacts to level of service. The total PCE project trips were added to existing traffic volumes to derive Existing Plus Project Conditions. This scenario's traffic volumes are illustrated in **Figure 10**. Intersection capacity analysis for the study intersections uses the existing lanes geometries and project access driveway improvements. The results of the analysis are shown in **Table 4-2** and provided in **Appendix B**.

Table 4-2: Intersection Capacity Analysis – Existing Plus Project Conditions

Intersection	Intersection Control Type	Existing Conditions				Existing + Project Conditions			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Stoddard Wells Road / Abbey Lane	SSSC	8.9	A	8.9	A	11.4	B	14.2	B
2. Stoddard Wells Road / Project Driveway "A"	SSSC	N/A				9.4	A	14.8	B

Abbreviations:
SSSC – Side Street Stop Controlled Intersection
N/A – Not Applicable Future Intersection.
Delay – seconds per vehicle
LOS – Level of Service

As presented in **Table 4-2***,* under existing plus project conditions, the study intersections would operate at LOS B or better during the AM and PM peak hours. The existing and project geometrics are illustrated in **Figure 11**.

4.4.1 Existing Plus Project Traffic Signal Warrant Analysis

A traffic signal warrant analysis (Warrant 3 - Peak Hour) was completed for the side street stop-controlled intersection of Stoddard Wells Road at Abbey Lane. The intersection does meet the peak hour warrant

under the Existing Plus Project Conditions scenario. The traffic signal warrant analyses are provided in **Appendix C**.

4.4.2 Existing Plus Project Traffic Queuing Analysis

A queuing analysis for the existing plus project conditions was performed for the northbound left turn from Stoddard Wells Road to Abbey Lane. The queuing analysis was performed utilizing the Trafficware SimTraffic Version 11 software package. The 95th percentile maximum queue length results for the Existing Plus Project Conditions are shown in **Table 4 3** and provided in **Appendix D**.

Table 4-3: Queuing Analysis – Existing Plus Project Conditions

Intersection	Intersection Control Type	Storage Length (Feet)	Veh. Queue (Ft)	
			AM	PM
1. Stoddard Wells Road / Abbey Lane	NBL	130	57	46
2. Stoddard Wells Road / Project Driveway "A"	NBL	(200)	80	75
(XXX) – Proposed Storage Length 95% - 95 Percentile Queue Length				

As presented in **Table 4-3**, under existing plus project conditions the existing and proposed turn bay lengths will accommodate the AM or PM peak 95th percentile traffic flows.

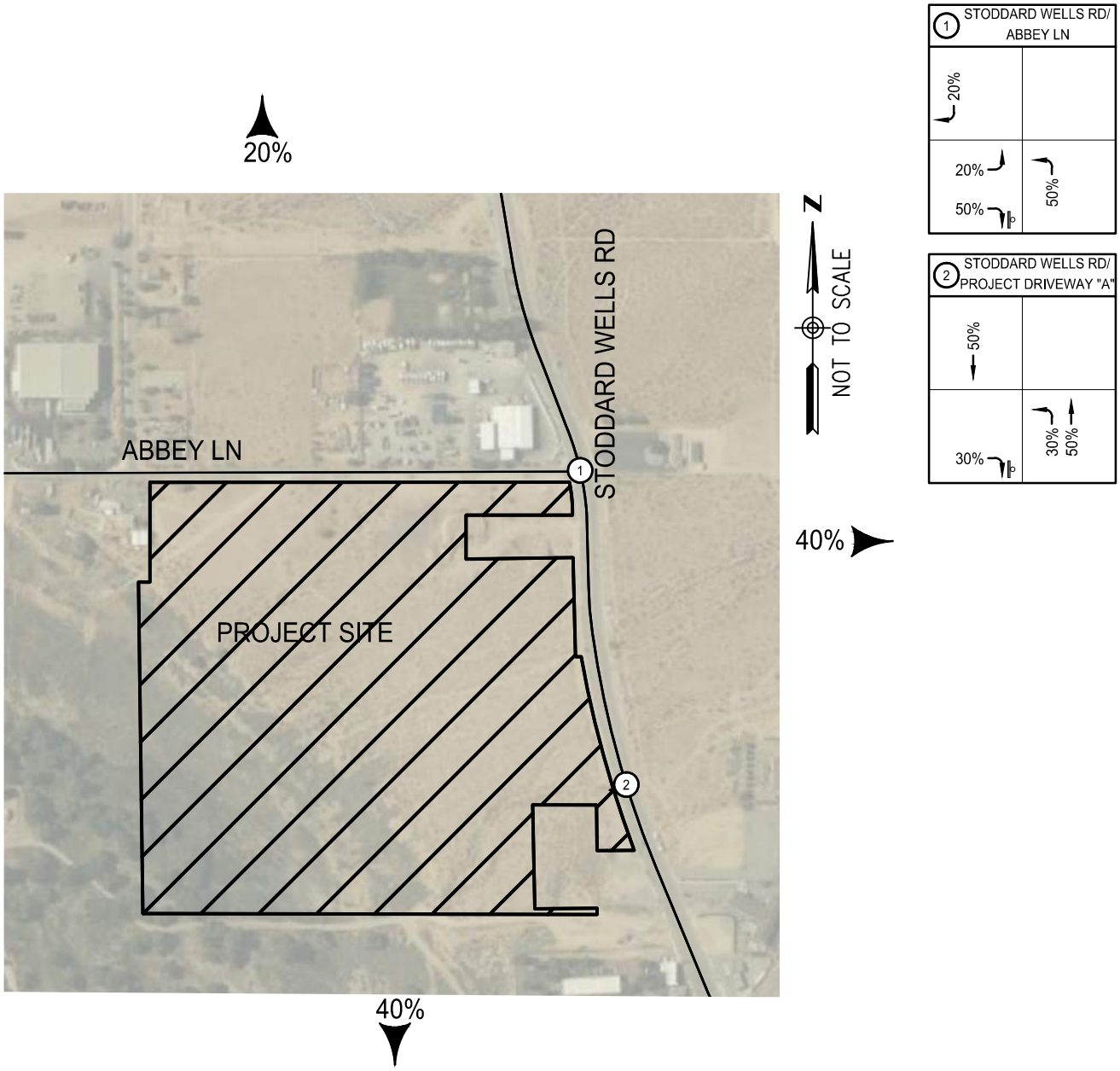

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FIGURE 5: AUTO PROJECT TRIP DISTRIBUTION
ABBEY LANE INDUSTRIAL DEVELOPMENT
VICTORVILLE, CALIFORNIA

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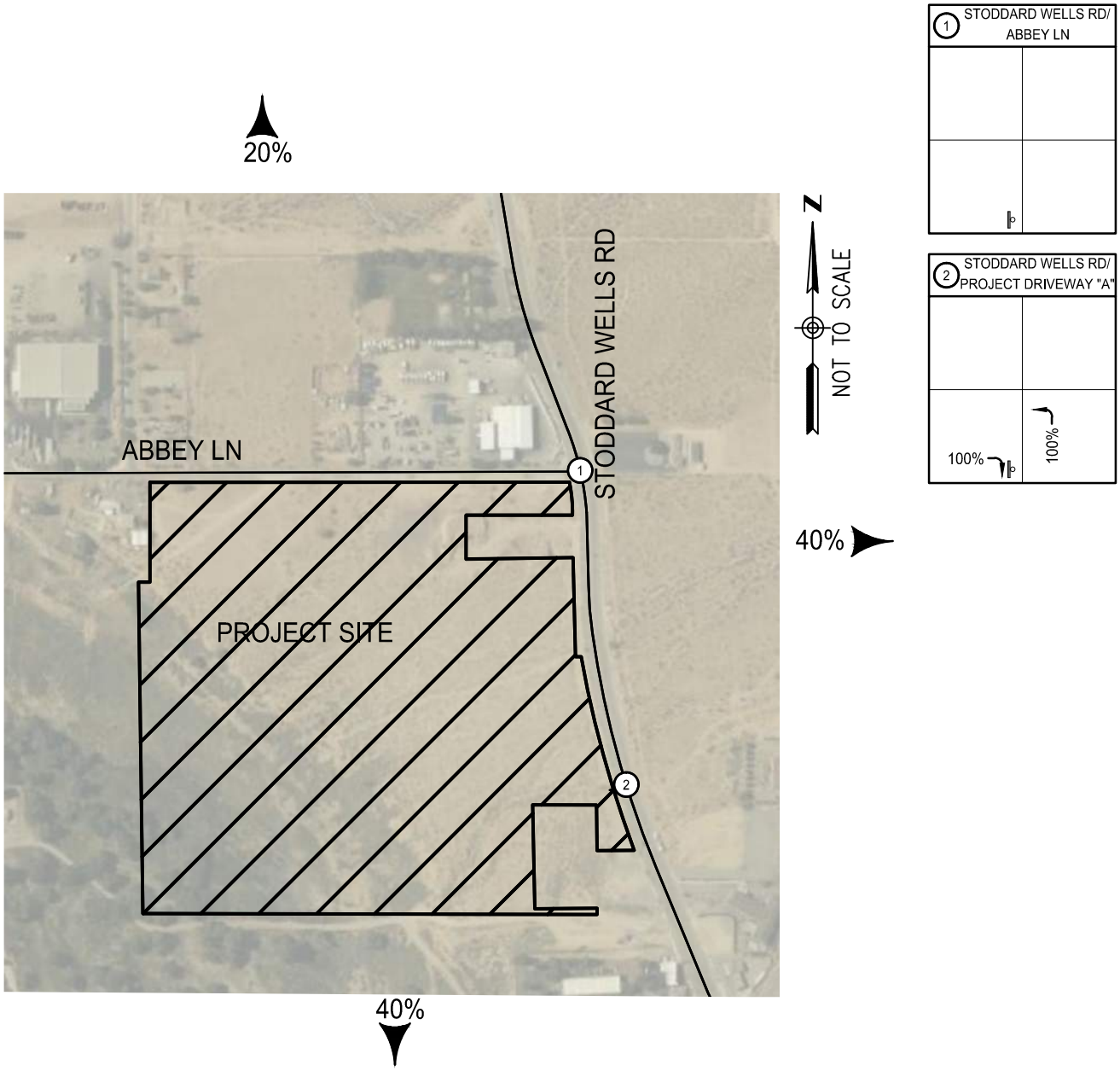

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FIGURE 6: TRUCK PROJECT TRIP DISTRIBUTION
ABBEY LANE INDUSTRIAL DEVELOPMENT
VICTORVILLE, CALIFORNIA

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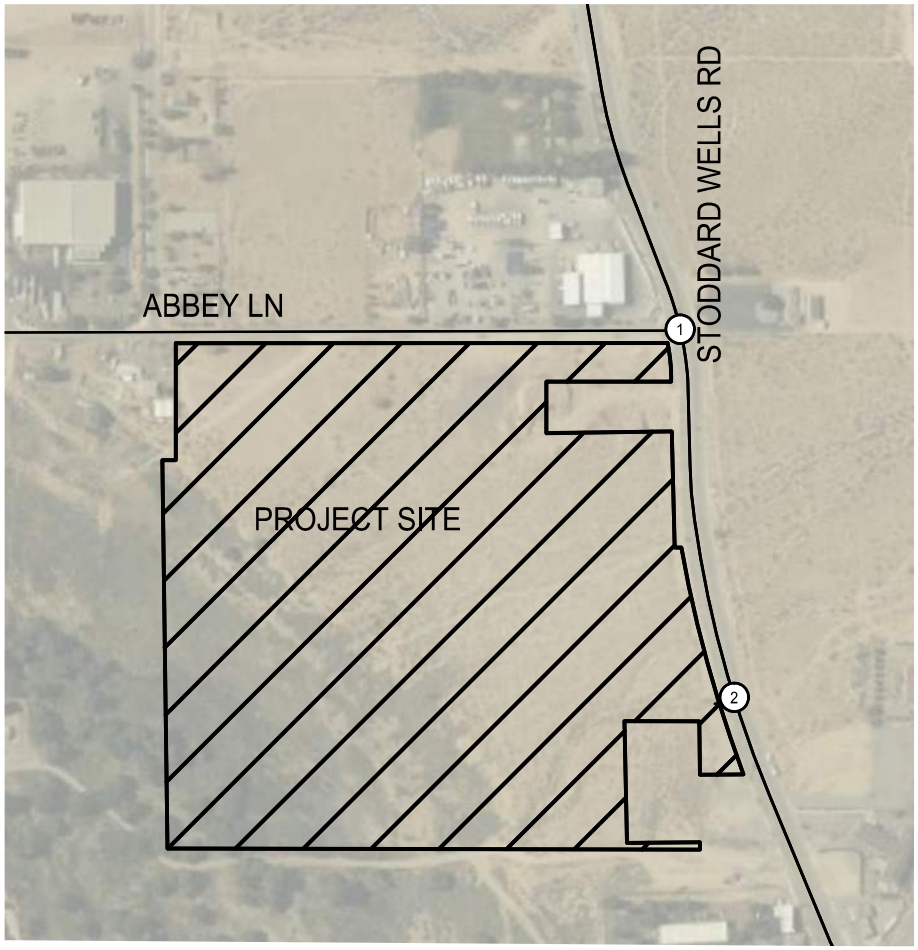

1 STODDARD WELLS RD/ ABBEY LN	
91/61	
22/94 53/235	227/151

2 STODDARD WELLS RD/ PROJECT DRIVEWAY "A"	
53/235	
32/141	136/91 227/151

AUTO PROJECT TRIPS

AM PEAK HOUR - 453 IN / 106 OUT
PM PEAK HOUR - 301 IN / 470 OUT

LEGEND

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

DAVID EVANS AND ASSOCIATES INC.

