Attachment C – Local Transportation Study

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Pheasant Hill Multi-Family

Local Transportation Study

December 2022

Prepared for

Tideline Partners
2148 Jimmy Durante Boulevard, Suite B
Del Mar, CA 92014

Prepared by

C+R
3900 Fifth Avenue, Suite 310
San Diego, CA 92103

Executive Summary

The purpose of this Local Transportation Study (LTS) is to evaluate how the proposed Pheasant Hill Multi-Family project (the "Project") will affect the surrounding local transportation network, as well as to determine if additional transportation improvements will be needed.

The project site is located along the south side of Guajome Street just west of the existing Sprinter light rail line in the City of Vista. The Project is proposing to construct 183 multi-family dwelling units, including three four-story buildings with covered parking and one three-story building. Additional surface level parking would be provided throughout the site.

Pedestrian access to the site will be provided via a new sidewalk located on both sides of the new driveway. As part of the Project features, the Project will construct additional sidewalks along Guajome Street, specifically at the following locations:

- Construct sidewalk on the north side of Guajome Street/Lado De Loma Drive, between 201 Guajome Street and Eddie Drive.
- Southern side of Guajome Street, between the Project's western property line and Mercantile Street, including a temporary asphalt sidewalk between the eastern rail road right-of-way and Mercantile Street. The construction of this portion of the sidewalk will require CPUC approval via the GO-88B Modification of an existing Rail Crossing process, which the applicant is working on submitting to the City and the CPUC.

  SANDAG is currently in the preliminary design stage of the Inland Rail Trail (IRT) along the railroad tracks in this area. The IRT will intersect with the Project's proposed sidewalk. Based upon review of the preliminary design for the Inland Rail Trail, the sidewalk proposed by the Project will complement the Inland Rail Trail and would not conflict with SANDAG's plan.

Access to the Project will be provided via a new full-access side-street stop-controlled driveway along the south side of Guajome Street. Based on a queuing analysis conducted using VISSIM, a microsimulation software, and a site meeting conducted on November 11, 2021 with staff from City of Vista, California Public Utility Commission (CPUC), North County Transit District (NCTD), SANDAG, and the Project engineers, it was determined that the new driveway would be located approximately 70 feet west of the existing Sprinter light rail line. Queuing discussion is provided in Section 6.

For a conservative analysis and to allow flexibility for potential minor land use changes, this LTS assumes a total of 185 dwelling units.

Local Transportation Study Summary

This section provides a discussion of the findings from the LTS prepared per the City of Vista Transportation Impact Analysis Guidelines (TIAG). Detailed analyses are available in Chapters 3, 4, and 5.

Roadway Segment

Table ES.1 displays the roadway segment level of service (LOS) results for each of the study scenarios analyzed.

Table ES.1 - Summary of Roadway Segment LOS Analyses Results

Roadway	Segment	Level of Service					
		E	E+P	NT	NT+P	HY	HY+P
Lado De Loma Drive	Vista Village Drive to Guajome Street	Under Capacity	Under Capacity	Under Capacity	Under Capacity	C	D
Guajome Street	Lado De Loma Drive to Project Driveway	Under Capacity	Under Capacity	Under Capacity	Under Capacity	A	B
Guajome Street	Project Driveway to South Santa Fe Avenue	Under Capacity	Under Capacity	Under Capacity	Under Capacity	A	B

Source: CR Associates (2022)

Notes:
E = Existing Conditions; E+P = Existing with Project Conditions.
NT = Near-Term Year 2023 Base Conditions; NT+P = Near-Term Year 2023 Base with Project Conditions.
HY = Horizon Year 2030 Base Conditions; HY+P = Horizon Year 2030 Base with Project Conditions.

With the implementation of the Project, all study roadway segments are projected to operate under capacity or at acceptable LOS D or better under the various study scenarios.

Intersection

Table ES.2 displays the intersection LOS results for each of the study scenarios analyzed.

Table ES.2 - Summary of Intersection LOS Analyses Results

ID	Intersection	Peak Hour	Level of Service					
			E	E+P	NT	NT+P	HY	HY+P
1	Vista Village Drive & Lado De Loma Drive	AM	C	C	C	C	C	C
		PM	C	C	C	C	D	D
2	Lado De Loma Drive & Guajome Street	AM	A	A	A	A	A	A
		PM	A	A	A	A	A	A
3	South Santa Fe Avenue & Guajome Street	AM	A	A	A	A	A	A
		PM	A	A	A	A	B	B
4	Project Driveway & Guajome Street	AM	N/A	A	N/A	A	N/A	B
		PM	N/A	B	N/A	B	N/A	B

Source: CR Associates (2022)

Notes:
E = Existing Conditions; E+P = Existing with Project Conditions.
NT = Near-Term Year 2023 Base Conditions; NT+P = Near-Term Year 2023 Base with Project Conditions.
HY = Horizon Year 2030 Base Conditions; HY+P = Horizon Year 2030 Base with Project Conditions.
N/A = Not Applicable.

With the implementation of the Project, all study intersections are projected to operate at acceptable LOS D or better during both the AM and PM peak hours under the various study scenarios.

Determination of the Need for Off-Site Improvements

Intersection Improvements

Based upon the LOS analyses results and the significance criteria presented in Section 2.6 of this report, the addition of Project traffic would not have any adverse effects on traffic operations at any of the study intersections under Existing with Project conditions. Therefore, no intersection improvements will be required.

Roadway Segment Improvements

Based upon the LOS analyses results and the significance criteria presented in Section 2.6 of this report, the addition of Project traffic would not have any adverse effects on traffic operations along study roadway segments under “with Project” conditions.

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1.0 Introduction

The purpose of this Local Transportation Study (LTS) is to evaluate how the proposed Pheasant Hill Multi-Family project (the "Project") will affect the surrounding local transportation network, as well as to determine if additional transportation improvements will be needed.

1.1 Project Description

The project site is located along the south side of Guajome Street just west of the existing Sprinter light rail line in the City of Vista. The Project will construct 183 multi-family dwelling units, including three four-story buildings with covered parking and one three-story building. Additional surface level parking would be provided throughout the site. The Project will construct sidewalks to City of Vista standard. Access to the Project will be provided via a full-access side-street stop-controlled driveway along the south side of Guajome Street approximately 70 feet west of the existing Sprinter light rail line. **Figure 1.1** displays the Project's regional location. **Figure 1.2** displays the project site plan.

For a conservative analysis and to allow flexibility for potential minor land use changes, this LTS assumes a total of 185 dwelling units.

1.2 Project Improvements

The Project will include the improvements or construction of the following facilities as project features:

Project Driveway

- *Project Driveway & Guajome Street* – This driveway will be on the south side of Guajome Street approximately 70 feet west of the existing Sprinter light rail line. This driveway will operate as a side-street stop-controlled intersection with Guajome Street as the uncontrolled approach and the driveway as the stop-controlled approach. This driveway will include one inbound lane and one outbound lane.

Off-Site Improvements

Prior to the approval of the Project's improvement plans, the Project shall, to the satisfaction of the City Engineer, coordinate with City's staff, CPUC, and NCTD to obtain approval of a GO-88B for the following features:

a. A westbound left-turn pocket into the Project
b. A sidewalk located on the southern side of Guajome Street, between the western property line and Mercantile Street, including a temporary asphalt sidewalk between the eastern rail road right-of-way and Mercantile Street.

Prior to the issuance of the occupancy permit for the Project, the Project shall take the following steps, each to the satisfaction of the City Engineer:

1. Construct sidewalk on the north side of Guajome Street/Lado De Loma Drive, between 201 Guajome Street and Eddie Drive.
2. Construct sidewalk on the south side of Guajome Street, between the Project's western property line and Mercantile Street, including a temporary asphalt sidewalk between the eastern rail road right-of-way and Mercantile Street.
3. Construct street improvements and westbound left-turn pocket per the Project's approved site plan.

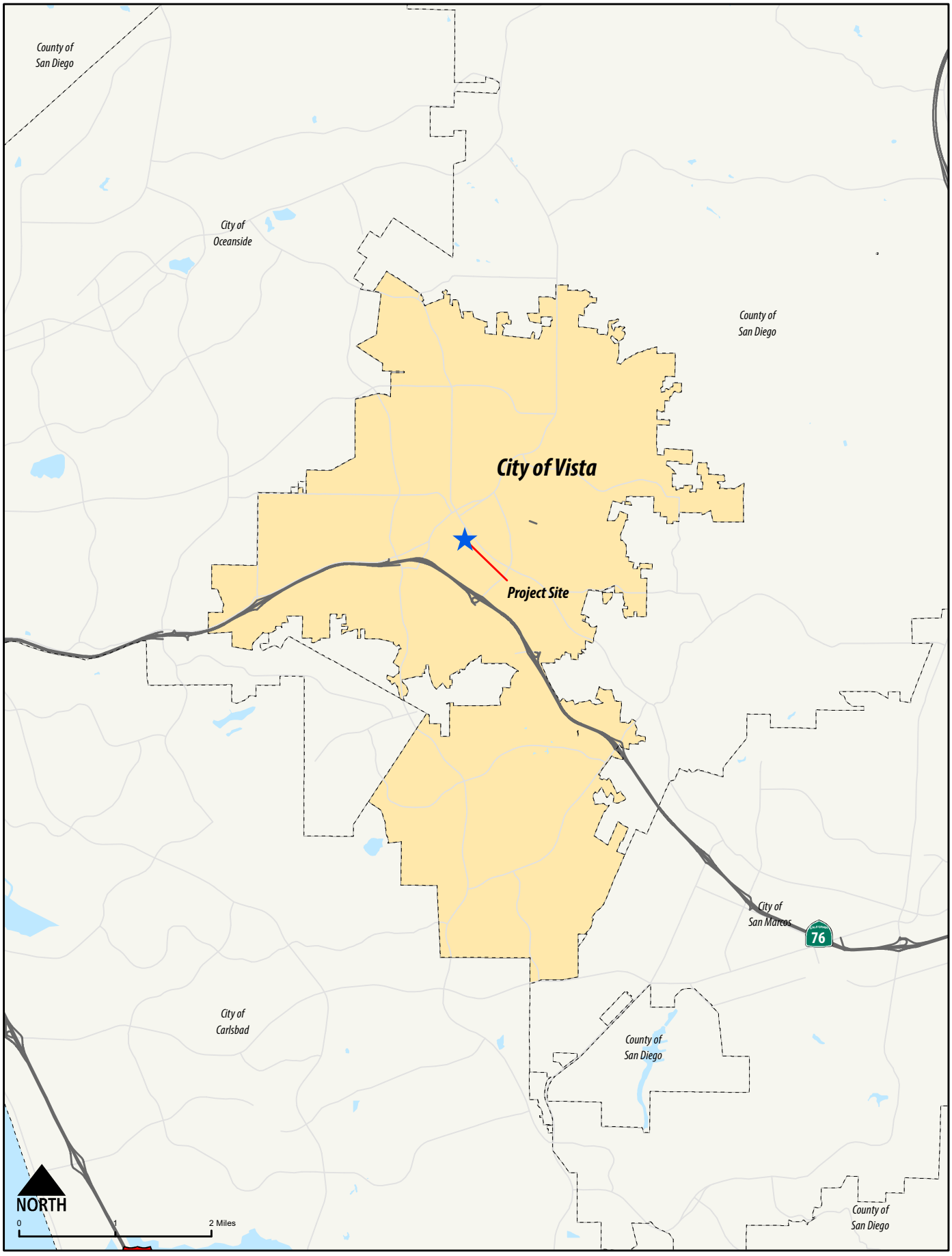

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Figure 1.1
Project Regional Location

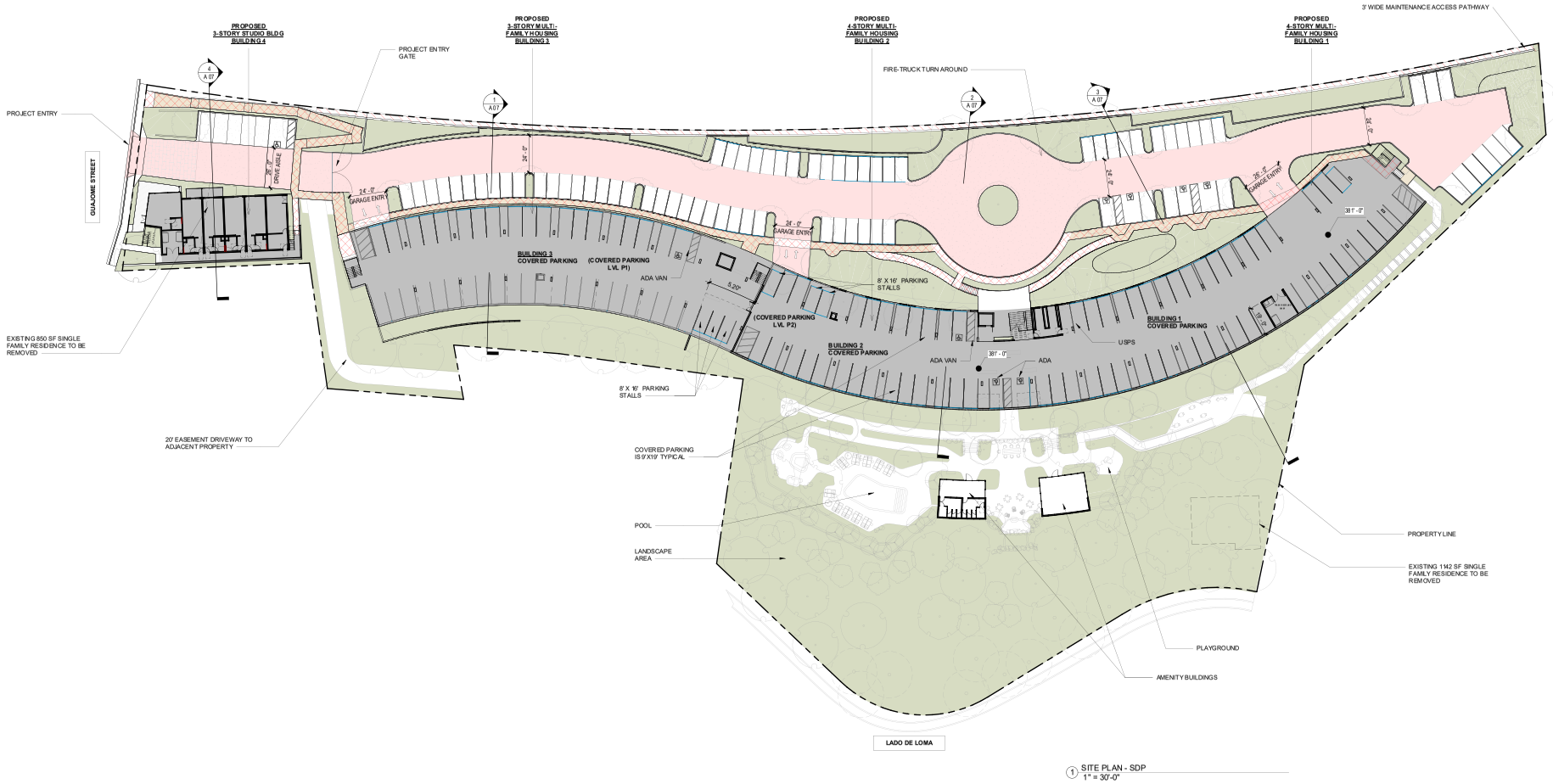

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Figure 1.2
Project Site Plan

Due to uncertainty regarding the final design of the Inland Rail Trail along Guajome Street by SANDAG, the Project is not assuming connection to the Inland Rail Trail from the sidewalks along Guajome Street. However, where feasible, the Project applicant will coordinate with SANDAG to ensure that the proposed sidewalk under step 2 does not conflict with SANDAG's design for the Inland Rail Trail.

Bicycle Facilities

No changes to the bicycle network are proposed.

Transit Facilities

No changes to the transit network are proposed.

1.3 Project Trip Generation, Distribution, and Assignment

Project Trip Generation

Project trip generation estimates were derived utilizing the trip generation rates outlined in SANDAG's *(Not So) Brief Guide of Vehicular Traffic Generation Rates for The San Diego Region* (2002). Although the Project's current site plan proposes 183 multi-family dwelling units, for a conservative analysis and to allow flexibility for potential minor land use changes, this LTS assumed a total of 185 dwelling units instead. **Table 1.1** displays the anticipated trip generation as studied in this LTS and **Table 1.2** displays the anticipated trip generation for the current site plan.

As shown in Table 1.1, the Project as studied in this LTS would generate a total of 1,110 daily trips, with 89 occurring in the AM peak Hour (18 inbound, 71 outbound) and 100 occurring in the PM peak hour (70 inbound, 30 outbound). Whereas the current site plan would generate a total of 1,098 daily trips, with 88 occurring in the AM peak Hour (18 inbound, 70 outbound) and 99 occurring in the PM peak hour (69 inbound, 30 outbound). Therefore, the trip generation as studied in the LTS provides a more conservative analysis from a trip generation perspective.

Project Trip Distribution

The trip distribution for the Project was developed based on the geographical location of the Project, as well as the characteristics of the proposed and surrounding land uses. **Figure 1.3** displays the project trip distribution pattern for the Project.

Project Trip Assignment

Based on the project trip distribution pattern, daily and AM/PM peak hour project trips were assigned to the surrounding roadway network. **Figure 1.4** displays the project trip assignment for the Project.

Table 1.1 - Project Trip Generation - LTS

Land Use	Units	Trip Rate	ADT	AM Peak Hour					PM Peak Hour				
				%	Trips	Split	In	Out	%	Trips	Split	In	Out
Multi-Family Residential (More Than 20 DU/Acre)	185 DU	6/DU	1,110	8%	89	2:8	18	71	9%	100	7:3	70	30

Source: (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (2002)

Table 1.2 - Project Trip Generation – Current Site Plan

Land Use	Units	Trip Rate	ADT	AM Peak Hour					PM Peak Hour				
				%	Trips	Split	In	Out	%	Trips	Split	In	Out
Multi-Family Residential (More Than 20 DU/Acre)	183 DU	6/DU	1,098	8%	88	2:8	18	70	9%	99	7:3	69	30

Source: (Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region (2002)

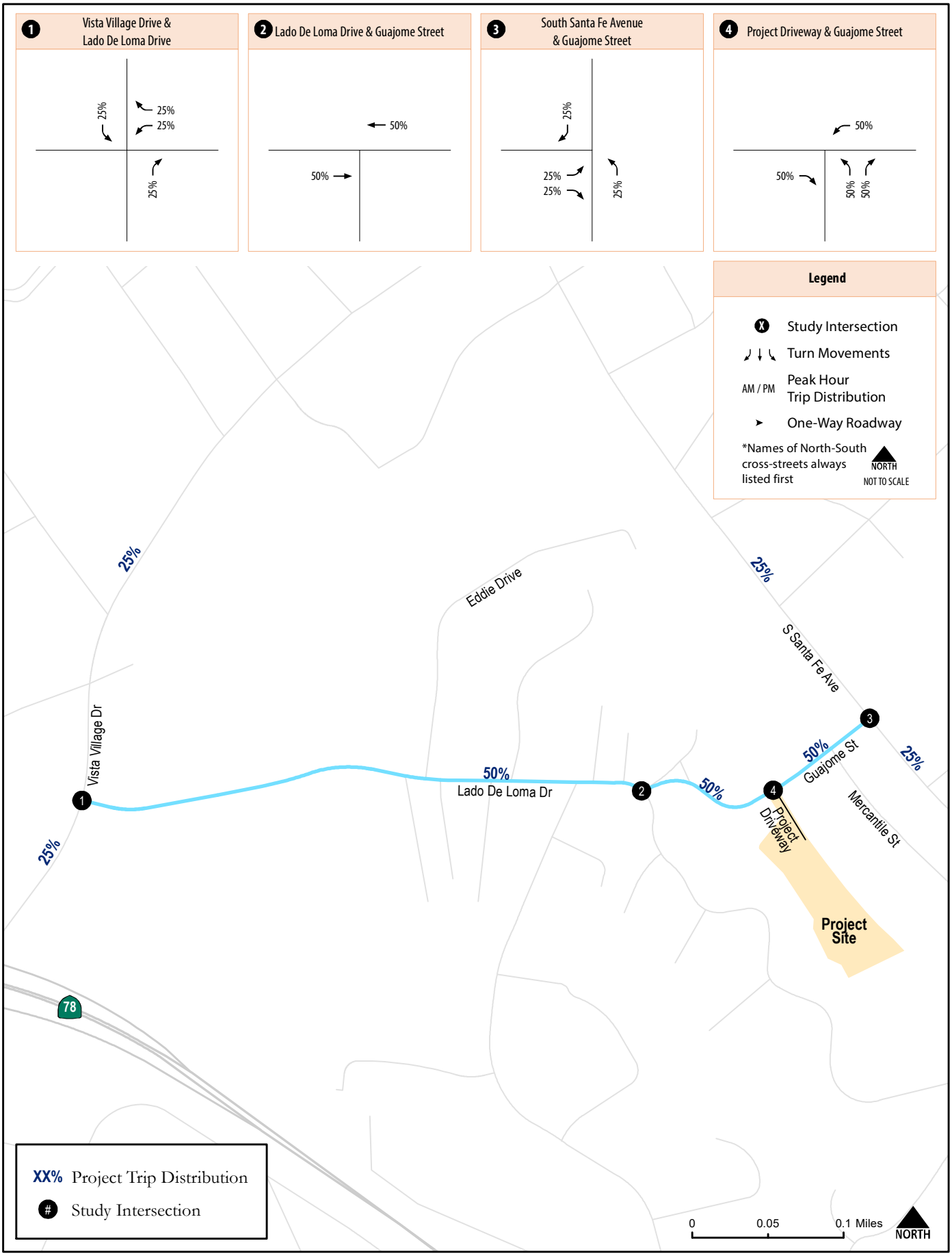

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Figure 1.3
Project Trip Distribution

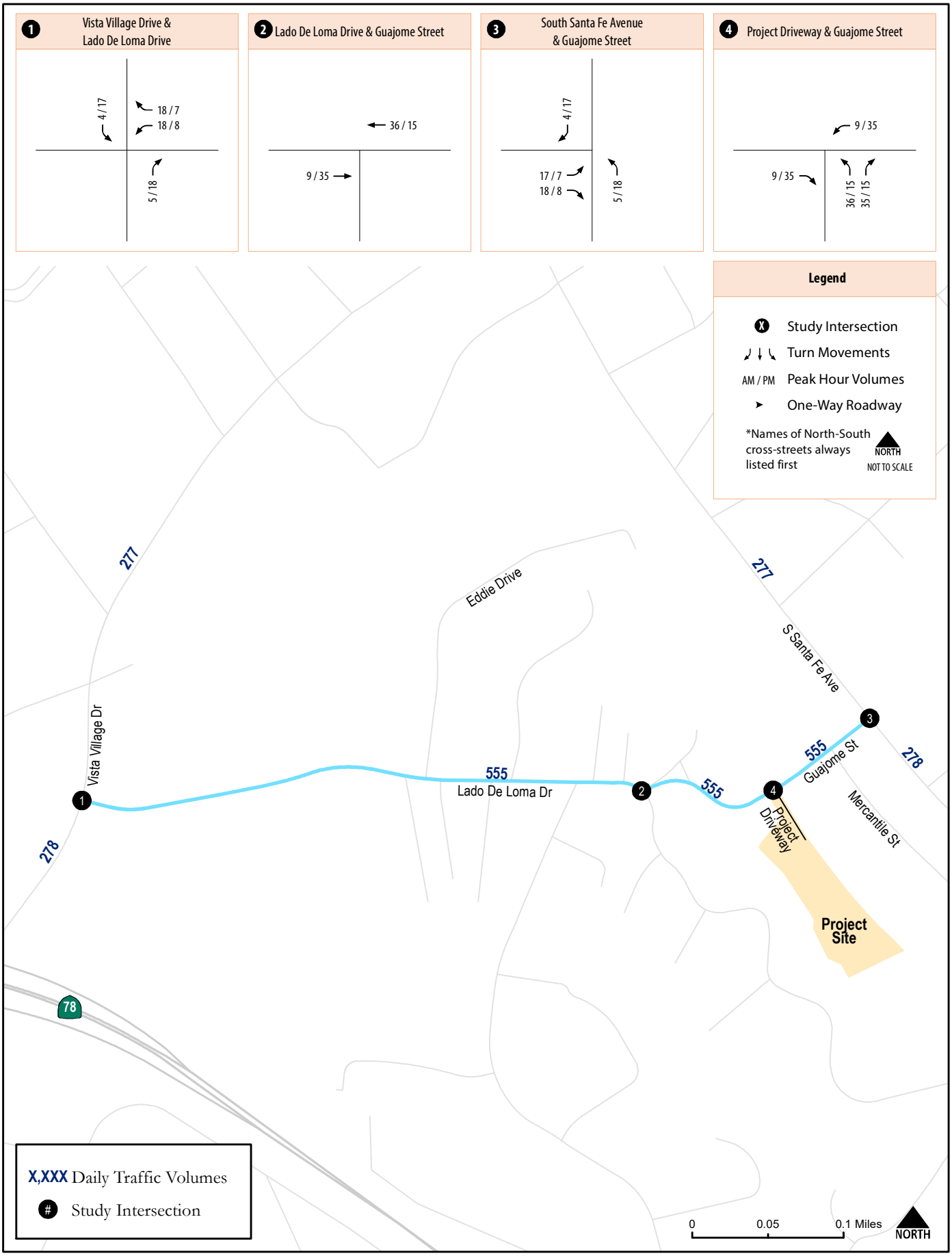

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Figure 1.4
Project Trip Assignment

1.4 Project Study Area

Based on the criteria outlined in the *City of Vista Transportation Impact Analysis Guidelines* (TIAG) (December 2020) and the project trip assignment, the following two (2) roadway segments and four (4) intersections were analyzed in this study:

Roadway Segments

- Lado De Loma Drive, between Vista Village Drive and Guajome Street
- Guajome Street, between Lado De Loma Drive and South Santa Fe Avenue

After implementation of the Project, the study roadway segments will be divided as follows:

- Lado De Loma Drive, between Vista Village Drive and Guajome Street
- Guajome Street, between Lado De Loma Drive and Project Driveway
- Guajome Street, between Project Driveway and South Santa Fe Avenue

Intersections

1. Vista Village Drive & Lado De Loma Drive (Signalized)
2. Lado De Loma Drive & Guajome Street (All-way stop-controlled)
3. South Santa Fe Avenue & Guajome Street (Roundabout)
4. Project Driveway & Guajome Street (Side-street stop-controlled)[1]

[1] Intersection provides project access and does not currently exist; therefore, it is only analyzed under "with Project" scenarios.

Figure 1.5 displays the project study roadway segments and intersections.

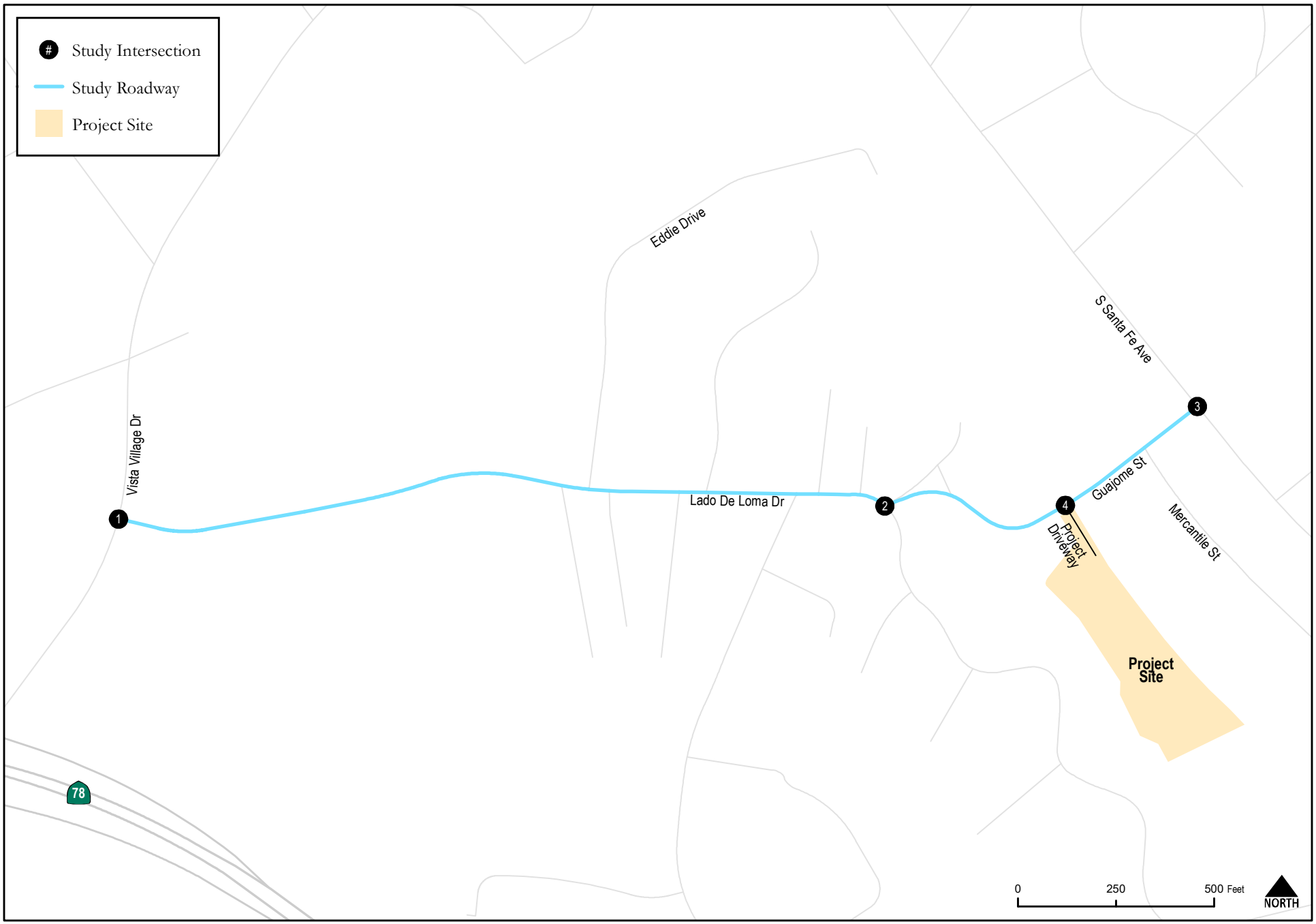

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Figure 1.5
Project Study Area

1.5 Report Organization

Following this introductory chapter, the report is organized into the following chapters:

2.0 *Analysis Methodology* – This chapter reviews the methods utilized to evaluate the Project's effect on the local transportation network, as is required in the City of Vista TIAG for an LTS.

3.0 *Existing Conditions* – This chapter provides a qualitative description of the transportation facilities and services located within the project study area including roadway, active transportation, and transit facilities. This chapter also evaluates the traffic operational conditions for the existing transportation network. LOS analyses and results are provided for both Existing and Existing with Project conditions.

4.0 *Near-Term Year 2023 Conditions* – This chapter describes near-term developments anticipated to add traffic to the project study area by year 2023, the Project's opening year. These projects are included in the Near-Term Year 2023 Base conditions. LOS analyses and results are provided for both Near-Term Year 2023 Base and Near-Term Year 2023 Base with Project conditions. Recommended improvements as a result of the Project are also identified, if necessary.

5.0 *Horizon Year 2030 Conditions* – This chapter describes projected long-range future conditions of the transportation network within the study area. Recommended improvements as a result of the Project are also identified, if necessary.

6.0 *Site Access & Parking* – This chapter addresses access to the project site and evaluates the amount of parking that will be provided on-site.

2.0 Analysis Methodology

This LTS was performed in accordance with the standards and requirements identified in the City of Vista TIAG. The project information form (PIF) is included in **Appendix A.**

2.1 Analysis Guidelines

The City of Vista TIAG provides standards and thresholds to determine the effect a land development project will have on the local transportation network through an LTS. Although an LTS is not required to satisfy California Environmental Quality Act (CEQA) requirements, it is required for projects that generate more than 400 ADT. An LTS helps to provide the project applicant and the City of Vista an understanding of how the local transportation network will operate with the implementation of the Project. Additionally, the LTS identifies facilities that may require improvement(s) to address issues related to operations and safety for all transportation modes (vehicle, pedestrian, bicycle, and transit).

2.2 Level of Service (LOS) Definition

LOS is a quantitative measure describing operational conditions within a traffic stream, and the motorist's and/or passengers' perception of operations. A LOS definition generally describes these conditions in terms of such factors as delay, speed, travel time, freedom to maneuver, interruptions in traffic flow, queuing, comfort, and convenience. **Table 2.1** describes generalized definitions of the various LOS categories (A through F) as applied to roadway operations.

Table 2.1 - LOS Definitions

LOS Category	Definition of Operation
A	This LOS represents a completely free-flow condition, where the operation of vehicles is virtually unaffected by the presence of other vehicles and only constrained by the geometric features of the highway and by driver preferences.
B	This LOS represents a relatively free-flow condition, although the presence of other vehicles becomes noticeable. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.
C	At this LOS, the influence of traffic density on operations becomes marked. The ability to maneuver within the traffic stream is clearly affected by other vehicles.
D	At this LOS, the ability to maneuver is notably restricted due to traffic congestion, and only minor disruptions can be absorbed without extensive queues forming and the service deteriorating.
E	This LOS represents operations at or near capacity. LOS E is an unstable level, with vehicles operating with minimum spacing for maintaining uniform flow. At LOS E, disruptions cannot be dissipated readily thus causing deterioration down to LOS F.
F	At this LOS, forced or breakdown of traffic flow occurs, although operations appear to be at capacity, queues form behind these breakdowns. Operations within queues are highly unstable, with vehicles experiencing brief periods of movement followed by stoppages.

Source: Highway Capacity Manual 6th Edition

2.3 Roadway Segment LOS Standards and Thresholds

Roadway segment LOS standards and thresholds provide the basis for analysis of arterial roadway segment performance. The analysis of roadway segment LOS is based on the functional classification of the roadway, the maximum capacity, roadway geometrics, and existing or forecast ADT volumes. The City of Vista General Plan establishes a goal of LOS D for all City streets except for within areas designated for mixed-use development, or areas designated to be more bicycle/pedestrian friendly. If the existing LOS is D or worse, preservation of the existing LOS must be maintained, or acceptable improvements must be identified. **Table 2.2** presents the City of Vista roadway segment LOS standards and ADT thresholds which were utilized to analyze study roadway segments.

Table 2.2 - Circulation Element Roadway Classifications – Capacity and LOS

Street Classification	LOS				
	A	B	C	D	E
6-Lane Prime Arterial	< 36,000	< 42,000	< 48,000	< 54,000	< 60,000
6-Lane Urban Major	< 30,000	< 35,000	< 40,000	< 45,000	< 50,000
4-Lane Major Arterial	< 24,000	< 28,000	< 32,000	< 36,000	< 40,000
4-Lane Collector	< 15,000	< 17,500	< 20,000	< 22,500	< 25,000
2-Lane Collector with TWLTL	< 9,000	< 10,500	< 12,000	< 13,500	< 15,000
2-Lane Collector	< 5,280	< 6,160	< 7,040	< 7,920	< 8,800
2-Lane Semi-Rural[1]	-	-	-	-	< 7,900

Source: City of Vista TIAG (December 2020)

Notes:
TWLTL = Two Way Left-Turn Lane (or striped center median).
[1] Semi-Rural Streets: Capacities identified are the maximum recommended volumes to maintain this classification. If volumes exceed this capacity, either a classification modification should be considered or measures should be taken to reduce through traffic.

2.4 Peak Hour Intersection LOS Standards and Thresholds

This section presents the methodologies used to perform peak hour intersection capacity analysis at the signalized and unsignalized intersections within the study area. The following assumptions were utilized in conducting all intersection LOS analyses:

- *Peak Hour Factor (PHF)* – PHF was calculated from June 2021 and November 2021 peak hour intersection count data, included in **Appendix B**, and utilized for Existing and Near-Term analysis. A PHF of 0.95 or existing PHF (whichever is greater) was used for Horizon Year conditions.

- *Signal Timing* – Used traffic signal timing/phasing plans provided by the City of Vista (July 2021). Existing signal timings are provided in **Appendix C**. Signal timing was optimized under Horizon Year conditions.

- *Heavy Truck Percentage* – A 2% truck percentage was assumed for all scenarios.

- *Lane Utilization Factor* – No unusual lane utilization was observed in the field; therefore, HCM 6th Edition defaults were used for all scenarios

2.4.1 Signalized Intersections

The analysis of signalized intersections utilized the operational analysis procedure as outlined in the Highway Capacity Manual (HCM) 6th Edition Chapter 19 signalized intersection analysis methodology. This method defines LOS in terms of delay, or more specifically, average stopped delay per vehicle. Delay is a measure of driver and/or passenger discomfort, frustration, fuel consumption and lost travel time. This technique uses 1,900 vehicles per hour per lane (VPHPL) as the maximum saturation volume of an intersection. This saturation volume is adjusted to account for lane width, on-street parking, pedestrians, traffic composition (i.e., percentage trucks) and shared lane movements (i.e., through and right-turn movements originating from the same lane). The LOS criteria used for the analysis of signalized intersections are described in **Table 2.3**, identifying the thresholds of control delays and the associated LOS. The computerized analysis of intersection operations was performed utilizing the Synchro Version 10 traffic analysis software by Trafficware Ltd.

Table 2.3 - Signalized Intersection LOS Operation Analysis Method

Average Stopped Delay Per Vehicle (Seconds)	LOS Characteristics
<10	LOS A describes operations with very low delay. This occurs when progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
>10– 20	LOS B describes operations with generally good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
>20 – 35	LOS C describes operations with higher delays, which may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
>35– 55	LOS D describes operations with high vehicle delay, resulting from some combination of unfavorable progression, long cycle lengths, or high vehicle volumes. The influence of congestion becomes more noticeable, and individual cycle failures are noticeable.
>55 – 80	LOS E is considered the limit of acceptable delay. Individual cycle failures are frequent occurrences.
>80	LOS F describes a condition of excessively high vehicle delay, considered unacceptable to most drivers. This condition often occurs when arrival flow rates exceed the LOS D capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes to such delay.

Source: Highway Capacity Manual 6th Edition

2.4.2 Unsignalized Intersections

Unsignalized intersections were analyzed using the Highway Capacity 6th Edition side-street stop (Chapter 20), all-way stop (Chapter 21), and roundabout (Chapter 22) intersection analysis methodology. The computerized analysis of intersection operations was performed utilizing the Synchro Version 10 traffic analysis software by Trafficware Ltd.

LOS was determined as follows:

- *Side-street stop intersections* – Reported for the worst-case approach.
- *All-way stop controlled intersections* – Reported for the average of all approaches.
- *Roundabout* – Reported for the worst-case approach.

The LOS criteria used for the analysis of unsignalized intersections are described in **Table 2.4**.

Table 2.4 - LOS Criteria for Stop-Controlled Unsignalized Intersections

Average Stopped Delay Per Vehicle (Seconds)	LOS Characteristics
0 – 10	A
> 10 – 15	B
> 15 – 25	C
> 25 – 35	D
> 35 – 50	E
> 50	F

Source: Highway Capacity Manual 6th Edition

2.5 Determination of Project Study Area

Per the City of Vista TIAG, the project study area should include the following facilities:

Vehicle

All signalized and unsignalized project driveways shall be analyzed as well as any other intersections at the discretion of the City Traffic Engineer. Freeway ramp intersections should also be analyzed if the project will add 20 or more peak hour (new trips) trips in either direction.

Pedestrian

An assessment of existing pedestrian facilities for the following extents:

- Pedestrian facilities directly connected to project access points and adjacent to the project development, extending in each direction to the nearest intersection with a classified roadway or connection with a Class I bike path.
- Pedestrian facilities connecting to transit stops within two blocks of the project.

Bicycle

Discussion of existing and planned bicycle infrastructure including any opportunities or deficiencies such as bike lanes, bike buffers, or other bike facilities. The extents are as follows:

- All roadways adjacent to the project, extending in each direction to the nearest intersection with a classified roadway or with a Class I bike path.
- Both directions of travel should be evaluated.

Transit

Identify, discuss, and evaluate existing and planned transit stops or routes located within ½ mile of each pedestrian access point.

2.6 Improvement Thresholds

Per the City of Vista TIAG, the Project will need to implement improvements to an intersection when one of the following occurs:

- Under either the Existing with Project and Near-Term Year 2023 with Project scenarios, addition of the project traffic results in a service from LOS D or better to LOS E or F. Under this condition, the project is responsible for improvements necessary to restore the intersection to LOS D conditions or better.

- Under either the Existing with Project and Near-Term Year 2023 with Project scenarios, an intersection is operating at LOS E or F under the no-project scenario and the project adds more than an additional two seconds of average vehicle delay. Under this condition, the project is responsible for improvements to restore the intersection LOS to pre-development conditions or better.

- Under the longer-range cumulative conditions, if the addition of project traffic results in a service drop from LOS D or better to LOS E or F, or if an intersection is operating at LOS E or F and the project contributes to the average vehicle delay (regardless of time), the project is determined to have a cumulative impact. Under this condition, the project applicant is responsible for mitigating the intersection LOS to pre-development conditions or better. Identified cumulative transportation related impacts can be mitigated by participation in the City of Vista's Impact Fees for Arterials Streets and Traffic Signals Program.

3.0 Existing Conditions

This chapter provides a qualitative description of the existing transportation network facilities within the project study area. This includes vehicular, pedestrian, bicycle, and transit facilities. Additionally, this chapter provides an analysis of the existing vehicular traffic operations along study roadway segments and intersections.

3.1 Vehicular Facilities

Descriptions of all study roadway facilities are provided in **Table 3.1**. Existing physical characteristics of roadway segments within the project study area were collected via field work, as well as street-level (Google StreetView) and aerial (Nearmap) imagery.

3.2 Pedestrian Facilities

Table 3.2 summarizes pedestrian facilities to the extents required per the City of Vista TIAG, presented previously in Section 2.5, including existing substandard or missing pedestrian facilities (e.g., missing sidewalks and curb ramps, narrow sidewalks, other major obstructions).

As shown in Table 3.2, within the project study area there are some missing segments of sidewalk along Guajome Street and Lado De Loma Drive. Additionally, curb ramps were observed to be missing at all corners of the intersection of Lado De Loma Drive & Guajome Street.

Table 3.1 - Existing Transportation Network Characteristics

Roadway	Segment	# of Lanes	Median Type	Posted Speed Limit	Parking	Sidewalk?	Bike lanes?	Transit Route
Lado De Loma Drive	Vista Village Drive to Guajome Street	1 EB / 1 WB	Undivided	25	Parallel (Intermittently)	Contiguous on the north side, between Vista Village Drive and Eddie Drive	None	None
Guajome Street	Lado De Loma Drive to South Santa Fe Avenue	1 EB / 1 WB	Undivided	25	EB: Prohibited WB: Parallel (Intermittently)	Contiguous on the north side between Project Driveway and South Santa Fe Avenue. Contiguous on the south side from Mercantile Street to South Santa Fe Avenue.	None	None

Source: CR Associates (2022)

Table 3.2 - Pedestrian Facilities and Conditions

Roadway	Segment	North/East Side		South/West Side	
		Type	Conditions	Type	Conditions
Lado De Loma Drive	Eddie Drive to Guajome Street	None	N/A	None	N/A
Lado De Loma Drive	South of Guajome Street	None	N/A	None	N/A
Guajome Street	Lado De Loma Drive to Project Driveway	None	N/A	None	N/A
Guajome Street	Project Driveway to South Santa Fe Avenue	Contiguous	Unobstructed, approximately 12 feet wide	Contiguous (Intermittently)	Sidewalk only present east of Mercantile Street
South Santa Fe Avenue	Oceanview Drive to Guajome Street	Non-contiguous	Unobstructed, approximately 12 feet wide	Non-contiguous	Unobstructed, approximately 12 feet wide
South Santa Fe Avenue	Guajome Street to Terrace Drive	Non-contiguous	Unobstructed, approximately 12 feet wide	Non-contiguous	Unobstructed, approximately 12 feet wide

Source: CR Associates (2022)

Note:
N/A = Not Applicable

3.3 Bicycle Facilities

Table 3.3 summarizes bicycle facilities to the extents required per the City of Vista TIAG, presented previously in Section 2.5, including existing bicycle facilities and substandard or missing facilities (e.g., bike lane gaps, obstructions). Planned bicycle facilities, per the *City of Vista Bicycle Master Plan* (January 2015), are also identified.

As shown in Table 3.3, there are no existing or planned bicycle facilities along Guajome Street and bicycle facilities along South Santa Fe Avenue are built to their ultimate classification. It should be noted that the Inland Rail Trail, a 21-mile Class I separated bikeway project that will run from Oceanside to Escondido, proposes to be construct a segment of the bikeway parallel to South Santa Fe Avenue. The Inland Rail Trail will provide direct access to the Sprinter stations along its alignment.

3.4 Transit Facilities

NCTD Bus Routes 305 and 334 (described below) operate within a ½ mile radius of the Project. Detailed NCTD Route information is provided in Appendix D.

- NCTD Bus Route #305 – (Escondido to Vista via Mission Road & South Santa Fe Avenue) – Within the Project vicinity, this route operates primarily on South Santa Fe Avenue and connects to Vista Transit Center and Escondido Transit Center. On weekdays, this route operates with a frequency of approximately 30-minute headways between the hours of 4:19 AM and 10:54 PM and followed by one additional service approximately 60 minutes later. During the weekend, this route operates with a frequency of approximately 30-minute headways between the hours of 5:15 AM and 9:54 PM and followed by one additional service approximately 60 minutes later. It should be noted that this route offers services during the holidays.

