



Avilla Rancho Vistoso East and West

Traffic Impact Analysis

South of Woodburne Avenue
on Rancho Vistoso Boulevard
North of Tangerine Road
in Oro Valley, Arizona

January 2022 - 1st Submittal
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Project No. 21-1550

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For Submittal to:
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AVILLA RANCHO VISTOSO EAST & WEST

PARCELS 5-U & 7-I TRAFFIC IMPACT ANALYSIS REPORT

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and North of Tangerine Road in Oro Valley, Arizona**

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October 2022 – 3rd Submittal

CivTech Project No. 21-1550

TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	1
INTRODUCTION	5
Study Requirements	5
Study Area And Study Intersections	5
Study Horizon Years	6
Site Access Driveways	6
EXISTING CONDITIONS.....	8
Land Use	8
Surrounding Land Use	8
Existing Roadway Network	8
Existing Intersection Configurations	8
Existing Traffic Volumes	9
2021 Existing Capacity Analysis.....	12
Existing Traffic Signal Warrant Analysis	13
2018 – 2020 Crash History	17
PROPOSED DEVELOPMENT	17
Site Location.....	17
Site Density/Intensity	17
Site Access Driveways	17
Site Circulation.....	18
Trip Generation.....	21
Vehicle Trip Distribution And Assignment.....	22
Future Background Traffic	26
Total Traffic.....	26
TRAFFIC AND IMPROVEMENT ANALYSIS	31
Turn Lane Warranting And Queue Length Analysis	33
Queue Storage.....	34
CONCLUSIONS.....	37

LIST OF TABLES

Table 1 – Level of Service Criteria for Controlled Intersections	12
Table 2 – 2021 Existing Peak Hour Levels of Service	13
Table 3 – 2021 Hourly Vehicle Distribution at Intersection 1	14
Table 4 – 2021 Hourly Vehicle Distribution at Driveway 2	15
Table 5 – 2021 Existing Traffic Signal Warrant Analysis	16
Table 6 – Crash Data Summary	17
Table 7 – Trip Generation	21
Table 8 – Site Trip Distribution	22
Table 9 – Peak Hour Levels of Service	31
Table 10 – Driveway Right-Turn Deceleration Lane Warranting Criteria AM(PM)	33
Table 11 – 2026 Queue Storage Lengths	35

LIST OF FIGURES

Figure 1 – Vicinity Map	7
Figure 2 – Existing Lane Configurations and Stop Controls	10
Figure 3 – Existing Peak Hour Traffic Volumes	11
Figure 4 – Site Plan and Access	20
Figure 5 – Trip Distribution	23
Figure 6 – 2023 Site Generated Traffic Volumes	24
Figure 7 - 2026 Site Generated Traffic Volumes	25
Figure 8 – 2023 Background Traffic Volumes	27
Figure 9 – 2026 Background Traffic Volumes	28
Figure 10 – 2023 Total Traffic Volumes	29
Figure 11 – 2026 Total Traffic Volumes	30
Figure 12 – Proposed Lane Configurations and Traffic Control	36

EXECUTIVE SUMMARY

NexMetro Communities is proposing two residential developments to be located east and west of Rancho Vistoso Boulevard, north of Tangerine Road within the limits of the Town of Oro Valley, AZ. The residential developments will be located on Parcel 5-U (east of Rancho Vistoso Boulevard) and Parcel 7-I (west of Rancho Vistoso Boulevard) Parcel 5-U is located north of the Safeway Shopping Center and will be called **Avilla Rancho Vistoso East**. The Parcel 5-U residential development will be for 88 multi-family home “casitas” and the Parcel 7-I residential development will be for 119 multi-family home “casitas”. The Parcel 7-I is a residential development, which is west of Rancho Vistoso Boulevard, will be called **Avilla Rancho Vistoso West**.

CivTech, Inc. has been retained by NexMetro Communities to prepare the Traffic Impact Analysis Report (TIA) for the proposed developments. Per the “*Town of Oro Valley Subdivision Street Standards and Policies Manual*”, the TIA shall be prepared per the ADOT requirements – ADOT TGP – 240 – Traffic Impact Analysis & Statement – August 2021. Based on the expected site-generated trips from the two parcels, the project will require a Category I TIA. The Study Area will be the site access driveways/roadways and the adjacent signalized intersections and/or major unsignalized street intersection within a minimum of a ½ mile. The Study Horizon Years will be the opening year and 3 years after opening. The proposed development will be constructed in one continuous phase beginning with Avilla Rancho Vistoso East (Parcel 5-U) to build-out in 2023 and then continuing onto Avilla Rancho Vistoso West (Parcel 7-I) to build-out in 2024. Therefore, per the ADOT requirements the Study Horizon Years will be 2023 and 2026. The purpose of this TIA is to address the traffic and transportation impacts of the proposed development on the surrounding streets and intersections.

The following conclusions and recommendations have been documented in this TIA

GENERAL

- The proposed development is anticipated to generate 1,478 weekday daily trips, 110 trips during the AM Peak Hour (26 in/ 84 out), and 130 trips during the PM Peak Hour (82 in/ 48 out).

SITE ACCESS DRIVEWAYS

There are a total of four (4) site access driveways.

- Access B – Is located along the south side of Woodburne Avenue and will be an “secondary access” driveway located approximately 1,230 feet west of Rancho Vistoso Boulevard. To be conservative, no vehicle trips are anticipated to use this site access driveway; therefore, no site-generated trips will be assigned to this driveway. This access will be gated.
- Access C – Is the main entrance into Avilla Rancho Vistoso West and is located along the west side of Avilla Drive. Access C will be a full movement access driveway. This access will be gated.
- Access D – Is the main entrance into Avilla Rancho Vistoso East. Access D will be a full access driveway and will be located approximately 280-feet east of Rancho Vistoso Boulevard along the existing Safeway access aisle. Access D will align with the existing Safeway PAAL that provides access to the parking lot. This access will be gated.

- Access F – Is an “emergency access only” located approximately 810-feet east of Rancho Vistoso Blvd. Access F will align with the access aisle behind the Safeway. This access will be gated with a “crash gate”.

SITE ACCESS ROADWAYS

A TIA was prepared and submitted to the Town of Oro Valley in January 2022 to support the Avilla Rancho Vistoso East and West residential developments. In analyzing the existing roadway network, it was determined that the traffic signal warrants were met for the Rancho Vistoso Boulevard/Driveway 2 intersection and the Rancho Vistoso Boulevard/Woodburne Avenue intersection for the existing traffic conditions WITHOUT any of the traffic from the Avilla Rancho Vistoso development. The TIA that was submitted in January 2022 analyzed the two warranted traffic signals using synchronized traffic signals due to their close proximity. Subsequently, CivTech, Inc. received review comments from town staff requesting further discussion on the proposed two traffic signal approach and a request to analyze a regional approach in which only one traffic signal is warranted and proposed with the re-alignment of Woodburne Avenue to provide a connection to this new traffic signal.

A meeting was held on March 11, 2022, between CivTech, the developer and its representatives, and Town Engineering and Planning staff to further discuss this concept and the effects on the traffic patterns, existing roadway networks, costs of the regional solution, and the adjacent property disturbances. During this discussion, it was proposed to close off Woodburne Avenue to the NB traffic and only allowing right-in/right-out turn movements from Rancho Vistoso Boulevard onto and from Woodburne Avenue. As a result of this closure, something had to be done to accommodate the large volume NB left-turn movement from Rancho Vistoso Boulevard onto Woodburne Avenue. So, the idea was discussed to provide a connector road from Woodburne Avenue to Avilla Drive and to move the NB left-turns to the Rancho Vistoso Boulevard/Avilla Drive-Driveway 2 intersection. Further discussion with Town staff led to the proposed roadway network described below and shown in **Figure 4** and further analyzed in this TIA.

As a result of this new roadway network, the proposed traffic signal at the Rancho Vistoso Boulevard/Woodburne Avenue intersection (Warrants were met for the existing traffic conditions) will no longer be needed. Also, the existing EB left-turn lane at this intersection will no longer be allowed, therefore the Woodburne Avenue EB approach will need to be re-stripped for only an EB right-turn lane.

There are a total of three (3) internal circulation access improvements proposed.

- Avilla Drive – Is an approximately 950-ft long proposed curvilinear roadway proposed to align with Rancho Vistoso Boulevard to the east at *Driveway 2* and to align with Tangerine Road to the south at *Wells Fargo Driveway*. The roadway is anticipated to require 60 feet of right-of-way and have a cross-sectional width of 43 feet.
- Woodburne Avenue Re-Alignment – Is an approximately 140-ft long proposed roadway segment that transitions approximately 340 ft west of Ranch Vistoso Boulevard along Woodburne Avenue. Woodburne Avenue is re-aligned using Vistoso Drive to facilitate the closing of the existing median break at Woodburne Avenue so that the existing SB left-turn bay may be lengthened.

- Vistoso Drive – Is an approximately 500-ft long proposed curvilinear roadway that is formed by the re-alignment of Woodburne. It is proposed to terminate at Avilla Drive to the east and transitions into Woodburne Avenue approximately 520-ft west of Avilla Drive.

2021 EXISTING CONDITIONS

- The results of the 2021 existing conditions analysis indicate that all Study Intersections operate with acceptable Level of Service (LOS D or better). With the exception of the WB approach at the **Rancho Vistoso Boulevard/Driveway 2** intersection during the PM Peak Hour.

2021 TRAFFIC SIGNAL WARRANT ANALYSIS

- The results of the Traffic Signal Warrant Analysis indicate that Warrants 1, 2, and 3 are all met for the 2021 existing traffic conditions at the **Rancho Vistoso Boulevard/Woodburne Avenue** intersection and the **Rancho Vistoso Boulevard/Driveway 2** intersection **without any future development**. Therefore, any further analysis of the existing traffic conditions provided in this TIA for the two intersections, will be analyzed as signalized intersections prior to the development of the proposed especially the **Rancho Vistoso Boulevard/Driveway 2** intersection.

STUDY HORIZON YEARS – 2023 AND 2026

- The results of the Synchro analysis summarized indicate that all Study Intersections operate with overall acceptable Levels of Service (LOS D or better), with the exception of the existing **Tangerine Road/Driveway 6 intersection**.
- The existing Driveway 6 serves as the main entrance into the Placita de Oro Shopping Mall. The mall includes a Wells Fargo Bank, an Ace Hardware, a Goodwill Store, and a couple restaurants. The poor LOS and delay noted below is all due to the traffic entering and exiting the Placita de Oro Shopping Mall and **IT HAS NOTHING TO DO WITH THE TRAFFIC GENERATED BY THE PROPOSED AVILLA RANCHO VISTOSO EAST & WEST DEVELOPMENT**.
- For the 2026 No-Build scenario, for the unsignalized **Tangerine Road/Driveway 6-Avilla Drive intersection**, the NB left-turn movement will operate with a projected delay of 45.4 sec/veh and 40.7 sec/veh (LOS E) during the AM and PM Peak Hour, respectively.
- For the 2026 Build scenario, for the unsignalized intersection of **Tangerine Road and Driveway 6/Avilla Drive**, the NB left approach operates with a projected delay of 49.3 sec/veh and 42.9 sec/veh (LOS E) during the AM and PM Peak Hour, respectively. The SB left approach operates with a projected delay of 44.3 sec/veh (LOS E) during the PM Peak Hour. Side street delay along arterial roadways during the Peak Hour is not uncommon. With higher volume arterials provide minimal platooning between signalizations and therefore not enough gaps in traffic for vehicles along side streets.

RIGHT-TURN LANES

- **NOTE:** The warrants for the NB right turn lane at the **Rancho Vistoso Boulevard/Driveway 2-Avilla Drive** are met for the existing 2021 traffic conditions **WITHOUT** the proposed the proposed Avilla Rancho Vistoso East & West development. The warrants are per the ADOT Standards. As a result, this intersection will need to be widened to accommodate the NB right-turn lane.
- **NOTE:** The warrants for a new NB right turn lane on the NB approach at the **Rancho Vistoso Boulevard/Driveway 6-Avilla Drive intersection** are met for the 2021 existing traffic conditions per the ADOT Standards. However, this an existing traffic condition that has nothing to do with the traffic generated by the proposed Avilla Rancho Vistoso East & West development.

LEFT-TURN LANES

- The developer will be responsible for the modification of the existing median along Rancho Vistoso Boulevard to provide a NB left turn lane at Driveway 2 as well as the modification of the existing median along Tangerine Road to provide the EB left turn lane at Driveway 6. The modification of the medians to provide the left turn deceleration lanes will be done in accordance with the City of Tucson Department of Transportation (TDT) Pavement Marking Design Manual. Per the Manual, the minimum turn lane storage length on a roadway with a posted speed limit of 45 mph is 150-feet.

QUEUE STORAGE

- The recommended storage lengths are provided for 2026 Study Horizon Year using the Total Traffic volumes.

INTRODUCTION

NexMetro Communities is proposing two residential developments to be located east and west of Rancho Vistoso Boulevard, north of Tangerine Road within the limits of the Town of Oro Valley, AZ. The residential developments will be located on Parcel 5-U (east of Rancho Vistoso Boulevard) and Parcel 7-I (west of Rancho Vistoso Boulevard) Parcel 5-U is located north of the Safeway Shopping Center and will be called **Avilla Rancho Vistoso East**. The Parcel 5-U residential development will be for 88 multi-family home “casitas” and the Parcel 7-I residential development will be for 119 multi-family home “casitas”. The Parcel 7-I is a residential development, which is west of Rancho Vistoso Boulevard, will be called **Avilla Rancho Vistoso West**.

CivTech, Inc. has been retained by NexMetro Communities to prepare the Traffic Impact Analysis Report (TIA) for the proposed developments. Per the *“Town of Oro Valley Subdivision Street Standards and Policies Manual”*, the TIA shall be prepared per the ADOT requirements – ADOT TGP – 240 – Traffic Impact Analysis & Statement – August 2021. Based on the expected site-generated trips from the two parcels, the project will require a Category I TIA. The Study Area will consist of the site access driveways/roadways and the adjacent signalized intersections and/or major unsignalized street intersection within a minimum of a ½ mile. The Study Horizon Years will be the opening year and 3 years after opening. The proposed development will be constructed in one continuous phase beginning with Avilla Rancho Vistoso East (Parcel 5-U) to build-out in 2023 and then continuing onto Avilla Rancho Vistoso West (Parcel 7-I) to build-out in 2024. Therefore, per the ADOT requirements the Study Horizon Years will be 2023 and 2026.

See **Figure 1** for the Vicinity Map which shows the two sites and the existing roadway network. The driveway locations are shown in **Figure 4**.

STUDY REQUIREMENTS

This TIA analyzes the traffic impact due to the proposed development on the surrounding street network. The TIA has been prepared in conformance with the *Town of Oro Valley Subdivision Street Standards and Policies Manual – May 2004* using the ADOT requirements. The specific objectives of the TIA are:

- To determine whether the planned street system in the vicinity of the site is adequate to accommodate the increased traffic that results from the proposed development.
- To recommend additional street improvements or traffic control devices, where necessary, to mitigate the additional site-generated traffic; and,
- Evaluate the internal site circulation and provide recommendations if necessary.

STUDY AREA AND STUDY INTERSECTIONS

The Study Area has been defined as including the following Study Intersections:

- Tangerine Road & Rancho Vistoso Boulevard-1st Avenue (Intersection 5)
- Rancho Vistoso Boulevard & Woodburne Ave. (Intersection 1)

- Avilla Drive & Access C
- Woodburne Avenue & Access B
- Rancho Vistoso Boulevard & Driveway 3
- Rancho Vistoso Boulevard & Driveway 2
- Tangerine Road & Access 6
- Tangerine Road & Driveway 4

STUDY HORIZON YEARS

This TIA has been prepared per the *Town of Oro Valley Subdivision Street Standards and Policies Manual – May 2004*. The manual defers the Traffic Impact Analysis Report to the ADOT requirements, specifically, ADOT TGP 240 – Traffic Impact Analysis & Statement – August 2021. The proposed development is anticipated to generate greater than 100 but less than 500 trips during the morning and afternoon Peak Hours. Therefore, per ADOT requirements a Category I TIA will be required. The Study Horizon Years will be the 2023 Opening Year and three (3) years after opening 2026.

The Study Intersections and the site accesses noted above will be analyzed for the AM and PM Peak Hours to determine the recommended intersection lane configuration, intersection stop control, turn lane storage requirements, and roadway typical sections for the development.

SITE ACCESS DRIVEWAYS

There are a total of four (4) site access driveways.

- Access B – Is located along the south side of Woodburne Avenue and will be an “secondary access” driveway located approximately 1,230 feet west of Rancho Vistoso Boulevard. To be conservative, no vehicle trips are anticipated to use this site access driveway; therefore, no site-generated trips will be assigned to this driveway. This access will be gated.
- Access C – Is the main entrance into Avilla Rancho Vistoso West and is located along the west side of Avilla Drive. Access C will be a full movement access driveway. This access will be gated.
- Access D – Is the main entrance into Avilla Rancho Vistoso East. Access D will be a full access driveway and will be located approximately 280-feet east of Rancho Vistoso Boulevard along the existing Safeway access aisle. Access D will align with the existing Safeway PAAL that provides access to the parking lot. This access will be gated.
- Access F – Is an “emergency access only” located approximately 810-feet east of Rancho Vistoso Blvd. Access F will align with the access aisle behind the Safeway. This access will be gated with a “crash gate”.

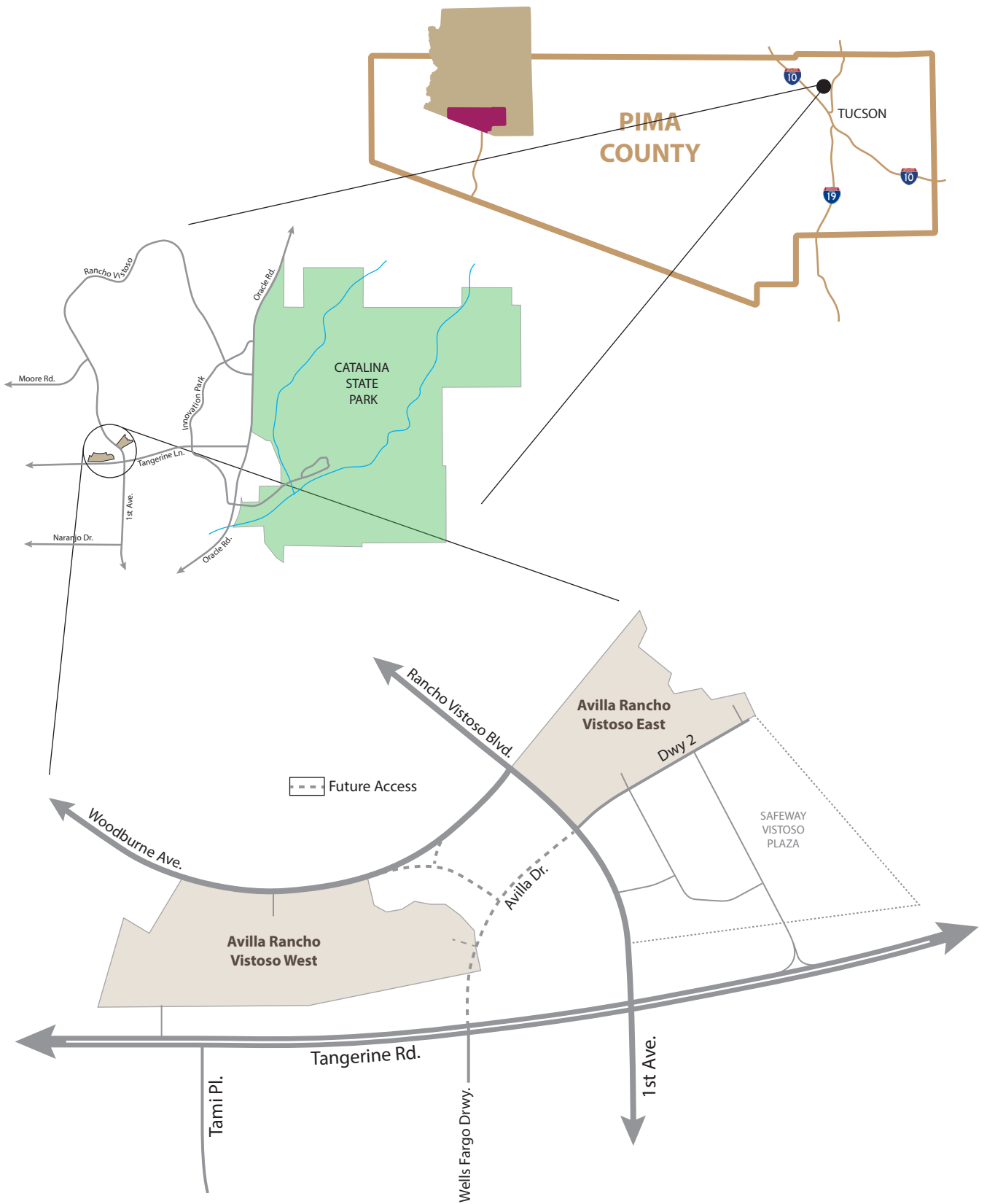


Figure 1: Vicinity Map

EXISTING CONDITIONS

LAND USE

The parcel where the proposed development will be located is currently vacant land.

SURROUNDING LAND USE

The surrounding land uses are mostly residential and retail/commercial uses and some vacant land. Arizona State Route 77/Oracle Road (SR-77) is located approximately one and half miles to the east (SR-77). I-10 is located approximately eight (8) miles to the west.

EXISTING ROADWAY NETWORK

The existing roadway network within the Study Area includes Tangerine Road, Rancho Vistoso Boulevard-First Avenue, Woodburne Avenue, and Safeway Access Driveways. The roadway classifications were obtained from the Pima County Road Classification Map. The proposed Avilla Drive will be a 2-lane roadway and be designed and constructed per the Town of Oro Valley requirements.

Tangerine Road is an east-west four (4) lane arterial street with two (2) lanes of travel in each direction of travel, a raised center median, and a bike lane in the vicinity of the proposed development. The posted speed limit is 45 mph within the vicinity of the site.

Rancho Vistoso Boulevard-First Avenue is a north-south four (4) lane arterial street with two lanes in each direction of travel a raised center median, and a bike lane. The posted speed limit is 45 mph within the vicinity of the site.

Woodburne Avenue is an east-west two (2) lane collector street with one (1) lanes of travel and a bike lane in each direction of travel. The posted speed limit is 35 mph within the vicinity of the site.

EXISTING INTERSECTION CONFIGURATIONS

The existing signalized **Tangerine Road/Rancho Vistoso Boulevard-First Avenue (Intersection 5)** intersection functions with protected/permitted left-turn phasing on all approaches. The NB and SB approaches consists of one (1) exclusive left-turn lane, two (2) through lanes, a bike lane, and one (1) dedicated right-turn lane. The EB and WB approaches consists of one (1) exclusive left-turn lane, two (2) through lanes, a bike lane, and one (1) dedicated right-turn lane.

The existing unsignalized **Rancho Vistoso Boulevard/Woodburne Avenue (Intersection 1)** intersection operates as a "T" intersection with STOP control on the EB approach. The NB approach consists of an exclusive left-turn lane, two (2) through lanes, and a bike lane. The SB approach consists of one (1) through lane, one (1) shared through/right-turn lane, and a bike lane. The EB approach consists of a left-turn lane and a right-turn lane.

The existing unsignalized **Rancho Vistoso Boulevard/Driveway 2** intersection operates as a "T" intersection with STOP control on the WB approach. The NB approach consists of one (1) through lane, one (1) shared through/right lane, and a bike lane. The SB approach consists of an exclusive

left-turn lane, two (2) through lanes, and a bike lane. The WB approach consist of a shared left/right-turn lane.

The existing unsignalized **Rancho Vistoso Boulevard/Driveway 3** intersection operates as a “T” intersection with STOP control on the WB approach. The NB approach consists of one (1) through lane, one (1) shared through/right lane, and a bike lane. The SB approach consists of an exclusive left-turn lane, two (2) through lanes, and a bike lane. The WB Approach consists of a single lane allowing only a right turn out.

The existing unsignalized **Tangerine Road/Driveway 4** intersection operates as a “T” intersection with STOP control on the SB approach. The SB approach is controlled by a raised concrete median that only allows a WB right-turn in and a SB right-turn out.

The existing unsignalized **Tangerine Road/Wells Fargo Driveway (Driveway 6)** intersection operates as a “T” intersection with STOP control on the NB approach. The NB approach consists of a shared left/right-turn lane. This driveway serves that existing Wells Fargo Bank.

The existing unsignalized **Tangerine Road/Tami Lane (Driveway 7)** intersection operates as a “T” intersection with STOP control in the NB approach. The EB approach consists of one (1) through lane and one (1) shared through/right-turn lane. The WB approach consists of (1) exclusive left-turn lane and two (2) through lanes. The NB approach consist of a shared left/right-turn lane.

The existing intersection lane configurations and traffic control is illustrated in **Figure 2**.

EXISTING TRAFFIC VOLUMES

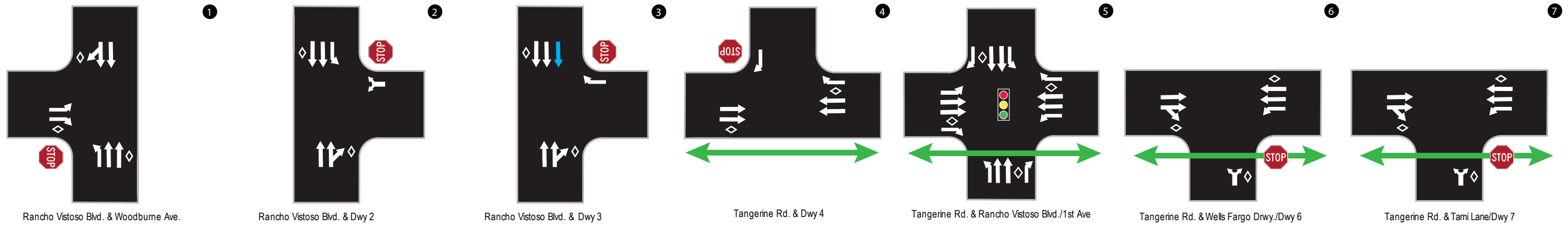
CivTech engaged Field Data Services of Arizona, Inc. /Veracity Traffic Group to record traffic volumes at three (3) Study Intersections within the project vicinity. Peak Hour volume turning movement counts were performed for 24-hours on Wednesday, October 20, 2021. Peak Hour turning movement counts were collected at the following Study Intersections:

- Rancho Vistoso Blvd. & Driveway 2
- Rancho Vistoso Blvd. & Driveway 3
- Tangerine Road & Driveway 4

CivTech engaged Field Data Services of Arizona, Inc. /Veracity Traffic Group to record traffic volumes at four (4) Study Intersections within the project vicinity. Peak Hour volume turning movement counts were performed for 24-hours on Tuesday, December 7, 2021. Peak Hour turning movement counts were collected at the following Study Intersections:

- Rancho Vistoso Blvd. & 1st Ave./Tangerine Rd.
- Rancho Vistoso Blvd. & Woodburne Ave.
- Tangerine Rd. & Wells Fargo Drwy.
- Tangerine Rd. & Tami Pl.

The existing traffic volumes observed for this study are presented in **Figure 3** for the weekday AM and PM Peak Hours. Traffic volume data obtained for this study have been included in **Appendix B**.



LEGEND

	Thru or Turning Movement		Traffic Signal
	Two-Way Left Turn-Lane		Stop Sign
	Raised Median		Speed Limit
	Bike Lane		
	Multi-Use Path		
	Left Turn Drop Lane		

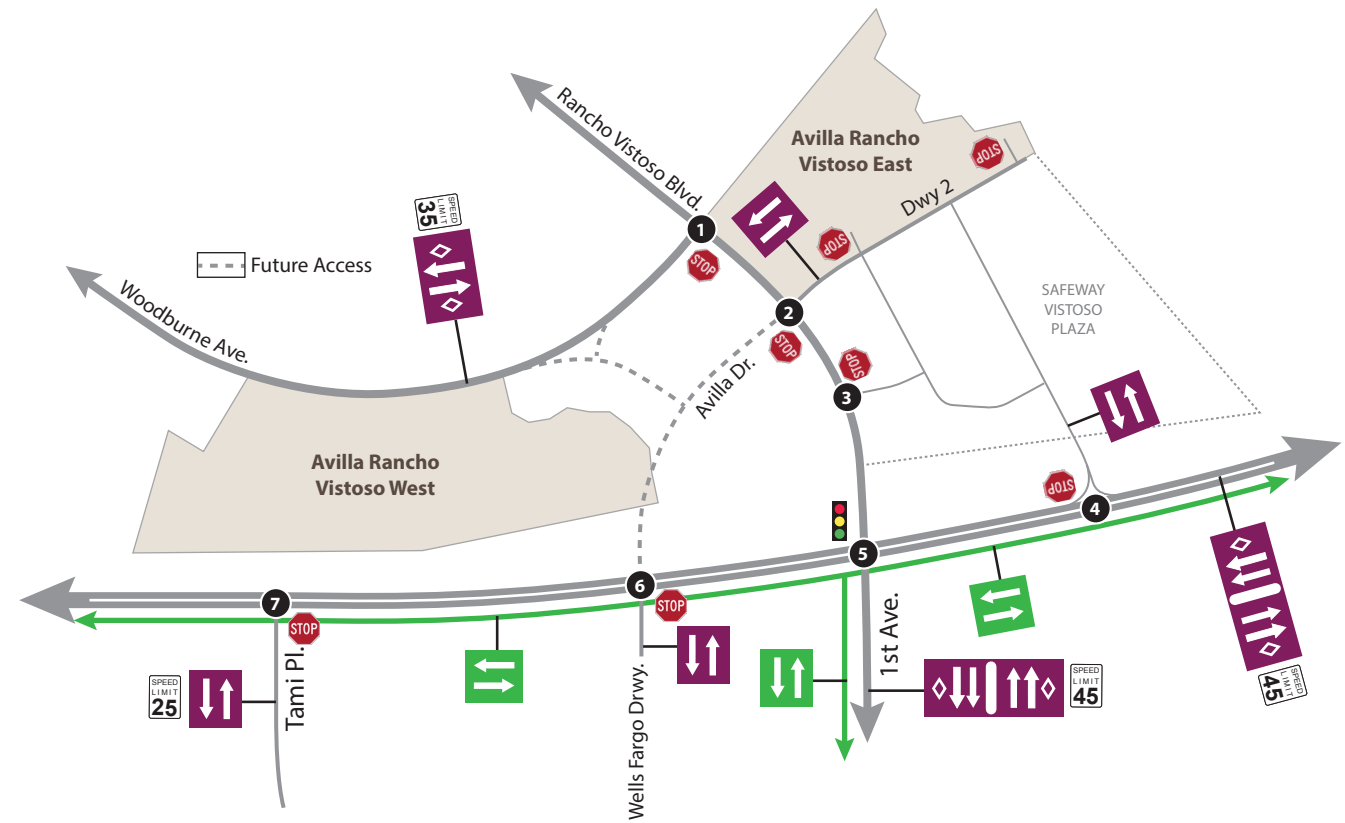


Figure 2: Existing Lane Configurations and Traffic Controls

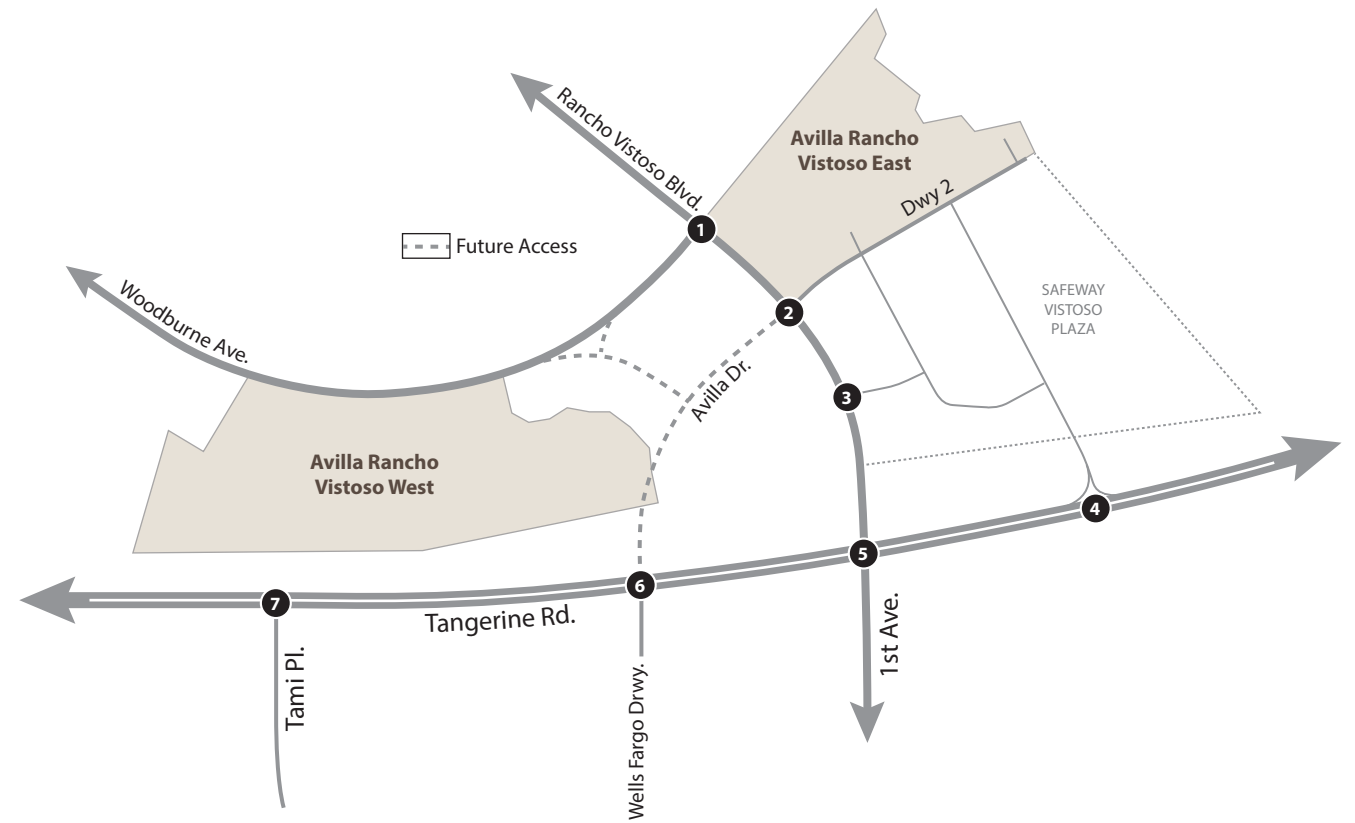
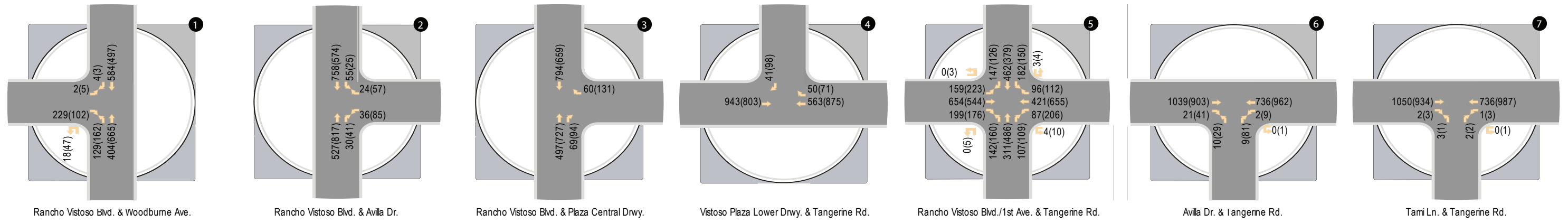


Figure 3: Existing Peak Hour Traffic Volumes

2021 EXISTING CAPACITY ANALYSIS

Peak Hour capacity analyses have been conducted for the Study Intersections based on existing intersection configurations and traffic volumes. All intersections have been analyzed using the methodologies presented in the *Highway Capacity Manual (HCM)*, Updated 2016, *Special Report 209*, and using Synchro software, version 11.0 under the HCM 6th edition (2016) methodology.

The concept of Level of Service (LOS) uses qualitative measures that characterize operational conditions within the traffic stream. The individual Levels of Service are described by factors that include speed, travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six Levels of Service are defined for each type of facility for which analysis procedures are available. They are given letter designations A through F, with LOS A representing the best operating conditions and LOS F the worst. Each Level of Service represents a range of operating conditions. Levels of Service for intersections are defined within ranges of average control delay per vehicle, the number of seconds a vehicle can expect to wait due to the presence of a traffic control device. **Table 1** lists the Level of Service criteria for signalized and unsignalized intersections, respectively.

Table 1 – Level of Service Criteria for Controlled Intersections

Level-of-Service	Signalized Control Delay (sec/veh)	Unsignalized Control Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80 (or v/c > 1)	> 50 (or v/c > 1)

Source: Exhibits 19-8, 20-2, 21-8, and 22-8, Highway Capacity Manual, 6th Edition (2016)

Synchro 11.0 software calculates the LOS per the HCM 6th edition (2016) methodology. The 6th edition HCM documents the signalized LOS calculation methodology which considers lane geometry, traffic volumes and cycle length/phasing to compute LOS. Synchro analysis worksheets report individual movement delay/LOS and overall delay/LOS for signalized intersections; unsignalized intersection worksheets report the worst-case delay/LOS and the average overall intersection delay. Signal timing at the intersection of **1st Avenue/Rancho Vistoso Boulevard and Tangerine Road** was provided to CivTech by the Town of Oro Valley. Results of the existing Level of Service analyses are shown in **Table 2** for both AM and PM Peak Hours. The existing conditions analysis worksheets have been included in **Appendix C**.

Table 2 – 2021 Existing Peak Hour Levels of Service

ID	Intersection	Control	Approach/ Movement	Existing LOS AM (PM)
1	Rancho Vistoso Blvd. & Woodburne Ave.	1-way Stop (EB)	NB Left EB Left EB Right	B (B) C (D) B (B)
2	Rancho Vistoso Blvd. & Dwy. 2	1-way Stop (WB)	SB Left WB Shared	A (B) C (F)
3	Rancho Vistoso Blvd. & Dwy. 3	1-way Stop (WB)	WB Right	A (B)
4	Tangerine Rd. & Dwy. 4	1-way Stop (SB)	SB Right	B (B)
5	Tangerine Rd. & Rancho Vistoso Blvd/1st Ave.	Signal	NB	C (D)
			SB	C (C)
			EB	D (E)
			WB	D (D)
			Overall	D (D)
6	Tangerine Rd. & Dwy. 6	1-way Stop (NB)	NB Shared WB Left	C (C) B (B)
7	Tangerine Rd. & Dwy. 7	1-way Stop (NB)	NB Shared WB Left	C (C) B (B)

The results of the 2021 existing conditions analysis summarized in **Table 2** indicate that all Study Intersections operate with overall acceptable Level of Service (LOS D or better) with the exception of the EB approach at **Rancho Vistoso Boulevard and Driveway 2** during the PM Peak Hour and **Tangerine Road & Rancho Vistoso Boulevard/1st Avenue** during the PM Peak Hour.

EXISTING TRAFFIC SIGNAL WARRANT ANALYSIS

HOURLY VEHICLE DISTRIBUTION

CivTech utilized the existing traffic volumes at two intersections: Rancho Vistoso Boulevard & Woodburne Avenue and Rancho Vistoso Boulevard & Driveway 2 in the signal warrant analysis below. These volumes include existing volumes grown to account for regional growth added to the volumes produced by the proposed development. Along the major roadway, Rancho Vistoso Boulevard, CivTech utilized the calculated hourly vehicle distribution percentages based on the 2019 24-hour bi-directional counts from the Pima Association of Governments along Rancho Vistoso Boulevard in the NB and SB directions between Tangerine Road and Moore Road. The area is currently surrounded by residential homes to the north of Woodburne Avenue and at the northeast corner of Rancho Vistoso Boulevard and Tangerine Road are commercial developments. Therefore, it was assumed that the hourly vehicle distribution percentages based on existing 24-hour bi-directional will be consistent even in the future along Rancho Vistoso Boulevard at both mentioned intersections.

The minor approach, Woodburne Avenue, will utilize the existing hourly vehicle distribution percentages provided by the ITE based on LUC 210 to calculate the hourly existing vehicles at the EB approach volumes.

The minor approach, Driveway 2, will utilize the existing 24-hour driveway counts to calculate the 24-hour exiting vehicle distribution.

The highest volume of traffic occurs during the AM Peak Hour from 8:00 AM – 9:00 AM and during the PM Peak Hour from 4:00 PM – 5:00 PM based on the existing counts collected. With the hourly residential vehicle distribution given by existing 24-hour bi-directional counts and ITE’s, as discussed above; the existing Peak Hour approach volumes were used as the fixed volumes. Based on that information and the existing traffic volume, an equation was derived to calculate the directional approach for every hour. The results of the signal warrant analysis based on the AM and PM Peak Hour will be provided as part of **Appendix D** as well as shown in **Table 5**. The calculated 24-hourly vehicle distribution is presented in **Table 3** for the Rancho Vistoso Boulevard & Woodburne Avenue intersection.

Table 3 – 2021 Hourly Vehicle Distribution at Intersection 1

Time of Day	Total %Daily (NB)	Total %Daily (SB)	Total %Daily (EB)
00:00-1:00 AM	0.17%	0.17%	0.20%
1:00-2:00 AM	0.10%	0.10%	0.20%
2:00-3:00 AM	0.07%	0.07%	0.00%
3:00-4:00 AM	0.08%	0.08%	0.20%
4:00-5:00 AM	0.44%	0.44%	0.80%
5:00-6:00 AM	1.52%	1.52%	2.00%
6:00-7:00 AM	4.10%	4.10%	5.90%
7:00-8:00 AM	6.88%	6.88%	10.20%
8:00-9:00 AM⁽¹⁾	6.91%	6.91%	8.60%
9:00-10:00 AM	6.26%	6.26%	5.40%
10:00-11:00 AM	6.96%	6.96%	5.40%
11:00 AM-12:00 PM	6.83%	6.83%	5.10%
12:00-1:00 PM	7.83%	7.83%	5.60%
1:00-2:00 PM	7.24%	7.24%	5.90%
2:00-3:00 PM	7.19%	7.19%	6.20%
3:00-4:00 PM	7.79%	7.79%	6.00%
4:00-5:00 PM	7.92%	7.92%	7.50%
5:00-6:00 PM	6.96%	6.96%	7.40%
6:00-7:00 PM	5.58%	5.58%	5.90%
7:00-8:00 PM	3.67%	3.67%	4.30%
8:00-9:00 PM	2.46%	2.46%	3.10%
9:00-10:00 PM	1.77%	1.77%	2.40%
10:00-11:00 PM	0.81%	0.81%	1.10%
11:00 PM-12:00 AM	0.44%	0.44%	0.70%
Total Daily	100%	100.0%	100.0%

(1) Hourly vehicle distribution was applied to the Peak Hour traffic volume to calculate the hourly volumes.

The hourly vehicle distribution is presented in **Table 4** for the intersection **Rancho Vistoso Boulevard & Driveway 2**.

Table 4 – 2021 Hourly Vehicle Distribution at Driveway 2

Time of Day	Total %Daily (NB)	Total %Daily (SB)	Total %Daily (EB)
00:00-1:00 AM	0.17%	0.17%	0.03%
1:00-2:00 AM	0.10%	0.10%	0.03%
2:00-3:00 AM	0.07%	0.07%	0.17%
3:00-4:00 AM	0.08%	0.08%	0.10%
4:00-5:00 AM	0.44%	0.44%	0.03%
5:00-6:00 AM	1.52%	1.52%	0.10%
6:00-7:00 AM	4.10%	4.10%	1.09%
7:00-8:00 AM	6.88%	6.88%	3.85%
8:00-9:00 AM⁽¹⁾	6.91%	6.91%	4.06%
9:00-10:00 AM	6.26%	6.26%	6.82%
10:00-11:00 AM	6.96%	6.96%	7.26%
11:00 AM-12:00 PM	6.83%	6.83%	9.55%
12:00-1:00 PM	7.83%	7.83%	8.63%
1:00-2:00 PM	7.24%	7.24%	8.63%
2:00-3:00 PM	7.19%	7.19%	8.08%
3:00-4:00 PM	7.79%	7.79%	8.53%
4:00-5:00 PM	7.92%	7.92%	10.10%
5:00-6:00 PM	6.96%	6.96%	8.29%
6:00-7:00 PM	5.58%	5.58%	6.34%
7:00-8:00 PM	3.67%	3.67%	3.48%
8:00-9:00 PM	2.46%	2.46%	2.73%
9:00-10:00 PM	1.77%	1.77%	0.99%
10:00-11:00 PM	0.81%	0.81%	0.72%
11:00 PM-12:00 AM	0.44%	0.44%	0.38%
Total Daily	100%	100.0%	100.0%

(1) Hourly vehicle distribution was applied to the Peak Hour traffic volume to calculate the hourly volumes.

The current posted speed limit along Rancho Vistoso Boulevard is 45 MPH and along Woodburne Avenue the posted speed limit is 35 mph. The assumed speed limit on Driveway 2 is 15 mph. CivTech calculated hourly approach volumes at the two (2) Study Intersections Rancho Vistoso Boulevard & Woodburne Avenue and Rancho Vistoso Boulevard & Driveway 2 for both AM and PM Peak Hour for the signal warrant analysis evaluation provided in **Appendix D** and shown in **Table 3** and **Table 4**, respectively.