FIGURE 7: AUTO PROJECT TRIPS
ABBEY LANE INDUSTRIAL DEVELOPMENT
VICTORVILLE, CALIFORNIA

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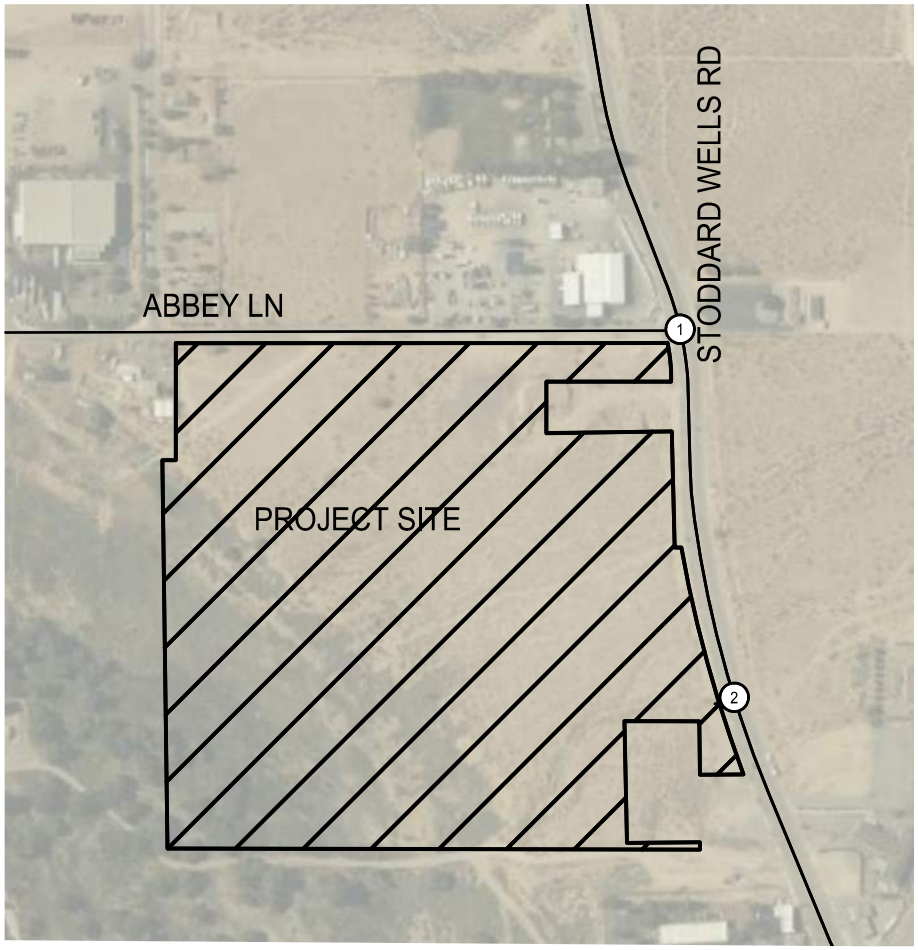

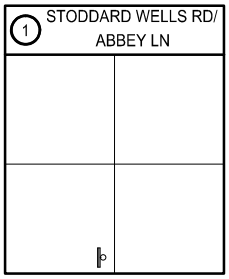

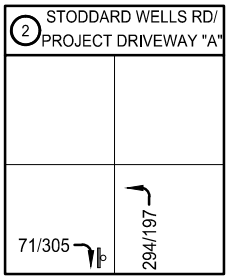

TRUCK PROJECT TRIPS

AM PEAK HOUR - 294 IN / 71OUT
PM PEAK HOUR - 197 IN / 305 OUT

LEGEND

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

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FIGURE 8: TRUCK PROJECT TRIPS
ABBEY LANE INDUSTRIAL DEVELOPMENT
VICTORVILLE, CALIFORNIA

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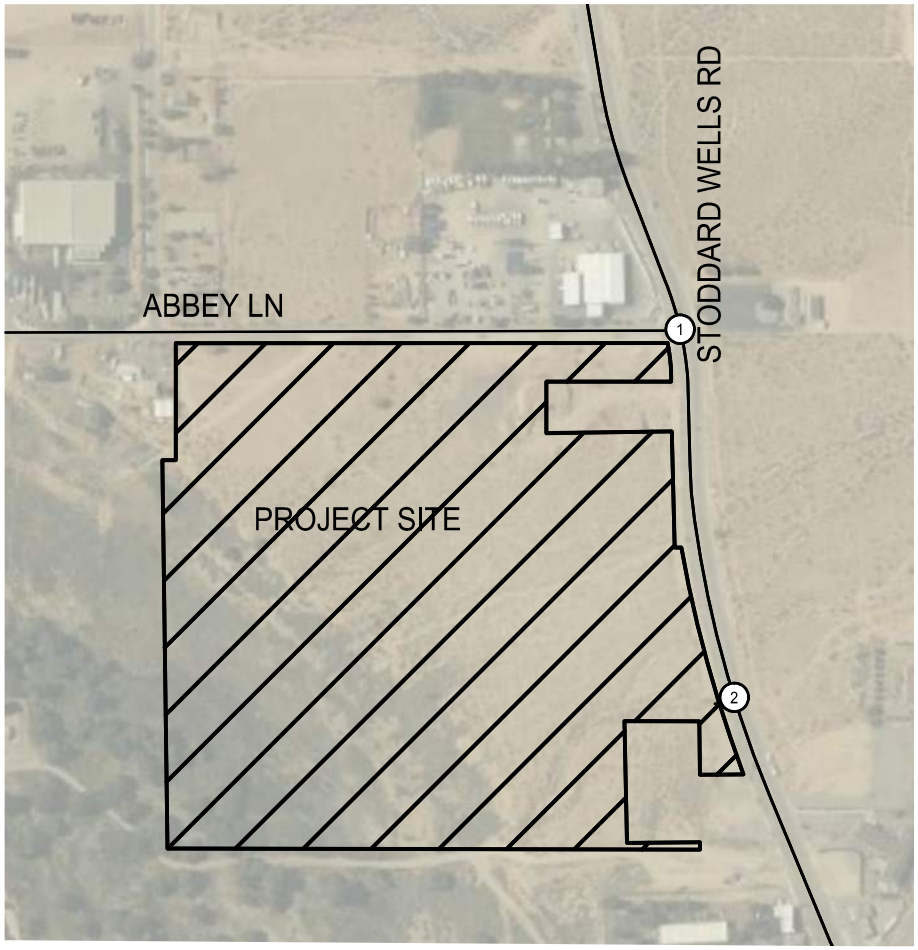

1 STODDARD WELLS RD/ ABBEY LN	
91/61	
22/94 53/235	227/151

2 STODDARD WELLS RD/ PROJECT DRIVEWAY "A"	
53/235	
103/446	430/288 227/151

TOTAL PCE PROJECT TRIPS

AM PEAK HOUR - 747 IN / 177 OUT
PM PEAK HOUR - 498 IN / 775 OUT

LEGEND

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

DAVID EVANS AND ASSOCIATES INC.

FIGURE 9: TOTAL PCE PROJECT TRIPS
ABBEY LANE INDUSTRIAL DEVELOPMENT
VICTORVILLE, CALIFORNIA

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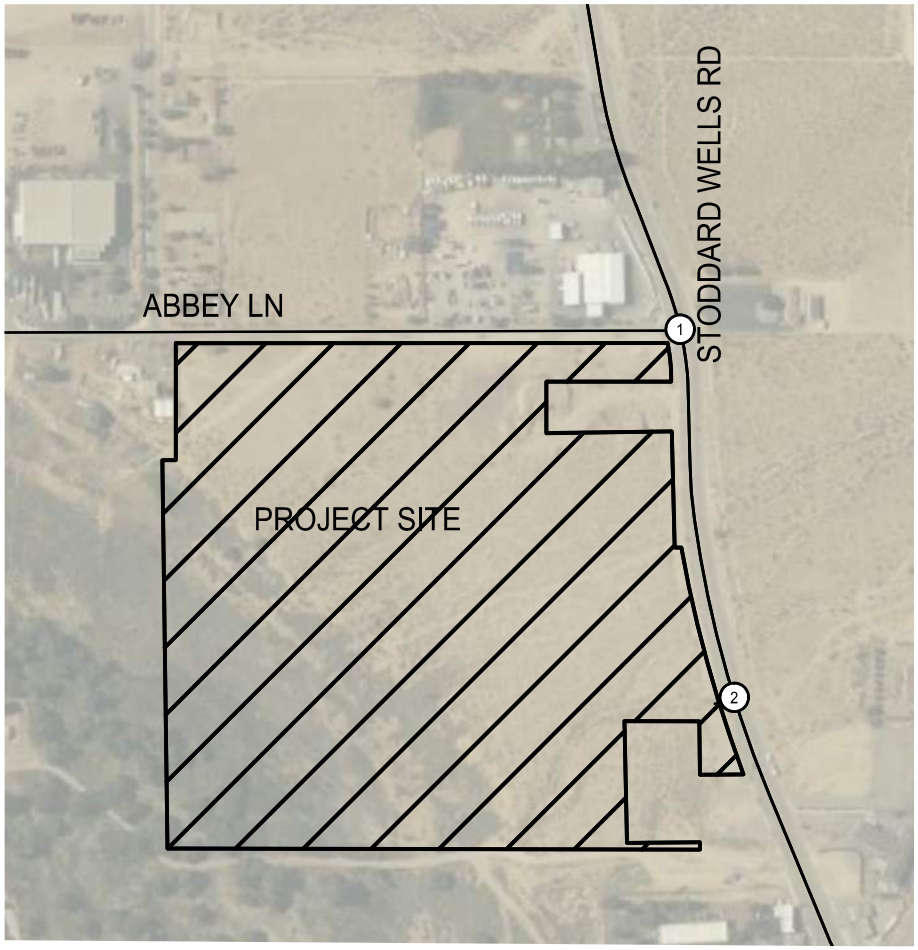

LEGEND

XX/XX - AM/PM PEAK HOUR PCE VOLUMES

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

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FIGURE 10: EXISTING PLUS PROJECT TRAFFIC PCE VOLUMES
ABBEY LANE INDUSTRIAL DEVELOPMENT
VICTORVILLE, CALIFORNIA

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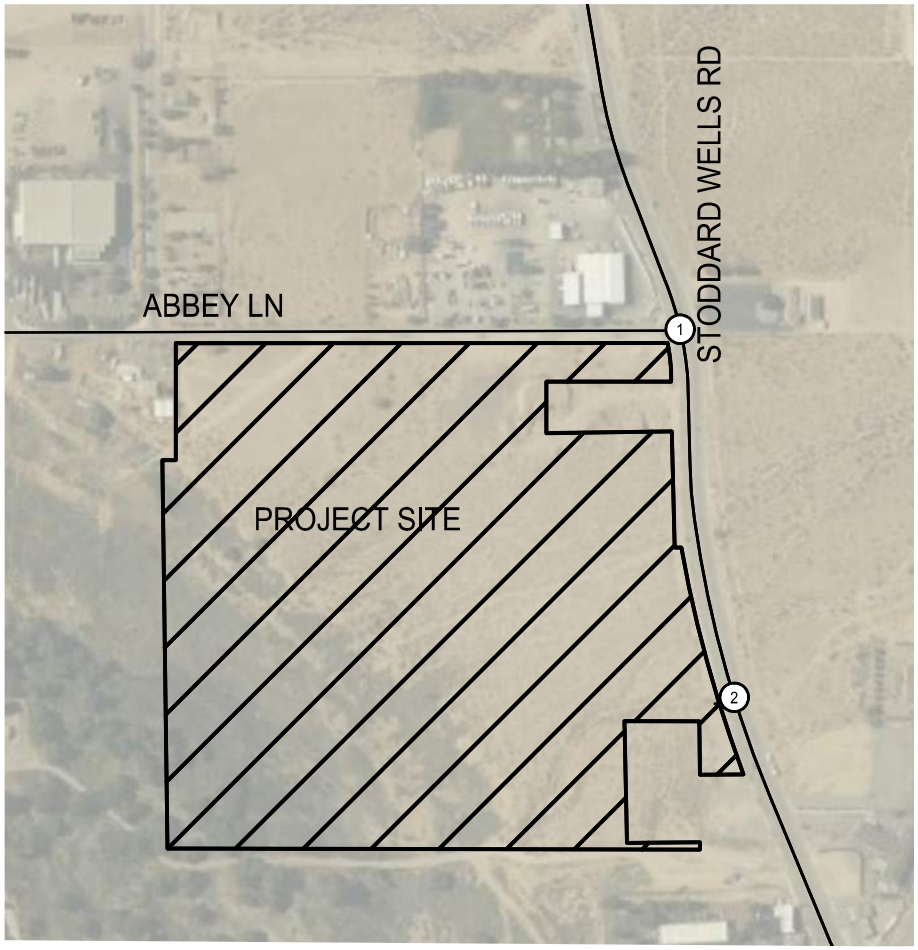

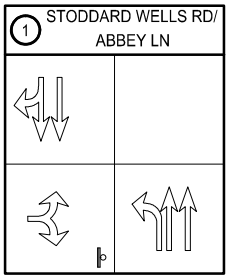

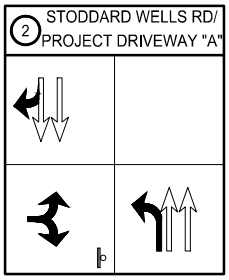

LEGEND

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

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FIGURE 11: EXISTING PLUS PROJECT INTERSECTION GEOMETRICS
ABBEY LANE INDUSTRIAL DEVELOPMENT
VICTORVILLE, CALIFORNIA

5 BACKGROUND CONDITIONS (YEAR 2024)

This scenario represents conditions at the time the project is anticipated to be fully constructed and occupied (known as buildout which is the year 2024 for this project) but without traffic generated by the project. This scenario is comprised of Ambient growth—a general rate of growth in traffic from overall regional growth but not specific to any nearby development.