- NCTD Bus Route #334 – (Vista Circulator) – Within the Project vicinity, this route operates primarily along South Santa Fe Avenue as part of a clockwise loop throughout the City of Vista. On weekdays, this route operates with a frequency of 30 to 60-minute headways between 4:36 AM to 8:02 PM. On Saturdays, this route operates with a frequency of 30 to 60-minute headways between 5:36 AM to 6:33 PM. This route does not operate on Sundays or during the holidays.

There are no transit stops located along project frontage. The closest transit stops (within ½ mile radius of the Project) include four (4) bus stops along South Santa Fe Avenue and two (2) Sprinter stations. Table 3.4 displays the transit amenities at these transit stops.

Table 3.3 - Bicycle Facilities and Conditions

Roadway	Segment	Existing		Ultimate Classification
		Facility	Conditions	
Guajome Street	Lado De Loma Drive to South Santa Fe Avenue	None	N/A	No bicycle facility
South Santa Fe Avenue	Oceanview Drive to Guajome Street	Class III Bike Route	Unobstructed with paved sharrows and posted "bike route" signs	Class III Bike Route
South Santa Fe Avenue	Guajome Street to Terrace Drive	Class III Bike Route	Unobstructed with paved sharrows and posted "bike route" signs	Class III Bike Route
Inland Rail Trail	North Melrose Drive (Oceanside) to North Pacific Street (Escondido) Phase 1 through 3 are completed. Phase 4 is currently planned for construction by 2025 per the SANDAG 2021 RTP	Planned	N/A	Class I Multi-Use Path

Source: City of Vista Bicycle Master Plan (January 2015); *CR Associates (2022)*

Note:
N/A = Not Applicable.

Table 3.4 - Existing Transit Amenities

Amenity	Transit Stop					
	South Santa Fe Avenue & Broadway Stop No. 25055	South Santa Fe Avenue & Broadway Stop No. 25056	South Santa Fe Avenue & Terrace Drive Stop No. 20693	South Santa Fe Avenue & Terrace Drive Stop No. 20280	Vista Center Station	Civic Center Station
NCTD Route	305, 334	305	305	305	Sprinter, 302, 303, 305, 306, 318, 332, 334	Sprinter only
Direction of Travel	Northbound	Southbound	Northbound	Southbound	Northbound/Southbound	Northbound/Southbound
Bus Stop Sign	X	X	X	X	X	X
ADA Accessible Pad	X	X	X	X	X	X
Bench	X	X	X	X	X	X
Shelter		X	X	X	X	X
Trash Receptacle		X	X	X	X	X
Lighting	X	X	X	X	X	X
Bike Rack		X			X	X
System/Route Map		X	X	X	X	X
Wayfinding						
Digital Message Signs					X	X

Source: CR Associates (2022)

3.5 Existing Roadway Network and Traffic Volumes

Figure 3.1 displays the study area roadway functional classifications and intersection geometrics under Existing conditions. It should be noted that the study segments of Guajome Street and Lado de Loma Drive are classified as 2-Lane Light Collectors in the Circulation Element. However, the two roads currently exist and operate as 2-Lane Semi Rural based on the typical cross section described in the City of Vista General Plan. Therefore, this classification will be used in the LOS analysis.

City staff provided historical counts from December 2017 and April 2018. Additionally, traffic counts were conducted along the study roadway segments and intersections in June 2021 and November 2021 by Counts Unlimited, Inc. To ensure that these counts reflect traffic conditions prior to the COVID-19 restrictions, a count validation was conducted. When compared to 2017 and 2018 counts, 2021 counts were generally higher. Therefore, 2021 counts were used as-is, except where 2021 counts were lower than 2017 or 2018 counts, for which the historical counts were used instead.

Existing and historical traffic counts are provided in Appendix B. Daily traffic and AM/PM peak hour turning movement volumes for study roadway segments and intersections are displayed in **Figure 3.2**.

3.6 Existing Traffic Conditions

LOS analyses under Existing conditions were conducted using the methodologies described in Chapter 2.0. Roadway segment and intersection LOS analysis results are discussed below.

3.6.1 Roadway Segment Analysis

Table 3.5 displays the LOS analysis results for the study roadway segments under Existing conditions. As shown in the table, all of the study roadway segments currently operate under capacity under this scenario.

3.6.2 Intersection Analysis

Table 3.6 displays intersection LOS and average vehicle delay results for the study intersections under Existing conditions. LOS calculation worksheets are provided in **Appendix E**. As shown in the table, all of the study intersections currently operate at acceptable LOS C or better during both the AM and PM peak hours under this scenario.

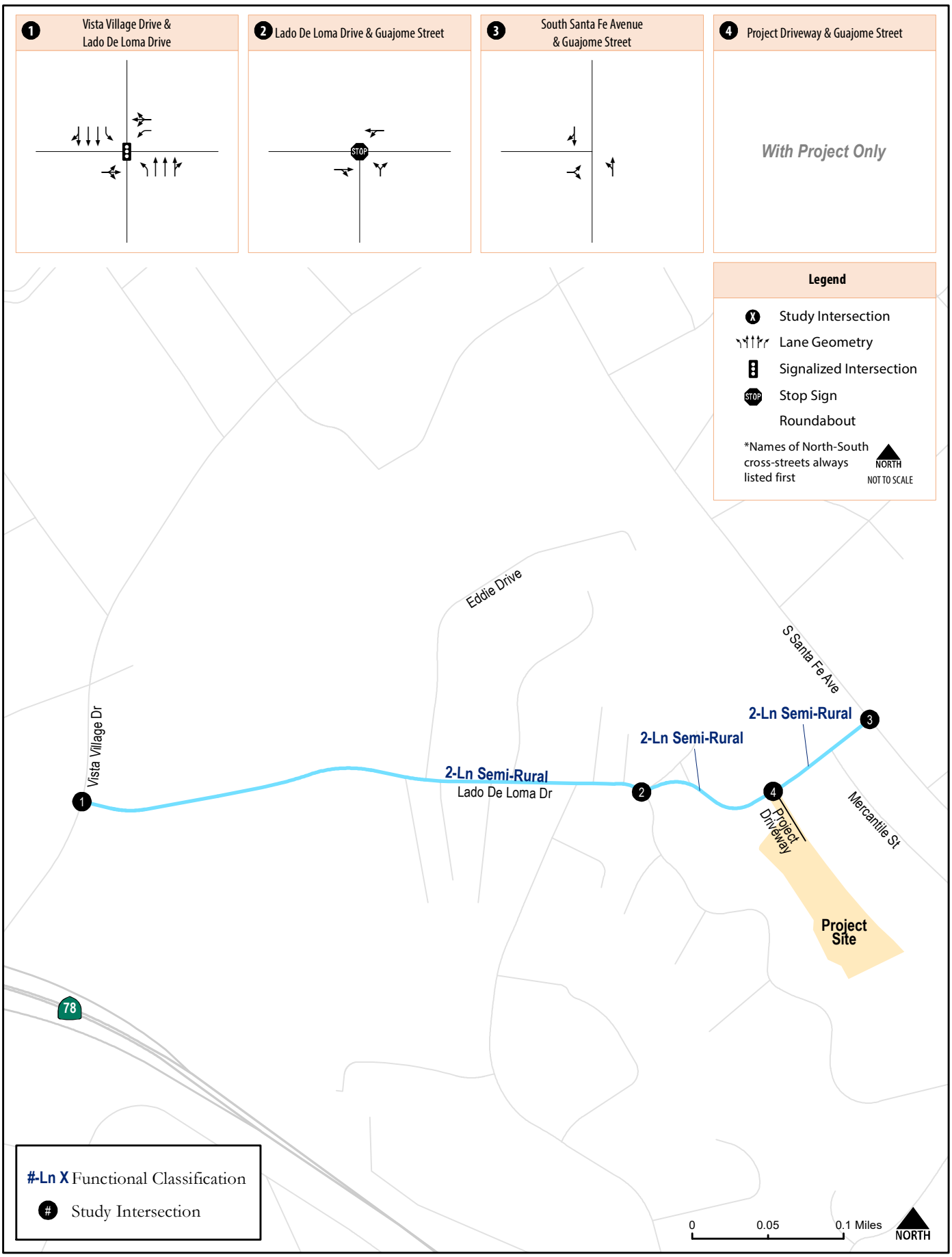

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Figure 3.1
Functional Classifications and Intersection Geometrics - Existing Conditions

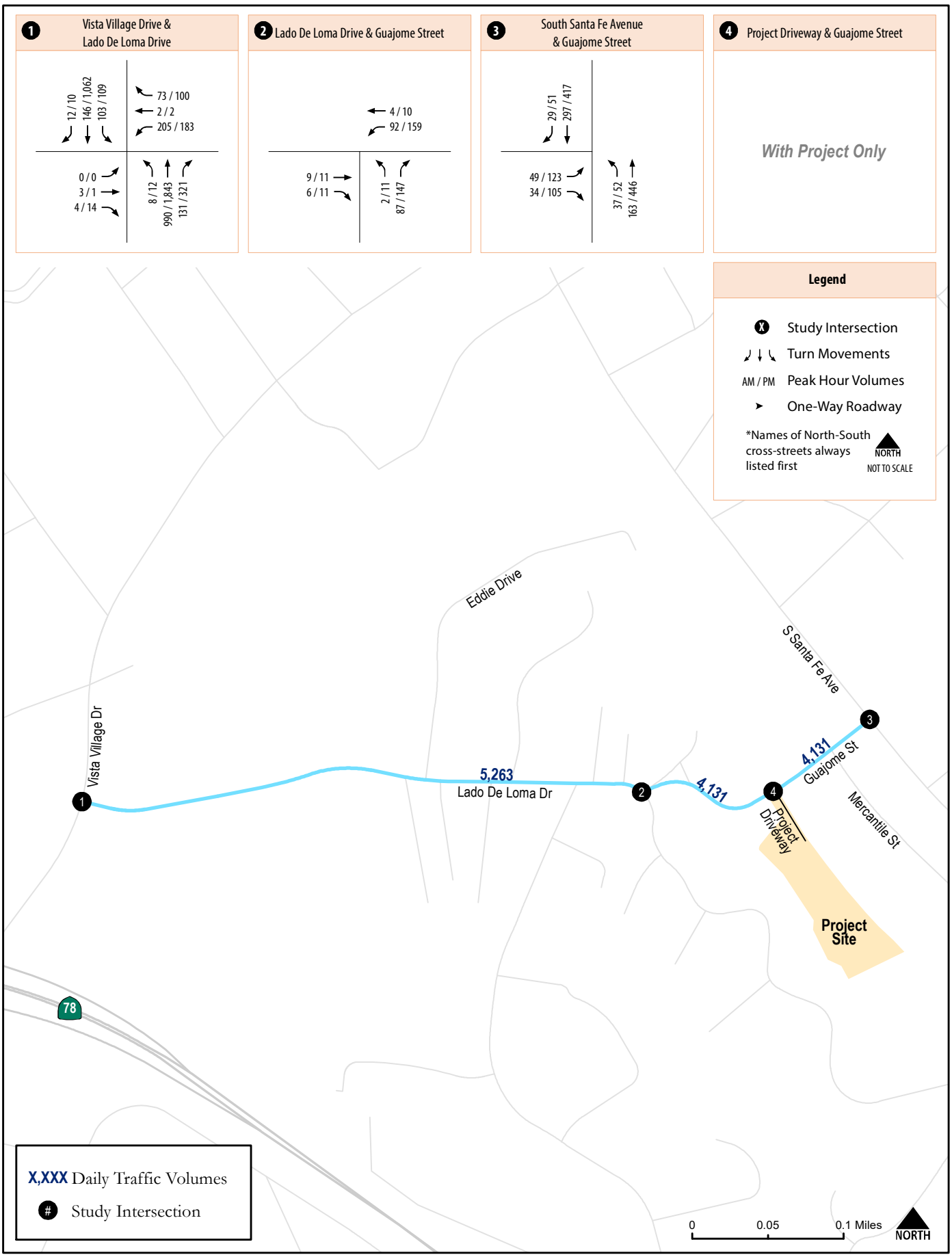

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Figure 3.2
Traffic Volumes - Existing Conditions

Table 3.5 - Roadway Segment LOS Results – Existing Conditions

Roadway	Segment	Functional Classification	Roadway Capacity	Daily Volume	V/C	LOS
Lado De Loma Drive	Vista Village Drive to Guajome Street	2-Lane Semi-Rural[1]	7,900	5,263	0.666	Under Capacity
Guajome Street	Lado De Loma Drive to South Santa Fe Avenue	2-Lane Semi-Rural[1]	7,900	4,131	0.523	Under Capacity

Source: CR Associates (2022)

Note:
[1] 2-Lane Semi-Rural was deemed an appropriate functional classification based on the typical cross sections described in the City of Vista General Plan.

Table 3.6 - Peak Hour Intersection LOS Results – Existing Conditions

ID	Intersection	Peak Hour	Traffic Control	Delay (sec/veh)	LOS
1	Vista Village Drive & Lado De Loma Drive/Ford Dealership Driveway	AM	Signal	22.9	C
		PM		25.7	C
2	Lado De Loma Drive & Guajome Street	AM	AWSC	7.6	A
		PM		8.2	A
3	South Santa Fe Avenue & Guajome Street	AM	Roundabout	5.3	A
		PM		8.0	A

Source: CR Associates (2022)

Notes:
For roundabout intersections, the delay shown is the worst delay experienced by any of the approaches.
AWSC = All-way stop-controlled intersection. For AWSC intersections, the delay shown is the average delay experienced at all of the approaches.

3.7 Existing with Project Roadway Network and Traffic Volumes

Functional classifications and intersection geometrics under Existing with Project conditions were assumed to be identical to Existing conditions, with the exception of the new project driveway discussed previously in Section 1.2. It should be noted that the Project will construct sidewalks to City of Vista standards. However, as analyzed under Existing conditions, due to the existing lack of sidewalks off-site Guajome Street and Lado de Loma Drive are assumed to maintain a functional classification of 2-Lane Semi-Rural under this scenario.

Traffic volumes for Existing with Project conditions were derived by adding project trips (as previously shown in Figure 1.5) to the Existing conditions traffic volumes (as previously shown in Figure 3.2). Daily roadway and peak hour intersection volumes for this scenario are displayed in **Figure 3.3**.

3.8 Existing with Project Traffic Conditions

LOS analyses under Existing with Project conditions were conducted using the methodologies described in Chapter 2. Roadway segment and intersection LOS analysis results are discussed separately below.

3.8.1 Roadway Segment Analysis

Table 3.7 displays the LOS analysis results for the study roadway segments under Existing with Project conditions. As shown in the table, all of the study roadway segments are projected to continue to operate under capacity under this scenario.

3.8.2 Intersection Analysis

Table 3.8 displays intersection LOS and average vehicle delay results for the study intersections under Existing with Project conditions. LOS calculation worksheets are provided in **Appendix F**. As shown in the table, all of the study intersections are projected to continue to operate at acceptable LOS C or better during both the AM and PM peak hours under this scenario.

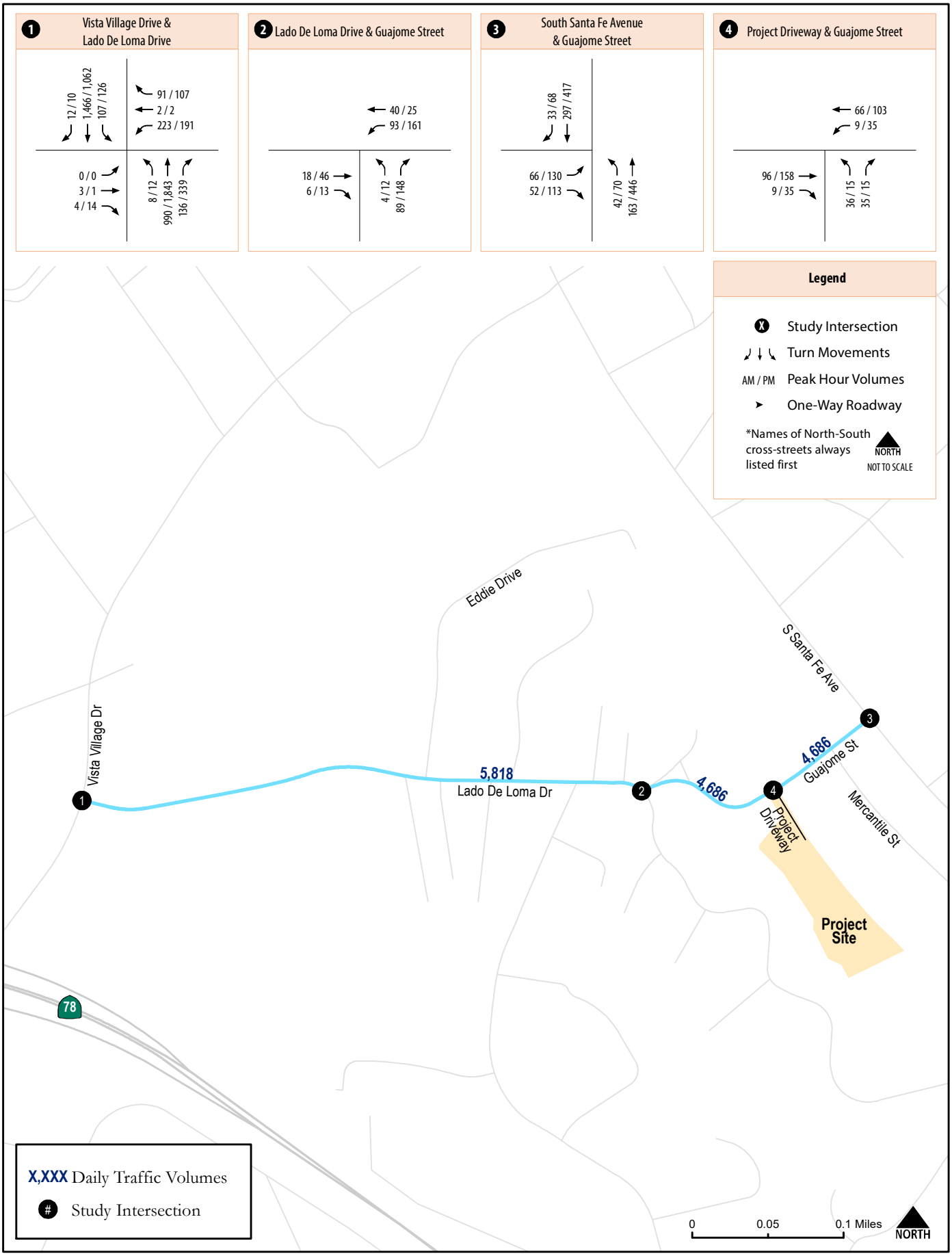

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Figure 3.3
Traffic Volumes - Existing with Project Conditions

Table 3.7 - Roadway Segment LOS Results – Existing with Project Conditions

Roadway	Segment	Functional Classification	Roadway Capacity	E+P			E			ΔV/C
				Daily Volume	V/C	LOS	Daily Volume	V/C	LOS	
Lado De Loma Drive	Vista Village Drive to Guajome Street	2-Lane Semi-Rural[1]	7,900	5,818	0.736	Under Capacity	5,263	0.666	Under Capacity	0.070
Guajome Street	Lado De Loma Drive to Project Driveway	2-Lane Semi-Rural[1]	7,900	4,686	0.593	Under Capacity	4,131	0.523	Under Capacity	0.070
Guajome Street	Project Driveway to South Santa Fe Avenue	2-Lane Semi-Rural[1]	7,900	4,686	0.593	Under Capacity	4,131	0.523	Under Capacity	0.070

Source: CR Associates (2022)

Notes:
E = Existing Conditions; E+P = Existing with Project Conditions.
[1] 2-Lane Semi-Rural was deemed an appropriate functional classification based on the typical cross sections described in the City of Vista General Plan.

Table 3.8 - Peak Hour Intersection LOS Results – Existing with Project Conditions

ID	Intersection	Peak Hour	Traffic Control	E+P		E		Δ Delay
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	
1	Vista Village Drive & Lado De Loma Drive/Ford Dealership Driveway	AM	Signal	24.8	C	22.9	C	1.9
		PM		30.6	C	25.7	C	4.9
2	Lado De Loma Drive & Guajome Street	AM	AWSC	7.9	A	7.6	A	0.3
		PM		8.4	A	8.2	A	0.2
3	South Santa Fe Avenue & Guajome Street	AM	Roundabout	5.3	A	5.3	A	0.0
		PM		8.3	A	8.0	A	0.3
4	Project Driveway & Guajome Street	AM	SSSC	9.8	A	N/A	N/A	9.8
		PM		10.2	B	N/A	N/A	10.2

Source: CR Associates (2022)

Notes:
E = Existing Conditions; E+P = Existing with Project Conditions.
For roundabout intersections, the delay shown is the worst delay experienced by any of the approaches.
AWSC = All-way stop-controlled intersection. For AWSC intersections, the delay shown is the average delay experienced at all of the approaches.
SSSC = Side-street stop-controlled intersection. For SSSC intersections, the delay shown is the worst delay experienced by any of the approaches.
N/A = Not Applicable.

3.9 Determination of the Need for Off-Site Improvements

This section identifies the recommended off-site improvements under the Existing with Project conditions, consistent with the City of Vista TIAG.

Intersection Improvements

Based upon the LOS analysis results presented in this section and the significance criteria presented in Section 2.6 of this report, the addition of Project traffic would not have any adverse effects on traffic operations at any of the study intersections under Existing with Project conditions. Therefore, no intersection improvements will be required.

Roadway Segment Improvements

Based upon the LOS analyses results presented in this section and the significance criteria presented in Section 2.6 of this report, the addition of Project traffic would not have any adverse effects on traffic operations along study roadway segments under Existing with Project conditions.

4.0 Near-Term Year 2023 Conditions

This section provides an analysis of Year 2023 traffic conditions, the Project's Opening Year, both with and without the Project. The scenarios analyzed in this section include:

- Near-Term Year 2023 Base
- Near-Term Year 2023 Base with Project

4.1 Cumulative Projects Traffic

Given the extents of the project study area, it is unlikely that the traffic generated by cumulative projects will travel along the study roadway segments and intersections. Therefore, no traffic volumes generated by cumulative projects were added to the existing traffic volumes (shown in Figure 3.2).

4.2 Near-Term Year 2023 Base Roadway Network and Traffic Volumes

Study area roadway functional classifications and intersection geometrics under Near-Term Year 2023 Base conditions were assumed to be identical to Existing conditions, as previously shown in Figure 3.1.

In accordance with City of Vista TIAG, traffic volumes under the Near-Term Year 2023 Base conditions were developed utilizing an annual growth factor of 1%. Daily roadway and peak hour intersection traffic volumes were developed by using the formula below:

$$V_{future} = V_{current} (1+g)^n$$

where

V_{future} = future year projected traffic volume (veh./hr.)
$V_{current}$ = current year traffic volume counts, typically peak hour (veh./hr.)
g = average yearly growth factor, expressed as a decimal
n = number of years projected out in the future

For the Near-Term Year 2023 Base scenario, the annual growth rate of 1% was utilized over the two (2) years between existing traffic volumes (Year 2021) and Near-Term Year 2023. Traffic volume growth calculation worksheets are provided in Appendix B. Manual adjustments were also made to ensure that traffic volumes along adjacent intersections are reasonably balanced. Daily roadway and peak hour intersection volumes for this scenario are displayed in **Figure 4.1**.

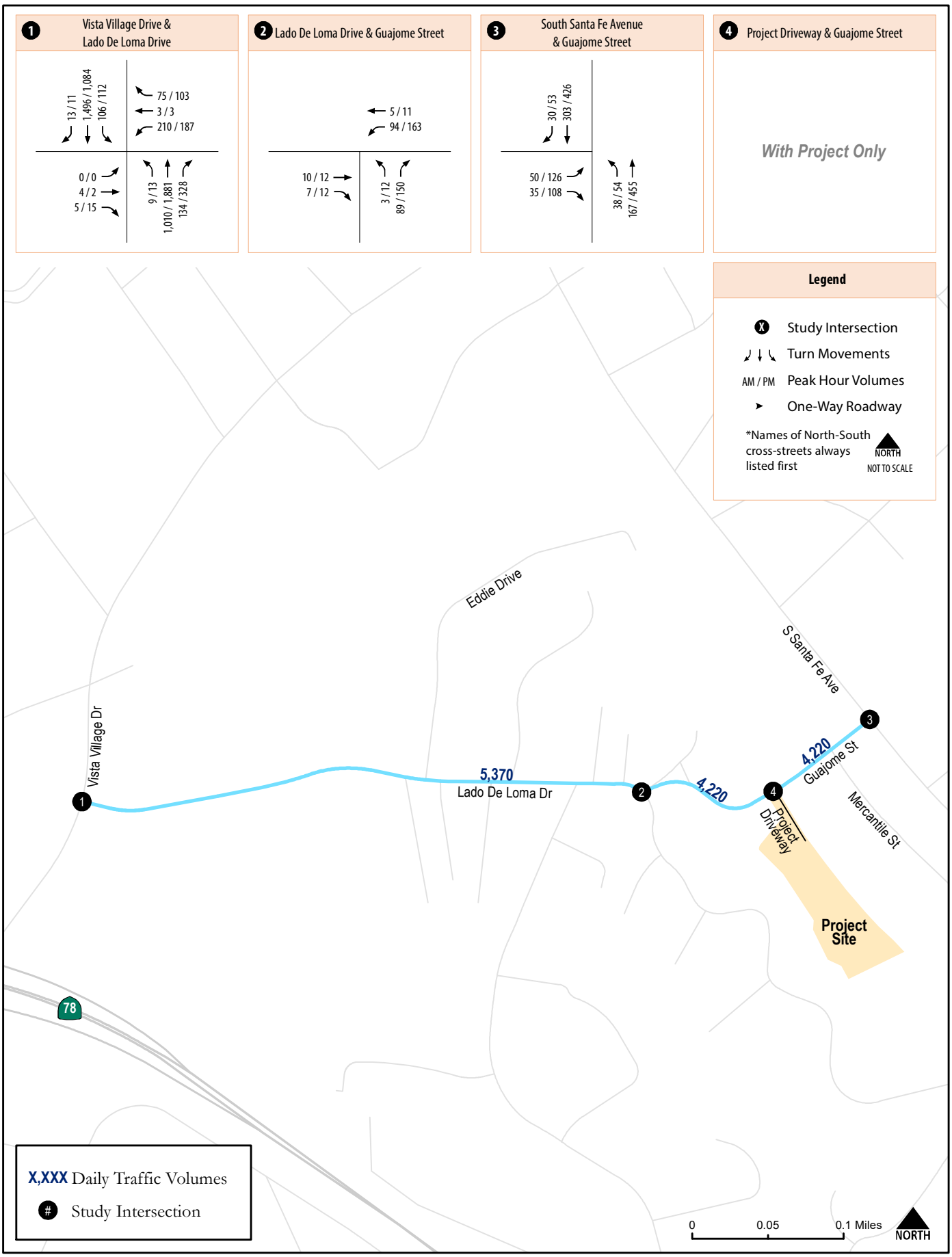

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Figure 4.1

Traffic Volumes - Near-Term Year 2023 Base Conditions

4.3 Near-Term Year 2023 Base Traffic Conditions

LOS analyses under Near-Term Year 2023 Base conditions were conducted using the methodologies described in Chapter 2. Roadway segment and intersection LOS analysis results are discussed separately below.

4.3.1 Roadway Segment Analysis

Table 4.1 displays the LOS analysis results for the study roadway segments under Near-Term Year 2023 Base conditions. As shown in the table, all of the study roadway segments are projected to operate under capacity under this scenario.

4.3.2 Intersection Analysis

Table 4.2 displays intersection LOS and average vehicle delay results for the study intersections under Near-Term Year 2023 Base conditions. LOS calculation worksheets are provided in **Appendix G**. As shown in the table, all of the study intersections are projected to operate at acceptable LOS C or better under this scenario.

Table 4.1 - Roadway Segment LOS Results – Near-Term Year 2023 Base Conditions

Roadway	Segment	Functional Classification	Roadway Capacity	Daily Volume	V/C	LOS
Lado De Loma Drive	Vista Village Drive to Guajome Street	2-Lane Semi-Rural[1]	7,900	5,370	0.680	Under Capacity
Guajome Street	Lado De Loma Drive to South Santa Fe Avenue	2-Lane Semi-Rural[1]	7,900	4,220	0.534	Under Capacity

Source: CR Associates (2022)

Note:
[1] 2-Lane Semi-Rural was deemed an appropriate functional classification based on the typical cross sections described in the City of Vista General Plan.

Table 4.2 - Peak Hour Intersection LOS Results – Near-Term Year 2023 Base Conditions

Intersection	Peak Hour	Traffic Control	Delay (sec/veh)	LOS
1. Vista Village Drive & Lado De Loma Drive/Ford Dealership Driveway	AM	Signal	23.8	C
	PM		26.4	C
2. Lado De Loma Drive & Guajome Street	AM	AWSC	7.6	A
	PM		8.3	A
3. South Santa Fe Avenue & Guajome Street	AM	Roundabout	5.3	A
	PM		8.1	A

Source: CR Associates (2022)

Notes:
For roundabout intersections, the delay shown is the worst delay experienced by any of the approaches.
AWSC = All-way stop-controlled intersection. For AWSC intersections, the delay shown is the average delay experienced at all of the approaches.

4.4 Near-Term Year 2023 Base with Project Roadway Network and Traffic Volumes

Study area roadway functional classifications and intersection geometrics under the Near-Term Year 2023 Base with Project conditions were assumed to be identical to the Near-Term Year 2023 Base conditions, with the exception of the mew project driveway discussed previously in Section 1.2.

Traffic volumes for the Near-Term Year 2023 Base with Project conditions were derived by adding project trips (as previously shown in Figure 1.4) to the Near-Term Year 2023 Base traffic volumes (as previously shown in Figure 4.1). Daily roadway and peak hour intersection volumes for this scenario are displayed in **Figure 4.2**.

4.5 Near-Term Year 2023 Base with Project Traffic Conditions

LOS analyses under Near-Term Year 2023 Base with Project conditions were conducted using the methodologies described in Chapter 2. Roadway segment and intersection LOS analysis results are discussed separately below.

4.5.1 Roadway Segment Analysis

Table 4.3 displays the LOS analysis results for the study roadway segments under Near-Term Year 2023 Base with Project conditions. As shown in the table, all of the study roadway segments are projected to continue to operate under capacity under this scenario.

4.5.2 Intersection Analysis

Table 4.4 displays intersection LOS and average vehicle delay results for the study intersections under Near-Term Year 2023 Base with Project conditions. LOS calculation worksheets are provided in **Appendix H**. As shown in the table, all of the study intersections are projected to continue to operate at acceptable LOS C or better during both the AM and PM peak hours under this scenario.

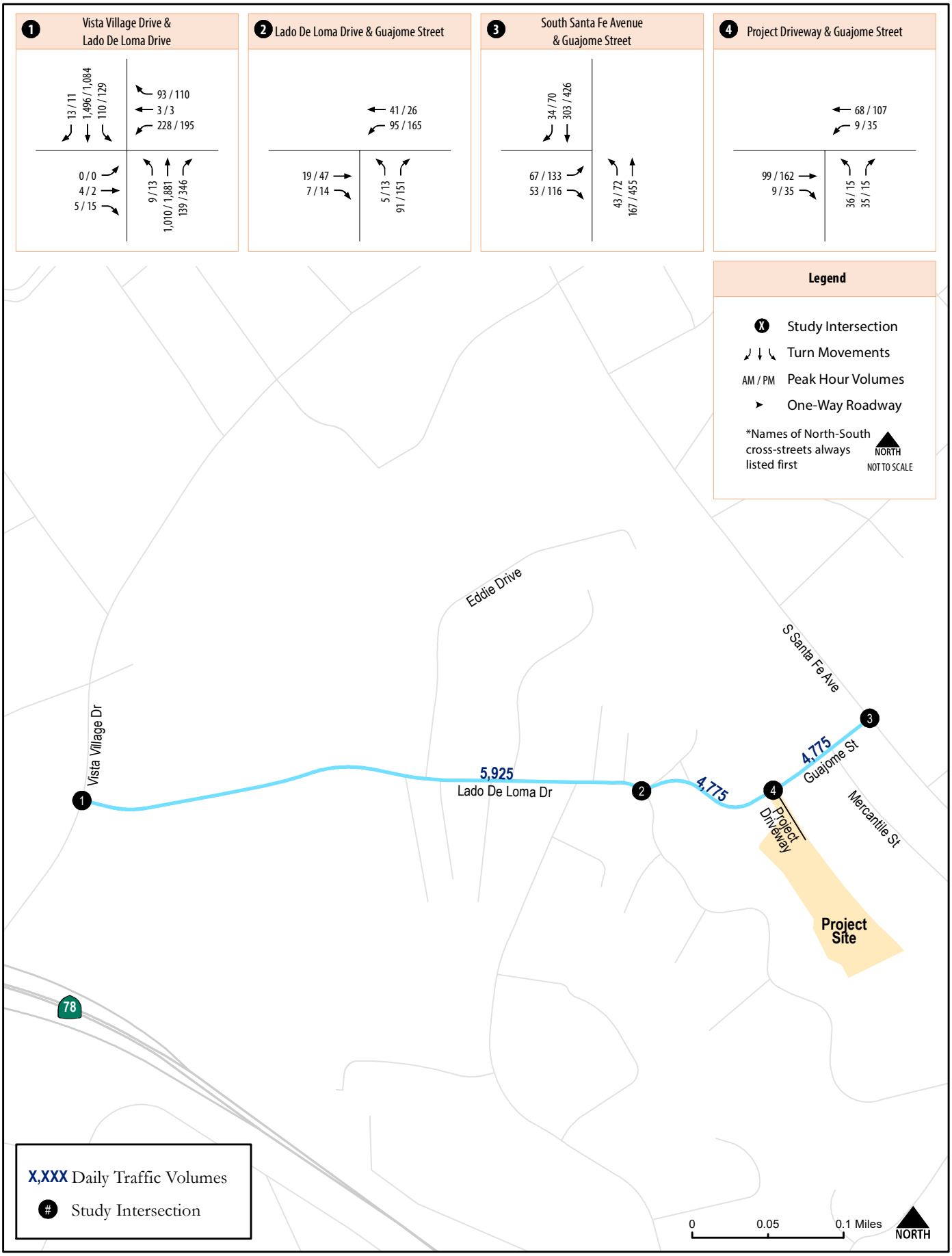

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Figure 4.2

Traffic Volumes - Near-Term Year 2023 Base with Project Conditions

Table 4.3 - Roadway Segment LOS Results – Near-Term Year 2023 Base with Project Conditions

Roadway	Segment	Functional Classification	Roadway Capacity	NT+P			NT			ΔV/C
				Daily Volume	V/C	LOS	Daily Volume	V/C	LOS	
Lado De Loma Drive	Vista Village Drive to Guajome Street	2-Lane Semi-Rural[1]	7,900	5,925	0.750	Under Capacity	5,370	0.680	Under Capacity	0.070
Guajome Street	Lado De Loma Drive to Project Driveway	2-Lane Semi-Rural[1]	7,900	4,775	0.604	Under Capacity	4,220	0.534	Under Capacity	0.070
Guajome Street	Project Driveway to South Santa Fe Avenue	2-Lane Semi-Rural[1]	7,900	4,775	0.604	Under Capacity	4,220	0.534	Under Capacity	0.070

Source: CR Associates (2022)

Notes:
NT = Near-Term Year 2023 Base Conditions; NT+P = Near-Term Year 2023 Base with Project Conditions.
[1] 2-Lane Semi-Rural was deemed an appropriate functional classification based on the typical cross sections described in the City of Vista General Plan.

Table 4.4 - Peak Hour Intersection LOS Results – Near-Term Year 2023 Base with Project Conditions

ID	Intersection	Peak Hour	Traffic Control	NT+P		NT		Δ Delay
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	
1	Vista Village Drive & Lado De Loma Drive/Ford Dealership Driveway	AM	Signal	25.8	C	23.8	C	2.0
		PM		31.8	C	26.4	C	5.4
2	Lado De Loma Drive & Guajome Street	AM	AWSC	7.9	A	7.6	A	0.3
		PM		8.5	A	8.3	A	0.2
3	South Santa Fe Avenue & Guajome Street	AM	Roundabout	5.4	A	5.3	A	0.1
		PM		8.5	A	8.1	A	0.4
4	Project Driveway & Guajome Street	AM	SSSC	9.9	A	N/A	N/A	9.9
		PM		10.3	B	N/A	N/A	10.3

Source: CR Associates (2022)

Notes:
NT = Near-Term Year 2023 Base Conditions; NT+P = Near-Term Year 2023 Base with Project Conditions.
For roundabout intersections, the delay shown is the worst delay experienced by any of the approaches.
AWSC = All-way stop-controlled intersection. For AWSC intersections, the delay shown is the average delay experienced at all of the approaches.
SSSC = Side-street stop-controlled intersection. For SSSC intersections, the delay shown is the worst delay experienced by any of the approaches.
N/A = Not Applicable.

4.6 Determination of the Need for Off-Site Improvements

This section identifies the recommended off-site improvements under the Near-Term Year 2023 with Project conditions, consistent with the City of Vista TIAG.

Intersection Improvements

Based upon the LOS analysis results presented in this section and the significance criteria presented in Section 2.6 of this report, the addition of Project traffic would not have an adverse effect on traffic operations at any of the study intersections under Near-Term Year 2023 Base with Project conditions. Therefore, no intersection improvements will be required.

Roadway Segment Improvements

Based upon the LOS analysis results presented in this section and the significance criteria presented in Section 2.6 of this report, the addition of Project traffic would not have an adverse effect on traffic operations along study roadway segments under Near-Term Year 2023 Base with Project conditions.

5.0 Horizon Year 2030 Conditions

This section provides an analysis of Horizon Year 2030 traffic conditions both with and without the Project. The scenarios analyzed in this section include:

- Horizon Year 2030 Base
- Horizon Year 2030 Base with Project

5.1 Horizon Year 2030 Base Roadway Network and Traffic Volumes

Based on review of the City of Vista General Plan Circulation Element, study area intersection geometrics under Horizon Year 2030 Base conditions were assumed to be identical to Existing conditions. However, per the City of Vista General Plan, the roadway segments of Lado De Loma Drive and Guajome Street are identified as 2-Lane Collectors and analyzed as such under this scenario.

Per the City of Vista TIAG, traffic volumes should be obtained from the City of Vista General Plan PEIR. However, the PEIR does not include traffic volumes for the roadway segments and intersections studied in this LTS. Therefore, daily roadway traffic volumes were developed by using the same approach as previously presented in Section 4.2. Traffic volumes along South Santa Fe Avenue were obtained from the PEIR for Existing conditions (2007) and Horizon Year (2030). Traffic volumes were compared and an average annual growth rate of 2.17% was observed over the twenty-three (23) year period.

Since the PEIR does not include peak hour intersection traffic volumes for the study area intersections, the average annual growth rate of 2.17% was utilized over the nine (9) years between existing traffic volumes (Year 2021) and Horizon Year 2030. Horizon Year 2030 growth calculation worksheets are provided in Appendix B. Manual adjustments were also made to ensure that traffic volumes along adjacent intersections are reasonably balanced. Daily roadway and peak hour intersection volumes for this scenario are displayed in **Figure 5.1**.

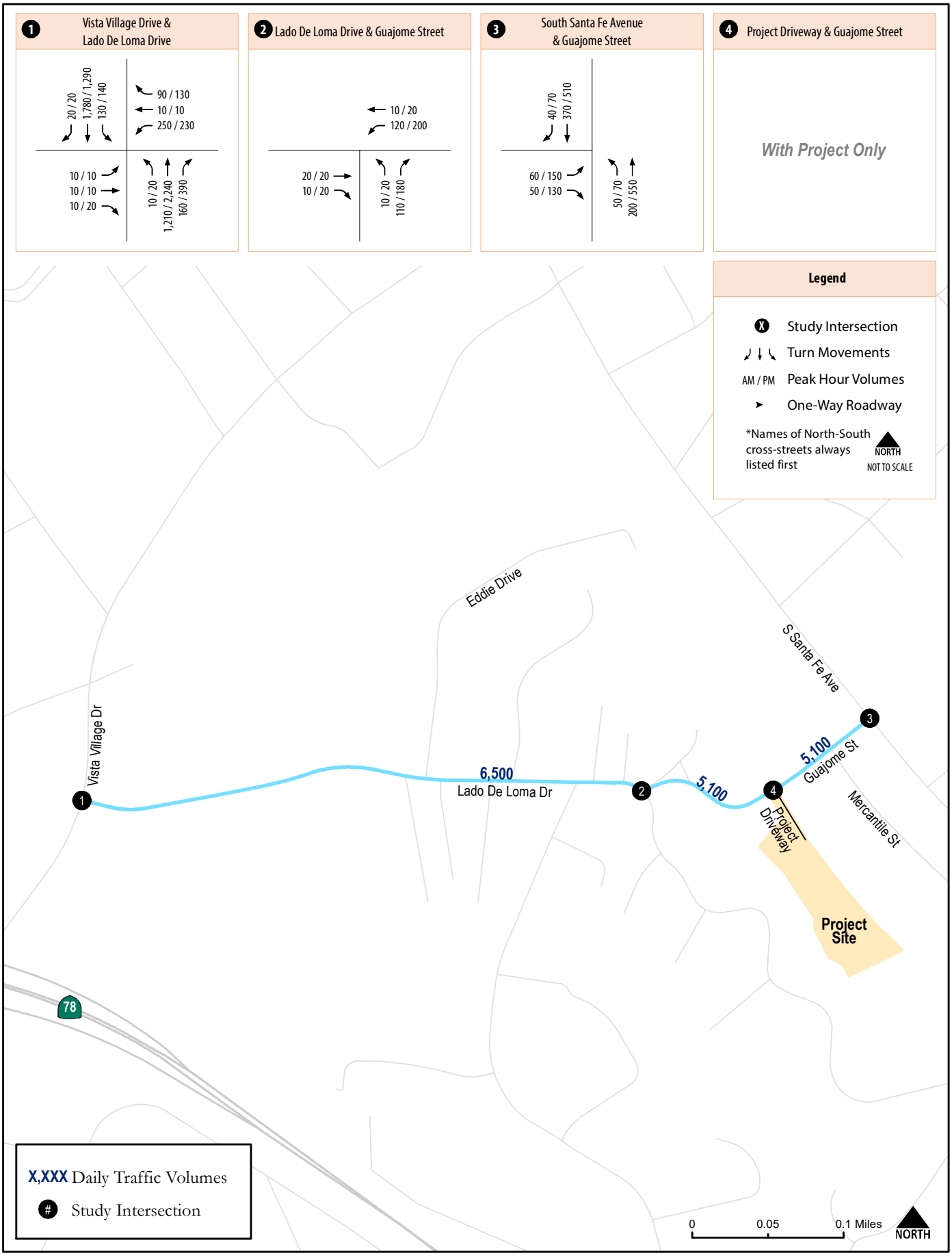

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Figure 5.1

Traffic Volumes - Horizon Year 2030 Base Conditions

5.2 Horizon Year 2030 Base Traffic Conditions

LOS analyses under Horizon Year 2030 Base conditions were conducted using the methodologies described in Chapter 2. Roadway segment and intersection LOS analysis results are discussed separately below.

5.2.1 Roadway Segment Analysis

Table 5.1 displays the LOS analysis results for the study roadway segments under Horizon Year 2030 Base conditions. As shown in the table, all of the study roadway segments are projected to operate at acceptable LOS C or better under this scenario.

5.2.2 Intersection Analysis

Table 5.2 displays intersection LOS and average vehicle delay results for the study intersections under Horizon Year 2030 Base conditions. LOS calculation worksheets are provided in **Appendix I**. As shown in the table, all of the study intersections are projected to operate at acceptable LOS D or better during both the AM and PM peak hours under this scenario.

Table 5.1 - Roadway Segment LOS Results – Horizon Year 2030 Base Conditions

Roadway	Segment	Functional Classification	Roadway Capacity	Daily Volume	V/C	LOS
Lado De Loma Drive	Vista Village Drive to Guajome Street	2-Lane Collector	8,800	6,500	0.739	C
Guajome Street	Lado De Loma Drive to South Santa Fe Avenue	2-Lane Collector	8,800	5,100	0.580	A

Source: CR Associates (2022)

Notes:
HY = Horizon Year 2030 Base Conditions; HY+P = Horizon Year 2030 Base with Project Conditions.
[1] 2-Lane Semi-Rural was deemed an appropriate functional classification based on the typical cross sections described in the City of Vista General Plan.

Table 5.2 - Peak Hour Intersection LOS Results – Horizon Year 2030 Base Conditions

Intersection	Peak Hour	Traffic Control	Delay (sec/veh)	LOS
1. Vista Village Drive & Lado De Loma Drive/Ford Dealership Driveway	AM	Signal	31.4	C
	PM		40.0	D
2. Lado De Loma Drive & Guajome Street	AM	AWSC	7.8	A
	PM		8.9	A
3. South Santa Fe Avenue & Guajome Street	AM	Roundabout	5.9	A
	PM		10.0	B

Source: CR Associates (2022)

Notes:
For roundabout intersections, the delay shown is the worst delay experienced by any of the approaches.
AWSC = All-way stop-controlled intersection. For AWSC intersections, the delay shown is the average delay experienced at all of the approaches.

5.3 Horizon Year 2030 Base with Project Roadway Network and Traffic Volumes

Functional classifications and intersection geometrics under the Horizon Year 2030 Base with Project conditions were assumed to be identical to the Horizon Year 2030 Base conditions, with the exception of the njew project driveway discussed previously in Section 1.2.