The traffic signal warrant analysis was analyzed in accordance with standard traffic signal warranting criteria found in the Manual on Uniform Traffic Control Devices, 2009 Edition (MUTCD).

The MUTCD describes nine (9) conditions, but in our analysis, there will be three (3) conditions under which a traffic signal might be warranted, designated Warrants 1 through 3; where Warrant 1 is the eight-hour vehicular volume, Warrant 2 is the four-hour vehicular volume, and Warrant 3 is the Peak Hour.

The MUTCD indicates that traffic control signals should be installed only after one or more of the traffic signal warrants are met. However, as provided in the MUTCD, the satisfaction of a warrant or warrants is not in itself justification for a traffic signal. Every situation is unique and warrant guidelines must be supplemented by the effects of specific site conditions, established traffic patterns, and the application of good engineering judgment. Installation of a traffic signal should improve the overall

safety and/or operation of an intersection and should be considered only when deemed necessary by careful traffic analysis and after less restrictive solutions have been attempted. Estimated approach traffic volumes at the subject intersection were compared to the MUTCD criteria to determine if a traffic signal would be warranted prior to the proposed development. The signal warrant results are summarized in **Table 5**.

Table 5 – 2021 Existing Traffic Signal Warrant Analysis

Reduction Factor	Warrant	Is Warrant Met?			
		Rancho Vistoso Boulevard & Woodburne Avenue		Rancho Vistoso Boulevard & Driveway 2	
		AM	PM	AM	PM
Warrant 1. Eight-Hour Vehicular Volume	Condition A: Minimum Vehicular Volume	Yes	No	No	No
	Condition B: Interruption of Continuous Traffic	Yes	Yes	Yes	Yes
	Combination of Condition A & Condition B	Yes	No	No	No
	Overall (Either Condition A or B satisfied meets warrant)	Yes	Yes	Yes	Yes
Warrant 2. Four Hour Vehicular Volume		Yes	Yes	Yes	Yes
Warrant 3. Peak Hour		Yes	Yes	Yes	Yes

Table 5 summarizes the volume-based warrant analysis results for the existing conditions. The warranting criteria for Warrants 2 and 3 were automatically calculated using formulae, not determined by the plotting method described in the MUTCD. The formula, which approximate the curves of the MUTCD.

The results of the Traffic Signal Warrant Analysis indicate that Warrants 1, 2, and 3 are all met for the 2021 existing traffic conditions at the **Rancho Vistoso Boulevard/Woodburne Avenue** intersection and the **Rancho Vistoso Boulevard/Driveway 2** intersection **without any future development**. Therefore, any further analysis of the existing traffic conditions provided in this TIA for the two intersections, will be analyzed as signalized intersections prior to the development of the proposed especially the **Rancho Vistoso Boulevard/Driveway 2** intersection.

Traffic signal warrant analysis worksheets are provided within **Appendix D**. Actual 24-hour approach counts should be conducted, and the intersection should be monitored to determine when traffic signal installation is required. Proposed lane configurations are shown in **Figure 12**.

2018 – 2020 CRASH HISTORY

Crash data for the Study Area was obtained for the past three (3) calendar years (2018 and 2020). Crash data for all Study Intersections were provided. In total, there have been 75 incidents within the Study Area from the beginning of 2018 to the end of 2020. A majority of these crashes occurred at intersections along the length of Tangerine Road within the vicinity of the site. The fewest crashes occurred at the intersections directly bordering the site. The summary of intersection crash data is presented in **Table 6**.

Table 6 – Crash Data Summary

General Location	3-Year Total	Year			Severity			Incident Type					
		2018	2019	2020	Non-Injury	Injury	Fatality	Single Vehicle	Angle	Left Turn	Rear End	Head On	Side Swipe
Rancho Vistoso Blvd & Woodburne Ave	14	2	8	4	14	0	0	2	2	5	3	0	2
Rancho Vistoso Boulevard & Dwy 2	12	2	6	4	12	0	0	2	2	4	2	0	2
Rancho Vistoso Blvd & Dwy 3	4	3	1	0	4	0	0	0	1	2	0	0	1
Tangerine Road & Dwy 4	0	0	0	0	0	0	0	0	0	0	0	0	0
Tangerine Road & Rancho Vistoso Blvd-1 st Ave	43	12	23	8	19	0	0	1	7	15	13	0	6
Tangerine Road & Tami Place	2	1	1	0	2	0	0	1	0	1	0	0	0
Tangerine Road & Wells Fargo Driveway	0	0	0	0	0	0	0	0	0	0	0	0	0

Of all of the incidents reviewed, all were non-injury and there were no fatalities. The highest percentage of accidents at most intersections is left-turn collisions and the lowest percentage of accidents being head on collisions. Crash analysis worksheets are included in **Appendix E**.

PROPOSED DEVELOPMENT

SITE LOCATION

The proposed two residential developments will be located east and west of Rancho Vistoso Boulevard, north of Tangerine Road within the limits of the Town of Oro Valley, AZ. The residential developments will be located on Parcel 5-U (east of Rancho Vistoso Boulevard) and Parcel 7-I (west of Rancho Vistoso Boulevard). Parcel 5-U is located north of the Safeway Shopping Center and will be called **Avilla Rancho Vistoso East**. The Parcel 5-U residential development will be for 87 multi-family home “casitas” and the Parcel 7-I residential development will be for 118 multi-family home “casitas”. The Parcel 7-I residential development will be called **Avilla Rancho Vistoso West**.

SITE DENSITY/INTENSITY

This development consists of approximately 205 units of proposed multi-family home “casitas” complex.

SITE ACCESS DRIVEWAYS

There are a total of four (4) site access driveways.

- Access B – Is located along the south side of Woodburne Avenue and will be an “secondary access” driveway located approximately 1,230 feet west of Rancho Vistoso Boulevard. To be

conservative, no vehicle trips are anticipated to use this site access driveway; therefore, no site-generated trips will be assigned to this driveway. This access will be gated.

- Access C – Is the main entrance into Avilla Rancho Vistoso West and is located along the west side of Avilla Drive. Access C will be a full movement access driveway. This access will be gated.
- Access D – Is the main entrance into Avilla Rancho Vistoso East. Access D will be a full access driveway and will be located approximately 280-feet east of Rancho Vistoso Boulevard along the existing Safeway access aisle. Access D will align with the existing Safeway PAAL that provides access to the parking lot. This access will be gated.
- Access F – Is an “emergency access only” located approximately 810-feet east of Rancho Vistoso Blvd. Access F will align with the access aisle behind the Safeway. This access will be gated with a “crash gate”.

The proposed development Site Plan and Accesses are shown in **Figure 4**.

SITE CIRCULATION

A TIA was prepared and submitted to the Town of Oro Valley in January 2022 to support the Avilla Rancho Vistoso East and West residential developments. In analyzing the existing roadway network, it was determined that the traffic signal warrants were met for the Rancho Vistoso Boulevard/Driveway 2 intersection and the Rancho Vistoso Boulevard/Woodburne Avenue intersection for the existing traffic conditions WITHOUT any of the traffic from the Avilla Rancho Vistoso development. The TIA that was submitted in January 2022 analyzed the two warranted traffic signals using synchronized traffic signals due to their close proximity. Subsequently, CivTech, Inc. received review comments from town staff requesting further discussion on the proposed two traffic signal approach and a request to analyze a regional approach in which only one traffic signal is warranted and proposed with the realignment of Woodburne Avenue to provide a connection to this new traffic signal.

A meeting was held on March 11, 2022, between CivTech, the developer and its representatives, and Town Engineering and Planning staff to further discuss this concept and the effects on the traffic patterns, existing roadway networks, costs of the regional solution, and the adjacent property disturbances. During this discussion, it was proposed to close off Woodburne Avenue to the NB traffic and only allowing right-in/right-out turn movements from Rancho Vistoso Boulevard onto and from Woodburne Avenue. As a result of this closure, something had to be done to accommodate the large volume NB left-turn movement from Rancho Vistoso Boulevard onto Woodburne Avenue. So, the idea was discussed to provide a connector road from Woodburne Avenue to Avilla Drive and to move the NB left-turns to the Rancho Vistoso Boulevard/Avilla Drive-Driveway 2 intersection. Further discussion with Town staff led to the proposed roadway network described below and shown in **Figure 4** and further analyzed in this TIA.

As a result of this new roadway network, the proposed traffic signal at the Rancho Vistoso Boulevard/Woodburne Avenue intersection (Warrants were met for the existing traffic conditions) will no longer be needed. Also, the existing EB left-turn lane at this intersection will no longer be allowed, therefore the Woodburne Avenue EB approach will need to be re-stripped for only an EB right-turn lane.

There are a total of three (3) internal circulation access improvements proposed.

- Avilla Drive – Is an approximately 950-ft long proposed curvilinear roadway proposed to align with Rancho Vistoso Boulevard to the east at *Driveway 2* and to align with Tangerine Road to the south at *Wells Fargo Driveway*. The roadway is anticipated to require 60 feet of right-of-way and have a cross-sectional width of 43 feet.
- Woodburne Avenue Re-Alignment – Is an approximately 140-ft long proposed roadway segment that transitions approximately 340 ft west of Ranch Vistoso Boulevard along Woodburne Avenue. Woodburne Avenue is re-aligned using Vistoso Drive to facilitate the closing of the existing median break at Woodburne Avenue so that the existing SB left-turn bay may be lengthened.
- Vistoso Drive – Is an approximately 500-ft long proposed curvilinear roadway that is formed by the re-alignment of Woodburne. It is proposed to terminate at Avilla Drive to the east and transitions into Woodburne Avenue approximately 520-ft west of Avilla Drive.
- The new Avilla Drive/Vistoso Drive intersection – The intersection need to be designed and constructed to accommodate a school bus including the curb returns.



Figure 4: Site Plan and Access

TRIP GENERATION

The potential trip generation for the proposed development was estimated utilizing the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition* and *Trip Generation Handbook, 3rd Edition*. The ITE *Trip Generation Manual* contains data collected by various transportation professionals for a wide range of different land uses. The data are summarized in the report and average rates and equations have been established that correlate the relationship between an independent variable that describes the development size and generated trips for each categorized land use. The report provides information for daily and Peak Hour trips.

The anticipated trip generation is summarized in **Table 7**. Detailed trip generation calculations are provided in **Appendix F**.

Table 7 – Trip Generation

Land Use	ITE Code	ITE Land Use Name	Acreage	Quantity Units ⁺	AM Distribution		PM Distribution			
					In	Out	In	Out		
Avilla Rancho Vistoso East	220	Apartments	7.733	88 DUs	24%	76%	63%	37%		
Avilla Rancho Vistoso West	220	Apartments	14.879	119 DUs	24%	76%	63%	37%		
Total Acreage			22.612							
Land Use	ADT		AM Peak Hour			PM Peak Hour				
	Avg. Rate*	Total	Avg. Rate*	In	Out	Total	Avg. Rate*	In	Out	Total
Avilla Rancho Vistoso East	7.28	640	0.57	12	38	50	0.67	37	21	58
Avilla Rancho Vistoso West	7.05	838	0.50	14	46	60	0.60	45	27	72
Totals Trips		1,478		26	84	110		82	48	130

Notes: *All average rates were calculated by dividing total trips generated using regression equation by the number of dwelling units. (See below.)
 DUs = Dwelling Units

CALCULATIONS (Equations shown only where applicable)			
Land Use [Units]	Daily	AM Peak Hour	PM Peak Hour
Apartments [88 DUs]	$T_{Day} = 88 \times 6.41 + 75.31 = 640$	$T_{AM} = 88 \times 0.31 + 22.85 = 50$	$T_{PM} = 88 \times 0.43 + 20.55 = 58$
Apartments [119 DUs]	$T_{Day} = 119 \times 6.41 + 75.31 = 838$	$T_{AM} = 119 \times 0.31 + 22.85 = 60$	$T_{PM} = 119 \times 0.43 + 20.55 = 72$

The proposed development is anticipated to generate 1,478 weekday daily trips, 110 trips during the AM Peak Hour (26 in/ 84 out), and 130 trips during the PM Peak Hour (82 in/ 48 out).

VEHICLE TRIP DISTRIBUTION AND ASSIGNMENT

A single trip distribution pattern was assumed for the proposed development. It is expected that the proposed development will generate trips based on existing and future employment within a 10-mile radius of the site. Future and existing total employment within a 10-mile radius of the site, as observed from satellite photography, was used as a basis to estimate trip distribution. No trips were assigned to/from the north along Rancho Vistoso Boulevard since the proposed development is residential in nature and developments to the north of the site are all residential. The circuitous nature of Rancho Vistoso Boulevard and the additional redundancy of Innovation Park Drive makes trips to/from the north along Rancho Vistoso Boulevard unlikely. The resulting trip distribution percentages for the Study Area are shown in **Table 8**.

Table 8 – Site Trip Distribution

Direction (To/From)	Percentage
1 st Avenue (south of Tangerine Road)	30%
Tangerine Road (east of Rancho Vistoso Boulevard)	40%
Tangerine Road (west of Rancho Vistoso Boulevard)	30%
Total	100%

Figure 5 illustrates the trip distribution percentages noted in **Table 8** on the roadway network within the Study Area. The percentages presented in **Figure 5** were applied to the site trips generated to determine the AM and PM Peak Hour site traffic at the intersections within the Study Area. **Figure 6** presents the resulting site generated traffic for the proposed development.

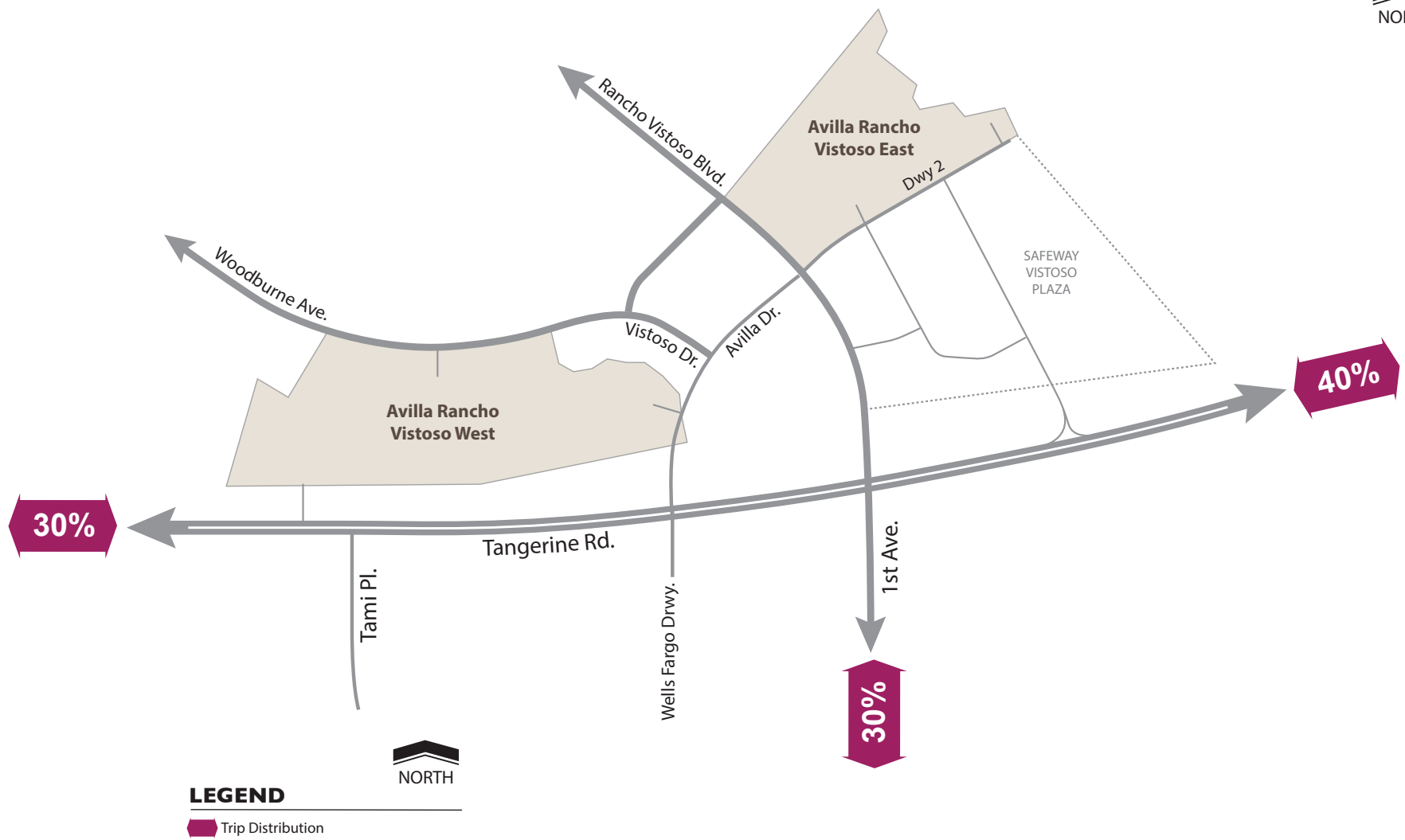


Figure 5: Trip Distribution

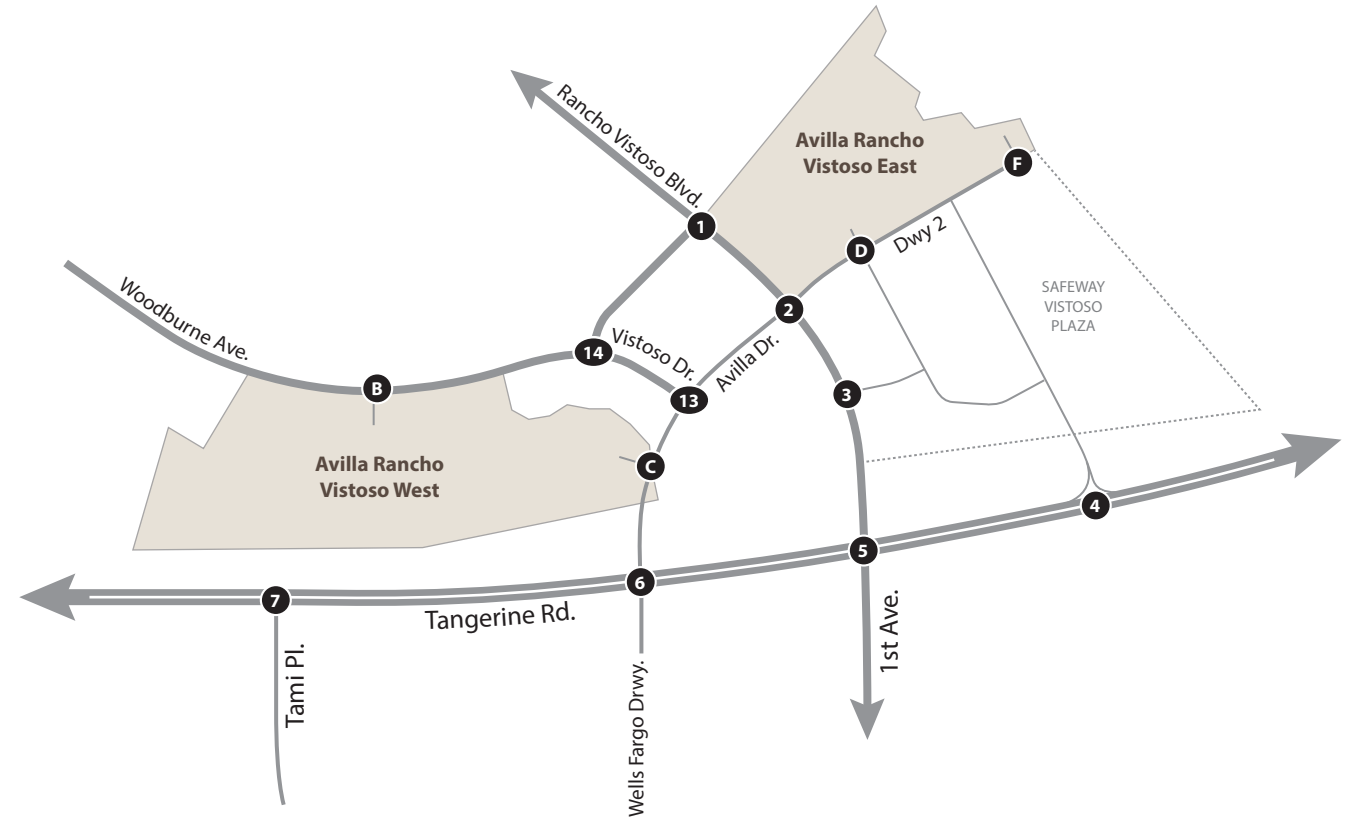
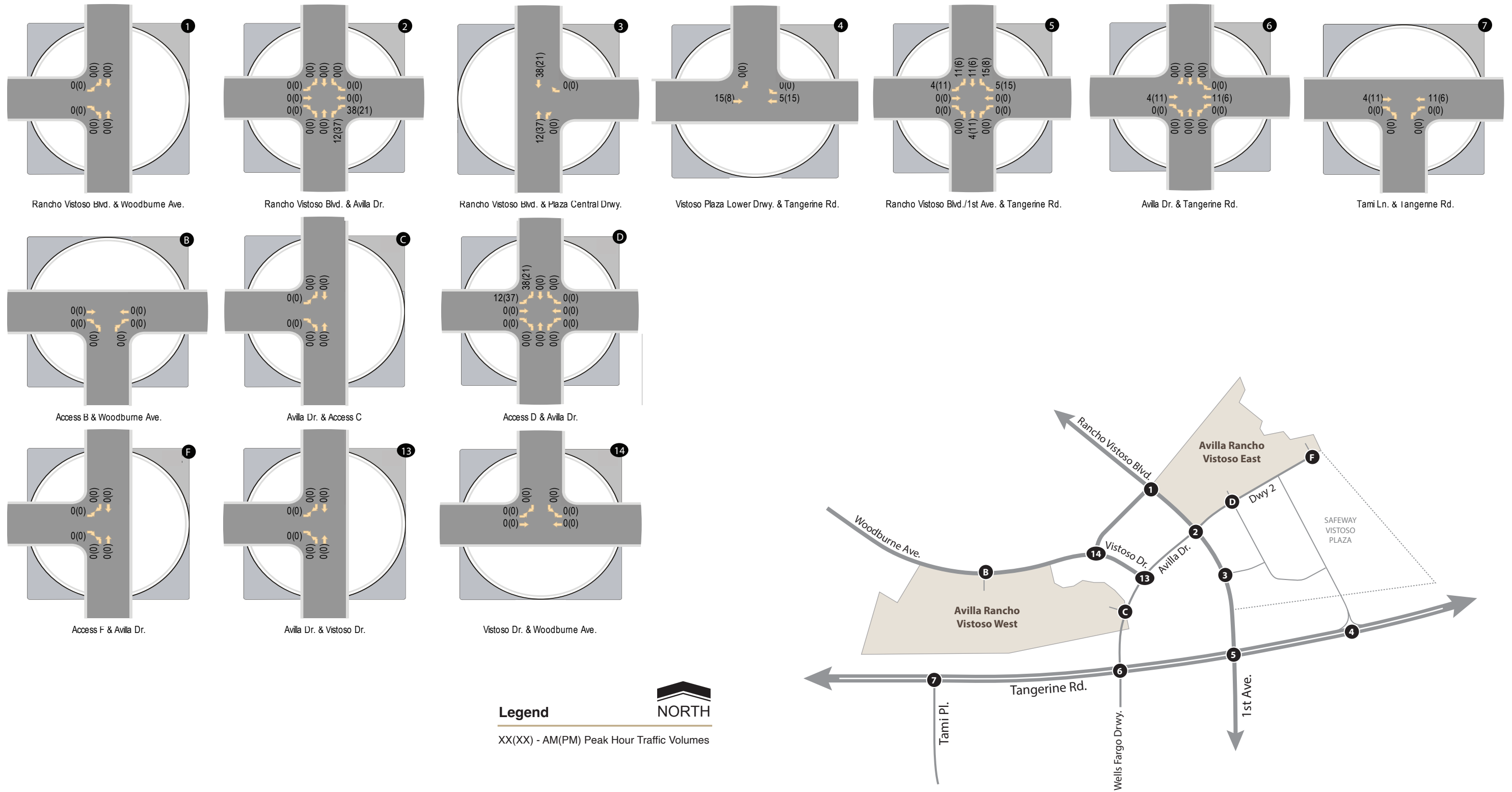


Figure 6: 2023 Site Generated Traffic Volumes

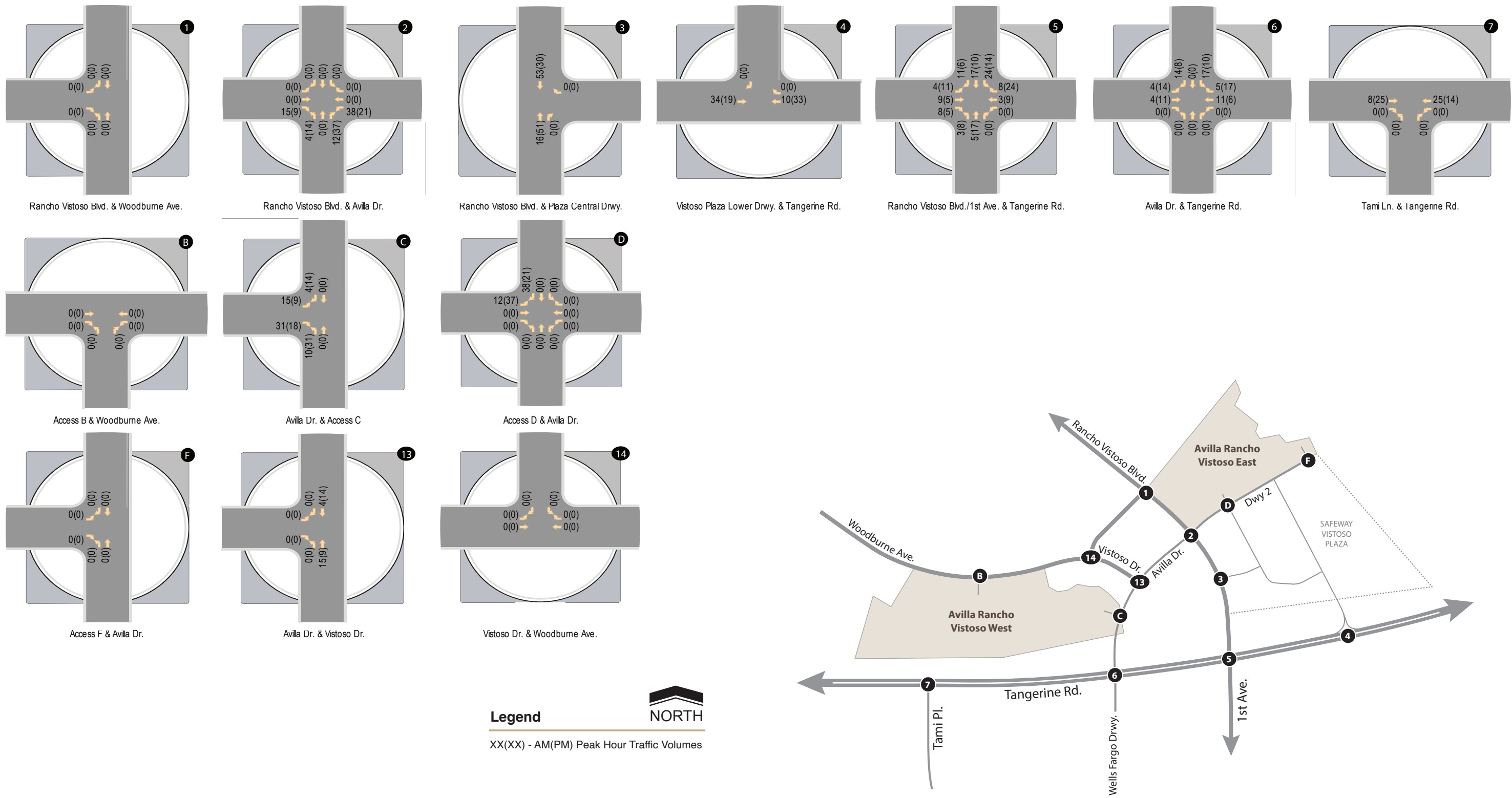


Figure 7: 2026 Site Generated Traffic Volumes

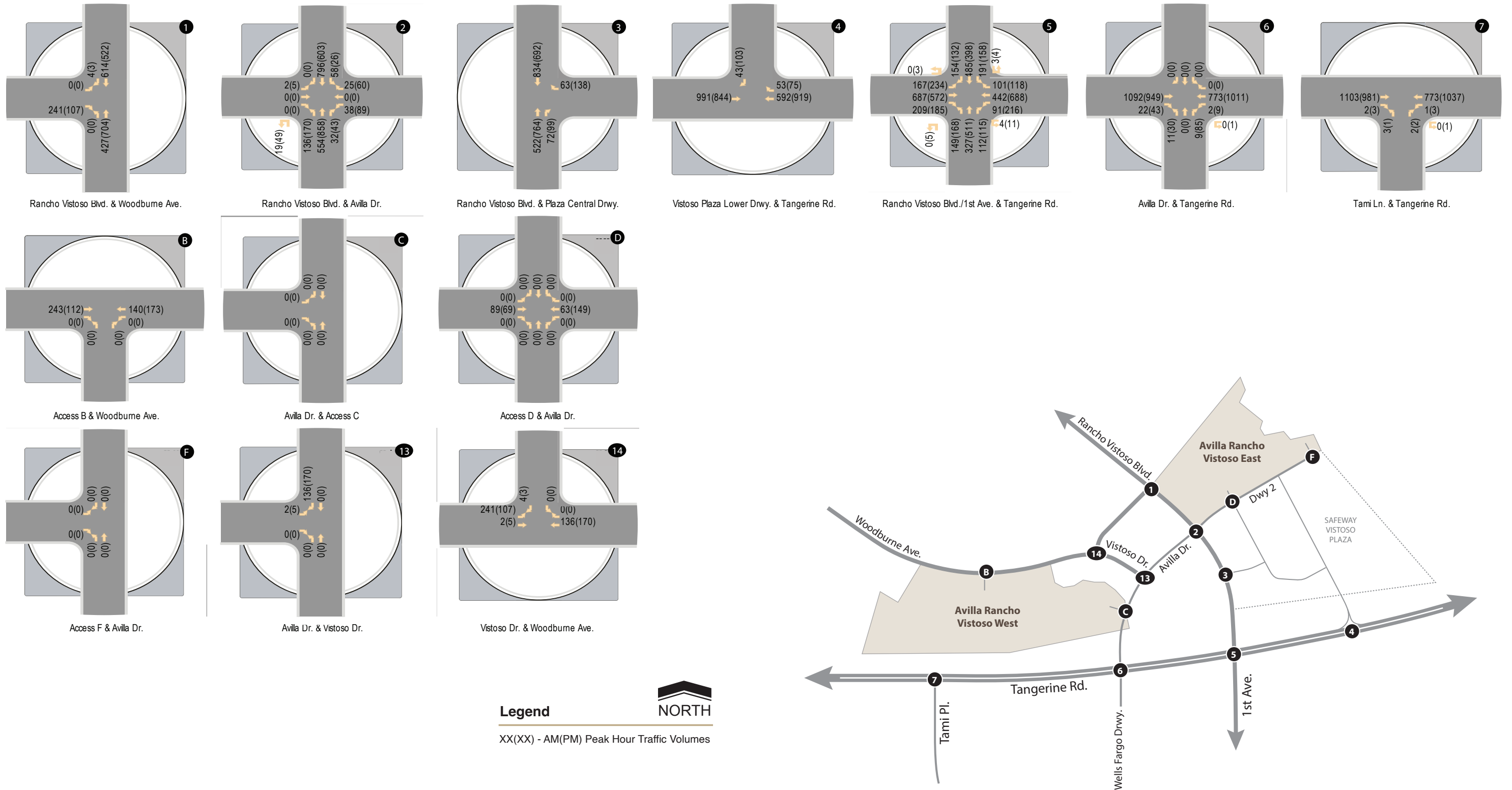
FUTURE BACKGROUND TRAFFIC

CivTech researched historical daily traffic volumes from the ADOT Transportation Data Management System (TDMS) website to estimate an average annual growth rate. The location experienced an average annual increase of 2.5% per year from 2015 to 2018. A 2.5% growth rate (1.051 annual expansion factor for 2023, 1.131 for 2026) was applied to the volumes at the Study Intersections to obtain the future background traffic volumes.

The background volumes for the Opening Year of 2023 are presented in **Figure 8**. The background volumes for the Study Horizon Year of 2026 are presented in **Figure 9**. Background traffic calculations are located within **Appendix G**.

TOTAL TRAFFIC

Total Traffic was determined by adding the site generated traffic to the estimated projected background traffic. Total Peak Hour traffic volumes for the opening year of 2023 are shown in **Figure 10**. Total Peak Hour traffic volumes for the horizon year of 2026 are shown in **Figure 11**.



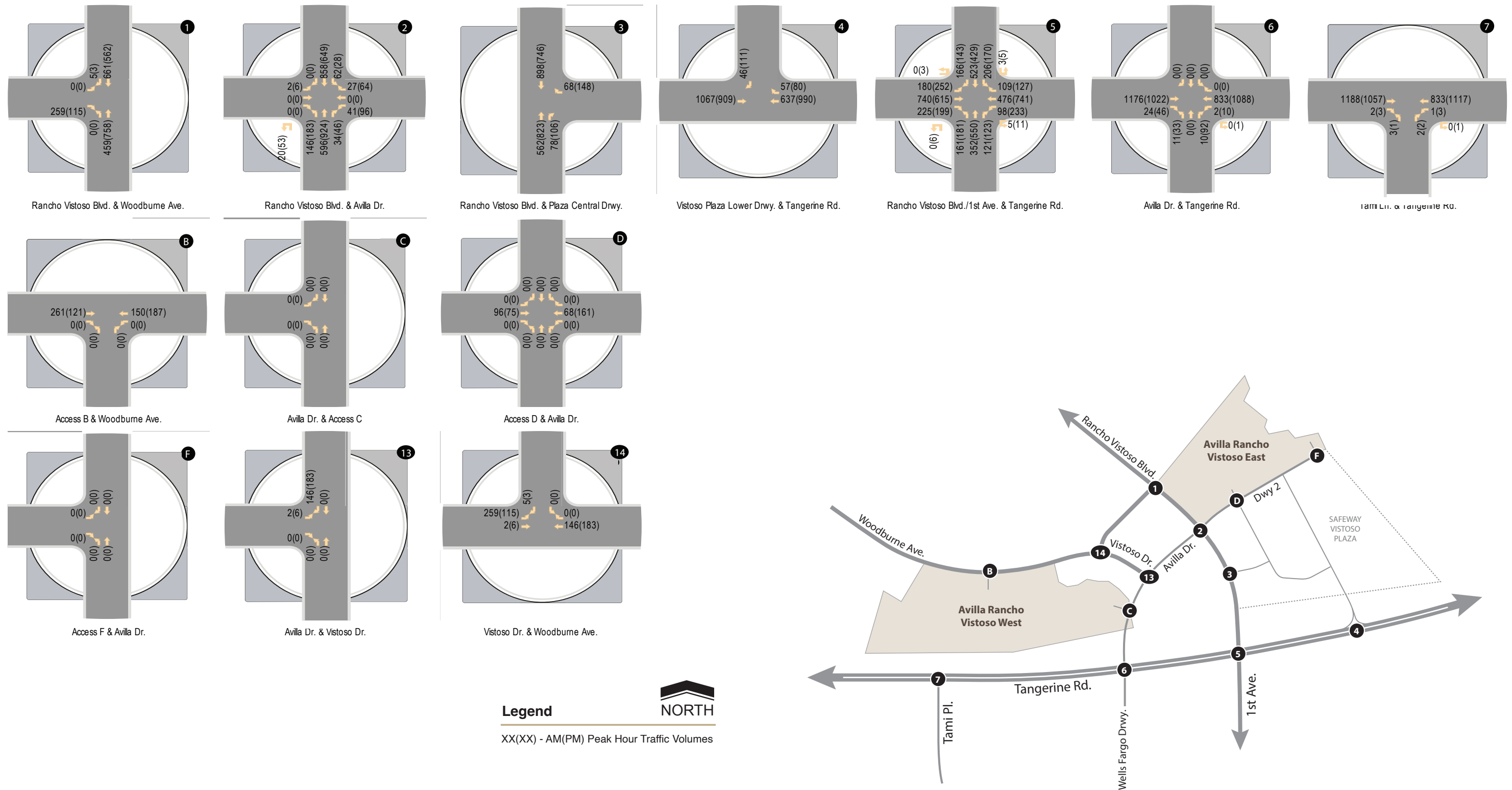
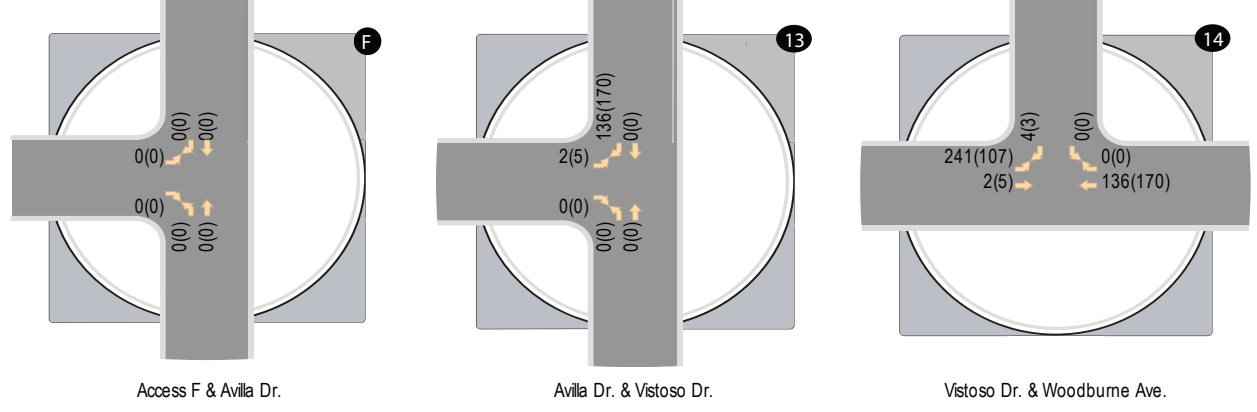
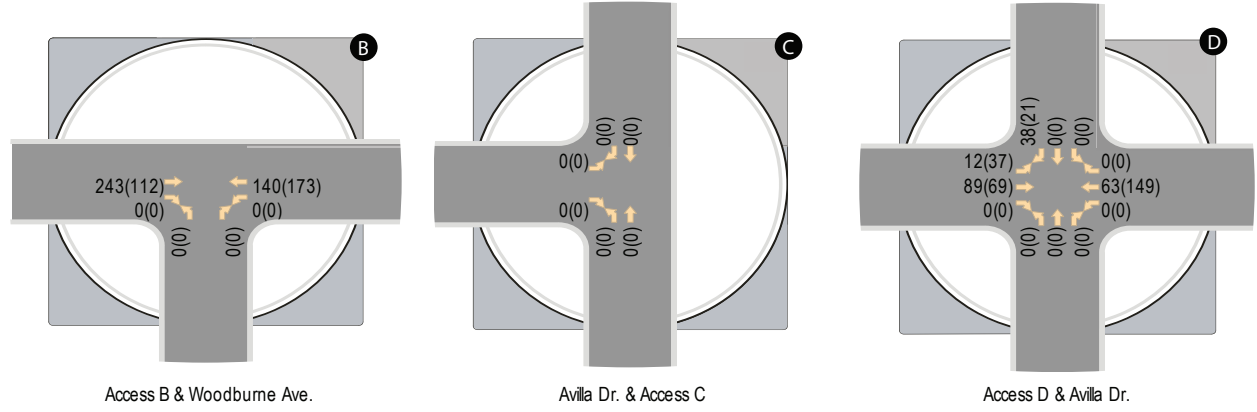
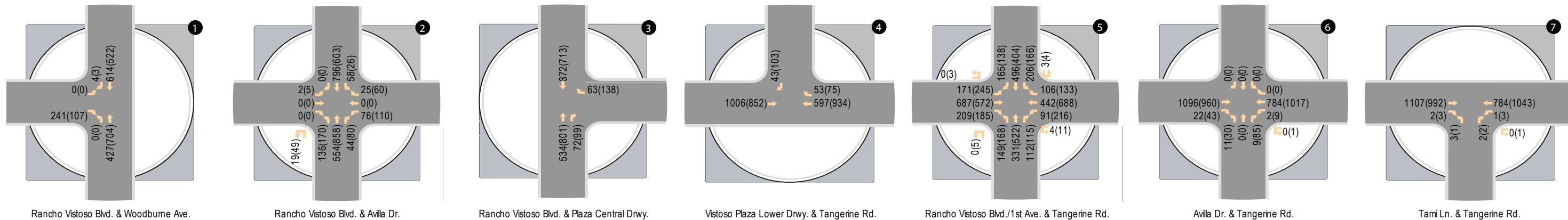