5.1 Ambient Growth Projections

The proposed project is anticipated to be constructed and occupied in the year 2024. As stated earlier in this report near-term growth in traffic is comprised of regional ambient growth and other area projects expected to be completed within the same timeframe. Ambient growth is estimated as a 3.5% annual increase.

5.2 Background Traffic Analysis

The background condition traffic volumes are illustrated in **Figure 12.** Intersection capacity analysis for this scenario uses existing lanes geometries. The results of the analysis are shown in **Table 5-1** and provided in **Appendix B.**

Table 5-1: Intersection Capacity Analysis – Background Conditions

Intersection	Intersection Control Type	AM Peak		PM Peak	
		Delay	LOS	Delay	LOS
1. Stoddard Wells Road / Abbey Lane	SSSC	8.9	A	8.9	A
2. Stoddard Wells Road / Project Driveway "A"	SSSC	N/A			
Abbreviations: SSSC – Side Street Stop Controlled Intersection N/A – Not Applicable Future Intersection. Delay – seconds per vehicle LOS – Level of Service					

As presented in **Table 5-1***,* under background conditions, the study intersection is anticipated to continue to operate at LOS A during the AM and PM peak hours with the existing geometrics.

5.2.1 Background Traffic Signal Warrant Analysis

A traffic signal warrant analysis (Warrant 3 - Peak Hour) was completed for the side street stop-controlled intersection of Stoddard Wells Road at Abbey Lane. The intersection does not meet the peak hour warrant under the under the background conditions scenario. The traffic signal warrant analyses are provided in **Appendix C***.*

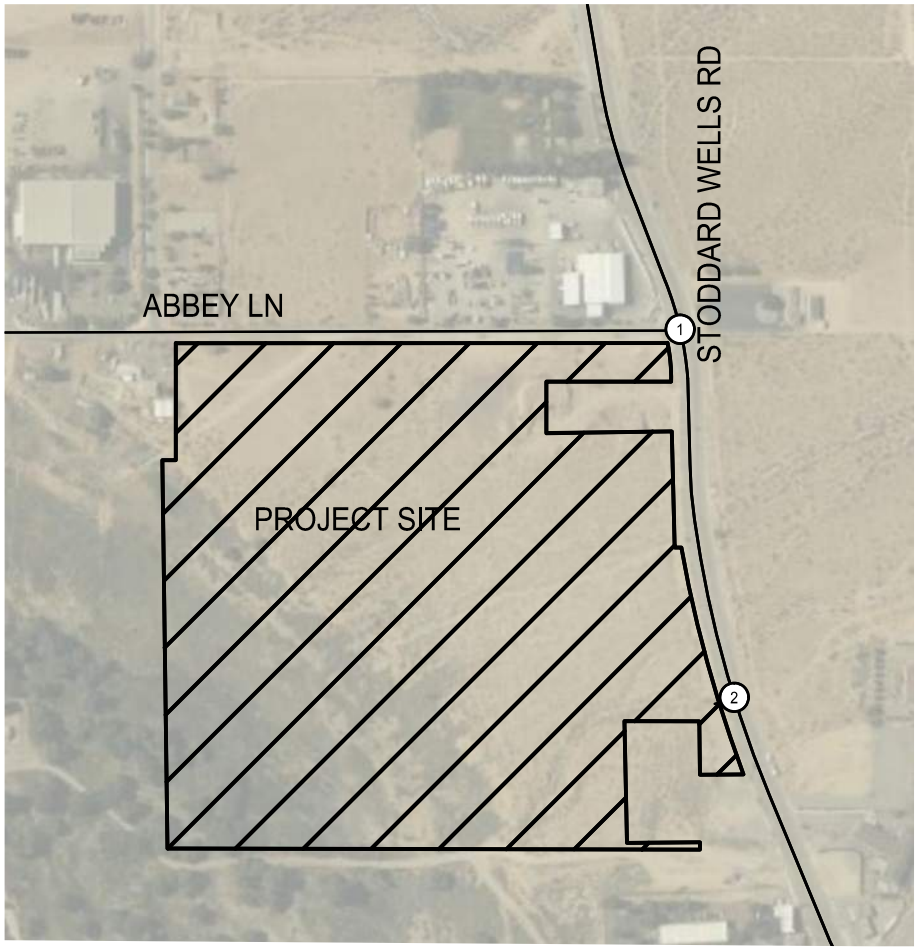
5.2.2 Background Traffic Queuing Analysis

A queuing analysis for the background conditions was performed for the northbound left turn from Stoddard Wells Road to Abbey Lane. The queuing analysis was performed utilizing the Trafficware SimTraffic Version 11 software package. The 95th percentile maximum queue length results for the Background Conditions are shown in **Table 5-2** and provided in **Appendix D**.

Table 5-2: Queuing Analysis – Background Conditions

Intersection	Movement	Storage Length (Feet)	Vehicle Queue (Ft)	
			AM	PM
1. Stoddard Wells Road / Abbey Lane	NBL	130	13	15
Queue – In Feet 95% - 95 Percentile Queue Length				

As presented in **Table 5-2**, under background conditions the existing turn bay length can accommodate the AM or PM peak 95th percentile traffic flows.



① STODDARD WELLS RD/ ABBEY LN	
1/1 148/179	
1/1 10/11	7/7 123/141

② STODDARD WELLS RD/ PROJECT DRIVEWAY "A"
FUTURE PROJECT DRIVEWAY

LEGEND

XX/XX - AM/PM PEAK HOUR PCE VOLUMES

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

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FIGURE 12: BACKGROUND TRAFFIC PCE VOLUMES
ABBEY LANE INDUSTRIAL DEVELOPMENT
VICTORVILLE, CALIFORNIA

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6 PROJECT TRAFFIC CONDITIONS

This scenario adds the project's estimated traffic generation at buildout (2024) to the background conditions scenario described above. Level of service impacts identified in this scenario are considered "cumulative" impacts—impacts that the project contributes to, but does not solely cause, and may be responsible for a fair-share of the cost to implement any improvement measures.

6.1 Project Traffic Analysis

The traffic volumes under this scenario are illustrated in **Figure 13**. Intersection capacity analysis for the study intersections uses existing lanes geometries and the proposed project-specific access, roadway, and off-site intersection improvements described earlier. The results of the analysis are shown in **Table 6-1** and provided in **Appendix B.**

Table 6-1: Intersection Capacity Analysis – Project Conditions

Intersection	Intersection Control Type	Background Conditions				Project Conditions			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Stoddard Wells Road / Abbey Lane	SSSC	8.9	A	8.9	A	11.5	B	14.4	B
2. Stoddard Wells Road / Project Driveway "A"	SSSC	N/A				9.4	A	14.9	B
Abbreviations: SSSC – Side Street Stop Controlled Intersection N/A – Not Applicable Future Intersection. Delay – seconds per vehicle LOS – Level of Service									

As presented in **Table 6-1**, under the project conditions, the study intersections would operate at LOS B or better during the AM and PM peak hours.

6.1.1 Project Traffic Signal Warrant Analysis

A traffic signal warrant analysis (Warrant 3 - Peak Hour) was completed for the side street stop-controlled intersection of Stoddard Wells Road at Abbey Lane. The intersection does meet the peak hour warrant under the project conditions scenario. The traffic signal warrant analyses are provided in **Appendix C**.

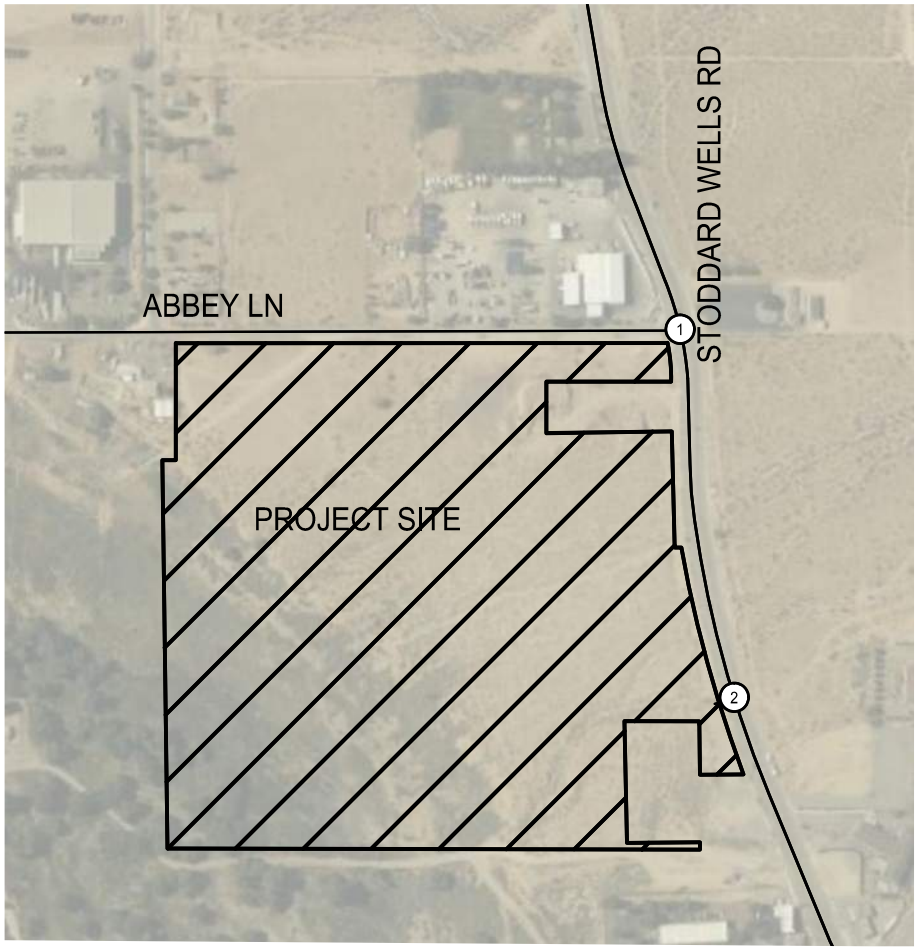
6.1.2 Project Traffic Queuing Analysis

A queuing analysis for the project conditions was performed for the northbound left turn from Stoddard Wells Road to Abbey Lane. The queuing analysis was performed utilizing the Trafficware SimTraffic Version 11 software package. The 95th percentile maximum queue length results for the Project Conditions are shown in **Table 6-2** and provided in **Appendix D**.

Table 6-2: Queuing Analysis – Project Conditions

Intersection	Movement	Storage Length (Feet)	Vehicle Queue (Ft)	
			AM	PM
1. Stoddard Wells Road / Abbey Lane	NBL	130	59	48
2. Stoddard Wells Road / Project Driveway "A"	NBL	(200)	74	80
Queue – In Feet (XXX) – Proposed Storage Length 95% - 95 Percentile Queue Length				

As presented in **Table 6-2**, under project conditions the existing and proposed turn bay lengths will accommodate the AM or PM peak 95th percentile traffic flows.



LEGEND

XX/XX - AM/PM PEAK HOUR PCE VOLUMES

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

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FIGURE 13: PROJECT TRAFFIC PCE VOLUMES
ABBEY LANE INDUSTRIAL DEVELOPMENT
VICTORVILLE, CALIFORNIA

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7 FUTURE CONDITIONS (YEAR 2034)

The future conditions scenario represents conditions at the planning horizon year 2034 without traffic generated by the project. This scenario is comprised of an ambient growth—a general rate of growth in traffic reflecting regional growth but not specific to any nearby development (assumed to be 3.5% annually for this study).

7.1 Future Traffic Analysis

The future conditions (year 2034) forecasted traffic volumes are illustrated in **Figure 14.** Intersection capacity analysis for the study intersections uses existing lanes geometries. The results of the analysis are shown in **Table 7-1** and provided in **Appendix B.**

Table 7-1: Intersection Capacity Analysis – Future Conditions (Year 2034)

Intersection	Intersection Control Type	AM Peak		PM Peak	
		Delay	LOS	Delay	LOS
1. Stoddard Wells Road / Abbey Lane	SSSC	9.0	A	9.1	A
2. Stoddard Wells Road / Project Driveway "A"	SSSC	N/A			
Abbreviations: SSSC – Side Street Stop Controlled Intersection N/A – Not Applicable Future Intersection. Delay – seconds per vehicle LOS – Level of Service					

As presented in under the **Table 7-1**, under future conditions, the study intersections are anticipated to continue to operate at LOS A during the AM and PM peak hours with the existing geometrics

7.1.1 Future Traffic Signal Warrant Analysis

A traffic signal warrant analysis (Warrant 3 - Peak Hour) was completed for the side street stop-controlled intersection of Stoddard Wells Road at Abbey Lane. The intersection does not meet the peak hour warrant under the under the future condition scenario. The traffic signal warrant analyses are provided in **Appendix C**.