Daily and peak hour intersection volumes for the Horizon Year 2030 Base with Project conditions were derived by adding project trips (as previously shown in Figure 1.4) to the Horizon Year 2030 Base traffic volumes (as previously shown in Figure 5.1). Daily and peak hour intersection volumes for this scenario are displayed in **Figure 5.2**.

5.4 Horizon Year 2030 Base with Project Traffic Conditions

LOS analyses under Horizon Year 2030 Base with Project conditions were conducted using the methodologies described in Chapter 2. Roadway segment and intersection LOS analysis results are discussed below.

5.4.1 Roadway Segment Analysis

Table 5.3 displays the LOS analysis results for the study roadway segments under Horizon Year 2030 Base with Project conditions. As shown in the table, all of the study roadway segments are projected to operate at acceptable LOS D under this scenario.

5.4.2 Intersection Analysis

Table 5.4 displays intersection LOS and average vehicle delay results for the study intersections under Horizon Year 2030 Base with Project conditions. LOS calculation worksheets are provided in **Appendix J**. As shown in the table, all of the study intersections are projected to operate at acceptable LOS D or better during both the AM and PM peak hours under this scenario.

5.5 Determination of the Need for Off-Site Improvements

This section identifies the recommended transportation improvements under the Horizon Year 2030 Base with Project conditions, consistent with the City of Vista TIAG.

Intersection Improvements

Based upon the LOS analysis results presented in this section and the significance criteria presented in Section 2.6 of this report, the addition of Project traffic would not have an adverse effect on traffic operations at any of the study intersections under Horizon Year 2030 Base with Project conditions. Therefore, no intersection improvements will be required.

Roadway Segment Improvements

Based upon the LOS analysis results presented in this section and the significance criteria presented in Section 2.6 of this report, the addition of Project traffic would not have an adverse effect on traffic operations along study roadway segments under Horizon Year 2030 Base with Project conditions.

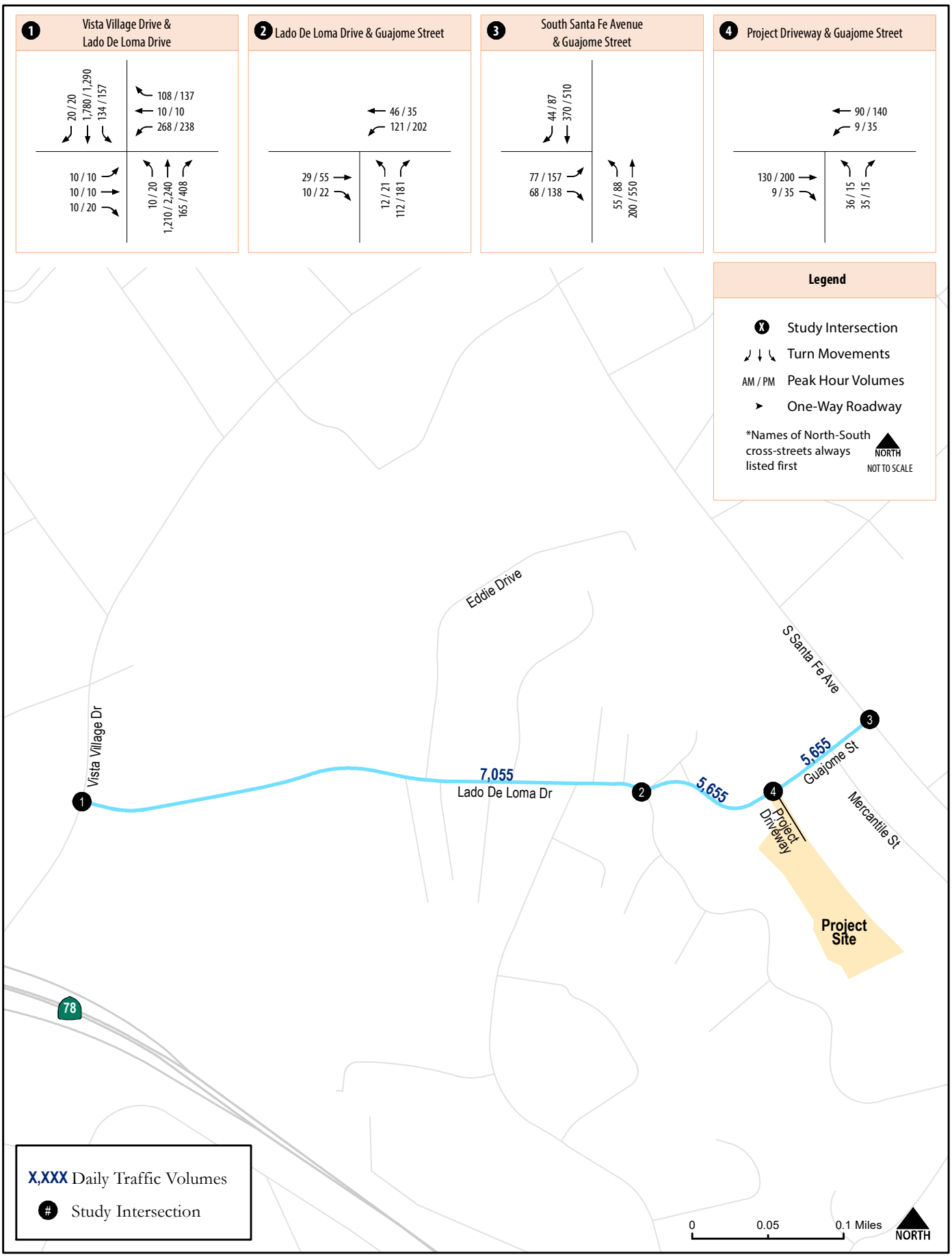

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Figure 5.2

Traffic Volumes - Horizon Year 2030 Base with Project Conditions

Table 5.3 - Roadway Segment LOS Results – Horizon Year 2030 Base with Project Conditions

Roadway	Segment	Functional Classification	Roadway Capacity	HY+P			HY			ΔV/C
				Daily Volume	V/C	LOS	Daily Volume	V/C	LOS	
Lado De Loma Drive	Vista Village Drive to Guajome Street	2-Lane Collector	8,800	7,055	0.802	D	6,500	0.739	C	0.063
Guajome Street	Lado De Loma Drive to Project Driveway	2-Lane Collector	8,800	5,655	0.643	B	5,100	0.580	A	0.063
Guajome Street	Project Driveway to South Santa Fe Avenue	2-Lane Collector	8,800	5,655	0.643	B	5,100	0.580	A	0.063

Source: CR Associates (2022)

Notes:
HY = Horizon Year 2030 Base Conditions; HY+P = Horizon Year 2030 Base with Project Conditions.
[1] 2-Lane Semi-Rural was deemed an appropriate functional classification based on the typical cross sections described in the City of Vista General Plan.

Table 5.4 - Peak Hour Intersection LOS Results – Horizon Year 2030 Base with Project Conditions

ID	Intersection	Peak Hour	Traffic Control	HY+P		HY		Δ Delay
				Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	
1	Vista Village Drive & Lado De Loma Drive/Ford Dealership Driveway	AM	Signal	33.6	C	31.4	C	2.2
		PM		46.2	D	40.0	D	6.2
2	Lado De Loma Drive & Guajome Street	AM	AWSC	8.1	A	7.8	A	0.3
		PM		9.1	A	8.9	A	0.2
3	South Santa Fe Avenue & Guajome Street	AM	Roundabout	6.0	A	5.9	A	0.1
		PM		10.6	B	10.0	B	0.6
4	Project Driveway & Guajome Street	AM	SSSC	9.9	A	N/A	N/A	9.9
		PM		10.8	B	N/A	N/A	10.8

Source: CR Associates (2022)

Notes:
HY = Horizon Year 2030 Base Conditions; HY+P = Horizon Year 2030 Base with Project Conditions.
For roundabout intersections, the delay shown is the worst delay experienced by any of the approaches.
AWSC = All-way stop-controlled intersection. For AWSC intersections, the delay shown is the average delay experienced at all of the approaches.
SSSC = Side-street stop-controlled intersection. For SSSC intersections, the delay shown is the worst delay experienced by any of the approaches.
N/A = Not Applicable.

6.0 Site Access and Parking

This chapter addresses vehicular access to the project site and parking requirements.

6.1 Vehicular Access

Access to the Project will be provided via a new full-access side-street stop-controlled driveway along the south side of Guajome Street. Based on a queuing analysis conducted using VISSIM, a microsimulation software, and a site meeting conducted on November 11, 2021 with staff from City of Vista, California Public Utility Commission (CPUC), North County Transit District (NCTD), SANDAG, and the Project engineers, it was determined that the new driveway would be located approximately 70 feet west of the existing Sprinter light rail line.

The queuing analysis showed that the maximum queue length is 50 feet or approximately 2 vehicles. Under a worst case scenario where one of the vehicles is a moving truck, the maximum queue length would be 55 feet. The 55 feet of storage length is based upon the length of the longest rentable moving truck (26 feet) + 4 feet buffer + 25 feet queuing length of a standard vehicle. In a worst-case scenario, this queue storage length would allow one moving truck and one standard vehicle to queue while waiting to access Project Driveway. Therefore, the 70 feet of storage that the Proposed Project will provide are deemed sufficient for vehicles to queue. Queue analysis results and recommendations are provided in **Appendix K**.

6.2 Pedestrian Access

Pedestrian access to the site will be provided via a new sidewalk located on both sides of the new driveway. As part of the Project features, the Project will construct additional sidewalks along Guajome Street, specifically at the following locations:

- Construct sidewalk on the north side of Guajome Street/Lado De Loma Drive, between 201 Guajome Street and Eddie Drive.
- Southern side of Guajome Street, between the Project's western property line and Mercantile Street, including a temporary asphalt sidewalk between the eastern rail road right-of-way and Mercantile Street.

6.3 Project Parking

Table 6.1 summarizes the Project's required parking. Since the Project is located within the Downtown Vista Specific Plan (DVSP), residential and guest parking requirements were obtained from DVSP Section 3.6.1. Other parking requirements were obtained from the Vista Development Code (VDC).

Table 6.1 - Project Parking

Type	Requirement	Unit Type	Requirement Rate	Amount	Minimum Parking Required[1]	Proposed Parking
Residential	DVSP Section 3.6.1	Studio	1	58 Units	58	58
		1 Bedroom	1	90 Units	90	90
		2 Bedroom	2	35 Units	70	70
Guest	DVSP Section 3.6.1	Dwelling Unit	0.25	183 DU	47	47
				Total	**265**	**265**

Source: Tideline Partners (2022); CR Associates (2022)

Notes:
DU = Dwelling Unit.
[1] Based on the number of dwelling units per the August 2022 site plan (183 DU) and not the number of units analyzed (185 DU).

As shown, the Project is required to provide a minimum of 265 standard parking spaces, including 218 residential parking spaces and 47 guest parking spaces. Based on the current site plan, the Project proposes to provide a total of 265 standard residential and guest parking spaces.

Additionally, the Project shall meet or exceed the minimum parking requirements for motorcycle, electric vehicle supply equipment (EVCS), accessible, and bicycle parking. Table 6.2 summarizes the Project's additional parking requirements. As shown, the Project will also meet the additional parking requirements by providing 3 motorcycle, 54 bicycle, 27 EVCS, and 9 accessible parking spaces.

Table 6.2 - Additional Project Parking

Type	Requirement	Minimum Parking Required	Proposed Parking
Motorcycle	VDC Section 18.54.090[1]	3	3
EVCS	CGB Section 4.106.4.2 CBC 11B-228.3.2.1	27	27
Accessible	CDC 11B-208	9 (3 Van, 6 Standard)	9 (3 Van, 6 Standard)
Bicycle Parking	VDC Section 18.54.050	54	54

Source: Tideline Partners (2022); CR Associates (2022)

Notes:
[1] One parking space per hundred parking spaces may be reduced in size to accommodate motorcycles.

Appendix A - Project Information Form

PROJECT INFORMATION FORM (PIF)

THE FOLLOWING IS TO BE COMPLETED BY THE PROJECT APPLICANT:

PROJECT INFORMATION FORM			
1.	**PROJECT DESCRIPTION:** The Project proposes to construct 183 multi-family dwelling units, including three four-story buildings with covered parking and one three-story building. Additional surface parking would be provided throughout the site.		
2.	**PROJECT LOCATION:** The project site is located along the south side of Guajome Street just west of the existing Sprinter light rail line in the City of Vista.		
3.	**LAND USE:** Multi-Family Residential **SIZE/DENSITY:** 183 dwelling units (35 2BR, 90 1BR, and 58 studios) Please note: For a conservative analysis, the LTS assumes a total of 185 dwelling units.		
4.	**ZONING AND LAND USE CONSISTENT WITH ADOPTED GENERAL PLAN?**	☒ Yes	☐ No
5.	**PROJECT LOCATED IN TRANSIT PRIORITY AREA[1], SMART GROWTH AREA, OR LOW VMT AREA[2]?**	☒ Yes	☐ No
6.	**PROJECT TRIP GENERATION:** 1,098 **ADT** (as proposed) 1,110 ADT (as studied in LTS)	☐ < 200 ADT ☐ > 400 ADT ☐ ≥ 500 ADT ☒ ≥ 1,000 ADT ☐ ≥ 2,400 ADT	
ATTACHMENTS			
A.	**PROJECT LOCATION MAP**	☒ Attached	
B.	**PROJECT TRIP DISTRIBUTION**	☒ Attached	
C.	**PROJECT TRIP ASSIGNMENT**	☒ Attached	

1. Projects located in a TPA must be able to access the transit station within a ½ mile walking distance or 6 minute walk continuously without discontinuity of sidewalk or obstructions to the route. Qualifying transit stops means a site containing an existing rail transit station served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods (OPR, 2017). A high-quality transit corridor may also be considered if a corridor with fixed route bus service has service intervals no longer than 15 minutes during peak commute hours (OPR, 2017).
2. Based on the most recent SANDAG SB 743 Screening Map. Example shown in Appendix B.

~~This project is tiering off of the Specific Plan, which utilize LOS as a metric of determining transportation related impact. Thus the analysis was conducted using LOS instead of VMT.~~

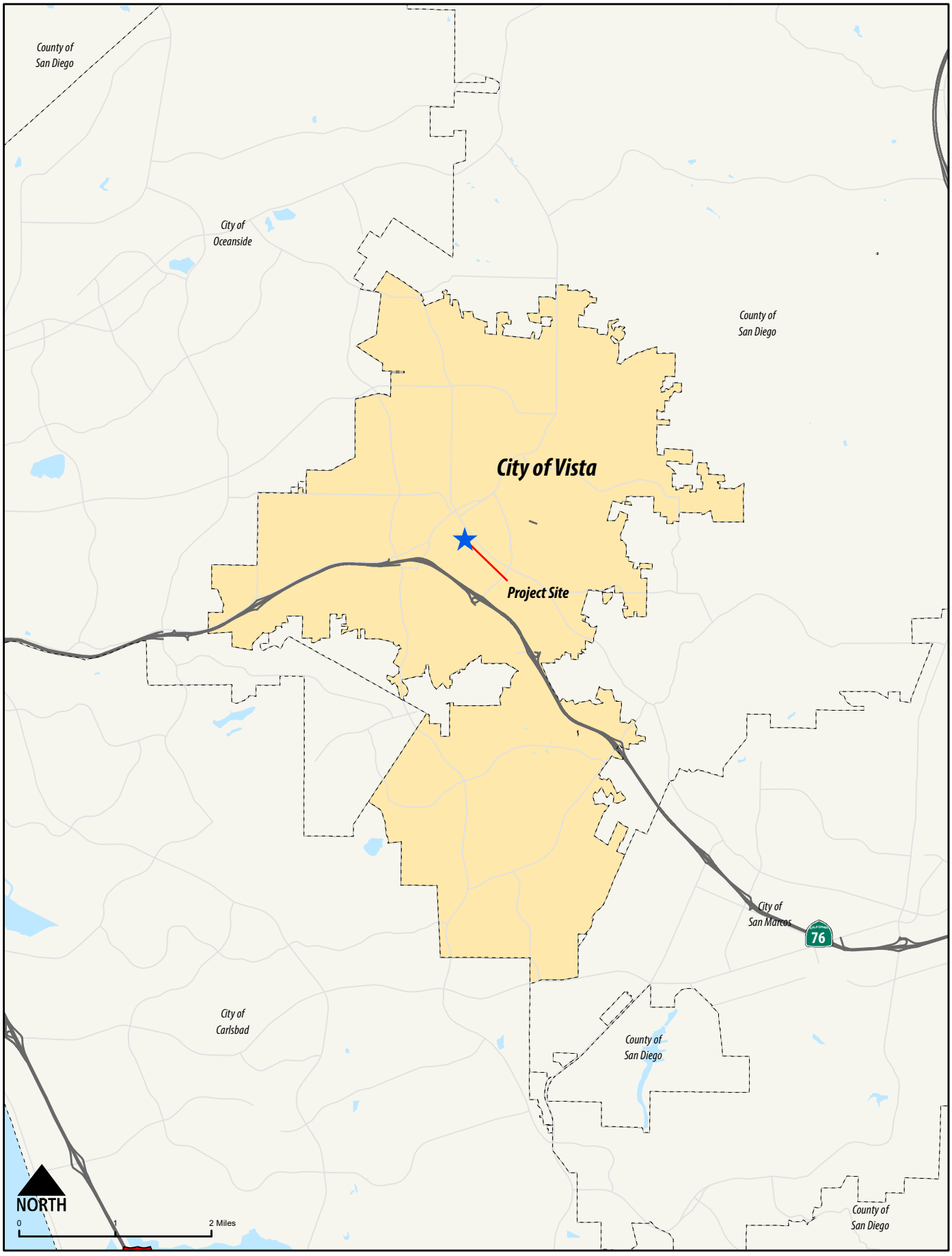
TO BE COMPLETED BY CITY STAFF AND RETURNED TO PROJECT APPLICANT

PROJECT STUDY REQUIREMENTS				
1)	**Does the project require a CEQA VMT analysis?**	☐ Yes	☒ No	
	A. If yes, does the project require a SANDAG Model Run?	☐ Yes	☐ No	
2a)	**Does the project require a Local Transportation Study?**	☒ Yes	☐ No	☐ Incomplete[(1)]
OR				
2b)	**Does the project require a Local Transportation Assessment?**	☐ Yes	☒ No	☐ Incomplete[(1)]

The City is amending the Downtown Specific Plan to include project site, which makes it exempt from VMT analysis.

HYH
8/30/2022

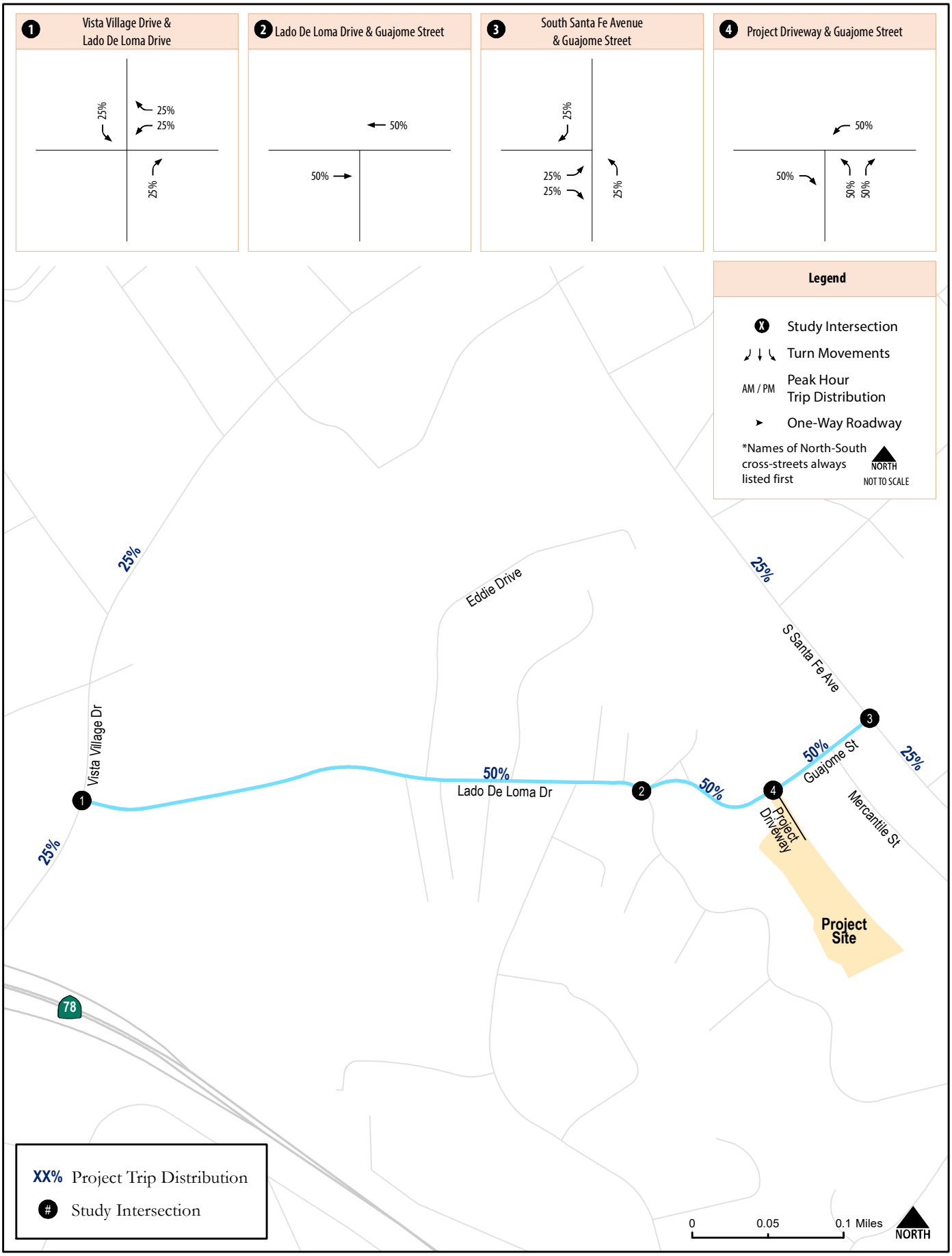
(1) Incomplete application or additional information is needed to determine study requirements.



Pheasant Hill Multi-Family
Local Transportation Study

C R

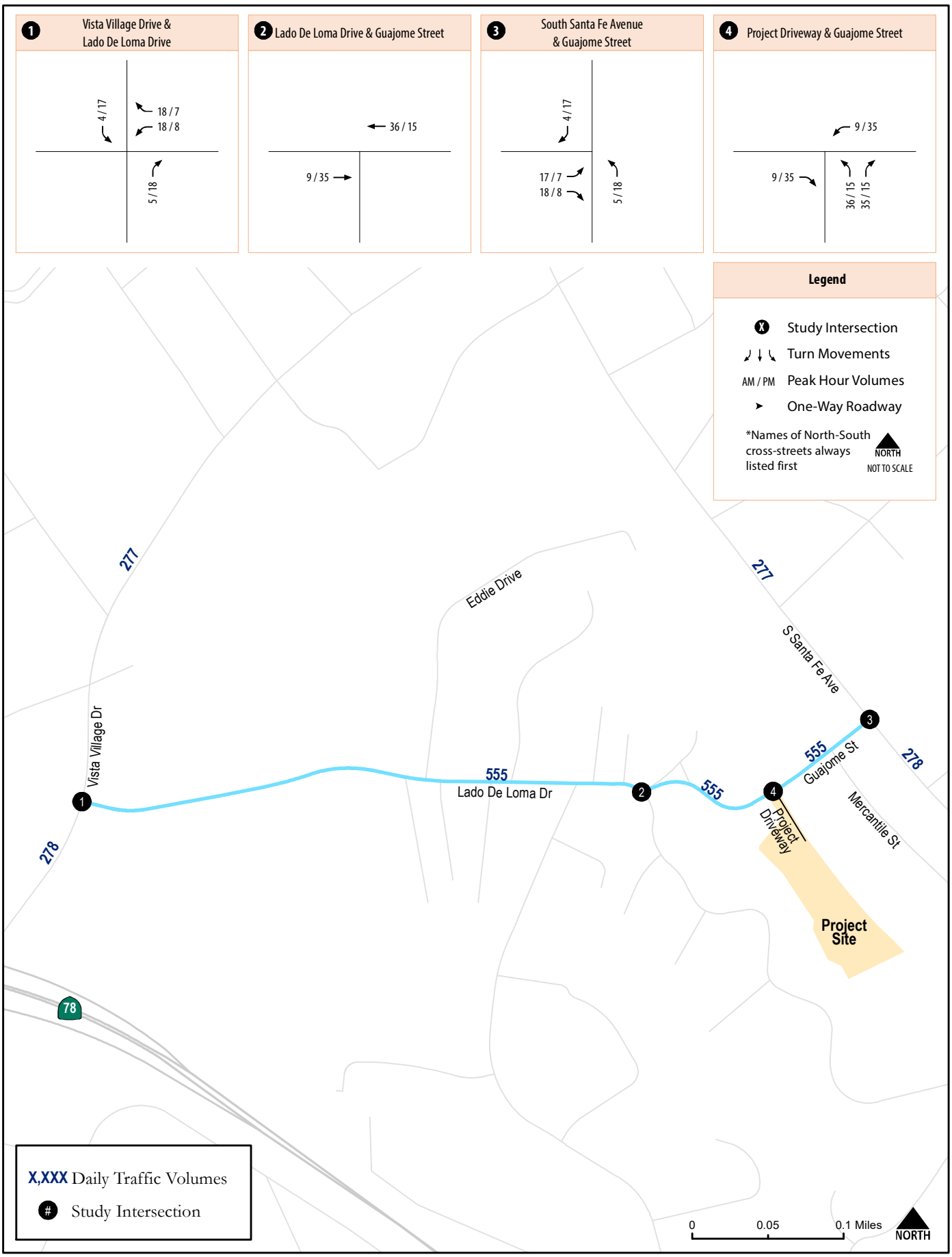
Project Regional Location



Pheasant Hill Multi-Family
Local Transportation Study

C R

Project Trip Distribution



Pheasant Hill Multi-Family
Local Transportation Study

C R

Project Trip Assignment

Appendix B - Traffic Counts, Count Validation, and Traffic Growth Calculations

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92787
Phone: (951) 268-6268
email: counts@countsunlimited.com

City of Vista
Lado de Loma Drive
B/ Eddie Drive - Peters Drive
24 Hour Directional Volume Count

VST001
Site Code: 999-21313

Start	29-Jun-21	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
Time	Tue	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		4	54			3	41				
12:15		6	46			2	35				
12:30		3	29			1	26				
12:45		4	40	17	169	2	34	8	136	25	305
01:00		2	30			2	28				
01:15		0	32			0	**43**				
01:30		0	47			1	**44**				
01:45		2	52	4	161	1	**33**	4	148	8	309
02:00		2	53			2	**45**				
02:15		1	47			1	33				
02:30		1	52			0	36				
02:45		2	57	6	209	1	32	4	146	10	355
03:00		1	55			0	26				
03:15		0	58			2	37				
03:30		1	51			2	33				
03:45		2	54	4	218	2	40	6	136	10	354
04:00		0	59			1	35				
04:15		1	62			0	37				
04:30		0	51			3	39				
04:45		2	**57**	3	229	10	35	14	146	17	375
05:00		4	**64**			6	32				
05:15		4	**68**			8	26				
05:30		10	**63**			13	33				
05:45		11	52	29	247	11	34	38	125	67	372
06:00		19	53			28	42				
06:15		11	39			12	36				
06:30		14	46			17	38				
06:45		20	47	64	185	24	27	81	143	145	328
07:00		20	51			21	24				
07:15		21	40			27	25				
07:30		23	30			32	30				
07:45		25	48	89	169	44	27	124	106	213	275
08:00		17	23			38	15				
08:15		37	29			32	20				
08:30		21	33			27	22				
08:45		23	21	98	106	31	9	128	66	226	172
09:00		24	13			27	7				
09:15		38	20			23	8				
09:30		24	10			26	11				
09:45		29	11	115	54	25	8	101	34	216	88
10:00		31	16			30	4				
10:15		30	7			34	10				
10:30		**55**	13			37	5				
10:45		**31**	9	147	45	27	4	128	23	275	68
11:00		**41**	7			**39**	2				
11:15		**47**	9			**43**	3				
11:30		38	2			**33**	4				
11:45		33	5	159	23	**34**	1	149	10	308	33
Total		735	1815	735	1815	785	1219	785	1219	1520	3034
Combined Total		2550		2550		2004		2004		4554	
AM Peak	-	10:30	-	-	-	11:00	-	-	-	-	-
Vol.	-	174	-	-	-	149	-	-	-	-	-
P.H.F.		0.791				0.847					
PM Peak	-	-	04:45	-	-	-	01:15	-	-	-	-
Vol.	-	-	252	-	-	-	165	-	-	-	-
P.H.F.			0.926				0.917				
Percentage		28.8%	71.2%			39.2%	60.8%				
ADT/AADT		ADT 4,554		AADT 4,554							

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24 Hour Directional Classification Count

VST001C
Site Code: 999-21313

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
07/13/21	1	3	1	0	0	0	0	0	0	0	0	0	0	5
01:00	0	7	3	0	0	0	0	0	0	0	0	0	0	10
02:00	0	8	0	0	0	0	0	0	0	0	0	0	0	8
03:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
05:00	0	8	10	0	2	0	0	**1**	0	0	0	0	0	21
06:00	0	41	25	0	3	0	0	1	**1**	0	0	0	0	71
07:00	0	50	24	0	8	0	0	1	0	0	0	0	0	83
08:00	1	69	25	0	5	0	0	0	0	0	0	0	0	100
09:00	**2**	84	25	0	9	0	0	0	0	0	0	0	0	120
10:00	0	81	33	**2**	**12**	**1**	0	0	0	0	0	0	0	129
11:00	0	**103**	**38**	1	12	0	0	0	0	0	0	0	0	**154**
12 PM	1	114	42	**1**	9	0	0	1	0	0	0	0	0	168
13:00	2	115	45	0	6	1	0	1	0	0	0	0	0	170
14:00	1	149	50	0	9	1	0	1	0	0	0	0	0	211
15:00	3	121	54	1	**17**	**4**	0	**2**	0	0	0	0	0	202
16:00	2	**183**	55	0	7	1	0	0	0	0	0	0	0	248
17:00	**5**	181	**70**	1	15	0	0	1	0	0	0	0	0	**273**
18:00	1	144	47	0	4	0	0	0	0	0	0	0	0	196
19:00	1	97	26	0	4	0	0	0	0	0	0	0	0	128
20:00	3	83	26	0	6	0	0	0	0	0	0	0	0	118
21:00	1	58	14	0	3	0	0	0	0	0	0	0	0	76
22:00	0	43	7	0	1	0	0	0	0	0	0	0	0	51
23:00	0	18	1	0	0	0	0	0	0	0	0	0	0	19
Total	24	1768	621	6	132	8	0	9	1	0	0	0	0	2569
Percent	0.9%	68.8%	24.2%	0.2%	5.1%	0.3%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	11:00	11:00	10:00	10:00	10:00		05:00	06:00					11:00
Vol.	2	103	38	2	12	1		1	1					154
PM Peak	17:00	16:00	17:00	12:00	15:00	15:00		15:00						17:00
Vol.	5	183	70	1	17	4		2						273
Grand Total	24	1768	621	6	132	8	0	9	1	0	0	0	0	2569
Percent	0.9%	68.8%	24.2%	0.2%	5.1%	0.3%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	

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VST001C
Site Code: 999-21313

Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
07/13/21	0	2	1	0	1	0	0	0	0	0	0	0	0	4
01:00	0	3	2	0	0	0	0	0	0	0	0	0	0	5
02:00	1	3	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	5	6	0	0	0	0	0	0	0	0	0	0	11
04:00	0	7	2	0	1	0	0	0	0	0	0	0	0	10
05:00	1	19	7	0	6	0	0	0	0	0	0	0	0	33
06:00	0	40	24	0	18	0	0	1	0	0	0	0	0	83
07:00	1	67	32	0	**35**	0	0	0	0	0	0	0	0	135
08:00	**2**	76	**47**	0	21	0	0	0	0	0	0	0	0	**146**
09:00	2	85	21	0	16	**1**	0	**2**	0	0	0	0	0	127
10:00	2	60	25	0	16	0	0	1	0	0	0	0	0	104
11:00	0	**86**	34	0	15	1	0	0	0	0	0	0	0	136
12 PM	**1**	73	25	0	14	0	0	0	0	0	0	0	0	113
13:00	0	84	40	0	21	**1**	0	0	0	0	0	0	0	146
14:00	0	77	**46**	0	13	0	0	**1**	0	0	0	0	0	137
15:00	1	89	35	0	**26**	0	0	1	0	0	0	0	0	152
16:00	0	105	30	0	18	1	0	0	0	0	0	0	0	154
17:00	1	**106**	46	0	15	0	0	0	0	0	0	0	0	**168**
18:00	1	79	31	0	18	0	0	0	0	0	0	0	0	129
19:00	1	64	26	0	7	0	0	0	0	0	0	0	0	98
20:00	1	41	15	0	4	0	0	0	0	0	0	0	0	61
21:00	0	29	10	0	2	0	0	0	0	0	0	0	0	41
22:00	0	15	6	0	4	0	0	0	0	0	0	0	0	25
23:00	0	10	5	0	1	0	0	0	0	0	0	0	0	16
Total	15	1225	516	0	272	4	0	6	0	0	0	0	0	2038
Percent	0.7%	60.1%	25.3%	0.0%	13.3%	0.2%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	11:00	08:00		07:00	09:00		09:00						08:00
Vol.	2	86	47		35	1		2						146
PM Peak	12:00	17:00	14:00		15:00	13:00		14:00						17:00
Vol.	1	106	46		26	1		1						168
Grand Total	15	1225	516	0	272	4	0	6	0	0	0	0	0	2038
Percent	0.7%	60.1%	25.3%	0.0%	13.3%	0.2%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	

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Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
07/13/21	1	5	2	0	1	0	0	0	0	0	0	0	0	9
01:00	0	10	5	0	0	0	0	0	0	0	0	0	0	15
02:00	1	11	0	0	0	0	0	0	0	0	0	0	0	12
03:00	0	9	6	0	0	0	0	0	0	0	0	0	0	15
04:00	0	11	2	0	1	0	0	0	0	0	0	0	0	14
05:00	1	27	17	0	8	0	0	1	0	0	0	0	0	54
06:00	0	81	49	0	21	0	0	**2**	**1**	0	0	0	0	154
07:00	1	117	56	0	**43**	0	0	1	0	0	0	0	0	218
08:00	3	145	**72**	0	26	0	0	0	0	0	0	0	0	246
09:00	**4**	169	46	0	25	**1**	0	2	0	0	0	0	0	247
10:00	2	141	58	**2**	28	1	0	1	0	0	0	0	0	233
11:00	0	**189**	72	1	27	1	0	0	0	0	0	0	0	**290**
12 PM	2	187	67	**1**	23	0	0	1	0	0	0	0	0	281
13:00	2	199	85	0	27	2	0	1	0	0	0	0	0	316
14:00	1	226	96	0	22	1	0	2	0	0	0	0	0	348
15:00	4	210	89	1	**43**	**4**	0	**3**	0	0	0	0	0	354
16:00	2	**288**	85	0	25	2	0	0	0	0	0	0	0	402
17:00	**6**	287	**116**	1	30	0	0	1	0	0	0	0	0	**441**
18:00	2	223	78	0	22	0	0	0	0	0	0	0	0	325
19:00	2	161	52	0	11	0	0	0	0	0	0	0	0	226
20:00	4	124	41	0	10	0	0	0	0	0	0	0	0	179
21:00	1	87	24	0	5	0	0	0	0	0	0	0	0	117
22:00	0	58	13	0	5	0	0	0	0	0	0	0	0	76
23:00	0	28	6	0	1	0	0	0	0	0	0	0	0	35
Total	39	2993	1137	6	404	12	0	15	1	0	0	0	0	4607
Percent	0.8%	65.0%	24.7%	0.1%	8.8%	0.3%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	09:00	11:00	08:00	10:00	07:00	09:00		06:00	06:00					11:00
Vol.	4	189	72	2	43	1		2	1					290
PM Peak	17:00	16:00	17:00	12:00	15:00	15:00		15:00						17:00
Vol.	6	288	116	1	43	4		3						441
Grand Total	39	2993	1137	6	404	12	0	15	1	0	0	0	0	4607
Percent	0.8%	65.0%	24.7%	0.1%	8.8%	0.3%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	

Counts Unlimited, Inc.

PO Box 1178
Corona, CA 92878
Phone: (951) 268-6268
email: counts@countsunlimited.com

City of Vista
Lado de Loma Drive
B/ Eddie Drive - Peters Drive
24 Hour Directional Speed Survey

VST001S
Site Code: 999-21313

Eastbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
07/13/21	0	0	0	3	1	1	0	0	0	0	0	0	0	0	5
01:00	0	3	2	3	1	1	0	0	0	0	0	0	0	0	10
02:00	0	0	1	2	1	1	0	3	0	0	0	0	0	0	8
03:00	0	0	0	2	2	0	0	0	0	0	0	0	0	0	4
04:00	0	0	1	1	2	0	0	0	0	0	0	0	0	0	4
05:00	1	2	5	10	2	1	0	0	0	0	0	0	0	0	21
06:00	0	4	19	21	19	6	2	0	0	0	0	0	0	0	71
07:00	6	2	14	24	32	5	0	0	0	0	0	0	0	0	83
08:00	0	2	7	31	43	11	4	2	0	0	0	0	0	0	100
09:00	6	5	13	51	32	10	3	0	0	0	0	0	0	0	120
10:00	3	6	29	50	35	5	0	1	0	0	0	0	0	0	129
11:00	2	8	24	49	56	14	2	0	0	0	0	0	0	0	155
12 PM	3	2	27	55	63	17	1	0	0	0	0	0	0	0	168
13:00	8	5	24	61	56	14	2	0	0	0	0	0	0	0	170
14:00	4	7	36	92	59	13	1	0	0	0	0	0	0	0	212
15:00	6	9	29	85	57	16	0	0	0	0	0	0	0	0	202
16:00	9	7	40	84	78	24	3	3	0	0	0	0	0	0	248
17:00	14	11	54	104	68	18	4	0	0	0	0	0	0	0	273
18:00	1	8	36	76	59	16	0	0	0	0	0	0	0	0	196
19:00	4	10	27	50	30	6	1	0	0	0	0	0	0	0	128
20:00	6	4	30	52	21	5	0	0	0	0	0	0	0	0	118
21:00	5	4	18	27	17	5	0	0	0	0	0	0	0	0	76
22:00	1	3	14	20	11	1	1	0	0	0	0	0	0	0	51
23:00	0	0	3	11	3	1	0	0	1	0	0	0	0	0	19
Total	79	102	453	964	748	191	24	9	1	0	0	0	0	0	2571

Daily

15th Percentile :	22 MPH
50th Percentile :	28 MPH
85th Percentile :	33 MPH
95th Percentile :	37 MPH

Statistics

Mean Speed(Average) :	29 MPH
10 MPH Pace Speed :	26-35 MPH
Number in Pace :	1712
Percent in Pace :	66.6%
Number of Vehicles > 55 MPH :	0
Percent of Vehicles > 55 MPH :	0.0%

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City of Vista
Lado de Loma Drive
B/ Eddie Drive - Peters Drive
24 Hour Directional Speed Survey

VST001S
Site Code: 999-21313

Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
07/13/21	0	0	1	0	2	1	0	0	0	0	0	0	0	0	4
01:00	0	0	1	3	0	0	0	1	0	0	0	0	0	0	5
02:00	0	0	2	1	0	1	0	0	0	0	0	0	0	0	4
03:00	0	0	0	4	1	0	3	2	1	0	0	0	0	0	11
04:00	0	0	1	3	4	2	0	0	0	0	0	0	0	0	10
05:00	0	1	2	5	10	10	4	1	0	0	0	0	0	0	33
06:00	2	4	14	16	26	14	4	2	1	0	0	0	0	0	83
07:00	3	7	12	36	44	25	7	1	0	0	0	0	0	0	135
08:00	2	0	7	44	59	24	9	2	0	0	0	0	0	0	147
09:00	4	3	19	36	43	19	3	1	0	0	0	0	0	0	128
10:00	4	5	7	26	33	27	2	0	0	0	0	0	0	0	104
11:00	4	0	17	34	53	24	4	0	0	0	0	0	0	0	136
12 PM	0	2	7	30	43	26	5	0	0	0	0	0	0	0	113
13:00	5	4	15	29	53	33	7	0	0	0	0	0	0	0	146
14:00	6	1	14	39	41	33	3	0	0	0	0	0	0	0	137
15:00	9	1	7	45	55	28	8	0	0	0	0	0	0	0	153
16:00	5	1	8	38	64	31	7	0	0	0	0	0	0	0	154
17:00	9	9	17	53	56	22	3	0	0	0	0	0	0	0	169
18:00	2	2	13	38	44	25	5	0	0	0	0	0	0	0	129
19:00	3	5	12	39	32	5	2	0	0	0	0	0	0	0	98
20:00	2	3	9	25	20	1	1	0	0	0	0	0	0	0	61
21:00	0	1	6	16	13	3	1	1	0	0	0	0	0	0	41
22:00	0	1	4	7	4	7	2	0	0	0	0	0	0	0	25
23:00	0	2	1	4	6	2	1	0	0	0	0	0	0	0	16
Total	60	52	196	571	706	363	81	11	2	0	0	0	0	0	2042

Daily

15th Percentile :	24 MPH
50th Percentile :	31 MPH
85th Percentile :	37 MPH
95th Percentile :	39 MPH

Statistics

Mean Speed(Average) :	31 MPH
10 MPH Pace Speed :	26-35 MPH
Number in Pace :	1277
Percent in Pace :	62.5%
Number of Vehicles > 55 MPH :	0
Percent of Vehicles > 55 MPH :	0.0%

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City of Vista
Lado de Loma Drive
B/ Eddie Drive - Peters Drive
24 Hour Directional Speed Survey

VST001S
Site Code: 999-21313

Eastbound, Westbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
07/13/21	0	0	1	3	3	2	0	0	0	0	0	0	0	0	9
01:00	0	3	3	6	1	1	0	1	0	0	0	0	0	0	15
02:00	0	0	3	3	1	2	0	3	0	0	0	0	0	0	12
03:00	0	0	0	6	3	0	3	2	1	0	0	0	0	0	15
04:00	0	0	2	4	6	2	0	0	0	0	0	0	0	0	14
05:00	1	3	7	15	12	11	4	1	0	0	0	0	0	0	54
06:00	2	8	33	37	45	20	6	2	1	0	0	0	0	0	154
07:00	9	9	26	60	76	30	7	1	0	0	0	0	0	0	218
08:00	2	2	14	75	102	35	13	4	0	0	0	0	0	0	247
09:00	10	8	32	87	75	29	6	1	0	0	0	0	0	0	248
10:00	7	11	36	76	68	32	2	1	0	0	0	0	0	0	233
11:00	6	8	41	83	109	38	6	0	0	0	0	0	0	0	291
12 PM	3	4	34	85	106	43	6	0	0	0	0	0	0	0	281
13:00	13	9	39	90	109	47	9	0	0	0	0	0	0	0	316
14:00	10	8	50	131	100	46	4	0	0	0	0	0	0	0	349
15:00	15	10	36	130	112	44	8	0	0	0	0	0	0	0	355
16:00	14	8	48	122	142	55	10	3	0	0	0	0	0	0	402
17:00	23	20	71	157	124	40	7	0	0	0	0	0	0	0	442
18:00	3	10	49	114	103	41	5	0	0	0	0	0	0	0	325
19:00	7	15	39	89	62	11	3	0	0	0	0	0	0	0	226
20:00	8	7	39	77	41	6	1	0	0	0	0	0	0	0	179
21:00	5	5	24	43	30	8	1	1	0	0	0	0	0	0	117
22:00	1	4	18	27	15	8	3	0	0	0	0	0	0	0	76
23:00	0	2	4	15	9	3	1	0	1	0	0	0	0	0	35
Total	139	154	649	1535	1454	554	105	20	3	0	0	0	0	0	4613

Daily

15th Percentile :	23 MPH
50th Percentile :	29 MPH
85th Percentile :	34 MPH
95th Percentile :	39 MPH

Statistics

Mean Speed(Average) :	30 MPH
10 MPH Pace Speed :	26-35 MPH
Number in Pace :	2989
Percent in Pace :	64.8%
Number of Vehicles > 55 MPH :	0
Percent of Vehicles > 55 MPH :	0.0%

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PO Box 1178
Corona, CA 92878
(951)268-6268

City of Vista
N/S: Vista Village Drive
E/W: Lado De Loma Drive
Weather: Clear

File Name : 01_VST_Vista_Lado AM
Site Code : 99921313
Start Date : 6/29/2021
Page No : 1