Figure 9: 2026 Background Traffic Volumes



Legend
 XX(XX) - AM(PM) Peak Hour Traffic Volumes

NORTH

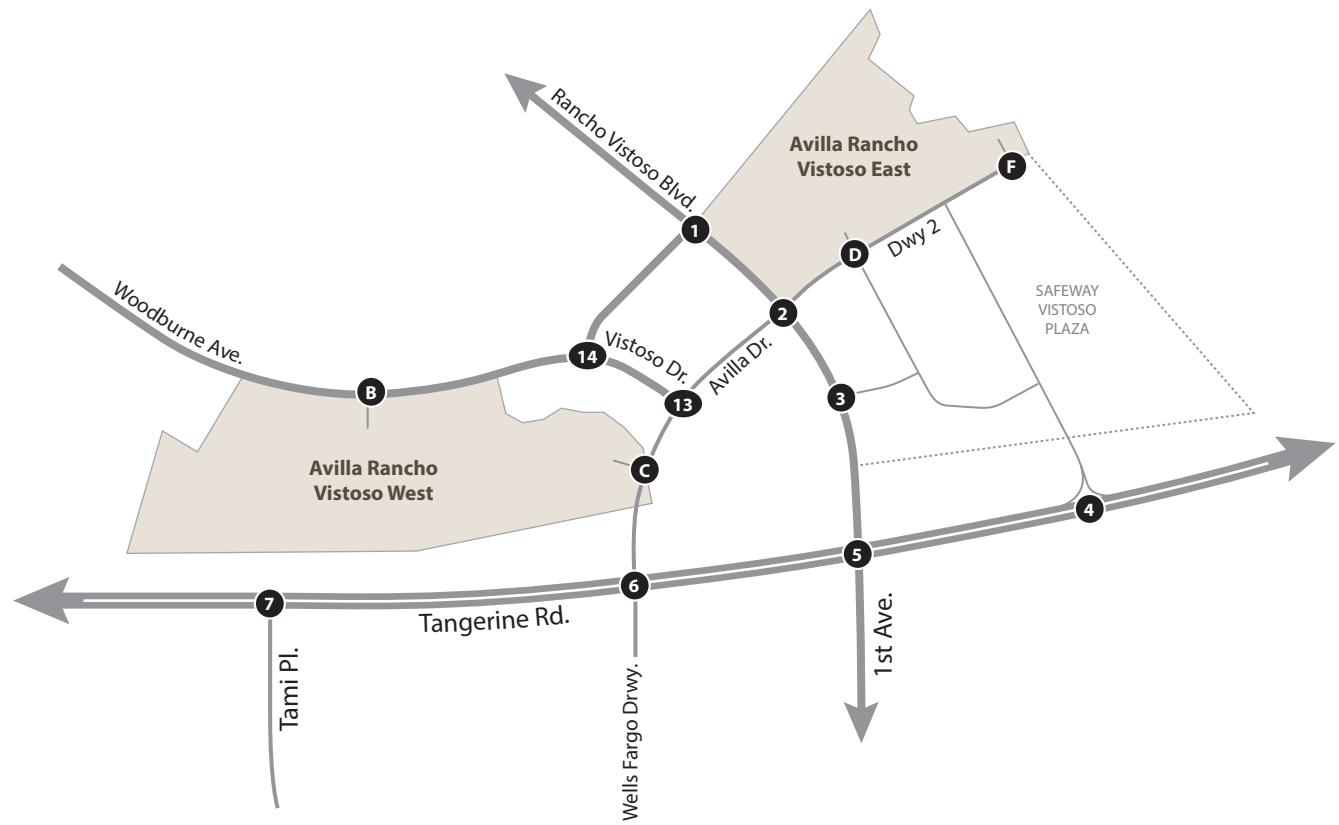


Figure 10: 2023 Total Traffic Volumes

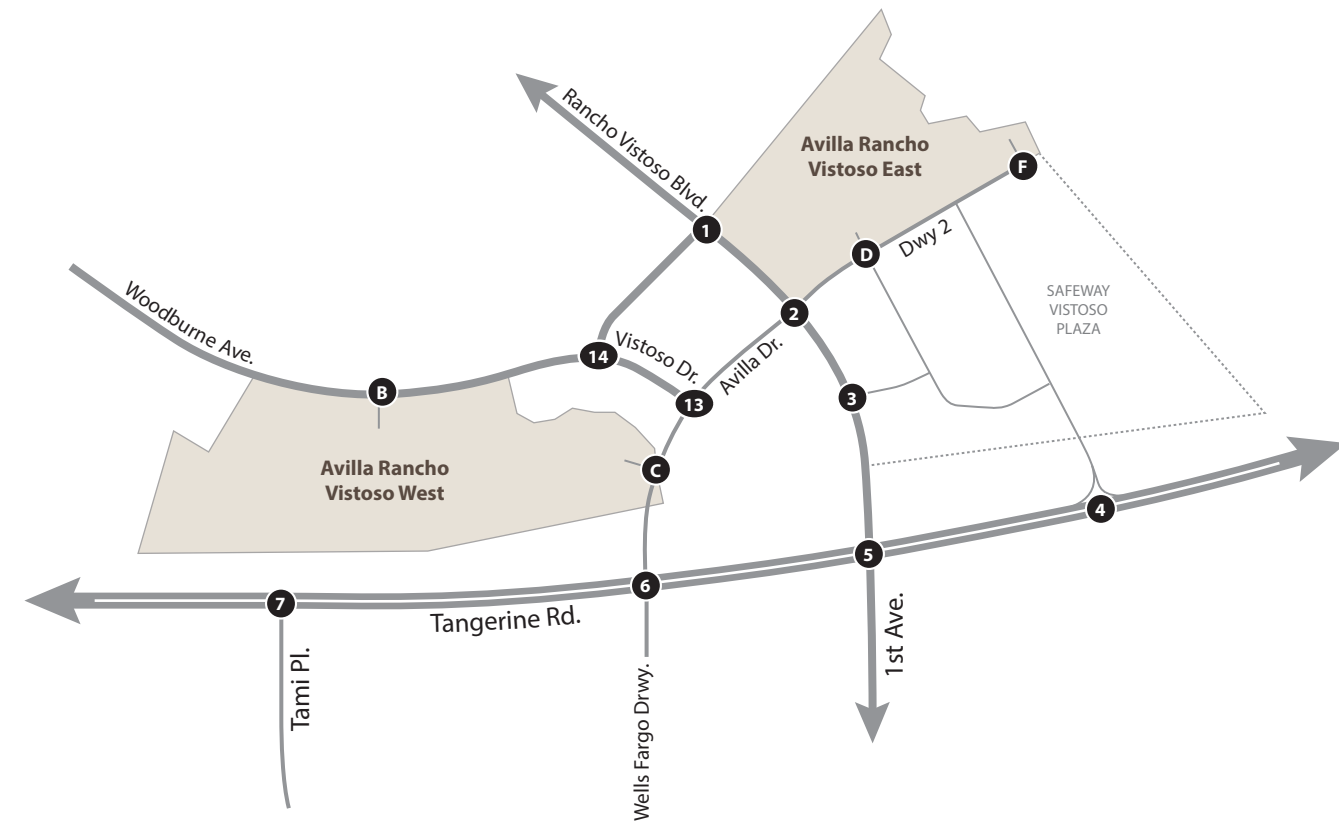
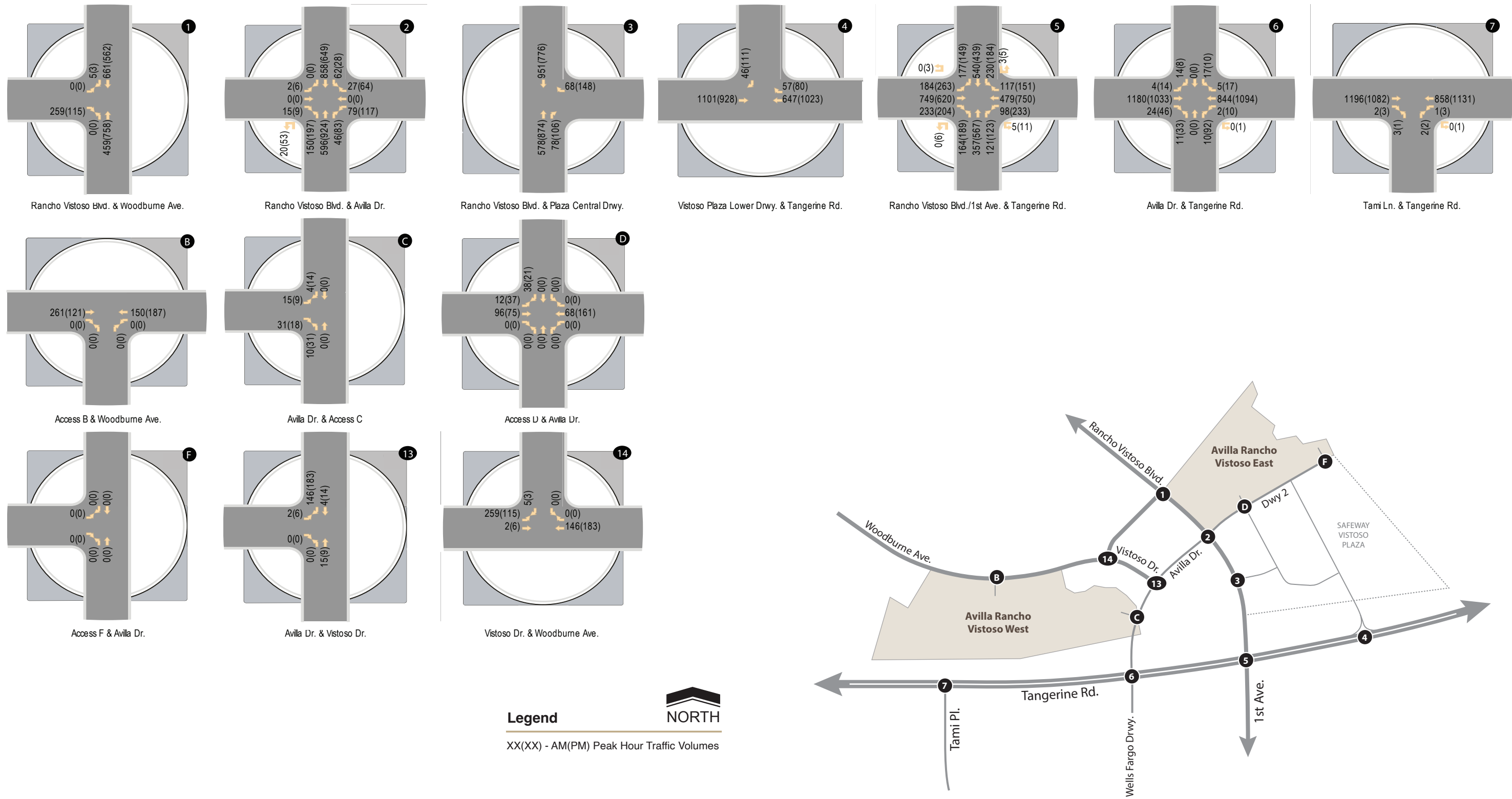


Figure 11: 2026 Total Traffic Volumes

TRAFFIC AND IMPROVEMENT ANALYSIS

The overall intersection and approach Levels of Service are summarized in **Table 9** for the 2023 and 2026 background and Total Traffic conditions. Detailed analysis worksheets for the 2023 background analysis can be found in **Appendix H**, worksheets for the 2026 background analysis can be found in **Appendix I**, worksheets for the 2023 Total Traffic analysis can be found in **Appendix J**, and worksheets for the 2026 Total Traffic analysis can be found in **Appendix K**.

As stated above, the results of the signal warrant analysis being met in the existing condition at the two intersections: **Rancho Vistoso Boulevard/Woodburne Avenue** and **Rancho Vistoso Boulevard/Driveway 2**. The future **Rancho Vistoso Boulevard/Driveway 2-Avilla Dr.** intersection will be analyzed as a signalized intersection and the **Rancho Vistoso Boulevard/Woodburne Avenue** intersection will be analyzed as a right-in/right-out STOP-controlled intersection prior to the construction of the site.

The south leg of Tangerine Road and Driveway 6/Avilla Drive will be analyzed with two (2) outbound lanes and two (2) receiving inbound lane. By 2026 Study Horizon Year, the NB approach was analyzed as an exclusive left turn lane and a shared through/right-turn lane.

Table 9 – Peak Hour Levels of Service

ID	Intersection	Control	Approach/ Movement	2023		2026	
				No Build	Build	No Build	Build
				AM (PM)	AM(PM)	AM (PM)	AM(PM)
1	Rancho Vistoso Blvd. & Woodburne Ave.	1-Way Stop (EB)	EB Right	B (B)	B (B)	C (B)	C (B)
2	Rancho Vistoso Blvd. Drwy. 2/Avilla Dr.	Signal	NB	B (C)	C (D)	C (D)	B (C)
			SB	B (C)	C (C)	C (C)	C (C)
			EB	C (C)	C (C)	C (C)	C (C)
			WB	C (C)	C (D)	C (C)	C (C)
			Overall	C (A)	C (D)	C (C)	C (B)
3	Rancho Vistoso Blvd. & Dwy. 3	1-Way Stop (WB)	WB Right	A (B)	A (B)	A (B)	A (B)
4	Tangerine Rd. & Dwy. 4	1-Way Stop (SB)	SB Right	B (B)	B (B)	B (B)	B (C)
5	Rancho Vistoso Blvd./1 st Ave. & Tangerine Rd.	Signalized	NB	D (D)	D (D)	D (D)	D (D)
			SB	D (C)	D (D)	D (C)	D (C)
			EB	D (E)	D (D)	D (E)	D (D)
			WB	D (D)	D (D)	D (D)	D (D)
			Overall	D (D)	D (D)	D (D)	D (D)
6	Drwy. 6/Avilla Dr. & Tangerine Rd.	1-Way Stop (NB)	NB Shared WB Left	C (C) B (B)	C (C) B (B)	-	-
		2-Way Stop (NB/SB)	NB Left NB Shared SB Left SB Shared EB Left WB Left	-	-	E (E) B (C) - - A (A) B (B)	E (E) B (C) D (E) A (B) A (A) B (B)

Table 9 – Peak Hour Levels of Service

ID	Intersection	Control	Approach/ Movement	2023		2026	
				No Build	Build	No Build	Build
				AM (PM)	AM(PM)	AM (PM)	AM(PM)
7	Tangerine Rd. & Dwy. 7	1-Way Stop (NB)	NB Left WB Left	C (C) B (B)	C (C) B (B)	D (C) B (B)	D (C) B (B)
9	Woodburne Ave. & Access B	1-Way Stop (NB)	NB Shared WB Left	A (A) A (A)	A (A) A (A)	A (A) A (A)	A (A) A (A)
10	Avilla Dr. & Access C	1-Way Stop (EB)	NB Shared EB Shared	A (A) A (A)	A (A) A (A)	A (A) A (A)	A (A) A (A)
11	Drwy. 2/ Avilla Dr. & Access D	All-Way Stop	NB Shared SB Shared EB Shared WB Shared	A (A) A (A) A (A) A (A)	A (A) A (A) A (A) A (A)	A (A) A (A) A (A) A (A)	A (A) A (A) A (A) A (A)
13	Avilla Dr. & Vistoso Dr.	1-Way Stop (EB)	EB Shared NB Left	A (A) -	A (A) A (A)	A (A) A (A)	A (A) A (A)
14	Woodburne Ave. & Woodburne Ave. /Vistoso Dr.	1-Way Stop (SB)	EB Left SB Shared	A (A) A (A)	A (A) A (A)	A (A) A (A)	A (A) A (A)
15	Drwy. 2/Avilla Dr. & Access F	2-Way Stop (NB/SB)	NB Shared SB Shared WB Shared	A (A) A (A) A (A)	A (A) A (A) A (A)	A (A) A (A) A (A)	A (A) A (A) A (A)

The results of the Synchro analysis summarized in **Table 9** indicate that all Study Intersections operate with overall acceptable Levels of Service (LOS D or better), with the exception of **Tangerine Road/Driveway 6-Avilla Drive intersection**.

The existing Driveway 6 serves as the main entrance into the Placita de Oro Shopping Mall. The mall includes a Wells Fargo Bank, an Ace Hardware, a Goodwill Store, and a couple restaurants. The poor LOS and delay noted is all due to the traffic entering and exiting the Placita de Oro Shopping Mall and **IT HAS NOTHING TO DO WITH THE TRAFFIC GENERATED BY THE PROPOSED AVILLA RANCHO VISTOSO EAST & WEST DEVELOPMENT**.

For the 2026 No-Build scenario, for the unsignalized **Tangerine Road/Driveway 6-Avilla Drive intersection**, the NB left-turn movement will operate with a projected delay of 45.4 sec/veh and 40.7 sec/veh (LOS E) during the AM and PM Peak Hour, respectively.

For the 2026 Build scenario, for the unsignalized **Tangerine Road/Driveway 6-Avilla Drive intersection**, the NB left approach operates with a projected delay of 49.9 sec/veh and 43.7 sec/veh (LOS E) during the AM and PM Peak Hour, respectively. The SB left approach operates with a projected delay of 46.7 sec/veh (LOS E) during the PM Peak Hour. Side street delay along arterial roadways during the Peak Hour is not uncommon. With higher volume arterials provide minimal platooning between signalizations and therefore not enough gaps in traffic for vehicles along side streets.

TURN LANE WARRANTING AND QUEUE LENGTH ANALYSIS

RIGHT-TURN LANES

The Town of Oro Valley deferrers to section 245 – Turn Lane Warrants of the *ADOT Traffic Guidelines and Processes*, which recommends a driveway right-turn deceleration lane to be provided per the following determining factors:

- a) the combination of through traffic volume and turning traffic volume,
- b) the posted roadway speed, and
- c) the number of through lanes on the roadway.

Excerpt of the ADOT’s *TGP 245* is provided in **Appendix L. Table 10** is a summary of the existing and 2026 Peak Hour right-turn volumes from the adjacent street onto the proposed driveways:

Table 10 – Driveway Right-Turn Deceleration Lane Warranting Criteria AM(PM)

ID	Intersection (Movement)	Factors				Minimum Right-Turn Volume		Right-Turn Volume		Warrants Met?
		a.		b.	c.	Existing	2026 Total	Existing	2026 Total	
		Existing	2026 Total							
2	Rancho Vistoso Blvd. & Drwy. 2/Avilla Dr. (NB)	527(817)	596(924)	45 MPH	2 lanes	25(12)	25(11)	30(41)	46(83)	Yes(Yes)
6	Avilla Dr. & Tangerine Rd. (WB)	736(962)	844(1094)	45 MPH	2 lanes	15(11)	12(8)	-	5(17)	No(Yes)

The results of the right turn warrants summarized in **Table 10** indicate that a right turn lane is warranted for the NB approach at the **Rancho Vistoso Boulevard/Driveway 2-Avilla Drive intersection** as well as for the WB approach at the **Tangerine Road/Avilla Drive intersection**.

NOTE: The warrants for the NB right turn lane at the **Rancho Vistoso Boulevard/Driveway 2-Avilla Drive are met for the existing 2021 traffic conditions WITHOUT** the proposed the proposed Avilla Rancho Vistoso East & West development. The warrants are per the ADOT Standards. As a result, this intersection will need to be widened to accommodate the NB right-turn lane.

NOTE: The warrants for a new NB right turn lane on the NB approach at the **Rancho Vistoso Boulevard/Driveway 6 intersection are met for the 2021 existing traffic conditions** per the ADOT Standards. However, this an existing traffic condition that has nothing to do with the traffic generated by the proposed Avilla Rancho Vistoso East & West development.

The existing Driveway 6 serves as the main entrance into the Placita de Oro Shopping Mall. The mall includes a Wells Fargo Bank, an Ace Hardware, a Goodwill Store, and a couple restaurants. The poor LOS and delay noted below is all due to the traffic entering and exiting the Placita de Oro Shopping Mall and **IT HAS NOTHING TO DO WITH THE TRAFFIC GENERATED BY THE PROPOSED AVILLA RANCHO VISTOSO EAST & WEST DEVELOPMENT.**

LEFT-TURN LANES

The developer will be responsible for the modification of the existing median along Rancho Vistoso Boulevard to provide a NB left turn lane at Driveway 2 as well as the modification of the existing median along Tangerine Road to provide the EB left turn lane at Driveway 6. The modification of the medians to provide the left turn deceleration lanes will be done in accordance to the City of Tucson Department of Transportation (TDT) Pavement Marking Design Manual. Per the Manual, the minimum turn lane storage length on a roadway with a posted speed limit of 45 mph is 150-feet.

QUEUE STORAGE

Adequate turn storage should be supplied on any approach where turn lanes are permitted and/or warranted. A queuing analysis was prepared according to the methodology documented in Pima County Transportation Department's *Roadway and Development Street Standards Manual, 2020*. The manual calls for the use of a 95th percentile method. Using Synchro 11.0 software, the Study Intersections were analyzed to determine the left-turn and right-turn storage needed to accommodate the expected traffic volumes in the 2026 horizon year.

The resulting turn lane storage requirements for the Study Intersections are summarized in **Table 11** Detailed queue storage calculation worksheets using the 95th percentile method.

Table 11 – 2026 Queue Storage Lengths

ID	Intersection	Control	Movement	Queue Storage		
				⁽¹⁾ Existing	⁽²⁾ HCM	Recommended
1	Rancho Vistoso Blvd. & Woodburne Ave.	1-Way Stop	NB Left	105'	-	-
			EB Left	150'	-	-
			EB Right	150'	60'	150'
2	Rancho Vistoso Blvd. & Drwy. 2/Avilla Dr.	Signalized	NB Left	-	105'	⁽⁵⁾ 60'
			SB Left	55'	25'	⁽³⁾ 150'
			EB Left	-	25'	⁽³⁾ 110'
			WB Left	-	130'	⁽³⁾ 150'
			NB Right	-	350'	⁽³⁾ 110'
5	Tangerine Rd. & Rancho Vistoso Blvd./1 st Ave.	Signalized	NB Left	300'	260'	300'
			SB Left	540'	305'	540'
			EB Left	245'	425'	⁽⁶⁾ 245'
			WB Left	260'	335'	260'
			NB Right	300'	155'	300'
			SB Right	100'	215'	100'
			EB Right	240'	280'	240'
WB Right	430'	200'	430'			
6	Avilla Dr. & Tangerine Rd.	2-Way stop (NB/SB)	NB Left	-	30'	⁽⁴⁾ No Change
			SB Left	-	25'	⁽³⁾ 110'
			EB Left	-	25'	⁽³⁾ 150'
			WB Left	120'	25'	120'
13	Avilla Dr. & Vistoso Dr.	1-Way Stop (EB)	EB Shared	-	<25'	⁽³⁾ 110'
14	Woodburne Ave. & Woodburne Ave./Vistoso Dr.	1-Way Stop (SB)	SB Shared	-	25'	⁽³⁾ 110'

(1) Measured from beginning of stop bar.

(2) HCM 95th percentile queue reported in vehicles/lane, assuming 1 vehicle ~ 25 feet.

(3) TDT's *Pavement Marking Design Manual* provide a minimum turn lane is 110 for a roadway with 40 mph or less and 150' for a 45-mph roadway.

(4) No site traffic is contributing to this movement.

(5) Due to the location of the roadway having increase in elevation as vehicle is headed NB, the recommended queue length is 60'.

(6) The physical constraint of the median limits the queue storage length to extend beyond the existing queue storage length. Therefore, existing queue length is recommended.

The recommended storage lengths in **Table 11** are provided for Study Horizon Year 2026 using the Total Traffic projections. Proposed lane configurations are shown in **Figure 12**. Due to the proximity of the intersection of **Rancho Vistoso & Woodburne** to **Rancho Vistoso & Driveway 2/Avilla Drive**, it is recommended that **Rancho Vistoso & Woodburne** be restricted to right-in/right-out and 110 feet of SB left queue storage recommended for **Rancho Vistoso & Driveway 2/Avilla Drive**.

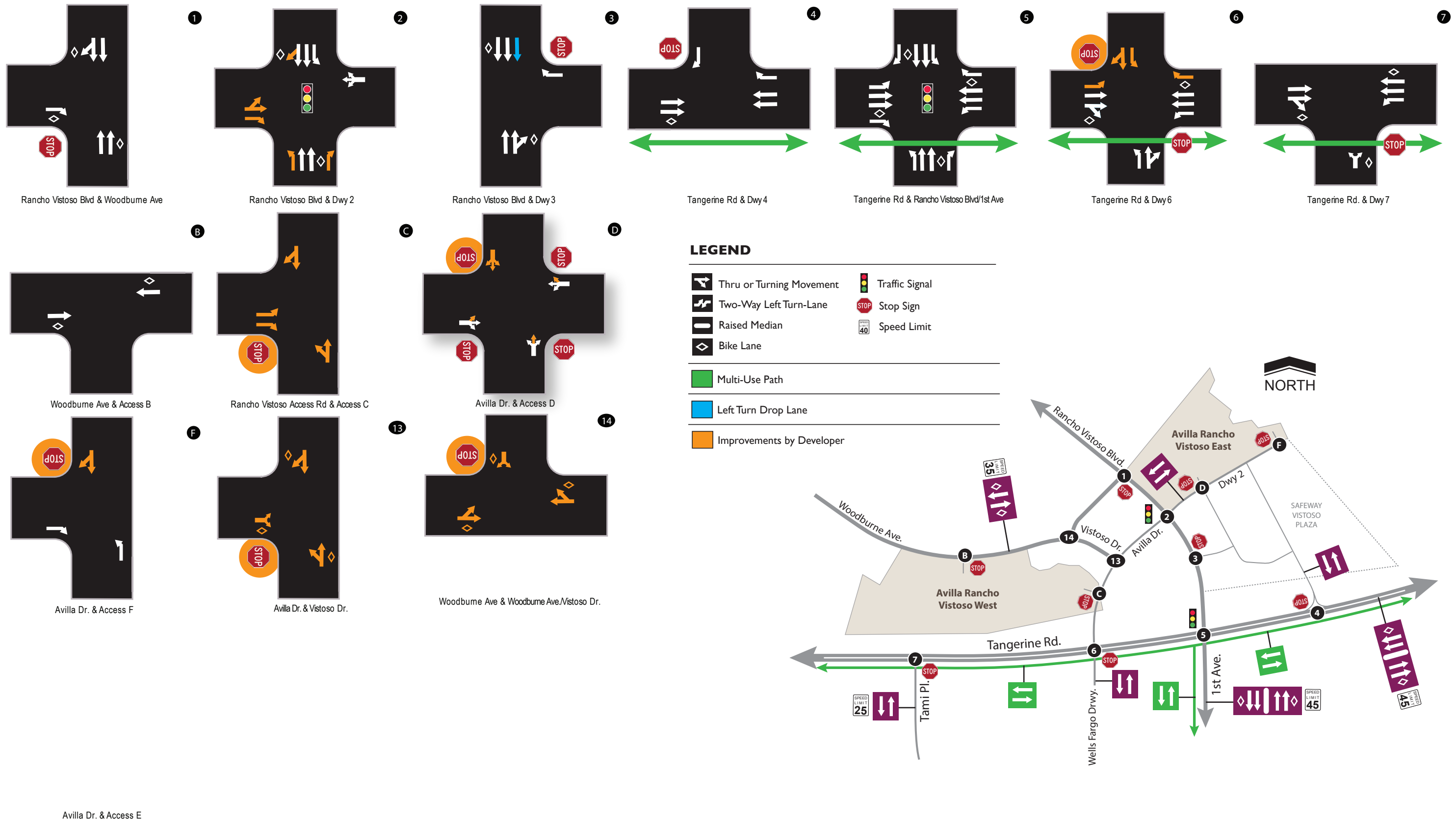


Figure 12: Proposed Lane Configurations and Traffic Controls

CONCLUSIONS

The following conclusions and recommendations have been documented in this TIA

GENERAL

- The proposed development is anticipated to generate 1,478 weekday daily trips, 110 trips during the AM Peak Hour (26 in/ 84 out), and 130 trips during the PM Peak Hour (82 in/ 48 out).

SITE ACCESS DRIVEWAYS

There are a total of four (4) site access driveways.

- Access B – Is located along the south side of Woodburne Avenue and will be an “secondary access” driveway located approximately 1,230 feet west of Rancho Vistoso Boulevard. To be conservative, no vehicle trips are anticipated to use this site access driveway; therefore, no site-generated trips will be assigned to this driveway. This access will be gated.
- Access C – Is the main entrance into Avilla Rancho Vistoso West and is located along the west side of Avilla Drive. Access C will be a full movement access driveway. This access will be gated.
- Access D – Is the main entrance into Avilla Rancho Vistoso East. Access D will be a full access driveway and will be located approximately 280-feet east of Rancho Vistoso Boulevard along the existing Safeway access aisle. Access D will align with the existing Safeway PAAL that provides access to the parking lot. This access will be gated.
- Access F – Is an “emergency access only” located approximately 810-feet east of Rancho Vistoso Blvd. Access F will align with the access aisle behind the Safeway. This access will be gated with a “crash gate”.

SITE ACCESS ROADWAYS

A TIA was prepared and submitted to the Town of Oro Valley in January 2022 to support the Avilla Rancho Vistoso East and West residential developments. In analyzing the existing roadway network, it was determined that the traffic signal warrants were met for the Rancho Vistoso Boulevard/Driveway 2 intersection and the Rancho Vistoso Boulevard/Woodburne Avenue intersection for the existing traffic conditions WITHOUT any of the traffic from the Avilla Rancho Vistoso development. The TIA that was submitted in January 2022 analyzed the two warranted traffic signals using synchronized traffic signals due to their close proximity. Subsequently, CivTech, Inc. received review comments from town staff requesting further discussion on the proposed two traffic signal approach and a request to analyze a regional approach in which only one traffic signal is warranted and proposed with the realignment of Woodburne Avenue to provide a connection to this new traffic signal.

A meeting was held on March 11, 2022, between CivTech, the developer and its representatives, and Town Engineering and Planning staff to further discuss this concept and the effects on the traffic patterns, existing roadway networks, costs of the regional solution, and the adjacent property disturbances. During this discussion, it was proposed to close off Woodburne Avenue to the NB traffic and only allowing right-in/right-out turn movements from Rancho Vistoso Boulevard onto and from

Woodburne Avenue. As a result of this closure, something had to be done to accommodate the large volume NB left-turn movement from Rancho Vistoso Boulevard onto Woodburne Avenue. So, the idea was discussed to provide a connector road from Woodburne Avenue to Avilla Drive and to move the NB left-turns to the Rancho Vistoso Boulevard/Avilla Drive-Driveway 2 intersection. Further discussion with Town staff led to the proposed roadway network described below and shown in **Figure 12** and further analyzed in this TIA.

As a result of this new roadway network, the proposed traffic signal at the Rancho Vistoso Boulevard/Woodburne Avenue intersection (Warrants were met for the existing traffic conditions) will no longer be needed. Also, the existing EB left-turn lane at this intersection will no longer be allowed, therefore the Woodburne Avenue EB approach will need to be re-stripped for only an EB right-turn lane.

There are a total of three (3) internal circulation access improvements proposed.

- *Avilla Drive* – Is an approximately 950-ft long proposed curvilinear roadway proposed to align with Rancho Vistoso Boulevard to the east at *Driveway 2* and to align with Tangerine Road to the south at *Wells Fargo Driveway*. The roadway is anticipated to require 60 feet of right-of-way and have a cross-sectional width of 43 feet.
- *Woodburne Avenue Re-Alignment* – Is an approximately 140-ft long proposed roadway segment that transitions approximately 340 ft west of Ranch Vistoso Boulevard along Woodburne Avenue. Woodburne Avenue is re-aligned using Vistoso Drive to facilitate the closing of the existing median break at Woodburne Avenue so that the existing SB left-turn bay may be lengthened.
- *Vistoso Drive* – Is an approximately 500-ft long proposed curvilinear roadway that is formed by the re-alignment of Woodburne. It is proposed to terminate at Avilla Drive to the east and transitions into Woodburne Avenue approximately 520-ft west of Avilla Drive.
- *The new Avilla Drive/Vistoso Drive intersection* – The intersection need to be designed and constructed to accommodate a school bus including the curb returns.

2021 EXISTING CONDITIONS

- The results of the 2021 existing conditions analysis indicate that all Study Intersections operate with acceptable Level of Service (LOS D or better). With the exception of the WB approach at the **Rancho Vistoso Boulevard/Driveway 2** intersection during the PM Peak Hour.

2021 TRAFFIC SIGNAL WARRANT ANALYSIS

- The results of the Traffic Signal Warrant Analysis indicate that Warrants 1, 2, and 3 are all met for the 2021 existing traffic conditions at the **Rancho Vistoso Boulevard/Woodburne Avenue** intersection and the **Rancho Vistoso Boulevard/Driveway 2** intersection **without any future development**. Therefore, any further analysis of the existing traffic conditions provided in this TIA for the two intersections, will be analyzed as signalized intersections prior to the development of the proposed especially the **Rancho Vistoso Boulevard/Driveway 2** intersection.

STUDY HORIZON YEARS – 2023 AND 2026

- The results of the Synchro analysis summarized indicate that all Study Intersections operate with overall acceptable Levels of Service (LOS D or better), with the exception of the existing **Tangerine Road/Driveway 6 intersection**.
- The existing Driveway 6 serves as the main entrance into the Placita de Oro Shopping Mall. The mall includes a Wells Fargo Bank, an Ace Hardware, a Goodwill Store, and a couple restaurants. The poor LOS and delay noted below is all due to the traffic entering and exiting the Placita de Oro Shopping Mall and **IT HAS NOTHING TO DO WITH THE TRAFFIC GENERATED BY THE PROPOSED AVILLA RANCHO VISTOSO EAST & WEST DEVELOPMENT**.
- For the 2026 No-Build scenario, for the unsignalized **Tangerine Road/Driveway 6-Avilla Drive intersection**, the NB left-turn movement will operate with a projected delay of 45.4 sec/veh and 40.7 sec/veh (LOS E) during the AM and PM Peak Hour, respectively.
- For the 2026 Build scenario, for the unsignalized intersection of **Tangerine Road and Driveway 6/Avilla Drive**, the NB left approach operates with a projected delay of 49.9 sec/veh and 43.7 sec/veh (LOS E) during the AM and PM Peak Hour, respectively. The SB left approach operates with a projected delay of 46.7 sec/veh (LOS E) during the PM Peak Hour. Side street delay along arterial roadways during the Peak Hour is not uncommon. With higher volume arterials provide minimal platooning between signalizations and therefore not enough gaps in traffic for vehicles along side streets.

RIGHT-TURN LANES

- **NOTE:** The warrants for the NB right turn lane at the **Rancho Vistoso Boulevard/Driveway 2-Avilla Drive are met for the existing 2021 traffic conditions WITHOUT** the proposed the proposed Avilla Rancho Vistoso East & West development. The warrants are per the ADOT Standards. As a result, this intersection will need to be widened to accommodate the NB right-turn lane.
- **NOTE:** The warrants for a new NB right turn lane on the NB approach at the **Rancho Vistoso Boulevard/Driveway 6-Avilla Drive intersection are met for the 2021 existing traffic conditions** per the ADOT Standards. However, this an existing traffic condition that has nothing to do with the traffic generated by the proposed Avilla Rancho Vistoso East & West development.

LEFT-TURN LANES

- The developer will be responsible for the modification of the existing median along Rancho Vistoso Boulevard to provide a NB left turn lane at Driveway 2 as well as the modification of the existing median along Tangerine Road to provide the EB left turn lane at Driveway 6. The modification of the medians to provide the left turn deceleration lanes will be done in accordance with the City of Tucson Department of Transportation (TDT) Pavement Marking

Design Manual. Per the Manual, the minimum turn lane storage length on a roadway with a posted speed limit of 45 mph is 150-feet.

QUEUE STORAGE

- The recommended storage lengths are provided for 2026 Study Horizon Year using the Total Traffic volumes.

LIST OF REFERENCES

Highway Capacity Manual, Sixth Edition: A Guide for Multimodal Mobility Analysis. Transportation Research Board, Washington, D.C., 2018.

Manual on Uniform Traffic Control Devices. U.S. Department of Transportation, Federal Highways Administration, Washington, D.C., 2009.

Pavement Marking Design Manual. Second Edition. City of Tucson Department of Transportation and Pima County Department of Transportation. August 2008.

Traffic Guidelines and Processes. Arizona Department of Transportation. January 2019.

Trip Generation Manual, 11th Edition, Institute of Transportation Engineers, Washington, D.C., 2017.

Trip Generation Handbook, 3rd Edition, Institute of Transportation Engineers, Washington, D.C., 2014.

TECHNICAL APPENDICES

APPENDIX A:	REVIEW COMMENTS AND RESPONSES (RESERVED)
APPENDIX B:	EXISTING TRAFFIC COUNTS
APPENDIX C:	EXISTING PEAK HOUR ANALYSIS
APPENDIX D:	TRAFFIC SIGNAL WARRANT ANALYSIS
APPENDIX E:	CRASH ANALYSIS WORKSHEETS
APPENDIX F:	TRIP GENERATION CALCULATIONS
APPENDIX G:	BACKGROUND GROWTH CALCULATIONS
APPENDIX H:	2023 NO-BUILD PEAK HOUR ANALYSIS
APPENDIX I:	2026 NO-BUILD PEAK HOUR ANALYSIS
APPENDIX J:	2023 BUILD PEAK HOUR ANALYSIS
APPENDIX K:	2026 BUILD PEAK HOUR ANALYSIS
APPENDIX L:	EXCERPT OF ADOT'S TGP 245

APPENDIX A

REVIEW COMMENTS AND RESPONSES (Reserved)

**21-1550 NexMetro Avilla Rancho Vistoso
2nd Submittal**

CivTech, Inc.

Review Comments & Responses

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Reviewer Name, Agency: **Hannah Oden, Town of Oro Valley**

Item	Review Comment	(Code) & Response
1.	At meetings with the Town, is was discussed for this intersection to be used for site access. Site trips should be added to this access. Will the access be gated?	2. Access B will remain as a full access driveway however, no trips will be assigned to this driveway as the analysis in the TIA is the worst case scenario for Access C, Intersection 13, and Intersection 2.
2.	Will Access C be gated?	1. Access C will be gated.
3.	Will Access F be gated?	1. Access F will be gated.
4.	The Town requires a copy of the written agreement for shared use with the shopping center owner prior to final approval of the TIA.	4. A written agreement between the client and Safeway is still being finalized.
5.	It was also noted that signals at Woodburne and at Avilla Dr. would be too close together and still not mitigate the congestion/multiple turns.	2. Signilization on Woodburne was considered in an earlier version of this report. The figures have since been updated.
6.	Modify lane configuration / pavement marking.	1. The new pavement marking will be shown on the Off-Site Improvement Plans.
7.	Name must be approved by Town Engineer.	1. The name of the roadway between Intersection 13 and Intersection 14 will remain Vistoso Drive. As noted in the review comment the Town Engineer needs to approve the name.
8.	Modify pavement marking for right-turn only	1. The new pavement marking will be shown on the Off-Site Improvement Plans.
9.	Previous comments, per the Town Engineer, requested 5% distribution to the north. Revise the distribution or provide more detail in the text for no trips to the north.	1. Since the proposed development is residential and there is little to no commercial development to the north, no trips are anticipated to and from the north. Having no expected trips going north on Rancho Vistoso Boulevard, north of Woodburne Avenue, the analysis in the TIA has analyzed the worst case scenario.
10.	The intersection geometry must accommodate school buses to easily turn.	4. Client has be informed of the Town's geometric requirement. Improvements will be made to the Off-site Improvement Plans.
11.	Revise analysis to use a minimum of 4 seconds yellow time, and 2 seconds for all-red between each phase change. Revise analysis as the signal shall continue to operate with lagging left turns.	1. Capacity analysis will be re-evaluated using prescribed conditions at all signals.



**21-1550 NexMetro Avilla Rancho Vistoso
2nd Submittal**

CivTech, Inc.

Review Comments & Responses

Disposition Codes: (1) Will Comply (2) Will Evaluate (3) Delete Comment (4) Defer to Consultant/Owner

Reviewer Name, Agency: **Hannah Oden, Town of Oro Valley**

Item	Review Comment	(Code) & Response
12.	Could the distribution of EB to NB Lt-turns at #5 & #6 be changed to mitigate some of the queue at #5? And the Lt-turn lane at #6 be extended? The queue cannot back 210 ft into the travel lane.	2. EB left-turn queue reduction at Intersection 5 will be evaluated in <i>Synchro</i> . However, all the trips assigned to Intersection 6 are trips associated with Avilla Rancho Vistoso West and all the trips assigned to Intersection 5 are associated with Avilla Rancho Vistoso East. There is not much that can be done to mitigate the queuing during the AM and PM Peak Hours.
13.	Does the SB Lt-turn at #5 need to be reduced to accommodate the NB Lt-turn at #2?	1. Yes, the existing median and the SB left-turn lane storage will need to be revised to accommodate the NB left-turn lane at Intersection 2.
14.	Why would there be a traffic signal here if the median is closed?	1. The Figure will be updated and the traffic signal symbol will be
15.	Did the analysis check LOS for Perm+Prot?	1. The capacity analysis at intersection 2 was updated to consider permitted-protected phasing.
16.	Review site trip assignment with #5 and #6 to mitigate poor LOS at #5 with Lt-turn storage at #6.	2. EB left-turn queue reduction at Intersection 5 will be evaluated in <i>Synchro</i> . However, all the trips assigned to Intersection 6 are trips associated with Avilla Rancho Vistoso West and all the trips assigned to Intersection 5 are associated with Avilla Rancho Vistoso East. There is not much that can be done to mitigate the queuing during the AM and PM Peak Hours.
17.	This access was removed.	1. Synchro Capacity Analysis Appendice LOS sheets will be updated to
18.	Assign site trips to this access	4. To be conservatie, no site trips have assigned to Access B.
19.	Would some of these site trips use Access B?	4. To be conservatie, no site trips have assigned to Access B.



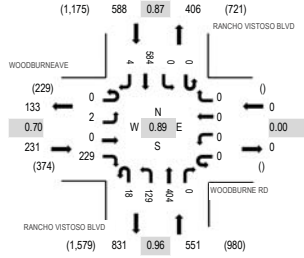
APPENDIX B

EXISTING TRAFFIC COUNTS

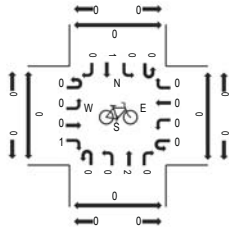


Location: 2 RANCHO VISTOSO BLVD & WOODBURN RD AM
Date: Tuesday, December 7, 2021
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

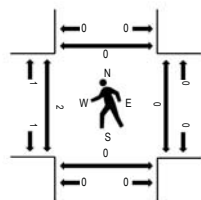
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

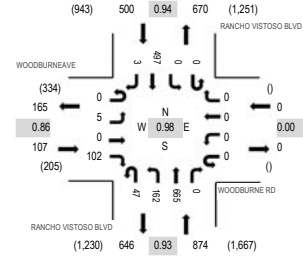
Traffic Counts - Motorized Vehicles

Interval Start Time	WOODBURNEAVE			WOODBURNE RD			RANCHO VISTOSO BLVD				RANCHO VISTOSO BLVD				Rolling Hour	Pedestrian Crossings						
	Eastbound			Westbound			Northbound		Southbound		Total	West	East	South		North						
	U-Turn	Left	Thru Right	U-Turn	Left	Thru Right	U-Turn	Left	Thru Right	U-Turn							Left	Thru Right				
7:00 AM	0	0	0	36	0	0	0	0	3	30	55	0	0	0	128	1	253	1,317	1	0	0	0
7:15 AM	0	1	0	82	0	0	0	0	1	56	87	0	0	0	156	2	385	1,370	1	0	0	0
7:30 AM	0	0	0	63	0	0	0	0	6	29	95	0	0	0	128	1	322	1,287	0	0	0	0
7:45 AM	0	0	0	50	0	0	0	0	3	23	114	0	0	0	166	1	357	1,283	0	0	0	0
8:00 AM	0	1	0	34	0	0	0	0	8	21	108	0	0	0	134	0	306	1,212	1	0	0	0
8:15 AM	0	1	0	43	0	0	0	0	6	28	91	0	0	0	132	1	302		0	0	0	0
8:30 AM	0	0	0	40	0	0	0	0	8	14	80	0	0	0	176	0	318		0	0	0	0
8:45 AM	0	0	0	23	0	0	0	0	6	20	88	0	0	0	147	2	286		0	0	0	0
Count Total	0	3	0	371	0	0	0	0	41	221	718	0	0	0	1,167	8	2,529		3	0	0	0
Peak Hour	0	2	0	229	0	0	0	0	18	129	404	0	0	0	584	4	1,370		2	0	0	0

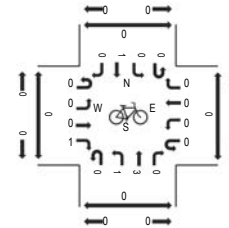


Location: 2 RANCHO VISTOSO BLVD & WOODBURN RD PM
Date: Tuesday, December 7, 2021
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 04:45 PM - 05:00 PM

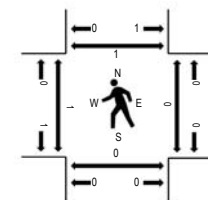
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WOODBURNEAVE			WOODBURNE RD			RANCHO VISTOSO BLVD				RANCHO VISTOSO BLVD				Rolling Hour	Pedestrian Crossings						
	Eastbound			Westbound			Northbound		Southbound		Total	West	East	South		North						
	U-Turn	Left	Thru Right	U-Turn	Left	Thru Right	U-Turn	Left	Thru Right	U-Turn							Left	Thru Right				
4:00 PM	0	0	0	22	0	0	0	0	12	43	134	0	0	0	125	0	336	1,441	1	0	0	0
4:15 PM	0	0	0	30	0	0	0	0	13	37	159	0	0	0	120	0	359	1,473	0	0	0	0
4:30 PM	0	1	0	27	0	0	0	0	12	29	168	0	0	0	130	0	367	1,481	1	0	0	0
4:45 PM	0	2	0	31	0	0	0	0	11	49	150	0	0	0	135	1	379	1,444	0	0	0	0
5:00 PM	0	0	0	22	0	0	0	0	10	48	177	0	0	0	110	1	368	1,374	0	0	0	0
5:15 PM	0	2	0	22	0	0	0	0	14	36	170	0	0	0	122	1	367		0	0	0	1
5:30 PM	0	0	0	24	0	0	0	0	10	48	142	0	0	0	106	0	330		0	0	0	0
5:45 PM	0	0	0	22	0	0	0	0	9	40	146	0	0	0	91	1	309		0	0	0	0
Count Total	0	5	0	200	0	0	0	0	91	330	1,246	0	0	0	939	4	2,815		2	0	0	1
Peak Hour	0	5	0	102	0	0	0	0	47	162	665	0	0	0	497	3	1,481		1	0	0	1

Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Wednesday, October 20, 2021 &
Thursday, October 21, 2021

City: Oro Valley

Project# 21-1651-001

Location : Northern Driveway east of Rancho Vistoso Blvd

2-DAY AVERAGE

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB
00:00	0	0	0	1	12:00	0	0	18	36
00:15	0	0	0	0	12:15	0	0	18	31
00:30	0	0	0	0	12:30	0	0	21	27
00:45	0	0	0	0	12:45	0	0	25	81
01:00	0	0	0	0	13:00	0	0	19	33
01:15	0	0	0	0	13:15	0	0	19	31
01:30	0	0	0	0	13:30	0	0	21	37
01:45	0	0	0	0	13:45	0	0	30	88
02:00	0	0	0	0	14:00	0	0	26	31
02:15	0	0	0	1	14:15	0	0	28	31
02:30	0	0	0	0	14:30	0	0	24	27
02:45	0	0	0	0	14:45	0	0	24	100
03:00	0	0	1	1	15:00	0	0	22	33
03:15	0	0	0	0	15:15	0	0	31	32
03:30	0	0	0	1	15:30	0	0	24	36
03:45	0	0	0	1	15:45	0	0	28	105
04:00	0	0	0	0	16:00	0	0	19	36
04:15	0	0	0	0	16:15	0	0	23	36
04:30	0	0	1	0	16:30	0	0	25	46
04:45	0	0	0	1	16:45	0	0	21	88
05:00	0	0	2	1	17:00	0	0	20	29
05:15	0	0	0	1	17:15	0	0	28	33
05:30	0	0	2	0	17:30	0	0	19	39
05:45	0	0	2	5	17:45	0	0	25	92
06:00	0	0	6	4	18:00	0	0	15	24
06:15	0	0	8	4	18:15	0	0	14	24
06:30	0	0	11	3	18:30	0	0	9	28
06:45	0	0	20	45	18:45	0	0	12	49
07:00	0	0	15	12	19:00	0	0	8	15
07:15	0	0	22	17	19:15	0	0	8	15
07:30	0	0	18	12	19:30	0	0	8	12
07:45	0	0	21	74	19:45	0	0	8	31
08:00	0	0	16	11	20:00	0	0	4	13
08:15	0	0	19	16	20:15	0	0	4	11
08:30	0	0	13	15	20:30	0	0	1	8
08:45	0	0	32	79	20:45	0	0	3	12
09:00	0	0	18	25	21:00	0	0	4	7
09:15	0	0	27	18	21:15	0	0	4	3
09:30	0	0	19	31	21:30	0	0	3	2
09:45	0	0	20	83	21:45	0	0	3	14
10:00	0	0	25	23	22:00	0	0	2	3
10:15	0	0	25	23	22:15	0	0	1	5
10:30	0	0	20	32	22:30	0	0	1	2
10:45	0	0	27	96	22:45	0	0	1	4
11:00	0	0	21	38	23:00	0	0	1	2
11:15	0	0	23	31	23:15	0	0	0	2
11:30	0	0	23	37	23:30	0	0	1	1
11:45	0	0	30	96	23:45	0	0	1	2