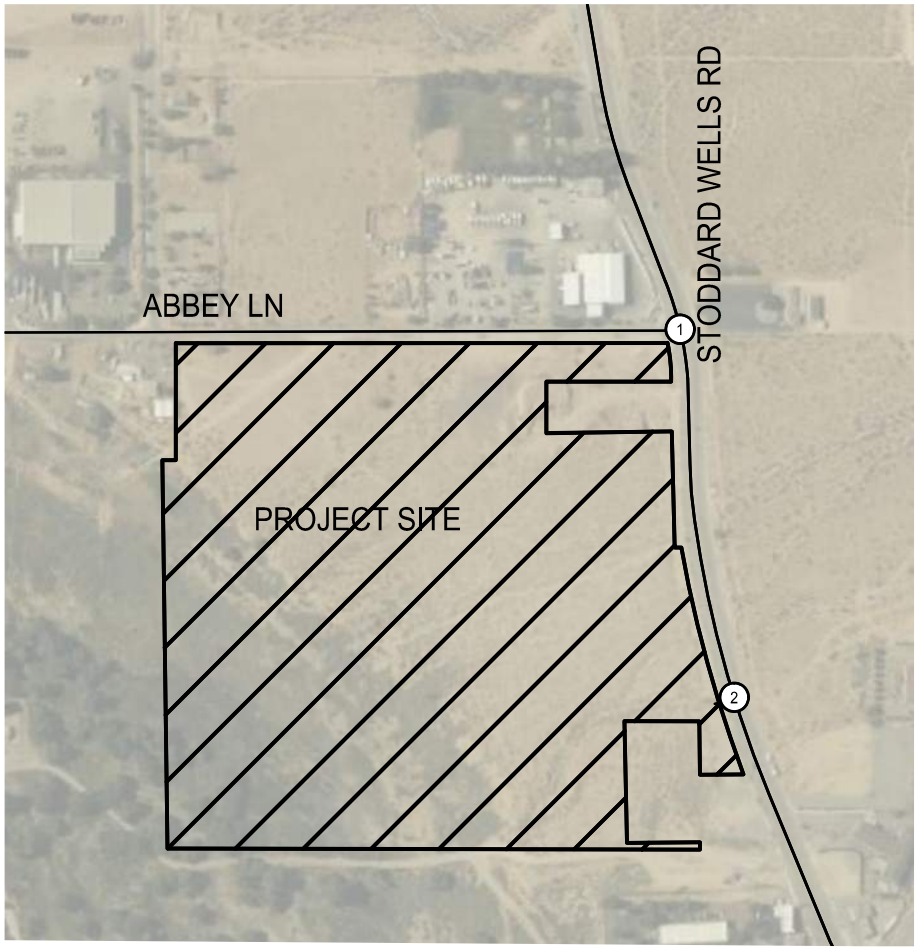
7.1.2 Future Traffic Queuing Analysis

A queuing analysis for future conditions was performed for the northbound left turn from Stoddard Wells Road to Abbey Lane. The queuing analysis was performed utilizing the Trafficware SimTraffic Version 11 software package. The 95th percentile maximum queue length results for the Future Conditions are shown in **Table 7-2** and provided in **Appendix D**.

Table 7-2: Queuing Analysis – Future Conditions

Intersection	Movement	Storage Length (Feet)	Vehicle Queue (Ft)	
			AM	PM
1. Stoddard Wells Road / Abbey Lane	NBL	130	11	15
Queue – In Feet 95% - 95 Percentile Queue Length				

As presented in **Table 7-2**, under future conditions the existing turn bay lengths can accommodate the AM or PM peak 95th percentile traffic flows.



1 STODDARD WELLS RD/ ABBEY LN	
1/1 191/232	
1/1 13/14	9/9 159/183

2 STODDARD WELLS RD/ PROJECT DRIVEWAY "A"
FUTURE PROJECT DRIVEWAY

LEGEND

XX/XX - AM/PM PEAK HOUR PCE VOLUMES

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

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FIGURE 14: FUTURE TRAFFIC PCE VOLUMES
ABBEY LANE INDUSTRIAL DEVELOPMENT
VICTORVILLE, CALIFORNIA

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8 FUTURE PLUS PROJECT CONDITIONS (YEAR 2034)

The future plus project conditions scenario adds the project's estimated traffic generation to the future condition scenario described in **Chapter 7**. 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 improvement measures.

8.1 Future Plus Project Traffic Analysis

The forecasted volumes for this scenario are illustrated in **Figure 15**. Intersection capacity analysis for the study intersections uses the existing lanes geometries and the proposed project-specific access improvements described earlier. The results of the intersection capacity analysis are shown in **Table 8-1** and provided in **Appendix B.**

Table 8-1: Intersection Capacity Analysis – Future Plus Project Conditions (Year 2034)

Intersection	Intersection Control Type	Future Conditions				Future + Project Conditions			
		AM Peak		PM Peak		AM Peak		PM Peak	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1. Stoddard Wells Road / Abbey Lane	SSSC	9.0	A	9.1	A	11.5	B	14.4	B
2. Stoddard Wells Road / Project Driveway "A"	SSSC	N/A				9.4	A	14.9	B
Abbreviations: SSSC – Side Street Stop Controlled Intersection N/A – Not Applicable Future Intersection. Delay – seconds per vehicle LOS – Level of Service									

As presented in **Table 8-1,** under future plus project conditions, the study intersections would operate at LOS B or better during the AM and PM peak hours.

8.1.1 Future Plus Project Conditions Traffic Signal Warrant Analysis

A traffic signal warrant analysis (Warrant 3 - Peak Hour) was completed for the side street stop-controlled intersection of Stoddard Wells Road at Abbey Lane. The intersection does not meet the peak hour warrant under the under the future plus project conditions scenario. The traffic signal warrant analyses are provided in **Appendix C**.

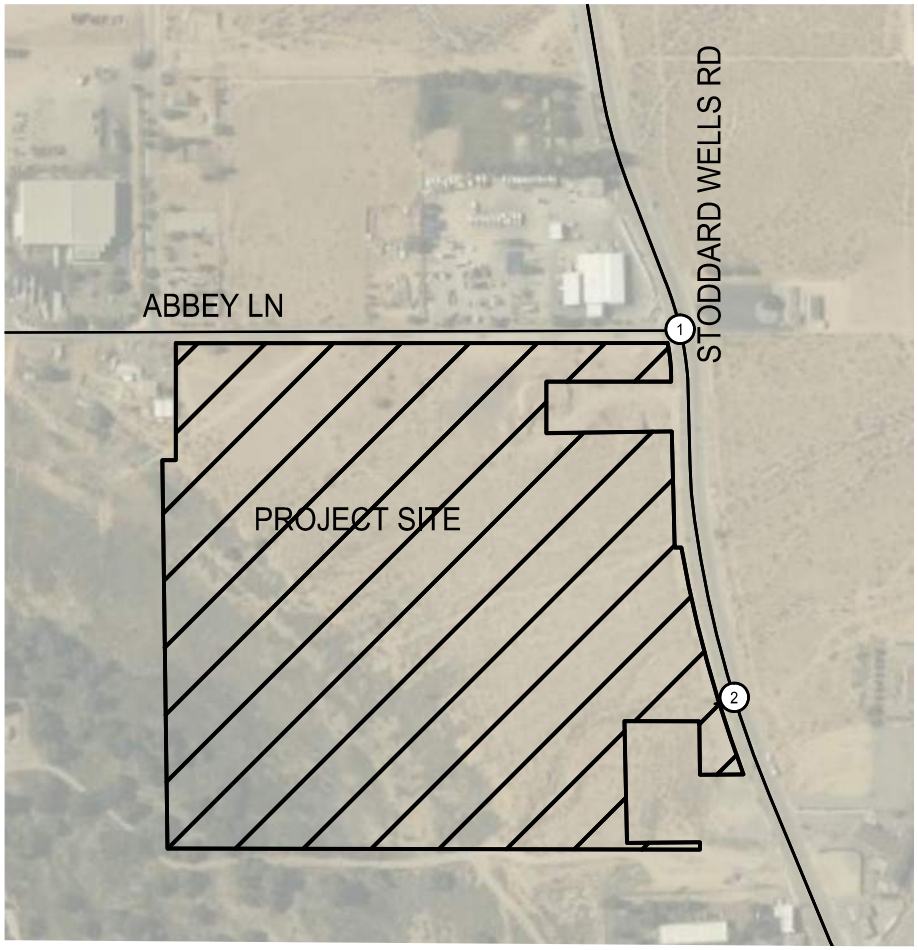
8.1.2 Future Traffic Queuing Analysis

A queuing analysis for the Future Plus Project Conditions was performed for the northbound left turn from Stoddard Wells Road to Abbey Lane. The queuing analysis was performed utilizing the Trafficware SimTraffic Version 11 software package. The 95th percentile maximum queue length results for the Future Plus Project Conditions are shown in **Table 8 2** and provided in **Appendix D**.

Table 8-2: Queuing Analysis – Future Plus Project Conditions

Intersection	Movement	Storage Length (Feet)	Vehicle Queue (Ft)	
			AM	PM
1. Stoddard Wells Road / Abbey Lane	NBL	130	59	48
2. Stoddard Wells Road / Project Driveway "A"	NBL	(200)	74	80
Queue – In Feet (XXX) – Proposed Storage Length 95% - 95 Percentile Queue Length				

As presented in **Table 8-2**, under Future Plus Project Conditions the existing turn bay lengths can accommodate the AM or PM peak 95th percentile traffic flows.



LEGEND

XX/XX - AM/PM PEAK HOUR PCE VOLUMES

(#) - STUDY INTERSECTIONS

- SIGNALIZED INTERSECTION

- STOP CONTROLLED APPROACH

DAVID EVANS AND ASSOCIATES INC.

FIGURE 15: FUTURE PLUS PROJECT TRAFFIC PCE VOLUMES ABBEY LANE INDUSTRIAL DEVELOPMENT VICTORVILLE, CALIFORNIA

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9 APPENDICES

Appendix A: Turn Movement Count Volumes
Appendix B: Intersection Capacity Analysis Calculations
Appendix C: Traffic Signal Warrant Worksheets
Appendix D: Queuing Analysis

DAVID EVANS AND ASSOCIATES INC.

Appendix A: Turn Movement Count Volumes

SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : STODDARD WELLS RD

EAST-WEST STREET : ABBEY

VICTORVILLE

02-24-22

BEGINNING TIME : 06:00AM

AUTOS			LARGE 2 AXLE			3 AXLE			4(+) AXLE			TOTALS
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	
NORTH LEG												
0	11	0	0	0	0	0	1	0	0	2	0	14
0	16	0	0	2	0	0	0	0	0	1	0	19
0	21	0	0	1	0	0	1	0	0	0	0	23
0	16	0	0	1	0	0	3	0	0	0	0	20
0	19	0	0	0	0	0	3	0	0	1	0	23
0	16	0	0	3	0	0	2	0	0	1	0	22
0	22	0	0	3	0	0	3	0	0	3	0	31
0	18	0	0	1	0	0	4	0	0	2	0	25
0	139	0	0	11	0	0	17	0	0	10	0	177
SOUTH LEG												
0	9	0	0	1	0	0	1	0	0	0	0	11
0	19	0	0	2	0	0	0	0	0	0	0	21
0	14	0	0	0	0	0	0	0	0	2	0	16
0	14	0	0	1	0	0	0	0	0	0	0	15
0	14	0	0	0	0	0	3	0	0	3	0	20
0	11	3	0	1	0	0	3	0	0	1	0	19
0	17	1	0	0	0	0	3	0	0	3	0	24
0	16	0	0	2	0	0	1	0	0	1	0	20
0	114	4	0	7	0	0	11	0	0	10	0	146
EAST LEG												
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
WEST LEG												
5	0	0	0	0	0	0	0	0	0	0	0	5
1	0	0	0	0	0	2	0	0	0	0	0	3
2	0	0	1	0	0	0	0	0	0	0	0	3
2	0	1	0	0	0	0	0	0	0	0	0	3
5	0	0	0	0	0	1	0	0	0	0	0	6
2	0	0	0	0	0	1	0	0	0	0	0	3
1	0	1	0	0	0	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	2	1	0	0	4	0	0	0	0	0	25

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SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : STODDARD WELLS RD
EAST-WEST STREET : ABBEY