Groups Printed- Total Volume

	Vista Village Drive Southbound				Lado De Loma Drive Westbound				Vista Village Drive Northbound				North County Ford Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	17	335	1	353	28	0	7	35	1	152	25	178	0	0	0	0	566
07:15 AM	22	379	0	401	39	0	11	50	2	177	31	210	0	0	0	0	661
07:30 AM	13	344	1	358	56	0	13	69	0	178	32	210	0	0	0	0	637
07:45 AM	13	393	1	407	34	0	12	46	2	248	22	272	0	0	2	2	727
Total	65	1451	3	1519	157	0	43	200	5	755	110	870	0	0	2	2	2591
08:00 AM	17	293	1	311	54	0	10	64	5	227	36	268	1	1	2	4	647
08:15 AM	23	318	0	341	37	1	19	57	5	216	34	255	0	0	2	2	655
08:30 AM	8	328	2	338	35	0	15	50	5	205	38	248	0	0	2	2	638
08:45 AM	16	269	4	289	48	0	14	62	10	236	53	299	0	0	2	2	652
Total	64	1208	7	1279	174	1	58	233	25	884	161	1070	1	1	8	10	2592
Grand Total	129	2659	10	2798	331	1	101	433	30	1639	271	1940	1	1	10	12	5183
Apprch %	4.6	95	0.4		76.4	0.2	23.3		1.5	84.5	14		8.3	8.3	83.3		
Total %	2.5	51.3	0.2	54	6.4	0	1.9	8.4	0.6	31.6	5.2	37.4	0	0	0.2	0.2	

	Vista Village Drive Southbound				Lado De Loma Drive Westbound				Vista Village Drive Northbound				North County Ford Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	**22**	379	0	401	39	0	11	50	2	177	31	210	0	0	0	0	661
07:30 AM	13	344	**1**	358	**56**	0	**13**	**69**	0	178	32	210	0	0	0	0	637
07:45 AM	13	**393**	1	**407**	34	0	12	46	2	**248**	22	**272**	0	0	**2**	2	**727**
08:00 AM	17	293	1	311	54	0	10	64	**5**	227	**36**	268	**1**	**1**	2	**4**	647
Total Volume	65	1409	3	1477	183	0	46	229	9	830	121	960	1	1	4	6	2672
% App. Total	4.4	95.4	0.2		79.9	0	20.1		0.9	86.5	12.6		16.7	16.7	66.7		
PHF	.739	.896	.750	.907	.817	.000	.885	.830	.450	.837	.840	.882	.250	.250	.500	.375	.919

Counts Unlimited, Inc.
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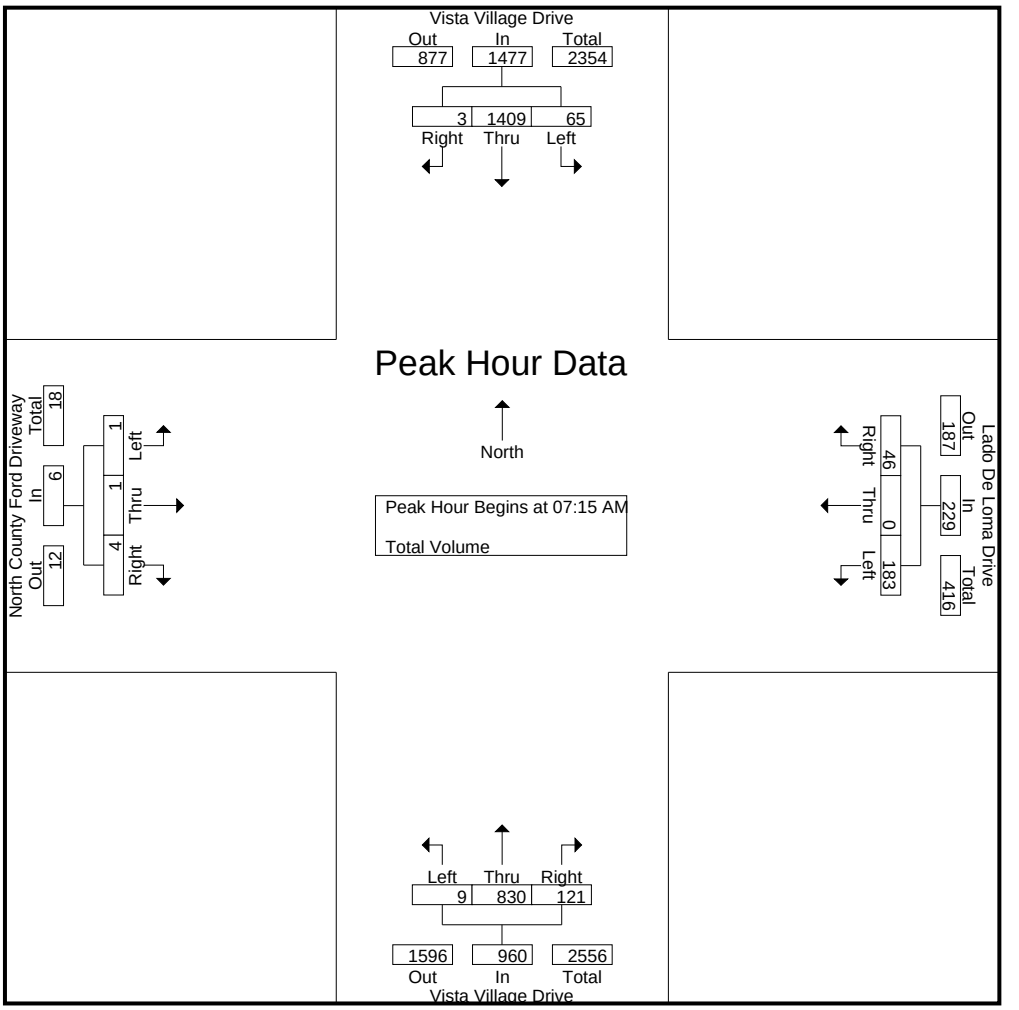
(951)268-6268

City of Vista
N/S: Vista Village Drive
E/W: Lado De Loma Drive
Weather: Clear

File Name : 01_VST_Vista_Lado AM
Site Code : 99921313
Start Date : 6/29/2021
Page No : 2



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

	07:00 AM				07:30 AM				08:00 AM				07:45 AM			
+0 mins.	17	335	**1**	353	**56**	0	13	**69**	5	227	36	268	0	0	**2**	2
+15 mins.	**22**	379	0	401	34	0	12	46	5	216	34	255	**1**	**1**	2	**4**
+30 mins.	13	344	1	358	54	0	10	64	5	205	38	248	0	0	2	2
+45 mins.	13	**393**	1	**407**	37	**1**	**19**	57	**10**	**236**	**53**	**299**	0	0	2	2
Total Volume	65	1451	3	1519	181	1	54	236	25	884	161	1070	1	1	8	10
% App. Total	4.3	95.5	0.2		76.7	0.4	22.9		2.3	82.6	15		10	10	80	
PHF	.739	.923	.750	.933	.808	.250	.711	.855	.625	.936	.759	.895	.250	.250	1.000	.625

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Corona, CA 92878
(951)268-6268

City of Vista
N/S: Vista Village Drive
E/W: Lado De Loma Drive
Weather: Clear

File Name : 01_VST_Vista_Lado PM
Site Code : 99921313
Start Date : 6/29/2021
Page No : 1

Groups Printed- Total Volume

	Vista Village Drive Southbound				Lado De Loma Drive Westbound				Vista Village Drive Northbound				North County Ford Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
03:00 PM	21	267	2	290	62	0	24	86	4	368	81	453	1	0	2	3	832
03:15 PM	18	241	0	259	57	0	24	81	1	356	83	440	0	0	3	3	783
03:30 PM	24	339	1	364	49	0	25	74	1	401	90	492	0	0	3	3	933
03:45 PM	18	254	0	272	53	0	25	78	5	386	75	466	0	0	4	4	820
Total	81	1101	3	1185	221	0	98	319	11	1511	329	1851	1	0	12	13	3368
04:00 PM	22	312	2	336	51	0	30	81	3	374	75	452	0	1	2	3	872
04:15 PM	29	251	0	280	30	0	22	52	4	421	69	494	1	2	5	8	834
04:30 PM	18	314	0	332	43	0	19	62	2	421	71	494	0	0	0	0	888
04:45 PM	23	279	1	303	44	2	21	67	6	417	70	493	0	1	1	2	865
Total	92	1156	3	1251	168	2	92	262	15	1633	285	1933	1	4	8	13	3459
Grand Total	173	2257	6	2436	389	2	190	581	26	3144	614	3784	2	4	20	26	6827
Apprch %	7.1	92.7	0.2		67	0.3	32.7		0.7	83.1	16.2		7.7	15.4	76.9		
Total %	2.5	33.1	0.1	35.7	5.7	0	2.8	8.5	0.4	46.1	9	55.4	0	0.1	0.3	0.4	

	Vista Village Drive Southbound				Lado De Loma Drive Westbound				Vista Village Drive Northbound				North County Ford Driveway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:30 PM																	
03:30 PM	24	**339**	1	**364**	49	0	25	74	1	401	**90**	492	0	0	3	3	**933**
03:45 PM	18	254	0	272	**53**	0	25	78	**5**	386	75	466	0	0	4	4	820
04:00 PM	22	312	**2**	336	51	0	**30**	**81**	3	374	75	452	0	1	2	3	872
04:15 PM	**29**	251	0	280	30	0	22	52	4	**421**	69	**494**	**1**	**2**	**5**	**8**	834
Total Volume	93	1156	3	1252	183	0	102	285	13	1582	309	1904	1	3	14	18	3459
% App. Total	7.4	92.3	0.2		64.2	0	35.8		0.7	83.1	16.2		5.6	16.7	77.8		
PHF	.802	.853	.375	.860	.863	.000	.850	.880	.650	.939	.858	.964	.250	.375	.700	.563	.927

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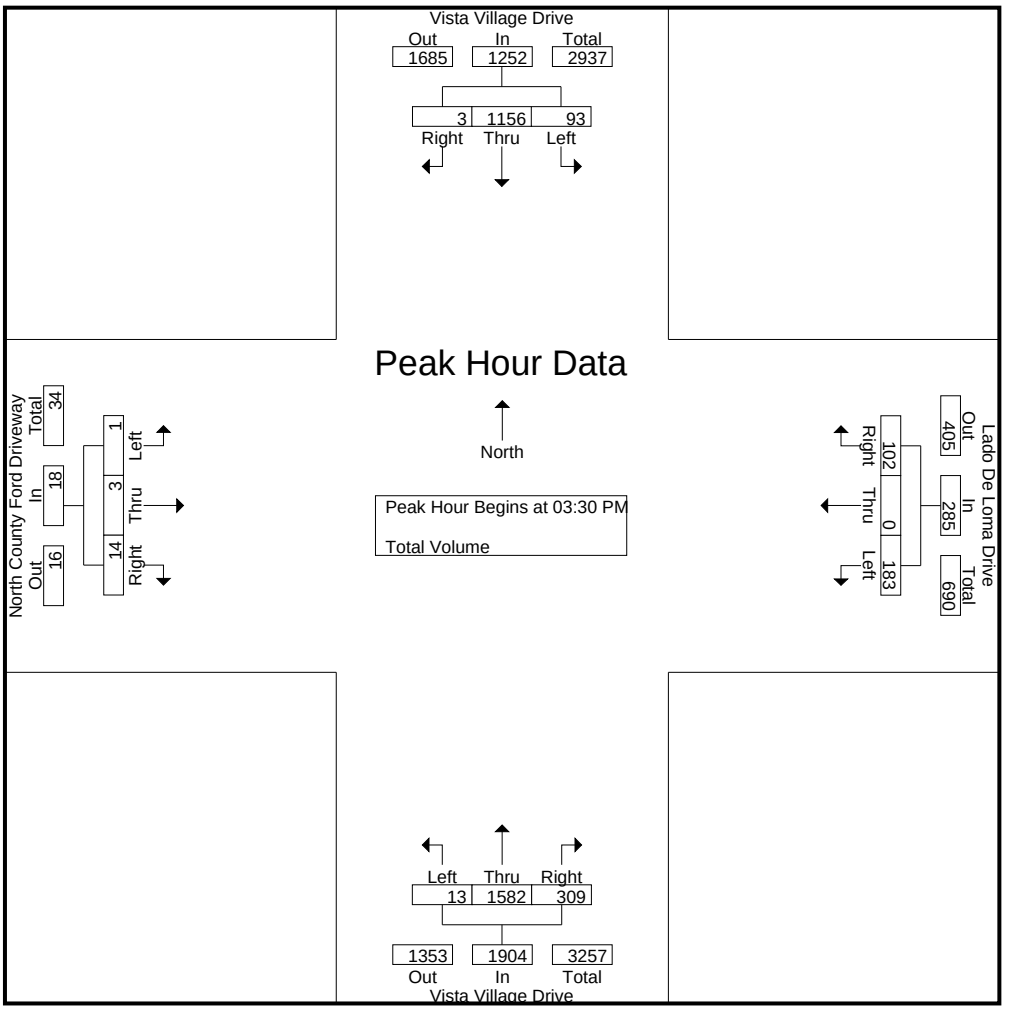
Corona, CA 92878
(951)268-6268

City of Vista
N/S: Vista Village Drive
E/W: Lado De Loma Drive
Weather: Clear

File Name : 01_VST_Vista_Lado PM
Site Code : 99921313
Start Date : 6/29/2021
Page No : 2



Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:30 PM				03:00 PM				04:00 PM				03:30 PM			
+0 mins.	24	**339**	1	**364**	**62**	0	24	**86**	3	374	**75**	452	0	0	3	3
+15 mins.	18	254	0	272	57	0	24	81	4	**421**	69	**494**	0	0	4	4
+30 mins.	22	312	**2**	336	49	0	**25**	74	2	421	71	494	0	1	2	3
+45 mins.	**29**	251	0	280	53	0	25	78	**6**	417	70	493	**1**	**2**	**5**	**8**
Total Volume	93	1156	3	1252	221	0	98	319	15	1633	285	1933	1	3	14	18
% App. Total	7.4	92.3	0.2		69.3	0	30.7		0.8	84.5	14.7		5.6	16.7	77.8	
PHF	.802	.853	.375	.860	.891	.000	.980	.927	.625	.970	.950	.978	.250	.375	.700	.563

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PO Box 1178
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(951)268-6268

City of Vista
N/S: Lado De Loma Drive
E/W: Lado De Loma Drive/Guajome Street
Weather: Clear

File Name : 02_VST_Lado_Guajome AM
Site Code : 99921313
Start Date : 6/29/2021

Groups Printed- Total Volume

	Guajome Street Westbound			Lado De Loma Drive Northbound			Lado De Loma Drive Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	22	0	22	1	12	13	1	1	2	37
07:15 AM	22	0	22	1	17	18	3	0	3	43
07:30 AM	18	3	21	1	20	21	1	1	2	44
07:45 AM	22	2	24	1	20	21	4	3	7	52
Total	84	5	89	4	69	73	9	5	14	176
08:00 AM	19	1	20	2	31	33	1	1	2	55
08:15 AM	26	1	27	0	12	12	2	2	4	43
08:30 AM	16	2	18	0	19	19	2	1	3	40
08:45 AM	31	0	31	0	25	25	4	2	6	62
Total	92	4	96	2	87	89	9	6	15	200
Grand Total	176	9	185	6	156	162	18	11	29	376
Apprch %	95.1	4.9		3.7	96.3		62.1	37.9		
Total %	46.8	2.4	49.2	1.6	41.5	43.1	4.8	2.9	7.7	

	Guajome Street Westbound			Lado De Loma Drive Northbound			Lado De Loma Drive Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	19	1	20	**2**	**31**	**33**	1	1	2	55
08:15 AM	26	1	27	0	12	12	2	**2**	4	43
08:30 AM	16	**2**	18	0	19	19	2	1	3	40
08:45 AM	**31**	0	**31**	0	25	25	**4**	2	**6**	**62**
Total Volume	92	4	96	2	87	89	9	6	15	200
% App. Total	95.8	4.2		2.2	97.8		60	40		
PHF	.742	.500	.774	.250	.702	.674	.563	.750	.625	.806

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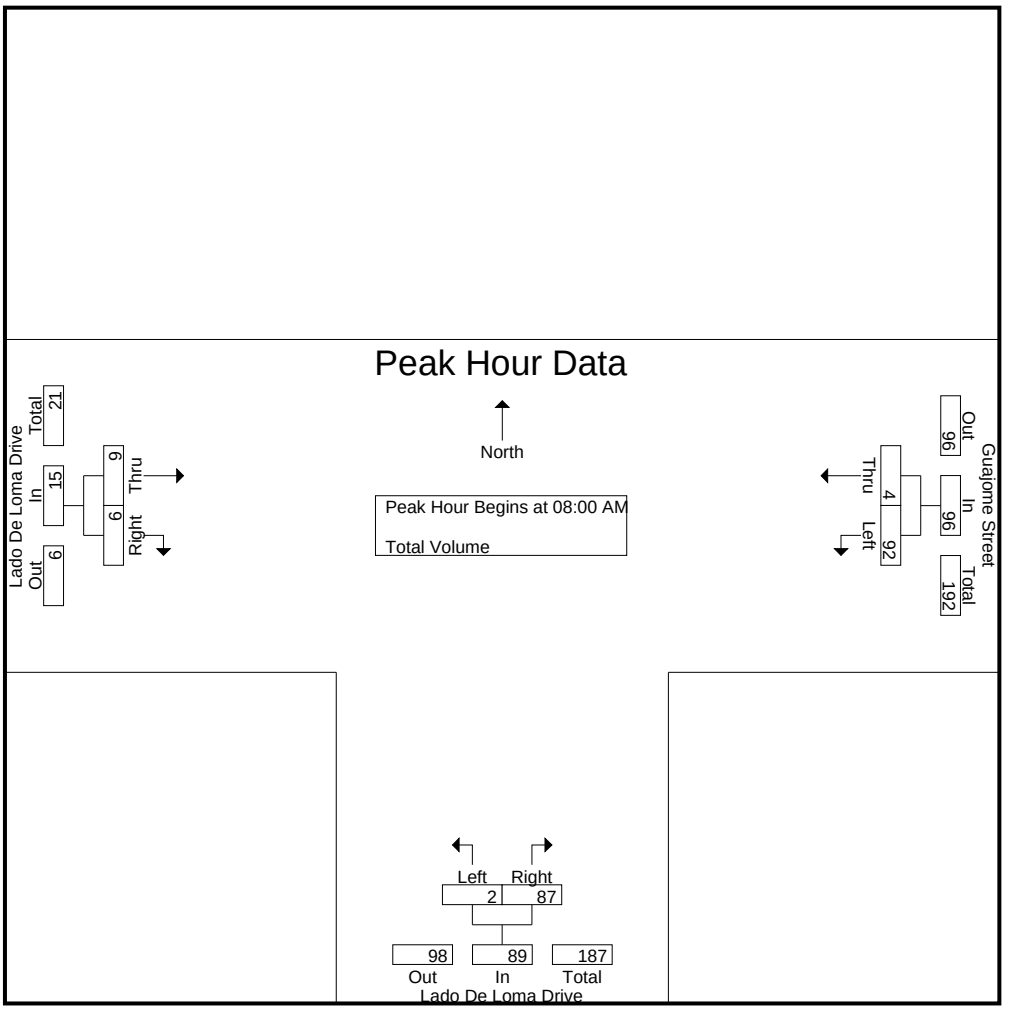
(951)268-6268

City of Vista
N/S: Lado De Loma Drive
E/W: Lado De Loma Drive/Guajome Street
Weather: Clear

File Name : 02_VST_Lado_Guajome AM
Site Code : 99921313
Start Date : 6/29/2021
Page No : 2



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

	08:00 AM			07:15 AM			07:45 AM		
+0 mins.	19	1	20	1	17	18	**4**	**3**	**7**
+15 mins.	26	1	27	1	20	21	1	1	2
+30 mins.	16	**2**	18	1	20	21	2	2	4
+45 mins.	**31**	0	**31**	**2**	**31**	**33**	2	1	3
Total Volume	92	4	96	5	88	93	9	7	16
% App. Total	95.8	4.2		5.4	94.6		56.2	43.8	
PHF	.742	.500	.774	.625	.710	.705	.563	.583	.571

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City of Vista
N/S: Lado De Loma Drive
E/W: Lado De Loma Drive/Guajome Street
Weather: Clear

File Name : 02_VST_Lado_Guajome PM
Site Code : 99921313
Start Date : 6/29/2021
Page No : 1

Groups Printed- Total Volume

	Guajome Street Westbound			Lado De Loma Drive Northbound			Lado De Loma Drive Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
03:00 PM	33	3	36	3	24	27	5	0	5	68
03:15 PM	43	7	50	2	27	29	3	3	6	85
03:30 PM	38	3	41	1	33	34	5	3	8	83
03:45 PM	35	5	40	2	43	45	2	3	5	90
Total	149	18	167	8	127	135	15	9	24	326
04:00 PM	44	1	45	3	34	37	2	0	2	84
04:15 PM	37	2	39	1	39	40	4	5	9	88
04:30 PM	41	3	44	5	32	37	1	2	3	84
04:45 PM	37	4	41	2	42	44	4	4	8	93
Total	159	10	169	11	147	158	11	11	22	349
Grand Total	308	28	336	19	274	293	26	20	46	675
Apprch %	91.7	8.3		6.5	93.5		56.5	43.5		
Total %	45.6	4.1	49.8	2.8	40.6	43.4	3.9	3	6.8	

	Guajome Street Westbound			Lado De Loma Drive Northbound			Lado De Loma Drive Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	**44**	1	**45**	3	34	37	2	0	2	84
04:15 PM	37	2	39	1	39	40	**4**	**5**	**9**	88
04:30 PM	41	3	44	**5**	32	37	1	2	3	84
04:45 PM	37	**4**	41	2	**42**	**44**	4	4	8	**93**
Total Volume	159	10	169	11	147	158	11	11	22	349
% App. Total	94.1	5.9		7	93		50	50		
PHF	.903	.625	.939	.550	.875	.898	.688	.550	.611	.938

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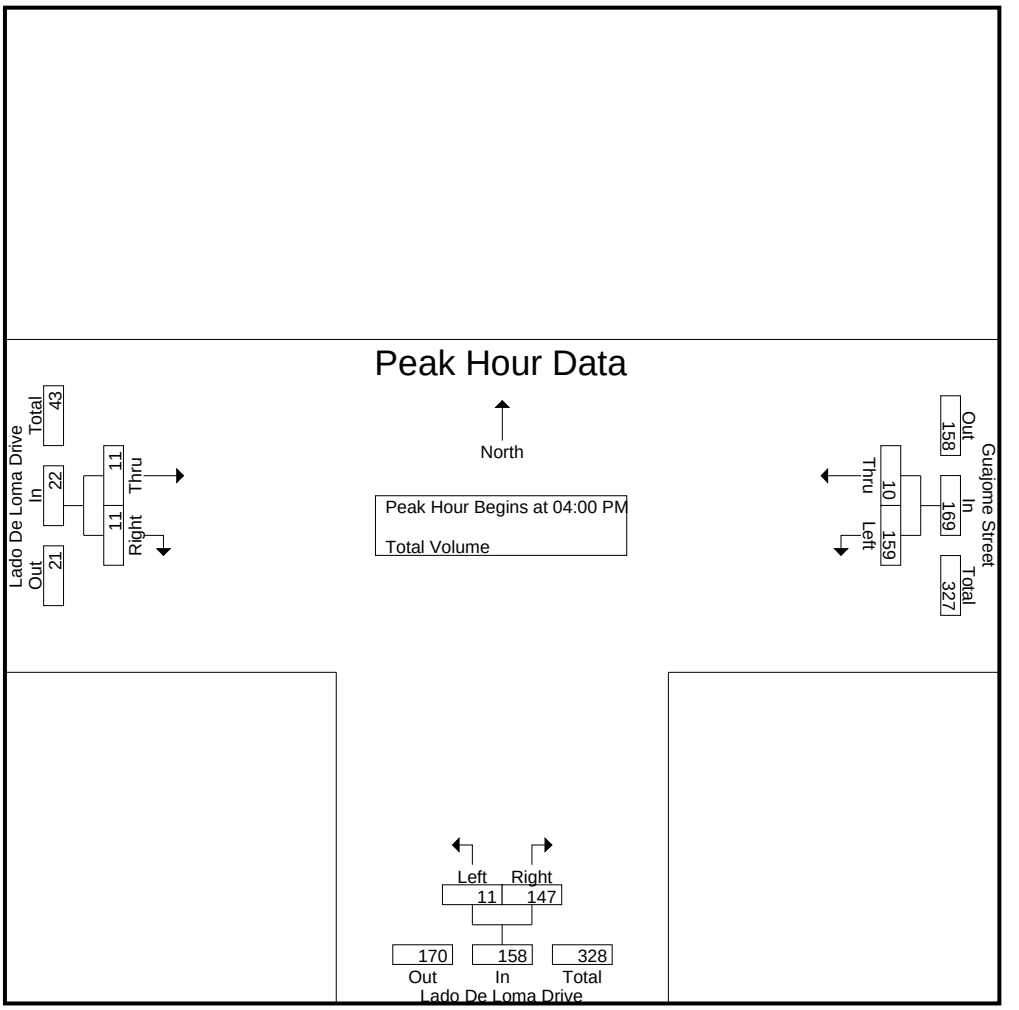
City of Vista
N/S: Lado De Loma Drive
E/W: Lado De Loma Drive/Guajome Street
Weather: Clear

File Name : 02_VST_Lado_Guajome PM
Site Code : 99921313
Start Date : 6/29/2021
Page No : 2



Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:15 PM			03:45 PM			03:00 PM		
+0 mins.	43	**7**	**50**	2	**43**	**45**	**5**	0	5
+15 mins.	38	3	41	3	34	37	3	**3**	6
+30 mins.	35	5	40	1	39	40	5	3	**8**
+45 mins.	**44**	1	45	**5**	32	37	2	3	5
Total Volume	160	16	176	11	148	159	15	9	24
% App. Total	90.9	9.1		6.9	93.1		62.5	37.5	
PHF	.909	.571	.880	.550	.860	.883	.750	.750	.750

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City of Vista
N/S: Rhoda Lane
E/W: Guajome Street
Weather: Clear

File Name : 03_VST_Rhoda_Guajome AM
Site Code : 99921313
Start Date : 6/29/2021
Page No : 1

Groups Printed- Total Volume

	Rhoda Lane Southbound			Guajome Street Westbound			Guajome Street Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
07:00 AM	1	0	1	10	0	10	0	23	23	34
07:15 AM	1	0	1	17	0	17	0	24	24	42
07:30 AM	0	0	0	20	0	20	0	19	19	39
07:45 AM	0	1	1	22	0	22	0	24	24	47
Total	2	1	3	69	0	69	0	90	90	162
08:00 AM	1	0	1	23	0	23	1	22	23	47
08:15 AM	0	0	0	21	0	21	0	27	27	48
08:30 AM	0	1	1	18	0	18	0	17	17	36
08:45 AM	1	0	1	23	0	23	0	33	33	57
Total	2	1	3	85	0	85	1	99	100	188
Grand Total	4	2	6	154	0	154	1	189	190	350
Apprch %	66.7	33.3		100	0		0.5	99.5		
Total %	1.1	0.6	1.7	44	0	44	0.3	54	54.3	

	Rhoda Lane Southbound			Guajome Street Westbound			Guajome Street Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	**1**	0	**1**	**23**	0	**23**	**1**	22	23	47
08:15 AM	0	0	0	21	0	21	0	27	27	48
08:30 AM	0	**1**	1	18	0	18	0	17	17	36
08:45 AM	1	0	1	23	0	23	0	**33**	**33**	**57**
Total Volume	2	1	3	85	0	85	1	99	100	188
% App. Total	66.7	33.3		100	0		1	99		
PHF	.500	.250	.750	.924	.000	.924	.250	.750	.758	.825

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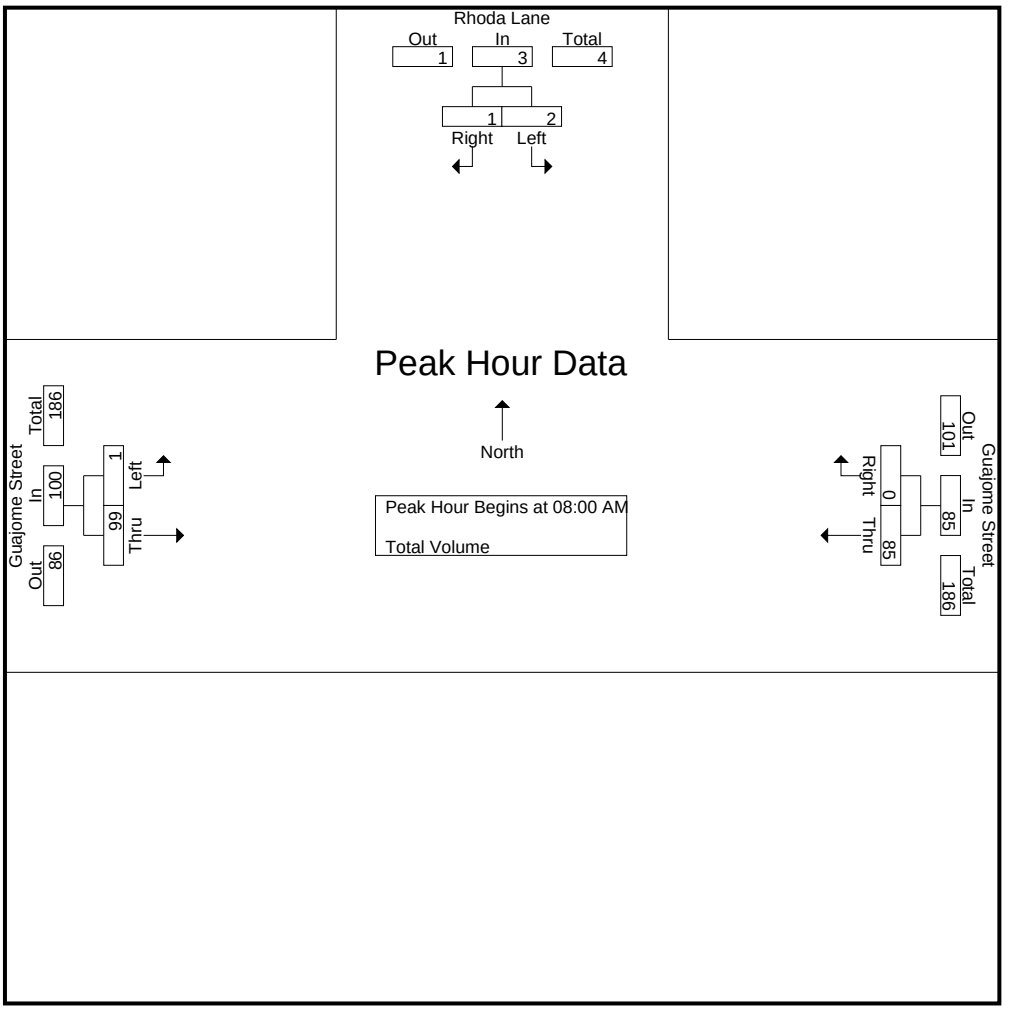
City of Vista
N/S: Rhoda Lane
E/W: Guajome Street
Weather: Clear

File Name : 03_VST_Rhoda_Guajome AM
Site Code : 99921313
Start Date : 6/29/2021
Page No : 2



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

	07:00 AM			07:30 AM			08:00 AM		
+0 mins.	**1**	0	**1**	20	0	20	**1**	22	23
+15 mins.	1	0	1	22	0	22	0	27	27
+30 mins.	0	0	0	**23**	0	**23**	0	17	17
+45 mins.	0	**1**	1	21	0	21	0	**33**	**33**
Total Volume	2	1	3	86	0	86	1	99	100
% App. Total	66.7	33.3		100	0		1	99	
PHF	.500	.250	.750	.935	.000	.935	.250	.750	.758

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City of Vista
N/S: Rhoda Lane
E/W: Guajome Street
Weather: Clear

File Name : 03_VST_Rhoda_Guajome PM
Site Code : 99921313
Start Date : 6/29/2021

Groups Printed- Total Volume

	Rhoda Lane Southbound			Guajome Street Westbound			Guajome Street Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
03:00 PM	1	0	1	24	1	25	0	38	38	64
03:15 PM	0	1	1	38	1	39	0	41	41	81
03:30 PM	0	0	0	34	0	34	0	51	51	85
03:45 PM	0	0	0	44	0	44	0	38	38	82
Total	1	1	2	140	2	142	0	168	168	312
04:00 PM	0	0	0	35	0	35	2	41	43	78
04:15 PM	1	0	1	33	0	33	0	52	52	86
04:30 PM	0	0	0	36	0	36	0	39	39	75
04:45 PM	0	0	0	36	0	36	0	53	53	89
Total	1	0	1	140	0	140	2	185	187	328
Grand Total	2	1	3	280	2	282	2	353	355	640
Apprch %	66.7	33.3		99.3	0.7		0.6	99.4		
Total %	0.3	0.2	0.5	43.8	0.3	44.1	0.3	55.2	55.5	

	Rhoda Lane Southbound			Guajome Street Westbound			Guajome Street Eastbound			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 03:30 PM										
03:30 PM	0	0	0	34	0	34	0	51	51	85
03:45 PM	0	0	0	**44**	0	**44**	0	38	38	82
04:00 PM	0	0	0	35	0	35	**2**	41	43	78
04:15 PM	**1**	0	**1**	33	0	33	0	**52**	**52**	**86**
Total Volume	1	0	1	146	0	146	2	182	184	331
% App. Total	100	0		100	0		1.1	98.9		
PHF	.250	.000	.250	.830	.000	.830	.250	.875	.885	.962

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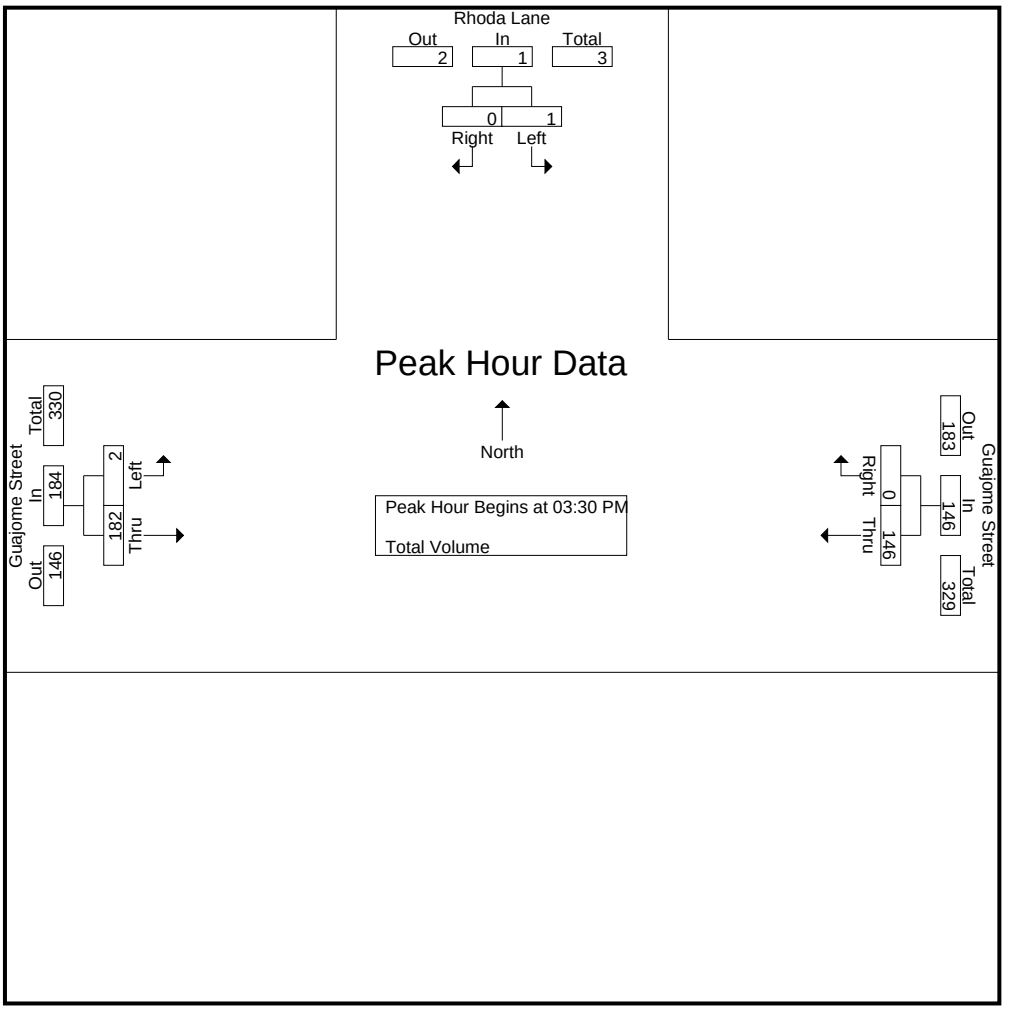
City of Vista
N/S: Rhoda Lane
E/W: Guajome Street
Weather: Clear

File Name : 03_VST_Rhoda_Guajome PM
Site Code : 99921313
Start Date : 6/29/2021
Page No : 2



Peak Hour Analysis From 03:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:00 PM			03:15 PM			04:00 PM		
+0 mins.	**1**	0	**1**	38	**1**	39	**2**	41	43
+15 mins.	0	**1**	1	34	0	34	0	52	52
+30 mins.	0	0	0	**44**	0	**44**	0	39	39
+45 mins.	0	0	0	35	0	35	0	**53**	**53**
Total Volume	1	1	2	151	1	152	2	185	187
% App. Total	50	50		99.3	0.7		1.1	98.9	
PHF	.250	.250	.500	.858	.250	.864	.250	.873	.882

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City of Vista
N/S: Santa Fe Avenue
E/W: Guajome Street
Weather: Clear

File Name : 04_VST_Santa_Guajome AM
Site Code : 99921313
Start Date : 6/29/2021
Page No : 1

Groups Printed- Total Volume

	Santa Fe Avenue Southbound				Santa Fe Avenue Northbound				Guajome Street Eastbound				
Start Time	Thru	Right	U-Turns	App. Total	Left	Thru	U-Turns	App. Total	Left	Right	U-Turns	App. Total	Int. Total
07:00 AM	62	9	0	71	6	24	0	30	13	3	0	16	117
07:15 AM	48	19	0	67	4	29	0	33	10	5	3	18	118
07:30 AM	14	82	1	97	8	38	0	46	6	3	9	18	161
07:45 AM	0	76	2	78	13	45	0	58	16	0	3	19	155
Total	124	186	3	313	31	136	0	167	45	11	15	71	551
08:00 AM	0	91	1	92	11	42	0	53	19	0	5	24	169
08:15 AM	0	57	2	59	5	38	0	43	20	0	2	22	124
08:30 AM	0	53	5	58	8	44	0	52	10	0	7	17	127
08:45 AM	0	63	1	64	11	58	0	69	20	0	0	20	153
Total	0	264	9	273	35	182	0	217	69	0	14	83	573
Grand Total	124	450	12	586	66	318	0	384	114	11	29	154	1124
Apprch %	21.2	76.8	2		17.2	82.8	0		74	7.1	18.8		
Total %	11	40	1.1	52.1	5.9	28.3	0	34.2	10.1	1	2.6	13.7	

	Santa Fe Avenue Southbound				Santa Fe Avenue Northbound				Guajome Street Eastbound				
Start Time	Thru	Right	U-Turns	App. Total	Left	Thru	U-Turns	App. Total	Left	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	**14**	82	1	**97**	8	38	0	46	6	**3**	**9**	18	161
07:45 AM	0	76	**2**	78	**13**	**45**	0	**58**	16	0	3	19	155
08:00 AM	0	**91**	1	92	11	42	0	53	19	0	5	**24**	**169**
08:15 AM	0	57	2	59	5	38	0	43	**20**	0	2	22	124
Total Volume	14	306	6	326	37	163	0	200	61	3	19	83	609
% App. Total	4.3	93.9	1.8		18.5	81.5	0		73.5	3.6	22.9		
PHF	.250	.841	.750	.840	.712	.906	.000	.862	.763	.250	.528	.865	.901

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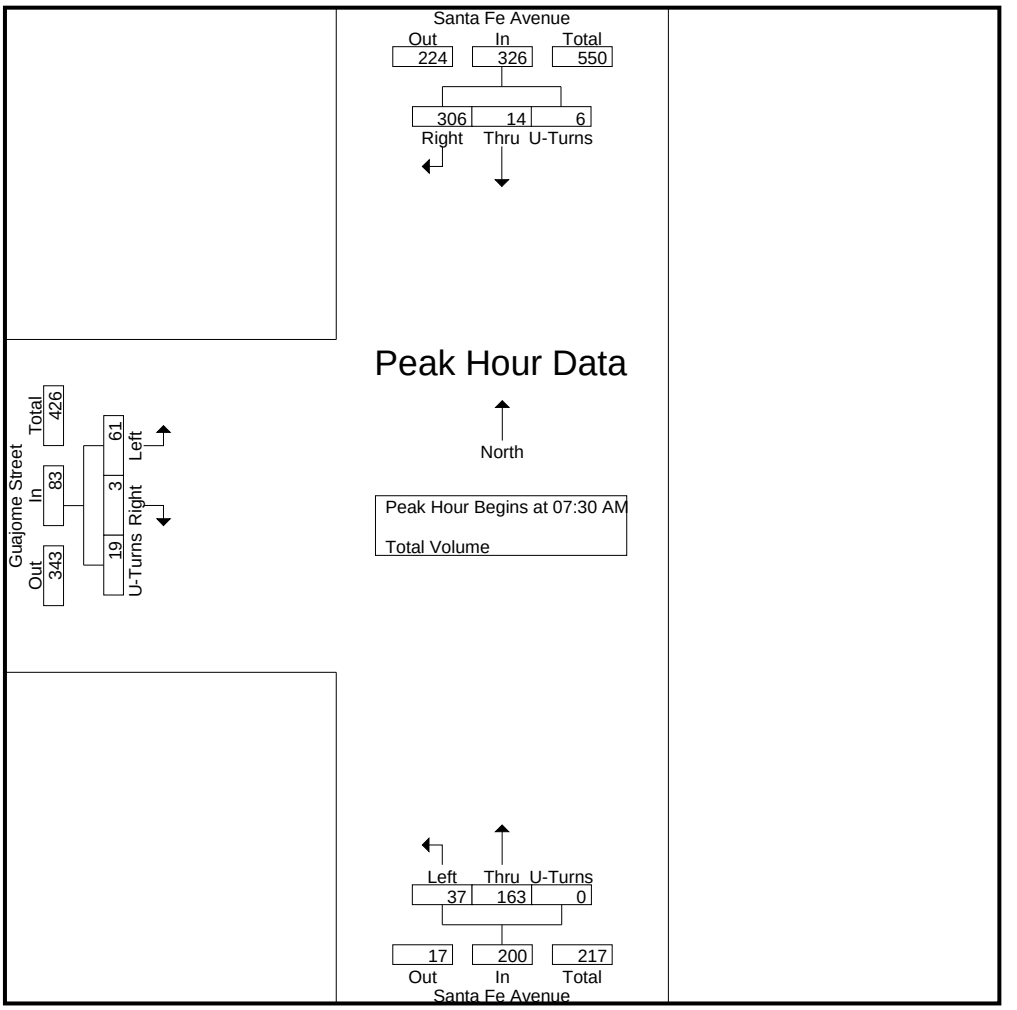
City of Vista
N/S: Santa Fe Avenue
E/W: Guajome Street
Weather: Clear

File Name : 04_VST_Santa_Guajome AM
Site Code : 99921313
Start Date : 6/29/2021
Page No : 2



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

	07:15 AM				08:00 AM				07:30 AM			
+0 mins.	**48**	19	0	67	**11**	42	0	53	6	**3**	**9**	18
+15 mins.	14	82	1	**97**	5	38	0	43	16	0	3	19
+30 mins.	0	76	**2**	78	8	44	0	52	19	0	5	**24**
+45 mins.	0	**91**	1	92	11	**58**	0	**69**	**20**	0	2	22
Total Volume	62	268	4	334	35	182	0	217	61	3	19	83
% App. Total	18.6	80.2	1.2		16.1	83.9	0		73.5	3.6	22.9	
PHF	.323	.736	.500	.861	.795	.784	.000	.786	.763	.250	.528	.865

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City of Vista
N/S: Santa Fe Avenue
E/W: Guajome Street
Weather: Clear

File Name : 04_VST_Santa_Guajome PM
Site Code : 99921313
Start Date : 6/29/2021
Page No : 1

Groups Printed- Total Volume

	Santa Fe Avenue Southbound				Santa Fe Avenue Northbound				Guajome Street Eastbound				
Start Time	Thru	Right	U-Turns	App. Total	Left	Thru	U-Turns	App. Total	Left	Right	U-Turns	App. Total	Int. Total
04:00 PM	79	19	0	98	3	108	5	116	27	22	0	49	263
04:15 PM	86	22	0	108	3	90	4	97	27	29	0	56	261
04:30 PM	81	10	0	91	17	108	2	127	34	29	0	63	281
04:45 PM	81	19	0	100	15	96	3	114	30	20	0	50	264
Total	327	70	0	397	38	402	14	454	118	100	0	218	1069
05:00 PM	89	23	0	112	13	113	0	126	21	25	0	46	284
05:15 PM	95	15	1	111	7	106	5	118	37	26	0	63	292
05:30 PM	99	21	1	121	10	110	2	122	30	20	0	50	293
05:45 PM	109	15	0	124	14	117	1	132	41	28	0	69	325
Total	392	74	2	468	44	446	8	498	129	99	0	228	1194
Grand Total	719	144	2	865	82	848	22	952	247	199	0	446	2263
Apprch %	83.1	16.6	0.2		8.6	89.1	2.3		55.4	44.6	0		
Total %	31.8	6.4	0.1	38.2	3.6	37.5	1	42.1	10.9	8.8	0	19.7	