Total Vol. 478 486 **964** 663 981 **1644**

GPS Coordinates: 32.426904, -110.961451

		Daily Totals		
NB	SB			Combined
		1141	1466	2607

Split %	AM			PM		
	49.6%	50.4%	37.0%	40.3%	59.7%	63.0%
Peak Hour	10:00	11:00	11:00	13:45	16:00	15:45
Volume	96	140	236	106	148	237
P.H.F.	0.91	0.93	0.91	0.90	0.81	0.84

Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Wednesday, October 20, 2021 &
Thursday, October 21, 2021

City: Oro Valley

Project# 21-1651-002

Location : Southern Driveway east of Rancho Vistoso Blvd

2-DAY AVERAGE

AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB			
00:00	0	0	0	0	12:00	0	0	42	29			
00:15	0	0	0	0	12:15	0	0	50	37			
00:30	0	0	0	0	12:30	0	0	36	23			
00:45	0	0	0	0	12:45	0	0	40	167	35	122	289
01:00	0	0	1	0	13:00	0	0	45	35			
01:15	0	0	0	0	13:15	0	0	38	22			
01:30	0	0	0	0	13:30	0	0	46	26			
01:45	0	0	0	1	13:45	0	0	44	172	37	120	292
02:00	0	0	1	0	14:00	0	0	33	31			
02:15	0	0	1	1	14:15	0	0	44	32			
02:30	0	0	1	0	14:30	0	0	40	27			
02:45	0	0	1	3	14:45	0	0	42	159	37	126	284
03:00	0	0	1	0	15:00	0	0	46	32			
03:15	0	0	0	0	15:15	0	0	41	30			
03:30	0	0	1	0	15:30	0	0	35	30			
03:45	0	0	0	1	15:45	0	0	43	164	33	124	288
04:00	0	0	2	0	16:00	0	0	46	35			
04:15	0	0	0	0	16:15	0	0	47	32			
04:30	0	0	1	0	16:30	0	0	42	32			
04:45	0	0	3	6	16:45	0	0	35	169	30	128	297
05:00	0	0	3	1	17:00	0	0	37	28			
05:15	0	0	2	1	17:15	0	0	42	28			
05:30	0	0	3	1	17:30	0	0	25	33			
05:45	0	0	5	12	17:45	0	0	29	133	20	108	241
06:00	0	0	8	4	18:00	0	0	27	28			
06:15	0	0	8	3	18:15	0	0	22	24			
06:30	0	0	12	5	18:30	0	0	25	19			
06:45	0	0	15	42	18:45	0	0	14	87	21	91	178
07:00	0	0	19	6	19:00	0	0	12	12			
07:15	0	0	19	8	19:15	0	0	11	9			
07:30	0	0	18	18	19:30	0	0	16	16			
07:45	0	0	21	76	19:45	0	0	12	50	13	49	99
08:00	0	0	26	15	20:00	0	0	9	12			
08:15	0	0	21	15	20:15	0	0	9	11			
08:30	0	0	24	12	20:30	0	0	6	5			
08:45	0	0	37	107	20:45	0	0	4	28	5	33	60
09:00	0	0	25	16	21:00	0	0	6	5			
09:15	0	0	35	24	21:15	0	0	5	8			
09:30	0	0	32	21	21:30	0	0	2	4			
09:45	0	0	30	122	21:45	0	0	1	13	3	20	33
10:00	0	0	35	27	22:00	0	0	1	2			
10:15	0	0	43	28	22:15	0	0	1	1			
10:30	0	0	36	31	22:30	0	0	1	1			
10:45	0	0	46	159	22:45	0	0	2	4	1	4	8
11:00	0	0	39	36	23:00	0	0	1	1			
11:15	0	0	43	37	23:15	0	0	0	0			
11:30	0	0	43	31	23:30	0	0	1	0			
11:45	0	0	38	162	23:45	0	0	0	1	2	3	4

Total Vol. 689 459 **1147** 1145 925 **2069**

GPS Coordinates: 32.425817, -110.960942

Daily Totals		Combined
NB	SB	
1833	1383	3216

Split %	AM			PM		
	60.0%	40.0%	35.7%	55.3%	44.7%	64.3%
Peak Hour	11:30	11:00	11:30	15:45	15:45	15:45
Volume	171	134	297	178	131	308
P.H.F.	0.86	0.91	0.86	0.94	0.93	0.96

Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Wednesday, October 20, 2021 &
Thursday, October 21, 2021

City: Oro Valley

Project# 21-1651-003

Location : Driveway north of Tangerine Rd

2-DAY AVERAGE

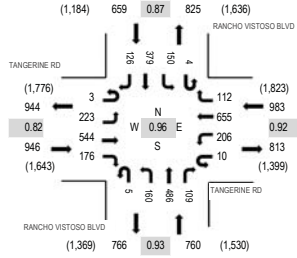
AM Period	NB	SB	EB	WB	PM Period	NB	SB	EB	WB					
00:00	0	0	0	0	12:00	22	21	0	0					
00:15	1	0	0	0	12:15	19	22	0	0					
00:30	0	0	0	0	12:30	25	20	0	0					
00:45	0	1	1	1	12:45	21	86	30	92	0	0	0	0	178
01:00	0	2	0	0	13:00	14	23	0	0					
01:15	0	0	0	0	13:15	18	22	0	0					
01:30	0	0	0	0	13:30	18	25	0	0					
01:45	0	0	0	2	13:45	24	73	16	86	0	0	0	0	158
02:00	0	0	0	0	14:00	16	25	0	0					
02:15	0	0	0	0	14:15	15	28	0	0					
02:30	0	0	0	0	14:30	17	19	0	0					
02:45	0	0	0	0	14:45	19	66	25	96	0	0	0	0	161
03:00	0	0	0	0	15:00	15	23	0	0					
03:15	0	0	0	0	15:15	15	23	0	0					
03:30	0	0	0	0	15:30	15	16	0	0					
03:45	0	0	0	0	15:45	23	67	23	84	0	0	0	0	151
04:00	0	0	0	0	16:00	20	30	0	0					
04:15	0	0	0	0	16:15	13	24	0	0					
04:30	0	0	0	0	16:30	16	22	0	0					
04:45	1	1	0	0	16:45	9	57	23	98	0	0	0	0	155
05:00	1	0	0	0	17:00	12	25	0	0					
05:15	2	2	0	0	17:15	11	19	0	0					
05:30	0	0	0	0	17:30	13	22	0	0					
05:45	3	5	3	5	17:45	7	43	14	79	0	0	0	0	122
06:00	1	3	0	0	18:00	8	17	0	0					
06:15	2	1	0	0	18:15	7	15	0	0					
06:30	3	3	0	0	18:30	8	14	0	0					
06:45	5	10	3	9	18:45	4	27	13	59	0	0	0	0	85
07:00	4	2	0	0	19:00	2	7	0	0					
07:15	8	9	0	0	19:15	4	8	0	0					
07:30	12	10	0	0	19:30	2	11	0	0					
07:45	7	30	11	31	19:45	1	9	4	29	0	0	0	0	38
08:00	9	12	0	0	20:00	2	4	0	0					
08:15	15	10	0	0	20:15	2	4	0	0					
08:30	9	10	0	0	20:30	0	5	0	0					
08:45	17	50	10	41	20:45	2	5	4	17	0	0	0	0	22
09:00	13	12	0	0	21:00	1	2	0	0					
09:15	13	14	0	0	21:15	2	3	0	0					
09:30	18	16	0	0	21:30	0	1	0	0					
09:45	17	60	13	55	21:45	1	3	2	7	0	0	0	0	10
10:00	20	16	0	0	22:00	1	1	0	0					
10:15	25	12	0	0	22:15	1	2	0	0					
10:30	17	19	0	0	22:30	0	0	0	0					
10:45	29	90	18	65	22:45	1	2	0	3	0	0	0	0	5
11:00	28	20	0	0	23:00	1	1	0	0					
11:15	28	19	0	0	23:15	0	0	0	0					
11:30	27	30	0	0	23:30	0	0	0	0					
11:45	16	99	20	89	23:45	0	1	0	1	0	0	0	0	1

Total Vol.	343	295	638	436	648	1083
GPS Coordinates:	32.425496, -110.959131					
				Daily Totals		
				NB	SB	Combined
				779	942	1721
	AM			PM		
Split %	53.8%	46.2%	37.1%	40.2%	59.8%	62.9%
Peak Hour	10:45	11:30	10:45	12:00	12:45	12:00
Volume	112	92	199	86	99	178
P.H.F.	0.98	0.77	0.87	0.87	0.84	0.88

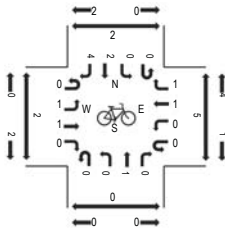


Location: 3 RANCHO VISTOSO BLVD & TANGERINE RD PM
Date: Tuesday, December 7, 2021
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:30 PM - 04:45 PM

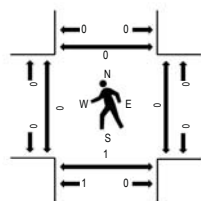
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

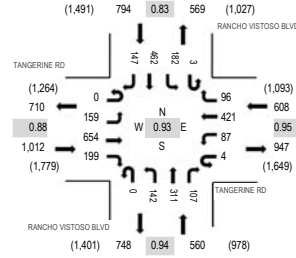
Traffic Counts - Motorized Vehicles

Interval Start Time	TANGERINE RD Eastbound				TANGERINE RD Westbound				RANCHO VISTOSO BLVD Northbound				RANCHO VISTOSO BLVD Southbound				Rolling Hour Total	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		West	East	South	North	
4:00 PM	0	55	135	34	3	53	175	27	0	32	107	38	0	26	91	28	804	3,348	0	0	1	0
4:15 PM	0	38	137	46	3	48	158	32	1	48	138	22	1	44	98	33	847	3,313	0	0	0	0
4:30 PM	1	68	174	44	3	54	185	29	1	44	98	19	0	37	81	30	868	3,235	0	0	0	0
4:45 PM	2	62	98	52	1	51	137	24	3	36	143	30	3	43	109	35	829	3,044	0	0	0	0
5:00 PM	0	42	95	31	2	49	176	40	1	38	153	24	0	18	72	28	769	2,832	1	0	2	1
5:15 PM	0	48	103	37	3	38	157	36	1	47	121	20	2	24	98	34	769	0	0	0	0	
5:30 PM	0	40	109	36	0	41	111	30	0	54	108	21	2	27	70	28	677	0	0	0	0	
5:45 PM	0	40	86	30	1	33	91	32	0	43	115	24	2	29	66	25	617	0	0	0	0	
Count Total	3	393	937	310	16	367	1,190	250	7	342	983	198	10	248	685	241	6,180	1	0	3	1	
Peak Hour	3	223	544	176	10	206	655	112	5	160	486	109	4	150	379	126	3,348	0	0	1	0	

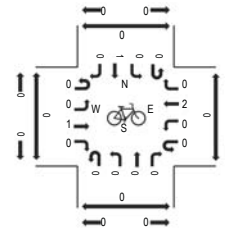


Location: 3 RANCHO VISTOSO BLVD & TANGERINE RD AM
Date: Tuesday, December 7, 2021
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

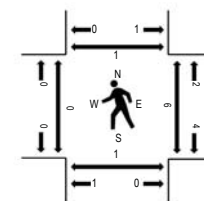
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

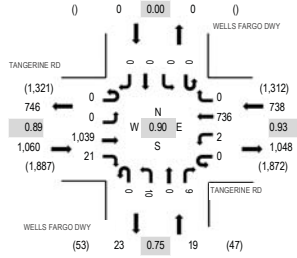
Traffic Counts - Motorized Vehicles

Interval Start Time	TANGERINE RD Eastbound				TANGERINE RD Westbound				RANCHO VISTOSO BLVD Northbound				RANCHO VISTOSO BLVD Southbound				Rolling Hour Total	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		West	East	South	North	
7:00 AM	1	36	131	18	0	7	54	15	0	15	47	16	0	53	81	25	499	2,770	0	0	0	0
7:15 AM	0	34	154	36	2	21	83	36	0	36	84	29	1	63	135	40	754	2,974	0	1	0	0
7:30 AM	0	36	160	55	0	15	122	24	0	33	65	24	1	40	103	41	719	2,848	0	3	1	1
7:45 AM	0	50	177	61	1	25	111	18	0	37	86	24	1	36	131	40	798	2,776	0	2	0	0
8:00 AM	0	39	163	47	1	26	105	18	0	36	76	30	0	43	93	26	703	2,571	0	0	0	0
8:15 AM	0	42	108	37	0	28	98	18	0	22	72	25	0	34	102	42	628	1	1	0	0	
8:30 AM	0	32	122	49	2	28	88	10	0	25	63	25	0	31	122	50	647	0	1	0	0	
8:45 AM	1	34	112	44	1	34	90	12	1	17	75	15	2	27	102	26	593	0	0	1	0	
Count Total	2	303	1,127	347	7	184	751	151	1	221	568	188	5	327	869	290	5,341	1	8	2	1	
Peak Hour	0	159	654	199	4	87	421	96	0	142	311	107	3	182	462	147	2,974	0	6	1	1	

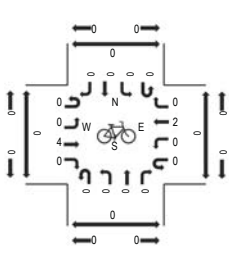


Location: 4 WELLS FARGO DWY & TANGERINE RD AM
Date: Tuesday, December 7, 2021
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

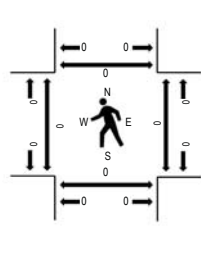
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

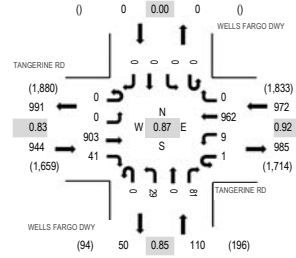
Traffic Counts - Motorized Vehicles

Interval Start Time	TANGERINE RD				TANGERINE RD				WELLS FARGO DWY				WELLS FARGO DWY				Rolling Hour	Pedestrian Crossings				
	Eastbound				Westbound				Northbound				Southbound					Total	West	East	South	North
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right						
7:00 AM	0	0	199	1	0	0	99	0	0	0	0	2	0	0	0	0	301	1,688	0	0	0	0
7:15 AM	0	0	247	2	0	0	158	0	0	3	0	0	0	0	0	0	410	1,817	0	0	0	0
7:30 AM	0	0	264	5	0	0	198	0	0	2	0	1	0	0	0	0	470	1,786	0	0	0	0
7:45 AM	0	0	291	8	0	0	202	0	0	0	0	6	0	0	0	0	507	1,708	0	0	0	0
8:00 AM	0	0	237	6	0	2	178	0	0	5	0	2	0	0	0	0	430	1,558	0	0	0	0
8:15 AM	0	0	201	3	0	2	166	0	0	3	0	4	0	0	0	0	379		0	0	0	0
8:30 AM	0	0	207	8	0	5	164	0	0	5	0	3	0	0	0	0	392		0	0	0	0
8:45 AM	0	0	200	8	0	3	135	0	0	3	0	8	0	0	0	0	357		0	0	0	0
Count Total	0	0	1,846	41	0	12	1,300	0	0	21	0	26	0	0	0	0	3,246		0	0	0	0
Peak Hour	0	0	1,039	21	0	2	736	0	0	10	0	9	0	0	0	0	1,817		0	0	0	0

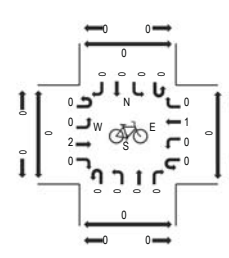


Location: 4 WELLS FARGO DWY & TANGERINE RD PM
Date: Tuesday, December 7, 2021
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:30 PM - 04:45 PM

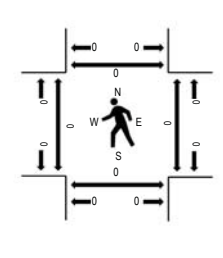
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

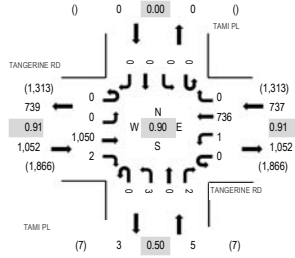
Traffic Counts - Motorized Vehicles

Interval Start Time	TANGERINE RD				TANGERINE RD				WELLS FARGO DWY				WELLS FARGO DWY				Rolling Hour	Pedestrian Crossings				
	Eastbound				Westbound				Northbound				Southbound					Total	West	East	South	North
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right						
4:00 PM	0	0	216	12	0	0	247	0	0	3	0	19	0	0	0	0	497	2,026	0	0	0	0
4:15 PM	0	0	221	14	0	1	245	0	0	7	0	18	0	0	0	0	506	1,981	0	0	0	0
4:30 PM	0	0	274	10	0	5	263	0	0	13	0	20	0	0	0	0	585	1,944	0	0	0	0
4:45 PM	0	0	192	5	1	3	207	0	0	6	0	24	0	0	0	0	438	1,765	0	0	0	0
5:00 PM	0	0	165	9	0	2	258	0	0	8	0	10	0	0	0	0	452	1,662	0	0	0	0
5:15 PM	0	0	182	10	0	3	243	0	0	13	0	18	0	0	0	0	469		0	0	0	0
5:30 PM	0	0	179	10	0	1	195	0	0	5	0	16	0	0	0	0	406		0	0	0	0
5:45 PM	0	0	152	8	0	1	158	0	0	9	0	7	0	0	0	0	335		0	0	0	0
Count Total	0	0	1,581	78	1	16	1,816	0	0	64	0	132	0	0	0	0	3,688		0	0	0	0
Peak Hour	0	0	903	41	1	9	962	0	0	29	0	81	0	0	0	0	2,026		0	0	0	0

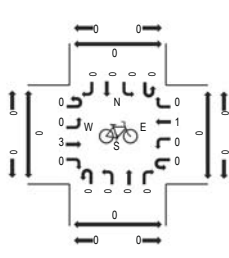


Location: 1 TAMI PL & TANGERINE RD AM
Date: Tuesday, December 7, 2021
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

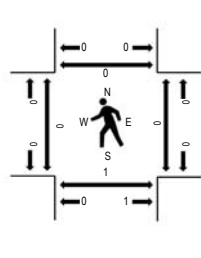
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

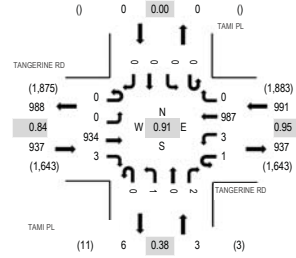
Traffic Counts - Motorized Vehicles

Interval Start Time	TANGERINE RD Eastbound			TANGERINE RD Westbound			TAMI PL Northbound			TAMI PL Southbound			Total	Rolling Hour	Pedestrian Crossings						
	U-Turn	Left	Thru Right	U-Turn	Left	Thru Right	U-Turn	Left	Thru Right	U-Turn	Left	Thru Right			West	East	South	North			
7:00 AM	0	0	203	0	0	1	100	0	0	0	0	0	0	0	0	304	1,680	0	0	0	0
7:15 AM	0	0	240	0	0	0	160	0	0	0	0	0	0	0	0	400	1,794	0	0	1	0
7:30 AM	0	0	278	0	0	0	199	0	0	0	0	1	0	0	0	478	1,765	0	0	0	0
7:45 AM	0	0	289	1	0	1	204	0	0	3	0	0	0	0	0	498	1,660	0	0	0	0
8:00 AM	0	0	243	1	0	0	173	0	0	0	0	1	0	0	0	418	1,506	0	0	0	0
8:15 AM	0	0	195	2	0	0	173	0	0	0	0	1	0	0	0	371		0	0	0	0
8:30 AM	0	0	211	0	0	1	161	0	0	0	0	0	0	0	0	373		0	0	0	0
8:45 AM	0	0	203	0	1	0	139	0	0	1	0	0	0	0	0	344		0	0	2	0
Count Total	0	0	1,862	4	1	3	1,309	0	0	4	0	3	0	0	0	3,186		0	0	3	0
Peak Hour	0	0	1,050	2	0	1	736	0	0	3	0	2	0	0	0	1,794		0	0	1	0

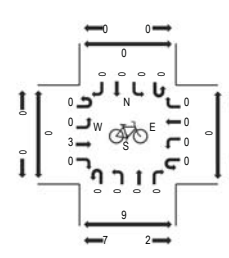


Location: 1 TAMI PL & TANGERINE RD PM
Date: Tuesday, December 7, 2021
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:30 PM - 04:45 PM

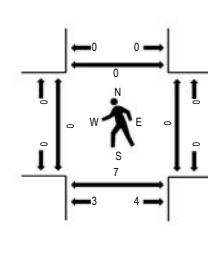
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	TANGERINE RD Eastbound			TANGERINE RD Westbound			TAMI PL Northbound			TAMI PL Southbound			Total	Rolling Hour	Pedestrian Crossings						
	U-Turn	Left	Thru Right	U-Turn	Left	Thru Right	U-Turn	Left	Thru Right	U-Turn	Left	Thru Right			West	East	South	North			
4:00 PM	0	0	227	1	0	1	252	0	0	1	0	1	0	0	0	483	1,931	0	0	2	0
4:15 PM	0	0	229	1	0	1	254	0	0	0	0	1	0	0	0	486	1,882	0	0	0	0
4:30 PM	0	0	278	0	0	1	254	0	0	0	0	0	0	0	0	533	1,858	0	0	2	0
4:45 PM	0	0	200	1	1	0	227	0	0	0	0	0	0	0	0	429	1,708	0	0	3	0
5:00 PM	0	0	165	1	1	2	265	0	0	0	0	0	0	0	0	434	1,598	0	0	1	0
5:15 PM	0	0	197	0	0	0	265	0	0	0	0	0	0	0	0	462		0	0	1	0
5:30 PM	0	0	186	0	1	0	196	0	0	0	0	0	0	0	0	383		0	0	1	0
5:45 PM	0	0	155	2	1	0	161	0	0	0	0	0	0	0	0	319		3	0	1	0
Count Total	0	0	1,637	6	4	5	1,874	0	0	1	0	2	0	0	0	3,529		3	0	11	0
Peak Hour	0	0	934	3	1	3	987	0	0	1	0	2	0	0	0	1,931		0	0	7	0

APPENDIX C

EXISTING PEAK HOUR ANALYSIS

21-1550 Avilla Rancho Vistoso
Existing AM

1: Rancho Vistoso Blvd. & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↘	↗↘	
Traffic Vol, veh/h	0	229	0	406	584	4
Future Vol, veh/h	0	229	0	406	584	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	249	0	441	635	4
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	320	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	676	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	676	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	13.4	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	676	-	-		
HCM Lane V/C Ratio	-	0.368	-	-		
HCM Control Delay (s)	-	13.4	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	1.7	-	-		

21-1550 Avilla Rancho Vistoso
Existing PM

1: Rancho Vistoso Blvd. & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↘	↗↘	
Traffic Vol, veh/h	0	102	0	670	497	3
Future Vol, veh/h	0	102	0	670	497	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	111	0	728	540	3
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	272	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	726	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	726	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	10.9	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	726	-	-		
HCM Lane V/C Ratio	-	0.153	-	-		
HCM Control Delay (s)	-	10.9	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0.5	-	-		

21-1550 Avilla Rancho Vistoso
Existing AM

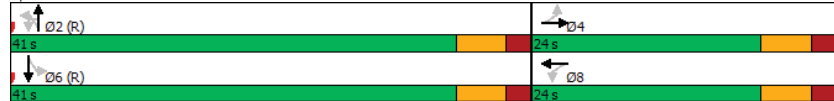
2: Rancho Vistoso Blvd. & Avilla Dr.
Timings

Lane Group	EBL	EBT	WBL	WBT	NBU	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔	↔	↔	↔
Traffic Volume (vph)	2	0	36	0	18	129	527	55	758
Future Volume (vph)	2	0	36	0	18	129	527	55	758
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases		4		8			2		6
Permitted Phases	4		8		2	2		6	
Detector Phase	4	4	8	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	24.0	24.0	24.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	36.9%	36.9%	36.9%	36.9%	63.1%	63.1%	63.1%	63.1%	63.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0	6.0		6.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Rancho Vistoso Blvd. & Avilla Dr.



21-1550 Avilla Rancho Vistoso
Existing PM

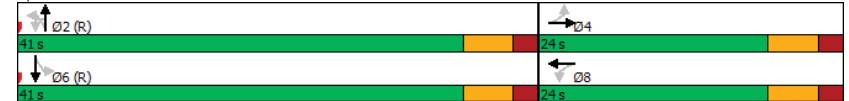
2: Rancho Vistoso Blvd. & Avilla Dr.
Timings

Lane Group	EBL	EBT	WBL	WBT	NBU	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔	↔	↔	↔
Traffic Volume (vph)	5	0	85	0	47	162	817	25	574
Future Volume (vph)	5	0	85	0	47	162	817	25	574
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases		4		8			2		6
Permitted Phases	4		8		2	2		6	
Detector Phase	4	4	8	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	24.0	24.0	24.0	24.0	41.0	41.0	41.0	41.0	41.0
Total Split (%)	36.9%	36.9%	36.9%	36.9%	63.1%	63.1%	63.1%	63.1%	63.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0	6.0		6.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 65
 Actuated Cycle Length: 65
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Rancho Vistoso Blvd. & Avilla Dr.



21-1550 Avilla Rancho Vistoso
Existing AM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔		↔	↔			↔	↔		↔	↔
Traffic Volume (veh/h)	2	0	0	36	0	24	18	129	527	30	55	758
Future Volume (veh/h)	2	0	0	36	0	24	18	129	527	30	55	758
Initial Q (Ob), 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	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	2	0	0	39	0	26	140	573	33	60	824	824
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	203	0	0	137	0	32	569	2601	150	731	2706	2706
Arrive On Green	0.05	0.00	0.00	0.05	0.00	0.05	1.00	1.00	1.00	0.76	0.76	0.76
Sat Flow, veh/h	1702	0	0	892	0	595	665	3415	196	814	3647	3647
Grp Volume(v), veh/h	2	0	0	65	0	0	140	298	308	60	824	824
Grp Sat Flow(s),veh/h/ln	1702	0	0	1487	0	0	665	1777	1835	814	1777	1777
Q Serve(g_s), s	0.0	0.0	0.0	2.7	0.0	0.0	1.8	0.0	0.0	1.2	4.7	4.7
Cycle Q Clear(g_c), s	0.1	0.0	0.0	2.8	0.0	0.0	6.5	2.0	0.0	1.2	4.7	4.7
Prop In Lane	1.00		0.00	0.60		0.40	1.00		0.11	1.00		1.00
Lane Grp Cap(c), veh/h	203	0	0	169	0	0	569	1353	1397	731	2706	2706
V/C Ratio(X)	0.01	0.00	0.00	0.38	0.00	0.00	0.25	0.22	0.22	0.08	0.30	0.30
Avail Cap(c_a), veh/h	511	0	0	499	0	0	569	1353	1397	731	2706	2706
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.1	0.0	0.0	30.4	0.0	0.0	0.3	0.0	0.0	2.0	2.4	2.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.4	0.0	0.0	1.0	0.4	0.4	0.2	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.0	0.0	1.9	0.0	0.0	0.3	0.3	0.3	0.2	1.6	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.1	0.0	0.0	31.8	0.0	0.0	1.3	0.4	0.4	2.2	2.7	2.7
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h	2			65			746				884	884
Approach Delay, s/veh	29.1			31.8			0.6				2.7	2.7
Approach LOS	C			C			A				A	A
Timer - Assigned Phs	2			4			6				8	8
Phs Duration (G+Y+Rc), s	55.5			9.5			55.5				9.5	9.5
Change Period (Y+Rc), s	6.0			6.0			6.0				6.0	6.0
Max Green Setting (Gmax), s	35.0			18.0			35.0				18.0	18.0
Max Q Clear Time (g_c+I1), s	8.5			2.1			6.7				4.8	4.8
Green Ext Time (p_c), s	5.4			0.0			7.0				0.2	0.2

Intersection Summary		
HCM 6th Ctrl Delay	2.9	
HCM 6th LOS	A	

Notes
User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
Existing PM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔		↔	↔			↔	↔		↔	↔
Traffic Volume (veh/h)	5	0	0	85	0	57	47	162	817	41	25	574
Future Volume (veh/h)	5	0	0	85	0	57	47	162	817	41	25	574
Initial Q (Ob), 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	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	5	0	0	92	0	62	176	888	45	27	624	624
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	290	0	0	195	9	78	606	2359	120	522	2436	2436
Arrive On Green	0.13	0.00	0.00	0.13	0.00	0.13	1.00	1.00	1.00	0.69	0.69	0.69
Sat Flow, veh/h	1378	0	0	823	72	603	801	3441	174	600	3647	3647
Grp Volume(v), veh/h	5	0	0	154	0	0	176	458	475	27	624	624
Grp Sat Flow(s),veh/h/ln	1378	0	0	1499	0	0	801	1777	1839	600	1777	1777
Q Serve(g_s), s	0.0	0.0	0.0	5.9	0.0	0.0	2.1	0.0	0.0	1.0	4.4	4.4
Cycle Q Clear(g_c), s	0.2	0.0	0.0	6.4	0.0	0.0	6.4	0.0	0.0	1.0	4.4	4.4
Prop In Lane	1.00		0.00	0.60		0.40	1.00		0.09	1.00		1.00
Lane Grp Cap(c), veh/h	290	0	0	283	0	0	606	1218	1260	522	2436	2436
V/C Ratio(X)	0.02	0.00	0.00	0.54	0.00	0.00	0.29	0.38	0.38	0.05	0.26	0.26
Avail Cap(c_a), veh/h	487	0	0	501	0	0	606	1218	1260	522	2436	2436
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	0.0	0.0	27.4	0.0	0.0	0.3	0.0	0.0	3.4	3.9	3.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.6	0.0	0.0	1.2	0.9	0.9	0.2	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.0	0.0	4.2	0.0	0.0	0.4	0.5	0.5	0.2	2.1	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	0.0	0.0	29.0	0.0	0.0	1.5	0.9	0.9	3.6	4.2	4.2
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h	5			154			1109				651	651
Approach Delay, s/veh	24.7			29.0			1.0				4.1	4.1
Approach LOS	C			C			A				A	A
Timer - Assigned Phs	2			4			6				8	8
Phs Duration (G+Y+Rc), s	50.6			14.4			50.6				14.4	14.4
Change Period (Y+Rc), s	6.0			6.0			6.0				6.0	6.0
Max Green Setting (Gmax), s	35.0			18.0			35.0				18.0	18.0
Max Q Clear Time (g_c+I1), s	8.4			2.2			6.4				8.4	8.4
Green Ext Time (p_c), s	8.3			0.0			5.0				0.5	0.5

Intersection Summary		
HCM 6th Ctrl Delay	4.4	
HCM 6th LOS	A	

Notes
User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
Existing AM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (veh/h)	0
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(q_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

21-1550 Avilla Rancho Vistoso
Existing PM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (veh/h)	0
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(q_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

21-1550 Avilla Rancho Vistoso
Existing AM

3: Rancho Vistoso Blvd. & Vistoso Plaza Central Drwy.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑			↑↑
Traffic Vol, veh/h	0	60	497	69	0	794
Future Vol, veh/h	0	60	497	69	0	794
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	65	540	75	0	863

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	308	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	*884	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	1	-
Mov Cap-1 Maneuver	-	*884	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	884
HCM Lane V/C Ratio	-	-	0.074
HCM Control Delay (s)	-	-	9.4
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.2

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

21-1550 Avilla Rancho Vistoso
Existing PM

3: Rancho Vistoso Blvd. & Vistoso Plaza Central Drwy.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑			↑↑
Traffic Vol, veh/h	0	131	727	94	0	659
Future Vol, veh/h	0	131	727	94	0	659
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	142	790	102	0	716

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	446	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	*787	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	1	-
Mov Cap-1 Maneuver	-	*787	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	787
HCM Lane V/C Ratio	-	-	0.181
HCM Control Delay (s)	-	-	10.6
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.7

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

21-1550 Avilla Rancho Vistoso
Existing AM

4: Tangerine Rd. & Vistoso Plaza Lower Drwy.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↔		↔
Traffic Vol, veh/h	0	943	563	50	0	41
Future Vol, veh/h	0	943	563	50	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1025	612	54	0	45
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	306
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	690
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	690
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	10.6			
HCM LOS			B			
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	690		
HCM Lane V/C Ratio	-	-	-	0.065		
HCM Control Delay (s)	-	-	-	10.6		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0.2		

21-1550 Avilla Rancho Vistoso
Existing PM

4: Tangerine Rd. & Vistoso Plaza Lower Drwy.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↔		↔
Traffic Vol, veh/h	0	803	875	71	0	98
Future Vol, veh/h	0	803	875	71	0	98
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	873	951	77	0	107
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	476
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	535
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	535
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	13.4			
HCM LOS			B			
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	535		
HCM Lane V/C Ratio	-	-	-	0.199		
HCM Control Delay (s)	-	-	-	13.4		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0.7		

21-1550 Avilla Rancho Vistoso
Existing AM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
Timings

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	159	654	199	4	87	421	96	142	311	107	3	182
Future Volume (vph)	159	654	199	4	87	421	96	142	311	107	3	182
Turn Type	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	pm+pt
Protected Phases	7	4		3	3	8		5	2		1	1
Permitted Phases	4		4	8	8		8	2		2	6	6
Detector Phase	7	4	4	3	3	8	8	5	2	2	1	1
Switch Phase												
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	16.0	40.3	40.3	16.0	16.0	40.3	40.3	16.0	40.3	40.3	16.0	16.0
Total Split (s)	22.0	41.0	41.0	22.0	22.0	41.0	41.0	22.0	45.0	45.0	22.0	22.0
Total Split (%)	16.9%	31.5%	31.5%	16.9%	16.9%	31.5%	31.5%	16.9%	34.6%	34.6%	16.9%	16.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0					6.0	6.0	6.0		6.0
Lead/Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	None	Max	Max	None	C-Max	C-Max	None	None

Intersection Summary

Cycle Length: 130

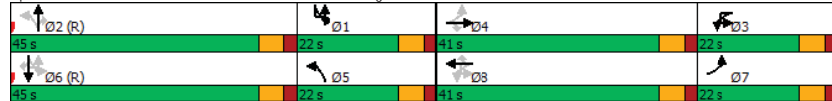
Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.



21-1550 Avilla Rancho Vistoso
Existing PM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
Timings

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	3	223	544	176	10	206	655	112	5	160	486	109
Future Volume (vph)	3	223	544	176	10	206	655	112	5	160	486	109
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm
Protected Phases	7	7	4		3	3	8		5	5	2	
Permitted Phases	4	4		4	8	8		8	2	2		2
Detector Phase	7	7	4	4	3	3	8	8	5	5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	16.0	16.0	40.3	40.3	16.0	16.0	40.3	40.3	16.0	16.0	40.3	40.3
Total Split (s)	22.0	22.0	41.0	41.0	22.0	22.0	41.0	41.0	22.0	22.0	45.0	45.0
Total Split (%)	16.9%	16.9%	31.5%	31.5%	16.9%	16.9%	31.5%	31.5%	16.9%	16.9%	34.6%	34.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)			0.0	0.0					0.0	0.0		0.0
Total Lost Time (s)			6.0	6.0					6.0	6.0		6.0
Lead/Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	C-Max	C-Max

Intersection Summary

Cycle Length: 130

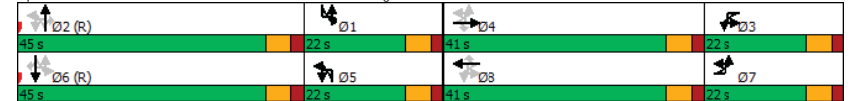
Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.



21-1550 Avilla Rancho Vistoso
Existing AM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations	↔	↗	↘	↔	↗	↘	↔	↗	↘	↔	↗	↘
Traffic Volume (veh/h)	159	654	199	4	87	421	96	142	311	107	3	182
Future Volume (veh/h)	159	654	199	4	87	421	96	142	311	107	3	182
Initial Q (Ob), 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	
Parking Bus, Adj	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		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870		1870	1870	1870		1870	1870		1870
Adj Flow Rate, veh/h	173	711	216		95	458	104		154	338		116
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92		0.92
Percent Heavy Veh, %	2	2	2		2	2	2		2	2		2
Cap, veh/h	329	957	427		244	957	427		528	1066		476
Arrive On Green	0.08	0.27	0.27		0.08	0.27	0.27		0.17	0.30		0.30
Sat Flow, veh/h	1781	3554	1585		1781	3554	1585		1781	3554		1585
Grp Volume(v), veh/h	173	711	216		95	458	104		154	338		116
Grp Sat Flow(s),veh/h/ln	1781	1777	1585		1781	1777	1585		1781	1777		1585
Q Serve(g_s), s	0.0	23.8	15.0		0.0	14.1	6.7		0.0	9.6		7.2
Cycle Q Clear(g_c), s	0.0	23.8	15.0		0.0	14.1	6.7		0.0	9.6		7.2
Prop In Lane	1.00		1.00		1.00		1.00		1.00		1.00	
Lane Grp Cap(c), veh/h	329	957	427		244	957	427		528	1066		476
V/C Ratio(X)	0.53	0.74	0.51		0.39	0.48	0.24		0.29	0.32		0.24
Avail Cap(c_a), veh/h	411	957	427		327	957	427		528	1066		476
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Uniform Delay (d), s/veh	47.1	43.4	40.2		52.3	39.8	37.1		30.1	35.2		34.4
Incr Delay (d2), s/veh	5.9	5.2	4.2		4.6	1.7	1.4		1.1	0.8		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
%ile BackOfQ(95%),veh/ln	9.6	16.2	10.3		5.7	10.3	4.9		6.7	7.5		5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.0	48.6	44.4		56.9	41.6	38.5		31.2	36.0		35.6
LnGrp LOS	D	D	D		E	D	D		C	D		D
Approach Vol, veh/h		1100				657				608		
Approach Delay, s/veh		48.5				43.3				34.7		
Approach LOS		D				D				C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	28.0	45.0	16.0	41.0	28.0	45.0	16.0	41.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	16.0	39.0	16.0	35.0	16.0	39.0	16.0	35.0				
Max Q Clear Time (g_c+I1), s	2.0	11.6	2.0	25.8	2.0	12.2	2.0	16.1				
Green Ext Time (p_c), s	1.5	2.4	0.6	5.5	1.0	3.7	1.3	5.4				

Intersection Summary												
HCM 6th Ctrl Delay											37.8	
HCM 6th LOS											D	

Notes
User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
Existing PM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations	↔	↗	↘	↔	↔	↗	↘	↔	↔	↗	↘	↔
Traffic Volume (veh/h)	3	223	544	176	10	206	655	112	5	160	486	109
Future Volume (veh/h)	3	223	544	176	10	206	655	112	5	160	486	109
Initial Q (Ob), 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	
Parking Bus, Adj	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		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870		1870	1870	1870		1870	1870		1870
Adj Flow Rate, veh/h	242	591	191		224	712	122		174	528		118
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92		0.92
Percent Heavy Veh, %	2	2	2		2	2	2		2	2		2
Cap, veh/h	271	779	347		338	864	385		550	1066		476
Arrive On Green	0.11	0.22	0.22		0.13	0.24	0.24		0.16	0.30		0.30
Sat Flow, veh/h	1781	3554	1585		1781	3554	1585		1781	3554		1585
Grp Volume(v), veh/h	242	591	191		224	712	122		174	528		118
Grp Sat Flow(s),veh/h/ln	1781	1777	1585		1781	1777	1585		1781	1777		1585
Q Serve(g_s), s	11.9	20.2	13.9		7.9	24.7	8.2		0.0	15.9		7.3
Cycle Q Clear(g_c), s	11.9	20.2	13.9		7.9	24.7	8.2		0.0	15.9		7.3
Prop In Lane	1.00		1.00		1.00		1.00		1.00		1.00	
Lane Grp Cap(c), veh/h	271	779	347		338	864	385		550	1066		476
V/C Ratio(X)	0.89	0.76	0.55		0.66	0.82	0.32		0.32	0.50		0.25
Avail Cap(c_a), veh/h	294	957	427		338	957	427		550	1066		476
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Uniform Delay (d), s/veh	54.8	47.5	45.1		49.6	46.6	40.3		29.2	37.4		34.4
Incr Delay (d2), s/veh	33.0	4.1	2.9		9.8	6.5	1.0		1.2	1.6		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
%ile BackOfQ(95%),veh/ln	15.5	14.5	9.7		12.2	17.3	6.0		7.7	11.6		5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.8	51.7	47.9		59.5	53.1	41.3		30.4	39.1		35.7
LnGrp LOS	F	D	D		E	D	D		C	D		D
Approach Vol, veh/h			1024				1058					820
Approach Delay, s/veh			59.5				53.1					36.7
Approach LOS			E				D					D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.1	45.0	23.4	34.5	27.1	45.0	20.3	37.6				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	16.0	39.0	16.0	35.0	16.0	39.0	16.0	35.0				
Max Q Clear Time (g_c+I1), s	2.0	17.9	9.9	22.2	2.0	9.8	13.9	26.7				
Green Ext Time (p_c), s	1.1	4.0	1.0	6.2	1.2	3.4	0.4	4.9				

Intersection Summary												
HCM 6th Ctrl Delay											45.2	
HCM 6th LOS											D	

Notes
User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
Existing AM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	462	147
Future Volume (veh/h)	462	147
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	502	160
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1066	476
Arrive On Green	0.60	0.60
Sat Flow, veh/h	3554	1585
Grp Volume(v), veh/h	502	160
Grp Sat Flow(s),veh/h/ln	1777	1585
Q Serve(g_s), s	10.2	6.6
Cycle Q Clear(q_c), s	10.2	6.6
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1066	476
V/C Ratio(X)	0.47	0.34
Avail Cap(c_a), veh/h	1066	476
HCM Platoon Ratio	2.00	2.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	20.2	19.5
Incr Delay (d2), s/veh	1.5	1.9
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.5	4.2
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	21.7	21.4
LnGrp LOS	C	C
Approach Vol, veh/h	860	
Approach Delay, s/veh	22.3	
Approach LOS	C	
Timer - Assigned Phs		

21-1550 Avilla Rancho Vistoso
Existing PM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	SBU	SBL	SBT	SBR
Lane Configurations		↑	↑↑	↑
Traffic Volume (veh/h)	4	150	379	126
Future Volume (veh/h)	4	150	379	126
Initial Q (Qb), veh	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	
Work Zone On Approach	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	
Adj Flow Rate, veh/h	163	412	137	
Peak Hour Factor	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	
Cap, veh/h	484	1066	476	
Arrive On Green	0.32	0.60	0.60	
Sat Flow, veh/h	1781	3554	1585	
Grp Volume(v), veh/h	163	412	137	
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	
Q Serve(g_s), s	0.0	7.8	5.4	
Cycle Q Clear(q_c), s	0.0	7.8	5.4	
Prop In Lane	1.00		1.00	
Lane Grp Cap(c), veh/h	484	1066	476	
V/C Ratio(X)	0.34	0.39	0.29	
Avail Cap(c_a), veh/h	484	1066	476	
HCM Platoon Ratio	2.00	2.00	2.00	
Upstream Filter(I)	1.00	1.00	1.00	
Uniform Delay (d), s/veh	27.4	19.8	19.3	
Incr Delay (d2), s/veh	1.5	1.1	1.5	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	6.3	5.4	3.7	
Unsig. Movement Delay, s/veh				
LnGrp Delay(d),s/veh	28.9	20.8	20.8	
LnGrp LOS	C	C	C	
Approach Vol, veh/h		712		
Approach Delay, s/veh		22.7		
Approach LOS		C		
Timer - Assigned Phs				

21-1550 Avilla Rancho Vistoso
Existing AM

6: Avilla Dr. & Tangerine Rd.
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	0	1039	21	2	736	0	10	0	9	0	0	0
Future Vol, veh/h	0	1039	21	2	736	0	10	0	9	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	150	-	-	0	-	50	0	-	50
Veh in Median Storage, #	-	0	-	-	0	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	0	-	-	0	-	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1129	23	2	800	0	11	0	10	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	800	0	0	1152
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1178	-	-	602
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	-
Mov Cap-1 Maneuver	*1178	-	-	602
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	23	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	144	460	*1178	-	-	602	-	-	-	-
HCM Lane V/C Ratio	0.075	0.021	-	-	-	0.004	-	-	-	-
HCM Control Delay (s)	32	13	0	-	-	11	-	-	0	0
HCM Lane LOS	D	B	A	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	0.1	0	-	-	0	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
Existing PM

6: Avilla Dr. & Tangerine Rd.
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	0	903	41	1	9	962	0	29	0	81	0	0
Future Vol, veh/h	0	903	41	1	9	962	0	29	0	81	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	150	-	0	-	50	0	-	50
Veh in Median Storage, #	-	0	-	-	0	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	0	-	-	0	-	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	982	45	1	10	1046	0	32	0	88	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1046	0	0	1026
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	6.44
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.52
Pot Cap-1 Maneuver	*1034	-	-	319
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	-
Mov Cap-1 Maneuver	*1034	-	-	584
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	17.1	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	196	505	*1034	-	-	584	-	-	-	-
HCM Lane V/C Ratio	0.161	0.174	-	-	-	0.019	-	-	-	-
HCM Control Delay (s)	26.9	13.6	0	-	-	11.3	-	-	0	0
HCM Lane LOS	D	B	A	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	0.6	0	-	-	0.1	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
Existing AM