VICTORVILLE
02-24-22

BEGINNING TIME : 08:00AM

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												
1	15	0	0	2	0	0	3	0	0	2	0	23
0	18	0	0	3	0	0	2	0	0	2	0	25
1	9	0	0	2	0	0	6	0	0	3	0	21
0	13	0	0	2	0	0	3	0	0	2	0	20
2	55	0	0	9	0	0	14	0	0	9	0	89
SOUTH LEG												
0	14	2	0	2	0	0	3	0	0	3	0	24
0	14	2	0	2	0	0	2	1	0	2	0	23
0	7	3	0	1	0	0	4	0	0	3	0	18
0	12	1	0	2	0	0	3	0	0	2	0	20
0	47	8	0	7	0	0	12	1	0	10	0	85
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
WEST LEG												
3	0	0	0	0	0	0	0	0	0	0	0	3
1	0	0	1	0	0	1	0	0	0	0	0	3
1	0	0	0	0	0	1	0	0	0	0	0	2
5	0	0	0	0	0	0	0	0	0	0	0	5
10	0	0	1	0	0	2	0	0	0	0	0	13

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INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: STODDARD WELLS RD

EAST-WEST STREET: ABBEY

TIME: 06:00AM-07:00AM DATE: 02-24-22

NORTH LEG

Rt	Thru	Lt	
0	76		Total
0	14		1st
0	19		2nd
0	23		3rd
0	20		4th

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

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

	Lt	Thru	Rt
1st	0	11	
2nd	0	21	
3rd	0	16	
4th	0	15	
Total	0	63	

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INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: STODDARD WELLS RD

EAST-WEST STREET: ABBEY

TIME: 07:00AM-08:00AM DATE: 02-24-22

NORTH LEG

Rt	Thru	Lt	
0	101		Total
0	23		1st
0	22		2nd
0	31		3rd
0	25		4th

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

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

	Lt	Thru	Rt
1st	0	20	
2nd	3	16	
3rd	1	23	
4th	0	20	
Total	4	79	

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INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: STODDARD WELLS RD

EAST-WEST STREET: ABBEY

TIME: 08:00AM-09:00AM DATE: 02-24-22

NORTH LEG

Rt	Thru	Lt	
2	87		Total
1	22		1st
0	25		2nd
1	20		3rd
0	20		4th

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

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

	Lt	Thru	Rt
1st	2	22	
2nd	3	20	
3rd	3	15	
4th	1	19	
Total	9	76	

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SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : STODDARD WELLS RD

EAST-WEST STREET : ABBEY

VICTORVILLE

02-24-22

BEGINNING TIME : 03:00PM

AUTOS			LARGE 2 AXLE			3 AXLE			4(+) AXLE			TOTALS
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	
NORTH LEG												
0	13	0	0	2	0	0	2	0	0	3	0	20
0	18	0	0	2	0	0	1	0	0	1	0	22
0	20	0	0	0	0	0	2	0	0	4	0	26
0	17	0	0	1	0	0	1	0	0	1	0	20
0	20	0	0	1	0	0	0	0	0	1	0	22
0	21	0	0	2	0	0	5	0	0	5	0	33
1	17	0	0	0	0	0	1	0	0	2	0	21
0	27	0	0	4	0	0	2	0	0	2	0	35
1	153	0	0	12	0	0	14	0	0	19	0	199
SOUTH LEG												
0	19	1	0	2	0	0	1	0	0	1	0	24
0	15	-2	0	0	0	0	2	2	0	2	0	19
0	9	0	0	3	0	0	2	0	0	1	0	15
0	21	1	0	1	0	0	7	0	0	2	0	32
0	10	0	0	3	0	0	4	1	0	5	0	23
0	13	1	0	1	0	0	6	1	0	5	0	27
0	22	1	0	1	0	0	10	0	0	2	0	36
0	11	1	0	2	0	0	4	1	0	1	0	20
0	120	3	0	13	0	0	36	5	0	19	0	196
EAST LEG												
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0
WEST LEG												
3	0	0	0	0	0	1	0	0	0	0	0	4
2	0	0	2	0	0	1	0	0	0	0	0	5
7	0	0	0	0	0	0	0	0	0	0	0	7
3	0	0	0	0	0	0	0	0	0	0	0	3
1	0	0	0	0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0	0	0	0	0
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
21	0	0	2	0	0	2	0	0	0	0	0	25

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SANBAG CLASSIFICATION SUMMARY

NORTH-SOUTH STREET : STODDARD WELLS RD

EAST-WEST STREET : ABBEY

VICTORVILLE

02-24-22

BEGINNING TIME : 05:00PM

AUTOS			LARGE 2 AXLE			3 AXLE			4(+) AXLE			TOTALS
RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	RT	THRU	LT	
						NORTH LEG						
0	35	0	0	1	0	0	2	0	0	3	0	41
0	34	0	0	0	0	0	3	0	0	0	0	37
0	30	0	0	0	0	0	0	0	0	0	0	30
1	11	0	0	0	0	0	0	0	0	0	0	12
1	110	0	0	1	0	0	5	0	0	3	0	120
						SOUTH LEG						
0	12	0	0	1	0	0	1	0	0	0	0	14
0	12	0	0	0	0	0	1	0	0	1	0	14
0	12	0	0	2	0	0	1	0	0	0	0	15
0	20	0	0	0	0	0	0	0	0	0	0	20
0	56	0	0	3	0	0	3	0	0	1	0	63
						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
						WEST LEG						
5	0	0	0	0	0	0	0	0	0	0	0	5
3	0	1	0	0	0	0	0	0	0	0	0	4
0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	0	0	0	0	0	0	0	0	0	2
9	0	2	0	0	0	0	0	0	0	0	0	11

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INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: STODDARD WELLS RD

EAST-WEST STREET: ABBEY

TIME: 03:00PM-04:00PM DATE: 02-24-22

NORTH LEG

Rt	Thru	Lt	
0	88		Total
0	20		1st
0	22		2nd
0	26		3rd
0	20		4th

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

Total	1st	2nd	3rd	4th	
0	0	0	0	0	Lt
					Thru
19	4	5	7	3	Rt

	Lt	Thru	Rt
1st	1	23	
2nd	0	19	
3rd	0	15	
4th	1	31	
Total	2	88	

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INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: STODDARD WELLS RD

EAST-WEST STREET: ABBEY

TIME: 04:00PM-05:00PM DATE: 02-24-22

NORTH LEG

Rt	Thru	Lt	
1	110		Total
0	22		1st
0	33		2nd
1	20		3rd
0	35		4th

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

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

	Lt	Thru	Rt
1st	1	22	
2nd	2	25	
3rd	1	35	
4th	2	18	
Total	6	100	

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INTERSECTION TURNING COUNT

NORTH-SOUTH STREET: STODDARD WELLS RD

EAST-WEST STREET: ABBEY

TIME: 05:00PM-06:00PM DATE: 02-24-22

NORTH LEG

Rt	Thru	Lt	
1	119		Total
0	41		1st
0	37		2nd
0	30		3rd
1	11		4th

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

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

	Lt	Thru	Rt
1st	0	14	
2nd	0	14	
3rd	0	15	
4th	0	20	
Total	0	63	

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DAVID EVANS AND ASSOCIATES INC.

Appendix B: Intersection Capacity Analysis Calculations

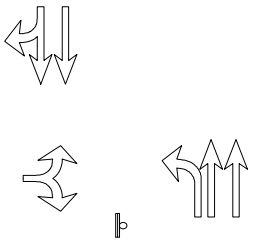
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TM	10-Mar-22	MOAI0000-0001	1 OF 2

E/W STREET : ABBEY LN
N/S STREET : STODDARD WELLS RD
CONDITION : AM PEAK HOUR

INTERSECTION : 1
PROJECTED GROWTH PER YEAR : 3.5%

CONDITION DIAGRAMS



EXISTING GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition	Project Trips	Existing + Project Condition	Year 2024 Ambient Growth	Background Condition	Project Condition	Year 2033 Ambient Growth	Future Condition	Future + Project Condition
Scenario #	1		3		5	7		9	11
ABBEY LN									
EB LEFT	1	22	23	0	1	23	0	1	23
EB THRU	0	0	0	0	0	0	0	0	0
EB RIGHT	9	54	63	1	10	64	3	13	67
WB LEFT	0	0	0	0	0	0	0	0	0
WB THRU	0	0	0	0	0	0	0	0	0
WB RIGHT	0	0	0	0	0	0	0	0	0
STODDARD WELLS RD									
NB LEFT	7	232	239	0	7	239	2	9	241
NB THRU	115	0	115	8	123	123	36	159	159
NB RIGHT	0	0	0	0	0	0	0	0	0
SB LEFT	0	0	0	0	0	0	0	0	0
SB THRU	138	0	138	10	148	148	43	191	191
SB RIGHT	1	93	94	0	1	94	0	1	94
TOTALS	**271**	**401**	**672**	**19**	**290**	**691**	**84**	**374**	**775**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET	OF
TURN VOLUME SUMMARY	TM	10-Mar-22	MOAI0000-0001	2	OF 2

E/W STREET : ABBEY LN
N/S STREET : STODDARD WELLS RD
CONDITION : AM PEAK HOUR
PHF : 0.89

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	22	0	0	3	0	0	3	0	0	3	0
0	18	0	0	1	0	0	4	0	0	2	0
1	15	0	0	2	0	0	3	0	0	2	0
0	18	0	0	3	0	0	2	0	0	2	0
PCE FACTOR			1.5			2			3		
1	73	0	0	14	0	0	24	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	17	1	0	0	0	0	3	0	0	3	0
0	16	0	0	2	0	0	1	0	0	1	0
0	14	2	0	2	0	0	3	0	0	3	0
0	14	2	0	2	0	0	2	1	0	2	0
PCE FACTOR			1.5			2			3		
0	61	5	0	9	0	0	18	2	0	27	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
PCE FACTOR			1.5			2			3		
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
1	0	1	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	0
1	0	0	1	0	0	1	0	0	0	0	0
PCE FACTOR			1.5			2			3		
5	0	1	2	0	0	2	0	0	0	0	0

	Truck Volumes	Auto Volumes	Totals	PCE Totals
ABBEY LN				
EB LEFT	0	1	1	1
EB THRU	0	0	0	0
EB RIGHT	2	5	7	9
WB LEFT	0	0	0	0
WB THRU	0	0	0	0
WB RIGHT	0	0	0	0
STODDARD WELLS RD				
NB LEFT	1	5	6	7
NB THRU	24	61	85	115
NB RIGHT	0	0	0	0
SB LEFT	0	0	0	0
SB THRU	30	73	103	138
SB RIGHT	0	1	1	1

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	9	7	115	138	1
Future Vol, veh/h	1	9	7	115	138	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	10	8	129	155	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	237	78	156	0	-	0
Stage 1	156	-	-	-	-	-
Stage 2	81	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	736	973	1436	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	939	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	732	973	1436	-	-	-
Mov Cap-2 Maneuver	739	-	-	-	-	-
Stage 1	857	-	-	-	-	-
Stage 2	939	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1436	-	943	-	-
HCM Lane V/C Ratio	0.005	-	0.012	-	-
HCM Control Delay (s)	7.5	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	63	239	115	138	94
Future Vol, veh/h	23	63	239	115	138	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	26	71	269	129	155	106

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	811	131	261	0	-	0
Stage 1	208	-	-	-	-	-
Stage 2	603	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	321	901	1315	-	-	-
Stage 1	813	-	-	-	-	-
Stage 2	515	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	255	901	1315	-	-	-
Mov Cap-2 Maneuver	375	-	-	-	-	-
Stage 1	646	-	-	-	-	-
Stage 2	515	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.4	5.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1315	-	655	-	-
HCM Lane V/C Ratio	0.204	-	0.148	-	-
HCM Control Delay (s)	8.4	-	11.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.8	-	0.5	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	10	7	123	148	1
Future Vol, veh/h	1	10	7	123	148	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	11	8	138	166	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	252	84	167	0	-	0
Stage 1	167	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	720	965	1423	-	-	-
Stage 1	851	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	716	965	1423	-	-	-
Mov Cap-2 Maneuver	728	-	-	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1423	-	937	-	-
HCM Lane V/C Ratio	0.006	-	0.013	-	-
HCM Control Delay (s)	7.5	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	64	239	123	148	94
Future Vol, veh/h	23	64	239	123	148	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	26	72	269	138	166	106

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	826	136	272	0	-	0
Stage 1	219	-	-	-	-	-
Stage 2	607	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	314	894	1303	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	512	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	249	894	1303	-	-	-
Mov Cap-2 Maneuver	370	-	-	-	-	-
Stage 1	637	-	-	-	-	-
Stage 2	512	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.5	5.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1303	-	650	-	-
HCM Lane V/C Ratio	0.206	-	0.15	-	-
HCM Control Delay (s)	8.5	-	11.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.8	-	0.5	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	13	9	159	191	1
Future Vol, veh/h	1	13	9	159	191	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	15	10	179	215	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	326	108	216	0	-	0
Stage 1	216	-	-	-	-	-
Stage 2	110	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	648	932	1366	-	-	-
Stage 1	805	-	-	-	-	-
Stage 2	908	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	643	932	1366	-	-	-
Mov Cap-2 Maneuver	677	-	-	-	-	-
Stage 1	799	-	-	-	-	-
Stage 2	908	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1366	-	908	-	-
HCM Lane V/C Ratio	0.007	-	0.017	-	-
HCM Control Delay (s)	7.7	-	9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	64	239	123	148	94
Future Vol, veh/h	23	64	239	123	148	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	26	72	269	138	166	106