	Santa Fe Avenue Southbound				Santa Fe Avenue Northbound				Guajome Street Eastbound				
Start Time	Thru	Right	U-Turns	App. Total	Left	Thru	U-Turns	App. Total	Left	Right	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	89	**23**	0	112	13	113	0	126	21	25	0	46	284
05:15 PM	95	15	**1**	111	7	106	**5**	118	37	26	0	63	292
05:30 PM	99	21	1	121	10	110	2	122	30	20	0	50	293
05:45 PM	**109**	15	0	**124**	**14**	**117**	1	**132**	**41**	**28**	0	**69**	**325**
Total Volume	392	74	2	468	44	446	8	498	129	99	0	228	1194
% App. Total	83.8	15.8	0.4		8.8	89.6	1.6		56.6	43.4	0		
PHF	.899	.804	.500	.944	.786	.953	.400	.943	.787	.884	.000	.826	.918

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City of Vista
N/S: Santa Fe Avenue
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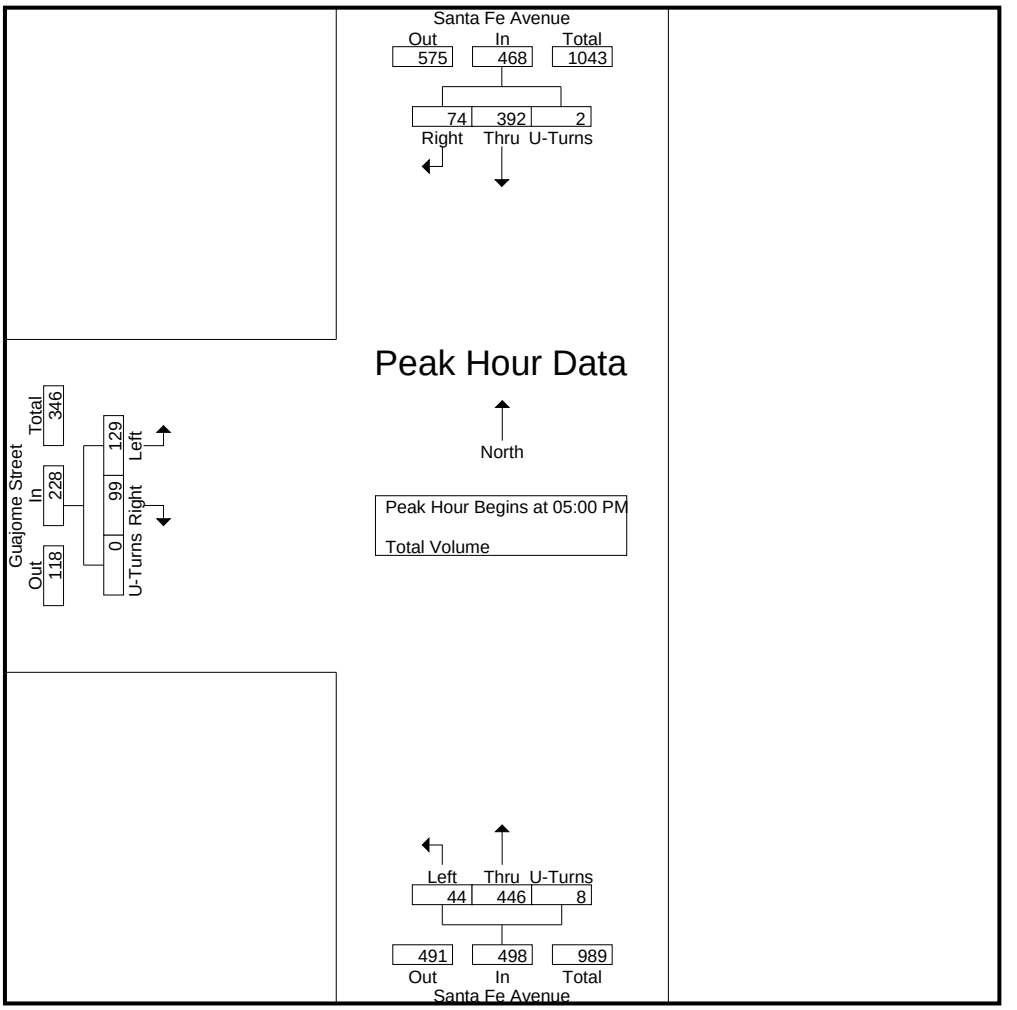
Weather: Clear

File Name : 04_VST_Santa_Guajome PM
Site Code : 99921313
Start Date : 6/29/2021



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

	05:00 PM				05:00 PM				05:00 PM			
+0 mins.	89	**23**	0	112	13	113	0	126	21	25	0	46
+15 mins.	95	15	**1**	111	7	106	**5**	118	37	26	0	63
+30 mins.	99	21	1	121	10	110	2	122	30	20	0	50
+45 mins.	**109**	15	0	**124**	**14**	**117**	1	**132**	**41**	**28**	0	**69**
Total Volume	392	74	2	468	44	446	8	498	129	99	0	228
% App. Total	83.8	15.8	0.4		8.8	89.6	1.6		56.6	43.4	0	
PHF	.899	.804	.500	.944	.786	.953	.400	.943	.787	.884	.000	.826

Prepared by NDS/ATD

VOLUME

Guajome St Bet. Santa Fe Ave (S) & Lado De Loma Dr

Day: Thursday
Date: 12/14/2017

City: Vista
Project #: CA17_4294_117

DAILY TOTALS	NB	SB	EB	WB	Total
	2,074	1,458	0	0	3,532

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	3		1						4		12:00	32		23						55	
00:15	4		0						4		12:15	32		23						55	
00:30	1		1						2		12:30	35		30						65	
00:45	1	9	0	2					1	11	12:45	30	129	35	111					65	240
01:00	1		1						2		13:00	32		14						46	
01:15	0		1						1		13:15	37		33						70	
01:30	0		1						1		13:30	33		17						50	
01:45	0	1	2	5					2	6	13:45	36	138	17	81					53	219
02:00	0		1						1		14:00	36		20						56	
02:15	0		2						2		14:15	38		27						65	
02:30	0		0						0		14:30	33		32						65	
02:45	0		0	3					0	3	14:45	51	158	35	114					86	272
03:00	1		0						1		15:00	56		41						97	
03:15	0		1						1		15:15	54		42						96	
03:30	1		2						3		15:30	47		30						77	
03:45	0	2	0	3					0	5	15:45	46	203	31	144					77	347
04:00	1		1						2		16:00	47		31						78	
04:15	0		1						1		16:15	54		38						92	
04:30	1		2						3		16:30	54		34						88	
04:45	4	6	3	7					7	13	16:45	52	207	39	142					91	349
05:00	4		2						6		17:00	44		45						89	
05:15	4		4						8		17:15	38		25						63	
05:30	11		2						13		17:30	45		32						77	
05:45	8	27	3	11					11	38	17:45	46	173	33	135					79	308
06:00	16		10						26		18:00	18		26						44	
06:15	13		8						21		18:15	30		31						61	
06:30	14		11						25		18:30	27		28						55	
06:45	12	55	10	39					22	94	18:45	26	101	14	99					40	200
07:00	30		17						47		19:00	21		25						46	
07:15	18		19						37		19:15	15		20						35	
07:30	42		27						69		19:30	20		18						38	
07:45	49	139	27	90					76	229	19:45	10	66	7	70					17	136
08:00	31		28						59		20:00	13		10						23	
08:15	43		20						63		20:15	13		13						26	
08:30	28		12						40		20:30	11		9						20	
08:45	37	139	21	81					58	220	20:45	14	51	9	41					23	92
09:00	28		12						40		21:00	15		11						26	
09:15	21		15						36		21:15	15		10						25	
09:30	30		15						45		21:30	19		7						26	
09:45	38	117	17	59					55	176	21:45	6	55	5	33					11	88
10:00	40		15						55		22:00	9		5						14	
10:15	30		19						49		22:15	4		13						17	
10:30	31		22						53		22:30	6		2						8	
10:45	21	122	16	72					37	194	22:45	3	22	1	21					4	43
11:00	38		15						53		23:00	5		0						5	
11:15	36		16						52		23:15	4		4						8	
11:30	39		24						63		23:30	4		1						5	
11:45	26	139	33	88					59	227	23:45	2	15	2	7					4	22
TOTALS		756		460						**1216**	**TOTALS**		1318		998						**2316**
SPLIT %		62.2%		37.8%						**34.4%**	**SPLIT %**		56.9%		43.1%						**65.6%**

DAILY TOTALS	NB	SB	EB	WB	Total
	2,074	1,458	0	0	3,532

AM Peak Hour	07:30	11:45			**07:30**	**PM Peak Hour**	14:45	16:15			**16:15**
AM Pk Volume	165	109			**267**	**PM Pk Volume**	208	156			**360**
Pk Hr Factor	0.842	0.826			**0.878**	**Pk Hr Factor**	0.929	0.867			**0.978**
7 - 9 Volume	278	171	0	0	**449**	**4 - 6 Volume**	380	277	0	0	**657**
7 - 9 Peak Hour	07:30	07:30			**07:30**	**4 - 6 Peak Hour**	16:00	16:15			**16:15**
7 - 9 Pk Volume	165	102	0	0	**267**	**4 - 6 Pk Volume**	207	156	0	0	**360**
Pk Hr Factor	0.842	0.911	0.000	0.000	**0.878**	**Pk Hr Factor**	0.958	0.867	0.000	0.000	**0.978**

Prepared by National Data & Surveying Services

Vista Village Dr & Lado De Loma

Peak Hour Turning Movement Count

ID: 18-04129-027
City: Vista

Day: Thursday
Date: 04/19/2018

PEAK HOURS

AM	07:15 AM - 08:15 AM
NOON	NONE
PM	05:00 PM - 06:00 PM

COUNT PERIODS

AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

SOUTHBOUND (Vista Village Dr)

AM	12	1466	101	2	1065
NOON	0	0	0	0	0
PM	10	1062	106	3	1946

0 3 1 0

EASTBOUND (Lado De Loma)

AM	NOON	PM	
22	0	23	
0	0	0	0
0	0	0	0
3	0	1	1
4	0	14	0

WESTBOUND (Lado De Loma)

	PM	NOON	AM
0.3	100	0	73
0.3	2	0	2
1.3	183	0	205
0	0	0	0
	428	0	235

NORTHBOUND (Vista Village Dr)

PM	1260	1	11	1843	321
NOON	0	0	0	0	0
AM	1675	0	8	990	131

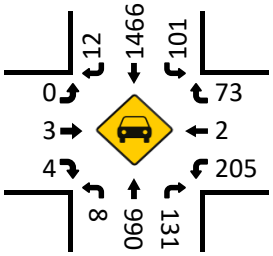
0 1 3 0

CONTROL

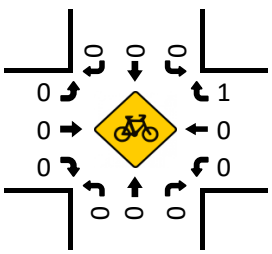
Signalized

TEV	2997 AM	0 NOON	3657 PM
PHF	0.94		0.98

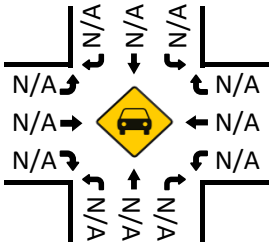
Total Vehicles (AM)



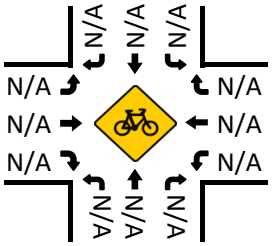
Bikes (AM)



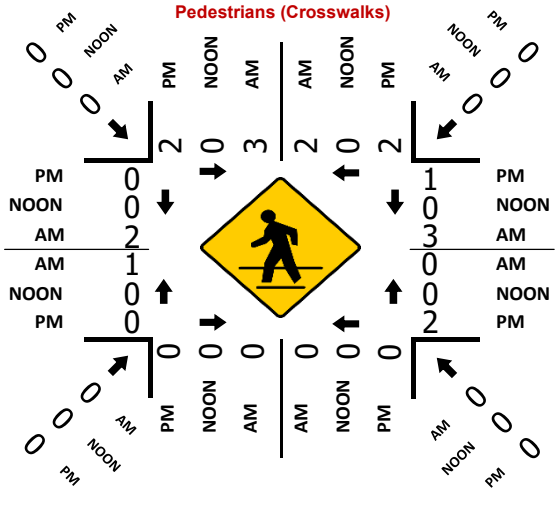
Total Vehicles (Noon)



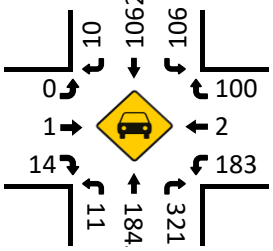
Bikes (NOON)



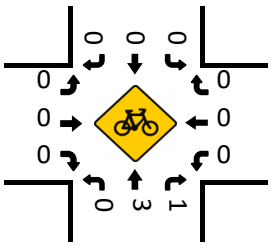
Pedestrians (Crosswalks)



Total Vehicles (PM)



Bikes (PM)



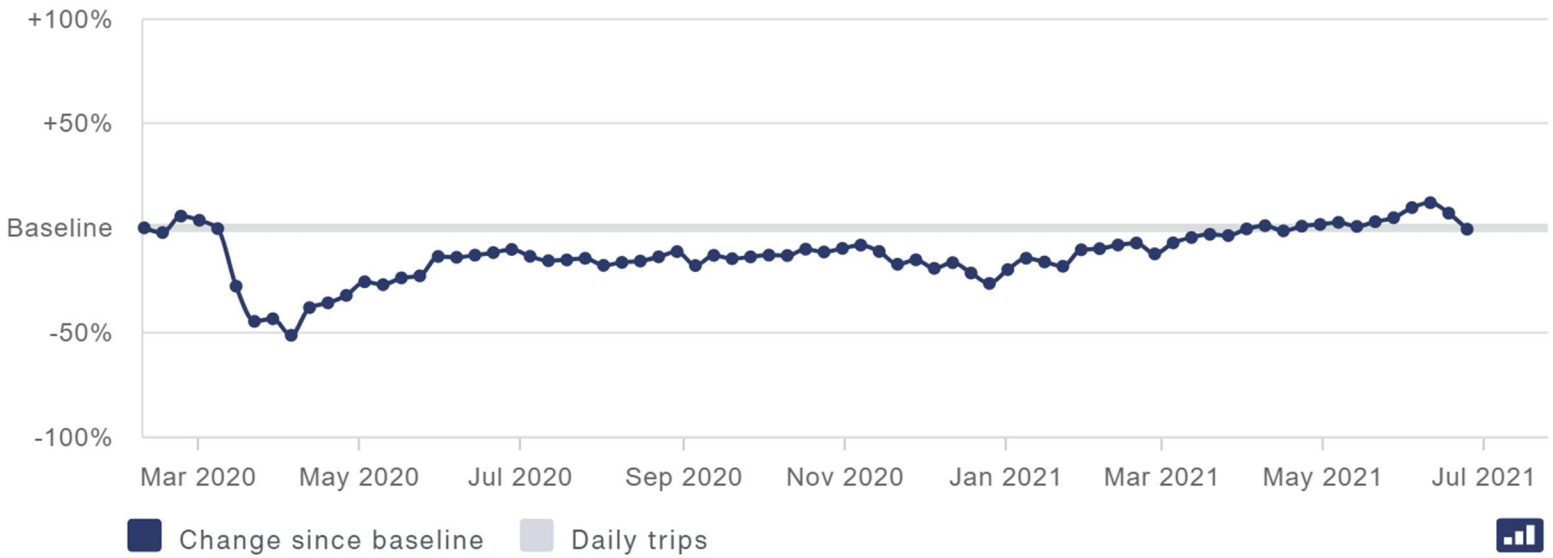
REPLICA

Pheasant Hills

Total Trips

Change over time period for trip volume in this geography

Week of **Feb 10, 2020** to the week of **Jun 28, 2021**



Count Validation - Intersection Turning Movements

ID	Intersection	Peak Hour	Existing (6/29/2021)												Historical (4/19/2018)												Adjustment Needed?
			NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	Total	
1	Vista Village Drive & Lado De Loma Drive	AM	9	830	121	65	1409	3	1	1	4	183	0	46	2672	8	990	131	103	1466	12	0	3	4	205	2	73	2997	Yes. Per City comment, use historical count.
		PM	13	1582	309	93	1156	3	1	3	14	183	0	102	3459	12	1843	321	109	1062	10	0	1	14	183	2	100	3657	
2	Lado De Loma Drive & Guajome Street	AM	2	0	87	0	0	0	0	9	6	92	4	0	200	-	-	-	-	-	-	-	-	-	-	-	-	-	No
		PM	11	0	147	0	0	0	0	11	11	159	10	0	349	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	South Santa Fe Avenue & Guajome Street	AM	37	163	0	0	297	29	49	0	34	0	0	0	609	-	-	-	-	-	-	-	-	-	-	-	-	-	No
		PM	52	446	0	0	417	51	123	0	105	0	0	0	1194	-	-	-	-	-	-	-	-	-	-	-	-	-	

Count Validation - Roadway Segment ADT

Roadway	Segment	Existing (2021)		Historical		Adjustment Needed?
		Count Date	ADT	Count Date	ADT	
Lado De Loma Drive	Vista Village Drive to Guajome Street	6/29/2021	4554	2017	5263	Yes. Per City comment, use historical count.
Lado De Loma Drive	South of Guajome Street	11/10/2021	630	-	-	No
Guajome Street	Lado De Loma Drive to South Santa Fe Avenue	11/10/2021	4131	12/14/2017	3532	No

Horizon Year Growth Calcs					
Roadway	**Segment**	**2007 ADT**	**2030 ADT**	**Growth**	**Growth Per Year**
South Santa Fe Avenue	Vista Village Drive to Civic Center Drive	19,762	32,900	49.9%	2.17%

Soure: City of Vista General Plan PEIR

defined by roadway classification and ADT volumes. The LOS thresholds are summarized in Table 4.11-2.

The city has adopted a standard of LOS D for its roadways. Any roadway segment operating at LOS E or F is considered deficient. Table 4.11-3 summarizes roadway segment LOS for the existing conditions. Roadway segments that exceed LOS D are shown in **boldface**.

Table 4.11-2. City of Vista Roadway Classifications: Capacity and Level of Service

	ADT[3] Level of Service				
Roadway Classification	A	B	C	D	E
6-Lane Prime Arterial (divided)	<36,000	<42,000	<48,000	<54,000	<60,000
6-Lane Urban Major	<30,000	<35,000	<40,000	<45,000	<50,000
4-Lane Major Arterial (divided)	<24,000	<28,000	<32,000	<36,000	<40,000
4-Lane Collector (undivided)	<15,000	<17,500	<20,000	<22,500	<25,000
2-Lane Collector with TWLTL[1]	<9,000	<10,500	<12,000	<13,500	<15,000
2-Lane Collector (divided)	<5,280	<6,160	<7,040	<7,920	<8,800
2-Lane Semi-Rural[2]					<7,900

[1]TWLTL: Two-way left-turn lane (striped center median)

[2]Semi-Rural Streets: capacities identified are the maximum recommended volumes to maintain this classification. If volumes exceed this capacity, either a classification modification should be considered or measures should be taken to reduce through traffic.

[3]ADT: Average Daily Traffic

Source: GP Update Circulation Element (City of Vista 2010)

Table 4.11-3. Existing Roadway Segment Level of Service

Location	Segment	Classification/# Lanes	LOS E Capacity	ADT[1]	V/C[2]	LOS[3]
S. Melrose Drive	Park Center Drive to Sycamore Avenue	Primary Arterial/6-Lane D[4]	60,000	24,741	0.412	A
	Sycamore Avenue to Shadowridge Drive	Primary Arterial/6-Lane D	60,000	23,681	0.395	A
	Shadowridge Drive to Sunset Drive	Primary Arterial/6-Lane D	60,000	27,342	0.456	A
	Sunset Drive to SR-78 Eastbound (EB) Off-Ramp	Major Arterial/4-Lane D	40,000	30,709	0.768	C
N. Melrose Drive	SR-78 EB Off-Ramp to Olive Avenue	Major Arterial/4-Lane D	40,000	35,945	0.899	D
	Olive Avenue to W. Bobier Drive	Major Arterial/4-Lane D	40,000	28,835	0.721	C
Sycamore Avenue	S. Melrose Drive to Business Park Drive	Major Arterial/4-Lane D	40,000	15,929	0.398	A
	Business Park Drive to La Mirada Drive	Major Arterial/4-Lane D	40,000	19,912	0.498	A
	La Mirada Drive to Shadowridge Drive	Major Arterial/5-Lane D	50,000	28,108	0.562	B

Location	Segment	Classification/# Lanes	LOS E Capacity	ADT[1]	V/C[2]	LOS[3]
	Shadowridge Drive to SR-78 EB Ramps	Major Arterial/6-Lane D	60,000	46,712	0.779	C
Vista Village Drive	W. Vista Way to Santa Fe Avenue	Primary Arterial/6-Lane D	60,000	37,649	0.627	B
	N. Santa Fe Avenue to Civic Center Drive	**Secondary Arterial/ 4-Lane UD[5]**	**25,000**	**23,671**	**0.947**	**E**
E. Vista Way	**Civic Center Drive to Vale Terrace Drive**	**Secondary Arterial/ 4-Lane UD**	**25,000**	**43,939**	**1.758**	**F**
	Vale Terrace Drive to Bobier Drive	**Secondary Arterial/ 4-Lane UD**	**25,000**	**33,545**	**1.342**	**F**
	North of Bobier Drive	**Secondary Arterial/ 4-Lane UD**	**25,000**	**29,730**	**1.189**	**F**
W. Vista Way	**Emerald Drive to N. Melrose Drive**	**Secondary Arterial/ 4-Lane UD**	**8,800**	**14,643**	**1.664**	**F**
	N. Melrose Drive to Vista Village Drive	Light Collector/ 2-Lane	60,000	19,912	0.332	A
Bobier Drive	N. Melrose Drive to N. Santa Fe Avenue	Primary Arterial/ 6-Lane D	25,000	20,416	0.817	D
	N. Santa Fe Avenue to E. Vista Way	Secondary Arterial/ 4-Lane UD	40,000	18,362	0.459	A
N. Santa Fe Avenue	Bobier Drive to Vista Village Drive	Major Arterial/ 4-Lane D	40,000	25,236	0.631	B
S. Santa Fe Avenue	Vista Village Drive to Civic Center Drive	Major Arterial/ 4-Lane D	25,000	19,762	0.790	C
Sunset Drive	Crestview Road to SR-78 Westbound (WB)	Secondary Arterial/ 4-Lane UD	25,000	20,888	0.836	D
Civic Center Drive	**SR-78 WB Ramps to S. Santa Fe Avenue**	**Secondary Arterial/ 4-Lane UD**	**25,000**	**31,248**	**1.250**	**F**
	S. Santa Fe Avenue to E. Vista Way	**Secondary Arterial/ 4-Lane UD**	**25,000**	**26,511**	**1.060**	**F**
Hacienda Drive	Emerald Drive to S. Melrose Drive	Secondary Arterial/ 4-Lane UD	25,000	15,340	0.614	B
	S. Melrose Drive to Vista Village Drive	Secondary Arterial/ 4-Lane UD	25,000	18,029	0.721	B
Emerald Drive	**Olive Avenue to West Drive**	**Secondary Arterial/ 4-Lane UD**	**15,000**	**17,404**	**1.160**	**F**
	West Drive to Hacienda Drive	**Collector/2-Lane w/TWLTL[6]**	**25,000**	**27,372**	**1.095**	**F**
Business Park Drive	Sycamore Avenue to Park Center Drive	Secondary Arterial/ 4-Lane UD	25,000	10,604	0.424	A
	Park Center Drive to Poinsettia Avenue	Secondary Arterial/ 4-Lane UD	25,000	9,967	0.399	A
	Poinsettia Avenue to Palomar Airport Road	Secondary Arterial/ 4-Lane UD	25,000	13,675	0.547	A

Location	Segment	Classification/# Lanes	LOS E Capacity	ADT[1]	V/C[2]	LOS[3]
La Mirada Drive	**Sycamore Avenue to Poinsettia Avenue**	**Secondary Arterial/ 4-Lane UD**	**8,800**	**9,439**	**1.073**	**F**
Shadowridge Drive	S. Melrose Drive to Sycamore Avenue	Light Collector/ 2-Lane	25,000	15,601	0.624	B
Sunset Drive	S. Melrose Drive to Buena Vista Drive	Secondary Arterial/ 4-Lane UD	8,800	4,278	0.486	A
	Buena Vista Drive to Civic Center Drive	Light Collector/ 2-Lane	8,800	5,096	0.579	A
Thibodo Road	Mar Vista Drive to Chaparral Drive	Light Collector/ 2-Lane	8,800	6,127	0.696	B
	Chaparral Drive to Sycamore Avenue	Light Collector/ 2-Lane	15,000	8,435	0.562	C
Olive Avenue	Emerald Drive to N. Melrose Drive	Collector/ 2-Lane w/TWLTL	15,000	9,320	0.621	C
	N. Melrose Drive to Plymouth Drive	Collector/ 2-Lane w/TWLTL	15,000	6,860	0.457	B
	Plymouth Drive to Vista Village Drive	Collector/ 2-Lane w/TWLTL	8,800	7,397	0.841	D
Monte Vista Drive	**S. Santa Fe Avenue to Cypress Road**	**Light Collector/ 2-Lane**	**8,800**	**8,428**	**0.958**	**E**
	Cypress Road to York Drive	Light Collector/ 2-Lane	8,800	6,486	0.737	C

[1] ADT = Average Daily Traffic
[2]V/C = Volume to Capacity Ratio (i.e. LOS E)
[3]LOS = Level of Service
[4]D = Divided
[5]UD = Undivided
[6]TWLTL = Two-Way Left Turn Lane
Civic Center Drive formerly Escondido Avenue.
Source: RBF Consulting 2010

As Table 4.11-3 shows, 11 roadway segments are currently operating at LOS E or F and are considered deficient:

- Vista Village Drive, between N. Santa Fe Avenue and Civic Center Drive (LOS E).
- E. Vista Way, between Civic Center Drive and Vale Terrace Drive (LOS F).
- E. Vista Way, between Vale Terrace Drive and Bobier Drive (LOS F).
- E. Vista Way, north of Bobier Drive (LOS F).
- W. Vista Way, between Emerald Drive and N. Melrose Drive (LOS F).
- Civic Center Drive, between SR-78 Westbound Ramps and S. Santa Fe Avenue (LOS F).
- Civic Center Drive, between S. Santa Fe Avenue and E. Vista Way (LOS F).
- Emerald Drive, between Olive Avenue and West Drive (LOS F).

Pages 4.11-16, 17, and 18

Table 4.11-7. 2030 Daily Roadway Segment Levels of Service with GP Update (2030)

Segment	Location	Classification	# Lanes	LOS E Capacity	ADT[1,3]	LOS[3]	Change in V/C	Impact?
S. Melrose Drive	Park Center Drive to Sycamore Avenue	Primary Arterial	6 D	60,000	~~45,300~~ 45,800	C	~~-0.343~~0.351	N
	Sycamore Avenue to Shadowridge Drive	Primary Arterial	6 D	60,000	~~24,400~~ 25,300	A	~~-0.012~~0.027	N
	Shadowridge Drive to Sunset Drive	Primary Arterial		60,000	~~33,600~~ 38,600	A	~~-0.104~~0.187	N
	Sunset Drive to SR-78 EB Off-Ramp	Urban Major	6 D	50,000	~~34,500~~ 39,200	B	~~0.078~~0.016	N
N. Melrose Drive	SR-78 EB Off-Ramp to Olive Avenue	Urban Major	6 D	50,000	37,700	C	-0.145	N
	Olive Avenue to W. Bobier Drive	Urban Major	6 D	50,000	38,400	C	-0.047	N
Sycamore Avenue	S. Melrose Drive to Business Park Drive	Primary Arterial	6 D	60,000	~~46,200~~ 46,600	C	~~-0.372~~0.379	N
	Business Park Drive to La Mirada Drive	Primary Arterial	6D	60,000	~~39,000~~ 39,400	B	~~-0.152~~0.159	N
	La Mirada Drive to Shadowridge Drive	Primary Arterial	6D	60,000	~~39,500~~ 40,100	B	~~-0.096~~0.106	N
	Shadowridge Drive to SR-78 EB Ramps	Primary Arterial	6 D	60,000	~~47,600~~ 50,100	C	~~-0.014~~0.056	N
Vista Village Drive	W. Vista Way to N. Santa Fe Avenue	Urban Major	6 D	50,000	39,200	C	-0.157	N
	N. Santa Fe Avenue to Civic Center Drive	Urban Major	6 D	50,000	24,100	A	-0.465	N
E. Vista Way	Civic Center Drive to Vale Terrace Drive	Urban Major	6 D	50,000	44,300	D	-0.872	N
	Vale Terrace Drive to E. Bobier Drive	Urban Major	6 D	50,000	28,000	A	-0.782	N
	North of E. Bobier Drive	Major Arterial	4 D	40,000	31,200	C	-0.409	N
W. Vista Way	Emerald Drive to N. Melrose Drive	Collector	4	25,000	16,100	B	-1.020	N
	N. Melrose Drive to Vista Village Drive	Primary Arterial	6 D	60,000	17,000	A	-0.049	N
Bobier Drive	N. Melrose Drive to N. Santa Fe Avenue	Major Arterial	4 D	40,000	28,400	C	-0.107	N

Segment	Location	Classification	# Lanes	LOS E Capacity	ADT[1,3]	LOS[3]	Change in V/C	Impact?
	N. Santa Fe Avenue to E. Vista Way	Major Arterial	4 D	40,000	21,600	A	-0.081	N
N. Santa Fe Avenue	Bobier Drive to Vista Village Drive	Major Arterial	4 D	40,000	25,600	B	-0.009	N
S. Santa Fe Avenue	Vista Village Drive to Civic Center Drive	Major Arterial	4 D	~~25~~40,000	32,900	D	-0.033	N
Branding Iron Drive	Melrose Avenue to Crestview Road	Major Arterial	4D	40,000	13,900	C	N/A[5]	N
~~Sunset Avenue~~	Crestview Road to SR-78 WB Ramps	Major Arterial	4 D	40,000	~~28,100~~ 32,006	C	N/A~~0.134~~	N
Civic Center Drive[4]	**SR-78 WB Ramps to S. Santa Fe Avenue**	**Urban Major**	**6 D**	**50,000**	**47,200**	**E**	**-0.306**	**Y**
	S. Santa Fe Avenue to E. Vista Way	**Major Arterial**	**4 D**	**40,000**	**36,100**	**E**	**-0.~~158~~157**	**Y**
Hacienda Drive	Emerald Drive to S. Melrose Drive	Collector	4 UD	25,000	9,900	A	-0.218	N
	S. Melrose Drive to Vista Village Drive	Collector	4 UD	25,000	~~18,900~~ 19,200	C	~~0.035~~0.047	N
Emerald Drive	**Olive Avenue to West Drive**	**Collector**	**4 UD**	**25,000**	**24,500**	**E**	**-0.180**	**Y**
	West Drive to Hacienda Drive	Major Arterial	4 D	40,000	30,600	C	-0.330	N
Business Park Drive	Sycamore Avenue to Park Center Drive	Collector	4 UD	25,000	20,500	D	-0.396	N
	Park Center Drive to Poinsettia Avenue	Collector	4 UD	25,000	18,000	C	-0.321	N
	Poinsettia Avenue to Palomar Airport Road	Collector	4 UD	25,000	21,900	D	-0.329	N
La Mirada Drive	Sycamore Avenue to Poinsettia Avenue	Collector	2 UD	15,000	~~12,500~~ 12,700	D	~~0.240~~-0.226	N
Shadowridge Drive	S. Melrose Drive to Sycamore Avenue	Collector	4 UD	25,000	~~10,900~~ 12,800	A	-0.~~188~~112	N
Sunset Drive	S. Melrose Drive to Buena Vista Drive	Semi-Rural	2	7,100	1,9~~6~~00	A	-0.~~261~~218	N
	Buena Vista Drive to Civic Center Drive	Semi-Rural	2	7,100	2,600	A	-0.~~494~~213	N
Thibodo Road	Mar Vista Drive to Chaparral Drive	Collector	2	15,000	7,~~4~~200	A	~~-4.104~~-.203	N
	Chaparral Drive to Sycamore Avenue	Collector	2	15,000	9,000	A	-0.038	N
Olive Avenue	Emerald Drive to N. Melrose Drive	Collector	~~4~~	25,000	13,900	A	-0.065	N
	N. Melrose Drive to Plymouth Drive	Collector	~~4~~	~~2~~15,000	18,700	C	-0.291	N
	Plymouth Drive to Vista Village Drive	Collector	2	15,000	10,900	C	-0.114	N
Monte Vista Drive	S. Santa Fe Avenue to Cypress Road	Collector	2	15,000	13,500	D	-0.058	N
	Cypress Road to York Drive	Collector	2	15,000	6,300	A	-0.317	N

Segment	Location	Classification	# Lanes	LOS E Capacity	ADT[1,3]	LOS[3]	Change in V/C	Impact?

[1]ADT: Average Daily Traffic
[2]TWLTL: Two-Way Left-Turn Lane
[3]Deficient operating conditions showed in **boldface.**
[4]Civic Center Drive formerly Escondido Avenue.
[5]The Branding Iron segments do not exist in the existing condition but are included as a planned roadway improvement in the GP Update.
Source: RBF Consulting 2010.

Appendix C - Signal Timings

332 CABINET

Vista Village Dr @ Lado De Loma Dr

Phase Timing and Options

Unit Information

Controller Number	63
Software	Intelight MAXTIME 2.X
Main Street	Vista Village Dr
Side Street	Lado De Loma Dr
IP Address	10.9.9.60

Unit Parameters

Extended Mode	Disable
Startup Flash	0
Auto Ped Clear	Disable
Red Revert	5
Backup Time	600
Startup All Red	0
Man. Control Seq.	1
MCE Enable	Enable
Start Yel. Override	0
Start Red Override	0
Free Sequence	1
All Red Flash Exit	5
Local CVM Fash	Disable
All Red Flash Sns	Disable
All Dark Flash Sns	Disable

Phase Timing

Phase	1	2	3	4	5	6	7	8
Description								
Walk		4				4		4
Ped Clear		12				12		20
Steady Don't Walk								
Min Green	5	15			5	15	5	5
Min Green 2								
Passage	2.0	3.5			2.0	3.5	2.5	2.5
Passage 2								
Max Green 1	15	40			15	40	15	20
Max Green 2								
Yellow Change	4.4	4.4			4.4	4.4	3.6	3.6
Red Clear	1.0	1.0			1.0	1.0	1.0	1.0
Added Initial								
Maximum Initial								
Time B4 Reduction								
Cars B4 Reduction								
Time To Reduce								
Reduce By								
Minimum Gap								
Advance Walk								
Delayed Ped								

Phase Options

Phase	1	2	3	4	5	6	7	8
Enable	X	X	.	.	X	X	X	X
Auto Flash Entry	.	.	.	.	.	.	.	X
Auto Flash Exit	.	X	.	.	.	X	.	.
Non Lock Detector	X	X	.	.	X	X	X	X
Min Vehicle Recall	.	X	.	.	.	X	.	.
Max Vehicle Recall	.	.	.	.	.	.	.	.
Ped Recall	.	.	.	.	.	.	.	.
Soft Vehicle Recall	.	.	.	.	.	.	.	.
Dual Entry	.	.	.	.	.	.	.	.
Sim. Gap Disable	.	.	.	.	.	.	.	.
Actuated Rest in Walk	.	X	.	.	.	X	.	X
Conditional Svc Enable	.	.	.	.	.	.	.	.
Add Initial Calculation	.	.	.	.	.	.	.	.
Ped Clear During Yellow	.	.	.	.	.	.	.	.
Ped Clear During Red Clr	.	.	.	.	.	.	.	.
Yellow Min Override	.	.	.	.	.	.	.	.
No Startup Call	.	.	.	.	.	.	.	.
No Ped Startup Call	.	.	.	.	.	.	.	.
Min Green 2	.	.	.	.	.	.	.	.
Max Green 2	.	.	.	.	.	.	.	.
Red Rest	.	.	.	.	.	.	.	.
Ped Recycle	.	.	.	.	.	.	.	.

Phase Configuration

Phase	Startup	Description
1	Phase Not On	
2	YellowChange	
3	None	
4	None	
5	Phase Not On	
6	YellowChange	
7	Phase Not On	
8	Phase Not On	

Global Phase Recalls

Phase	1	2	3	4	5	6	7	8
Min	.	.	.	.	.	.	.	.
Max	.	.	.	.	.	.	.	.
Ped	.	.	.	.	.	.	.	.

Notes

Printed on: 7/6/2021

Sequences

Sequence 1

Ring	Sequence
1	1,2,a,b
2	5,6,a,7,8,b
3	
4	

Sequence 2

Ring	Sequence
1	2,1,a,3,4,b
2	5,6,a,7,8,b
3	
4	

Sequence 3

Ring	Sequence
1	1,2,a,4,3,b
2	5,6,a,7,8,b
3	
4	

Sequence 4

Ring	Sequence
1	2,1,a,4,3,b
2	5,6,a,7,8,b
3	
4	

Sequence 5

Ring	Sequence
1	1,2,a,b
2	5,6,a,7,8,b
3	
4	

Sequence 6

Ring	Sequence
1	1,2,a,b
2	5,6,a,7,8,b
3	
4	

Sequence 7

Ring	Sequence
1	1,2,a,4,3,b
2	6,5,a,7,8,b
3	
4	

Sequence 8

Ring	Sequence
1	2,1,a,4,3,b
2	6,5,a,7,8,b
3	
4	

Sequence 9

Ring	Sequence
1	1,2,a,3,4,b
2	5,6,a,8,7,b
3	
4	

Sequence 10

Ring	Sequence
1	2,1,a,3,4,b
2	5,6,a,8,7,b
3	
4	

Sequence 11

Ring	Sequence
1	1,2,a,4,3,b
2	5,6,a,8,7,b
3	
4	

Sequence 12

Ring	Sequence
1	2,1,a,4,3,b
2	5,6,a,8,7,b
3	
4	

Sequence 13

Ring	Sequence
1	1,2,a,3,4,b
2	6,5,a,8,7,b
3	
4	

Sequence 14

Ring	Sequence
1	2,1,a,3,4,b
2	6,5,a,8,7,b
3	
4	

Sequence 15

Ring	Sequence
1	1,2,a,4,3,b
2	6,5,a,8,7,b
3	
4	

Sequence 16

Ring	Sequence
1	2,1,a,4,3,b
2	6,5,a,8,7,b
3	
4	

Overlaps

Standard Overlaps

Overlap	1	2	3	4	5	6
Enabled	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Description						
Type	Off	Off	Off	Off	Off	Off
Included Phs						
Modifier Phs						
Negative Phs						
Negative Ovlp						
Negative Ped						
Green Suppr						
Trail Green						
Trail Yellow						
Trail Red						
Walk						
Ped Clear						
Delay						
Startup Call	.	.	.	.	.	.
Recall	.	.	.	.	.	.
Call for Svc	.	.	.	.	.	.

Backup Prevention / No Serve Phases

Sequence 1

Backup Protection Plan

Serve Phase	Backup phase 1	2	3	4	5	6	7	8
1	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	.
Thru Red	No							

Call Phs

Ph	Call Ph
1	
2	
3	
4	
5	
6	
7	
8	

No Serve

Ph	No Srv
1	
2	
3	
4	
5	
6	
7	
8	

Sequence 2

Backup Protection Plan

Serve Phase	Backup phase 1	2	3	4	5	6	7	8
1	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	.
Thru Red	No							

Call Phs

Ph	Call Ph
1	
2	
3	
4	
5	
6	
7	
8	

No Serve

Ph	No Srv
1	
2	
3	
4	
5	
6	
7	
8	

Sequence 3

Backup Protection Plan

Serve Phase	Backup phase 1	2	3	4	5	6	7	8
1	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	.
Thru Red	No							

Call Phs

Ph	Call Ph
1	
2	
3	
4	
5	
6	
7	
8	

No Serve

Ph	No Srv
1	
2	
3	
4	
5	
6	
7	
8	

Sequence 4

Backup Protection Plan

Serve Phase	Backup phase 1	2	3	4	5	6	7	8
1	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	.
Thru Red	No							

Call Phs

Ph	Call Ph
1	
2	
3	
4	
5	
6	
7	
8	

No Serve

Ph	No Srv
1	
2	
3	
4	
5	
6	
7	
8	

Sequence 5

Backup Protection Plan

Serve Phase	Backup phase 1	2	3	4	5	6	7	8
1	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	.
Thru Red	No							

Call Phs

Ph	Call Ph
1	
2	
3	
4	
5	
6	
7	
8	

No Serve

Ph	No Srv
1	
2	
3	
4	
5	
6	
7	
8	

Sequence 6

Backup Protection Plan

Serve Phase	Backup phase 1	2	3	4	5	6	7	8
1	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	.
Thru Red	No							

Call Phs

Ph	Call Ph
1	
2	
3	
4	
5	
6	
7	
8	

No Serve

Ph	No Srv
1	
2	
3	
4	
5	
6	
7	
8	

Sequence 7

Backup Protection Plan

Serve Phase	Backup phase 1	2	3	4	5	6	7	8
1	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	.
Thru Red	No							

Call Phs

Ph	Call Ph
1	
2	
3	
4	
5	
6	
7	
8	

No Serve

Ph	No Srv
1	
2	
3	
4	
5	
6	
7	
8	

Sequence 8

Backup Protection Plan

Serve Phase	Backup phase 1	2	3	4	5	6	7	8
1	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	.
Thru Red	No							

Call Phs

Ph	Call Ph
1	
2	
3	
4	
5	
6	
7	
8	

No Serve

Ph	No Srv
1	
2	
3	
4	
5	
6	
7	
8	

Sequence 9

Backup Protection Plan

Serve Phase	Backup phase 1	2	3	4	5	6	7	8
1	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	.
Thru Red	No							

Call Phs

Ph	Call Ph
1	
2	
3	
4	
5	
6	
7	
8	

No Serve

Ph	No Srv
1	
2	
3	
4	
5	
6	
7	
8	

Detector Configuration

Vehicle Detectors

Detector	Slot	C1 Pin Number	Call Phas	Call O/L	Addtnl Call PH	Switch Phase	Delay	Extend	Queue Limit	No Activity	Max Pres.	Erratic Count	Fail Time	Failed Recall	Description
1	I-1	C1-56	1											None	
2	I-2U	C1-39	2											None	
3	I-2L	C1-43	2											None	
4	I-3U	C1-63	2											None	
5	I-3L	C1-76	2											None	
6	I-4	C1-47	2											None	
7	I-5	C1-58	3											None	
8	I-6U	C1-41	4											None	
9	I-6L	C1-45	4											None	
10	I-7U	C1-65	4											None	
11	I-7L	C1-78	4											None	
12	I-8	C1-49	4											None	
13	I-9U	C1-60	1											None	
14	I-9L	C1-62	3											None	
15	J-1	C1-55	5											None	
16	J-2U	C1-40	6											None	
17	J-2L	C1-44	6											None	
18	J-3U	C1-64	6											None	
19	J-3L	C1-77	6											None	
20	J-4	C1-48	6											None	
21	J-5	C1-57	7											None	
22	J-6U	C1-42	8											None	
23	J-6L	C1-46	8											None	
24	J-7U	C1-66	8											None	
25	J-7L	C1-79	8											None	
26	J-8	C1-50	8											None	
27	J-9U	C1-59	5											None	
28	J-9L	C1-61	7											None	

Pedestrian Detectors

Detector	Slot	C1 Pin Number	Call PH	Call O/L	Addtnl Call PH	No Act	Max Pres	Erratic Count
1	-------	-------						
2	I-12U	C1-67	2					
3	-------	-------						
4	I-12L	C1-69	4					
5	-------	-------						
6	I-13U	C1-68	6					
7	-------	-------						
8	I-13L	C1-70	8					

Global Vehicle Detector Parameters

Global No Activity	
Global Max Presence	20
Global Erratic Count	
Global Failed Recall	Max Recall
Detector Reset Enable	Enabled

Global Ped Detector Parameters

Global No Activity	
Global Max Pres.	5
Global Erratic Ct	

Vehicle Detection Options

Detector	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Volume	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Occupancy	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Yellow Lock Call	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Red Lock Call	X	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Extend	X	X	X	X	X	.	X	X	X	X	X	.	X	X	X	X	X	X	X	.	X	X	X	X	X	.	X	X
Added Initial	X	X	X	X	X	.	X	X	X	X	X	.	X	X	X	X	X	X	X	.	X	X	X	X	X	.	X	X
Queue	.	.	.	.	.	X	.	.	.	.	.	X	.	.	.	.	.	.	.	X	.	.	.	.	.	X	.	.
Call	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Min Green 2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Passage 2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Coordination Configuration

Coordination Parameters

Operational Mode	Automatic
Coord Mode	Full Permissive
Maximum Mode	Per Pattern
Force Mode	Per Pattern
Correction Mode	Shortway (Auto)
Max Cyc Limit %	25
Min Cyc Limit %	25
Max Dwell	0
Trans. Cover Ped	Pattern

Patterns

Patt.	Cycle	Offset 1	Split	Seq	Reference	Coord Mode	FO Mode	Max Mode	Phs Pln	Det Pln	Ped Pln	OL Pln	Description
1	110	15	1	5	Yellow	Full Permissive	Fixed	Max Inhibit	1	1	1	1	
2	110		2	5	Yellow	Full Permissive	Fixed	Max Inhibit	1	1	1	1	
3	120	15	3	5	Yellow	Full Permissive	Fixed	Max Inhibit	1	1	1	1	
4					Yellow	Full Permissive	Fixed	Max Inhibit	1	1	1	1	
5					Yellow	Full Permissive	Fixed	Max Inhibit	1	1	1	1	
6					Yellow	Full Permissive	Fixed	Max Inhibit	1	1	1	1	
7					Yellow	Full Permissive	Fixed	Max Inhibit	1	1	1	1	
8	130	110	8	5	Yellow	Full Permissive	Fixed	Max Inhibit	1	1	1	1	
9					Yellow	Full Permissive	Fixed	Max Inhibit	1	1	1	1	

Split Parameters

Split 1

PH.	Time	Min	Max	Coord Phase	Ref Phase	FO Mode	Mode
1	11			.	.	Fixed	None
2	39			X	X	Fixed	None
3				.	.	Fixed	None
4				.	.	Fixed	None
5	15			.	.	Fixed	None
6	50			X	.	Fixed	None
7	15			.	.	Fixed	None
8	30			.	.	Fixed	None

Split 2

PH.	Time	Min	Max	Coord Phase	Ref Phase	FO Mode	Mode
1	15			.	.	Fixed	None
2	35			X	X	Fixed	None
3				.	.	Fixed	None
4				.	.	Fixed	None
5	15			.	.	Fixed	None
6	50			X	.	Fixed	None
7	15			.	.	Fixed	None
8	30			.	.	Fixed	None

Split 3

PH.	Time	Min	Max	Coord Phase	Ref Phase	FO Mode	Mode
1	11			.	.	Fixed	None
2	49			X	X	Fixed	None
3				.	.	Fixed	None
4				.	.	Fixed	None
5	15			.	.	Fixed	None
6	60			X	.	Fixed	None
7	15			.	.	Fixed	None
8	30			.	.	Fixed	None

Split 4

PH.	Time	Min	Max	Coord Phase	Ref Phase	FO Mode	Mode
1				.	.	Fixed	None
2				.	.	Fixed	None
3				.	.	Fixed	None
4				.	.	Fixed	None
5				.	.	Fixed	None
6				.	.	Fixed	None
7				.	.	Fixed	None
8				.	.	Fixed	None

Split 5

PH.	Time	Min	Max	Coord Phase	Ref Phase	FO Mode	Mode
1				.	.	Fixed	None
2				.	.	Fixed	None
3				.	.	Fixed	None
4				.	.	Fixed	None
5				.	.	Fixed	None
6				.	.	Fixed	None
7				.	.	Fixed	None
8				.	.	Fixed	None

Split 6

PH.	Time	Min	Max	Coord Phase	Ref Phase	FO Mode	Mode
1				.	.	Fixed	None
2				.	.	Fixed	None
3				.	.	Fixed	None
4				.	.	Fixed	None
5				.	.	Fixed	None
6				.	.	Fixed	None
7				.	.	Fixed	None
8				.	.	Fixed	None

Split 7

PH.	Time	Min	Max	Coord Phase	Ref Phase	FO Mode	Mode
1				.	.	Fixed	None
2				.	.	Fixed	None
3				.	.	Fixed	None
4				.	.	Fixed	None
5				.	.	Fixed	None
6				.	.	Fixed	None
7				.	.	Fixed	None
8				.	.	Fixed	None

Split 8

PH.	Time	Min	Max	Coord Phase	Ref Phase	FO Mode	Mode
1	11			.	.	Fixed	None
2	59			X	X	Fixed	None
3				.	.	Fixed	None
4				.	.	Fixed	None
5	15			.	.	Fixed	None
6	70			X	.	Fixed	None
7	15			.	.	Fixed	None
8	30			.	.	Fixed	None

Split 9

PH.	Time	Min	Max	Coord Phase	Ref Phase	FO Mode	Mode
1				.	.	Fixed	None
2				.	.	Fixed	None
3				.	.	Fixed	None
4				.	.	Fixed	None
5				.	.	Fixed	None
6				.	.	Fixed	None
7				.	.	Fixed	None
8				.	.	Fixed	None

Advanced Coord Options

Pattern	1	2	3	4	5	6	7	8	9
Ring Plan									
Allow Split Underrun	X	X	X	.	.	.	.	X	.
Allow Split Overrun	.	.	.	.	.	.	.	.	.
Allow No Coord Phase	.	.	.	.	.	.	.	.	.
Coord Now	.	.	.	.	.	.	.	.	.