7: Tami Pl. & Tangerine Rd.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	1050	2	1	736	3	2
Future Vol, veh/h	1050	2	1	736	3	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1141	2	1	800	3	2

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	1143	0	1544	572
Stage 1	-	-	-	-	1142	-
Stage 2	-	-	-	-	402	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	607	-	*175	463
Stage 1	-	-	-	-	*266	-
Stage 2	-	-	-	-	*743	-
Platoon blocked, %	-	-	-	-	1	-
Mov Cap-1 Maneuver	-	-	607	-	*175	463
Mov Cap-2 Maneuver	-	-	-	-	*175	-
Stage 1	-	-	-	-	*266	-
Stage 2	-	-	-	-	*742	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	233	-	-	607	-
HCM Lane V/C Ratio	0.023	-	-	0.002	-
HCM Control Delay (s)	20.8	-	-	10.9	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

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

21-1550 Avilla Rancho Vistoso
Existing PM

7: Tami Pl. & Tangerine Rd.
HCM 6th TWSC

Intersection							
Int Delay, s/veh	0						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑	↑↑	↑	↑
Traffic Vol, veh/h	934	3	1	3	987	1	2
Future Vol, veh/h	934	3	1	3	987	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	1015	3	1	3	1073	1	2

Major/Minor	Major1	Major2	Minor1				
Conflicting Flow All	0	0	1018	1018	0	1562	509
Stage 1	-	-	-	-	-	1017	-
Stage 2	-	-	-	-	-	545	-
Critical Hdwy	-	-	6.44	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.52	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	323	677	-	*242	509
Stage 1	-	-	-	-	-	*310	-
Stage 2	-	-	-	-	-	*630	-
Platoon blocked, %	-	-	-	-	-	1	-
Mov Cap-1 Maneuver	-	-	531	531	-	*240	509
Mov Cap-2 Maneuver	-	-	-	-	-	*240	-
Stage 1	-	-	-	-	-	*310	-
Stage 2	-	-	-	-	-	*625	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	371	-	-	531	-
HCM Lane V/C Ratio	0.009	-	-	0.008	-
HCM Control Delay (s)	14.8	-	-	11.8	-
HCM Lane LOS	B	-	-	B	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

21-1550 Avilla Rancho Vistoso
Existing AM

8: Tangerine Rd. & Access A
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	1052	739	0	0	0
Future Vol, veh/h	0	1052	739	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1143	803	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 402
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.32
Pot Cap-1 Maneuver	0	-	- - 0 *787
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	- - - 1
Mov Cap-1 Maneuver	-	-	- - - *787
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
Existing PM

8: Tangerine Rd. & Access A
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	937	988	0	0	0
Future Vol, veh/h	0	937	988	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1018	1074	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 537
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.32
Pot Cap-1 Maneuver	0	-	- - 0 *667
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	- - - 1
Mov Cap-1 Maneuver	-	-	- - - *667
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
Existing AM

9: Access B & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↕	↕	↕
Traffic Vol, veh/h	231	0	0	133	0	0
Future Vol, veh/h	231	0	0	133	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	- None	- None	- None	- None	- None	- None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	251	0	0	145	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	251	0	396
Stage 1	-	-	-	-	251
Stage 2	-	-	-	-	145
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1314	-	609
Stage 1	-	-	-	-	791
Stage 2	-	-	-	-	882
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1314	-	609
Mov Cap-2 Maneuver	-	-	-	-	609
Stage 1	-	-	-	-	791
Stage 2	-	-	-	-	882

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1314	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

21-1550 Avilla Rancho Vistoso
Existing PM

9: Access B & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↕	↕	↕
Traffic Vol, veh/h	107	0	0	165	0	0
Future Vol, veh/h	107	0	0	165	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	- None	- None	- None	- None	- None	- None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	0	0	179	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	116	0	295
Stage 1	-	-	-	-	116
Stage 2	-	-	-	-	179
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1473	-	696
Stage 1	-	-	-	-	909
Stage 2	-	-	-	-	852
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1473	-	696
Mov Cap-2 Maneuver	-	-	-	-	696
Stage 1	-	-	-	-	909
Stage 2	-	-	-	-	852

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1473	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

21-1550 Avilla Rancho Vistoso
Existing AM

10: Avilla Dr. & Access C
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↕	↕	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1	1	0
Stage 1	1	-	-
Stage 2	0	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	1022	1084	1622
Stage 1	1022	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1022	1084	1622
Mov Cap-2 Maneuver	1022	-	-
Stage 1	1022	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

21-1550 Avilla Rancho Vistoso
Existing PM

10: Avilla Dr. & Access C
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↕	↕	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1	1	0
Stage 1	1	-	-
Stage 2	0	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	1022	1084	1622
Stage 1	1022	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1022	1084	1622
Mov Cap-2 Maneuver	1022	-	-
Stage 1	1022	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

21-1550 Avilla Rancho Vistoso
Existing AM

11: Avilla Dr. & Access D
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	85	0	0	60	0	0	0	0	0	0	0
Future Vol, veh/h	0	85	0	0	60	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	92	0	0	65	0	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	65	0	0	92
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1537	-	-	1503
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1537	-	-	1503
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1537	-	-	1503	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

21-1550 Avilla Rancho Vistoso
Existing PM

11: Avilla Dr. & Access D
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	66	0	0	142	0	0	0	0	0	0	0
Future Vol, veh/h	0	66	0	0	142	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	72	0	0	154	0	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	154	0	0	72
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1426	-	-	1528
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1426	-	-	1528
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1426	-	-	1528	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

21-1550 Avilla Rancho Vistoso
Existing AM

13: Avilla Dr. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↕		↕	
Traffic Vol, veh/h	2	0	0	0	0	129
Future Vol, veh/h	2	0	0	0	0	129
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	0	0	0	0	140
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	70	70	140	0	-	0
Stage 1	70	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	934	993	1443	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	934	993	1443	-	-	-
Mov Cap-2 Maneuver	934	-	-	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	8.9	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1443	-	934	-	-	
HCM Lane V/C Ratio	-	-	0.002	-	-	
HCM Control Delay (s)	0	-	8.9	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

21-1550 Avilla Rancho Vistoso
Existing PM

13: Avilla Dr. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↕		↕	
Traffic Vol, veh/h	5	0	0	0	0	162
Future Vol, veh/h	5	0	0	0	0	162
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	0	0	0	0	176
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	88	88	176	0	-	0
Stage 1	88	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	913	970	1400	-	-	-
Stage 1	935	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	913	970	1400	-	-	-
Mov Cap-2 Maneuver	913	-	-	-	-	-
Stage 1	935	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	9	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1400	-	913	-	-	
HCM Lane V/C Ratio	-	-	0.006	-	-	
HCM Control Delay (s)	0	-	9	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

21-1550 Avilla Rancho Vistoso
Existing AM

14: Woodburne Ave. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	5.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	229	2	129	0	0	4
Future Vol, veh/h	229	2	129	0	0	4
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	249	2	140	0	0	4
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	140	0	-	0	640	140
Stage 1	-	-	-	-	140	-
Stage 2	-	-	-	-	500	-
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	1443	-	-	-	440	908
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	609	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1443	-	-	-	364	908
Mov Cap-2 Maneuver	-	-	-	-	364	-
Stage 1	-	-	-	-	734	-
Stage 2	-	-	-	-	609	-
Approach	EB	WB	SB			
HCM Control Delay, s	7.9	0	9			
HCM LOS			A			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBRn1
Capacity (veh/h)	1443	-	-	-	-	908
HCM Lane V/C Ratio	0.172	-	-	-	-	0.005
HCM Control Delay (s)	8	0	-	-	-	9
HCM Lane LOS	A	A	-	-	-	A
HCM 95th %tile Q(veh)	0.6	-	-	-	-	0

21-1550 Avilla Rancho Vistoso
Existing PM

14: Woodburne Ave. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	102	5	162	0	0	3
Future Vol, veh/h	102	5	162	0	0	3
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	111	5	176	0	0	3
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	176	0	-	0	403	176
Stage 1	-	-	-	-	176	-
Stage 2	-	-	-	-	227	-
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	1400	-	-	-	603	867
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	811	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1400	-	-	-	555	867
Mov Cap-2 Maneuver	-	-	-	-	555	-
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	811	-
Approach	EB	WB	SB			
HCM Control Delay, s	7.4	0	9.2			
HCM LOS			A			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBRn1
Capacity (veh/h)	1400	-	-	-	-	867
HCM Lane V/C Ratio	0.079	-	-	-	-	0.004
HCM Control Delay (s)	7.8	0	-	-	-	9.2
HCM Lane LOS	A	A	-	-	-	A
HCM 95th %tile Q(veh)	0.3	-	-	-	-	0

21-1550 Avilla Rancho Vistoso
Existing AM

15: Access E & Avilla Dr.
HCM 6th TWSC

Intersection												
Int Delay, s/veh 3.7												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	85	0	0	0	60	0	0	0	0	0
Future Vol, veh/h	0	0	85	0	0	0	60	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	92	0	0	0	65	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	92
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	0	-	-	1503
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1503
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	954	-	-	1503	-	-
HCM Lane V/C Ratio	0.068	-	-	-	-	-
HCM Control Delay (s)	9.1	-	-	0	-	0
HCM Lane LOS	A	-	-	A	-	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-	-

21-1550 Avilla Rancho Vistoso
Existing PM

15: Access E & Avilla Dr.
HCM 6th TWSC

Intersection												
Int Delay, s/veh 6.4												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	66	0	0	0	142	0	0	0	0	0
Future Vol, veh/h	0	0	66	0	0	0	142	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	72	0	0	0	154	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	72
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	0	-	-	1528
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1528
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	968	-	-	1528	-	-
HCM Lane V/C Ratio	0.159	-	-	-	-	-
HCM Control Delay (s)	9.4	-	-	0	-	0
HCM Lane LOS	A	-	-	A	-	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-	-

APPENDIX D

TRAFFIC SIGNAL WARRANT ANALYSIS

Derive from Peak Hour

Existing AM Peak Hour

Volumes		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
Major Road	Approach 1	14	8	6	6	35	121	327	548	551	499	555	545	624	577	573	621	631	555	445	292	196	141	64	35
	Approach 2	14	9	6	7	38	129	349	585	588	533	592	581	666	616	611	663	674	592	475	312	209	151	69	37
	Both	28	17	12	13	73	250	676	1133	1139	1032	1147	1126	1290	1193	1184	1284	1305	1147	920	604	405	292	133	72
Minor Road	Approach 1	5	5	0	5	21	54	158	274	231	145	145	137	150	158	167	161	201	199	158	116	83	64	30	19
	Approach 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minor Road-Major Approach		5	5	0	5	21	54	158	274	231	145	145	137	150	158	167	161	201	199	158	116	83	64	30	19
Direction of higher-volume minor approach		EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB

Existing Vols @ Rancho Vistoso Blvd. & Woodburne Ave.

NB	SB	EB	WB
551	588	231	0

Start Time	Total % Daily (NB)	Total % Daily (SB)	Total % Daily (Exiting)	Approaches			
				NB	SB	EB	WB
Midnight	0.17%	0.17%	0.20%	14	14	5	0
1:00 a.m.	0.10%	0.10%	0.20%	8	9	5	0
2:00 a.m.	0.07%	0.07%	0.00%	6	6	0	0
3:00 a.m.	0.08%	0.08%	0.20%	6	7	5	0
4:00 a.m.	0.44%	0.44%	0.80%	35	38	21	0
5:00 a.m.	1.52%	1.52%	2.00%	121	129	54	0
6:00 a.m.	4.10%	4.10%	5.90%	327	349	158	0
7:00 a.m.	6.88%	6.88%	10.20%	548	585	274	0
8:00 a.m.	6.91%	6.91%	8.60%	551	588	231	0
9:00 a.m.	6.26%	6.26%	5.40%	499	533	145	0
10:00 a.m.	6.96%	6.96%	5.40%	555	592	145	0
11:00 a.m.	6.83%	6.83%	5.10%	545	581	137	0
Noon	7.83%	7.83%	5.60%	624	666	150	0
1:00 p.m.	7.24%	7.24%	5.90%	577	616	158	0
2:00 p.m.	7.19%	7.19%	6.20%	573	611	167	0
3:00 p.m.	7.79%	7.79%	6.00%	621	663	161	0
4:00 p.m.	7.92%	7.92%	7.50%	631	674	201	0
5:00 p.m.	6.96%	6.96%	7.40%	555	592	199	0
6:00 p.m.	5.58%	5.58%	5.90%	445	475	158	0
7:00 p.m.	3.67%	3.67%	4.30%	292	312	116	0
8:00 p.m.	2.46%	2.46%	3.10%	196	209	83	0
9:00 p.m.	1.77%	1.77%	2.40%	141	151	64	0
10:00 p.m.	0.81%	0.81%	1.10%	64	69	30	0
11:00 p.m.	0.44%	0.44%	0.70%	35	37	19	0
Total	100.00%	100%	100%	551	588	231	0

Note: The Approach Volumes at the intersection during the peak hour was used to calculate the volumes at each approach by applying the calculated percent distribution using the City's existing 24-hour counts on Rancho Vistoso Blvd. between Tangerine Rd & Moore Rd. in the NB & SB approaches and using the ITE's LUC 210 Existing percent distribution in the EB approach.

21-1550 Avilla Vistoso - 2021 Existing (Using AM Peak Hour Vol)

Signal Warrant Analysis

MUTCD Warrants 1-3

Major Street: <u>Rancho Vistoso Blvd.</u>	Speed Limit: <u>45</u>	Lanes:* <u>2</u>
Minor Street: <u>Woodburne Ave.</u>	Speed Limit: <u>35</u>	Lanes:* <u>2</u>
Locale: <u>Oro Valley</u>	*Number of Approach Lanes of Moving Traffic:	

Major Street vph - total of both approaches	28	17	12	13	73	250	676	1,133	1,139	1,032	1,147	1,126	1,290	1,193	1,184	1,284	1,305	1,147	920	604	405	292	133	72
Minor Street volume - higher-volume approach (vph)	5	5	0	5	21	54	158	274	231	145	145	137	150	158	167	161	201	199	158	116	83	64	30	19
Direction of higher-volume minor approach	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB
Beginning of hour	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00

Critical speed of major street traffic above 40 mph	X
In built-up area of isolated community less than 10,000 population	
Urban	x

Warrant 1, Eight-Hour Vehicular Volume

Condition A	Minimum Vehicular Volume	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Lanes (M/m):	1/1 2+1 2+/2+ 1/2+																										
Minimum Reqmts (100% ^a)	500 600 600 500																										
Lanes (M/m):	1/1 2+1 2+/2+ 1/2+ 2/2																										
Minimum Reqmts (70% ^a)	350 420 420 350 420			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Warrant met?	Yes			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	

Condition B	Interruption of Cont. Traffic	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Lanes (M/m):	1/1 2+1 2+/2+ 1/2+																										
Minimum Reqmts (100% ^b)	750 900 900 750																										
Lanes (M/m):	1/1 2+1 2+/2+ 1/2+ 2/2																										
Minimum Reqmts (70% ^b)	525 630 630 525 630			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	
Warrant met?	Yes			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	

Combination	of Conditions A & B	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Lanes (M/m):	1/1 2+1 2+/2+ 1/2+																										
Condition A (80% ^b)	400 480 480 400																										
Condition B (80% ^b)	600 720 720 600																										
Lanes (M/m):	1/1 2+1 2+/2+ 1/2+ 2/2																										
Condition A (56% ^d)	280 336 336 280 336			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	
Condition B (56% ^d)	420 504 504 420 504			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	
Warrant met?	Yes			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	

Warrant 2, Four Hour Vehicular Volume	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Lanes (M/m):	1/1 2+1 2+/2+ 1/2+																									
100% See to the right																										
70% See to the right	Use		No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	
Warrant met?	Yes		No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	

Warrant 3, Peak Hour	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Lanes (M/m):	1/1 2+1 2+/2+ 1/2+																									
100% See to the right																										
70% See to the right	Use		No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	
Warrant met?	Yes		No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	



Volume-Based Traffic Signal Warrants Analysis Summary

Warrant	Hour(s) of the Day	Hours Required to Meet Warrant	Hours Met	Is Warrant Met?	
Warrant 1. Eight-Hour Vehicular Volume	Condition A: Minimum Vehicular Volume	Any Eight Hours	8	12	Yes
	Condition B: Interruption of Continuous Traffic	Any Eight Hours	8	13	Yes
	Combination of Condition A & Condition B	Any Eight Hours	8	14	Yes
Overall (at least 1 of the 3 conditions required to meet warrant)				Yes	
Warrant 2. Four-Hour Vehicular Volume	Any Four Hours	4	13	Yes	
Warrant 3. Peak Hour	Any One/Peak Hour	1	11	Yes	

Derive from Peak Hour

Existing PM Peak Hour

Volumes		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
Major Road	Approach 1	19	11	8	9	49	168	453	759	763	691	769	754	864	799	793	860	874	769	616	405	271	195	89	48
	Approach 2	11	7	5	5	28	96	259	434	436	395	440	431	494	457	454	492	500	440	352	232	155	112	51	28
	Both	30	18	13	14	77	264	712	1193	1199	1086	1209	1185	1358	1256	1247	1352	1374	1209	968	637	426	307	140	76
Minor Road	Approach 1	3	3	0	3	11	29	84	146	123	77	77	73	80	84	88	86	107	106	84	61	44	34	16	10
	Approach 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minor Road-Major Approach		3	3	0	3	11	29	84	146	123	77	77	73	80	84	88	86	107	106	84	61	44	34	16	10
Direction of higher-volume minor approach		EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB

Existing Vols @ Rancho Vistoso Blvd. & Woodburne Ave.

NB	SB	EB	WB
874	500	107	0

Start Time	Total % Daily (NB)	Total % Daily (SB)	Total % Daily (Exiting)	Approaches			
				NB	SB	EB	WB
Midnight	0.17%	0.17%	0.20%	19	11	3	0
1:00 a.m.	0.10%	0.10%	0.20%	11	7	3	0
2:00 a.m.	0.07%	0.07%	0.00%	8	5	0	0
3:00 a.m.	0.08%	0.08%	0.20%	9	5	3	0
4:00 a.m.	0.44%	0.44%	0.80%	49	28	11	0
5:00 a.m.	1.52%	1.52%	2.00%	168	96	29	0
6:00 a.m.	4.10%	4.10%	5.90%	453	259	84	0
7:00 a.m.	6.88%	6.88%	10.20%	759	434	146	0
8:00 a.m.	6.91%	6.91%	8.60%	763	436	123	0
9:00 a.m.	6.26%	6.26%	5.40%	691	395	77	0
10:00 a.m.	6.96%	6.96%	5.40%	769	440	77	0
11:00 a.m.	6.83%	6.83%	5.10%	754	431	73	0
Noon	7.83%	7.83%	5.60%	864	494	80	0
1:00 p.m.	7.24%	7.24%	5.90%	799	457	84	0
2:00 p.m.	7.19%	7.19%	6.20%	793	454	88	0
3:00 p.m.	7.79%	7.79%	6.00%	860	492	86	0
4:00 p.m.	7.92%	7.92%	7.50%	874	500	107	0
5:00 p.m.	6.96%	6.96%	7.40%	769	440	106	0
6:00 p.m.	5.58%	5.58%	5.90%	616	352	84	0
7:00 p.m.	3.67%	3.67%	4.30%	405	232	61	0
8:00 p.m.	2.46%	2.46%	3.10%	271	155	44	0
9:00 p.m.	1.77%	1.77%	2.40%	195	112	34	0
10:00 p.m.	0.81%	0.81%	1.10%	89	51	16	0
11:00 p.m.	0.44%	0.44%	0.70%	48	28	10	0
Total	100.00%	100%	100%	874	500	107	0

Note: The Approach Volumes at the intersection during the peak hour was used to calculate the volumes at each approach by applying the calculated percent distribution using the City's existing 24-hour counts on Rancho Vistoso Blvd. between Tangerine Rd & Moore Rd. in the NB & SB approaches and using the ITE's LUC 210 Existing percent distribution in the EB approach.

21-1550 Avilla Vistoso - 2021 Existing (Using PM Peak Hour Vol)

Signal Warrant Analysis

MUTCD Warrants 1-3

Major Street: <u>Rancho Vistoso Blvd.</u>	Speed Limit: <u>45</u>	Lanes: * <u>2</u>
Minor Street: <u>Woodburne Ave.</u>	Speed Limit: <u>35</u>	Lanes: * <u>2</u>
Locale: <u>Oro Valley</u>	*Number of Approach Lanes of Moving Traffic:	

Major Street vph - total of both approaches	30	18	13	14	77	264	712	1,193	1,199	1,086	1,209	1,185	1,358	1,256	1,247	1,352	1,374	1,209	968	637	426	307	140	76
Minor Street volume - higher-volume approach (vph)	3	3	0	3	11	29	84	146	123	77	77	73	80	84	88	86	107	106	84	61	44	34	16	10
Direction of higher-volume minor approach	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB	EB
Beginning of hour	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00

Critical speed of major street traffic above 40 mph	X
In built-up area of isolated community less than 10,000 population	
Urban	x

Warrant 1, Eight-Hour Vehicular Volume

Condition A	Minimum Vehicular Volume	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u>																										
Minimum Reqmts (100% ^a)	500 600 600 500																										
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u> <u>2/2</u>																										
Minimum Reqmts (70% ^a)	350 420 420 350 140			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Warrant met?	No			No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

Condition B	Interruption of Cont. Traffic	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u>																										
Minimum Reqmts (100% ^b)	750 900 900 750																										
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u> <u>2/2</u>																										
Minimum Reqmts (70% ^b)	525 630 630 525 70			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Warrant met?	Yes			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No

Combination of Conditions A & B	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u> <u>2/2</u>																										
Condition A (80% ^b)	400 480 480 400																										
Condition B (80% ^b)	120 120 160 160																										
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u> <u>2/2</u>																										
Condition A (56% ^d)	280 336 336 280 112			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Condition B (56% ^d)	84 84 112 112 56			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
Warrant met?	No			No	No	No	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

Warrant 2, Four Hour Vehicular Volume	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u> <u>2/2</u>																										
100% See to the right																											
70% See to the right	Use			No	No	No	No	No	No	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	
Warrant met?	Yes			No	No	No	No	No	No	Yes	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	

Warrant 3, Peak Hour	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u> <u>2/2</u>																										
100% See to the right																											
70% See to the right	Use			No	No	No	No	No	No	Yes	Yes	No	No	No	No	No	No	No	Yes	Yes	No	No	No	No	No	No	
Warrant met?	Yes			No	No	No	No	No	No	Yes	Yes	No	No	No	No	No	No	No	Yes	Yes	No	No	No	No	No	No	



Volume-Based Traffic Signal Warrants Analysis Summary

Warrant	Hour(s) of the Day	Hours Required to Meet Warrant	Hours Met	Is Warrant Met?	
Warrant 1. Eight-Hour Vehicular Volume	Condition A: Minimum Vehicular Volume	Any Eight Hours	8	1	No
	Condition B: Interruption of Continuous Traffic	Any Eight Hours	8	13	Yes
	Combination of Condition A & Condition B	Any Eight Hours	8	2	No
Overall (at least 1 of the 3 conditions required to meet warrant)				Yes	
Warrant 2. Four-Hour Vehicular Volume	Any Four Hours	4	9	Yes	
Warrant 3. Peak Hour	Any One/Peak Hour	1	4	Yes	

Derive from Peak Hour

Existing AM Peak Hour

Volumes		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
Major Road	Approach 1	14	8	6	7	36	122	331	554	557	504	561	550	631	583	579	628	638	561	450	296	198	143	65	35
	Approach 2	20	12	9	10	52	179	483	809	813	736	819	803	921	851	845	917	932	819	656	431	289	208	95	51
	Both	34	20	15	17	88	301	814	1363	1370	1240	1380	1353	1552	1434	1424	1545	1570	1380	1106	727	487	351	160	86
Minor Road	Approach 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Approach 2	1	1	3	2	1	2	16	57	60	101	107	141	128	128	119	126	149	123	94	51	40	15	11	6
Minor Road-Major Approach		1	1	3	2	1	2	16	57	60	101	107	141	128	128	119	126	149	123	94	51	40	15	11	6
Direction of higher-volume minor approach		WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB

Existing Vols @ Rancho Vistoso Blvd. & Vistoso Plaza Upper Drwy.

NB	SB	EB	WB
557	813	0	57

Start Time	Total % Daily (NB)	Total % Daily (SB)	Total % Daily (Exiting)	Approaches			
				NB	SB	EB	WB
Midnight	0.17%	0.17%	0.03%	14	20	0	1
1:00 a.m.	0.10%	0.10%	0.03%	8	12	0	1
2:00 a.m.	0.07%	0.07%	0.17%	6	9	0	3
3:00 a.m.	0.08%	0.08%	0.10%	7	10	0	2
4:00 a.m.	0.44%	0.44%	0.03%	36	52	0	1
5:00 a.m.	1.52%	1.52%	0.10%	122	179	0	2
6:00 a.m.	4.10%	4.10%	1.09%	331	483	0	16
7:00 a.m.	6.88%	6.88%	3.85%	554	809	0	57
8:00 a.m.	6.91%	6.91%	4.06%	557	813	0	60
9:00 a.m.	6.26%	6.26%	6.82%	504	736	0	101
10:00 a.m.	6.96%	6.96%	7.26%	561	819	0	107
11:00 a.m.	6.83%	6.83%	9.55%	550	803	0	141
Noon	7.83%	7.83%	8.63%	631	921	0	128
1:00 p.m.	7.24%	7.24%	8.63%	583	851	0	128
2:00 p.m.	7.19%	7.19%	8.08%	579	845	0	119
3:00 p.m.	7.79%	7.79%	8.53%	628	917	0	126
4:00 p.m.	7.92%	7.92%	10.10%	638	932	0	149
5:00 p.m.	6.96%	6.96%	8.29%	561	819	0	123
6:00 p.m.	5.58%	5.58%	6.34%	450	656	0	94
7:00 p.m.	3.67%	3.67%	3.48%	296	431	0	51
8:00 p.m.	2.46%	2.46%	2.73%	198	289	0	40
9:00 p.m.	1.77%	1.77%	0.99%	143	208	0	15
10:00 p.m.	0.81%	0.81%	0.72%	65	95	0	11
11:00 p.m.	0.44%	0.44%	0.38%	35	51	0	6
Total	100.00%	100%	100%	557	813	0	57

Note: The Approach Volumes at the intersection during the peak hour was used to calculate the volumes at each approach by applying the calculated percent distribution using the City's existing 24-hour counts on Rancho Vistoso Blvd. between Tangerine Rd & Moore Rd. in the NB & SB approaches and using the ITE's LUC 210 Existing percent distribution in the EB approach.

21-1550 Avilla Vistoso - 2021 Existing (Using AM Peak Hour Vol)

Signal Warrant Analysis

MUTCD Warrants 1-3

Major Street: <u>Rancho Vistoso Blvd.</u>	Speed Limit: <u>45</u>	Lanes: * <u>2</u>
Minor Street: <u>Vistoso Plaza Upper Drwy.</u>	Speed Limit: <u>15</u>	Lanes: * <u>2</u>
Locale: <u>Oro Valley</u>	*Number of Approach Lanes of Moving Traffic:	

Major Street vph - total of both approaches	34	20	15	17	88	301	814	1,363	1,370	1,240	1,380	1,353	1,552	1,434	1,424	1,545	1,570	1,380	1,106	727	487	351	160	86	
Minor Street volume - higher-volume approach (vph)	1	1	3	2	1	2	16	57	60	101	107	141	128	128	119	126	149	123	94	51	40	15	11	6	
Direction of higher-volume minor approach	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB
Beginning of hour	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	

Critical speed of major street traffic above 40 mph	X
In built-up area of isolated community less than 10,000 population	
Urban	x

Warrant 1, Eight-Hour Vehicular Volume

Condition A	Minimum Vehicular Volume	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u>																										
Minimum Reqmts (100% ^a)	500 600 600 500																										
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u> <u>2/2</u>																										
Minimum Reqmts (70% ^a)	350 420 420 350 140			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	
Warrant met?	No			No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	Yes	No	No	No	No	No	No	

Condition B	Interruption of Cont. Traffic	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u>																										
Minimum Reqmts (100% ^b)	750 900 900 750																										
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u> <u>2/2</u>																										
Minimum Reqmts (70% ^b)	525 630 630 525 70			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	
Warrant met?	Yes			No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	

Combination	of Conditions A & B	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u>																										
Condition A (80% ^b)	400 480 480 400																										
Condition B (80% ^b)	600 720 720 600																										
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u> <u>2/2</u>																										
Condition A (56% ^d)	280 336 336 280 112			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	
Condition B (56% ^d)	420 504 504 420 56			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	
Warrant met?	No			No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	

Warrant 2, Four Hour Vehicular Volume	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u> <u>2/2</u>																									
100% See to the right																										
70% See to the right	Use			No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Warrant met?	Yes			No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No

Warrant 3, Peak Hour	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u> <u>2/2</u>																									
100% See to the right																										
70% See to the right	Use			No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
Warrant met?	Yes			No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No



Volume-Based Traffic Signal Warrants Analysis Summary

Warrant	Hour(s) of the Day	Hours Required to Meet Warrant	Hours Met	Is Warrant Met?	
Warrant 1. Eight-Hour Vehicular Volume	Condition A: Minimum Vehicular Volume	Any Eight Hours	8	2	No
	Condition B: Interruption of Continuous Traffic	Any Eight Hours	8	10	Yes
	Combination of Condition A & Condition B	Any Eight Hours	8	7	No
Overall (at least 1 of the 3 conditions required to meet warrant)				Yes	
Warrant 2. Four-Hour Vehicular Volume	Any Four Hours	4	10	Yes	
Warrant 3. Peak Hour	Any One/Peak Hour	1	9	Yes	

Derive from Peak Hour

Existing PM Peak Hour

Volumes		0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
Major Road	Approach 1	18	11	8	9	48	165	445	745	749	678	754	740	848	784	779	844	858	754	604	397	266	192	87	47
	Approach 2	13	8	6	6	34	115	310	520	523	473	527	517	592	547	544	589	599	527	422	277	186	134	61	33
	Both	31	19	14	15	82	280	755	1265	1272	1151	1281	1257	1440	1331	1323	1433	1457	1281	1026	674	452	326	148	80
Minor Road	Approach 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Approach 2	0	0	2	1	0	1	15	54	57	96	102	134	121	121	114	120	142	117	89	49	38	14	10	5
Minor Road-Major Approach		0	0	2	1	0	1	15	54	57	96	102	134	121	121	114	120	142	117	89	49	38	14	10	5
Direction of higher-volume minor approach		EB	EB	WB	WB	EB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB

Existing Vols @ Rancho Vistoso Blvd. & Vistoso Plaza Upper Drwy.

NB	SB	EB	WB
858	599	0	142

Start Time	Total % Daily (NB)	Total % Daily (SB)	Total % Daily (Exiting)	Approaches			
				NB	SB	EB	WB
Midnight	0.17%	0.17%	0.03%	18	13	0	0
1:00 a.m.	0.10%	0.10%	0.03%	11	8	0	0
2:00 a.m.	0.07%	0.07%	0.17%	8	6	0	2
3:00 a.m.	0.08%	0.08%	0.10%	9	6	0	1
4:00 a.m.	0.44%	0.44%	0.03%	48	34	0	0
5:00 a.m.	1.52%	1.52%	0.10%	165	115	0	1
6:00 a.m.	4.10%	4.10%	1.09%	445	310	0	15
7:00 a.m.	6.88%	6.88%	3.85%	745	520	0	54
8:00 a.m.	6.91%	6.91%	4.06%	749	523	0	57
9:00 a.m.	6.26%	6.26%	6.82%	678	473	0	96
10:00 a.m.	6.96%	6.96%	7.26%	754	527	0	102
11:00 a.m.	6.83%	6.83%	9.55%	740	517	0	134
Noon	7.83%	7.83%	8.63%	848	592	0	121
1:00 p.m.	7.24%	7.24%	8.63%	784	547	0	121
2:00 p.m.	7.19%	7.19%	8.08%	779	544	0	114
3:00 p.m.	7.79%	7.79%	8.53%	844	589	0	120
4:00 p.m.	7.92%	7.92%	10.10%	858	599	0	142
5:00 p.m.	6.96%	6.96%	8.29%	754	527	0	117
6:00 p.m.	5.58%	5.58%	6.34%	604	422	0	89
7:00 p.m.	3.67%	3.67%	3.48%	397	277	0	49
8:00 p.m.	2.46%	2.46%	2.73%	266	186	0	38
9:00 p.m.	1.77%	1.77%	0.99%	192	134	0	14
10:00 p.m.	0.81%	0.81%	0.72%	87	61	0	10
11:00 p.m.	0.44%	0.44%	0.38%	47	33	0	5
Total	100.00%	100%	100%	858	599	0	142

Note: The Approach Volumes at the intersection during the peak hour was used to calculate the volumes at each approach by applying the calculated percent distribution using the City's existing 24-hour counts on Rancho Vistoso Blvd. between Tangerine Rd & Moore Rd. in the NB & SB approaches and using the ITE's LUC 210 Existing percent distribution in the EB approach.

21-1550 Avilla Vistoso - 2021 Existing (Using PM Peak Hour Vol)

Signal Warrant Analysis

MUTCD Warrants 1-3

Major Street: <u>Rancho Vistoso Blvd.</u>	Speed Limit: <u>45</u>	Lanes:* <u>2</u>
Minor Street: <u>Vistoso Plaza Upper Drwy.</u>	Speed Limit: <u>15</u>	Lanes:* <u>2</u>
Locale: <u>Oro Valley</u>	*Number of Approach Lanes of Moving Traffic:	

Major Street vph - total of both approaches	31	19	14	15	82	280	755	1,265	1,272	1,151	1,281	1,257	1,440	1,331	1,323	1,433	1,457	1,281	1,026	674	452	326	148	80	
Minor Street volume - higher-volume approach (vph)	0	0	2	1	0	1	15	54	57	96	102	134	121	121	114	120	142	117	89	49	38	14	10	5	
Direction of higher-volume minor approach	EB	EB	WB	WB	EB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB	WB
Beginning of hour	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	

Critical speed of major street traffic above 40 mph	X
In built-up area of isolated community less than 10,000 population	
Urban	x

Warrant 1, Eight-Hour Vehicular Volume

Condition A	Minimum Vehicular Volume	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u>																										
Minimum Reqmts (100% ^a)	500 600 600 500																										
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u> <u>2/2</u>																										
Minimum Reqmts (70% ^a)	350 420 420 350 140			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	
Warrant met?	No			No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	

Condition B	Interruption of Cont. Traffic	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u>																										
Minimum Reqmts (100% ^b)	750 900 900 750																										
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u> <u>2/2</u>																										
Minimum Reqmts (70% ^b)	525 630 630 525 70			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	
Warrant met?	Yes			No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	

Combination	of Conditions A & B	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u>																										
Condition A (80% ^b)	400 480 480 400																										
Condition B (80% ^b)	600 720 720 600																										
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u> <u>2/2</u>																										
Condition A (56% ^d)	280 336 336 280 112			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	
Condition B (56% ^d)	420 504 504 420 56			No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	
Warrant met?	No			No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	

Warrant 2, Four Hour Vehicular Volume	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u> <u>2/2</u>																									
100% See to the right																										
70% See to the right	Use			No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Warrant met?	Yes			No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No

Warrant 3, Peak Hour	Criteria	Hour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Lanes (M/m):	<u>1/1</u> <u>2+1</u> <u>2+2+</u> <u>1/2+</u> <u>2/2</u>																									
100% See to the right																										
70% See to the right	Use			No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
Warrant met?	Yes			No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No



Volume-Based Traffic Signal Warrants Analysis Summary

Warrant	Condition	Hour(s) of the Day	Hours Required to Meet Warrant	Hours Met	Is Warrant Met?
Warrant 1. Eight-Hour Vehicular Volume	Condition A: Minimum Vehicular Volume	Any Eight Hours	8	1	No
	Condition B: Interruption of Continuous Traffic	Any Eight Hours	8	10	Yes
	Combination of Condition A & Condition B	Any Eight Hours	8	7	No
Overall (at least 1 of the 3 conditions required to meet warrant)					Yes
Warrant 2. Four-Hour Vehicular Volume		Any Four Hours	4	10	Yes
Warrant 3. Peak Hour		Any One/Peak Hour	1	8	Yes

APPENDIX E

CRASH ANALYSIS WORKSHEETS

CRASH STATISTICS

Rancho Vistoso Blvd & Woodburne Ave

2018-2020

		<u>Involvement</u>													
		# Incidents	Totals	# Motorists	# Non-Motorists			Code	No.	Code No.	Month	Code No.	<u>Additional Useful Information</u>		
<u>Incidents</u>		14	26 Veh	29	0										
Fatal		0	0 Ppl	0	0										
Injury		2	3 Ppl	0	0										
PDO		12	22 Veh												
<u>Peds/Bikes Summary</u>															
		<u>Incidents</u>	<u>Persons</u>	<u>Injuries</u>											
			Fatal	Non-Fatal											
Pedestrian:		0	0	0	0										
Bicycle:		0	0	0	0										
		<u>Code</u>	<u>No.</u>			<u>JunctionRelation</u>	<u>Code</u>	<u>No.</u>							
<u>LightCondition</u>						NOT_JUNCTION_RELATED	0	4							
DAYLIGHT		1	13			INTERSECTION_NON_INTERCHANGE	1	1							
DAWN		2	0			INTERSECTION_RELATED_NON_INTERCHANGE	2	0							
DUSK		3	0			ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3	3							
DARK_LIGHTED		4	1			RAILWAY_GRADE_CROSSING	4	0							
DARK_NOT_LIGHTED		5	0			CROSSOVER_RELATED	5	0							
DARK_UNKNOWN_LIGHTING		6	0			FRONTAGE_ROAD_NON_INTERCHANGE	6	4							
UNKNOWN		99	0			DRIVEWAY	7	2							
Check Total		14				ALLEY_ACCESS_RELATED	8	0							
<u>Weather</u>						UNKNOWN_NON_INTERCHANGE	9	0							
CLEAR		1	12			THRU_ROADWAY	10	0							
CLOUDY		2	0			INTERSECTION_INTERCHANGE	11	0							
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE		3	0			INTERSECTION_RELATED_INTERCHANGE	12	0							
RAIN		4	2			ENTRANCE_EXIT_RAMP_INTERCHANGE	13	0							
SNOW		5	0			FRONTAGE_ROAD_INTERCHANGE	14	0							
SEVERE_CROSSWINDS		6	0			OTHER_PART_OF_INTERCHANGE	15	0							
BLOWING_SAND_SOIL_DIRT		7	0			<not defined>	16	0							
FOG_SMOG_SMOKE		8	0			UNKNOWN_INTERCHANGE	17	0							
BLOWING_SNOW		9	0			UNKNOWN_JUNCTION	18	0							
OTHER		97	0			UNKNOWN	99	0							
UNKNOWN		99	0			OTHER_NON_INTERCHANGE	109	0							
Check Total		14				Check Total		14							
<u>TrafficWayType</u>						<u>CollisionManner</u>									
ONE_WAY_TRAFFICWAY		1	0			SINGLE_VEHICLE	1	2							
TWO_WAY_NOT_DIVIDED		2	1			ANGLE (front to side)(other than left turn)	2	2							
DED_WITH_CONTINUOUS_LEFT_TURN_LANE		3	0			LEFT_TURN	3	5							
UNPROTECTED_PAINTED_4_FEET_MEDIAN		4	12			REAR_END	4	3							
IDED_POSITIVE_MEDIAN_BARRIER		5	0			HEAD_ON	5	0							
UNKNOWN		99	1			SIDESWIPE_SAME_DIRECTION	6	2							
Check Total		14				SIDESWIPE_OPPOSITE_DIRECTION	7	0							
<u>Weekday</u>						REAR_TO_SIDE	8	0							
Sunday		1	2			REAR_TO_REAR	9	0							
Monday		2	2			OTHER	97	0							
Tuesday		3	0			UNKNOWN	99	0							
Wednesday		4	0			Check Total		14							
Thursday		5	2			<u>TravelDirection</u>									
Friday		6	6			1 NORTH	N								
Saturday		7	2			2 SOUTH	S								
Check Total		14				3 EAST	E								
						4 WEST	W								
						5 NORTHWEST	NW								
						6 NORTHEAST	NE								
						7 SOUTHWEST	SW								
						8 SOUTHEAST	SE								
						99 UNKNOWN	99								

CRASH LISTING

Rancho Vistoso Blvd & Woodburne Ave

INCIDENT ON STREET		LOCATION				DATE & TIME				UNITS												PERSON								SEVERITY				GENERAL																
INCIDENT	ON STREET	MP	OFF-SET	DIS-TANCE	INTERSECT STREET	NCIC	NCIC	YYMMDD	HH:MM	W	TAL	U1	U2	1	2	1	2	U1	U2	U1	U2	1	2	U1	U2	TTL	TTL	TYP	INJR	VLTN	PHSCND	NON	INCIDENTS	INJURIES	FATALITIES	H	LT	WE	JCT	TRF	HE	M								
3399603	10 RANCHO VISTOSO		M		500 Woodburne Ave	1007	1007	180720	12:09	6	2	1	1	3	3	1	0	0	0	50	50	W	N	4	1	3	0	1	1	1	1	20	1	0	0	255	1	0	0	N	1	1	0	99	16	3				
3456849	10 RANCHO VISTOSO		P		0 Woodburne Ave	1007	1007	181201	02:15	7	1	2		1		1	97		44		E		97		1	0	1	1	2		0						N	4	4	3	4	33	1							
3478824	10 RANCHO VISTOSO		P		0 Woodburne Ave	1007	1007	190125	13:06	6	2	1	1	1	1	1	0	0	0	50	44	W	S	4	1	2	0	1	1	1	1	20	1	0	0	255	1	0	0	N	1	1	1	4	16	3				
3479033	10 RANCHO VISTOSO		M		500 Woodburne Ave	1007	1007	190104	11:34	6	2	1	1	1	1	1	0	0	0	44	50	N	N	4	1	2	0	1	1	1	1	20	1	0	0	255	1	0	0	N	1	1	7	4	16	3				
3503453	10 RANCHO VISTOSO		M		300 Woodburne Ave	1007	1007	190311	15:46	2	2	1	1	1	2	1	0	0	0	44	44	E	N	4	1	2	0	1	1	1	1	20	1	0	0	255	1	0	0	N	1	1	0	4	16	2				
3569943	10 WOODBURNE		M		10 Rancho Vistoso Blvd	1007	1007	190930	16:42	2	2	1	1	1	1	2	0	0	0	50	30	E	E	2	5	2	0	1	1	1	1	4	1	0	0	255	1	0	0	N	1	1	3	4	16	4				
3569943	10 WOODBURNE		P		0 Rancho Vistoso Blvd	1007	1007	191013	13:13	1	2	1	1	1	1	1	0	0	0	50	44	E	S	4	1	2	0	1	1	2	3	97	1	0	0	255	1	1	2	0	0	0	0	N	1	1	3	4	16	3
3583939	10 RANCHO VISTOSO		P		500 Woodburne Ave	1007	1007	191103	13:17	1	2	1	1	1	1	1	0	0	0	44	31	SW	N	4	1	2	0	1	1	1	1	20	1	0	0	255	1	0	0	N	1	1	7	4	16	3				
3605902	10 RANCHO VISTOSO		P		0 Woodburne Ave	1007	1007	191220	15:59	6	1	1		3		1	0		41		N		6		1	0	1	1	7		0						N	1	1	6	4	33	1							
3605904	10 RANCHO VISTOSO		M		100 Woodburne Ave	1007	1007	191220	16:13	6	2	1	1	1	1	1	0	0	0	50	31	W	N	4	1	2	0	1	1	2	1	20	1	0	0	255	1	1	0	0	0	0	N	1	1	0	4	16	2	
3672027	10 RANCHO VISTOSO		M		100 Woodburne Ave	1007	1007	200611	15:19	5	2	1	1	1	1	1	0	0	0	50	50	S	S	6	1	2	0	1	1	1	1	20	1	0	0	255	1	0	0	N	1	1	6	4	16	4				
3702461	10 RANCHO VISTOSO		M		10 Woodburne Ave	1007	1007	200829	15:23	7	2	1	1	1	1	1	0	0	0	50	50	S	S	8	1	3	0	1	1	1	1	12	1	0	0	255	1	0	0	N	1	1	6	4	16	6				
3735294	10 RANCHO VISTOSO		M		50 Woodburne Ave	1007	1007	201210	14:30	5	2	2	2	2	2	1	0	0	0	47	30	N	N	1	1	2	0	1	1	1	1	12	1	0	0	255	1	0	0	N	1	4	0	4	16	6				
3735322	10 WOODBURNE		M		20 Rancho Vistoso Blvd	1007	1007	201218	11:08	6	2	1	1	1	1	1	0	0	0	14	31	E	E	2	3	3	0	1	1	1	1	2	1	0	0	255	1	0	0	N	1	1	6	2	16	4				