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	826	136	272	0	-	0
Stage 1	219	-	-	-	-	-
Stage 2	607	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	314	894	1303	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	512	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	249	894	1303	-	-	-
Mov Cap-2 Maneuver	370	-	-	-	-	-
Stage 1	637	-	-	-	-	-
Stage 2	512	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.5	5.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1303	-	650	-	-
HCM Lane V/C Ratio	0.206	-	0.15	-	-
HCM Control Delay (s)	8.5	-	11.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.8	-	0.5	-	-

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TM	10-Mar-22	MOAI0000-0001	1 OF 2

E/W STREET : ABBEY LN
N/S STREET : STODDARD WELLS RD
CONDITION : PM PEAK HOUR

INTERSECTION : 1
PROJECTED GROWTH PER YEAR : 3.5%

TURN MOVEMENTS

Condition	Existing Condition	Project Trips	Existing + Project Condition	Year 2023 Ambient Growth	Background Condition	Project Condition	Year 2033 Ambient Growth	Future Condition	Future + Project Condition
Scenario #	2		4		6	8		10	12
ABBEY LN									
EB LEFT	1	96	97	0	1	97	0	1	97
EB THRU	0	0	0	0	0	0	0	0	0
EB RIGHT	10	240	250	1	11	251	3	14	254
WB LEFT	0	0	0	0	0	0	0	0	0
WB THRU	0	0	0	0	0	0	0	0	0
WB RIGHT	0	0	0	0	0	0	0	0	0
STODDARD WELLS RD									
NB LEFT	7	154	161	0	7	161	2	9	163
NB THRU	132	0	132	9	141	141	42	183	183
NB RIGHT	0	0	0	0	0	0	0	0	0
SB LEFT	0	0	0	0	0	0	0	0	0
SB THRU	167	0	167	12	179	179	53	232	232
SB RIGHT	1	62	63	0	1	63	0	1	63
TOTALS	**318**	**552**	**870**	**22**	**340**	**892**	**100**	**440**	**992**

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN VOLUME SUMMARY	TM	10-Mar-22	MOAI0000-0001	2 OF 2

E/W STREET : ABBEY LN
N/S STREET : STODDARD WELLS RD
CONDITION : PM PEAK HOUR
PHF : 0.99

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	21	0	0	2	0	0	5	0	0	5	0
1	17	0	0	0	0	0	1	0	0	2	0
0	27	0	0	4	0	0	2	0	0	2	0
0	35	0	0	1	0	0	2	0	0	3	0
PCE FACTOR			1.5			2			3		
1	100	0	0	11	0	0	20	0	0	36	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	13	1	0	1	0	0	6	1	0	5	0
0	22	1	0	1	0	0	10	0	0	2	0
0	11	1	0	2	0	0	4	1	0	1	0
0	12	0	0	1	0	0	1	0	0	0	0
PCE FACTOR			1.5			2			3		
0	58	3	0	8	0	0	42	4	0	24	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
PCE FACTOR			1.5			2			3		
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
0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0
PCE FACTOR			1.5			2			3		
10	0	0	0	0	0	0	0	0	0	0	0

	Truck Volumes	Auto Volumes	Totals	PCE Totals
ABBEY LN				
EB LEFT	0	0	**0**	**1**
EB THRU	0	0	**0**	**0**
EB RIGHT	0	10	**10**	**10**
WB LEFT	0	0	**0**	**0**
WB THRU	0	0	**0**	**0**
WB RIGHT	0	0	**0**	**0**
STODDARD WELLS RD				
NB LEFT	2	3	**5**	**7**
NB THRU	34	58	**92**	**132**
NB RIGHT	0	0	**0**	**0**
SB LEFT	0	0	**0**	**0**
SB THRU	29	100	**129**	**167**
SB RIGHT	0	1	**1**	**1**

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	10	7	132	167	1
Future Vol, veh/h	1	10	7	132	167	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	10	7	133	169	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	251	85	170	0	-	0
Stage 1	170	-	-	-	-	-
Stage 2	81	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	722	963	1420	-	-	-
Stage 1	849	-	-	-	-	-
Stage 2	939	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	718	963	1420	-	-	-
Mov Cap-2 Maneuver	729	-	-	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	939	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1420	-	936	-	-
HCM Lane V/C Ratio	0.005	-	0.012	-	-
HCM Control Delay (s)	7.5	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	97	250	161	132	167	63
Future Vol, veh/h	97	250	161	132	167	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	98	253	163	133	169	64

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	594	117	233	0	-	0
Stage 1	201	-	-	-	-	-
Stage 2	393	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	441	919	1346	-	-	-
Stage 1	819	-	-	-	-	-
Stage 2	657	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	388	919	1346	-	-	-
Mov Cap-2 Maneuver	490	-	-	-	-	-
Stage 1	720	-	-	-	-	-
Stage 2	657	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	4.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1346	-	738	-	-
HCM Lane V/C Ratio	0.121	-	0.475	-	-
HCM Control Delay (s)	8	-	14.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.4	-	2.6	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	11	7	141	179	1
Future Vol, veh/h	1	11	7	141	179	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	11	7	142	181	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	267	91	182	0	-	0
Stage 1	182	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	705	955	1405	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	701	955	1405	-	-	-
Mov Cap-2 Maneuver	717	-	-	-	-	-
Stage 1	833	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1405	-	929	-	-
HCM Lane V/C Ratio	0.005	-	0.013	-	-
HCM Control Delay (s)	7.6	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	97	251	161	141	179	63
Future Vol, veh/h	97	251	161	141	179	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	98	254	163	142	181	64

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	610	123	245	0	-	0
Stage 1	213	-	-	-	-	-
Stage 2	397	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	431	911	1333	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	654	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	378	911	1333	-	-	-
Mov Cap-2 Maneuver	482	-	-	-	-	-
Stage 1	709	-	-	-	-	-
Stage 2	654	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.4	4.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1333	-	730	-	-
HCM Lane V/C Ratio	0.122	-	0.482	-	-
HCM Control Delay (s)	8.1	-	14.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.4	-	2.6	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	14	9	183	232	1
Future Vol, veh/h	1	14	9	183	232	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	14	9	185	234	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	346	118	235	0	-	0
Stage 1	235	-	-	-	-	-
Stage 2	111	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	630	918	1344	-	-	-
Stage 1	788	-	-	-	-	-
Stage 2	907	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	626	918	1344	-	-	-
Mov Cap-2 Maneuver	663	-	-	-	-	-
Stage 1	782	-	-	-	-	-
Stage 2	907	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1344	-	895	-	-
HCM Lane V/C Ratio	0.007	-	0.017	-	-
HCM Control Delay (s)	7.7	-	9.1	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	97	251	161	141	179	63
Future Vol, veh/h	97	251	161	141	179	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	130	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	98	254	163	142	181	64

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	610	123	245	0	-	0
Stage 1	213	-	-	-	-	-
Stage 2	397	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	431	911	1333	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	654	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	378	911	1333	-	-	-
Mov Cap-2 Maneuver	482	-	-	-	-	-
Stage 1	709	-	-	-	-	-
Stage 2	654	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.4	4.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1333	-	730	-	-
HCM Lane V/C Ratio	0.122	-	0.482	-	-
HCM Control Delay (s)	8.1	-	14.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.4	-	2.6	-	-

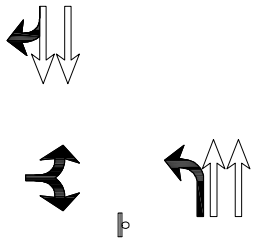
DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TM	10-Mar-22	MOAI0000-0001	1 OF 1

E/W STREET : PROJECT DRIVEWAY
N/S STREET : STODDARD WELLS RD
CONDITION : AM PEAK HOUR

INTERSECTION : 2
PROJECTED GROWTH PER YEAR : 3.5%

CONDITION DIAGRAMS



PROJECT GEOMETRICS

TURN MOVEMENTS

Condition	Existing Condition	Project Trips	Existing + Project Condition	Year 2023 Ambient Growth	Background Condition	Project Condition	Year 2033 Ambient Growth	Future Condition	Future + Project Condition
Scenario #	1		3		5	7		9	11
PROJECT DRIVEWAY									
EB LEFT	0	0	0	0	0	0	0	0	0
EB THRU	0	0	0	0	0	0	0	0	0
EB RIGHT	0	104	104	0	0	104	0	0	104
WB LEFT	0	0	0	0	0	0	0	0	0
WB THRU	0	0	0	0	0	0	0	0	0
WB RIGHT	0	0	0	0	0	0	0	0	0
STODDARD WELLS RD									
NB LEFT	0	439	439	0	0	439	0	0	439
NB THRU	122	232	354	8	130	362	38	168	400
NB RIGHT	0	0	0	0	0	0	0	0	0
SB LEFT	0	0	0	0	0	0	0	0	0
SB THRU	124	54	178	9	133	187	39	172	226
SB RIGHT	0	0	0	0	0	0	0	0	0
TOTALS	**1575**	**206**	**1781**	**111**	**1686**	**1892**	**38**	**1724**	**1930**

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	104	439	354	178	0
Future Vol, veh/h	0	104	439	354	178	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	117	493	398	200	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1385	100	200	0	-	0
Stage 1	200	-	-	-	-	-
Stage 2	1185	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	137	943	1384	-	-	-
Stage 1	820	-	-	-	-	-
Stage 2	257	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	88	943	1384	-	-	-
Mov Cap-2 Maneuver	192	-	-	-	-	-
Stage 1	528	-	-	-	-	-
Stage 2	257	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1384	-	943	-	-
HCM Lane V/C Ratio	0.356	-	0.124	-	-
HCM Control Delay (s)	9	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	1.6	-	0.4	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	104	439	362	187	0
Future Vol, veh/h	0	104	439	362	187	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	117	493	407	210	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1400	105	210	0	-	0
Stage 1	210	-	-	-	-	-
Stage 2	1190	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	134	936	1373	-	-	-
Stage 1	811	-	-	-	-	-
Stage 2	255	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	86	936	1373	-	-	-
Mov Cap-2 Maneuver	190	-	-	-	-	-
Stage 1	520	-	-	-	-	-
Stage 2	255	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1373	-	936	-	-
HCM Lane V/C Ratio	0.359	-	0.125	-	-
HCM Control Delay (s)	9.1	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	1.7	-	0.4	-	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	104	439	362	187	0
Future Vol, veh/h	0	104	439	362	187	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	117	493	407	210	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1400	105	210	0	-	0
Stage 1	210	-	-	-	-	-
Stage 2	1190	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	134	936	1373	-	-	-
Stage 1	811	-	-	-	-	-
Stage 2	255	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	86	936	1373	-	-	-
Mov Cap-2 Maneuver	190	-	-	-	-	-
Stage 1	520	-	-	-	-	-
Stage 2	255	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1373	-	936	-	-
HCM Lane V/C Ratio	0.359	-	0.125	-	-
HCM Control Delay (s)	9.1	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	1.7	-	0.4	-	-

DAVID EVANS AND ASSOCIATES INC.

SUBJECT	BY	DATE	JOB NO.	SHEET OF
TURN MOVEMENTS	TM	10-Mar-22	MOAI0000-0001	1 OF 1

E/W STREET : PROJECT DRIVEWAY
N/S STREET : STODDARD WELLS RD
CONDITION : PM PEAK HOUR

INTERSECTION : 2
PROJECTED GROWTH PER YEAR : 3.5%

TURN MOVEMENTS

Condition	Existing Condition	Project Trips	Existing + Project Condition	Year 2023 Ambient Growth	Background Condition	Project Condition	Year 2033 Ambient Growth	Future Condition	Future + Project Condition
Scenario #	2		4		6	8		10	12
PROJECT DRIVEWAY									
EB LEFT	0	0	0	0	0	0	0	0	0
EB THRU	0	0	0	0	0	0	0	0	0
EB RIGHT	0	454	454	0	0	454	0	0	454
WB LEFT	0	0	0	0	0	0	0	0	0
WB THRU	0	0	0	0	0	0	0	0	0
WB RIGHT	0	0	0	0	0	0	0	0	0
STODDARD WELLS RD									
NB LEFT	0	293	293	0	0	293	0	0	293
NB THRU	139	154	293	9	148	302	44	192	346
NB RIGHT	0	0	0	0	0	0	0	0	0
SB LEFT	0	0	0	0	0	0	0	0	0
SB THRU	142	240	382	10	152	392	45	197	437
SB RIGHT	0	0	0	0	0	0	0	0	0
TOTALS	**1575**	**206**	**1781**	**111**	**1686**	**1892**	**38**	**1724**	**1930**

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	454	293	293	382	0
Future Vol, veh/h	0	454	293	293	382	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	459	296	296	386	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1126	193	386	0	-	0
Stage 1	386	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	202	822	1184	-	-	-
Stage 1	662	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	152	822	1184	-	-	-
Mov Cap-2 Maneuver	281	-	-	-	-	-
Stage 1	497	-	-	-	-	-
Stage 2	438	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.8	4.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1184	-	822	-	-
HCM Lane V/C Ratio	0.25	-	0.558	-	-
HCM Control Delay (s)	9.1	-	14.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	1	-	3.5	-	-

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	454	293	302	392	0
Future Vol, veh/h	0	454	293	302	392	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	459	296	305	396	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1141	198	396	0	-	0
Stage 1	396	-	-	-	-	-
Stage 2	745	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	197	816	1174	-	-	-
Stage 1	655	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	147	816	1174	-	-	-
Mov Cap-2 Maneuver	277	-	-	-	-	-
Stage 1	490	-	-	-	-	-
Stage 2	435	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.9	4.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1174	-	816	-	-
HCM Lane V/C Ratio	0.252	-	0.562	-	-
HCM Control Delay (s)	9.1	-	14.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	1	-	3.6	-	-

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	454	293	302	392	0
Future Vol, veh/h	0	454	293	302	392	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	459	296	305	396	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1141	198	396	0	-	0
Stage 1	396	-	-	-	-	-
Stage 2	745	-	-	-	-	-
Critical Hdwy	6.8	6.9	4.1	-	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	197	816	1174	-	-	-
Stage 1	655	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	147	816	1174	-	-	-
Mov Cap-2 Maneuver	277	-	-	-	-	-
Stage 1	490	-	-	-	-	-
Stage 2	435	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.9	4.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1174	-	816	-	-
HCM Lane V/C Ratio	0.252	-	0.562	-	-
HCM Control Delay (s)	9.1	-	14.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	1	-	3.6	-	-

DAVID EVANS AND ASSOCIATES INC.