Ring Plans

Ring Plan 1

Ring	Offset	Early Gap
1		
2		
3		
4		

Ring Plan 2

Ring	Offset	Early Gap
1		
2		
3		
4		

Ring Plan 3

Ring	Offset	Early Gap
1		
2		
3		
4		

Ring Plan 4

Ring	Offset	Early Gap
1		
2		
3		
4		

Ring Plan 5

Ring	Offset	Early Gap
1		
2		
3		
4		

Ring Plan 6

Ring	Offset	Early Gap
1		
2		
3		
4		

Ring Plan 7

Ring	Offset	Early Gap
1		
2		
3		
4		

Ring Plan 8

Ring	Offset	Early Gap
1		
2		
3		
4		

Ring Plan 9

Ring	Offset	Early Gap
1		
2		
3		
4		

Scheduler Configuration

Schedule 1

Status	Enabled

Month of Year											
J	F	M	A	M	J	J	A	S	O	N	D
X	X	X	X	X	X	X	X	X	X	X	X

Description	Weekday

Days of Week						
S	M	T	W	T	F	S
.	X	X	X	X	X	.

Day Plan	1

Days of Month																														
1										1										2										3
1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Schedule 2

Status	Enabled

Month of Year											
J	F	M	A	M	J	J	A	S	O	N	D
X	X	X	X	X	X	X	X	X	X	X	X

Description	Weekend

Days of Week						
S	M	T	W	T	F	S
X	.	.	.	.	.	X

Day Plan	2

Days of Month																														
1										1										2										3
1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Schedule 3

Status	Disabled

Month of Year											
J	F	M	A	M	J	J	A	S	O	N	D
.	.	.	.	.	.	.	.	.	.	.	.

Description	

Days of Week						
S	M	T	W	T	F	S
.	.	.	.	.	.	.

Day Plan	0

Days of Month																														
1										1										2										3
1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1
.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Day Plans

Day Plan 1

Event	HR	MIN	ACT	Description
1	6		1	
2	7		3	
3	8	30	1	
4	9		64	Free
5	11		2	
6	14		8	
7	19		64	Free
8				
9				
10				

Day Plan 2

Event	HR	MIN	ACT	Description
1	10		2	
2	18		64	Free
3				
4				
5				
6				
7				
8				
9				
10				

Day Plan 3

Event	HR	MIN	ACT	Description
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Action Commands

Action	Command	Index
1	None	
2	None	
3	None	
4	None	
5	None	

Action	Command	Index
6	None	
7	None	
8	None	
9	None	
10	None	

Action	Command	Index
11	None	
12	None	
13	None	
14	None	
15	None	

Action	Command	Index
16	None	
17	None	
18	None	
19	None	
20	None	

Actions

		Aux			Special Functions						
Action	Pattern	1	2	3	1	2	3	4	5	6	7	8
1	Pattern 1	.	.	.	.	.	.	.	.	.	.	.
2	Pattern 2	.	.	.	.	.	.	.	.	.	.	.
3	Pattern 3	.	.	.	.	.	.	.	.	.	.	.
4	Pattern 4	.	.	.	.	.	.	.	.	.	.	.
5	Pattern 5	.	.	.	.	.	.	.	.	.	.	.
6	Pattern 6	.	.	.	.	.	.	.	.	.	.	.
7	Pattern 7	.	.	.	.	.	.	.	.	.	.	.
8	Pattern 8	.	.	.	.	.	.	.	.	.	.	.
9	Pattern 9	.	.	.	.	.	.	.	.	.	.	.
10	Pattern 10	.	.	.	.	.	.	.	.	.	.	.
11	None	.	.	.	.	.	.	.	.	.	.	.
12	None	.	.	.	.	.	.	.	.	.	.	.
13	None	.	.	.	.	.	.	.	.	.	.	.
14	None	.	.	.	.	.	.	.	.	.	.	.
15	None	.	.	.	.	.	.	.	.	.	.	.
16	None	.	.	.	.	.	.	.	.	.	.	.
17	None	.	.	.	.	.	.	.	.	.	.	.
18	None	.	.	.	.	.	.	.	.	.	.	.
19	None	.	.	.	.	.	.	.	.	.	.	.
20	None	.	.	.	.	.	.	.	.	.	.	.
64	Free	.	.	.	.	.	.	.	.	.	.	.

Preempt Configuration

Preemption Configuration

Preempt	1	2	3	4	5	6
Enabled	Enabled	Disabled	Disabled	Disabled	Disabled	Disabled
Type	Rail Road	Rail Road	Emergency Veh	Emergency Veh	Emergency Veh	Emergency Veh
Description	BBS Low Battery					
Track Phase						
Track 2 Phases						
Track Overlap						
Track 2 Overlap						
Dwell Phase			2,5	4,7	1,6	3,8
Dwell Ped						
Dwell Overlap						
Cycling Phase						
Cycling Ped						
Cycling Overlap						
Exit Phase						
Exit Overlaps						
Recovery Exit Omit						

Preemption Options

Preempt	1	2	3	4	5	6
Non Lock Mem	.	.	X	X	X	X
Not Overide Flash	.	.	X	X	X	X
Not Overide Next Preempt	.	.	X	X	X	X
Flash Dwell	.	.	.	.	.	.
Ped Recycle in Dwell Cycle	.	.	.	.	.	.
Immediate Ped Clear	.	.	.	.	.	.
Dwell Only Status Output	.	.	.	.	.	.
All Red Flash Dwell	X	.	.	.	.	.
Allow All Overlaps	.	.	.	.	.	.
Require All Red Entry	.	.	.	.	.	.
Require Gate Down Track Exit	.	.	.	.	.	.
Require Gate Up Dwell Exit	.	.	.	.	.	.
Use Normal On/Normal Off Input	.	.	.	.	.	.

Preemption Parameters

Preempt	1	2	3	4	5	6
Link						
Delay						
Min Duration						
Min Presence						
Max Presence			255	255	255	255
Max Presence Action	Terminate	Terminate	All Red Flash	All Red Flash	All Red Flash	All Red Flash
Enter Min Green						
Enter Yellow Change	25.5	25.5	25.5	25.5	25.5	25.5
Enter Red Clear	25.5	25.5	25.5	25.5	25.5	25.5
Enter Min Walk						
Enter Ped Clear			255	255	255	255
Track Green						
Track Yellow Change	25.5	25.5	25.5	25.5	25.5	25.5
Track Red Clear	25.5	25.5	25.5	25.5	25.5	25.5
Track 2 Green						
Track 2 Yellow	25.5	25.5	25.5	25.5	25.5	25.5
Track 2 Red	25.5	25.5	25.5	25.5	25.5	25.5
Track Ext. Gate Down						

Preempt Parameters

Preempt	1	2	3	4	5	6
Dwell Green			5	5	5	5
Exit Ped Clear	255	255	255	255	255	255
Exit Yellow Change	25.5	25.5	25.5	25.5	25.5	25.5
Exit Red Clear	25.5	25.5	25.5	25.5	25.5	25.5
Dwell Ext Time						
Max Exit Green						
Exit Type	Exit Phases	Exit Phases	st Phase Skip	st Phase Skip	st Phase Skip	st Phase Skip
Exit Max Mode	Disabled	Disabled	Disabled	Disabled	Disabled	Disabled
Exit Max Apply Time						
Veh Exit Calls						
Ped Exit Calls						

Advanced I/O Configuration

Channel Configuration

Ch	Control Type	Source
1	Phase Vehicle	1
2	Phase Vehicle	2
3	Phase Vehicle	3
4	Phase Vehicle	4
5	Phase Vehicle	5
6	Phase Vehicle	6
7	Phase Vehicle	7
8	Phase Vehicle	8

Ch	Control Type	Source
9	None	
10	None	
11	None	
12	None	
13	Phase Ped	2
14	Phase Ped	4
15	Phase Ped	6
16	Phase Ped	8

Concurrency Mode

Concurrency Mode
Auto

Auto Concurrency

Ch	Concurrency
1	5,6,15
2	5,6,13,15
3	
4	14
5	13
6	13,15
7	
8	16
9	
10	
11	
12	
13	15
14	
15	
16	

Channel Options

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flash Yellow	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Flash Red	X	X	X	X	X	X	X	X	.	.	.	.	.	.	.	.
Flash Alternate Half Hertz	X	.	.	X	X	.	.	X	.	.	.	.	.	.	.	.

Cabinet Configuration

IO Modules

IO Module	Type
1	Caltrans 332

Input Points

Input	C1 Pin	Input Type	Idx
1	C1-39	Vehicle Det Call	2
2	C1-40	Vehicle Det Call	16
3	C1-41	Vehicle Det Call	8
4	C1-42	Vehicle Det Call	22
5	C1-43	Vehicle Det Call	3
6	C1-44	Vehicle Det Call	17
7	C1-45	Vehicle Det Call	9
8	C1-46	Vehicle Det Call	23
9	C1-47	Vehicle Det Call	6
10	C1-48	Vehicle Det Call	20
11	C1-49	Vehicle Det Call	12
12	C1-50	Vehicle Det Call	26
13	C1-51	Preempt Input	1
14	C1-52	Preempt Input	2
15	C1-53	Unit Manual Control Enable	1
16	C1-54	Not Active	

Input	C1 Pin	Input Type	Idx
17	C1-55	Vehicle Det Call	15
18	C1-56	Vehicle Det Call	1
19	C1-57	Vehicle Det Call	21
20	C1-58	Vehicle Det Call	7
21	C1-59	Vehicle Det Call	27
22	C1-60	Vehicle Det Call	13
23	C1-61	Vehicle Det Call	28
24	C1-62	Vehicle Det Call	14
25	C11-10	Not Active	
26	C11-11	Not Active	
27	C11-12	Not Active	
28	C11-13	Not Active	
29	C1-63	Vehicle Det Call	4
30	C1-64	Vehicle Det Call	18
31	C1-65	Vehicle Det Call	10
32	C1-66	Vehicle Det Call	24

Input	C1 Pin	Input Type	Idx
33	C1-67	Ped Det Call	2
34	C1-68	Ped Det Call	6
35	C1-69	Ped Det Call	4
36	C1-70	Ped Det Call	8
37	C1-71	Preempt High Prioritor Lov	3
38	C1-72	Preempt High Prioritor Lov	4
39	C1-73	Preempt High Prioritor Lov	5
40	C1-74	Preempt High Prioritor Lov	6
41	C1-75	Not Active	
42	C1-76	Vehicle Det Call	5
43	C1-77	Vehicle Det Call	19
44	C1-78	Vehicle Det Call	11
45	C1-79	Vehicle Det Call	25
46	C1-80	Unit Interval Advance	1
47	C1-81	Unit Local Flash Sense	1
48	C1-82	Unit Stop Time	1

Input	C1 Pin	Input Type	Idx
49	C11-15	Not Active	
50	C11-16	Not Active	
51	C11-17	Not Active	
52	C11-18	Not Active	
53	C11-19	Not Active	
54	C11-20	Not Active	
55	C11-21	Not Active	
56	C11-22	Not Active	
57	C11-23	Not Active	
58	C11-24	Not Active	
59	C11-25	Not Active	
60	C11-26	Not Active	
61	C11-27	Not Active	
62	C11-28	Not Active	
63	C11-29	Not Active	
64	C11-30	Not Active	

Cabinet Configuration

Output Points

Output	C1 Pin	Output Type	Idx
1	C1-2	Channel Red Do Not Walk Driver	14
2	C1-3	Channel Green Walk Driver	14
3	C1-4	Channel Red Do Not Walk Driver	4
4	C1-5	Channel Yellow Ped Clear Driver	4
5	C1-6	Channel Green Walk Driver	4
6	C1-7	Channel Red Do Not Walk Driver	3
7	C1-8	Channel Yellow Ped Clear Driver	3
8	C1-9	Channel Green Walk Driver	3
9	C1-10	Channel Red Do Not Walk Driver	13
10	C1-11	Channel Green Walk Driver	13
11	C1-12	Channel Red Do Not Walk Driver	2
12	C1-13	Channel Yellow Ped Clear Driver	2
13	C1-15	Channel Green Walk Driver	2
14	C1-16	Channel Red Do Not Walk Driver	1
15	C1-17	Channel Yellow Ped Clear Driver	1
16	C1-18	Channel Green Walk Driver	1
17	C1-19	Channel Red Do Not Walk Driver	16
18	C1-20	Channel Green Walk Driver	16
19	C1-21	Channel Red Do Not Walk Driver	8
20	C1-22	Channel Yellow Ped Clear Driver	8
21	C1-23	Channel Green Walk Driver	8
22	C1-24	Channel Red Do Not Walk Driver	7
23	C1-25	Channel Yellow Ped Clear Driver	7
24	C1-26	Channel Green Walk Driver	7
25	C1-27	Channel Red Do Not Walk Driver	15
26	C1-28	Channel Green Walk Driver	15
27	C1-29	Channel Red Do Not Walk Driver	6
28	C1-30	Channel Yellow Ped Clear Driver	6
29	C1-31	Channel Green Walk Driver	6
30	C1-32	Channel Red Do Not Walk Driver	5
31	C1-33	Channel Yellow Ped Clear Driver	5
32	C1-34	Channel Green Walk Driver	5

Output	C1 Pin	Output Type	Idx
33	C1-35	Not Active	
34	C1-36	Not Active	
35	C1-37	Not Active	
36	C1-38	Not Active	
37	C1-100	Channel Yellow Ped Clear Driver	18
38	C1-101	Channel Yellow Ped Clear Driver	17
39	C1-102	Detector Reset	1
40	C1-103	Watchdog	
41	C1-83	Channel Red Do Not Walk Driver	18
42	C1-84	Channel Green Walk Driver	18
43	C1-85	Channel Red Do Not Walk Driver	12
44	C1-86	Channel Yellow Ped Clear Driver	12
45	C1-87	Channel Green Walk Driver	12
46	C1-88	Channel Red Do Not Walk Driver	11
47	C1-89	Channel Yellow Ped Clear Driver	11
48	C1-90	Channel Green Walk Driver	11
49	C1-91	Channel Red Do Not Walk Driver	17
50	C1-93	Channel Green Walk Driver	17
51	C1-94	Channel Red Do Not Walk Driver	10
52	C1-95	Channel Yellow Ped Clear Driver	10
53	C1-96	Channel Green Walk Driver	10
54	C1-97	Channel Red Do Not Walk Driver	9
55	C1-98	Channel Yellow Ped Clear Driver	9
56	C1-99	Channel Green Walk Driver	9
57	C11-1	Not Active	
58	C11-2	Not Active	
59	C11-3	Not Active	
60	C11-4	Not Active	
61	C11-5	Not Active	
62	C11-6	Not Active	
63	C11-7	Not Active	
64	C11-8	Not Active	

User Programs

Program 1

Enabled

Line	Result	Idx	Operation	Parameter A	Idx	Parameter B	Idx	Dly	Ext	Description
1	Unit Stop Time	1	Result=A	Aux Switch State						AUX switch stop time
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
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35										
36										
37										
38										
39										
40										

Appendix D - NCTD Route Information

NORTH COUNTY TRANSIT DISTRICT

COASTER STATIONS		ZONES
Oceanside Transit Center	195 S. Tremont Street, Oceanside, CA 92054 *(South Tremont Street between Topeka St. and Michigan Ave.)*	North County - Zone 1
Carlsbad Village	2775 State Street, Carlsbad, CA 92008 *(State St. & Grand Ave.)*	
Carlsbad Poinsettia	6511 Avenida Encinas, Carlsbad, CA 92011 *(Avenida Encinas just north of Embarcadero Ln.)*	
Encinitas	25 East "D" Street, Encinitas, CA 92024 *(D Street & S. Vulcan Ave.)*	
Solana Beach	105 N. Cedros Avenue, Solana Beach, CA 92075 *(North Cedros Ave. & Lomas Santa Fe Dr.)*	
Sorrento Valley	11170 Sorrento Valley Road, San Diego,CA 92121 *(Sorrento Valley Rd. between Carmel Mountain Rd. and Sorrento Valley Blvd.)*	Sorrento Valley - Zone 2
Old Town Transit Center	4005 Taylor Street, San Diego, CA 92110 *(Taylor St. & Pacific Hwy.)*	San Diego - Zone 3
Santa Fe Depot	1050 Kettner Boulevard, San Diego, CA 92101 *(West Broadway & Kettner Blvd.)*	

SPRINTER STATIONS	
Oceanside Transit Center	195 S. Tremont Street, Oceanside, CA 92054
Coast Highway Station	1304 ½ S. Tremont Street, Oceanside, CA 92054
Crouch Street Station	609 Crouch Street, Oceanside, CA 92054
El Camino Real Station	1505 El Camino Real, Oceanside, CA 92054
Rancho Del Oro Station	3513 Oceanside Boulevard, Oceanside, CA 92056
College Boulevard Station	4103 ½ Oceanside Boulevard, Oceanside, CA 92056 *No overnight parking.*
Melrose Drive Station	1495 ½ N. Melrose Drive, Oceanside, CA 92056
Vista Transit Center	240 N. Santa Fe Road., Vista, CA 92083
Civic Center-Vista Station	810 Phillips Street, Vista, CA 92083
Buena Creek Station	1923 Buena Creek Road, San Diego, CA 92084
Palomar College Station	1142 W. Armorlite Drive, San Marcos, CA 92069 *Free parking behind the station, accessible from Armorlite Drive, just west of the Bingham Drive intersection.*
San Marcos Civic Center Station	40 W. San Marcos Boulevard, San Marcos, CA 92069 *No parking available.*
Cal State San Marcos Station	410 La Moree Road, San Marcos, CA 92069 *No parking available.*
Nordahl Road Station	2121 Barham Drive, Escondido, CA 92025
Escondido Transit Center	796 W. Valley Parkway, Escondido, CA 92025

NORTH COUNTY TRANSIT DISTRICT SYSTEM MAP LEGEND

GoNCTD.com | (760) 966-6500

BREEZE Bus Route Finder

- 101 Oceanside to VA/UCSD/UTC via Hwy. 101
- 302 Oceanside to Vista via Vista Way
- 303 Oceanside to Vista via Town Center North
- 304 Encinitas to San Marcos via Rancho Santa Fe Rd.
- 305 Escondido to Vista via Mission Rd. & S. Santa Fe Ave.
- 306 Fallbrook to Vista via Mission Rd.
- 308 Solana Beach to Escondido via Del Dios Hwy.
- 309 Oceanside to Encinitas via El Camino Real
- 311 San Luis Rey Transit Center to Rancho Del Oro SPRINTER Station via Douglas Dr.
- 313 Oceanside Transit Center to San Luis Rey Transit Center via Mesa Dr.
- 315 Carlsbad Village Station to 14 Area
- 318 Oceanside to Vista via Oceanside Blvd. & Bobier Dr.
- 323 College Blvd. SPRINTER Station to Quarry Creek
- 325 Carlsbad Village to College Blvd. SPRINTER Station
- 332 Vista to Buena Creek SPRINTER Station via Vista Business Park
- 334 Vista Circulator
- 347 Cal State San Marcos to Palomar College
- 350 Escondido to Del Lago Transit Station via Westfield North County Mall
- 351 352 Escondido Circulator
- 353 Escondido Transit Center to Nordahl Marketplace via Citracado Pkwy.
- 354 Orange Glen High School via Mission, Lincoln & Citrus
- 355 357 El Norte Pkwy. & Valley Pkwy.
- 356 Morning View Dr., El Norte Pkwy. & Escondido Blvd.
- 358 359 N. Broadway, Country Club & El Norte Pkwy.
- 388 Escondido to Pala
- 444 Carlsbad Poinsettia COASTER Connection via Faraday Ave. & Rutherford Rd.
- 445 Carlsbad Poinsettia COASTER Connection to Palomar College

FLEX Route Finder

- 371 FLEX FLEX Ramona Commuter
- 372 FLEX FLEX Ramona Midday*
- 392 FLEX Oceanside to 14 Area via Vandergrift
- 395 FLEX Oceanside Transit Center to Camp San Onofre via Naval Hospital

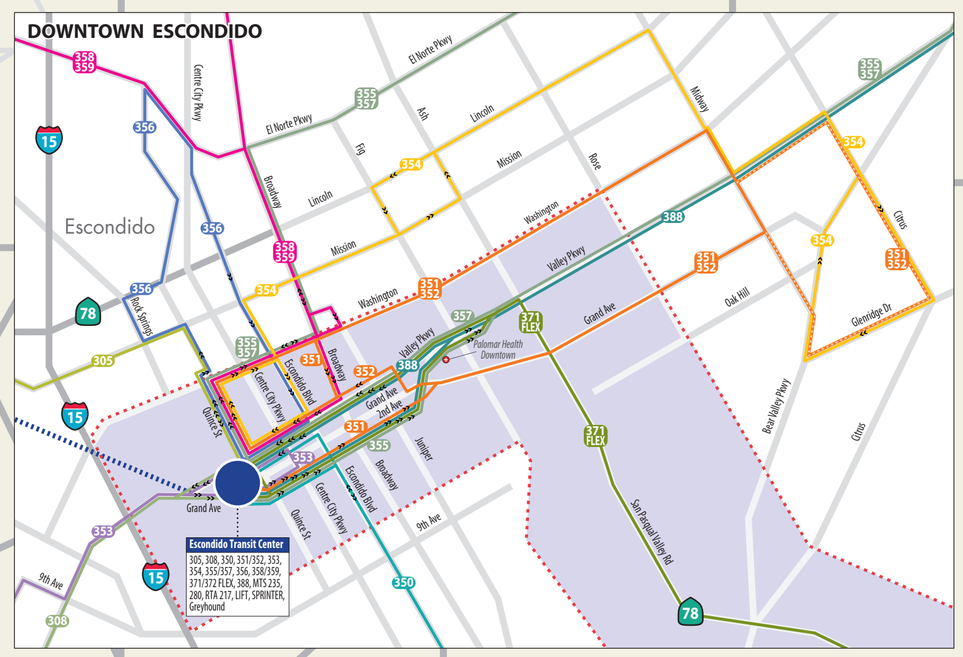
*** Reservation required. Call (855) 844-1454.**
* Se requieren reservaciones. Llame al (855) 844-1454.

Metropolitan Transit System (MTS) Bus Route Finder

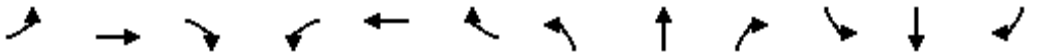
- 972 Sorrento Mesa (MTS)
- 973 Carroll Canyon (MTS)
- 974 UC San Diego (MTS)
- 978 Torrey Pines (MTS)
- 979 North University City (MTS)

- COASTER Station
- SPRINTER Station
- Regular Service
- Limited Service (selected trips)
- Points of Interest
- School/Academic Institution
- Medical Facility

Map not to scale
Updated: April 2021



Appendix E - Peak Hour Intersection Capacity Worksheets Existing Conditions



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	3	4	205	2	73	8	990	131	103	1466	12
Future Volume (veh/h)	0	3	4	205	2	73	8	990	131	103	1466	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	3	4	144	106	67	9	1053	123	110	1560	13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	6	8	215	129	82	19	3047	355	83	3620	30
Arrive On Green	0.00	0.01	0.01	0.12	0.12	0.12	0.01	0.66	0.66	0.05	0.69	0.69
Sat Flow, veh/h	0	727	969	1781	1071	677	1781	4636	541	1781	5223	44
Grp Volume(v), veh/h	0	0	7	144	0	173	9	773	403	110	1017	556
Grp Sat Flow(s),veh/h/ln	0	0	1696	1781	0	1748	1781	1702	1773	1781	1702	1863
Q Serve(g_s), s	0.0	0.0	0.5	9.3	0.0	11.6	0.6	12.1	12.1	5.6	15.7	15.7
Cycle Q Clear(g_c), s	0.0	0.0	0.5	9.3	0.0	11.6	0.6	12.1	12.1	5.6	15.7	15.7
Prop In Lane	0.00		0.57	1.00		0.39	1.00		0.31	1.00		0.02
Lane Grp Cap(c), veh/h	0	0	15	215	0	211	19	2237	1165	83	2359	1291
V/C Ratio(X)	0.00	0.00	0.48	0.67	0.00	0.82	0.47	0.35	0.35	1.32	0.43	0.43
Avail Cap(c_a), veh/h	0	0	147	377	0	370	143	2237	1165	83	2359	1291
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	59.2	50.5	0.0	51.5	59.0	9.1	9.1	57.2	8.1	8.1
Incr Delay (d2), s/veh	0.0	0.0	16.6	2.7	0.0	5.8	6.4	0.4	0.8	207.6	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.3	4.3	0.0	5.5	0.3	4.2	4.5	7.3	5.2	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	75.9	53.1	0.0	57.2	65.4	9.5	9.9	264.8	8.6	9.1
LnGrp LOS	A	A	E	D	A	E	E	A	A	F	A	A
Approach Vol, veh/h		7			317			1185			1683	
Approach Delay, s/veh		75.9			55.4			10.1			25.5	
Approach LOS		E			E			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	84.3		5.6	6.7	88.6		19.1				
Change Period (Y+Rc), s	5.4	5.4		4.6	5.4	5.4		4.6				
Max Green Setting (Gmax), s	5.6	43.6		10.4	9.6	54.6		25.4				
Max Q Clear Time (g_c+I1), s	7.6	14.1		2.5	2.6	17.7		13.6				
Green Ext Time (p_c), s	0.0	10.6		0.0	0.0	16.9		0.9				

Intersection Summary			
HCM 6th Ctrl Delay		22.9	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	9	6	92	4	2	87
Future Vol, veh/h	9	6	92	4	2	87
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	7	114	5	2	107
Number of Lanes	1	0	0	1	1	0

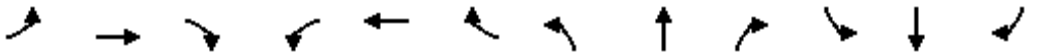
Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.1	8.1	7.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	2%	0%	96%
Vol Thru, %	0%	60%	4%
Vol Right, %	98%	40%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	89	15	96
LT Vol	2	0	92
Through Vol	0	9	4
RT Vol	87	6	0
Lane Flow Rate	110	19	119
Geometry Grp	1	1	1
Degree of Util (X)	0.109	0.02	0.143
Departure Headway (Hd)	3.586	3.978	4.333
Convergence, Y/N	Yes	Yes	Yes
Cap	983	893	827
Service Time	1.667	2.034	2.359
HCM Lane V/C Ratio	0.112	0.021	0.144
HCM Control Delay	7.1	7.1	8.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.1	0.5

Intersection	
Intersection Delay, s/veh	4.9
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	92	222	362
Demand Flow Rate, veh/h	94	227	370
Vehicles Circulating, veh/h	337	55	42
Vehicles Exiting, veh/h	75	376	240
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.6	4.3	5.3
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	94	227	370
Cap Entry Lane, veh/h	979	1305	1322
Entry HV Adj Factor	0.979	0.980	0.979
Flow Entry, veh/h	92	222	362
Cap Entry, veh/h	958	1278	1295
V/C Ratio	0.096	0.174	0.280
Control Delay, s/veh	4.6	4.3	5.3
LOS	A	A	A
95th %tile Queue, veh	0	1	1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	14	183	2	100	12	1843	321	109	1062	10
Future Volume (veh/h)	0	1	14	183	2	100	12	1843	321	109	1062	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1	14	146	60	102	12	1881	328	111	1084	10
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	2	24	207	72	123	24	2941	505	77	3654	34
Arrive On Green	0.00	0.02	0.02	0.12	0.12	0.12	0.01	0.67	0.67	0.04	0.70	0.70
Sat Flow, veh/h	0	107	1495	1781	622	1058	1781	4385	753	1781	5218	48
Grp Volume(v), veh/h	0	0	15	146	0	162	12	1454	755	111	707	387
Grp Sat Flow(s),veh/h/ln	0	0	1601	1781	0	1680	1781	1702	1735	1781	1702	1862
Q Serve(g_s), s	0.0	0.0	1.2	10.3	0.0	12.3	0.9	31.9	33.0	5.6	10.2	10.2
Cycle Q Clear(g_c), s	0.0	0.0	1.2	10.3	0.0	12.3	0.9	31.9	33.0	5.6	10.2	10.2
Prop In Lane	0.00		0.93	1.00		0.63	1.00		0.43	1.00		0.03
Lane Grp Cap(c), veh/h	0	0	26	207	0	195	24	2283	1163	77	2384	1304
V/C Ratio(X)	0.00	0.00	0.58	0.70	0.00	0.83	0.50	0.64	0.65	1.45	0.30	0.30
Avail Cap(c_a), veh/h	0	0	128	348	0	328	132	2283	1163	77	2384	1304
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	63.5	55.3	0.0	56.2	63.7	12.3	12.5	62.2	7.4	7.4
Incr Delay (d2), s/veh	0.0	0.0	14.5	3.2	0.0	6.6	5.8	1.4	2.8	259.7	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.6	4.8	0.0	5.6	0.4	11.3	12.4	8.0	3.4	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	78.0	58.5	0.0	62.8	69.5	13.7	15.3	321.9	7.7	8.0
LnGrp LOS	A	A	E	E	A	E	E	B	B	F	A	A
Approach Vol, veh/h		15			308			2221			1205	
Approach Delay, s/veh		78.0			60.8			14.5			36.7	
Approach LOS		E			E			B			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	92.6		6.7	7.2	96.4		19.7				
Change Period (Y+Rc), s	5.4	5.4		4.6	5.4	5.4		4.6				
Max Green Setting (Gmax), s	5.6	53.6		10.4	9.6	64.6		25.4				
Max Q Clear Time (g_c+I1), s	7.6	35.0		3.2	2.9	12.2		14.3				
Green Ext Time (p_c), s	0.0	15.4		0.0	0.0	10.8		0.9				

Intersection Summary		
HCM 6th Ctrl Delay		25.7
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	11	11	159	10	11	147
Future Vol, veh/h	11	11	159	10	11	147
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	12	169	11	12	156
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.3	8.8	7.7
HCM LOS	A	A	A

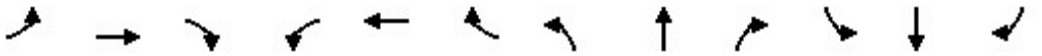
Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	7%	0%	94%
Vol Thru, %	0%	50%	6%
Vol Right, %	93%	50%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	158	22	169
LT Vol	11	0	159
Through Vol	0	11	10
RT Vol	147	11	0
Lane Flow Rate	168	23	180
Geometry Grp	1	1	1
Degree of Util (X)	0.181	0.027	0.222
Departure Headway (Hd)	3.868	4.179	4.436
Convergence, Y/N	Yes	Yes	Yes
Cap	933	859	802
Service Time	1.87	2.191	2.505
HCM Lane V/C Ratio	0.18	0.027	0.224
HCM Control Delay	7.7	7.3	8.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.1	0.8

Intersection	
Intersection Delay, s/veh	7.4
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	248	542	508
Demand Flow Rate, veh/h	253	553	518
Vehicles Circulating, veh/h	462	137	58
Vehicles Exiting, veh/h	114	578	632
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.5	8.0	6.7
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	253	553	518
Cap Entry Lane, veh/h	861	1200	1301
Entry HV Adj Factor	0.980	0.981	0.981
Flow Entry, veh/h	248	542	508
Cap Entry, veh/h	844	1177	1275
V/C Ratio	0.294	0.461	0.398
Control Delay, s/veh	7.5	8.0	6.7
LOS	A	A	A
95th %tile Queue, veh	1	2	2

Appendix F - Peak Hour Intersection Capacity Worksheets Existing with Project Conditions



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	3	4	223	2	91	8	990	136	107	1466	12
Future Volume (veh/h)	0	3	4	223	2	91	8	990	136	107	1466	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	3	4	163	106	86	9	1053	129	114	1560	13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	6	8	237	127	103	19	2973	364	83	3556	30
Arrive On Green	0.00	0.01	0.01	0.13	0.13	0.13	0.01	0.64	0.64	0.05	0.68	0.68
Sat Flow, veh/h	0	727	969	1781	956	775	1781	4609	564	1781	5223	44
Grp Volume(v), veh/h	0	0	7	163	0	192	9	777	405	114	1017	556
Grp Sat Flow(s),veh/h/ln	0	0	1696	1781	0	1731	1781	1702	1769	1781	1702	1863
Q Serve(g_s), s	0.0	0.0	0.5	10.5	0.0	13.0	0.6	12.6	12.6	5.6	16.3	16.3
Cycle Q Clear(g_c), s	0.0	0.0	0.5	10.5	0.0	13.0	0.6	12.6	12.6	5.6	16.3	16.3
Prop In Lane	0.00		0.57	1.00		0.45	1.00		0.32	1.00		0.02
Lane Grp Cap(c), veh/h	0	0	15	237	0	230	19	2195	1141	83	2318	1268
V/C Ratio(X)	0.00	0.00	0.48	0.69	0.00	0.83	0.47	0.35	0.35	1.37	0.44	0.44
Avail Cap(c_a), veh/h	0	0	147	377	0	366	143	2195	1141	83	2318	1268
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	59.2	49.6	0.0	50.7	59.0	9.8	9.8	57.2	8.7	8.7
Incr Delay (d2), s/veh	0.0	0.0	16.6	2.6	0.0	7.2	6.4	0.4	0.9	226.2	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.3	4.9	0.0	6.1	0.3	4.4	4.7	7.7	5.5	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	75.9	52.3	0.0	57.9	65.4	10.3	10.7	283.4	9.3	9.8
LnGrp LOS	A	A	E	D	A	E	E	B	B	F	A	A
Approach Vol, veh/h		7			355			1191			1687	
Approach Delay, s/veh		75.9			55.3			10.8			28.0	
Approach LOS		E			E			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	82.8		5.6	6.7	87.1		20.6				
Change Period (Y+Rc), s	5.4	5.4		4.6	5.4	5.4		4.6				
Max Green Setting (Gmax), s	5.6	43.6		10.4	9.6	54.6		25.4				
Max Q Clear Time (g_c+I1), s	7.6	14.6		2.5	2.6	18.3		15.0				
Green Ext Time (p_c), s	0.0	10.6		0.0	0.0	16.8		1.0				

Intersection Summary			
HCM 6th Ctrl Delay		24.8	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	18	6	93	40	4	89
Future Vol, veh/h	18	6	93	40	4	89
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	7	115	49	5	110
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.3	8.4	7.3
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	4%	0%	70%
Vol Thru, %	0%	75%	30%
Vol Right, %	96%	25%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	93	24	133
LT Vol	4	0	93
Through Vol	0	18	40
RT Vol	89	6	0
Lane Flow Rate	115	30	164
Geometry Grp	1	1	1
Degree of Util (X)	0.122	0.034	0.196
Departure Headway (Hd)	3.811	4.113	4.298
Convergence, Y/N	Yes	Yes	Yes
Cap	946	858	831
Service Time	1.811	2.197	2.345
HCM Lane V/C Ratio	0.122	0.035	0.197
HCM Control Delay	7.3	7.3	8.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.1	0.7

Intersection	
Intersection Delay, s/veh	5.0
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	131	228	367
Demand Flow Rate, veh/h	133	233	375
Vehicles Circulating, veh/h	337	74	48
Vehicles Exiting, veh/h	86	396	259
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.0	4.4	5.3
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	133	233	375
Cap Entry Lane, veh/h	979	1280	1314
Entry HV Adj Factor	0.985	0.980	0.980
Flow Entry, veh/h	131	228	367
Cap Entry, veh/h	964	1254	1287
V/C Ratio	0.136	0.182	0.285
Control Delay, s/veh	5.0	4.4	5.3
LOS	A	A	A
95th %tile Queue, veh	0	1	1

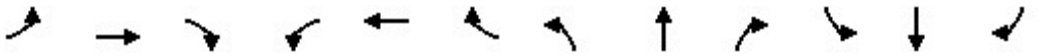
Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	96	9	9	66	36	35
Future Vol, veh/h	96	9	9	66	36	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	117	11	11	80	44	43

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	128	0	225	123
Stage 1	-	-	-	-	123	-
Stage 2	-	-	-	-	102	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1458	-	763	928
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	922	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1458	-	757	928
Mov Cap-2 Maneuver	-	-	-	-	757	-
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	915	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	833	-	-	1458	-
HCM Lane V/C Ratio	0.104	-	-	0.008	-
HCM Control Delay (s)	9.8	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1	14	191	2	107	12	1843	339	126	1062	10
Future Volume (veh/h)	0	1	14	191	2	107	12	1843	339	126	1062	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	1	14	148	68	99	12	1881	310	129	1084	10
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	2	24	211	82	119	24	2957	481	77	3641	34
Arrive On Green	0.00	0.02	0.02	0.12	0.12	0.12	0.01	0.67	0.67	0.04	0.70	0.70
Sat Flow, veh/h	0	107	1495	1781	688	1002	1781	4425	720	1781	5218	48
Grp Volume(v), veh/h	0	0	15	148	0	167	12	1441	750	129	707	387
Grp Sat Flow(s),veh/h/ln	0	0	1601	1781	0	1690	1781	1702	1741	1781	1702	1862
Q Serve(g_s), s	0.0	0.0	1.2	10.4	0.0	12.6	0.9	31.7	32.6	5.6	10.3	10.3
Cycle Q Clear(g_c), s	0.0	0.0	1.2	10.4	0.0	12.6	0.9	31.7	32.6	5.6	10.3	10.3
Prop In Lane	0.00		0.93	1.00		0.59	1.00		0.41	1.00		0.03
Lane Grp Cap(c), veh/h	0	0	26	211	0	201	24	2275	1163	77	2375	1299
V/C Ratio(X)	0.00	0.00	0.58	0.70	0.00	0.83	0.50	0.63	0.64	1.68	0.30	0.30
Avail Cap(c_a), veh/h	0	0	128	348	0	330	132	2275	1163	77	2375	1299
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	63.5	55.1	0.0	56.0	63.7	12.4	12.6	62.2	7.5	7.5
Incr Delay (d2), s/veh	0.0	0.0	14.5	3.1	0.0	6.9	5.8	1.4	2.8	356.3	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.6	4.9	0.0	5.8	0.4	11.2	12.3	10.1	3.5	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	78.0	58.2	0.0	63.0	69.5	13.8	15.3	418.5	7.8	8.1
LnGrp LOS	A	A	E	E	A	E	E	B	B	F	A	A
Approach Vol, veh/h		15			315			2203			1223	
Approach Delay, s/veh		78.0			60.7			14.6			51.2	
Approach LOS		E			E			B			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	92.3		6.7	7.2	96.1		20.0				
Change Period (Y+Rc), s	5.4	5.4		4.6	5.4	5.4		4.6				
Max Green Setting (Gmax), s	5.6	53.6		10.4	9.6	64.6		25.4				
Max Q Clear Time (g_c+I1), s	7.6	34.6		3.2	2.9	12.3		14.6				
Green Ext Time (p_c), s	0.0	15.5		0.0	0.0	10.8		0.9				

Intersection Summary			
HCM 6th Ctrl Delay		30.6	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	46	13	161	25	12	148
Future Vol, veh/h	46	13	161	25	12	148
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	14	171	27	13	157
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.8	9	7.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	7%	0%	87%
Vol Thru, %	0%	78%	13%
Vol Right, %	93%	22%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	160	59	186
LT Vol	12	0	161
Through Vol	0	46	25
RT Vol	148	13	0
Lane Flow Rate	170	63	198
Geometry Grp	1	1	1
Degree of Util (X)	0.189	0.076	0.245
Departure Headway (Hd)	4.002	4.383	4.456
Convergence, Y/N	Yes	Yes	Yes
Cap	900	820	793
Service Time	2.006	2.398	2.55
HCM Lane V/C Ratio	0.189	0.077	0.25
HCM Control Delay	7.9	7.8	9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.2	1

Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	264	561	527
Demand Flow Rate, veh/h	269	573	537
Vehicles Circulating, veh/h	462	144	78
Vehicles Exiting, veh/h	153	587	639
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.7	8.3	7.1
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	269	573	537
Cap Entry Lane, veh/h	861	1191	1274
Entry HV Adj Factor	0.981	0.980	0.981
Flow Entry, veh/h	264	561	527
Cap Entry, veh/h	845	1167	1250
V/C Ratio	0.312	0.481	0.421
Control Delay, s/veh	7.7	8.3	7.1
LOS	A	A	A
95th %tile Queue, veh	1	3	2

Intersection	
Int Delay, s/veh	1.6

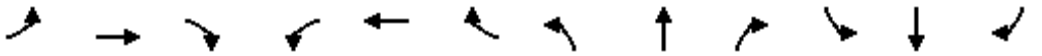
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	158	35	35	103	15	15
Future Vol, veh/h	158	35	35	103	15	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	165	36	36	107	16	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	201	0	362	183
Stage 1	-	-	-	-	183	-
Stage 2	-	-	-	-	179	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1371	-	637	859
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	852	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1371	-	619	859
Mov Cap-2 Maneuver	-	-	-	-	619	-
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	828	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	720	-	-	1371	-
HCM Lane V/C Ratio	0.043	-	-	0.027	-
HCM Control Delay (s)	10.2	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Appendix G - Peak Hour Intersection Capacity Worksheets Near-Term Year 2023 Base Conditions