Rancho Vistoso Blvd & Woodburne Ave

SUMMARY BY YEAR

SEVERITY / INCIDENTS	2018	2019	2020	Totals	Checks
Fatal Injury Incidents					
Non-fatal Injury Incidents		2		2	
PDO Incidents	2	6	4	12	
TOTALS	2	8	4	14	
Pedestrian Incidents					
Pedestrians Involved					
Bicycle Incidents					
Bicyclists Involved					
SEVERITY / INVOLVMENT					
Fatal Injuries					
Non-Fatal Injuries		3		3	
PDO Vehicles	3	11	8	22	
Pedestrians Fatally Injured					
Pedestrians Non-Fatally Injured					
Bicyclists Fatally Injured					
Bicyclists Non-Fatally Injured					
COLLISION MANNER					
SINGLE_VEHICLE	1	1	1	2	
ANGLE	2		2	2	
LEFT_TURN	3	1	4	5	
REAR_END	4		1	2	3
HEAD_ON	5				
SIDESWIPE_SAME_DIRECTION	6		2	2	
IDESWIPE_OPPOSITE_DIRECTION	7				
REAR_TO_SIDE	8				
REAR_TO_REAR	9				
OTHER	97				
UNKNOWN	99				
TOTALS	2	8	4	14	

CRASH STATISTICS

Rancho Visoto & Upper Plaza

2018-2020

		<u>Involvement</u>																	
		# Incidents	Totals	# Motorists	# Non-Motorists			<u>Code</u>	<u>No.</u>	<u>Code No.</u>	<u>Month</u>	<u>Code No.</u>	<u>Additional Useful Information</u>						
<u>Incidents</u>		12	22 Veh	25	0			<u>First Harmful Event</u>					<u>Vehicle Action Codes</u>						
Fatal	0	0 Ppl	0	0			OVERTURN_ROLLOVER	1	0		January	1	2	1 GOING_STRAIGHT_AHEAD					
Injury	1	1 Ppl	0	0	<u>Circumstances</u>		FIRE_EXPLOSION	2	0		February	2	0	2 SLOWING_IN_TRAFFICWAY					
PDO	11	20 Veh			Hit & Run?		IMMERSION	3	0		March	3	1	3 STOPPED_IN_TRAFFICWAY					
<u>Peds/Bikes Summary</u>						Intersection Related?		JACKKNIFE	4	0		April	4	0	4 MAKING_LEFT_TURN				
							CARGO_EQUIPMENT_LOSS_SHIFT	5	0		May	5	0	5 MAKING_RIGHT_TURN					
							FELL_JUMPED_FROM_VEHICLE	6	0		June	6	1	6 MAKING_U_TURN					
							THROWN_OR_FALLING_OBJECT	7	0		July	7	1	7 OVERTAKING_PASSING					
<u>Pedestrian:</u>		0	0	0	0	<u>JunctionRelation</u>		OTHER_NON_COLLISION	8	0		August	8	1	8 CHANGING_LANES				
<u>Bicycle:</u>		0	0	0	0	NOT_JUNCTION_RELATED		EQUIPMENT_FAILURE_TIRES_BRAKES	9	0		September	9	0	9 NEGOTIATING_A_CURVE				
							INTERSECTION_NON_INTERCHANGE	SEPARATION_OF_UNITS	10	0		October	10	0	10 BACKING				
							INTERSECTION_RELATED_NON_INTERCHANGE	RAN_OFF_ROAD_RIGHT	11	0		November	11	1	11 Avoiding_Vehicle_Object_Pedestrian				
<u>Code</u>		<u>No.</u>					ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	THROWN_OR_FALLING_OBJECT	12	0		December	12	5	12 ENTERING_PARKING_POSITION				
<u>LightCondition</u>							RAILWAY_GRADE_CROSSING	RAN_OFF_ROAD_RIGHT	13	0		Total	12		13 LEAVING_PARKING_POSITION				
DAYLIGHT	1	11					CROSSOVER_RELATED	CROSS_CENTERLINE	14	0					14 PROPERLY_PARKED				
DAWN	2	0					FRONTAGE_ROAD_NON_INTERCHANGE	CROSS_CENTERLINE	15	0					15 IMPROPERLY_PARKED				
DUSK	3	0					DRIVEWAY	DOWNHILL_RUNAWAY	16	0					16 DRIVERLESS_MOVING_VEHICLE				
DARK_LIGHTED	4	1					ALLEY_ACCESS_RELATED	MOTOR_VEHICLE_IN_TRANSPORT	17	10					17 CROSSING_ROAD				
DARK_NOT_LIGHTED	5	0					UNKNOWN_NON_INTERCHANGE	PEDESTRIAN	18	0					18 WALKING_WITH_TRAFFIC				
DARK_UNKNOWN_LIGHTING	6	0					THRU_ROADWAY	PEDALCYCLE	19	0					19 WALKING_AGAINST_TRAFFIC				
UNKNOWN	99	0					INTERSECTION_INTERCHANGE	RAILWAY_VEHICLE_TRAIN_ENGINE	20	0					20 STANDING				
Check Total		12					INTERSECTION_RELATED_INTERCHANGE	LIGHT_RAILWAY_RAILCAR_VEHICLE	21	0					21 LYING				
<u>Weather</u>							ENTRANCE_EXIT_RAMP_INTERCHANGE	ANIMAL_WILD_NON_GAME	22	0					22 GETTING_ON_OR_OFF_VEHICLE				
CLEAR	1	10					FRONTAGE_ROAD_INTERCHANGE	ANIMAL_WILD_GAME	23	0					23 WORKING_ON_OR_PUSHING_VEHICLE				
CLOUDY	2	0					OTHER_PART_OF_INTERCHANGE	ANIMAL_PET	24	0					24 WORKING_ON_ROAD				
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0					<not defined>	ANIMAL_LIVESTOCK	25	0					25 UNKNOWN				
RAIN	4	2					UNKNOWN_INTERCHANGE	PARKED_MOTOR_VEHICLE	26	0									
SNOW	5	0					UNKNOWN_JUNCTION	WORK_ZONE_MAINTENANCE_EQUIPMENT	27	0									
SEVERE_CROSSWINDS	6	0					UNKNOWN	STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	28	0									
BLOWING_SAND_SOIL_DIRT	7	0					OTHER_NON_INTERCHANGE	OTHER_NON_FIXED_OBJECT	29	0									
FOG_SMOG_SMOKE	8	0					Check Total	IMPACT_ATTENUATOR_CRASH_CUSHION	30	0									
BLOWING_SNOW	9	0						BRIDGE_OVERHEAD_STRUCTURE	31	0									
OTHER	97	0						BRIDGE_RAIL	32	0									
UNKNOWN	99	0						CULVERT	33	2									
Check Total		12						CURB	34	0									
<u>TrafficWayType</u>								DITCH	35	0									
ONE_WAY_TRAFFICWAY	1	0						EMBANKMENT	36	0									
TWO_WAY_NOT_DIVIDED	2	1						GUARDRAIL_FACE	37	0									
ED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	0						GUARDRAIL_END	38	0									
UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	10						CONCRETE_TRAFFIC_BARRIER	39	0									
DED_POSITIVE_MEDIAN_BARRIER	5	0						CABLE_TRAFFIC_BARRIER	40	0									
UNKNOWN	99	1						OTHER_TRAFFIC_BARRIER	41	0									
Check Total		12						TREE_BUSH_STUMP_STANDING	42	0									
<u>Weekday</u>								TRAFFIC_SIGN_SUPPORT	43	0									
Sunday	1	1						TRAFFIC_SIGNAL_SUPPORT	44	0									
Monday	2	1						UTILITY_POLE_LIGHT_SUPPORT	45	0									
Tuesday	3	0						OTHER_POST_POLE_OR_SUPPORT	46	0									
Wednesday	4	0						FENCE	47	0									
Thursday	5	2						MAILBOX	48	0									
Friday	6	6						BUILDING	49	0									
Saturday	7	2						OTHER_FIXED_OBJECT	99	0									
Check Total		12						UNKNOWN	255	0									
<u>TravelDirection</u>								Check Total	12										
								1 NORTH	N										
								2 SOUTH	S										
								3 EAST	E										
								4 WEST	W										
								5 NORTHWEST	NW										
								6 NORTHEAST	NE										
								7 SOUTHWEST	SW										
								8 SOUTHEAST	SE										
								99 UNKNOWN	99										

Rancho Visoto & Upper Plaza

SUMMARY BY YEAR

SEVERITY / INCIDENTS	2018	2019	2020	Totals	Checks
Fatal Injury Incidents					
Non-fatal Injury Incidents		1		1	
PDO Incidents	2	5	4	11	
TOTALS	2	6	4	12	
Pedestrian Incidents					
Pedestrians Involved					
Bicycle Incidents					
Bicyclists Involved					
SEVERITY / INVOLVMENT					
Fatal Injuries					
Non-Fatal Injuries		1		1	
PDO Vehicles	3	9	8	20	
Pedestrians Fatally Injured					
Pedestrians Non-Fatally Injured					
Bicyclists Fatally Injured					
Bicyclists Non-Fatally Injured					
COLLISION MANNER					
SINGLE_VEHICLE	1	1	1	2	
ANGLE	2		2	2	
LEFT_TURN	3	1	3	4	
REAR_END	4		2	2	
HEAD_ON	5				
SIDESWIPE_SAME_DIRECTION	6		2	2	
IDESWIPE_OPPOSITE_DIRECTION	7				
REAR_TO_SIDE	8				
REAR_TO_REAR	9				
OTHER	97				
UNKNOWN	99				
TOTALS	2	6	4	12	

CRASH STATISTICS

Rancho Vista & Central Driveway

2018-2019

		<u>Involvement</u>													
		# Incidents	Totals	# Motorists	# Non-Motorists			Code	No.	Code No.	Month			<u>Additional Useful Information</u>	
<u>Incidents</u>		4	8 Veh	11	0	<u>Circumstances</u>		<u>First Harmful Event</u>						<u>Vehicle Action Codes</u>	
Fatal	0	0 Ppl	0	0	Hit & Run?		0	OVERTURN_ROLLOVER	1	0	January	1	0	1 GOING_STRAIGHT_AHEAD	
Injury	2	2 Ppl	0	0	Intersection Related?		1	FIRE_EXPLOSION	2	0	February	2	1	2 SLOWING_IN_TRAFFICWAY	
PDO	2	4 Veh						IMMERSION	3	0	March	3	2	3 STOPPED_IN_TRAFFICWAY	
<u>Peds/Bikes Summary</u>		<u>Injuries</u>						JACKKNIFE	4	0	April	4	0	4 MAKING_LEFT_TURN	
								CARGO_EQUIPMENT_LOSS_SHIFT	5	0	May	5	0	5 MAKING_RIGHT_TURN	
								FELL_JUMPED_FROM_VEHICLE	6	0	June	6	0	6 MAKING_U_TURN	
								THROWN_OR_FALLING_OBJECT	7	0	July	7	0	7 OVERTAKING_PASSING	
Pedestrian:	0	0	0	0	<u>JunctionRelation</u>			OTHER_NON_COLLISION	8	0	August	8	0	8 CHANGING_LANES	
Bicycle:	0	0	0	0	NOT_JUNCTION_RELATED		0	EQUIPMENT_FAILURE_TIRES_BRAKES	9	0	September	9	0	9 NEGOTIATING_A_CURVE	
					INTERSECTION_NON_INTERCHANGE		1	SEPARATION_OF_UNITS	10	0	October	10	0	10 BACKING	
					INTERSECTION_RELATED_NON_INTERCHANGE		2	RAN_OFF_ROAD_RIGHT	11	0	November	11	1	11 Avoiding_Vehicle_Object_Pedestrian	
					ENTRANCE_EXIT_RAMP_NON_INTERCHANGE		3	RAN_OFF_ROAD_LEFT	12	0	December	12	0	12 ENTERING_PARKING_POSITION	
					RAILWAY_GRADE_CROSSING		4	CROSS_MEDIAN	13	0	Total	4	0	13 LEAVING_PARKING_POSITION	
					CROSSOVER_RELATED		5	CROSS_CENTERLINE	14	0			0	14 PROPERLY_PARKED	
					FRONTAGE_ROAD_NON_INTERCHANGE		6	DOWNHILL_RUNAWAY	15	0	<u>(Unit) SurfaceCondition</u>		0	15 IMPROPERLY_PARKED	
					DRIVEWAY		7	MOTOR_VEHICLE_IN_TRANSPORT	16	4	DRY	1	8	16 DRIVERLESS_MOVING_VEHICLE	
					ALLEY_ACCESS_RELATED		8	PEDESTRIAN	17	0	WET	2	0	17 CROSSING_ROAD	
					UNKNOWN_NON_INTERCHANGE		9	PEDALCYCLE	18	0	SNOW	3	0	18 WALKING_WITH_TRAFFIC	
					THRU_ROADWAY		10	RAILWAY_VEHICLE_TRAIN_ENGINE	19	0	SLUSH	4	0	19 WALKING_AGAINST_TRAFFIC	
					INTERSECTION_INTERCHANGE		11	LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0	ICE_FROST	5	0	20 STANDING	
					INTERSECTION_RELATED_INTERCHANGE		12	ANIMAL_WILD_NON_GAME	21	0	WATER_STANDING_MOVING	6	0	21 LYING	
					ENTRANCE_EXIT_RAMP_INTERCHANGE		13	ANIMAL_WILD_GAME	22	0	SAND	7	0	22 GETTING_ON_OR_OFF_VEHICLE	
					FRONTAGE_ROAD_INTERCHANGE		14	ANIMAL_PET	23	0	MUD_DIRT_GRAVEL	8	0	23 WORKING_ON_OR_PUSHING_VEHICLE	
					OTHER_PART_OF_INTERCHANGE		15	ANIMAL_LIVESTOCK	24	0	OIL	9	0	24 WORKING_ON_ROAD	
					<not defined>		16	PARKED_MOTOR_VEHICLE	25	0	OTHER	97	0	97 OTHER	
					UNKNOWN_INTERCHANGE		17	WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0	UNKNOWN	99	0	99 UNKNOWN	
					UNKNOWN_JUNCTION		18	STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0	Total	8	0		
					UNKNOWN		99	OTHER_NON_FIXED_OBJECT	28	0			0		
					OTHER_NON_INTERCHANGE		109	IMPACT_ATTENUATOR_CRASH_CUSHION	29	0			0		
					Check Total		4	BRIDGE_OVERHEAD_STRUCTURE	30	0			0		
					<u>CollisionManner</u>			BRIDGE_RAIL	31	0			0		
					SINGLE_VEHICLE		1	CULVERT	32	0			0		
					ANGLE (front to side)(other than left turn)		2	CURB	33	0			0		
					LEFT_TURN		3	DITCH	34	0			0		
					REAR_END		4	EMBANKMENT	35	0			0		
					HEAD_ON		5	GUARDRAIL_FACE	36	0			0		
					SIDESWIPE_SAME_DIRECTION		6	GUARDRAIL_END	37	0			0		
					SIDESWIPE_OPPOSITE_DIRECTION		7	CONCRETE_TRAFFIC_BARRIER	38	0			0		
					REAR_TO_SIDE		8	CABLE_TRAFFIC_BARRIER	39	0			0		
					REAR_TO_REAR		9	OTHER_TRAFFIC_BARRIER	40	0			0		
					OTHER		97	TREE_BUSH_STUMP_STANDING	41	0			0		
					UNKNOWN		99	TRAFFIC_SIGN_SUPPORT	42	0			0		
					Check Total		4	TRAFFIC_SIGNAL_SUPPORT	43	0			0		
					<u>TravelDirection</u>			UTILITY_POLE_LIGHT_SUPPORT	44	0			0		
					1 NORTH		N	OTHER_POST_POLE_OR_SUPPORT	45	0			0		
					2 SOUTH		S	FENCE	46	0			0		
					3 EAST		E	MAILBOX	47	0			0		
					4 WEST		W	BUILDING	48	0			0		
					5 NORTHWEST		NW	OTHER_FIXED_OBJECT	49	0			0		
					6 NORTHEAST		NE	UNKNOWN	99	0			0		
					7 SOUTHWEST		SW	Not Reported	255	0			0		
					8 SOUTHEAST		SE	Check Total	4	0			0		
					99 UNKNOWN		99								
					<u>Weekday</u>										
					Sunday		1								
					Monday		2								
					Tuesday		3								
					Wednesday		4								
					Thursday		5								
					Friday		6								
					Saturday		7								
					Check Total		4								

CRASH LISTING

Rancho Vista & Central Driveway

LOCATION				DATE & TIME				UNITS												PERSON								SEVERITY								GENERAL							
INCIDENT	ON STREET	MP	SET	OFF- D DIS- INTERSECT	OFCR	D TO- SRFCND	ALGMT	GRADE	DFCTS	BSTYLE	TRDR	UACT	TTL	TTL	TYP	INJR	VLTN	PHSCND	NON	INCIDENTS	INJURIES	FATALITIES	H	LT	WE	JCT	TRF	HE	M														
				STREET	NCIC NCIC YYMMDD HH:MM W TAL	U1 U2	1 2	1 2	U1 U2	U1 U2	1 2	U1 U2	MOT	NON	1 2	1 2	D1 D2	D1 D2	LOC	PDO	INJ	FAT	TTL	MOT	NON	TTL	MOT	NON	R	CN	CN	REL	CWY	CD	C								
3338611	RANCHO VISTOSO BLVD		P	150 Tangerine Rd	1007 1007 180213 15:01 3 2	1 1	1 1	1 1	0 0	0 44	50 SW N	4 1	2 0	1 1	2 1	20 1	0 0	255	1	1	0	0	0	0	0	0	0	N	1	1	0	4	16	3									
3354282	RANCHO VISTOSO BLVD		P	150 Tangerine Rd	1007 1007 180331 21:23 7 2	1 1	1 1	1 1	0 0	0 44	30 SE N	4 1	3 0	1 4	1 1	2 0	0 0	255	1	1	0	0	0	0	0	0	N	4	1	0	4	16	7										
3354292	RANCHO VISTOSO BLVD		P	20 Tangerine Rd	1007 1007 180316 14:29 6 2	1 1	1 1	1 1	0 0	0 44	44 W N	5 1	3 0	1 4	1 1	20 0	0 0	255	1	0	0	0	0	0	0	N	1	1	2	4	16	2											
3594734	RANCHO VISTOSO BLVD		P	686 Tangerine Rd	1007 1007 191126 15:25 3 2	1 1	1 1	1 1	0 99	0 44	44 W N	4 1	3 0	1 4	1 1	20 0	0 0	255	1	0	0	0	0	0	0	N	1	1	0	4	16	3											

Rancho Vista & Central Driveway

SUMMARY BY YEAR

<i>SEVERITY / INCIDENTS</i>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>Totals</u>	<u>Checks</u>
Fatal Injury Incidents					
Non-fatal Injury Incidents	2			2	
PDO Incidents	1	1		2	
TOTALS	3	1		4	
Pedestrian Incidents					
Pedestrians Involved					
Bicycle Incidents					
Bicyclists Involved					
<i>SEVERITY / INVOLVMENT</i>					
Fatal Injuries					
Non-Fatal Injuries	2			2	
PDO Vehicles	2	2		4	
Pedestrians Fatally Injured					
Pedestrians Non-Fatally Injured					
Bicyclists Fatally Injured					
Bicyclists Non-Fatally Injured					
<i>COLLISION MANNER</i>					
SINGLE_VEHICLE	1				
ANGLE	2	1		1	
LEFT_TURN	3	1	1	2	
REAR_END	4				
HEAD_ON	5				
SIDESWIPE_SAME_DIRECTION	6				
IDESWIPE_OPPOSITE_DIRECTION	7	1		1	
REAR_TO_SIDE	8				
REAR_TO_REAR	9				
OTHER	97				
UNKNOWN	99				
TOTALS	3	1		4	

CRASH STATISTICS

Rancho Vistoso Blvd/ 1st Ave & Tangerine Rd

2018-2020

		<u>Involvement</u>													
		<u># Incidents</u>	<u>Totals</u>	<u># Motorists</u>	<u># Non-Motorists</u>			<u>Code</u>	<u>No.</u>	<u>Code No.</u>	<u>Month</u>	<u>Code No.</u>	<u>Additional Useful Information</u>		
<u>Incidents</u>	<u>#</u>	<u>89 Veh</u>	<u>109</u>	<u>1</u>			<u>Code</u>	<u>No.</u>	<u>Code No.</u>	<u>Month</u>	<u>Code No.</u>	<u>Vehicle Action Codes</u>			
Fatal	0	0 Ppl	0	0			<u>First Harmful Event</u>								
Injury	14	19 Ppl	0	0	<u>Circumstances</u>		OVERTURN_ROLLOVER	1	0	January	1	6	1 GOING_STRAIGHT_AHEAD		
PDO	29	60 Veh			Hit & Run? 2		FIRE_EXPLOSION	2	0	February	2	3	2 SLOWING_IN_TRAFFICWAY		
<u>Peds/Bikes Summary</u>					Intersection Related? 17		IMMERSION	3	0	March	3	6	3 STOPPED_IN_TRAFFICWAY		
					<u>Injuries</u>		JACKKNIFE	4	0	April	4	5	4 MAKING_LEFT_TURN		
					<u>JunctionRelation</u>		CARGO_EQUIPMENT_LOSS_SHIFT	5	0	May	5	4	5 MAKING_RIGHT_TURN		
Pedestrian:	0	0	0	0	NOT_JUNCTION_RELATED		FELL_JUMPED_FROM_VEHICLE	6	0	June	6	2	6 MAKING_U_TURN		
Bicycle:	1	1	0	1	INTERSECTION_NON_INTERCHANGE		THROWN_OR_FALLING_OBJECT	7	0	July	7	1	7 OVERTAKING_PASSING		
					INTERSECTION_RELATED_NON_INTERCHANGE		OTHER_NON_COLLISION	8	0	August	8	2	8 CHANGING_LANES		
					ENTRANCE_EXIT_RAMP_NON_INTERCHANGE		EQUIPMENT_FAILURE_TIRES_BRAKES	9	0	September	9	2	9 NEGOTIATING_A_CURVE		
					RAILWAY_GRADE_CROSSING		SEPARATION_OF_UNITS	10	0	October	10	2	10 BACKING		
					CROSSOVER_RELATED		RAN_OFF_ROAD_RIGHT	11	0	November	11	4	11 Avoiding_Vehicle_Object_Pedestrian		
					FRONTAGE_ROAD_NON_INTERCHANGE		RAN_OFF_ROAD_LEFT	12	0	December	12	6	12 ENTERING_PARKING_POSITION		
					DRIVEWAY		CROSS_MEDIAN	13	0	Total		43	13 LEAVING_PARKING_POSITION		
					ALLEY_ACCESS_RELATED		CROSS_CENTERLINE	14	0				14 PROPERLY_PARKED		
					UNKNOWN_NON_INTERCHANGE		DOWNHILL_RUNAWAY	15	0	<u>(Unit) SurfaceCondition</u>			15 IMPROPERLY_PARKED		
					THRU_ROADWAY		MOTOR_VEHICLE_IN_TRANSPORT	16	41	DRY	1	87	16 DRIVERLESS_MOVING_VEHICLE		
					INTERSECTION_INTERCHANGE		PEDESTRIAN	17	0	WET	2	2	17 CROSSING_ROAD		
					INTERSECTION_RELATED_INTERCHANGE		PEDALCYCLE	18	1	SNOW	3	0	18 WALKING_WITH_TRAFFIC		
					ENTRANCE_EXIT_RAMP_INTERCHANGE		RAILWAY_VEHICLE_TRAIN_ENGINE	19	0	SLUSH	4	0	19 WALKING_AGAINST_TRAFFIC		
					FRONTAGE_ROAD_INTERCHANGE		LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0	ICE_FROST	5	0	20 STANDING		
					OTHER_PART_OF_INTERCHANGE		ANIMAL_WILD_NON_GAME	21	0	WATER_STANDING_MOVING	6	0	21 LYING		
					<not defined>		ANIMAL_WILD_GAME	22	0	SAND	7	0	22 GETTING_ON_OR_OFF_VEHICLE		
					UNKNOWN_INTERCHANGE		ANIMAL_PET	23	0	MUD_DIRT_GRAVEL	8	0	23 WORKING_ON_OR_PUSHING_VEHICLE		
					UNKNOWN_JUNCTION		ANIMAL_LIVESTOCK	24	0	OIL	9	0	24 WORKING_ON_ROAD		
					UNKNOWN		PARKED_MOTOR_VEHICLE	25	0	OTHER	97	0	97 OTHER		
					OTHER_NON_INTERCHANGE		WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0	UNKNOWN	99	0	99 UNKNOWN		
					Check Total		STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0	Total		89			
					OTHER_NON_INTERCHANGE		ANIMAL_WILD_GAME	28	0				99 UNKNOWN		
					Check Total		OTHER_NON_FIXED_OBJECT	28	0						
					Check Total		IMPACT_ATTENUATOR_CRASH_CUSHION	29	0						
					Check Total		BRIDGE_OVERHEAD_STRUCTURE	30	0						
					Check Total		BRIDGE_RAIL	31	0						
					Check Total		CULVERT	32	0						
					Check Total		CURB	33	0						
					Check Total		DITCH	34	0						
					Check Total		EMBANKMENT	35	0						
					Check Total		GUARDRAIL_FACE	36	0						
					Check Total		GUARDRAIL_END	37	0						
					Check Total		CONCRETE_TRAFFIC_BARRIER	38	0						
					Check Total		CABLE_TRAFFIC_BARRIER	39	0						
					Check Total		OTHER_TRAFFIC_BARRIER	40	0						
					Check Total		TREE_BUSH_STUMP_STANDING	41	0						
					Check Total		TRAFFIC_SIGN_SUPPORT	42	1						
					Check Total		TRAFFIC_SIGNAL_SUPPORT	43	0						
					Check Total		UTILITY_POLE_LIGHT_SUPPORT	44	0						
					Check Total		OTHER_POST_POLE_OR_SUPPORT	45	0						
					Check Total		FENCE	46	0						
					Check Total		MAILBOX	47	0						
					Check Total		BUILDING	48	0						
					Check Total		OTHER_FIXED_OBJECT	49	0						
					Check Total		UNKNOWN	99	0						
					Check Total		Not Reported	255	0						
					Check Total		Check Total		43						

Rancho Vistoso Blvd/ 1st Ave & Tangerine Rd

SUMMARY BY YEAR

SEVERITY / INCIDENTS	2018	2019	2020	Totals	Checks
Fatal Injury Incidents					
Non-fatal Injury Incidents	4	6	4	14	
PDO Incidents	8	17	4	29	
TOTALS	12	23	8	43	
Pedestrian Incidents					
Pedestrians Involved					
Bicycle Incidents			1	1	
Bicyclists Involved			1	1	
SEVERITY / INVOLVMENT					
Fatal Injuries					
Non-Fatal Injuries	5	10	4	19	
PDO Vehicles	15	36	9	60	
Pedestrians Fatally Injured					
Pedestrians Non-Fatally Injured					
Bicyclists Fatally Injured					
Bicyclists Non-Fatally Injured			1	1	
COLLISION MANNER					
SINGLE_VEHICLE	1	1		1	
ANGLE	2	2	2	3	7
LEFT_TURN	3	2	9	4	15
REAR_END	4	5	7	1	13
HEAD_ON	5				
SIDESWIPE_SAME_DIRECTION	6	1	4		5
DESWIPE_OPPOSITE_DIRECTION	7	1			1
REAR_TO_SIDE	8				
REAR_TO_REAR	9				
OTHER	97				
UNKNOWN	99		1		1
TOTALS	12	23	8	43	

CRASH LISTING

Tami Place & Tangerine Road

INCIDENT ON STREET		LOCATION				DATE & TIME				UNITS						PERSON				SEVERITY				GENERAL																											
MP	SET	D	DIS-	INTERSECT	NCIC	NCIC	YYMMDD	HH:MM	W	TAL	U1	U2	1	2	1	2	U1	U2	U1	U2	1	2	U1	U2	MOT	NON	1	2	1	2	D1	D2	D1	D2	LOC	PDO	INJ	FAT	TTL	MOT	NON	TTL	MOT	NON	R	CN	CN	REL	CWY	CD	C
3470258	10	TANGERINE	P	100	Tami	P1	1007	1007	181210	14:37	2	1	2	1	1	0	0	32	W	8	1	0	1	1	2	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	4	0	4	41	1				
3606366	10	TANGERINE	P	0	Tami	P1	1007	1007	191207	10:47	7	2	1	1	1	1	0	0	31	47	E	E	2	1	2	0	1	1	1	1	97	1	0	0	255	1	0	0	0	0	0	0	0	0	1	2	6	4	16	4	

Tami Place & Tangerine Road

SUMMARY BY YEAR

<i>SEVERITY / INCIDENTS</i>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>Totals</u>	<u>Checks</u>
Fatal Injury Incidents					
Non-fatal Injury Incidents					
PDO Incidents	1	1		2	
TOTALS	1	1		2	
Pedestrian Incidents					
Pedestrians Involved					
Bicycle Incidents					
Bicyclists Involved					
 <i>SEVERITY / INVOLVMENT</i>					
Fatal Injuries					
Non-Fatal Injuries					
PDO Vehicles	1	2		3	
Pedestrians Fatally Injured					
Pedestrians Non-Fatally Injured					
Bicyclists Fatally Injured					
Bicyclists Non-Fatally Injured					
 <i>COLLISION MANNER</i>					
SINGLE_VEHICLE	1	1		2	
ANGLE	2			2	
LEFT_TURN	3			3	
REAR_END	4		1	5	
HEAD_ON	5			5	
SIDESWIPE_SAME_DIRECTION	6			6	
IDESWIPE_OPPOSITE_DIRECTION	7			7	
REAR_TO_SIDE	8			8	
REAR_TO_REAR	9			9	
OTHER	97			97	
UNKNOWN	99			99	
TOTALS	1	1		2	

APPENDIX F

TRIP GENERATION CALCULATIONS

Methodology Overview

This form facilitates trip generation estimation using data within the Institute of Transportation Engineer's (ITE) Trip Generation Manual, 11th Edition and methodology described within ITE's Trip Generation Handbook, 3rd Edition. These references will be referred to as Manual and Handbook, respectively. The Manual contains data collected by various transportation professionals for a wide range of different land uses, with each land use category represented by a land use code (LUC). Average rates and equations have been established that correlate the relationship between an independent variable that describes the development size and generated trips for each categorized LUC in various settings and time periods. The Handbook indicates an established methodology for how to use data contained within the Manual when to use the fitted curve instead of the average rate and when to adjustments to the volume of trips are appropriate and how to do so. The methodology steps are represented visually in boxes in Figure 3.1. This worksheet applies calculations for each box if applicable.

Box 1 - Define Study Site Land Use Type&Site Characteristics

Box 2 - Define Site Context | Box 3 - Define Analysis Objectives Trip Types&Time Period

The analyst is to pick an appropriate LUC(s) based on the subject's zoning/land use(s)/future land use(s). The size of the land use(s) is described in reference to an independent variable(s) specific to (each) the land use (example: 1,000 square feet of building area is relatively common). Context assessment is to "simply determine whether the study sites is in a multimodal setting" and "could have persons accessing the site by walking, bicycling, or riding transit." This assessment is used in Box 4. The Manual separates data into 4 setting categories - Rural, General Urban/Suburban, Dense Multi-Urban Use and Center City Core. This worksheet uses the following abbreviations, respectively: R, G, D, and C. The Manual does not have data for all settings of all land use codes. The "General Urban/Suburban" setting is used by default.

This tool will focus on vehicular trips for a 24-hour period on a typical weekday as well as its AM peak hour and PM peak hour. Other time period(s) may be of interest.

Land Use Types and Size

Proposed Use	Amount Units	ITE LUC	ITE Land Use Name
5U Apartments(Low-Rise) Not Close to Rail	88 Dwelling Units	220	Multifamily Housing (Low-Rise Not Close to Rail)
7I Apartments(Low-Rise) Not Close to Rail	119 Dwelling Units	220	Multifamily Housing (Low-Rise Not Close to Rail)

Box 4 - Is Study Site Multimodal?

Per the Handbook, "if the objective is to establish a local trip generation rate for a particular land use or study site, the simplified approach (Box 9) may be acceptable but the Box 5 through 8 approach is required if the study site is located in an infill setting, contains a mix of uses on-site, or is near significant transit service."

Box 5/Box 9 - Estimate Baseline Trips/Estimate Vehicular Trips (Determine Equation)

Vehicle trips are estimated using rates/equations applicable to each LUC. When the appropriate graph has a fitted curve, the Handbook has a process (Figure 4.2) to determine when to use it versus using the weighted average rate or collecting local data. The methodology requires for engineering judgement in some circumstances and permits engineering judgement to override or make adjustments when appropriate to best project (example 1: study site is expected to operate differently than data in the applicable land use code - such as restaurant that is closed in the morning or in the evening; example 2: LUC data in a localized area fails to be represented by the typically selected fitted curve/weighted average rate - a small shop/LUC 820, AM peak hour is skewed by the high y-intercept).

Equation Type: Equation Used [Equated Rate] (Type Abbreviations: Weighted Average Rate ("WA"), Fitted Curve **Type: Equation Used [Equated Rate]**)

Proposed Use	ADT	AM Peak Hour	PM Peak Hour
5U Apartments(Low-Rise) Not Close to Rail	FC: T=6.41*X+75.31 [7.27]	FC: T=0.31*X+22.85 [0.57]	FC: T=0.43*X+20.55 [0.66]
7I Apartments(Low-Rise) Not Close to Rail	FC: T=6.41*X+75.31 [7.04]	FC: T=0.31*X+22.85 [0.50]	FC: T=0.43*X+20.55 [0.60]

Box 5/Box 9 - Estimate Baseline Trips/Estimate Vehicular Trips (Apply Equations and in/out Distributions)

Baseline Vehicular Trips

Proposed Use	ADT				AM Peak Hour				PM Peak Hour			
	% In	In	Out	Total	% In	In	Out	Total	% In	In	Out	Total
5U Apartments(Low-Rise) Not Close to Rail	50%	320	320	640	24%	12	38	50	63%	37	21	58
7I Apartments(Low-Rise) Not Close to Rail	50%	419	419	838	24%	14	46	60	63%	45	27	72

If vehicle trip reductions are not applied for internal capture and alternative mode, vehicle trips may be separated into vehicle trip subsets (pass-by trips, diverted trips, truck trips, new passenger vehicle trips) as part of Box 10. If vehicle trip reductions are to be applied, continue to Box 6.

APPENDIX G

BACKGROUND GROWTH CALCULATIONS

Location of counts: 1st Avenue north of Naranja Drive at Location A-255

Source(s): ADOT Transportation Management System

	Year	Volume
Start	2015	16,999
End	2018	18,295
AAGR		2.50%
Exp Factor		1.076

Growth Rate Used 2.5%
 Per-Year Multiplier 1.025

Year	Expansion Factor(s)	
2021	1.000	Existing
2022	1.025	
2023	1.051	Opening
2024	1.077	
2025	1.104	
2026	1.131	Horizon
2027	1.160	
2028	1.189	
2029	1.218	
2030	1.249	
2031	1.280	
2032	1.312	
2033	1.345	
2034	1.379	
2035	1.413	
2036	1.448	
2037	1.485	
2038	1.522	
2039	1.560	
2040	1.599	
2041	1.639	
2042	1.680	
2043	1.722	
2044	1.765	
2045	1.809	
2046	1.854	
2047	1.900	
2048	1.948	
2049	1.996	
2050	2.046	
2051	2.098	
2052	2.150	
2053	2.204	

APPENDIX H

2023 NO-BUILD PEAK HOUR ANALYSIS

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↕↕	↕↕	
Traffic Vol, veh/h	0	241	0	427	614	4
Future Vol, veh/h	0	241	0	427	614	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	262	0	464	667	4
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	336	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	660	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	660	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	14	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	660	-	-		
HCM Lane V/C Ratio	-	0.397	-	-		
HCM Control Delay (s)	-	14	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	1.9	-	-		

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↕↕	↕↕	
Traffic Vol, veh/h	0	107	0	704	522	3
Future Vol, veh/h	0	107	0	704	522	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	116	0	765	567	3
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	285	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	712	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	712	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	11	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	712	-	-		
HCM Lane V/C Ratio	-	0.163	-	-		
HCM Control Delay (s)	-	11	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0.6	-	-		

21-1550 Avilla Rancho Vistoso
2023 Background AM

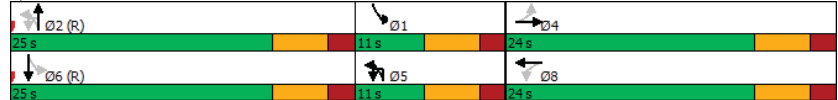
2: Rancho Vistoso Blvd. & Avilla Dr.
Timings

Lane Group	EBL	EBT	WBL	WBT	NBU	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔	↔	↔	↔
Traffic Volume (vph)	2	0	38	0	19	136	554	58	796
Future Volume (vph)	2	0	38	0	19	136	554	58	796
Turn Type	Perm	NA	Perm	NA	pm+pt	pm+pt	NA	pm+pt	NA
Protected Phases	4	4	8	8	5	5	2	1	6
Permitted Phases	4		8		2	2		6	
Detector Phase	4	4	8	8	5	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	11.0	11.0	24.0	11.0	24.0
Total Split (s)	24.0	24.0	24.0	24.0	11.0	11.0	25.0	11.0	25.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	18.3%	18.3%	41.7%	18.3%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0	
Lead/Lag					Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Rancho Vistoso Blvd. & Avilla Dr.



21-1550 Avilla Rancho Vistoso
2023 Background PM

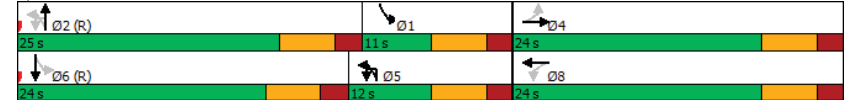
2: Rancho Vistoso Blvd. & Avilla Dr.
Timings

Lane Group	EBL	EBT	WBL	WBT	NBU	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔	↔	↔	↔
Traffic Volume (vph)	5	0	89	0	49	170	858	26	603
Future Volume (vph)	5	0	89	0	49	170	858	26	603
Turn Type	Perm	NA	Perm	NA	pm+pt	pm+pt	NA	pm+pt	NA
Protected Phases	4	4	8	8	5	5	2	1	6
Permitted Phases	4		8		2	2		6	
Detector Phase	4	4	8	8	5	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	11.0	11.0	24.0	11.0	24.0
Total Split (s)	24.0	24.0	24.0	24.0	12.0	12.0	25.0	11.0	24.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	20.0%	20.0%	41.7%	18.3%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0	
Lead/Lag					Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Rancho Vistoso Blvd. & Avilla Dr.



21-1550 Avilla Rancho Vistoso
2023 Background AM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔			↔			↔	↔		↔	↔
Traffic Volume (veh/h)	2	0	0	38	0	25	19	136	554	32	58	796
Future Volume (veh/h)	2	0	0	38	0	25	19	136	554	32	58	796
Initial Q (Ob), 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	
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
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	2	0	0	41	0	27		148	602	35	63	865
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	217	0	0	148	0	34		763	1081	63	835	1125
Arrive On Green	0.06	0.00	0.00	0.06	0.00	0.06		0.33	0.32	0.32	0.33	0.32
Sat Flow, veh/h	1696	0	0	896	0	590		1781	3413	198	1781	3647
Grp Volume(v), veh/h	2	0	0	68	0	0		148	313	324	63	865
Grp Sat Flow(s),veh/h/ln	1697	0	0	1486	0	0		1781	1777	1835	1781	1777
Q Serve(g_s), s	0.0	0.0	0.0	2.6	0.0	0.0		0.0	8.8	8.8	0.0	13.2
Cycle Q Clear(g_c), s	0.1	0.0	0.0	2.7	0.0	0.0		0.0	8.8	8.8	0.0	13.2
Prop In Lane	1.00		0.00	0.60		0.40		1.00		0.11	1.00	
Lane Grp Cap(c), veh/h	217	0	0	181	0	0		763	563	581	835	1125
V/C Ratio(X)	0.01	0.00	0.00	0.37	0.00	0.00		0.19	0.56	0.56	0.08	0.77
Avail Cap(c_a), veh/h	553	0	0	540	0	0		763	563	581	835	1125
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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.7	0.0	0.0	27.9	0.0	0.0		12.4	17.0	17.0	8.3	18.5
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.3	0.0	0.0		0.1	3.9	3.8	0.0	5.1
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
%ile BackOfQ(95%),veh/ln	0.0	0.0	0.0	1.8	0.0	0.0		2.3	6.9	7.1	0.7	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.7	0.0	0.0	29.2	0.0	0.0		12.5	20.9	20.8	8.3	23.6
LnGrp LOS	C	A	A	C	A	A		B	C	C	A	C
Approach Vol, veh/h	2			68				785			928	
Approach Delay, s/veh	26.7			29.2				19.3			22.5	
Approach LOS	C			C				B			C	
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	25.6	25.0	9.4		25.6	25.0	9.4					
Change Period (Y+Rc), s	6.0	6.0	6.0		6.0	6.0	6.0					
Max Green Setting (Gmax), s	5.0	19.0	18.0		5.0	19.0	18.0					
Max Q Clear Time (g_c+I1), s	2.0	10.8	2.1		2.0	15.2	4.7					
Green Ext Time (p_c), s	0.0	2.5	0.0		0.1	2.0	0.2					

Intersection Summary	
HCM 6th Ctrl Delay	21.4
HCM 6th LOS	C

Notes
User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
2023 Background PM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔			↔			↔	↔		↔	↔
Traffic Volume (veh/h)	5	0	0	89	0	60	49	170	858	43	26	603
Future Volume (veh/h)	5	0	0	89	0	60	49	170	858	43	26	603
Initial Q (Ob), 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	
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
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	0	0	97	0	65		185	933	47	28	655
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	311	0	0	209	10	83		698	1090	55	584	1066
Arrive On Green	0.14	0.00	0.00	0.14	0.00	0.14		0.26	0.32	0.32	0.25	0.30
Sat Flow, veh/h	1391	0	0	824	73	601		1781	3443	173	1781	3647
Grp Volume(v), veh/h	5	0	0	162	0	0		185	482	498	28	655
Grp Sat Flow(s),veh/h/ln	1391	0	0	1499	0	0		1781	1777	1839	1781	1777
Q Serve(g_s), s	0.0	0.0	0.0	5.7	0.0	0.0		0.0	15.2	15.2	0.0	9.5
Cycle Q Clear(g_c), s	0.2	0.0	0.0	6.2	0.0	0.0		0.0	15.2	15.2	0.0	9.5
Prop In Lane	1.00		0.00	0.60		0.40		1.00		0.09	1.00	
Lane Grp Cap(c), veh/h	311	0	0	302	0	0		698	563	582	584	1066
V/C Ratio(X)	0.02	0.00	0.00	0.54	0.00	0.00		0.27	0.86	0.86	0.05	0.61
Avail Cap(c_a), veh/h	529	0	0	543	0	0		698	563	582	584	1066
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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	22.4	0.0	0.0	25.0	0.0	0.0		13.8	19.2	19.2	15.8	18.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.5	0.0	0.0		0.2	15.4	14.9	0.0	2.6
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
%ile BackOfQ(95%),veh/ln	0.1	0.0	0.0	4.0	0.0	0.0		3.2	12.6	12.9	0.5	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	0.0	0.0	26.4	0.0	0.0		14.0	34.6	34.1	15.9	20.7
LnGrp LOS	C	A	A	C	A	A		B	C	C	B	C
Approach Vol, veh/h	5			162				1165			683	
Approach Delay, s/veh	22.4			26.4				31.1			20.5	
Approach LOS	C			C				C			C	
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	20.7	25.0	14.3		21.7	24.0	14.3					
Change Period (Y+Rc), s	6.0	6.0	6.0		6.0	6.0	6.0					
Max Green Setting (Gmax), s	5.0	19.0	18.0		6.0	18.0	18.0					
Max Q Clear Time (g_c+I1), s	2.0	17.2	2.2		2.0	11.5	8.2					
Green Ext Time (p_c), s	0.0	1.1	0.0		0.2	2.4	0.6					

Intersection Summary	
HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C

Notes
User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
2023 Background AM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (veh/h)	0
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(q_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

21-1550 Avilla Rancho Vistoso
2023 Background PM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (veh/h)	0
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(q_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↘			↗↗
Traffic Vol, veh/h	0	63	522	72	0	834
Future Vol, veh/h	0	63	522	72	0	834
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	68	567	78	0	907

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	323	0 0 - -
Stage 1	-	-	- - - -
Stage 2	-	-	- - - -
Critical Hdwy	-	6.94	- - - -
Critical Hdwy Stg 1	-	-	- - - -
Critical Hdwy Stg 2	-	-	- - - -
Follow-up Hdwy	-	3.32	- - - -
Pot Cap-1 Maneuver	0	*884	- - 0 -
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %		1	- - - -
Mov Cap-1 Maneuver	-	*884	- - - -
Mov Cap-2 Maneuver	-	-	- - - -
Stage 1	-	-	- - - -
Stage 2	-	-	- - - -

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	- 884	-
HCM Lane V/C Ratio	-	- 0.077	-
HCM Control Delay (s)	-	- 9.4	-
HCM Lane LOS	-	- A	-
HCM 95th %tile Q(veh)	-	- 0.3	-

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

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗↘			↗↗
Traffic Vol, veh/h	0	138	764	99	0	692
Future Vol, veh/h	0	138	764	99	0	692
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	150	830	108	0	752

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	469	0 0 - -
Stage 1	-	-	- - - -
Stage 2	-	-	- - - -
Critical Hdwy	-	6.94	- - - -
Critical Hdwy Stg 1	-	-	- - - -
Critical Hdwy Stg 2	-	-	- - - -
Follow-up Hdwy	-	3.32	- - - -
Pot Cap-1 Maneuver	0	*763	- - 0 -
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %		1	- - - -
Mov Cap-1 Maneuver	-	*763	- - - -
Mov Cap-2 Maneuver	-	-	- - - -
Stage 1	-	-	- - - -
Stage 2	-	-	- - - -

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	- 763	-
HCM Lane V/C Ratio	-	- 0.197	-
HCM Control Delay (s)	-	- 10.9	-
HCM Lane LOS	-	- B	-
HCM 95th %tile Q(veh)	-	- 0.7	-

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

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↔		↔
Traffic Vol, veh/h	0	991	592	53	0	43
Future Vol, veh/h	0	991	592	53	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1077	643	58	0	47
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	322
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	674
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	674
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	10.7			
HCM LOS			B			
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	674		
HCM Lane V/C Ratio	-	-	-	0.069		
HCM Control Delay (s)	-	-	-	10.7		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0.2		

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↔		↔
Traffic Vol, veh/h	0	844	919	75	0	103
Future Vol, veh/h	0	844	919	75	0	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	917	999	82	0	112
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	500
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	516
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	516
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	13.9			
HCM LOS			B			
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	516		
HCM Lane V/C Ratio	-	-	-	0.217		
HCM Control Delay (s)	-	-	-	13.9		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0.8		

21-1550 Avilla Rancho Vistoso
2023 Background AM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
Timings

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	167	687	209	4	91	442	101	149	327	112	3	191
Future Volume (vph)	167	687	209	4	91	442	101	149	327	112	3	191
Turn Type	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	pm+pt
Protected Phases	7	4		3	3	8		5	2		1	1
Permitted Phases	4		4	8	8		8	2		2	6	6
Detector Phase	7	4	4	3	3	8	8	5	2	2	1	1
Switch Phase												
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	16.0	40.3	40.3	16.0	16.0	40.3	40.3	16.0	40.3	40.3	16.0	16.0
Total Split (s)	20.0	47.0	47.0	16.0	16.0	43.0	43.0	19.0	47.0	47.0	20.0	20.0
Total Split (%)	15.4%	36.2%	36.2%	12.3%	12.3%	33.1%	33.1%	14.6%	36.2%	36.2%	15.4%	15.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0		
Total Lost Time (s)	6.0	6.0	6.0					6.0	6.0	6.0		
Lead/Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	None	Max	Max	None	C-Max	C-Max	None	None

Intersection Summary

Cycle Length: 130

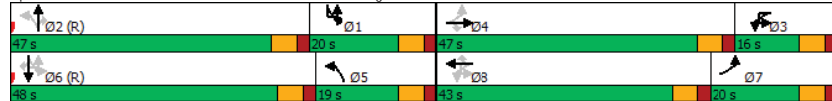
Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.