Appendix C: Traffic Signal Warrant Worksheet

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

COUNT DATE 2-24-22
CALC TNM DATE 3-2-22
CHK _____ DATE _____

DIST _____ CO _____ RTE _____ PM _____

Major St: STODDARD WELLS RD Critical Approach Speed 55 mph
Minor St: ABBEY LN 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 ☐ N/A
(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)									
	U	R	U	R						Hour
APPROACH LANES	1		2 or More							
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)						
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)						

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

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)									
	U	R	U	R						Hour
APPROACH LANES	1		2 or More							
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)						
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)						

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 ☐ 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	307
Higher Approach - Minor Street	X		11

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.

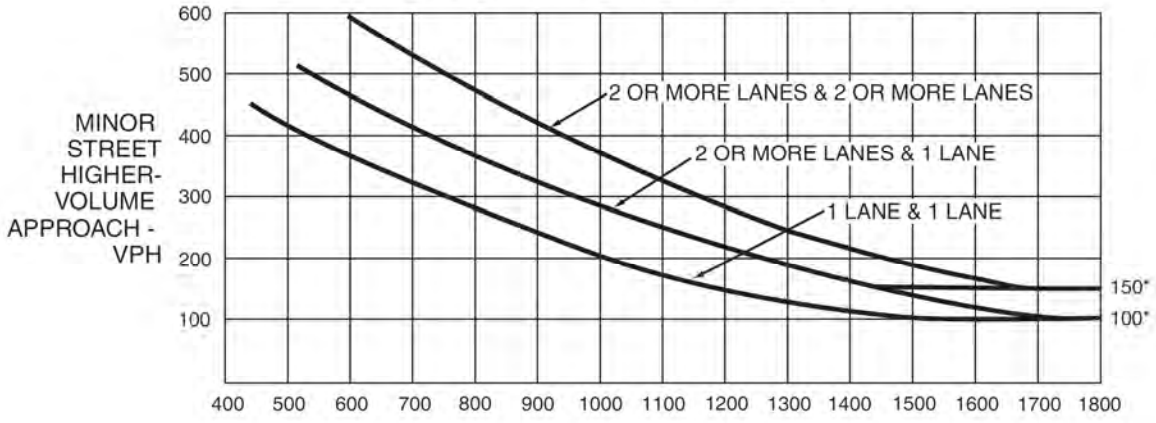
1- Number of Rail Traffic per Day_____ Adjustment factor from table 4C-2____

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)

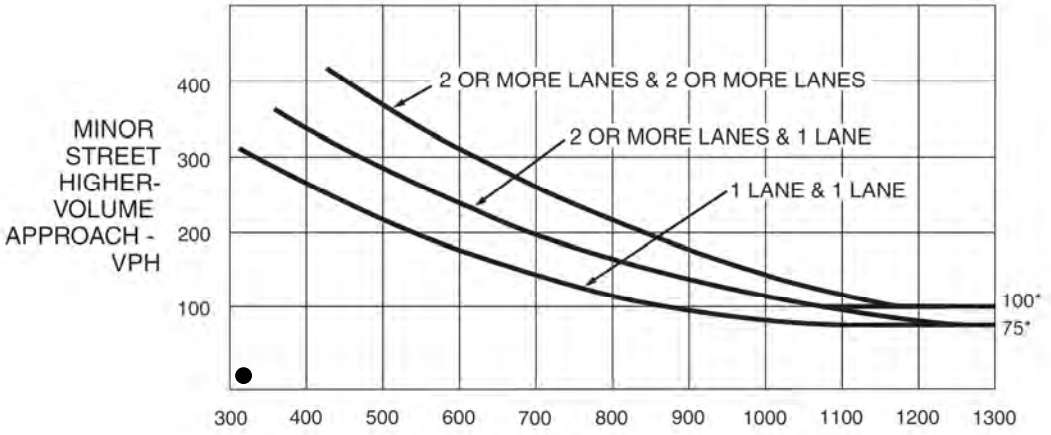
Figure 4C-3. Warrant 3, Peak Hour



*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 ☐

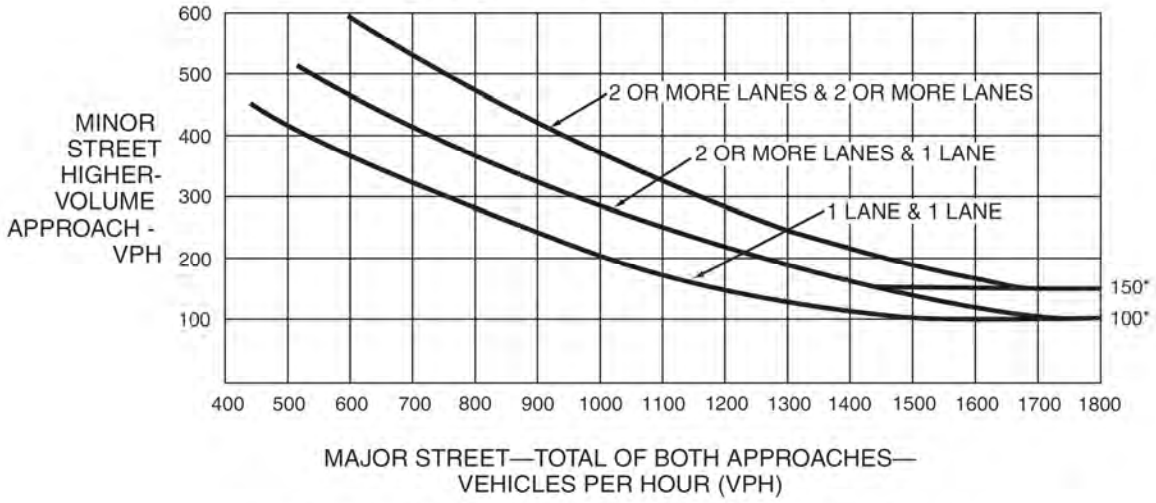
PART B **SATISFIED YES ☒ NO ☐**

APPROACH LANES	One	2 or More	4:15-5:15 PM Hour
Both Approaches - Major Street		X	523
Higher Approach - Minor Street	X		347

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.

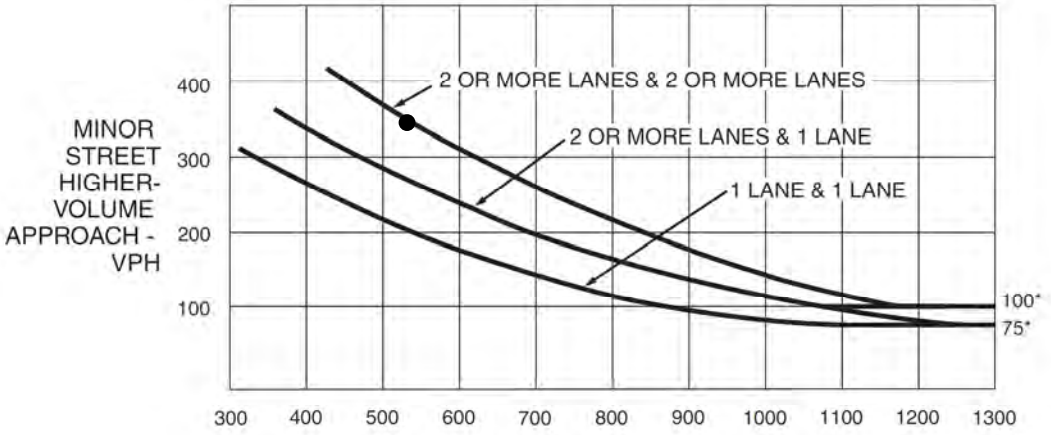
Figure 4C-3. Warrant 3, Peak Hour



*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 ☐

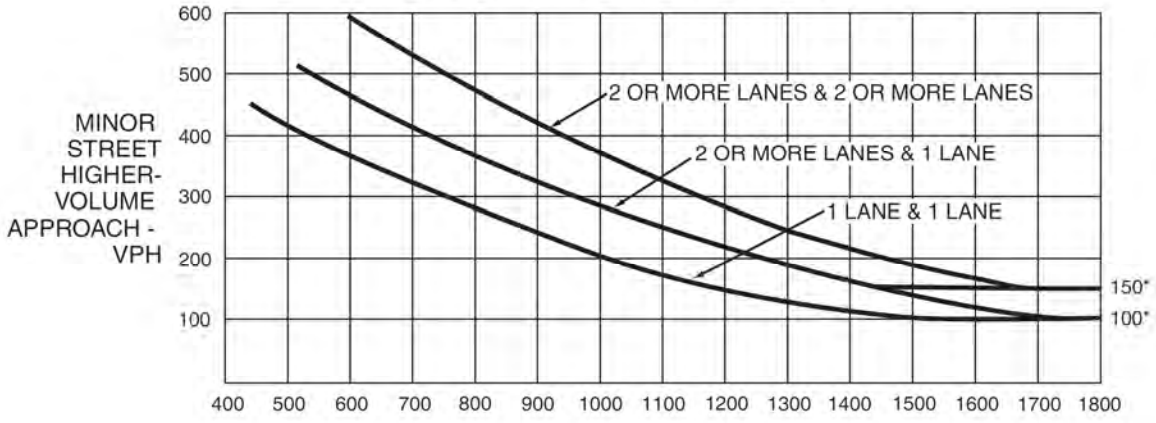
PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	4:15-5:15 PM Hour
Both Approaches - Major Street		X	328
Higher Approach - Minor Street	X		12

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.

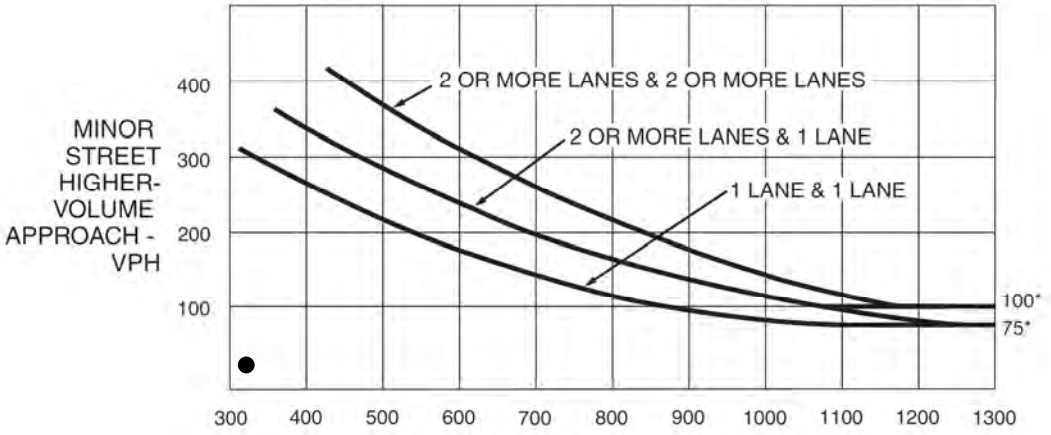
Figure 4C-3. Warrant 3, Peak Hour



*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 ☐

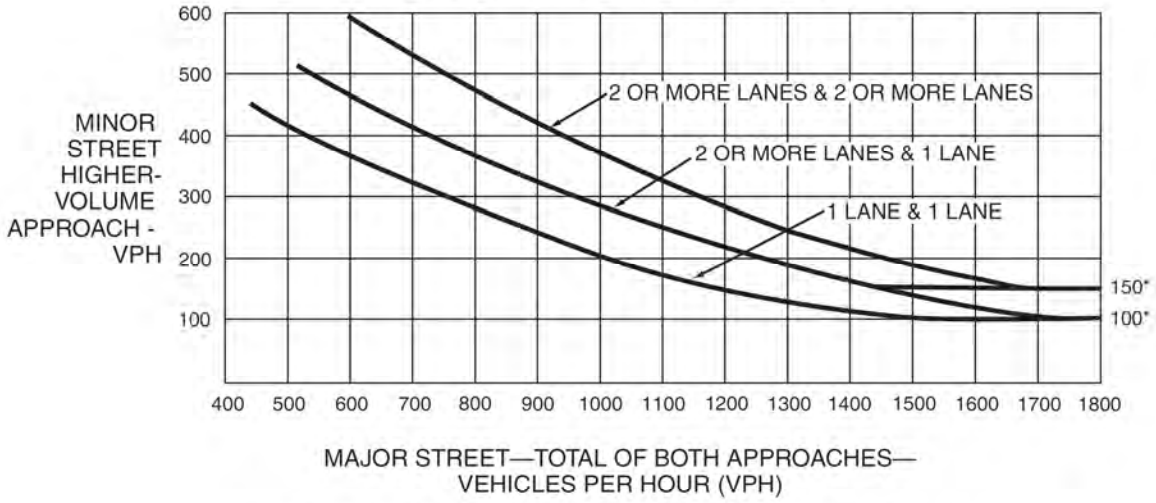
PART B **SATISFIED YES ☒ NO ☐**

APPROACH LANES	One	2 or More	4:15-5:15 PM Hour
Both Approaches - Major Street		X	544
Higher Approach - Minor Street	X		348

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.