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	4	5	210	3	75	9	1010	134	106	1496	13
Future Volume (veh/h)	0	4	5	210	3	75	9	1010	134	106	1496	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	4	5	148	108	69	10	1074	127	113	1591	14
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	8	10	219	131	84	21	3021	357	83	3589	32
Arrive On Green	0.00	0.01	0.01	0.12	0.12	0.12	0.01	0.65	0.65	0.05	0.69	0.69
Sat Flow, veh/h	0	756	945	1781	1066	681	1781	4629	547	1781	5220	46
Grp Volume(v), veh/h	0	0	9	148	0	177	10	789	412	113	1037	568
Grp Sat Flow(s),veh/h/ln	0	0	1700	1781	0	1748	1781	1702	1772	1781	1702	1862
Q Serve(g_s), s	0.0	0.0	0.6	9.5	0.0	11.9	0.7	12.6	12.6	5.6	16.4	16.4
Cycle Q Clear(g_c), s	0.0	0.0	0.6	9.5	0.0	11.9	0.7	12.6	12.6	5.6	16.4	16.4
Prop In Lane	0.00		0.56	1.00		0.39	1.00		0.31	1.00		0.02
Lane Grp Cap(c), veh/h	0	0	18	219	0	215	21	2222	1156	83	2340	1280
V/C Ratio(X)	0.00	0.00	0.49	0.67	0.00	0.82	0.48	0.36	0.36	1.36	0.44	0.44
Avail Cap(c_a), veh/h	0	0	147	377	0	370	143	2222	1156	83	2340	1280
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	59.0	50.3	0.0	51.3	58.9	9.4	9.4	57.2	8.4	8.4
Incr Delay (d2), s/veh	0.0	0.0	14.2	2.7	0.0	5.8	6.1	0.4	0.9	221.5	0.6	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.3	4.5	0.0	5.6	0.3	4.4	4.7	7.6	5.5	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	73.2	53.0	0.0	57.1	65.0	9.9	10.3	278.7	9.0	9.5
LnGrp LOS	A	A	E	D	A	E	E	A	B	F	A	A
Approach Vol, veh/h		9			325			1211			1718	
Approach Delay, s/veh		73.2			55.2			10.5			26.9	
Approach LOS		E			E			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	83.7		5.9	6.8	87.9		19.4				
Change Period (Y+Rc), s	5.4	5.4		4.6	5.4	5.4		4.6				
Max Green Setting (Gmax), s	5.6	43.6		10.4	9.6	54.6		25.4				
Max Q Clear Time (g_c+I1), s	7.6	14.6		2.6	2.7	18.4		13.9				
Green Ext Time (p_c), s	0.0	10.8		0.0	0.0	17.2		0.9				

Intersection Summary			
HCM 6th Ctrl Delay		23.8	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	10	7	94	5	3	89
Future Vol, veh/h	10	7	94	5	3	89
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	9	116	6	4	110
Number of Lanes	1	0	0	1	1	0

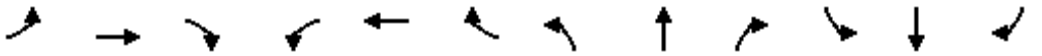
Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.1	8.1	7.2
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	3%	0%	95%
Vol Thru, %	0%	59%	5%
Vol Right, %	97%	41%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	92	17	99
LT Vol	3	0	94
Through Vol	0	10	5
RT Vol	89	7	0
Lane Flow Rate	114	21	122
Geometry Grp	1	1	1
Degree of Util (X)	0.114	0.023	0.147
Departure Headway (Hd)	3.608	3.981	4.34
Convergence, Y/N	Yes	Yes	Yes
Cap	978	891	826
Service Time	1.688	2.041	2.37
HCM Lane V/C Ratio	0.117	0.024	0.148
HCM Control Delay	7.2	7.1	8.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.1	0.5

Intersection	
Intersection Delay, s/veh	4.9
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	95	228	370
Demand Flow Rate, veh/h	97	233	378
Vehicles Circulating, veh/h	344	57	43
Vehicles Exiting, veh/h	77	384	247
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.7	4.3	5.3
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	97	233	378
Cap Entry Lane, veh/h	972	1302	1321
Entry HV Adj Factor	0.979	0.980	0.980
Flow Entry, veh/h	95	228	370
Cap Entry, veh/h	952	1276	1294
V/C Ratio	0.100	0.179	0.286
Control Delay, s/veh	4.7	4.3	5.3
LOS	A	A	A
95th %tile Queue, veh	0	1	1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2	15	187	3	103	13	1881	328	112	1084	11
Future Volume (veh/h)	0	2	15	187	3	103	13	1881	328	112	1084	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	2	15	144	68	95	13	1919	299	114	1106	11
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	3	25	207	82	115	26	2988	459	77	3639	36
Arrive On Green	0.00	0.02	0.02	0.12	0.12	0.12	0.01	0.67	0.67	0.04	0.70	0.70
Sat Flow, veh/h	0	190	1424	1781	706	987	1781	4465	686	1781	5213	52
Grp Volume(v), veh/h	0	0	17	144	0	163	13	1457	761	114	722	395
Grp Sat Flow(s),veh/h/ln	0	0	1614	1781	0	1693	1781	1702	1747	1781	1702	1861
Q Serve(g_s), s	0.0	0.0	1.4	10.1	0.0	12.2	0.9	32.2	33.2	5.6	10.6	10.6
Cycle Q Clear(g_c), s	0.0	0.0	1.4	10.1	0.0	12.2	0.9	32.2	33.2	5.6	10.6	10.6
Prop In Lane	0.00		0.88	1.00		0.58	1.00		0.39	1.00		0.03
Lane Grp Cap(c), veh/h	0	0	28	207	0	197	26	2278	1169	77	2376	1299
V/C Ratio(X)	0.00	0.00	0.60	0.70	0.00	0.83	0.51	0.64	0.65	1.49	0.30	0.30
Avail Cap(c_a), veh/h	0	0	129	348	0	331	132	2278	1169	77	2376	1299
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	63.4	55.2	0.0	56.2	63.6	12.4	12.6	62.2	7.5	7.5
Incr Delay (d2), s/veh	0.0	0.0	13.9	3.1	0.0	6.6	5.6	1.4	2.8	275.5	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.7	4.8	0.0	5.6	0.5	11.4	12.5	8.4	3.6	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	77.3	58.4	0.0	62.7	69.2	13.8	15.4	337.7	7.9	8.1
LnGrp LOS	A	A	E	E	A	E	E	B	B	F	A	A
Approach Vol, veh/h		17			307			2231			1231	
Approach Delay, s/veh		77.3			60.7			14.7			38.5	
Approach LOS		E			E			B			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	92.4		6.9	7.3	96.1		19.7				
Change Period (Y+Rc), s	5.4	5.4		4.6	5.4	5.4		4.6				
Max Green Setting (Gmax), s	5.6	53.6		10.4	9.6	64.6		25.4				
Max Q Clear Time (g_c+I1), s	7.6	35.2		3.4	2.9	12.6		14.2				
Green Ext Time (p_c), s	0.0	15.3		0.0	0.0	11.1		0.9				

Intersection Summary			
HCM 6th Ctrl Delay		26.4	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	12	12	163	11	12	150
Future Vol, veh/h	12	12	163	11	12	150
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	13	173	12	13	160
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.3	8.9	7.8
HCM LOS	A	A	A

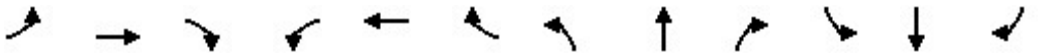
Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	7%	0%	94%
Vol Thru, %	0%	50%	6%
Vol Right, %	93%	50%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	162	24	174
LT Vol	12	0	163
Through Vol	0	12	11
RT Vol	150	12	0
Lane Flow Rate	172	26	185
Geometry Grp	1	1	1
Degree of Util (X)	0.186	0.03	0.229
Departure Headway (Hd)	3.891	4.196	4.444
Convergence, Y/N	Yes	Yes	Yes
Cap	927	856	800
Service Time	1.892	2.208	2.516
HCM Lane V/C Ratio	0.186	0.03	0.231
HCM Control Delay	7.8	7.3	8.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.1	0.9

Intersection	
Intersection Delay, s/veh	7.5
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	254	554	521
Demand Flow Rate, veh/h	259	565	531
Vehicles Circulating, veh/h	472	140	60
Vehicles Exiting, veh/h	119	591	645
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	7.7	8.1	6.8
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	259	565	531
Cap Entry Lane, veh/h	853	1196	1298
Entry HV Adj Factor	0.981	0.981	0.981
Flow Entry, veh/h	254	554	521
Cap Entry, veh/h	836	1173	1273
V/C Ratio	0.304	0.472	0.409
Control Delay, s/veh	7.7	8.1	6.8
LOS	A	A	A
95th %tile Queue, veh	1	3	2

Appendix H - Peak Hour Intersection Capacity Worksheets Near-Term Year 2023 Base with Project Conditions



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	4	5	228	3	93	9	1010	139	110	1496	13
Future Volume (veh/h)	0	4	5	228	3	93	9	1010	139	110	1496	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	4	5	167	109	88	10	1074	132	117	1591	14
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	8	10	242	130	105	21	2948	362	83	3522	31
Arrive On Green	0.00	0.01	0.01	0.14	0.14	0.14	0.01	0.64	0.64	0.05	0.67	0.67
Sat Flow, veh/h	0	756	945	1781	958	773	1781	4607	566	1781	5220	46
Grp Volume(v), veh/h	0	0	9	167	0	197	10	793	413	117	1037	568
Grp Sat Flow(s),veh/h/ln	0	0	1700	1781	0	1731	1781	1702	1769	1781	1702	1862
Q Serve(g_s), s	0.0	0.0	0.6	10.7	0.0	13.3	0.7	13.1	13.2	5.6	17.1	17.1
Cycle Q Clear(g_c), s	0.0	0.0	0.6	10.7	0.0	13.3	0.7	13.1	13.2	5.6	17.1	17.1
Prop In Lane	0.00		0.56	1.00		0.45	1.00		0.32	1.00		0.02
Lane Grp Cap(c), veh/h	0	0	18	242	0	235	21	2178	1132	83	2297	1256
V/C Ratio(X)	0.00	0.00	0.49	0.69	0.00	0.84	0.48	0.36	0.36	1.41	0.45	0.45
Avail Cap(c_a), veh/h	0	0	147	377	0	366	143	2178	1132	83	2297	1256
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	59.0	49.4	0.0	50.5	58.9	10.1	10.1	57.2	9.1	9.1
Incr Delay (d2), s/veh	0.0	0.0	14.2	2.6	0.0	7.9	6.1	0.5	0.9	240.4	0.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.3	5.0	0.0	6.3	0.3	4.6	5.0	8.0	5.8	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	73.2	52.0	0.0	58.5	65.0	10.6	11.1	297.6	9.8	10.3
LnGrp LOS	A	A	E	D	A	E	E	B	B	F	A	B
Approach Vol, veh/h		9			364			1216			1722	
Approach Delay, s/veh		73.2			55.5			11.2			29.5	
Approach LOS		E			E			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	82.2		5.9	6.8	86.4		20.9				
Change Period (Y+Rc), s	5.4	5.4		4.6	5.4	5.4		4.6				
Max Green Setting (Gmax), s	5.6	43.6		10.4	9.6	54.6		25.4				
Max Q Clear Time (g_c+I1), s	7.6	15.2		2.6	2.7	19.1		15.3				
Green Ext Time (p_c), s	0.0	10.8		0.0	0.0	17.1		1.0				

Intersection Summary			
HCM 6th Ctrl Delay		25.8	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	19	7	95	41	5	91
Future Vol, veh/h	19	7	95	41	5	91
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	9	117	51	6	112
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.4	8.4	7.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	5%	0%	70%
Vol Thru, %	0%	73%	30%
Vol Right, %	95%	27%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	96	26	136
LT Vol	5	0	95
Through Vol	0	19	41
RT Vol	91	7	0
Lane Flow Rate	119	32	168
Geometry Grp	1	1	1
Degree of Util (X)	0.126	0.037	0.201
Departure Headway (Hd)	3.833	4.11	4.307
Convergence, Y/N	Yes	Yes	Yes
Cap	941	858	829
Service Time	1.833	2.199	2.355
HCM Lane V/C Ratio	0.126	0.037	0.203
HCM Control Delay	7.4	7.4	8.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.4	0.1	0.7

Intersection	
Intersection Delay, s/veh	5.0
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	133	234	375
Demand Flow Rate, veh/h	135	239	383
Vehicles Circulating, veh/h	344	75	49
Vehicles Exiting, veh/h	88	404	265
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.1	4.5	5.4
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	135	239	383
Cap Entry Lane, veh/h	972	1278	1313
Entry HV Adj Factor	0.985	0.980	0.980
Flow Entry, veh/h	133	234	375
Cap Entry, veh/h	957	1253	1286
V/C Ratio	0.139	0.187	0.292
Control Delay, s/veh	5.1	4.5	5.4
LOS	A	A	A
95th %tile Queue, veh	0	1	1

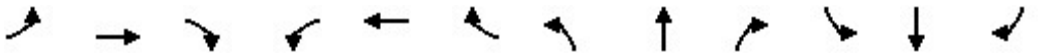
Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	99	9	9	68	36	35
Future Vol, veh/h	99	9	9	68	36	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	121	11	11	83	44	43

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	132	0	232	127
Stage 1	-	-	-	-	127	-
Stage 2	-	-	-	-	105	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1453	-	756	923
Stage 1	-	-	-	-	899	-
Stage 2	-	-	-	-	919	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1453	-	750	923
Mov Cap-2 Maneuver	-	-	-	-	750	-
Stage 1	-	-	-	-	899	-
Stage 2	-	-	-	-	912	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	826	-	-	1453	-
HCM Lane V/C Ratio	0.105	-	-	0.008	-
HCM Control Delay (s)	9.9	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	2	15	195	3	110	13	1881	346	129	1084	11
Future Volume (veh/h)	0	2	15	195	3	110	13	1881	346	129	1084	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	2	15	152	69	102	13	1919	317	132	1106	11
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	3	25	216	83	122	26	2939	478	77	3612	36
Arrive On Green	0.00	0.02	0.02	0.12	0.12	0.12	0.01	0.66	0.66	0.04	0.69	0.69
Sat Flow, veh/h	0	190	1424	1781	682	1007	1781	4425	720	1781	5213	52
Grp Volume(v), veh/h	0	0	17	152	0	171	13	1469	767	132	722	395
Grp Sat Flow(s),veh/h/ln	0	0	1614	1781	0	1689	1781	1702	1741	1781	1702	1861
Q Serve(g_s), s	0.0	0.0	1.4	10.7	0.0	12.9	0.9	33.2	34.3	5.6	10.7	10.8
Cycle Q Clear(g_c), s	0.0	0.0	1.4	10.7	0.0	12.9	0.9	33.2	34.3	5.6	10.7	10.8
Prop In Lane	0.00		0.88	1.00		0.60	1.00		0.41	1.00		0.03
Lane Grp Cap(c), veh/h	0	0	28	216	0	205	26	2261	1156	77	2359	1290
V/C Ratio(X)	0.00	0.00	0.60	0.70	0.00	0.84	0.51	0.65	0.66	1.72	0.31	0.31
Avail Cap(c_a), veh/h	0	0	129	348	0	330	132	2261	1156	77	2359	1290
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	63.4	54.9	0.0	55.9	63.6	12.9	13.1	62.2	7.8	7.8
Incr Delay (d2), s/veh	0.0	0.0	13.9	3.1	0.0	7.7	5.6	1.5	3.0	372.8	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.7	5.0	0.0	6.0	0.5	11.8	13.0	10.4	3.7	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	77.3	58.0	0.0	63.6	69.2	14.4	16.1	435.0	8.1	8.4
LnGrp LOS	A	A	E	E	A	E	E	B	B	F	A	A
Approach Vol, veh/h		17			323			2249			1249	
Approach Delay, s/veh		77.3			60.9			15.3			53.3	
Approach LOS		E			E			B			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	91.8		6.9	7.3	95.5		20.4				
Change Period (Y+Rc), s	5.4	5.4		4.6	5.4	5.4		4.6				
Max Green Setting (Gmax), s	5.6	53.6		10.4	9.6	64.6		25.4				
Max Q Clear Time (g_c+I1), s	7.6	36.3		3.4	2.9	12.8		14.9				
Green Ext Time (p_c), s	0.0	14.5		0.0	0.0	11.1		0.9				

Intersection Summary			
HCM 6th Ctrl Delay		31.8	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	47	14	165	26	13	151
Future Vol, veh/h	47	14	165	26	13	151
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	50	15	176	28	14	161
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.8	9.1	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	8%	0%	86%
Vol Thru, %	0%	77%	14%
Vol Right, %	92%	23%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	164	61	191
LT Vol	13	0	165
Through Vol	0	47	26
RT Vol	151	14	0
Lane Flow Rate	174	65	203
Geometry Grp	1	1	1
Degree of Util (X)	0.195	0.079	0.258
Departure Headway (Hd)	4.024	4.394	4.565
Convergence, Y/N	Yes	Yes	Yes
Cap	893	816	792
Service Time	2.039	2.416	2.565
HCM Lane V/C Ratio	0.195	0.08	0.256
HCM Control Delay	8	7.8	9.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.7	0.3	1

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	271	573	539
Demand Flow Rate, veh/h	277	585	550
Vehicles Circulating, veh/h	472	148	80
Vehicles Exiting, veh/h	158	601	653
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	8.0	8.5	7.2
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	277	585	550
Cap Entry Lane, veh/h	853	1187	1272
Entry HV Adj Factor	0.978	0.980	0.980
Flow Entry, veh/h	271	573	539
Cap Entry, veh/h	834	1162	1246
V/C Ratio	0.325	0.493	0.432
Control Delay, s/veh	8.0	8.5	7.2
LOS	A	A	A
95th %tile Queue, veh	1	3	2

Intersection	
Int Delay, s/veh	1.6

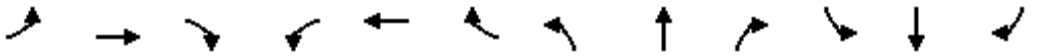
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	162	35	35	107	15	15
Future Vol, veh/h	162	35	35	107	15	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	169	36	36	111	16	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	205	0	370	187
Stage 1	-	-	-	-	187	-
Stage 2	-	-	-	-	183	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1366	-	630	855
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1366	-	612	855
Mov Cap-2 Maneuver	-	-	-	-	612	-
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	824	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.9	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	713	-	-	1366	-
HCM Lane V/C Ratio	0.044	-	-	0.027	-
HCM Control Delay (s)	10.3	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Appendix I - Peak Hour Intersection Capacity Worksheets Horizon Year 2030 Base Conditions



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	250	10	90	10	1210	160	130	1780	20
Future Volume (veh/h)	10	10	10	250	10	90	10	1210	160	130	1780	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	11	11	179	128	84	11	1274	147	137	1874	16
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	16	16	256	151	99	23	2856	330	83	3389	29
Arrive On Green	0.03	0.03	0.03	0.14	0.14	0.14	0.01	0.62	0.62	0.05	0.65	0.65
Sat Flow, veh/h	579	579	579	1781	1054	692	1781	4642	536	1781	5222	45
Grp Volume(v), veh/h	33	0	0	179	0	212	11	934	487	137	1221	669
Grp Sat Flow(s),veh/h/ln	1737	0	0	1781	0	1746	1781	1702	1774	1781	1702	1862
Q Serve(g_s), s	2.3	0.0	0.0	11.5	0.0	14.2	0.7	17.5	17.5	5.6	23.6	23.6
Cycle Q Clear(g_c), s	2.3	0.0	0.0	11.5	0.0	14.2	0.7	17.5	17.5	5.6	23.6	23.6
Prop In Lane	0.33		0.33	1.00		0.40	1.00		0.30	1.00		0.02
Lane Grp Cap(c), veh/h	48	0	0	256	0	251	23	2094	1091	83	2210	1209
V/C Ratio(X)	0.68	0.00	0.00	0.70	0.00	0.85	0.48	0.45	0.45	1.65	0.55	0.55
Avail Cap(c_a), veh/h	151	0	0	377	0	370	143	2094	1091	83	2210	1209
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.8	0.0	0.0	48.9	0.0	50.1	58.8	12.2	12.2	57.2	11.5	11.5
Incr Delay (d2), s/veh	11.9	0.0	0.0	2.6	0.0	9.8	5.8	0.7	1.3	339.0	1.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	5.3	0.0	6.9	0.4	6.3	6.8	10.3	8.3	9.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.7	0.0	0.0	51.5	0.0	59.9	64.6	12.9	13.6	396.2	12.5	13.4
LnGrp LOS	E	A	A	D	A	E	E	B	B	F	B	B
Approach Vol, veh/h		33			391			1432			2027	
Approach Delay, s/veh		69.7			56.0			13.5			38.7	
Approach LOS		E			E			B			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	79.2		7.9	6.9	83.3		21.8				
Change Period (Y+Rc), s	5.4	5.4		4.6	5.4	5.4		4.6				
Max Green Setting (Gmax), s	5.6	43.6		10.4	9.6	54.6		25.4				
Max Q Clear Time (g_c+I1), s	7.6	19.5		4.3	2.7	25.6		16.2				
Green Ext Time (p_c), s	0.0	12.2		0.0	0.0	18.7		1.0				

Intersection Summary			
HCM 6th Ctrl Delay		31.4	
HCM 6th LOS		C	

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	20	10	120	10	10	110
Future Vol, veh/h	20	10	120	10	10	110
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	11	126	11	11	116
Number of Lanes	1	0	0	1	1	0

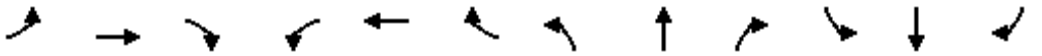
Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.3	8.3	7.4
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	8%	0%	92%
Vol Thru, %	0%	67%	8%
Vol Right, %	92%	33%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	120	30	130
LT Vol	10	0	120
Through Vol	0	20	10
RT Vol	110	10	0
Lane Flow Rate	126	32	137
Geometry Grp	1	1	1
Degree of Util (X)	0.133	0.036	0.166
Departure Headway (Hd)	3.79	4.062	4.365
Convergence, Y/N	Yes	Yes	Yes
Cap	951	869	818
Service Time	1.79	2.143	2.414
HCM Lane V/C Ratio	0.132	0.037	0.167
HCM Control Delay	7.4	7.3	8.3
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0.1	0.6

Intersection	
Intersection Delay, s/veh	5.4
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	116	264	431
Demand Flow Rate, veh/h	118	269	440
Vehicles Circulating, veh/h	397	64	54
Vehicles Exiting, veh/h	97	451	279
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.2	4.6	5.9
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	118	269	440
Cap Entry Lane, veh/h	920	1293	1306
Entry HV Adj Factor	0.983	0.981	0.980
Flow Entry, veh/h	116	264	431
Cap Entry, veh/h	905	1268	1280
V/C Ratio	0.128	0.208	0.337
Control Delay, s/veh	5.2	4.6	5.9
LOS	A	A	A
95th %tile Queue, veh	0	1	2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	20	230	10	130	20	2240	390	140	1290	20
Future Volume (veh/h)	10	10	20	230	10	130	20	2240	390	140	1290	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	11	16	187	88	121	21	2358	369	147	1358	16
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	14	14	21	255	102	141	36	2826	426	77	3401	40
Arrive On Green	0.03	0.03	0.03	0.14	0.14	0.14	0.02	0.63	0.63	0.04	0.65	0.65
Sat Flow, veh/h	497	497	722	1781	713	981	1781	4478	675	1781	5202	61
Grp Volume(v), veh/h	38	0	0	187	0	209	21	1771	956	147	889	485
Grp Sat Flow(s),veh/h/ln	1716	0	0	1781	0	1694	1781	1702	1749	1781	1702	1859
Q Serve(g_s), s	2.9	0.0	0.0	13.1	0.0	15.7	1.5	52.0	57.9	5.6	15.9	15.9
Cycle Q Clear(g_c), s	2.9	0.0	0.0	13.1	0.0	15.7	1.5	52.0	57.9	5.6	15.9	15.9
Prop In Lane	0.29		0.42	1.00		0.58	1.00		0.39	1.00		0.03
Lane Grp Cap(c), veh/h	49	0	0	255	0	243	36	2148	1104	77	2225	1215
V/C Ratio(X)	0.77	0.00	0.00	0.73	0.00	0.86	0.58	0.82	0.87	1.92	0.40	0.40
Avail Cap(c_a), veh/h	137	0	0	348	0	331	132	2148	1104	77	2225	1215
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.7	0.0	0.0	53.3	0.0	54.4	63.1	18.4	19.5	62.2	10.5	10.5
Incr Delay (d2), s/veh	17.0	0.0	0.0	4.2	0.0	14.3	5.3	3.8	9.2	456.4	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	6.2	0.0	7.7	0.7	19.5	23.9	12.2	5.7	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.7	0.0	0.0	57.5	0.0	68.7	68.4	22.2	28.7	518.6	11.1	11.5
LnGrp LOS	E	A	A	E	A	E	E	C	C	F	B	B
Approach Vol, veh/h		38			396			2748			1521	
Approach Delay, s/veh		79.7			63.4			24.8			60.3	
Approach LOS		E			E			C			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	87.4		8.3	8.1	90.4		23.2				
Change Period (Y+Rc), s	5.4	5.4		4.6	5.4	5.4		4.6				
Max Green Setting (Gmax), s	5.6	53.6		10.4	9.6	64.6		25.4				
Max Q Clear Time (g_c+I1), s	7.6	59.9		4.9	3.5	17.9		17.7				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	15.0		1.0				

Intersection Summary			
HCM 6th Ctrl Delay		40.0	
HCM 6th LOS		D	

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	20	20	200	20	20	180
Future Vol, veh/h	20	20	200	20	20	180
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	21	211	21	21	189
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.6	9.6	8.4
HCM LOS	A	A	A

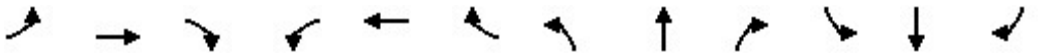
Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	10%	0%	91%
Vol Thru, %	0%	50%	9%
Vol Right, %	90%	50%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	200	40	220
LT Vol	20	0	200
Through Vol	0	20	20
RT Vol	180	20	0
Lane Flow Rate	211	42	232
Geometry Grp	1	1	1
Degree of Util (X)	0.238	0.051	0.298
Departure Headway (Hd)	4.066	4.35	4.634
Convergence, Y/N	Yes	Yes	Yes
Cap	884	823	780
Service Time	2.083	2.38	2.634
HCM Lane V/C Ratio	0.239	0.051	0.297
HCM Control Delay	8.4	7.6	9.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.9	0.2	1.3

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	295	653	611
Demand Flow Rate, veh/h	301	666	623
Vehicles Circulating, veh/h	548	161	75
Vehicles Exiting, veh/h	150	688	752
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.4	10.0	8.0
Approach LOS	A	B	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	301	666	623
Cap Entry Lane, veh/h	789	1171	1278
Entry HV Adj Factor	0.980	0.981	0.981
Flow Entry, veh/h	295	653	611
Cap Entry, veh/h	773	1149	1254
V/C Ratio	0.381	0.569	0.487
Control Delay, s/veh	9.4	10.0	8.0
LOS	A	B	A
95th %tile Queue, veh	2	4	3

Appendix J - Peak Hour Intersection Capacity Worksheets Horizon Year 2030 Base with Project Conditions



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	10	268	10	108	10	1210	165	134	1780	20
Future Volume (veh/h)	10	10	10	268	10	108	10	1210	165	134	1780	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	11	11	198	128	103	11	1274	153	141	1874	16
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	16	16	16	277	149	120	23	2788	335	83	3328	28
Arrive On Green	0.03	0.03	0.03	0.16	0.16	0.16	0.01	0.60	0.60	0.05	0.64	0.64
Sat Flow, veh/h	579	579	579	1781	959	772	1781	4620	555	1781	5222	45
Grp Volume(v), veh/h	33	0	0	198	0	231	11	939	488	141	1221	669
Grp Sat Flow(s),veh/h/ln	1737	0	0	1781	0	1731	1781	1702	1770	1781	1702	1862
Q Serve(g_s), s	2.3	0.0	0.0	12.7	0.0	15.6	0.7	18.1	18.1	5.6	24.4	24.4
Cycle Q Clear(g_c), s	2.3	0.0	0.0	12.7	0.0	15.6	0.7	18.1	18.1	5.6	24.4	24.4
Prop In Lane	0.33		0.33	1.00		0.45	1.00		0.31	1.00		0.02
Lane Grp Cap(c), veh/h	48	0	0	277	0	269	23	2054	1068	83	2169	1187
V/C Ratio(X)	0.68	0.00	0.00	0.71	0.00	0.86	0.48	0.46	0.46	1.70	0.56	0.56
Avail Cap(c_a), veh/h	151	0	0	377	0	366	143	2054	1068	83	2169	1187
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.8	0.0	0.0	48.1	0.0	49.4	58.8	13.0	13.0	57.2	12.3	12.3
Incr Delay (d2), s/veh	11.9	0.0	0.0	3.2	0.0	12.8	5.8	0.7	1.4	359.3	1.1	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.0	0.0	5.9	0.0	7.8	0.4	6.6	7.1	10.8	8.7	9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.7	0.0	0.0	51.4	0.0	62.2	64.6	13.8	14.4	416.5	13.4	14.3
LnGrp LOS	E	A	A	D	A	E	E	B	B	F	B	B
Approach Vol, veh/h		33			429			1438			2031	
Approach Delay, s/veh		69.7			57.2			14.4			41.7	
Approach LOS		E			E			B			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	77.8		7.9	6.9	81.9		23.3				
Change Period (Y+Rc), s	5.4	5.4		4.6	5.4	5.4		4.6				
Max Green Setting (Gmax), s	5.6	43.6		10.4	9.6	54.6		25.4				
Max Q Clear Time (g_c+I1), s	7.6	20.1		4.3	2.7	26.4		17.6				
Green Ext Time (p_c), s	0.0	12.1		0.0	0.0	18.4		1.1				

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

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	29	10	121	46	12	112
Future Vol, veh/h	29	10	121	46	12	112
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	11	127	48	13	118
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.5	8.6	7.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	10%	0%	72%
Vol Thru, %	0%	74%	28%
Vol Right, %	90%	26%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	124	39	167
LT Vol	12	0	121
Through Vol	0	29	46
RT Vol	112	10	0
Lane Flow Rate	131	41	176
Geometry Grp	1	1	1
Degree of Util (X)	0.142	0.048	0.212
Departure Headway (Hd)	3.908	4.249	4.34
Convergence, Y/N	Yes	Yes	Yes
Cap	923	848	821
Service Time	1.91	2.249	2.402
HCM Lane V/C Ratio	0.142	0.048	0.214
HCM Control Delay	7.6	7.5	8.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.5	0.2	0.8

Intersection	
Intersection Delay, s/veh	5.5
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	153	269	435
Demand Flow Rate, veh/h	156	274	444
Vehicles Circulating, veh/h	397	83	59
Vehicles Exiting, veh/h	106	470	298
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	5.6	4.8	6.0
Approach LOS	A	A	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	156	274	444
Cap Entry Lane, veh/h	920	1268	1299
Entry HV Adj Factor	0.981	0.981	0.980
Flow Entry, veh/h	153	269	435
Cap Entry, veh/h	903	1244	1274
V/C Ratio	0.169	0.216	0.342
Control Delay, s/veh	5.6	4.8	6.0
LOS	A	A	A
95th %tile Queue, veh	1	1	2

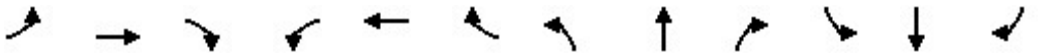
Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	130	9	9	90	36	35
Future Vol, veh/h	130	9	9	90	36	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	137	9	9	95	38	37

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	146	0	255	142
Stage 1	-	-	-	-	142	-
Stage 2	-	-	-	-	113	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1436	-	734	906
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	912	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1436	-	729	906
Mov Cap-2 Maneuver	-	-	-	-	729	-
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	906	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	807	-	-	1436	-
HCM Lane V/C Ratio	0.093	-	-	0.007	-
HCM Control Delay (s)	9.9	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	10	20	238	10	137	20	2240	408	157	1290	20
Future Volume (veh/h)	10	10	20	238	10	137	20	2240	408	157	1290	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	11	16	195	89	128	21	2358	387	165	1358	16
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	14	14	21	264	103	148	36	2785	439	77	3376	40
Arrive On Green	0.03	0.03	0.03	0.15	0.15	0.15	0.02	0.63	0.63	0.04	0.65	0.65
Sat Flow, veh/h	497	497	722	1781	693	997	1781	4448	701	1781	5202	61
Grp Volume(v), veh/h	38	0	0	195	0	217	21	1782	963	165	889	485
Grp Sat Flow(s),veh/h/ln	1716	0	0	1781	0	1691	1781	1702	1744	1781	1702	1859
Q Serve(g_s), s	2.9	0.0	0.0	13.6	0.0	16.3	1.5	53.4	59.9	5.6	16.1	16.1
Cycle Q Clear(g_c), s	2.9	0.0	0.0	13.6	0.0	16.3	1.5	53.4	59.9	5.6	16.1	16.1
Prop In Lane	0.29		0.42	1.00		0.59	1.00		0.40	1.00		0.03
Lane Grp Cap(c), veh/h	49	0	0	264	0	250	36	2132	1092	77	2209	1207
V/C Ratio(X)	0.77	0.00	0.00	0.74	0.00	0.87	0.58	0.84	0.88	2.15	0.40	0.40
Avail Cap(c_a), veh/h	137	0	0	348	0	330	132	2132	1092	77	2209	1207
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.7	0.0	0.0	53.0	0.0	54.1	63.1	19.1	20.3	62.2	10.8	10.8
Incr Delay (d2), s/veh	17.0	0.0	0.0	4.9	0.0	15.7	5.3	4.1	10.3	558.3	0.5	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.0	0.0	6.5	0.0	8.1	0.7	20.2	25.0	14.4	5.8	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.7	0.0	0.0	57.8	0.0	69.8	68.4	23.1	30.6	620.5	11.4	11.8
LnGrp LOS	E	A	A	E	A	E	E	C	C	F	B	B
Approach Vol, veh/h		38			412			2766			1539	
Approach Delay, s/veh		79.7			64.1			26.1			76.8	
Approach LOS		E			E			C			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.0	86.8		8.3	8.1	89.8		23.9				
Change Period (Y+Rc), s	5.4	5.4		4.6	5.4	5.4		4.6				
Max Green Setting (Gmax), s	5.6	53.6		10.4	9.6	64.6		25.4				
Max Q Clear Time (g_c+I1), s	7.6	61.9		4.9	3.5	18.1		18.3				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	15.0		0.9				

Intersection Summary		
HCM 6th Ctrl Delay		46.2
HCM 6th LOS		D

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	55	22	202	35	21	181
Future Vol, veh/h	55	22	202	35	21	181
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	58	23	213	37	22	191
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.1	9.9	8.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	10%	0%	85%
Vol Thru, %	0%	71%	15%
Vol Right, %	90%	29%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	202	77	237
LT Vol	21	0	202
Through Vol	0	55	35
RT Vol	181	22	0
Lane Flow Rate	213	81	249
Geometry Grp	1	1	1
Degree of Util (X)	0.248	0.102	0.323
Departure Headway (Hd)	4.2	4.519	4.66
Convergence, Y/N	Yes	Yes	Yes
Cap	857	792	771
Service Time	2.222	2.554	2.69
HCM Lane V/C Ratio	0.249	0.102	0.323
HCM Control Delay	8.6	8.1	9.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1	0.3	1.4

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Approach	EB	NB	SB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	310	672	629
Demand Flow Rate, veh/h	316	686	642
Vehicles Circulating, veh/h	548	168	95
Vehicles Exiting, veh/h	189	696	759
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	9.7	10.6	8.5
Approach LOS	A	B	A

Lane	Left	Left	Left
Designated Moves	LR	LT	TR
Assumed Moves	LR	LT	TR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	316	686	642
Cap Entry Lane, veh/h	789	1163	1252
Entry HV Adj Factor	0.981	0.980	0.980
Flow Entry, veh/h	310	672	629
Cap Entry, veh/h	774	1140	1228
V/C Ratio	0.400	0.590	0.513
Control Delay, s/veh	9.7	10.6	8.5
LOS	A	B	A
95th %tile Queue, veh	2	4	3

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	200	35	35	140	15	15
Future Vol, veh/h	200	35	35	140	15	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	211	37	37	147	16	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	248	0	451	230
Stage 1	-	-	-	-	230	-
Stage 2	-	-	-	-	221	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1318	-	566	809
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	816	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1318	-	548	809
Mov Cap-2 Maneuver	-	-	-	-	548	-
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	791	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	653	-	-	1318	-
HCM Lane V/C Ratio	0.048	-	-	0.028	-
HCM Control Delay (s)	10.8	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Appendix K - Queuing Analysis

TO: Lev Gershman, Managing Partner; Tideline Partners

FROM: Phuong Nguyen, PE; CR Associates

DATE: January 5, 2022

RE: Pheasant Hills Multi-Family – Queuing Analysis

This memorandum serves to document the queuing analysis conducted at the intersection of Guajome Street and Project Driveway #1, as part of the Pheasant Hills Multi-Family project (the "Proposed Project").

Project Description

The project site is located along the south side of Guajome Street, just west of the existing Sprinter light rail line in the City of Vista. The Proposed Project is proposing to construct 184 multi-family dwelling units including a three-story parking structure. Additional surface level parking would be provided throughout the site. The Proposed Project would construct sidewalks to City of Vista standard, allowing the segment of Guajome Street fronting the Proposed Project to be a 2-Lane Light Collector, which is its ultimate classification.

To accommodate the additional trips associated with the proposed Project, the Proposed Project will relocate the existing power pole and widen Guajome Street to construct a westbound left-turn pocket at the project's driveway. The westbound left-turn pocket will provide 70 feet of queuing space. A conceptual plan of the proposed improvement is provided in **Attachment A**.

Trip Generation, Distribution, and Assignment

Project trip generation estimates were derived utilizing the trip generation rates outlined in SANDAG's *(Not So) Brief Guide of Vehicular Traffic Generation Rates for The San Diego Region* (2002). The Proposed Project would generate a total of 1,152 daily trips, with 93 occurring in the AM peak Hour (19 inbound, 74 outbound) and 104 occurring in the PM peak hour (73 inbound, 31 outbound). These project trips were distributed and assigned to the surrounding roadway network based on the geographical location of the Proposed Project, as well as the characteristics of the proposed and surrounding land uses. Detailed project trip generation information and project trip distribution/assignment figures are provided in **Attachment B**.

It should be noted that the analyses presented hereafter focus only on Project Driveway #1. Detailed analyses for additional study area intersections and roadways will be provided separately via a Local Transportation Study (LTS).

Traffic Volumes

City staff provided historical counts from 2017 and 2018. Additionally, traffic counts were conducted along the study roadway segments and intersections on June 29, 2021, by Counts Unlimited, Inc. To ensure that these counts reflect traffic conditions prior to the COVID-19 restrictions, a count validation was conducted. When compared to 2018 counts along Guajome Street, the 2021 counts were higher. Thus, for the purpose of this queuing analysis, the 2021 counts were used. Existing and historical traffic counts are provided in **Attachment C**.

Queuing Analysis

Due to concerns regarding potential queuing at the nearby Sprinter railroad tracks to the east of the Proposed Project, a queuing analysis was conducted at Project Driveway #1. The queuing analysis was conducted for the PM peak hour as it generates more trips than the AM peak hour.

The analysis was conducted using the traffic simulation software VISSIM. VISSIM is a microscopic multi-modal traffic flow software utilized to simulate different traffic conditions. In the simulations, each vehicle in the traffic system is individually tracked through the model and comprehensive measures of effectiveness, such as average vehicle speed and queueing, are collected on every vehicle during each 0.1-second of the simulation. A total of 20 simulation iterations were conducted in order to yield a reasonable sample size for determining queues.

Table 1 displays the queuing analysis results. Queuing analysis worksheets are provided in Attachment D. For a conservative analysis, it is assumed that the eastbound and westbound Sprinter light rail are not synchronized with each other. As such, the railroad crossing arm would occur twice every thirty minutes, resulting in additional queuing along Guajome Street. Finally, it is assumed that 10 percent (10%) of the inbound vehicles are heavy vehicles (i.e. moving trucks). Once tenants move into the Proposed Project, it is improbable that 10 percent of the PM peak hour traffic would consist of heavy vehicles.

Table 1 - Queuing Analysis Results – Existing with Project Conditions

Intersection	Movement	Available Storage (ft)	Average Queue Length (ft)	Maximum Queue Length (ft)
Guajome Street & Project Driveway	WBLT	70	25 ft	50 ft

Note:
WBLT = Westbound left-turn movement.

As shown, the average calculated queue of 25 feet is projected to be less than the available queuing space (70 feet). The maximum queue length is 50 feet, also less than the available queuing space (70 feet).

Based upon the queuing analysis results presented above, and the concern from NCTD/CPUC regarding moving vehicles queuing on the Sprinter track, it is recommended that the proposed Project provide at least 55 feet of storage for queuing vehicles. The 55 feet of storage length is based upon the length of the longest rentable moving truck (26 feet) + 4 feet buffer + 25 feet queuing length of a standard vehicle. In a worst-case scenario, this queue storage length would allow one moving truck and one standard vehicle to queue while waiting to access Project Driveway #1. Therefore, the 70 feet of storage that the Proposed Project will provide are deemed sufficient for vehicles to queue.

Person Trip Generation

Due to the proximity of the proposed Project to the South Santa Fe Avenue commercial corridor, it is anticipated that in the near future when all the businesses along the corridor are fully developed, the corridor will attract pedestrian traffic from the surrounding areas. Therefore, in an effort to project the number of pedestrians that will be traveling to the corridor, and consequently traveling within the Proposed Project study area, specifically its frontage along Guajome Street, a person trip generation was conducted utilizing the person rates found in the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition.* Table 2 displays the anticipated person trip generation for the Proposed Project and land uses located within a quarter mile of the project. A quarter mile is

generally accepted as the maximum distance a person would be willing to walk to a destination. It should be noted that the proposed Project is in an area that is considered suburban. However, the ITE Trip Generation Manual does not contain person trip rates for areas with suburban characteristics. Therefore, the Dense Multi-Use Urban trip generation rate was utilized for this analysis, resulting in a very conservative person trip generation.

Table 2 – Person Trip Generation

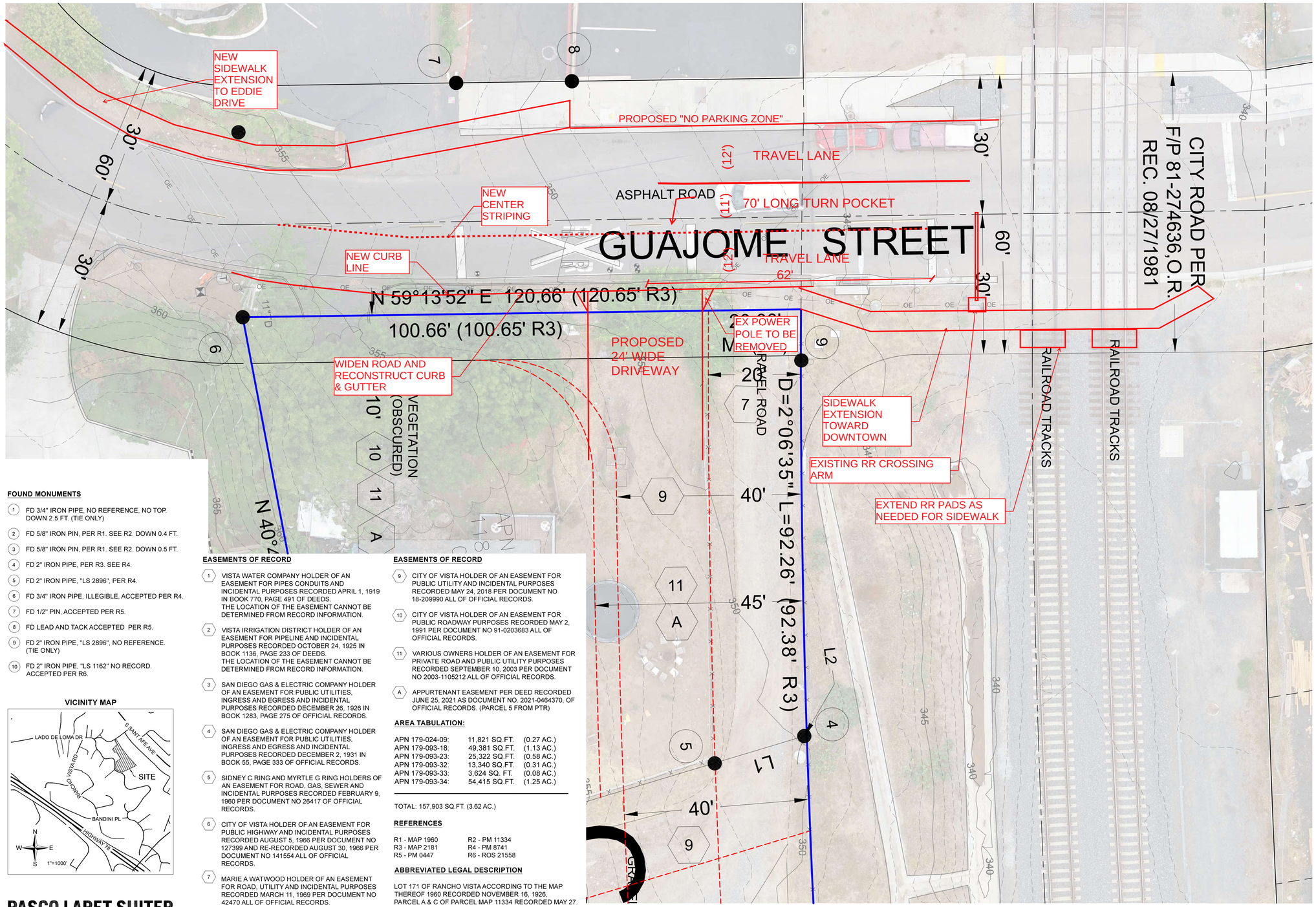
Land Use	Units	AM Person Trip Rate[1]	AM Person Trips	PM Person Trip Rate[1]	PM Person Trips
Multi-Family Residential (Proposed Project)	182 DU	0.54 / DU	98	0.64 / DU	117
Single Family Residential (Proposed Project)	6 DU	1.04 / DU	6	0.48 / DU	3
Single Family Residential (within ¼ mile from Proposed Project)	56	1.04 / DU	58	0.48 / DU	27
Total	**244 DU**	-	**162**	-	**147**

Note:
[1] The highest peak hour generator was used (AM Peak Hour).