21-1550 Avilla Rancho Vistoso
2023 Background PM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
Timings

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	3	234	572	185	11	216	688	118	5	168	511	115
Future Volume (vph)	3	234	572	185	11	216	688	118	5	168	511	115
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm
Protected Phases	7	7	4		3	3	8		5	5	2	
Permitted Phases	4	4		4	8	8		8	2	2		2
Detector Phase	7	7	4	4	3	3	8	8	5	5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	16.0	16.0	40.3	40.3	16.0	16.0	40.3	40.3	16.0	16.0	40.3	40.3
Total Split (s)	22.0	22.0	41.0	41.0	22.0	22.0	41.0	41.0	22.0	22.0	45.0	45.0
Total Split (%)	16.9%	16.9%	31.5%	31.5%	16.9%	16.9%	31.5%	31.5%	16.9%	16.9%	34.6%	34.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)			0.0	0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)			6.0	6.0			6.0	6.0			6.0	6.0
Lead/Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	None	None	None	C-Max	C-Max

Intersection Summary

Cycle Length: 130

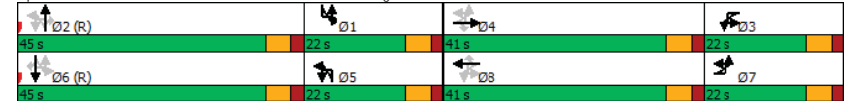
Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.



21-1550 Avilla Rancho Vistoso
2023 Background AM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	167	687	209	4	91	442	101	149	327	112	3	191
Future Volume (veh/h)	167	687	209	4	91	442	101	149	327	112	3	191
Initial Q (Ob), 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
Parking Bus, Adj	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		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870		1870	1870	1870	1870	1870	1870		1870
Adj Flow Rate, veh/h	182	747	227		99	480	110	162	355	122		208
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92		0.92
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2		2
Cap, veh/h	386	1121	500		248	1011	451	386	1121	500		471
Arrive On Green	0.11	0.32	0.32		0.07	0.28	0.28	0.10	0.32	0.32		0.11
Sat Flow, veh/h	1781	3554	1585		1781	3554	1585	1781	3554	1585		1781
Grp Volume(v), veh/h	182	747	227		99	480	110	162	355	122		208
Grp Sat Flow(s), veh/h/ln	1781	1777	1585		1781	1777	1585	1781	1777	1585		1781
Q Serve(g_s), s	0.0	23.7	14.9		0.0	14.5	6.9	0.0	9.9	7.4		0.0
Cycle Q Clear(g_c), s	0.0	23.7	14.9		0.0	14.5	6.9	0.0	9.9	7.4		0.0
Prop In Lane	1.00		1.00		1.00		1.00		1.00			1.00
Lane Grp Cap(c), veh/h	386	1121	500		248	1011	451	386	1121	500		471
V/C Ratio(X)	0.47	0.67	0.45		0.40	0.47	0.24	0.42	0.32	0.24		0.44
Avail Cap(c_a), veh/h	390	1121	500		252	1011	451	386	1121	500		471
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	43.2	38.6	35.6		51.7	38.5	35.7	40.7	33.8	33.0		35.6
Incr Delay (d2), s/veh	4.1	3.1	3.0		4.8	1.6	1.3	2.6	0.7	1.2		2.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0
%ile BackOfQ(95%), veh/ln	9.7	16.2	10.3		6.0	10.8	5.2	8.5	7.9	5.5		9.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	47.3	41.7	38.5		56.4	40.1	37.0	43.3	34.6	34.2		38.0
LnGrp LOS	D	D	D		E	D	D	D	C	C		D
Approach Vol, veh/h	1156			689				639				
Approach Delay, s/veh	42.0			41.9				36.7				
Approach LOS	D			D				D				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.3	47.0	15.7	47.0	19.3	48.0	19.7	43.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	14.0	41.0	10.0	41.0	13.0	42.0	14.0	37.0				
Max Q Clear Time (g_c+I1), s	2.0	11.9	2.0	25.7	2.0	17.3	2.0	16.5				
Green Ext Time (p_c), s	1.3	2.9	0.4	8.7	0.9	4.3	1.7	7.8				

Intersection Summary

HCM 6th Ctrl Delay	39.5
HCM 6th LOS	D

Notes
 User approved pedestrian interval to be less than phase max green.
 User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
2023 Background PM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (veh/h)	3	234	572	185	11	216	688	118	5	168	511	115
Future Volume (veh/h)	3	234	572	185	11	216	688	118	5	168	511	115
Initial Q (Ob), 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
Parking Bus, Adj	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		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870		1870	1870	1870	1870	1870	1870		1870
Adj Flow Rate, veh/h	254	622	201		235	748	128		183	555		125
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92		0.92
Percent Heavy Veh, %	2	2	2		2	2	2		2	2		2
Cap, veh/h	280	806	359		346	887	396		491	1066		476
Arrive On Green	0.12	0.23	0.23		0.14	0.25	0.25		0.15	0.30		0.30
Sat Flow, veh/h	1781	3554	1585		1781	3554	1585		1781	3554		1585
Grp Volume(v), veh/h	254	622	201		235	748	128		183	555		125
Grp Sat Flow(s), veh/h/ln	1781	1777	1585		1781	1777	1585		1781	1777		1585
Q Serve(g_s), s	12.9	21.3	14.6		8.8	26.0	8.6		0.0	16.8		7.8
Cycle Q Clear(g_c), s	12.9	21.3	14.6		8.8	26.0	8.6		0.0	16.8		7.8
Prop In Lane	1.00		1.00		1.00		1.00		1.00			1.00
Lane Grp Cap(c), veh/h	280	806	359		346	887	396		491	1066		476
V/C Ratio(X)	0.91	0.77	0.56		0.68	0.84	0.32		0.37	0.52		0.26
Avail Cap(c_a), veh/h	291	957	427		346	957	427		491	1066		476
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Uniform Delay (d), s/veh	54.5	47.1	44.5		49.4	46.4	39.8		34.9	37.7		34.6
Incr Delay (d2), s/veh	34.3	4.5	2.9		10.3	7.6	1.0		1.7	1.8		1.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0
%ile BackOfQ(95%), veh/ln	16.2	15.1	10.1		12.7	18.2	6.3		8.7	12.2		5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	88.7	51.6	47.4		59.7	53.9	40.8		36.6	39.6		35.9
LnGrp LOS	F	D	D		E	D	D		D	D		D
Approach Vol, veh/h	1077			1111				863				
Approach Delay, s/veh	59.6			53.6				38.4				
Approach LOS	E			D				D				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.4	45.0	24.2	35.5	25.4	45.0	21.2	38.4				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	16.0	39.0	16.0	35.0	16.0	39.0	16.0	35.0				
Max Q Clear Time (g_c+I1), s	2.0	18.8	10.8	23.3	2.0	14.6	14.9	28.0				
Green Ext Time (p_c), s	1.2	4.1	0.9	6.1	1.3	3.5	0.2	4.4				

Intersection Summary

HCM 6th Ctrl Delay	48.8
HCM 6th LOS	D

Notes
 User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
2023 Background AM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	485	154
Future Volume (veh/h)	485	154
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	527	167
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1148	512
Arrive On Green	0.32	0.32
Sat Flow, veh/h	3554	1585
Grp Volume(v), veh/h	527	167
Grp Sat Flow(s),veh/h/ln	1777	1585
Q Serve(g_s), s	15.3	10.4
Cycle Q Clear(q_c), s	15.3	10.4
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1148	512
V/C Ratio(X)	0.46	0.33
Avail Cap(c_a), veh/h	1148	512
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	35.0	33.3
Incr Delay (d2), s/veh	1.3	1.7
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.2	7.6
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	36.3	35.0
LnGrp LOS	D	C
Approach Vol, veh/h	902	
Approach Delay, s/veh	36.4	
Approach LOS	D	
Timer - Assigned Phs		

21-1550 Avilla Rancho Vistoso
2023 Background PM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	SBU	SBL	SBT	SBR
Lane Configurations		↑	↑↑	↑
Traffic Volume (veh/h)	4	158	398	132
Future Volume (veh/h)	4	158	398	132
Initial Q (Qb), veh	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	
Work Zone On Approach	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	
Adj Flow Rate, veh/h	172	433	143	
Peak Hour Factor	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	
Cap, veh/h	450	1066	476	
Arrive On Green	0.15	0.30	0.30	
Sat Flow, veh/h	1781	3554	1585	
Grp Volume(v), veh/h	172	433	143	
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	
Q Serve(g_s), s	0.0	12.6	9.0	
Cycle Q Clear(q_c), s	0.0	12.6	9.0	
Prop In Lane	1.00		1.00	
Lane Grp Cap(c), veh/h	450	1066	476	
V/C Ratio(X)	0.38	0.41	0.30	
Avail Cap(c_a), veh/h	450	1066	476	
HCM Platoon Ratio	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	
Uniform Delay (d), s/veh	38.7	36.3	35.0	
Incr Delay (d2), s/veh	1.9	1.1	1.6	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	8.7	9.6	6.7	
Unsig. Movement Delay, s/veh				
LnGrp Delay(d),s/veh	40.7	37.4	36.6	
LnGrp LOS	D	D	D	
Approach Vol, veh/h		748		
Approach Delay, s/veh		38.0		
Approach LOS		D		
Timer - Assigned Phs				

21-1550 Avilla Rancho Vistoso
2023 Background AM

6: Avilla Dr. & Tangerine Rd.
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗		↖ ↗		↖ ↗		↖ ↗		↖ ↗		↖ ↗	
Traffic Vol, veh/h	0	1092	22	2	773	0	11	0	9	0	0	0
Future Vol, veh/h	0	1092	22	2	773	0	11	0	9	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	150	-	-	0	-	50	0	-	50
Veh in Median Storage, #	-	0	-	-	0	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	0	-	-	0	-	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1187	24	2	840	0	12	0	10	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	840	0	0	1211
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1142	-	-	572
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	-
Mov Cap-1 Maneuver	*1142	-	-	572
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	25.8	0
HCM LOS			D	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	128	440	*1142	-	-	572	-	-	-	-
HCM Lane V/C Ratio	0.093	0.022	-	-	-	0.004	-	-	-	-
HCM Control Delay (s)	36	13.4	0	-	-	11.3	-	-	0	0
HCM Lane LOS	E	B	A	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	0.1	0	-	-	0	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
2023 Background PM

6: Avilla Dr. & Tangerine Rd.
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗		↖ ↗		↖ ↗		↖ ↗		↖ ↗		↖ ↗	
Traffic Vol, veh/h	0	949	43	1	9	1011	0	30	0	85	0	0
Future Vol, veh/h	0	949	43	1	9	1011	0	30	0	85	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	150	-	0	-	50	0	-	50
Veh in Median Storage, #	-	0	-	-	0	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	0	-	-	0	-	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1032	47	1	10	1099	0	33	0	92	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1099	0	0	1078
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	6.44
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.52
Pot Cap-1 Maneuver	*998	-	-	296
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	-
Mov Cap-1 Maneuver	*998	-	-	552
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	18.3	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	175	486	*998	-	-	552	-	-	-	-
HCM Lane V/C Ratio	0.186	0.19	-	-	-	0.02	-	-	-	-
HCM Control Delay (s)	30.2	14.1	0	-	-	11.7	-	-	0	0
HCM Lane LOS	D	B	A	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	0.7	0.7	0	-	-	0.1	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
2023 Background AM

7: Tami Pl. & Tangerine Rd.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	
Traffic Vol, veh/h	1103	2	1	773	3	2
Future Vol, veh/h	1103	2	1	773	3	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1199	2	1	840	3	2

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1201	0	1622
Stage 1	-	-	-	-	1200
Stage 2	-	-	-	-	422
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	577	-	158
Stage 1	-	-	-	-	248
Stage 2	-	-	-	-	720
Platoon blocked, %	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	577	-	158
Mov Cap-2 Maneuver	-	-	-	-	158
Stage 1	-	-	-	-	248
Stage 2	-	-	-	-	719

Approach	EB	WB	NB
HCM Control Delay, s	0	0	22.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	213	-	-	577	-
HCM Lane V/C Ratio	0.026	-	-	0.002	-
HCM Control Delay (s)	22.3	-	-	11.3	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

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

21-1550 Avilla Rancho Vistoso
2023 Background PM

7: Tami Pl. & Tangerine Rd.
HCM 6th TWSC

Intersection							
Int Delay, s/veh	0						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑	↑↑	↑	
Traffic Vol, veh/h	981	3	1	3	1037	1	2
Future Vol, veh/h	981	3	1	3	1037	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	1066	3	1	3	1127	1	2

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1070	1069	0
Stage 1	-	-	-	-	1068
Stage 2	-	-	-	-	572
Critical Hdwy	-	-	6.44	4.14	-
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.52	2.22	-
Pot Cap-1 Maneuver	-	-	299	648	-
Stage 1	-	-	-	-	291
Stage 2	-	-	-	-	607
Platoon blocked, %	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	501	501	-
Mov Cap-2 Maneuver	-	-	-	-	217
Stage 1	-	-	-	-	291
Stage 2	-	-	-	-	602

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	345	-	-	501	-
HCM Lane V/C Ratio	0.009	-	-	0.009	-
HCM Control Delay (s)	15.5	-	-	12.2	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

21-1550 Avilla Rancho Vistoso
2023 Background AM

8: Tangerine Rd. & Access A
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	1105	776	0	0	0
Future Vol, veh/h	0	1105	776	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1201	843	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 422
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.32
Pot Cap-1 Maneuver	0	-	- - 0 *763
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	- - - 1
Mov Cap-1 Maneuver	-	-	- - - *763
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
2023 Background PM

8: Tangerine Rd. & Access A
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	984	1038	0	0	0
Future Vol, veh/h	0	984	1038	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1070	1128	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 564
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.32
Pot Cap-1 Maneuver	0	-	- - 0 *643
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	- - - 1
Mov Cap-1 Maneuver	-	-	- - - *643
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
2023 Background AM

9: Access B & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↕	↕	
Traffic Vol, veh/h	243	0	0	140	0	0
Future Vol, veh/h	243	0	0	140	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	264	0	0	152	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	264	0	416
Stage 1	-	-	-	-	264
Stage 2	-	-	-	-	152
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1300	-	593
Stage 1	-	-	-	-	780
Stage 2	-	-	-	-	876
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1300	-	593
Mov Cap-2 Maneuver	-	-	-	-	593
Stage 1	-	-	-	-	780
Stage 2	-	-	-	-	876

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1300	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

21-1550 Avilla Rancho Vistoso
2023 Background PM

9: Access B & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↕	↕	
Traffic Vol, veh/h	112	0	0	173	0	0
Future Vol, veh/h	112	0	0	173	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	122	0	0	188	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	122	0	310
Stage 1	-	-	-	-	122
Stage 2	-	-	-	-	188
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1465	-	682
Stage 1	-	-	-	-	903
Stage 2	-	-	-	-	844
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1465	-	682
Mov Cap-2 Maneuver	-	-	-	-	682
Stage 1	-	-	-	-	903
Stage 2	-	-	-	-	844

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1465	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

21-1550 Avilla Rancho Vistoso
2023 Background AM

10: Avilla Dr. & Access C
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↕	↕	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1	1	0
Stage 1	1	-	-
Stage 2	0	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	1022	1084	1622
Stage 1	1022	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1022	1084	1622
Mov Cap-2 Maneuver	1022	-	-
Stage 1	1022	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

21-1550 Avilla Rancho Vistoso
2023 Background PM

10: Avilla Dr. & Access C
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↕	↕	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1	1	0
Stage 1	1	-	-
Stage 2	0	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	1022	1084	1622
Stage 1	1022	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1022	1084	1622
Mov Cap-2 Maneuver	1022	-	-
Stage 1	1022	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	89	0	0	63	0	0	0	0	0	0	0
Future Vol, veh/h	0	89	0	0	63	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	97	0	0	68	0	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	68	0	0	97
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1533	-	-	1496
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1533	-	-	1496
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1533	-	-	1496	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	69	0	0	149	0	0	0	0	0	0	0
Future Vol, veh/h	0	69	0	0	149	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	75	0	0	162	0	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	162	0	0	75
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1417	-	-	1524
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1417	-	-	1524
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1417	-	-	1524	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

21-1550 Avilla Rancho Vistoso
2023 Background AM

13: Avilla Dr. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			U	U	
Traffic Vol, veh/h	2	0	0	0	0	136
Future Vol, veh/h	2	0	0	0	0	136
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	0	0	0	0	148
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	74	74	148	0	-	0
Stage 1	74	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	930	988	1434	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	930	988	1434	-	-	-
Mov Cap-2 Maneuver	930	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	8.9	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1434	-	930	-	-	
HCM Lane V/C Ratio	-	-	0.002	-	-	
HCM Control Delay (s)	0	-	8.9	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

21-1550 Avilla Rancho Vistoso
2023 Background PM

13: Avilla Dr. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			U	U	
Traffic Vol, veh/h	5	0	0	0	0	170
Future Vol, veh/h	5	0	0	0	0	170
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	0	0	0	0	185
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	93	93	185	0	-	0
Stage 1	93	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	907	964	1390	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	907	964	1390	-	-	-
Mov Cap-2 Maneuver	907	-	-	-	-	-
Stage 1	931	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	9	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1390	-	907	-	-	
HCM Lane V/C Ratio	-	-	0.006	-	-	
HCM Control Delay (s)	0	-	9	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	241	2	136	0	0	4
Future Vol, veh/h	241	2	136	0	0	4
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	262	2	148	0	0	4
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	148	0	-	0	674	148
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	526	-
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	1434	-	-	-	420	899
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	593	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1434	-	-	-	343	899
Mov Cap-2 Maneuver	-	-	-	-	343	-
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	593	-
Approach	EB	WB	SB			
HCM Control Delay, s	8	0	9			
HCM LOS			A			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBRn1
Capacity (veh/h)	1434	-	-	-	-	899
HCM Lane V/C Ratio	0.183	-	-	-	-	0.005
HCM Control Delay (s)	8.1	0	-	-	-	9
HCM Lane LOS	A	A	-	-	-	A
HCM 95th %tile Q(veh)	0.7	-	-	-	-	0

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	107	5	170	0	0	3
Future Vol, veh/h	107	5	170	0	0	3
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	5	185	0	0	3
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	185	0	-	0	422	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	237	-
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	1390	-	-	-	588	857
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	802	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1390	-	-	-	539	857
Mov Cap-2 Maneuver	-	-	-	-	539	-
Stage 1	-	-	-	-	776	-
Stage 2	-	-	-	-	802	-
Approach	EB	WB	SB			
HCM Control Delay, s	7.5	0	9.2			
HCM LOS			A			
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBRn1
Capacity (veh/h)	1390	-	-	-	-	857
HCM Lane V/C Ratio	0.084	-	-	-	-	0.004
HCM Control Delay (s)	7.8	0	-	-	-	9.2
HCM Lane LOS	A	A	-	-	-	A
HCM 95th %tile Q(veh)	0.3	-	-	-	-	0

Intersection												
Int Delay, s/veh 3.7												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	89	0	0	0	63	0	0	0	0	0
Future Vol, veh/h	0	0	89	0	0	0	63	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	97	0	0	0	68	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	97
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	0	-	1496	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	1496	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	950	-	-	1496	-	-
HCM Lane V/C Ratio	0.072	-	-	-	-	-
HCM Control Delay (s)	9.1	-	-	0	-	0
HCM Lane LOS	A	-	-	A	-	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-	-

Intersection												
Int Delay, s/veh 6.5												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	69	0	0	0	149	0	0	0	0	0
Future Vol, veh/h	0	0	69	0	0	0	149	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	75	0	0	0	162	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	75
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	0	-	1524	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	1524	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.5	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	966	-	-	1524	-	-
HCM Lane V/C Ratio	0.168	-	-	-	-	-
HCM Control Delay (s)	9.5	-	-	0	-	0
HCM Lane LOS	A	-	-	A	-	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-	-

APPENDIX I

2026 NO-BUILD PEAK HOUR ANALYSIS

21-1550 Avilla Rancho Vistoso
2026 Background AM

1: Rancho Vistoso Blvd. & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	2.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↖↗	↖↗	
Traffic Vol, veh/h	0	259	0	459	661	5
Future Vol, veh/h	0	259	0	459	661	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	282	0	499	718	5
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	362	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	635	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	635	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	15.1	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	635	-	-		
HCM Lane V/C Ratio	-	0.443	-	-		
HCM Control Delay (s)	-	15.1	-	-		
HCM Lane LOS	-	C	-	-		
HCM 95th %tile Q(veh)	-	2.3	-	-		

21-1550 Avilla Rancho Vistoso
2026 Background PM

1: Rancho Vistoso Blvd. & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↖↗	↖↗	
Traffic Vol, veh/h	0	115	0	758	562	3
Future Vol, veh/h	0	115	0	758	562	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	125	0	824	611	3
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	307	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	689	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	689	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	11.4	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	689	-	-		
HCM Lane V/C Ratio	-	0.181	-	-		
HCM Control Delay (s)	-	11.4	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0.7	-	-		

21-1550 Avilla Rancho Vistoso
2026 Background AM

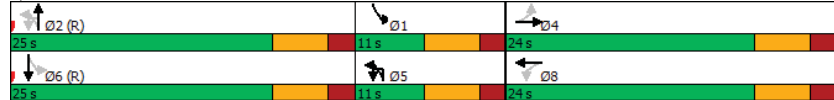
2: Rancho Vistoso Blvd. & Avilla Dr.
Timings

Lane Group	EBL	EBT	WBL	WBT	NBU	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔	↔	↔	↔
Traffic Volume (vph)	2	0	41	0	20	146	596	62	858
Future Volume (vph)	2	0	41	0	20	146	596	62	858
Turn Type	Perm	NA	Perm	NA	pm+pt	pm+pt	NA	pm+pt	NA
Protected Phases	4	4	8	8	5	5	2	1	6
Permitted Phases	4		8		2	2		6	
Detector Phase	4	4	8	8	5	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	11.0	11.0	24.0	11.0	24.0
Total Split (s)	24.0	24.0	24.0	24.0	11.0	11.0	25.0	11.0	25.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	18.3%	18.3%	41.7%	18.3%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0	6.0
Lead/Lag					Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Rancho Vistoso Blvd. & Avilla Dr.



21-1550 Avilla Rancho Vistoso
2026 Background PM

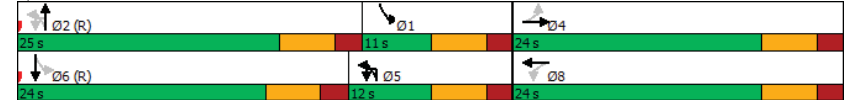
2: Rancho Vistoso Blvd. & Avilla Dr.
Timings

Lane Group	EBL	EBT	WBL	WBT	NBU	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔	↔	↔	↔
Traffic Volume (vph)	6	0	96	0	53	183	924	28	649
Future Volume (vph)	6	0	96	0	53	183	924	28	649
Turn Type	Perm	NA	Perm	NA	pm+pt	pm+pt	NA	pm+pt	NA
Protected Phases	4	4	8	8	5	5	2	1	6
Permitted Phases	4		8		2	2		6	
Detector Phase	4	4	8	8	5	5	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	11.0	11.0	24.0	11.0	24.0
Total Split (s)	24.0	24.0	24.0	24.0	12.0	12.0	25.0	11.0	24.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	20.0%	20.0%	41.7%	18.3%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0	6.0
Lead/Lag					Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Rancho Vistoso Blvd. & Avilla Dr.



21-1550 Avilla Rancho Vistoso
2026 Background AM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔		↔	↔			↔	↔		↔	↔
Traffic Volume (veh/h)	2	0	0	41	0	27	20	146	596	34	62	858
Future Volume (veh/h)	2	0	0	41	0	27	20	146	596	34	62	858
Initial Q (Ob), 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	
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
Work Zone On Approach	No		No	No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	2	0	0	45	0	29		159	648	37	67	933
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	225	0	0	152	0	36		737	1082	62	811	1125
Arrive On Green	0.06	0.00	0.00	0.06	0.00	0.06		0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1699	0	0	903	0	582		1781	3417	195	1781	3647
Grp Volume(v), veh/h	2	0	0	74	0	0		159	337	348	67	933
Grp Sat Flow(s),veh/h/ln	1699	0	0	1485	0	0		1781	1777	1835	1781	1777
Q Serve(g_s), s	0.0	0.0	0.0	2.9	0.0	0.0		0.0	9.6	9.6	0.0	14.6
Cycle Q Clear(g_c), s	0.1	0.0	0.0	2.9	0.0	0.0		0.0	9.6	9.6	0.0	14.6
Prop In Lane	1.00		0.00	0.61		0.39		1.00		0.11	1.00	
Lane Grp Cap(c), veh/h	225	0	0	188	0	0		737	563	581	811	1125
V/C Ratio(X)	0.01	0.00	0.00	0.39	0.00	0.00		0.22	0.60	0.60	0.08	0.83
Avail Cap(c_a), veh/h	554	0	0	540	0	0		737	563	581	811	1125
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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.4	0.0	0.0	27.8	0.0	0.0		13.2	17.3	17.3	9.0	19.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.3	0.0	0.0		0.1	4.6	4.5	0.0	7.1
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
%ile BackOfQ(95%),veh/ln	0.0	0.0	0.0	1.9	0.0	0.0		2.5	7.6	7.8	0.8	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.4	0.0	0.0	29.1	0.0	0.0		13.4	21.9	21.8	9.0	26.1
LnGrp LOS	C	A	A	C	A	A		B	C	C	A	C
Approach Vol, veh/h	2			74				844				1000
Approach Delay, s/veh	26.4			29.1				20.3				25.0
Approach LOS	C			C				C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	25.3	25.0		9.7	25.3	25.0		9.7				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	19.0		18.0	5.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	2.0	11.6		2.1	2.0	16.6		4.9				
Green Ext Time (p_c), s	0.0	2.5		0.0	0.1	1.4		0.2				

Intersection Summary

HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
2026 Background PM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔		↔	↔			↔	↔		↔	↔
Traffic Volume (veh/h)	6	0	0	96	0	64	53	183	924	46	28	649
Future Volume (veh/h)	6	0	0	96	0	64	53	183	924	46	28	649
Initial Q (Ob), 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	
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
Work Zone On Approach	No		No	No		No		No		No		No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	7	0	0	104	0	70		199	1004	50	30	705
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	320	0	0	217	11	89		665	1091	54	551	1066
Arrive On Green	0.15	0.00	0.00	0.15	0.00	0.15		0.25	0.32	0.32	0.24	0.30
Sat Flow, veh/h	1361	0	0	823	73	603		1781	3445	172	1781	3647
Grp Volume(v), veh/h	7	0	0	174	0	0		199	518	536	30	705
Grp Sat Flow(s),veh/h/ln	1361	0	0	1499	0	0		1781	1777	1839	1781	1777
Q Serve(g_s), s	0.0	0.0	0.0	6.1	0.0	0.0		0.0	16.9	16.9	0.0	10.4
Cycle Q Clear(g_c), s	0.3	0.0	0.0	6.7	0.0	0.0		0.0	16.9	16.9	0.0	10.4
Prop In Lane	1.00		0.00	0.60		0.40		1.00		0.09	1.00	
Lane Grp Cap(c), veh/h	320	0	0	316	0	0		665	563	583	551	1066
V/C Ratio(X)	0.02	0.00	0.00	0.55	0.00	0.00		0.30	0.92	0.92	0.05	0.66
Avail Cap(c_a), veh/h	524	0	0	543	0	0		665	563	583	551	1066
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
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.9	0.0	0.0	24.6	0.0	0.0		14.9	19.8	19.8	17.3	18.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.5	0.0	0.0		0.2	22.6	22.1	0.0	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.0	0.0	4.2	0.0	0.0		3.5	14.9	15.2	0.5	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.0	0.0	0.0	26.1	0.0	0.0		15.2	42.4	41.9	17.3	21.6
LnGrp LOS	C	A	A	C	A	A		B	D	D	B	C
Approach Vol, veh/h	7			174				1253				735
Approach Delay, s/veh	22.0			26.1				37.9				21.4
Approach LOS	C			C				D				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	20.2	25.0		14.8	21.2	24.0		14.8				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	19.0		18.0	6.0	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.0	18.9		2.3	2.0	12.4		8.7				
Green Ext Time (p_c), s	0.0	0.1		0.0	0.2	2.3		0.6				

Intersection Summary

HCM 6th Ctrl Delay	31.3
HCM 6th LOS	C

Notes

User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
2026 Background AM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (veh/h)	0
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(q_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

21-1550 Avilla Rancho Vistoso
2026 Background PM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (veh/h)	0
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(q_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑			↑↑
Traffic Vol, veh/h	0	68	562	78	0	898
Future Vol, veh/h	0	68	562	78	0	898
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	74	611	85	0	976

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	- 348	0	0 - -
Stage 1	- -	- -	- -
Stage 2	- -	- -	- -
Critical Hdwy	- 6.94	- -	- -
Critical Hdwy Stg 1	- -	- -	- -
Critical Hdwy Stg 2	- -	- -	- -
Follow-up Hdwy	- 3.32	- -	- -
Pot Cap-1 Maneuver	0 *860	- -	0 - -
Stage 1	0 -	- -	0 - -
Stage 2	0 -	- -	0 - -
Platoon blocked, %	- 1	- -	- -
Mov Cap-1 Maneuver	- *860	- -	- -
Mov Cap-2 Maneuver	- -	- -	- -
Stage 1	- -	- -	- -
Stage 2	- -	- -	- -

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	- -	860	-
HCM Lane V/C Ratio	- -	0.086	-
HCM Control Delay (s)	- -	9.6	-
HCM Lane LOS	- -	A	-
HCM 95th %tile Q(veh)	- -	0.3	-

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

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑			↑↑
Traffic Vol, veh/h	0	148	823	106	0	746
Future Vol, veh/h	0	148	823	106	0	746
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	161	895	115	0	811

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	- 505	0	0 - -
Stage 1	- -	- -	- -
Stage 2	- -	- -	- -
Critical Hdwy	- 6.94	- -	- -
Critical Hdwy Stg 1	- -	- -	- -
Critical Hdwy Stg 2	- -	- -	- -
Follow-up Hdwy	- 3.32	- -	- -
Pot Cap-1 Maneuver	0 *739	- -	0 - -
Stage 1	0 -	- -	0 - -
Stage 2	0 -	- -	0 - -
Platoon blocked, %	- 1	- -	- -
Mov Cap-1 Maneuver	- *739	- -	- -
Mov Cap-2 Maneuver	- -	- -	- -
Stage 1	- -	- -	- -
Stage 2	- -	- -	- -

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	- -	739	-
HCM Lane V/C Ratio	- -	0.218	-
HCM Control Delay (s)	- -	11.2	-
HCM Lane LOS	- -	B	-
HCM 95th %tile Q(veh)	- -	0.8	-

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

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	1067	637	57	0	46
Future Vol, veh/h	0	1067	637	57	0	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1160	692	62	0	50
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	346
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	650
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	650
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	11			
HCM LOS			B			
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	650		
HCM Lane V/C Ratio	-	-	-	0.077		
HCM Control Delay (s)	-	-	-	11		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0.2		

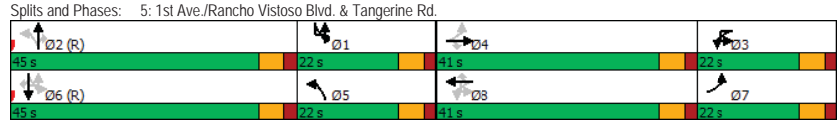
Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	909	990	80	0	111
Future Vol, veh/h	0	909	990	80	0	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	988	1076	87	0	121
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	538
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	488
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	488
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	14.8			
HCM LOS			B			
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	488		
HCM Lane V/C Ratio	-	-	-	0.247		
HCM Control Delay (s)	-	-	-	14.8		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	1		

21-1550 Avilla Rancho Vistoso
2026 Background AM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
Timings

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	180	740	225	5	98	476	109	161	352	121	3	206
Future Volume (vph)	180	740	225	5	98	476	109	161	352	121	3	206
Turn Type	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	pm+pt
Protected Phases	7	4		3	3	8		5	2		1	1
Permitted Phases	4		4	8	8		8	2		2	6	6
Detector Phase	7	4	4	3	3	8	8	5	2	2	1	1
Switch Phase												
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	16.0	40.0	40.0	16.0	16.0	40.0	40.0	16.0	40.0	40.0	16.0	16.0
Total Split (s)	22.0	41.0	41.0	22.0	22.0	41.0	41.0	22.0	45.0	45.0	22.0	22.0
Total Split (%)	16.9%	31.5%	31.5%	16.9%	16.9%	31.5%	31.5%	16.9%	34.6%	34.6%	16.9%	16.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0					0.0	0.0	0.0		
Total Lost Time (s)	6.0	6.0	6.0					6.0	6.0	6.0		
Lead/Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	None	None

Intersection Summary
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection
 Natural Cycle: 115
 Control Type: Actuated-Coordinated

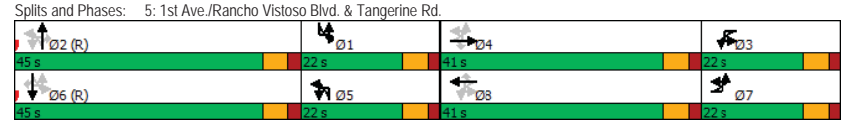


21-1550 Avilla Rancho Vistoso
2026 Background PM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
Timings

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations	↖	↗	↘	↖	↖	↗	↘	↖	↖	↗	↘	↖
Traffic Volume (vph)	3	252	615	199	11	233	741	127	6	181	550	123
Future Volume (vph)	3	252	615	199	11	233	741	127	6	181	550	123
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm
Protected Phases	7	7	4		3	3	8		5	5	2	
Permitted Phases	4	4		4	8	8		8	2	2		2
Detector Phase	7	7	4	4	3	3	8	8	5	5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	16.0	16.0	40.3	40.3	16.0	16.0	40.3	40.3	16.0	16.0	40.3	40.3
Total Split (s)	22.0	22.0	41.0	41.0	22.0	22.0	41.0	41.0	22.0	22.0	45.0	45.0
Total Split (%)	16.9%	16.9%	31.5%	31.5%	16.9%	16.9%	31.5%	31.5%	16.9%	16.9%	34.6%	34.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)			0.0	0.0			0.0	0.0			0.0	0.0
Total Lost Time (s)			6.0	6.0			6.0	6.0			6.0	6.0
Lead/Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	Max	None	None	Max	Max	None	None	C-Max	C-Max

Intersection Summary
 Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection
 Natural Cycle: 115
 Control Type: Actuated-Coordinated



21-1550 Avilla Rancho Vistoso
2026 Background AM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations	↔	↗	↘	↔	↖	↗	↘	↔	↖	↗	↘	↔
Traffic Volume (veh/h)	180	740	225	5	98	476	109	161	352	121	3	206
Future Volume (veh/h)	180	740	225	5	98	476	109	161	352	121	3	206
Initial Q (Ob), 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	
Parking Bus, Adj	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		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870		1870	1870	1870		1870	1870		1870
Adj Flow Rate, veh/h	196	804	245		107	517	118		175	383		132
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92		0.92
Percent Heavy Veh, %	2	2	2		2	2	2		2	2		2
Cap, veh/h	336	922	411		190	700	312		496	1066		568
Arrive On Green	0.14	0.26	0.26		0.08	0.20	0.20		0.18	0.30		0.18
Sat Flow, veh/h	1781	3554	1585		1781	3554	1585		1781	3554		1585
Grp Volume(v), veh/h	196	804	245		107	517	118		175	383		132
Grp Sat Flow(s), veh/h/ln	1781	1777	1585		1781	1777	1585		1781	1777		1585
Q Serve(g_s), s	6.4	28.2	17.6		3.4	17.8	8.4		0.0	11.0		8.3
Cycle Q Clear(g_c), s	6.4	28.2	17.6		3.4	17.8	8.4		0.0	11.0		8.3
Prop In Lane	1.00		1.00		1.00		1.00		1.00			1.00
Lane Grp Cap(c), veh/h	336	922	411		190	700	312		496	1066		568
V/C Ratio(X)	0.58	0.87	0.60		0.56	0.74	0.38		0.35	0.36		0.28
Avail Cap(c_a), veh/h	336	957	427		275	957	427		496	1066		568
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Uniform Delay (d), s/veh	49.1	46.1	42.2		56.3	49.0	45.3		36.3	35.7		34.7
Incr Delay (d2), s/veh	7.2	9.5	3.4		11.6	3.6	1.6		1.5	0.9		1.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0
%ile BackOfQ(95%), veh/ln	10.7	19.7	11.7		7.1	13.0	6.2		8.5	8.6		6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	56.3	55.5	45.6		67.9	52.6	46.9		37.8	36.6		36.2
LnGrp LOS	E	E	D		E	D	D		D	D		C
Approach Vol, veh/h		1245				742			690			
Approach Delay, s/veh		53.7				53.9			36.9			
Approach LOS		D				D			D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	29.5	45.0	15.8	39.7	29.5	45.0	23.9	31.6				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	16.0	39.0	16.0	35.0	16.0	39.0	16.0	35.0				
Max Q Clear Time (g_c+I1), s	2.0	13.0	5.4	30.2	2.0	19.3	8.4	19.8				
Green Ext Time (p_c), s	1.6	3.1	0.6	3.6	1.2	4.4	1.0	5.8				

Intersection Summary												
HCM 6th Ctrl Delay	46.4											
HCM 6th LOS	D											

Notes
User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
2026 Background PM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations	↔	↗	↘	↘	↔	↖	↗	↘	↔	↖	↗	↘
Traffic Volume (veh/h)	3	252	615	199	11	233	741	127	6	181	550	123
Future Volume (veh/h)	3	252	615	199	11	233	741	127	6	181	550	123
Initial Q (Ob), 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	
Parking Bus, Adj	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		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870		1870	1870	1870		1870	1870		1870
Adj Flow Rate, veh/h	274	668	216		253	805	138		197	598		134
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92		0.92
Percent Heavy Veh, %	2	2	2		2	2	2		2	2		2
Cap, veh/h	299	957	427		329	957	427		439	1066		476
Arrive On Green	0.12	0.27	0.27		0.12	0.27	0.27		0.13	0.30		0.30
Sat Flow, veh/h	1781	3554	1585		1781	3554	1585		1781	3554		1585
Grp Volume(v), veh/h	274	668	216		253	805	138		197	598		134
Grp Sat Flow(s), veh/h/ln	1781	1777	1585		1781	1777	1585		1781	1777		1585
Q Serve(g_s), s	13.2	22.0	15.0		8.9	27.8	9.1		0.0	18.4		8.4
Cycle Q Clear(g_c), s	13.2	22.0	15.0		8.9	27.8	9.1		0.0	18.4		8.4
Prop In Lane	1.00		1.00		1.00		1.00		1.00			1.00
Lane Grp Cap(c), veh/h	299	957	427		329	957	427		439	1066		476
V/C Ratio(X)	0.92	0.70	0.51		0.77	0.84	0.32		0.45	0.56		0.28
Avail Cap(c_a), veh/h	307	957	427		337	957	427		439	1066		476
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Uniform Delay (d), s/veh	53.8	42.7	40.2		50.7	44.9	38.0		39.5	38.3		34.8
Incr Delay (d2), s/veh	34.2	4.2	4.2		15.7	8.9	2.0		2.6	2.1		1.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0
%ile BackOfQ(95%), veh/ln	17.0	15.1	10.3		14.0	19.0	6.6		9.7	12.8		6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	88.0	47.0	44.4		66.4	53.8	40.0		42.1	40.4		36.3
LnGrp LOS	F	D	D		E	D	D		D	D		D
Approach Vol, veh/h		1158				1196			929			
Approach Delay, s/veh		56.2				54.9			40.2			
Approach LOS		E				D			D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.6	45.0	21.4	41.0	22.6	45.0	21.4	41.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	16.0	39.0	16.0	35.0	16.0	39.0	16.0	35.0				
Max Q Clear Time (g_c+I1), s	2.0	20.4	10.9	24.0	2.0	15.7	15.2	29.8				
Green Ext Time (p_c), s	1.2	3.9	1.0	6.0	1.3	3.3	0.2	3.5				

Intersection Summary												
HCM 6th Ctrl Delay	48.9											
HCM 6th LOS	D											

Notes
User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
2026 Background AM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	523	166
Future Volume (veh/h)	523	166
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	568	180
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1066	476
Arrive On Green	0.30	0.30
Sat Flow, veh/h	3554	1585
Grp Volume(v), veh/h	568	180
Grp Sat Flow(s),veh/h/ln	1777	1585
Q Serve(g_s), s	17.3	11.7
Cycle Q Clear(q_c), s	17.3	11.7
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1066	476
V/C Ratio(X)	0.53	0.38
Avail Cap(c_a), veh/h	1066	476
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	37.9	35.9
Incr Delay (d2), s/veh	1.9	2.3
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.4	8.5
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	39.8	38.2
LnGrp LOS	D	D
Approach Vol, veh/h	972	
Approach Delay, s/veh	38.0	
Approach LOS	D	
Timer - Assigned Phs		

21-1550 Avilla Rancho Vistoso
2026 Background PM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	SBU	SBL	SBT	SBR
Lane Configurations		↑	↑↑	↑
Traffic Volume (veh/h)	5	170	429	143
Future Volume (veh/h)	5	170	429	143
Initial Q (Qb), veh	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	
Work Zone On Approach	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	
Adj Flow Rate, veh/h	185	466	155	
Peak Hour Factor	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	
Cap, veh/h	397	1066	476	
Arrive On Green	0.13	0.30	0.30	
Sat Flow, veh/h	1781	3554	1585	
Grp Volume(v), veh/h	185	466	155	
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	
Q Serve(g_s), s	0.0	13.7	9.9	
Cycle Q Clear(q_c), s	0.0	13.7	9.9	
Prop In Lane		1.00	1.00	
Lane Grp Cap(c), veh/h	397	1066	476	
V/C Ratio(X)	0.47	0.44	0.33	
Avail Cap(c_a), veh/h	397	1066	476	
HCM Platoon Ratio	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	
Uniform Delay (d), s/veh	43.1	36.7	35.3	
Incr Delay (d2), s/veh	3.1	1.3	1.8	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	9.4	10.0	7.1	
Unsig. Movement Delay, s/veh				
LnGrp Delay(d),s/veh	46.2	38.0	37.1	
LnGrp LOS	D	D	D	
Approach Vol, veh/h		806		
Approach Delay, s/veh		39.7		
Approach LOS		D		
Timer - Assigned Phs				