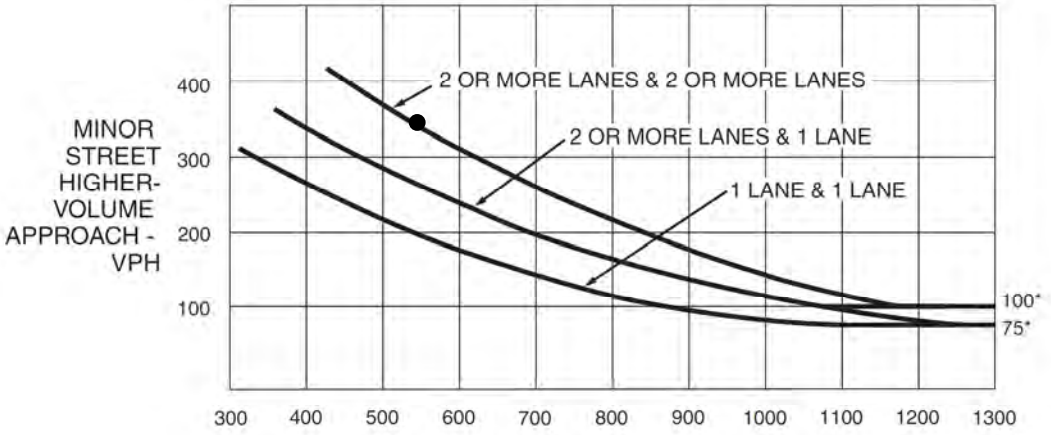
Figure 4C-3. Warrant 3, Peak Hour



*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 ☐

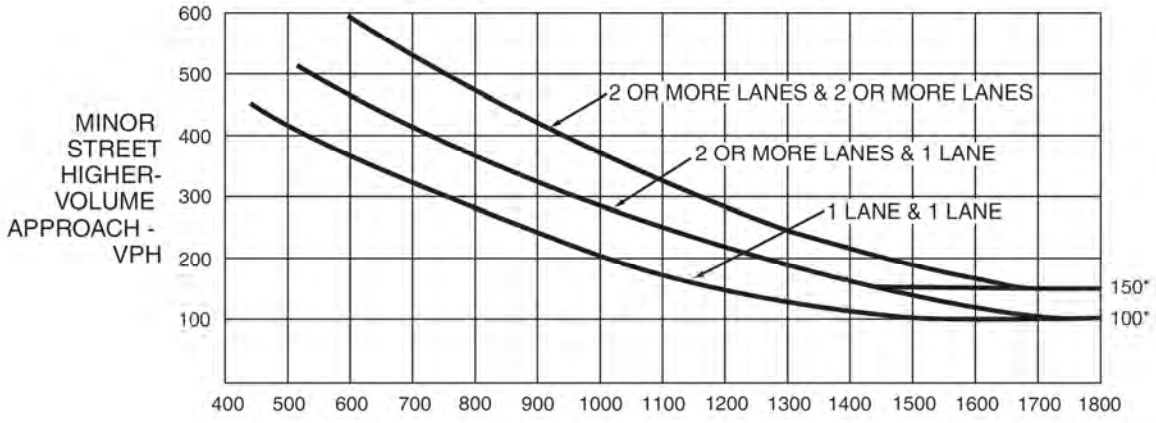
PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	4:15-5:15 PM Hour
Both Approaches - Major Street		X	425
Higher Approach - Minor Street	X		15

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.

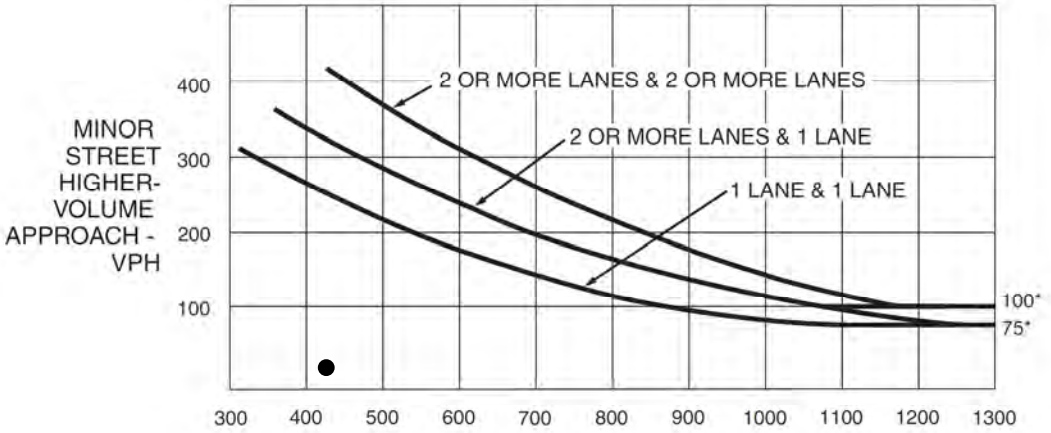
Figure 4C-3. Warrant 3, Peak Hour



*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 ☐

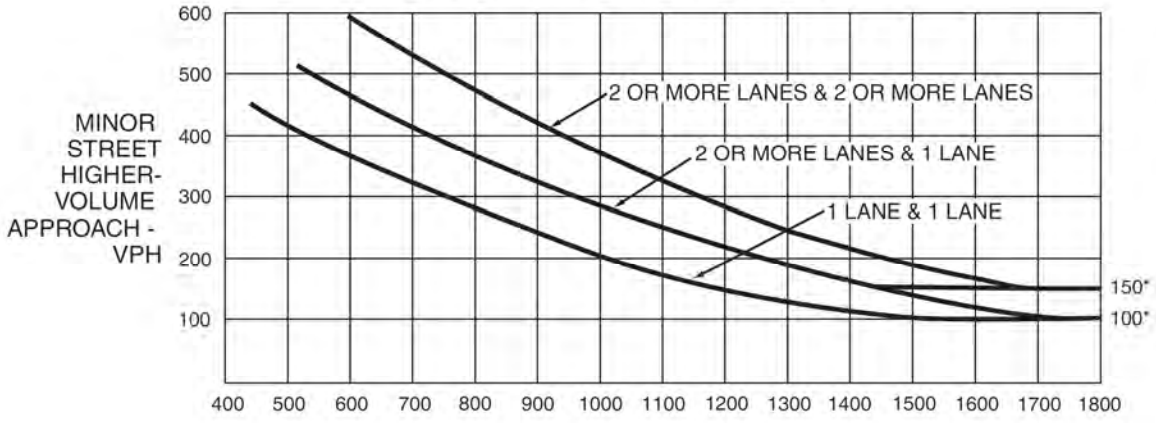
PART B **SATISFIED YES ☒ NO ☐**

APPROACH LANES	One	2 or More	4:15-5:15 PM Hour
Both Approaches - Major Street		X	641
Higher Approach - Minor Street	X		351

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.

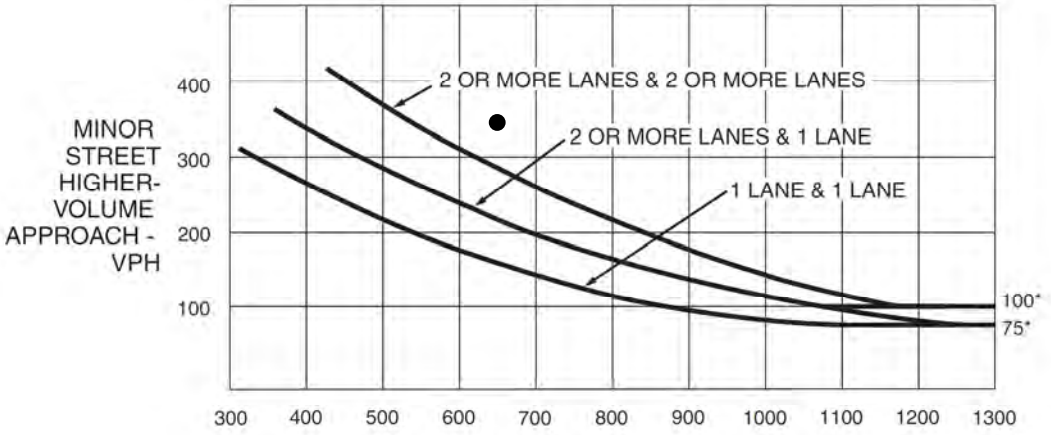
Figure 4C-3. Warrant 3, Peak Hour



*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.

Select Crashes

Choose Drawing Type

Point | Multi Points | Polyline | Rect | Polygon | Free Hand

(OPTIONAL) Buffer distance and unit.

Distance | Feet

Clear All | Clear Last | Save Drawing

Results

Selected Factors:

Date	01/01/2016 - 12/31/2019
County	San Bernardino
City	Victorville

Result Summary:

2019 data is provisional and subject to change.

1,881 of 1,926 (97.7%) crashes mapped.

No crashes selected. Clear Selection

DAVID EVANS AND ASSOCIATES INC.

Appendix D: Queuing Analysis

Intersection: 1: Stoddard Wells Rd & Abbey Ln

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	23	8
Average Queue (ft)	8	2
95th Queue (ft)	26	13
Link Distance (ft)	369	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		130
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Stoddard Wells Rd & Abbey Ln

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	39	49	15
Average Queue (ft)	26	29	3
95th Queue (ft)	43	57	15
Link Distance (ft)	369		329
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		130	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Stoddard Wells Rd & Project Driveway "A"

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	38	70
Average Queue (ft)	31	44
95th Queue (ft)	43	80
Link Distance (ft)	489	715
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Stoddard Wells Rd & Abbey Ln

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	23	10
Average Queue (ft)	9	2
95th Queue (ft)	27	13
Link Distance (ft)	369	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		130
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Stoddard Wells Rd & Abbey Ln

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	39	48	7
Average Queue (ft)	25	31	2
95th Queue (ft)	42	59	12
Link Distance (ft)	369		329
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		130	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Stoddard Wells Rd & Project Driveway "A"

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	40	64
Average Queue (ft)	32	39
95th Queue (ft)	45	74
Link Distance (ft)	489	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Stoddard Wells Rd & Abbey Ln

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	21	7
Average Queue (ft)	10	1
95th Queue (ft)	29	11
Link Distance (ft)	369	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		130
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Stoddard Wells Rd & Abbey Ln

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	39	48	7
Average Queue (ft)	25	31	2
95th Queue (ft)	42	59	12
Link Distance (ft)	369		329
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		130	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Stoddard Wells Rd & Project Driveway "A"

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	40	64
Average Queue (ft)	32	39
95th Queue (ft)	45	74
Link Distance (ft)	489	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Stoddard Wells Rd & Abbey Ln

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	23	7
Average Queue (ft)	9	1
95th Queue (ft)	28	11
Link Distance (ft)	369	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		130
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Stoddard Wells Rd & Abbey Ln

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	108	34	7
Average Queue (ft)	65	22	1
95th Queue (ft)	130	46	14
Link Distance (ft)	369		329
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		130	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Stoddard Wells Rd & Project Driveway "A"

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	134	64
Average Queue (ft)	92	42
95th Queue (ft)	156	75
Link Distance (ft)	489	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Stoddard Wells Rd & Abbey Ln

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	23	10
Average Queue (ft)	10	2
95th Queue (ft)	28	15
Link Distance (ft)	369	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		130
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Stoddard Wells Rd & Abbey Ln

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	108	39	2
Average Queue (ft)	66	22	1
95th Queue (ft)	126	48	8
Link Distance (ft)	369		329
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		130	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Stoddard Wells Rd & Project Driveway "A"

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	131	72
Average Queue (ft)	88	42
95th Queue (ft)	148	80
Link Distance (ft)	489	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Stoddard Wells Rd & Abbey Ln

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	21	12
Average Queue (ft)	9	2
95th Queue (ft)	27	15
Link Distance (ft)	369	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		130
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Stoddard Wells Rd & Abbey Ln

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	108	39	2
Average Queue (ft)	66	22	1
95th Queue (ft)	126	48	8
Link Distance (ft)	369		329
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		130	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2: Stoddard Wells Rd & Project Driveway "A"

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	131	72
Average Queue (ft)	88	42
95th Queue (ft)	148	80
Link Distance (ft)	489	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0