As shown in Table 2, a total of 162 person trips is anticipated during the AM peak hour, and 147 person trips is anticipated during the PM peak hour. It is recommended that the project applicant coordinate with NCTD and CPUC to provide the appropriate pedestrian facilities at its frontage to provide connectivity between the area west of the railroad tracks and the commercial area along South Santa Fe Avenue. The proposed Project feature in Attachment B includes a conceptual layout of the potential sidewalk connecting the Proposed Project to South Santa Fe Avenue.

Attachment A - Conceptual Plan

CONCEPTUAL ROADWAY IMPROVEMENT EXHIBIT 12/14/2021



FOUND MONUMENTS

1. FD 3/4" IRON PIPE, NO REFERENCE, NO TOP. DOWN 2.5 FT. (TIE ONLY)
2. FD 5/8" IRON PIN, PER R1. SEE R2. DOWN 0.4 FT.
3. FD 5/8" IRON PIN, PER R1. SEE R2. DOWN 0.5 FT.
4. FD 2" IRON PIPE, PER R3. SEE R4.
5. FD 2" IRON PIPE, "LS 2896", PER R4.
6. FD 3/4" IRON PIPE, ILLEGIBLE, ACCEPTED PER R4.
7. FD 1/2" PIN, ACCEPTED PER R5.
8. FD LEAD AND TACK ACCEPTED PER R5.
9. FD 2" IRON PIPE, "LS 2896", NO REFERENCE. (TIE ONLY)
10. FD 2" IRON PIPE, "LS 1162" NO RECORD. ACCEPTED PER R6.

VICINITY MAP

EASEMENTS OF RECORD

1. VISTA WATER COMPANY HOLDER OF AN EASEMENT FOR PIPES CONDUITS AND INCIDENTAL PURPOSES RECORDED APRIL 1, 1919 IN BOOK 770, PAGE 491 OF DEEDS. THE LOCATION OF THE EASEMENT CANNOT BE DETERMINED FROM RECORD INFORMATION.
2. VISTA IRRIGATION DISTRICT HOLDER OF AN EASEMENT FOR PIPELINE AND INCIDENTAL PURPOSES RECORDED OCTOBER 24, 1925 IN BOOK 1136, PAGE 233 OF DEEDS. THE LOCATION OF THE EASEMENT CANNOT BE DETERMINED FROM RECORD INFORMATION.
3. SAN DIEGO GAS & ELECTRIC COMPANY HOLDER OF AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS AND INCIDENTAL PURPOSES RECORDED DECEMBER 26, 1926 IN BOOK 1283, PAGE 275 OF OFFICIAL RECORDS.
4. SAN DIEGO GAS & ELECTRIC COMPANY HOLDER OF AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS AND INCIDENTAL PURPOSES RECORDED DECEMBER 2, 1931 IN BOOK 55, PAGE 333 OF OFFICIAL RECORDS.
5. SIDNEY C RING AND MYRTLE G RING HOLDERS OF AN EASEMENT FOR ROAD, GAS, SEWER AND INCIDENTAL PURPOSES RECORDED FEBRUARY 9, 1960 PER DOCUMENT NO 26417 OF OFFICIAL RECORDS.
6. CITY OF VISTA HOLDER OF AN EASEMENT FOR PUBLIC HIGHWAY AND INCIDENTAL PURPOSES RECORDED AUGUST 5, 1966 PER DOCUMENT NO 127399 AND RE-RECORDED AUGUST 30, 1966 PER DOCUMENT NO 141554 ALL OF OFFICIAL RECORDS.
7. MARIE A WATWOOD HOLDER OF AN EASEMENT FOR ROAD, UTILITY AND INCIDENTAL PURPOSES RECORDED MARCH 11, 1969 PER DOCUMENT NO 42470 ALL OF OFFICIAL RECORDS.
8. CARIDAD ELLIS HOLDER OF AN EASEMENT FOR ROAD, UTILITY AND INCIDENTAL PURPOSES RECORDED FEBRUARY 12, 1979 PER DOCUMENT NO 79-063219 ALL OF OFFICIAL RECORDS.

EASEMENTS OF RECORD

9. CITY OF VISTA HOLDER OF AN EASEMENT FOR PUBLIC UTILITY AND INCIDENTAL PURPOSES RECORDED MAY 24, 2018 PER DOCUMENT NO 18-209990 ALL OF OFFICIAL RECORDS.
10. CITY OF VISTA HOLDER OF AN EASEMENT FOR PUBLIC ROADWAY PURPOSES RECORDED MAY 2, 1991 PER DOCUMENT NO 91-0203683 ALL OF OFFICIAL RECORDS.
11. VARIOUS OWNERS HOLDER OF AN EASEMENT FOR PRIVATE ROAD AND PUBLIC UTILITY PURPOSES RECORDED SEPTEMBER 10, 2003 PER DOCUMENT NO 2003-1105212 ALL OF OFFICIAL RECORDS.
- A. APPURTENANT EASEMENT PER DEED RECORDED JUNE 25, 2021 AS DOCUMENT NO. 2021-0464370, OF OFFICIAL RECORDS. (PARCEL 5 FROM PTR)

AREA TABULATION:

APN 179-024-09:	11,821 SQ.FT.	(0.27 AC.)
APN 179-093-18:	49,381 SQ.FT.	(1.13 AC.)
APN 179-093-23:	25,322 SQ.FT.	(0.58 AC.)
APN 179-093-32:	13,340 SQ.FT.	(0.31 AC.)
APN 179-093-33:	3,624 SQ. FT.	(0.08 AC.)
APN 179-093-34:	54,415 SQ.FT.	(1.25 AC.)

TOTAL: 157,903 SQ.FT. (3.62 AC.)

REFERENCES

R1 - MAP 1960	R2 - PM 11334
R3 - MAP 2181	R4 - PM 8741
R5 - PM 0447	R6 - ROS 21558

ABBREVIATED LEGAL DESCRIPTION

LOT 171 OF RANCHO VISTA ACCORDING TO THE MAP THEREOF 1960 RECORDED NOVEMBER 16, 1926. PARCEL A & C OF PARCEL MAP 11334 RECORDED MAY 27. 1981, PARCEL A OF PARCEL MAP 8741 RECORDED MAY 23, 1979, LOT 10 EXCEPT THE NORTHEAST 20 FEET OF GUAJOME ADDITION OF MAP 2181 RECORDED MARCH 27, 1930 ALL IN THE CITY OF VISTA, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY.

SURVEYOR'S STATEMENT

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE PROFESSIONAL LAND SURVEYORS' ACT ON JULY 27, 2021.

Maximilian Lebl 09/28/2021

MAXIMILIAN LEBL, PLS 9323 DATE

PROFESSIONAL LAND SURVEYOR * MAXIMILIAN LEBL * LS 9323 * STATE OF CALIFORNIA *

PROJECT INFORMATION

CLIENT: TIDELINE
ADDRESS: VACANT LOT, VISTA
APN: 179-093-18, 23, 30, 32, 34 & 179-024-09

SURVEY NOTES

1. THE BOUNDARIES AND DIMENSIONS OF THE SURVEYED PARCEL(S) SHOWN HEREON ARE BASED ON A FIELD SURVEY. RECORD DIMENSIONS MAY VARY. THE BOUNDARIES OF ADJOINING PARCELS WERE COMPILED FROM RECORDED OR FILED DATA, AND ARE TO BE USED FOR PLANNING PURPOSES ONLY. FULL PROCEDURE OF SURVEY NOT SHOWN HEREON.
2. THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDIATE SYSTEM CCS 83, ZONE 6 EPOCH 1991.35 GRID BEARING BETWEEN CITY OF VISTA SURVEY CONTROL STATIONS "V2065" AND "V2031" AS DESIGNATED ON RECORD OF SURVEY NUMBER 14023. I.E. N 17°03'53" W
3. THE BENCH MARK IS V2085 AS SHOWN ON ROS 14023. MONUMENT IS LOCATED ON THE SOUTHWESTERLY SIDE OF SOUTH SANTA FE AVENUE 10.7 FEET NORTHEASTERLY FROM THE SOUTHWESTERLY CURB LINE 250' SOUTHEASTERLY FROM MONTE VISTA DRIVE, IN FRONT OF 1131 SOUTH SANTA FE AVENUE. ELEV.=416.78' (NGVD 29)
4. THE LOCATIONS OF UNDERGROUND UTILITY LINES AND/OR STRUCTURES AS SHOWN HEREON ARE BASED ON OBSERVED ABOVE GROUND EVIDENCE AND RECORD INFORMATION PROVIDED TO THE SURVEYOR. NO EXCAVATIONS WERE MADE DURING THE COURSE OF THIS SURVEY TO LOCATE UNDERGROUND UTILITIES. LOCATIONS OF UNDERGROUND UTILITIES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL UNDERGROUND UTILITIES MAY EXIST.
5. TITLE COMMITMENT PROVIDED BY FIRST AMERICAN TITLE INSURANCE COMPANY, ORDER NO DTR-6544193 DATED MARCH 9, 2021 & FIDELITY NATIONAL TITLE COMPANY, ORDER NO 995-33063812-JS3 WITH AN EFFECTIVE DATE OF MARCH 9, 2021. AMENDED AUGUST 27TH, 2021.
6. AERIAL MAPPING FLOWN JULY 27, 2021, PROVIDED BY PLSA ENGINEERING.
7. ACCURACIES OF ± 0.3' CAN BE EXPECTED AS IT RELATES TO THE TOPOGRAPHICAL INFORMATION GENERATED FROM THE DIGITAL TERRAIN MODELING (DTM) INFORMATION.

BOUNDARY NOTE

1. THE BOUNDARY SHOWN HEREON DOES NOT COINCIDE WITH THE LINES SHOWN PER THE TAX ASSESSORS PLAT MAP. THERE IS INSUFFICIENT DATA AVAILABLE ON THE PERFECTING DEEDS OF THE RHODA LANE VACATION. UNDERLYING FEE OWNERSHIP OF THE NORTHEASTERLY 20' OF FORMER RHODA LANE SHOULD BE UPDATED IN GRANT DEEDS TO BENEFIT ALL OF LOT 10.

LEGEND

- FOUND MONUMENT AS INDICATED
- ( ) RECORD BOUNDARY DATA AS INDICATED
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- CENTER LINE
- ADJOINING PROPERTY LINE
- TIE LINE / REFERENCE LINE
- EASEMENT LINE
- OE POWER - OVERHEAD
- LIGHT POLE
- UTILITY POLE
- GUY ANCHOR
- SIGNAL POLE
- VALVE - WATER
- (S) MH - SANITARY
- (D) MH - DRAINAGE
- DRAIN INLET
- (T) PULLBOX - TELCO
- (C) RISER - COMMUNICATION
- MAILBOX
- SIGN
- TREE - DECIDUOUS
- TREE
- TREE - CONIFEROUS

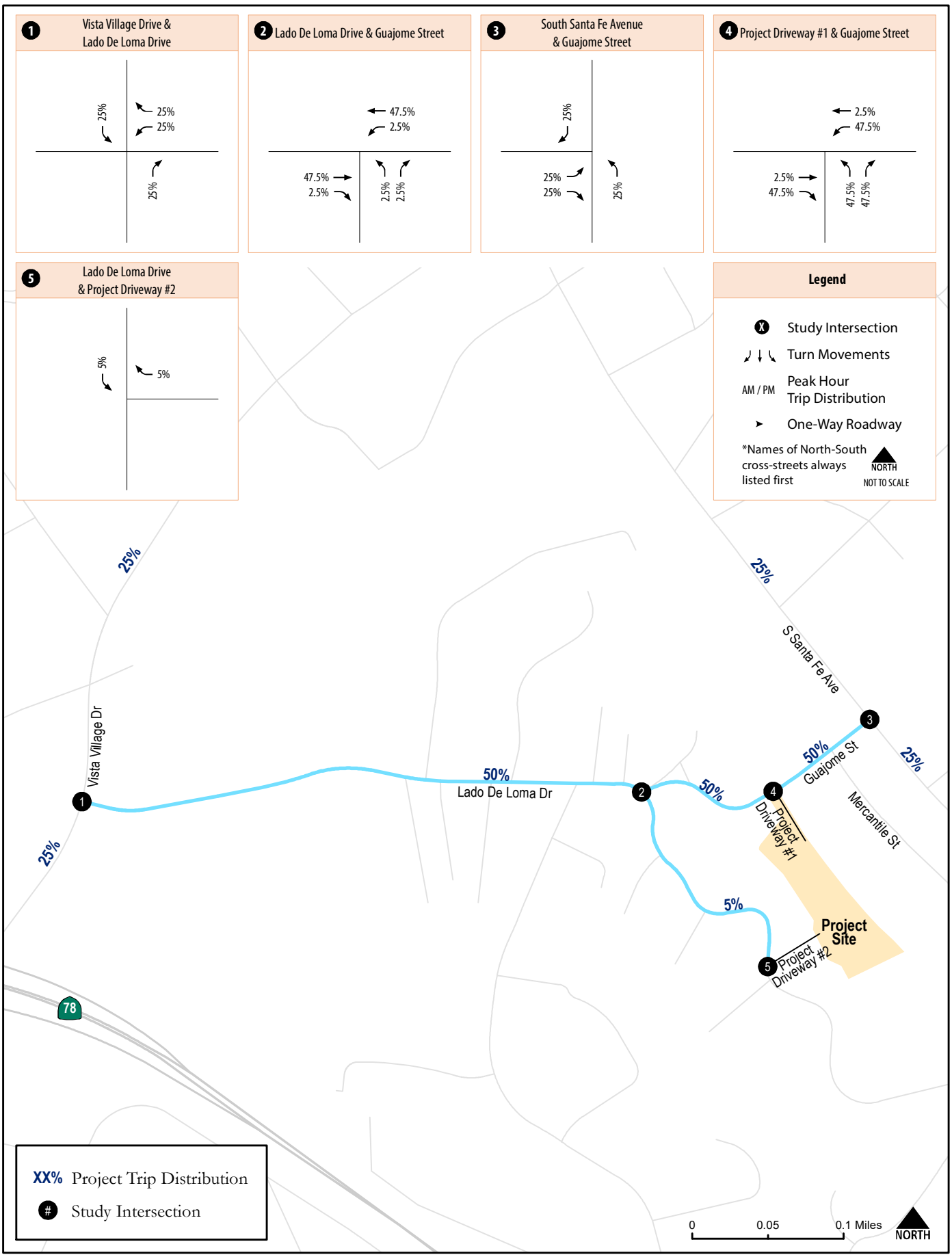
SCALE: 1" = 30'

0 30 60 90

PASCO LARET SUITER & ASSOCIATES
San Diego | Solana Beach | Orange County
Phone 858.259.8212 | www.plsaengineering.com

SAVE DATE: 12/07/21 - PLOT DATE: 12/07/21 - FILE NAME: J:\ACTIVE JOBS\3599 PHEASANT HILLS\CIVIL\DRAWING\EXHIBITS\3599-GUAJOME EXHIBIT.dwg

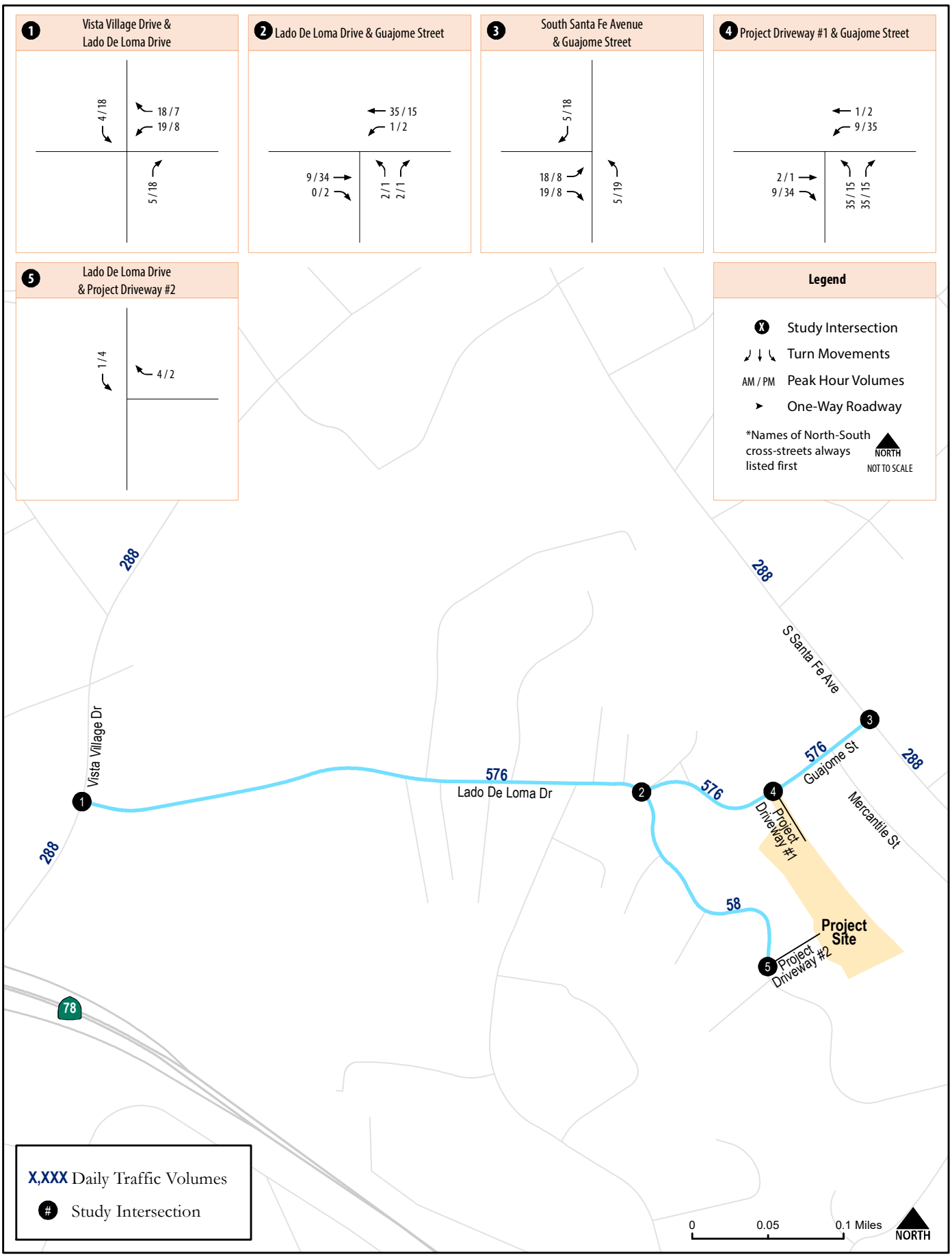
Attachment B - Project Trip Generation, Distribution, and Assignment



Pheasant Hill Multi-Family Local Transportation Study

C+R

Figure 1.3
Project Trip Distribution



Pheasant Hill Multi-Family Local Transportation Study

C+R

Figure 1.4
Project Trip Assignment

Multifamily Housing (Mid-Rise)
Close to Rail Transit (221)

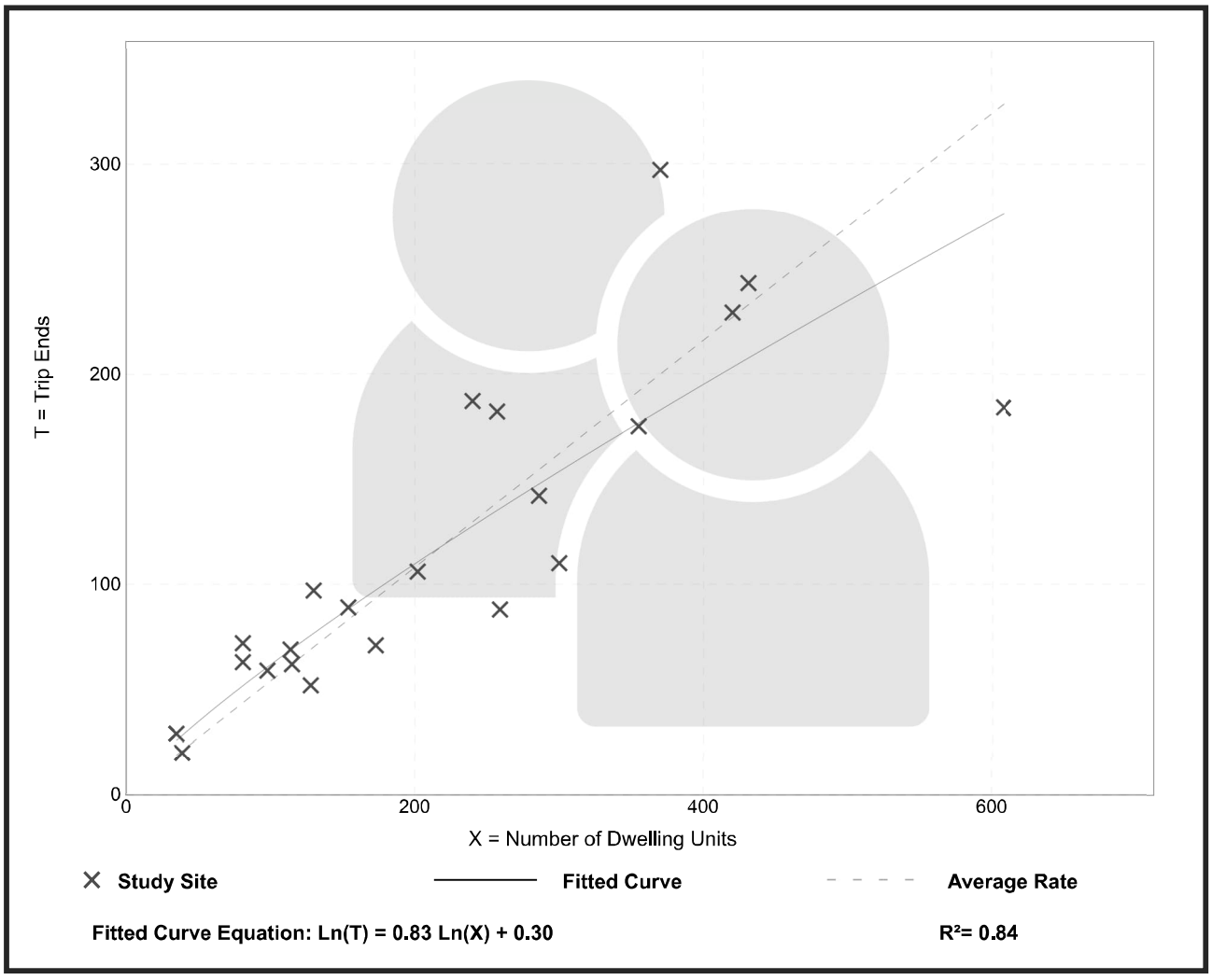
Person Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
AM Peak Hour of Generator

Setting/Location: **Dense Multi-Use Urban**
Number of Studies: 22
Avg. Num. of Dwelling Units: 222
Directional Distribution: 23% entering, 77% exiting

Person Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.54	0.30 - 0.89	0.17

Data Plot and Equation



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Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

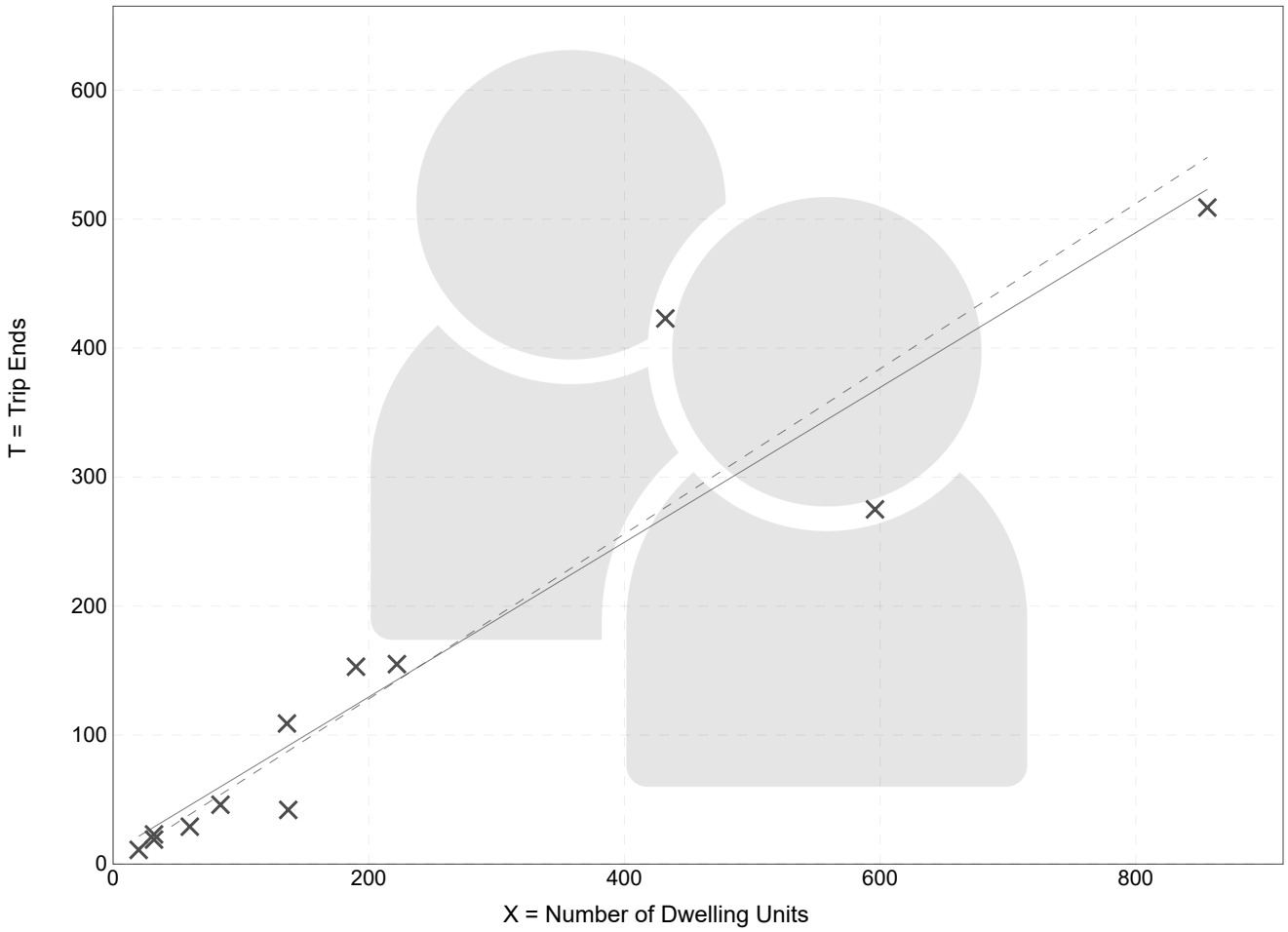
Person Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
PM Peak Hour of Generator

Setting/Location: **Dense Multi-Use Urban**
Number of Studies: 12
Avg. Num. of Dwelling Units: 233
Directional Distribution: 57% entering, 43% exiting

Person Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.64	0.31 - 0.98	0.20

Data Plot and Equation



Fitted Curve Equation: T = 0.60(X) + 9.53

R^2= 0.88

Single-Family Attached Housing
(215)

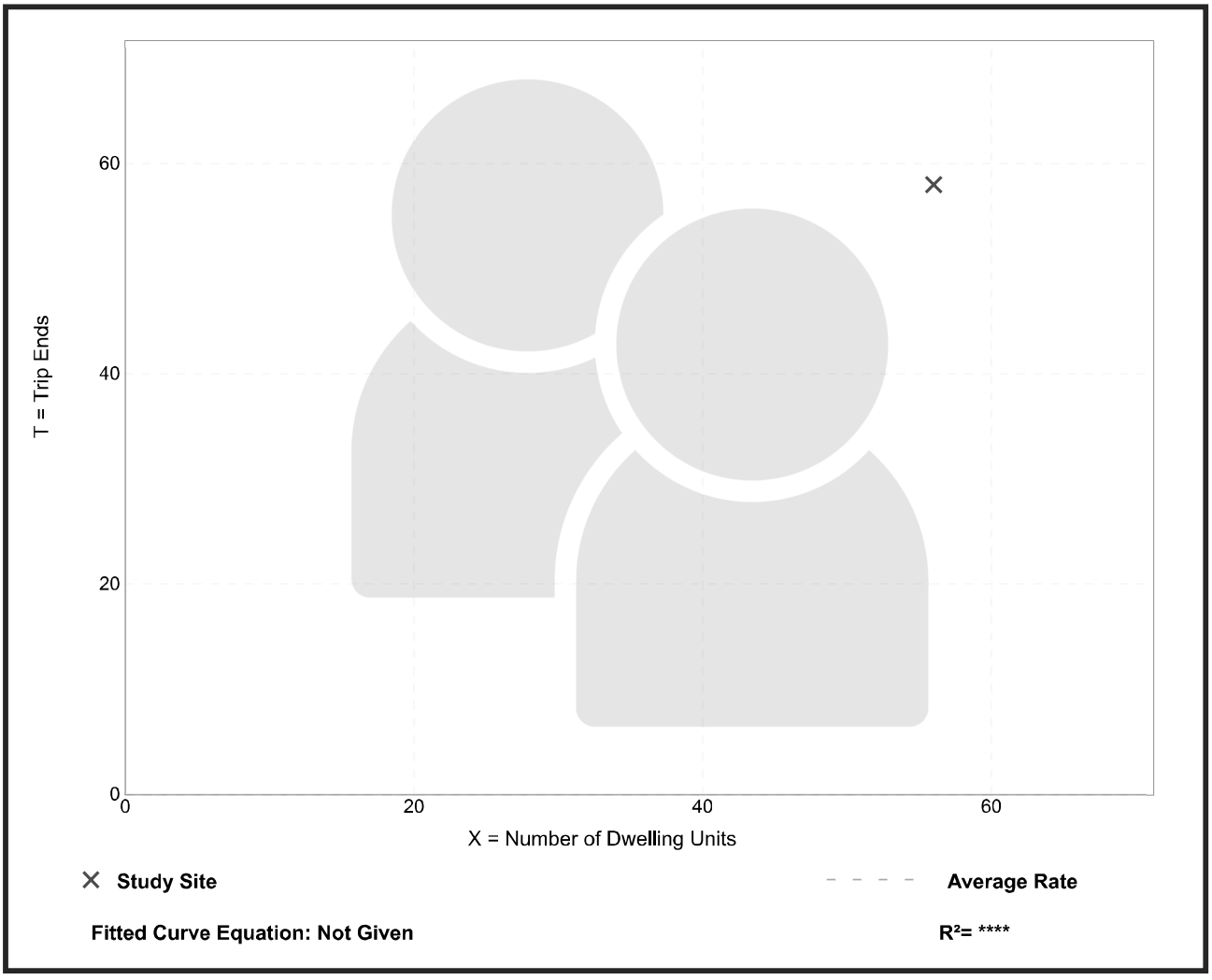
Person Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **Dense Multi-Use Urban**
Number of Studies: 1
Avg. Num. of Dwelling Units: 56
Directional Distribution: 48% entering, 52% exiting

Person Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
1.04	1.04 - 1.04	*

Data Plot and Equation

Caution – Small Sample Size



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Single-Family Attached Housing
(215)

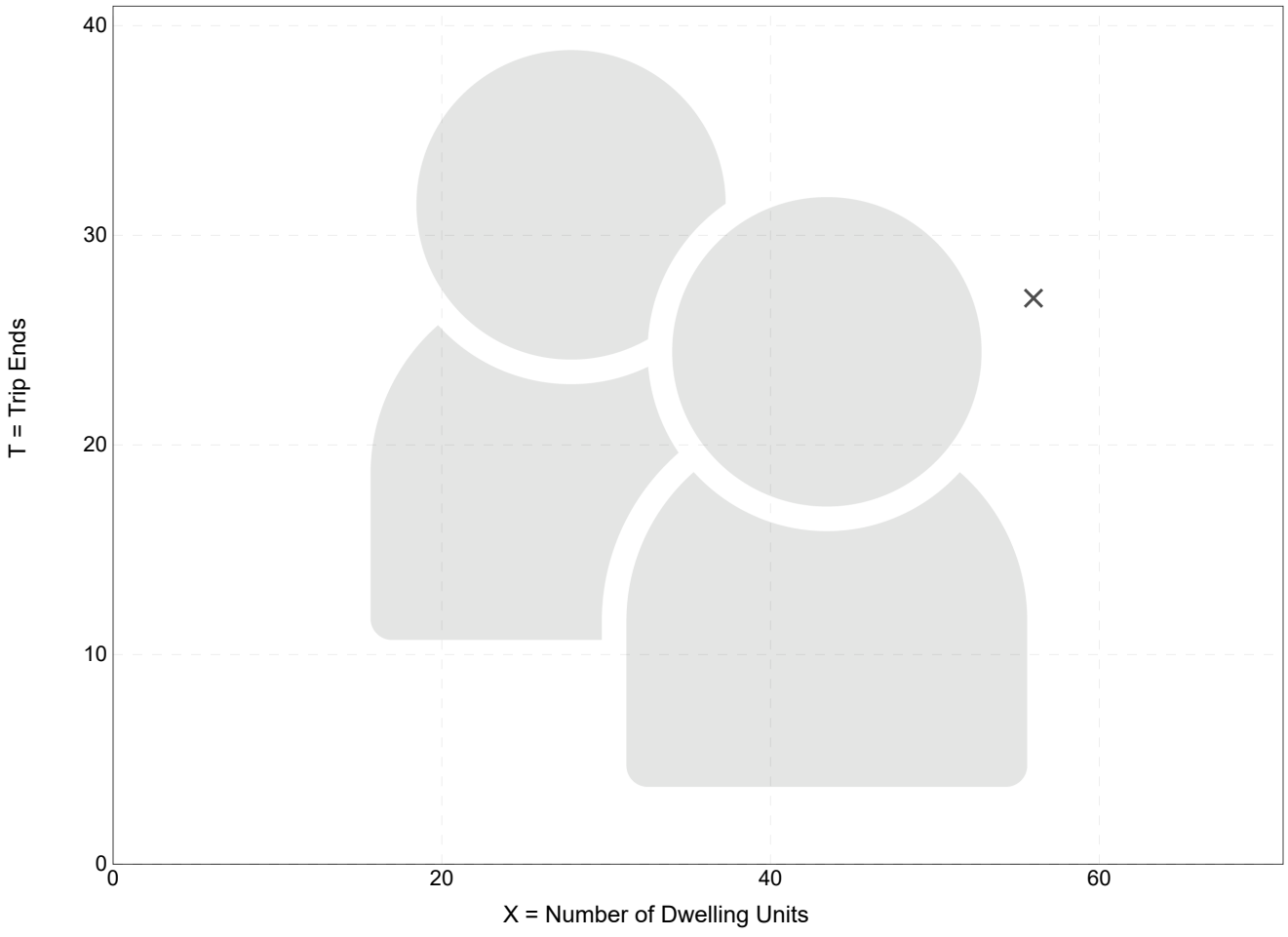
Person Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **Dense Multi-Use Urban**
Number of Studies: 1
Avg. Num. of Dwelling Units: 56
Directional Distribution: 52% entering, 48% exiting

Person Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.48	0.48 - 0.48	*

Data Plot and Equation

Caution – Small Sample Size



× **Study Site** – – – – **Average Rate**

Fitted Curve Equation: Not Given **R^2= ****

Attachment C - Traffic Counts

Counts Unlimited, Inc

PO Box 1178
Corona, CA 92878
Phone: 951-268-6268
email: counts@countsunlimited.com

City of Vista
Guajome Street
B/ Lado de Loma Drive - Mercantile Street
24 Hour Directional Volume Counts

VSTGULLME
Site Code: 229-21679

Start Time	11/10/2021 Wed	Eastbound Morning	Eastbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Westbound Morning	Westbound Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		1	41			2	37				
12:15		2	41			2	25				
12:30		0	29			1	33				
12:45		0	44	3	155	1	25	6	120	9	275
01:00		0	36			0	35				
01:15		2	28			0	37				
01:30		0	50			1	35				
01:45		1	44	3	158	0	39	1	146	4	304
02:00		2	56			1	32				
02:15		0	**60**			1	22				
02:30		0	**46**			0	38				
02:45		1	**66**	3	228	0	**51**	2	143	5	371
03:00		1	**66**			0	**54**				
03:15		1	46			1	**44**				
03:30		0	58			0	**51**				
03:45		1	47	3	217	0	47	1	196	4	413
04:00		1	46			0	39				
04:15		1	51			2	35				
04:30		3	44			2	46				
04:45		1	54	6	195	9	53	13	173	19	368
05:00		5	43			1	44				
05:15		7	37			4	41				
05:30		11	42			2	42				
05:45		8	33	31	155	7	31	14	158	45	313
06:00		15	37			6	25				
06:15		19	36			8	23				
06:30		21	28			11	39				
06:45		20	23	75	124	18	21	43	108	118	232
07:00		33	30			33	23				
07:15		28	19			23	18				
07:30		40	13			**35**	16				
07:45		32	28	133	90	**37**	11	128	68	261	158
08:00		43	15			**42**	18				
08:15		39	19			**29**	9				
08:30		38	12			20	12				
08:45		38	12	158	58	25	4	116	43	274	101
09:00		27	15			26	10				
09:15		27	2			29	6				
09:30		35	12			22	11				
09:45		37	5	126	34	32	2	109	29	235	63
10:00		41	2			22	10				
10:15		38	4			39	3				
10:30		31	3			32	2				
10:45		**42**	2	152	11	22	3	115	18	267	29
11:00		**37**	2			21	0				
11:15		**43**	5			29	4				
11:30		**38**	2			22	3				
11:45		31	1	149	10	25	0	97	7	246	17
Total		842	1435	842	1435	645	1209	645	1209	1487	2644
Combined Total		2277		2277		1854		1854		4131	
AM Peak	-	10:45	-	-	-	07:30	-	-	-	-	-
Vol.	-	160	-	-	-	143	-	-	-	-	-
P.H.F.		0.930				0.851					
PM Peak	-	-	02:15	-	-	-	02:45	-	-	-	-
Vol.	-	-	238	-	-	-	200	-	-	-	-
P.H.F.			0.902				0.926				
Percentage		37.0%	63.0%			34.8%	65.2%				
ADT/AADT		ADT 4,131		AADT 4,131							

Prepared by NDS/ATD

VOLUME

Guajome St Bet. Santa Fe Ave (S) & Lado De Loma Dr

Day: Thursday
Date: 12/14/2017

City: Vista
Project #: CA17_4294_117

DAILY TOTALS	NB	SB	EB	WB	Total
	2,074	1,458	0	0	3,532

AM Period	NB		SB		EB		WB		TOTAL		PM Period	NB		SB		EB		WB		TOTAL	
00:00	3		1						4		12:00	32		23						55	
00:15	4		0						4		12:15	32		23						55	
00:30	1		1						2		12:30	35		30						65	
00:45	1	9	0	2					1	11	12:45	30	129	35	111					65	240
01:00	1		1						2		13:00	32		14						46	
01:15	0		1						1		13:15	37		33						70	
01:30	0		1						1		13:30	33		17						50	
01:45	0	1	2	5					2	6	13:45	36	138	17	81					53	219
02:00	0		1						1		14:00	36		20						56	
02:15	0		2						2		14:15	38		27						65	
02:30	0		0						0		14:30	33		32						65	
02:45	0		0	3					0	3	14:45	51	158	35	114					86	272
03:00	1		0						1		15:00	56		41						97	
03:15	0		1						1		15:15	54		42						96	
03:30	1		2						3		15:30	47		30						77	
03:45	0	2	0	3					0	5	15:45	46	203	31	144					77	347
04:00	1		1						2		16:00	47		31						78	
04:15	0		1						1		16:15	54		38						92	
04:30	1		2						3		16:30	54		34						88	
04:45	4	6	3	7					7	13	16:45	52	207	39	142					91	349
05:00	4		2						6		17:00	44		45						89	
05:15	4		4						8		17:15	38		25						63	
05:30	11		2						13		17:30	45		32						77	
05:45	8	27	3	11					11	38	17:45	46	173	33	135					79	308
06:00	16		10						26		18:00	18		26						44	
06:15	13		8						21		18:15	30		31						61	
06:30	14		11						25		18:30	27		28						55	
06:45	12	55	10	39					22	94	18:45	26	101	14	99					40	200
07:00	30		17						47		19:00	21		25						46	
07:15	18		19						37		19:15	15		20						35	
07:30	42		27						69		19:30	20		18						38	
07:45	49	139	27	90					76	229	19:45	10	66	7	70					17	136
08:00	31		28						59		20:00	13		10						23	
08:15	43		20						63		20:15	13		13						26	
08:30	28		12						40		20:30	11		9						20	
08:45	37	139	21	81					58	220	20:45	14	51	9	41					23	92
09:00	28		12						40		21:00	15		11						26	
09:15	21		15						36		21:15	15		10						25	
09:30	30		15						45		21:30	19		7						26	
09:45	38	117	17	59					55	176	21:45	6	55	5	33					11	88
10:00	40		15						55		22:00	9		5						14	
10:15	30		19						49		22:15	4		13						17	
10:30	31		22						53		22:30	6		2						8	
10:45	21	122	16	72					37	194	22:45	3	22	1	21					4	43
11:00	38		15						53		23:00	5		0						5	
11:15	36		16						52		23:15	4		4						8	
11:30	39		24						63		23:30	4		1						5	
11:45	26	139	33	88					59	227	23:45	2	15	2	7					4	22
TOTALS		756		460						**1216**	**TOTALS**		1318		998						**2316**
SPLIT %		62.2%		37.8%						**34.4%**	**SPLIT %**		56.9%		43.1%						**65.6%**

DAILY TOTALS	NB	SB	EB	WB	Total
	2,074	1,458	0	0	3,532

AM Peak Hour	07:30	11:45			**07:30**	**PM Peak Hour**	14:45	16:15			**16:15**
AM Pk Volume	165	109			**267**	**PM Pk Volume**	208	156			**360**
Pk Hr Factor	0.842	0.826			**0.878**	**Pk Hr Factor**	0.929	0.867			**0.978**
7 - 9 Volume	278	171	0	0	**449**	**4 - 6 Volume**	380	277	0	0	**657**
7 - 9 Peak Hour	07:30	07:30			**07:30**	**4 - 6 Peak Hour**	16:00	16:15			**16:15**
7 - 9 Pk Volume	165	102	0	0	**267**	**4 - 6 Pk Volume**	207	156	0	0	**360**
Pk Hr Factor	0.842	0.911	0.000	0.000	**0.878**	**Pk Hr Factor**	0.958	0.867	0.000	0.000	**0.978**

Attachment D - Queuing Analysis Worksheets

$VISION					
* File:P:\Shared\Project\2021.0488_Pheasant Hill Multi-Family\Analysis\Round 2\VISSIM\Pheasant Hills.inpx					
* Comment:					
* Date:12/15/2021 4:08:48 PM					
* PTV Vissim:2021.00 [11]					
*					
* Table: Queue Results					
*					
* SIMRUN: SimRun	Simulation run (Number of simulation run)				
* TIMEINT: TimeInt	Time interval (Time interval)				
* QUEUECOUNTER: QueueCounter	Queue counter (Queue Counter)				
* QLEN: QLen	Queue length (A	the current queue length is measured upstream by the queue counter and the arithmetic mean is thus calculated per time interval.) [ft]			
* QLENMAX: QLenMax	Queue length (r	the current queue length is measured upstream by the queue counter and the maximum is thus calculated per time interval.) [ft]			
* QSTOPS: QStops	Queue stops (Number of queue stops. A queue stop is where one vehicle that is directly upstream or within the queue length falls below the speed of the Begin attribute defined for the queue condition.)				
*					
* SimRun;TimeInt;QueueCounter;QLen;QLenMax;QStops					
* Simulation run;Time interval;Queue counter;Queue length;Queue length (maximum);Queue stops					
*					
SIMRUN: SimRun	TIMEINT	QUEUECOUNTER	QLEN	QLENMAX	QSTOPS
1	0-3600	1	0.34	46.71	4
2	0-3600	1	0.14	47.02	2
3	0-3600	1	0.21	47.39	1
4	0-3600	1	0	0	0
5	0-3600	1	0.01	21.15	1
6	0-3600	1	0.12	44.23	1
7	0-3600	1	0.12	44.6	2
8	0-3600	1	0	0	0
9	0-3600	1	0.17	44.61	1
10	0-3600	1	0.16	44.63	1
11	0-3600	1	0.05	44.67	1
12	0-3600	1	0.14	44.69	1
13	0-3600	1	0.04	45.72	1
14	0-3600	1	0.07	45.86	2
15	0-3600	1	0	0	0
16	0-3600	1	0.41	46.14	3
17	0-3600	1	0.04	46.42	1
18	0-3600	1	0.19	46.42	1
19	0-3600	1	0.18	45.86	2
20	0-3600	1	0.14	44.69	1
AVERAGE (Round up to the nearest 25 ft or length of 1 standard vehicle)			25	50	