21-1550 Avilla Rancho Vistoso
2026 Background AM

6: Avilla Dr. & Tangerine Rd.
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗		↖ ↗		↖ ↗		↖ ↗		↖ ↗		↖ ↗	
Traffic Vol, veh/h	0	1176	24	2	833	0	11	0	10	0	0	0
Future Vol, veh/h	0	1176	24	2	833	0	11	0	10	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	150	-	-	0	-	50	0	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1278	26	2	905	0	12	0	11	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	905	0	0	1304
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1106	-	-	527
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	-
Mov Cap-1 Maneuver	*1106	-	-	527
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	30.4	0
HCM LOS			D	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	101	411	*1106	-	-	527	-	-	-	-
HCM Lane V/C Ratio	0.118	0.026	-	-	-	0.004	-	-	-	-
HCM Control Delay (s)	45.4	14	0	-	-	11.9	-	-	0	0
HCM Lane LOS	E	B	A	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	0.1	0	-	-	0	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
2026 Background PM

6: Avilla Dr. & Tangerine Rd.
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗		↖ ↗		↖ ↗		↖ ↗		↖ ↗		↖ ↗	
Traffic Vol, veh/h	0	1022	46	1	10	1088	0	33	0	92	0	0
Future Vol, veh/h	0	1022	46	1	10	1088	0	33	0	92	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	150	-	-	0	-	50	0	-
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1111	50	1	11	1183	0	36	0	100	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1183	0	0	1161
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	6.44
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.52
Pot Cap-1 Maneuver	*962	-	-	262
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	-
Mov Cap-1 Maneuver	*962	-	-	511
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	21.9	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	136	457	*962	-	-	511	-	-	-	-
HCM Lane V/C Ratio	0.264	0.219	-	-	-	0.023	-	-	-	-
HCM Control Delay (s)	40.7	15.1	0	-	-	12.2	-	-	0	0
HCM Lane LOS	E	C	A	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	1	0.8	0	-	-	0.1	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
2026 Background AM

7: Tami Pl. & Tangerine Rd.
HCM 6th TWSC

Intersection							
Int Delay, s/veh	0.1						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑		↑	↑↑	↑	↑	
Traffic Vol, veh/h	1188	2	1	833	3	2	
Future Vol, veh/h	1188	2	1	833	3	2	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	-	150	-	0	-	
Veh in Median Storage, #	0	-	-	0	0	-	
Grade, %	0	-	-	0	0	-	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	1291	2	1	905	3	2	

Major/Minor	Major1	Major2	Minor1	
Conflicting Flow All	0	0	1293	0 1747 647
Stage 1	-	-	-	1292 -
Stage 2	-	-	-	455 -
Critical Hdwy	-	-	4.14	- 6.84 6.94
Critical Hdwy Stg 1	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	5.84 -
Follow-up Hdwy	-	-	2.22	- 3.52 3.32
Pot Cap-1 Maneuver	-	-	532	- *128 414
Stage 1	-	-	-	*221 -
Stage 2	-	-	-	*698 -
Platoon blocked, %	-	-	-	1 -
Mov Cap-1 Maneuver	-	-	532	- *127 414
Mov Cap-2 Maneuver	-	-	-	*127 -
Stage 1	-	-	-	*221 -
Stage 2	-	-	-	*696 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	26.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	176	-	-	532	-
HCM Lane V/C Ratio	0.031	-	-	0.002	-
HCM Control Delay (s)	26.1	-	-	11.8	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

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

21-1550 Avilla Rancho Vistoso
2026 Background PM

7: Tami Pl. & Tangerine Rd.
HCM 6th TWSC

Intersection							
Int Delay, s/veh	0						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑		↑	↑↑	↑	↑	
Traffic Vol, veh/h	1057	3	1	3 1117	1	2	
Future Vol, veh/h	1057	3	1	3 1117	1	2	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Free	Free	Free	Free	Stop	Stop	
RT Channelized	-	None	-	None	-	None	
Storage Length	-	-	-	150	-	0	
Veh in Median Storage, #	0	-	-	-	0	0	
Grade, %	0	-	-	-	0	0	
Peak Hour Factor	92	92	92	92	92	92	
Heavy Vehicles, %	2	2	2	2	2	2	
Mvmt Flow	1149	3	1	3 1214	1	2	

Major/Minor	Major1	Major2	Minor1	
Conflicting Flow All	0	0	1152	0 1766 576
Stage 1	-	-	-	1151 -
Stage 2	-	-	-	615 -
Critical Hdwy	-	-	6.44	4.14 - 6.84 6.94
Critical Hdwy Stg 1	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	5.84 -
Follow-up Hdwy	-	-	2.52	2.22 - 3.52 3.32
Pot Cap-1 Maneuver	-	-	265	602 - *173 460
Stage 1	-	-	-	*263 -
Stage 2	-	-	-	*584 -
Platoon blocked, %	-	-	-	1 -
Mov Cap-1 Maneuver	-	-	456	456 - *172 460
Mov Cap-2 Maneuver	-	-	-	*172 -
Stage 1	-	-	-	*263 -
Stage 2	-	-	-	*579 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	17.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	295	-	-	456	-
HCM Lane V/C Ratio	0.011	-	-	0.01	-
HCM Control Delay (s)	17.3	-	-	13	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

21-1550 Avilla Rancho Vistoso
2026 Background AM

8: Tangerine Rd. & Access A
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	1190	836	0	0	0
Future Vol, veh/h	0	1190	836	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1293	909	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 455
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.32
Pot Cap-1 Maneuver	0	-	- - - 0 *739
Stage 1	0	-	- - - 0 -
Stage 2	0	-	- - - 0 -
Platoon blocked, %	-	-	- - - 1
Mov Cap-1 Maneuver	-	-	- - - *739
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
2026 Background PM

8: Tangerine Rd. & Access A
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	1060	1118	0	0	0
Future Vol, veh/h	0	1060	1118	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1152	1215	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 608
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.32
Pot Cap-1 Maneuver	0	-	- - - 0 *619
Stage 1	0	-	- - - 0 -
Stage 2	0	-	- - - 0 -
Platoon blocked, %	-	-	- - - 1
Mov Cap-1 Maneuver	-	-	- - - *619
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
2026 Background AM

9: Access B & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↕		↕	
Traffic Vol, veh/h	261	0	0	150	0	0
Future Vol, veh/h	261	0	0	150	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	284	0	0	163	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	284	0	447
Stage 1	-	-	-	-	284
Stage 2	-	-	-	-	163
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1278	-	569
Stage 1	-	-	-	-	764
Stage 2	-	-	-	-	866
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1278	-	569
Mov Cap-2 Maneuver	-	-	-	-	569
Stage 1	-	-	-	-	764
Stage 2	-	-	-	-	866

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1278	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

21-1550 Avilla Rancho Vistoso
2026 Background PM

9: Access B & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↕		↕	
Traffic Vol, veh/h	121	0	0	187	0	0
Future Vol, veh/h	121	0	0	187	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	132	0	0	203	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	132	0	335
Stage 1	-	-	-	-	132
Stage 2	-	-	-	-	203
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1453	-	660
Stage 1	-	-	-	-	894
Stage 2	-	-	-	-	831
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1453	-	660
Mov Cap-2 Maneuver	-	-	-	-	660
Stage 1	-	-	-	-	894
Stage 2	-	-	-	-	831

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

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

21-1550 Avilla Rancho Vistoso
2026 Background AM

10: Avilla Dr. & Access C
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↕	↕	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1	1	0
Stage 1	1	-	-
Stage 2	0	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	1022	1084	1622
Stage 1	1022	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1022	1084	1622
Mov Cap-2 Maneuver	1022	-	-
Stage 1	1022	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

21-1550 Avilla Rancho Vistoso
2026 Background PM

10: Avilla Dr. & Access C
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↕	↕	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1	1	0
Stage 1	1	-	-
Stage 2	0	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	1022	1084	1622
Stage 1	1022	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1022	1084	1622
Mov Cap-2 Maneuver	1022	-	-
Stage 1	1022	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	96	0	0	68	0	0	0	0	0	0	0
Future Vol, veh/h	0	96	0	0	68	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	104	0	0	74	0	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	74	0	104	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	2.218	-
Pot Cap-1 Maneuver	1526	-	1488	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1526	-	1488	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1526	-	-	1488	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	75	0	0	161	0	0	0	0	0	0	0
Future Vol, veh/h	0	75	0	0	161	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	82	0	0	175	0	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	175	0	82	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	2.218	-
Pot Cap-1 Maneuver	1401	-	1515	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1401	-	1515	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1401	-	-	1515	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	-	-	0	-	-	0
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-

21-1550 Avilla Rancho Vistoso
2026 Background AM

13: Avilla Dr. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↕	↕	
Traffic Vol, veh/h	2	0	0	0	0	146
Future Vol, veh/h	2	0	0	0	0	146
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	0	0	0	0	159

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	80	80	159
Stage 1	80	-	-
Stage 2	0	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	922	980	1420
Stage 1	943	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	922	980	1420
Mov Cap-2 Maneuver	922	-	-
Stage 1	943	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1420	-	922	-	-
HCM Lane V/C Ratio	-	-	0.002	-	-
HCM Control Delay (s)	0	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

21-1550 Avilla Rancho Vistoso
2026 Background PM

13: Avilla Dr. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↕	↕	
Traffic Vol, veh/h	6	0	0	0	0	183
Future Vol, veh/h	6	0	0	0	0	183
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	0	0	0	0	199

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	100	100	199
Stage 1	100	-	-
Stage 2	0	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	899	956	1373
Stage 1	924	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	899	956	1373
Mov Cap-2 Maneuver	899	-	-
Stage 1	924	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1373	-	899	-	-
HCM Lane V/C Ratio	-	-	0.007	-	-
HCM Control Delay (s)	0	-	9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

21-1550 Avilla Rancho Vistoso
2026 Background AM

14: Woodburne Ave. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	259	2	146	0	0	5
Future Vol, veh/h	259	2	146	0	0	5
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	282	2	159	0	0	5
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	159	0	-	0	725	159
Stage 1	-	-	-	-	159	-
Stage 2	-	-	-	-	566	-
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	1420	-	-	-	392	886
Stage 1	-	-	-	-	870	-
Stage 2	-	-	-	-	568	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1420	-	-	-	314	886
Mov Cap-2 Maneuver	-	-	-	-	314	-
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	568	-
Approach	EB	WB	SB			
HCM Control Delay, s	8.1	0	9.1			
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1420	-	-	-	886	
HCM Lane V/C Ratio	0.198	-	-	-	0.006	
HCM Control Delay (s)	8.2	0	-	-	9.1	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.7	-	-	-	0	

21-1550 Avilla Rancho Vistoso
2026 Background PM

14: Woodburne Ave. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	115	6	183	0	0	3
Future Vol, veh/h	115	6	183	0	0	3
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	125	7	199	0	0	3
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	199	0	-	0	456	199
Stage 1	-	-	-	-	199	-
Stage 2	-	-	-	-	257	-
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	1373	-	-	-	562	842
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	786	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1373	-	-	-	511	842
Mov Cap-2 Maneuver	-	-	-	-	511	-
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	786	-
Approach	EB	WB	SB			
HCM Control Delay, s	7.5	0	9.3			
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1373	-	-	-	842	
HCM Lane V/C Ratio	0.091	-	-	-	0.004	
HCM Control Delay (s)	7.9	0	-	-	9.3	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.3	-	-	-	0	

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	96	0	0	0	68	0	0	0	0	0
Future Vol, veh/h	0	0	96	0	0	0	68	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	104	0	0	0	74	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	104
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	0	-	1488	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	1488	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	946	-	-	1488	-	-
HCM Lane V/C Ratio	0.078	-	-	-	-	-
HCM Control Delay (s)	9.1	-	-	0	-	0
HCM Lane LOS	A	-	-	A	-	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-	-

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	75	0	0	0	161	0	0	0	0	0
Future Vol, veh/h	0	0	75	0	0	0	161	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	82	0	0	0	175	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	-	0	0	82
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	4.12	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.218	-
Pot Cap-1 Maneuver	0	-	1515	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	1515	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.6	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	961	-	-	1515	-	-
HCM Lane V/C Ratio	0.182	-	-	-	-	-
HCM Control Delay (s)	9.6	-	-	0	-	0
HCM Lane LOS	A	-	-	A	-	A
HCM 95th %tile Q(veh)	0.7	-	-	0	-	-

APPENDIX J

2023 BUILD PEAK HOUR ANALYSIS

21-1550 Avilla Rancho Vistoso
2023 Total AM

1: Rancho Vistoso Blvd. & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↘	↗↘	
Traffic Vol, veh/h	0	241	0	427	614	4
Future Vol, veh/h	0	241	0	427	614	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	262	0	464	667	4
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	336	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	660	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	660	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	14	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	660	-	-		
HCM Lane V/C Ratio	-	0.397	-	-		
HCM Control Delay (s)	-	14	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	1.9	-	-		

21-1550 Avilla Rancho Vistoso
2023 Total PM

1: Rancho Vistoso Blvd. & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↘	↗↘	
Traffic Vol, veh/h	0	107	0	704	522	3
Future Vol, veh/h	0	107	0	704	522	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	116	0	765	567	3
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	285	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	712	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	712	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	11	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	712	-	-		
HCM Lane V/C Ratio	-	0.163	-	-		
HCM Control Delay (s)	-	11	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0.6	-	-		

21-1550 Avilla Rancho Vistoso
2023 Total AM

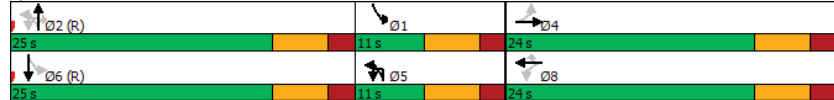
2: Rancho Vistoso Blvd. & Avilla Dr.
Timings

Lane Group	EBL	EBT	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔		↔	↔		↔	↔	↔	↔	↔
Traffic Volume (vph)	2	0	76	0	25	19	136	554	44	58	796
Future Volume (vph)	2	0	76	0	25	19	136	554	44	58	796
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	pm+pt	NA	Perm	pm+pt	NA
Protected Phases		4		8			5	2		1	6
Permitted Phases	4		8		8	2	2		2	6	
Detector Phase	4	4	8	8	8	5	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	11.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	24.0	24.0	24.0	24.0	24.0	11.0	11.0	25.0	25.0	11.0	25.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%	18.3%	18.3%	41.7%	41.7%	18.3%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lag	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Rancho Vistoso Blvd. & Avilla Dr.



21-1550 Avilla Rancho Vistoso
2023 Total PM

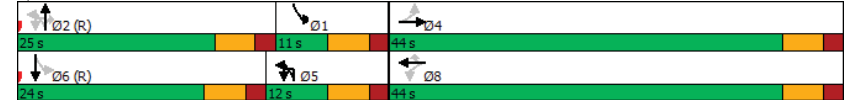
2: Rancho Vistoso Blvd. & Avilla Dr.
Timings

Lane Group	EBL	EBT	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔		↔	↔		↔	↔	↔	↔	↔
Traffic Volume (vph)	5	0	110	0	60	49	170	858	80	26	603
Future Volume (vph)	5	0	110	0	60	49	170	858	80	26	603
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	pm+pt	NA	Perm	pm+pt	NA
Protected Phases		4		8			5	2		1	6
Permitted Phases	4		8		8	2	2		2	6	
Detector Phase	4	4	8	8	8	5	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	44.0	44.0	24.0	24.0	24.0	11.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	44.0	44.0	44.0	44.0	44.0	12.0	12.0	25.0	25.0	11.0	24.0
Total Split (%)	55.0%	55.0%	55.0%	55.0%	55.0%	15.0%	15.0%	31.3%	31.3%	13.8%	30.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lag	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 80
 Actuated Cycle Length: 80
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Rancho Vistoso Blvd. & Avilla Dr.



21-1550 Avilla Rancho Vistoso
2023 Total AM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔			↔	↔		↔	↔	↔	↔	↔
Traffic Volume (veh/h)	2	0	0	76	0	25	19	136	554	44	58	796
Future Volume (veh/h)	2	0	0	76	0	25	19	136	554	44	58	796
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	
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
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	2	0	0	83	0	27		148	602	48	63	865
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	255	0	0	235	0	128		721	1125	502	797	1125
Arrive On Green	0.08	0.00	0.00	0.08	0.00	0.08		0.30	0.32	0.32	0.30	0.32
Sat Flow, veh/h	1673	0	0	1422	0	1585		1781	3554	1585	1781	3647
Grp Volume(v), veh/h	2	0	0	83	0	27		148	602	48	63	865
Grp Sat Flow(s),veh/h/ln	1674	0	0	1422	0	1585		1781	1777	1585	1781	1777
Q Serve(g_s), s	0.0	0.0	0.0	3.4	0.0	1.0		0.0	8.4	1.3	0.0	13.2
Cycle Q Clear(g_c), s	0.1	0.0	0.0	3.4	0.0	1.0		0.0	8.4	1.3	0.0	13.2
Prop In Lane	1.00		0.00	1.00		1.00		1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	255	0	0	235	0	128		721	1125	502	797	1125
V/C Ratio(X)	0.01	0.00	0.00	0.35	0.00	0.21		0.21	0.53	0.10	0.08	0.77
Avail Cap(c_a), veh/h	566	0	0	546	0	476		721	1125	502	797	1125
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
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
Uniform Delay (d), s/veh	25.4	0.0	0.0	26.9	0.0	25.8		13.4	16.9	14.4	8.8	18.5
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.9	0.0	0.8		0.1	1.8	0.4	0.0	5.1
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
%ile BackOfQ(95%),veh/ln	0.0	0.0	0.0	2.1	0.0	0.7		2.4	6.1	0.9	0.7	9.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.4	0.0	0.0	27.8	0.0	26.6		13.5	18.7	14.8	8.9	23.6
LnGrp LOS	C	A	A	C	A	C		B	B	B	A	C
Approach Vol, veh/h	2			110				798				928
Approach Delay, s/veh	25.4			27.5				17.5				22.6
Approach LOS	C			C				B				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	24.1	25.0		10.9	24.1	25.0		10.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	19.0		18.0	5.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	2.0	10.4		2.1	2.0	15.2		5.4				
Green Ext Time (p_c), s	0.0	2.7		0.0	0.1	2.0		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C

Notes
User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
2023 Total PM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔			↔	↔		↔	↔	↔	↔	↔
Traffic Volume (veh/h)	5	0	0	110	0	60	49	170	858	80	26	603
Future Volume (veh/h)	5	0	0	110	0	60	49	170	858	80	26	603
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	
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
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	0	0	120	0	65		185	933	87	28	655
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	136	0	0	256	0	158		931	844	376	870	800
Arrive On Green	0.10	0.00	0.00	0.10	0.00	0.10		0.45	0.24	0.24	0.44	0.22
Sat Flow, veh/h	463	0	0	1669	0	1585		1781	3554	1585	1781	3647
Grp Volume(v), veh/h	5	0	0	120	0	65		185	933	87	28	655
Grp Sat Flow(s),veh/h/ln	463	0	0	1669	0	1585		1781	1777	1585	1781	1777
Q Serve(g_s), s	0.3	0.0	0.0	0.0	0.0	3.1		0.0	19.0	3.5	0.0	14.0
Cycle Q Clear(g_c), s	5.5	0.0	0.0	5.2	0.0	3.1		0.0	19.0	3.5	0.0	14.0
Prop In Lane	1.00		0.00	1.00		1.00		1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	136	0	0	256	0	158		931	844	376	870	800
V/C Ratio(X)	0.04	0.00	0.00	0.47	0.00	0.41		0.20	1.11	0.23	0.03	0.82
Avail Cap(c_a), veh/h	638	0	0	788	0	753		931	844	376	870	800
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
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
Uniform Delay (d), s/veh	37.4	0.0	0.0	34.8	0.0	33.8		11.7	30.5	24.6	12.6	29.5
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.3	0.0	1.7		0.1	64.0	1.4	0.0	9.2
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
%ile BackOfQ(95%),veh/ln	0.2	0.0	0.0	4.1	0.0	2.2		3.2	22.9	2.6	0.5	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.5	0.0	0.0	36.1	0.0	35.5		11.8	94.5	26.0	12.6	38.6
LnGrp LOS	D	A	A	D	A	D		B	F	C	B	D
Approach Vol, veh/h	5			185				1205				683
Approach Delay, s/veh	37.5			35.9				76.9				37.6
Approach LOS	D			D				E				D
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	41.0	25.0		14.0	42.0	24.0		14.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	19.0		38.0	6.0	18.0		38.0				
Max Q Clear Time (g_c+I1), s	2.0	21.0		7.5	2.0	16.0		7.2				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.2	0.9		0.9				

Intersection Summary	
HCM 6th Ctrl Delay	60.2
HCM 6th LOS	E

Notes
User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
2023 Total AM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (veh/h)	0
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(q_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

21-1550 Avilla Rancho Vistoso
2023 Total PM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (veh/h)	0
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(q_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑			↑↑
Traffic Vol, veh/h	0	63	534	72	0	872
Future Vol, veh/h	0	63	534	72	0	872
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	68	580	78	0	948

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	329	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	*860	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	1	-
Mov Cap-1 Maneuver	-	*860	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	860
HCM Lane V/C Ratio	-	-	0.08
HCM Control Delay (s)	-	-	9.5
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.3

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

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑			↑↑
Traffic Vol, veh/h	0	138	801	99	0	713
Future Vol, veh/h	0	138	801	99	0	713
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	150	871	108	0	775

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	490	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	*763	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	1	-
Mov Cap-1 Maneuver	-	*763	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	763
HCM Lane V/C Ratio	-	-	0.197
HCM Control Delay (s)	-	-	10.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.7

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

21-1550 Avilla Rancho Vistoso
2023 Total AM

4: Tangerine Rd. & Vistoso Plaza Lower Drwy.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↔		↔
Traffic Vol, veh/h	0	1006	597	53	0	43
Future Vol, veh/h	0	1006	597	53	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1093	649	58	0	47
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	325
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	671
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	671
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	10.8			
HCM LOS			B			
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	671		
HCM Lane V/C Ratio	-	-	-	0.07		
HCM Control Delay (s)	-	-	-	10.8		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0.2		

21-1550 Avilla Rancho Vistoso
2023 Total PM

4: Tangerine Rd. & Vistoso Plaza Lower Drwy.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↔		↔
Traffic Vol, veh/h	0	852	934	75	0	103
Future Vol, veh/h	0	852	934	75	0	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	926	1015	82	0	112
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	508
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	510
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	510
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	14			
HCM LOS			B			
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	510		
HCM Lane V/C Ratio	-	-	-	0.22		
HCM Control Delay (s)	-	-	-	14		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0.8		

21-1550 Avilla Rancho Vistoso
2023 Total AM

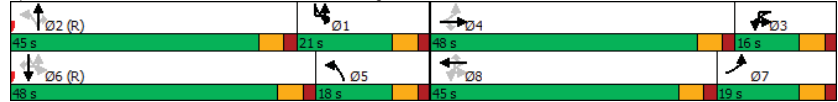
5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
Timings

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	171	687	209	4	91	442	106	149	331	112	3	206
Future Volume (vph)	171	687	209	4	91	442	106	149	331	112	3	206
Turn Type	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	pm+pt
Protected Phases	7	4		3	3	8		5	2		1	1
Permitted Phases	4		4	8	8		8	2		2	6	6
Detector Phase	7	4	4	3	3	8	8	5	2	2	1	1
Switch Phase												
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	16.0	40.3	40.3	16.0	16.0	40.3	40.3	16.0	40.3	40.3	16.0	16.0
Total Split (s)	19.0	48.0	48.0	16.0	16.0	45.0	45.0	18.0	45.0	45.0	21.0	21.0
Total Split (%)	14.6%	36.9%	36.9%	12.3%	12.3%	34.6%	34.6%	13.8%	34.6%	34.6%	16.2%	16.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	None	Max	Max	None	C-Max	C-Max	None	None

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection
 Natural Cycle: 115
 Control Type: Actuated-Coordinated

Splits and Phases: 5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.



21-1550 Avilla Rancho Vistoso
2023 Total PM

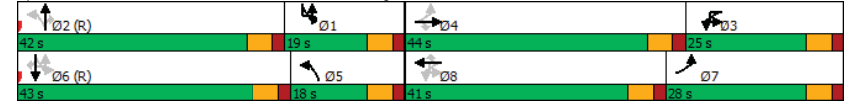
5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
Timings

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	245	572	185	11	216	688	133	168	522	115	4	166
Future Volume (vph)	245	572	185	11	216	688	133	168	522	115	4	166
Turn Type	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	pm+pt
Protected Phases	7	4		3	3	8		5	2		1	1
Permitted Phases	4		4	8	8		8	2		2	6	6
Detector Phase	7	4	4	3	3	8	8	5	2	2	1	1
Switch Phase												
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	16.0	40.0	40.0	16.0	16.0	40.0	40.0	16.0	40.0	40.0	16.0	16.0
Total Split (s)	28.0	44.0	44.0	25.0	25.0	41.0	41.0	18.0	42.0	42.0	19.0	19.0
Total Split (%)	21.5%	33.8%	33.8%	19.2%	19.2%	31.5%	31.5%	13.8%	32.3%	32.3%	14.6%	14.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	None	Max	Max	None	C-Max	C-Max	None	None

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection
 Natural Cycle: 115
 Control Type: Actuated-Coordinated

Splits and Phases: 5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.



21-1550 Avilla Rancho Vistoso
2023 Total AM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
Timings

Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	496	165
Future Volume (vph)	496	165
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6
Switch Phase		
Minimum Initial (s)	5.0	5.0
Minimum Split (s)	40.3	40.3
Total Split (s)	48.0	48.0
Total Split (%)	36.9%	36.9%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	C-Max	C-Max

Intersection Summary

21-1550 Avilla Rancho Vistoso
2023 Total PM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
Timings

Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	404	138
Future Volume (vph)	404	138
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6
Switch Phase		
Minimum Initial (s)	5.0	5.0
Minimum Split (s)	40.0	40.0
Total Split (s)	43.0	43.0
Total Split (%)	33.1%	33.1%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	C-Max	C-Max

Intersection Summary

21-1550 Avilla Rancho Vistoso
2023 Total AM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations	↔	↗	↘	↔	↗	↘	↔	↗	↘	↔	↔	↔
Traffic Volume (veh/h)	171	687	209	4	91	442	106	149	331	112	3	206
Future Volume (veh/h)	171	687	209	4	91	442	106	149	331	112	3	206
Initial Q (Ob), 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	
Parking Bus, Adj	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		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870		1870	1870	1870		1870	1870		1870
Adj Flow Rate, veh/h	186	747	227		99	480	115	162	360	122		224
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92		0.92
Percent Heavy Veh, %	2	2	2		2	2	2		2	2		2
Cap, veh/h	387	1148	512		258	1066	476	355	1066	476		467
Arrive On Green	0.10	0.32	0.32		0.07	0.30	0.30	0.09	0.30	0.30		0.12
Sat Flow, veh/h	1781	3554	1585		1781	3554	1585	1781	3554	1585		1781
Grp Volume(v), veh/h	186	747	227		99	480	115	162	360	122		224
Grp Sat Flow(s),veh/h/ln	1781	1777	1585		1781	1777	1585	1781	1777	1585		1781
Q Serve(g_s), s	0.0	23.4	14.7		0.0	14.2	7.1	0.0	10.3	7.6		0.0
Cycle Q Clear(g_c), s	0.0	23.4	14.7		0.0	14.2	7.1	0.0	10.3	7.6		0.0
Prop In Lane	1.00		1.00		1.00		1.00		1.00			1.00
Lane Grp Cap(c), veh/h	387	1148	512		258	1066	476	355	1066	476		467
V/C Ratio(X)	0.48	0.65	0.44		0.38	0.45	0.24	0.46	0.34	0.26		0.48
Avail Cap(c_a), veh/h	390	1148	512		262	1066	476	355	1066	476		467
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	42.5	37.7	34.8		50.2	36.8	34.3	43.9	35.4	34.5		37.7
Incr Delay (d2), s/veh	4.2	2.9	2.8		4.3	1.4	1.2	3.3	0.9	1.3		2.8
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
%ile BackOfQ(95%),veh/ln	9.7	15.6	9.9		5.9	10.3	5.1	8.7	7.9	5.5		10.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	40.6	37.5		54.5	38.2	35.5	47.2	36.3	35.8		40.4
LnGrp LOS	D	D	D		D	D	D	D	D	D		D
Approach Vol, veh/h		1160			694		644					
Approach Delay, s/veh		41.0			40.1		38.9					
Approach LOS		D			D		D					
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.3	45.0	15.7	48.0	18.3	48.0	18.7	45.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	15.0	39.0	10.0	42.0	12.0	42.0	13.0	39.0				
Max Q Clear Time (g_c+I1), s	2.0	12.3	2.0	25.4	2.0	17.7	2.0	16.2				
Green Ext Time (p_c), s	1.5	2.5	0.4	8.7	0.8	3.9	1.2	6.3				

Intersection Summary

HCM 6th Ctrl Delay	39.4
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
2023 Total PM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations	↔	↗	↘	↔	↔	↗	↘	↔	↔	↗	↘	↔
Traffic Volume (veh/h)	3	245	572	185	11	216	688	133	5	168	522	115
Future Volume (veh/h)	3	245	572	185	11	216	688	133	5	168	522	115
Initial Q (Ob), 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	
Parking Bus, Adj	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		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870		1870	1870	1870		1870	1870		1870
Adj Flow Rate, veh/h	266	622	201		235	748	145		183	567		125
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92		0.92
Percent Heavy Veh, %	2	2	2		2	2	2		2	2		2
Cap, veh/h	308	1039	463		299	957	427		461	984		439
Arrive On Green	0.12	0.29	0.29		0.09	0.27	0.27		0.15	0.28		0.28
Sat Flow, veh/h	1781	3554	1585		1781	3554	1585		1781	3554		1585
Grp Volume(v), veh/h	266	622	201		235	748	145		183	567		125
Grp Sat Flow(s),veh/h/ln	1781	1777	1585		1781	1777	1585		1781	1777		1585
Q Serve(g_s), s	11.5	19.5	13.4		6.6	25.3	9.6		0.0	17.8		8.0
Cycle Q Clear(g_c), s	11.5	19.5	13.4		6.6	25.3	9.6		0.0	17.8		8.0
Prop In Lane	1.00		1.00		1.00		1.00		1.00			1.00
Lane Grp Cap(c), veh/h	308	1039	463		299	957	427		461	984		439
V/C Ratio(X)	0.86	0.60	0.43		0.78	0.78	0.34		0.40	0.58		0.28
Avail Cap(c_a), veh/h	403	1039	463		395	957	427		461	984		439
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Uniform Delay (d), s/veh	52.9	39.5	37.3		52.0	44.0	38.2		38.3	40.4		36.9
Incr Delay (d2), s/veh	26.1	2.6	2.9		18.4	6.3	2.2		2.0	2.5		1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0
%ile BackOfQ(95%),veh/ln	15.8	13.5	9.3		13.5	17.3	7.0		8.9	12.6		5.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	79.0	42.0	40.2		70.4	50.3	40.4		40.3	42.9		38.5
LnGrp LOS	E	D	D		E	D	D		D	D		D
Approach Vol, veh/h		1089			1128		875					
Approach Delay, s/veh		50.7			53.2		41.7					
Approach LOS		D			D		D					
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.0	42.0	18.0	44.0	25.0	43.0	21.0	41.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	13.0	36.0	19.0	38.0	12.0	37.0	22.0	35.0				
Max Q Clear Time (g_c+I1), s	2.0	19.8	8.6	21.5	2.0	15.1	13.5	27.3				
Green Ext Time (p_c), s	1.0	3.5	1.6	7.3	1.0	3.1	1.6	4.7				

Intersection Summary

HCM 6th Ctrl Delay	47.3
HCM 6th LOS	D

Notes

User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
2023 Total AM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	496	165
Future Volume (veh/h)	496	165
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	539	179
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1148	512
Arrive On Green	0.32	0.32
Sat Flow, veh/h	3554	1585
Grp Volume(v), veh/h	539	179
Grp Sat Flow(s),veh/h/ln	1777	1585
Q Serve(g_s), s	15.7	11.2
Cycle Q Clear(q_c), s	15.7	11.2
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1148	512
V/C Ratio(X)	0.47	0.35
Avail Cap(c_a), veh/h	1148	512
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	35.1	33.6
Incr Delay (d2), s/veh	1.4	1.9
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.1	7.9
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	36.5	35.5
LnGrp LOS	D	D
Approach Vol, veh/h	942	
Approach Delay, s/veh	37.2	
Approach LOS	D	
Timer - Assigned Phs		

21-1550 Avilla Rancho Vistoso
2023 Total PM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	SBU	SBL	SBT	SBR
Lane Configurations		↑	↑↑	↑
Traffic Volume (veh/h)	4	166	404	138
Future Volume (veh/h)	4	166	404	138
Initial Q (Qb), veh	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00
Work Zone On Approach	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	
Adj Flow Rate, veh/h	180	439	150	
Peak Hour Factor	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	
Cap, veh/h	434	1011	451	
Arrive On Green	0.15	0.28	0.28	
Sat Flow, veh/h	1781	3554	1585	
Grp Volume(v), veh/h	180	439	150	
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	
Q Serve(g_s), s	0.0	13.1	9.7	
Cycle Q Clear(q_c), s	0.0	13.1	9.7	
Prop In Lane	1.00		1.00	
Lane Grp Cap(c), veh/h	434	1011	451	
V/C Ratio(X)	0.41	0.43	0.33	
Avail Cap(c_a), veh/h	434	1011	451	
HCM Platoon Ratio	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	
Uniform Delay (d), s/veh	41.3	38.0	36.7	
Incr Delay (d2), s/veh	2.3	1.4	2.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	8.9	9.7	7.1	
Unsig. Movement Delay, s/veh				
LnGrp Delay(d),s/veh	43.6	39.3	38.7	
LnGrp LOS	D	D	D	
Approach Vol, veh/h		769		
Approach Delay, s/veh		40.2		
Approach LOS		D		
Timer - Assigned Phs				

21-1550 Avilla Rancho Vistoso
2023 Total AM

6: Avilla Dr. & Tangerine Rd.
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗		↖ ↗		↖ ↗		↖ ↗		↖ ↗		↖ ↗	
Traffic Vol, veh/h	0	1096	22	2	784	0	11	0	9	0	0	0
Future Vol, veh/h	0	1096	22	2	784	0	11	0	9	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	150	-	-	0	-	50	0	-	50
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1191	24	2	852	0	12	0	10	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	852	0	0	1215
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1142	-	-	570
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	-
Mov Cap-1 Maneuver	*1142	-	-	570
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	26.3	0
HCM LOS			D	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	125	439	*1142	-	-	570	-	-	-	-
HCM Lane V/C Ratio	0.096	0.022	-	-	-	0.004	-	-	-	-
HCM Control Delay (s)	36.8	13.4	0	-	-	11.3	-	-	0	0
HCM Lane LOS	E	B	A	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	0.1	0	-	-	0	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
2023 Total PM

6: Avilla Dr. & Tangerine Rd.
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗		↖ ↗		↖ ↗		↖ ↗		↖ ↗		↖ ↗	
Traffic Vol, veh/h	0	960	43	1	9	1017	0	30	0	85	0	0
Future Vol, veh/h	0	960	43	1	9	1017	0	30	0	85	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	150	-	-	0	-	50	0	50
Veh in Median Storage, #	-	0	-	-	-	0	-	-	0	-	-	0
Grade, %	-	0	-	-	-	0	-	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1043	47	1	10	1105	0	33	0	92	0	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1105	0	0	1090
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	6.44
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.52
Pot Cap-1 Maneuver	*998	-	-	291
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	-
Mov Cap-1 Maneuver	*998	-	-	546
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	18.7	0
HCM LOS			C	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	169	482	*998	-	-	546	-	-	-	-
HCM Lane V/C Ratio	0.193	0.192	-	-	-	0.02	-	-	-	-
HCM Control Delay (s)	31.3	14.2	0	-	-	11.7	-	-	0	0
HCM Lane LOS	D	B	A	-	-	B	-	-	A	A
HCM 95th %tile Q(veh)	0.7	0.7	0	-	-	0.1	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
2023 Total AM

7: Tami Pl. & Tangerine Rd.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	1107	2	1	784	3	2
Future Vol, veh/h	1107	2	1	784	3	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1203	2	1	852	3	2

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1205	0	1632
Stage 1	-	-	-	-	1204
Stage 2	-	-	-	-	428
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	575	-	*154
Stage 1	-	-	-	-	*247
Stage 2	-	-	-	-	*720
Platoon blocked, %	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	575	-	*154
Mov Cap-2 Maneuver	-	-	-	-	*154
Stage 1	-	-	-	-	*247
Stage 2	-	-	-	-	*719

Approach	EB	WB	NB
HCM Control Delay, s	0	0	22.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	208	-	-	575	-
HCM Lane V/C Ratio	0.026	-	-	0.002	-
HCM Control Delay (s)	22.8	-	-	11.3	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

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

21-1550 Avilla Rancho Vistoso
2023 Total PM

7: Tami Pl. & Tangerine Rd.
HCM 6th TWSC

Intersection							
Int Delay, s/veh	0						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑	↑↑	↑	↑
Traffic Vol, veh/h	992	3	1	3	1043	1	2
Future Vol, veh/h	992	3	1	3	1043	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	1078	3	1	3	1134	1	2

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1082	1081	0
Stage 1	-	-	-	-	1080
Stage 2	-	-	-	-	575
Critical Hdwy	-	-	6.44	4.14	-
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.52	2.22	-
Pot Cap-1 Maneuver	-	-	294	641	-
Stage 1	-	-	-	-	*287
Stage 2	-	-	-	-	*607
Platoon blocked, %	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	494	494	-
Mov Cap-2 Maneuver	-	-	-	-	*209
Stage 1	-	-	-	-	*287
Stage 2	-	-	-	-	*602

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	337	-	-	494	-
HCM Lane V/C Ratio	0.01	-	-	0.009	-
HCM Control Delay (s)	15.8	-	-	12.3	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

21-1550 Avilla Rancho Vistoso
2023 Total AM

8: Tangerine Rd. & Access A
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	1105	776	0	0	0
Future Vol, veh/h	0	1105	776	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1201	843	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 422
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.32
Pot Cap-1 Maneuver	0	-	- - 0 *763
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	- - - 1
Mov Cap-1 Maneuver	-	-	- - - *763
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
2023 Total PM

8: Tangerine Rd. & Access A
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	984	1038	0	0	0
Future Vol, veh/h	0	984	1038	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1070	1128	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 564
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.32
Pot Cap-1 Maneuver	0	-	- - 0 *643
Stage 1	0	-	- - 0 -
Stage 2	0	-	- - 0 -
Platoon blocked, %	-	-	- - - 1
Mov Cap-1 Maneuver	-	-	- - - *643
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
2023 Total AM

9: Access B & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Traffic Vol, veh/h	243	0	0	140	0	0
Future Vol, veh/h	243	0	0	140	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	264	0	0	152	0	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	264	0	416	264
Stage 1	-	-	-	-	264	-
Stage 2	-	-	-	-	152	-
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	-	-	1300	-	593	775
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	876	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1300	-	593	775
Mov Cap-2 Maneuver	-	-	-	-	593	-
Stage 1	-	-	-	-	780	-
Stage 2	-	-	-	-	876	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	0			
HCM LOS			A			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1300	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

21-1550 Avilla Rancho Vistoso
2023 Total PM

9: Access B & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Traffic Vol, veh/h	112	0	0	173	0	0
Future Vol, veh/h	112	0	0	173	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	122	0	0	188	0	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	122	0	310	122
Stage 1	-	-	-	-	122	-
Stage 2	-	-	-	-	188	-
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	-	-	1465	-	682	929
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	844	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1465	-	682	929
Mov Cap-2 Maneuver	-	-	-	-	682	-
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	844	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	0			
HCM LOS			A			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1465	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

21-1550 Avilla Rancho Vistoso
2023 Total AM

10: Avilla Dr. & Access C
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↕	↕	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1	1	0
Stage 1	1	-	-
Stage 2	0	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	1022	1084	1622
Stage 1	1022	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1022	1084	1622
Mov Cap-2 Maneuver	1022	-	-
Stage 1	1022	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

21-1550 Avilla Rancho Vistoso
2023 Total PM

10: Avilla Dr. & Access C
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↕	↕	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1	1	0
Stage 1	1	-	-
Stage 2	0	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	1022	1084	1622
Stage 1	1022	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1022	1084	1622
Mov Cap-2 Maneuver	1022	-	-
Stage 1	1022	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

21-1550 Avilla Rancho Vistoso
2023 Total AM

11: Avilla Dr. & Access D
HCM 6th ASC

Intersection	
Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Vol, veh/h	12	89	0	0	63	0	0	0	0	0	0	38
Future Vol, veh/h	12	89	0	0	63	0	0	0	0	0	0	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	97	0	0	68	0	0	0	0	0	0	41
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	8.2	7.6	0	6.9
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	0%	12%	0%	0%	0%
Vol Thru, %	100%	88%	100%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	101	0	63	38
LT Vol	0	12	0	0	0
Through Vol	0	89	0	63	0
RT Vol	0	0	0	0	38
Lane Flow Rate	0	110	0	68	41
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0	0.143	0	0.08	0.043
Departure Headway (Hd)	4.403	4.701	4.642	4.19	3.76
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	764	0	850	958
Service Time	2.404	2.424	2.365	2.241	1.76
HCM Lane V/C Ratio	0	0.144	0	0.08	0.043
HCM Control Delay	7.4	8.2	7.4	7.6	6.9
HCM Lane LOS	N	A	N	A	A
HCM 95th-tile Q	0	0.5	0	0.3	0.1

21-1550 Avilla Rancho Vistoso
2023 Total PM

11: Avilla Dr. & Access D
HCM 6th ASC

Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Vol, veh/h	37	69	0	0	149	0	0	0	0	0	0	21
Future Vol, veh/h	37	69	0	0	149	0	0	0	0	0	0	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	75	0	0	162	0	0	0	0	0	0	23
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	8.5	8.2	0	7.1
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	0%	35%	0%	0%	0%
Vol Thru, %	100%	65%	100%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	106	0	149	21
LT Vol	0	37	0	0	0
Through Vol	0	69	0	149	0
RT Vol	0	0	0	0	21
Lane Flow Rate	0	115	0	162	23
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0	0.155	0	0.187	0.025
Departure Headway (Hd)	4.609	4.828	4.653	4.159	3.979
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	742	0	857	905
Service Time	2.61	2.563	2.388	2.214	1.979
HCM Lane V/C Ratio	0	0.155	0	0.189	0.025
HCM Control Delay	7.6	8.5	7.4	8.2	7.1
HCM Lane LOS	N	A	N	A	A
HCM 95th-tile Q	0	0.5	0	0.7	0.1

21-1550 Avilla Rancho Vistoso
2023 Total AM

13: Avilla Dr. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			U	U	
Traffic Vol, veh/h	2	0	0	0	0	136
Future Vol, veh/h	2	0	0	0	0	136
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	0	0	0	0	148

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	74	74	148	0	- 0
Stage 1	74	-	-	-	-
Stage 2	0	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	- -
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	- -
Pot Cap-1 Maneuver	930	988	1434	-	- -
Stage 1	949	-	-	-	- -
Stage 2	-	-	-	-	- -
Platoon blocked, %					
Mov Cap-1 Maneuver	930	988	1434	-	- -
Mov Cap-2 Maneuver	930	-	-	-	- -
Stage 1	949	-	-	-	- -
Stage 2	-	-	-	-	- -

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1434	-	930	-	-
HCM Lane V/C Ratio	-	-	0.002	-	-
HCM Control Delay (s)	0	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

21-1550 Avilla Rancho Vistoso
2023 Total PM

13: Avilla Dr. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			U	U	
Traffic Vol, veh/h	5	0	0	0	0	170
Future Vol, veh/h	5	0	0	0	0	170
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	0	0	0	0	185

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	93	93	185	0	- 0
Stage 1	93	-	-	-	-
Stage 2	0	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	- -
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	- -
Pot Cap-1 Maneuver	907	964	1390	-	- -
Stage 1	931	-	-	-	- -
Stage 2	-	-	-	-	- -
Platoon blocked, %					
Mov Cap-1 Maneuver	907	964	1390	-	- -
Mov Cap-2 Maneuver	907	-	-	-	- -
Stage 1	931	-	-	-	- -
Stage 2	-	-	-	-	- -

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1390	-	907	-	-
HCM Lane V/C Ratio	-	-	0.006	-	-
HCM Control Delay (s)	0	-	9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

21-1550 Avilla Rancho Vistoso
2023 Total AM

14: Woodburne Ave. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	241	2	136	0	0	4
Future Vol, veh/h	241	2	136	0	0	4
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	262	2	148	0	0	4

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	148	0	674
Stage 1	-	-	148
Stage 2	-	-	526
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.318
Pot Cap-1 Maneuver	1434	-	899
Stage 1	-	-	880
Stage 2	-	-	593
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1434	-	899
Mov Cap-2 Maneuver	-	-	343
Stage 1	-	-	719
Stage 2	-	-	593

Approach	EB	WB	SB
HCM Control Delay, s	8	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1434	-	-	-	899
HCM Lane V/C Ratio	0.183	-	-	-	0.005
HCM Control Delay (s)	8.1	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.7	-	-	-	0

21-1550 Avilla Rancho Vistoso
2023 Total PM

14: Woodburne Ave. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	107	5	170	0	0	3
Future Vol, veh/h	107	5	170	0	0	3
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	5	185	0	0	3

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	185	0	422
Stage 1	-	-	185
Stage 2	-	-	237
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.318
Pot Cap-1 Maneuver	1390	-	857
Stage 1	-	-	847
Stage 2	-	-	802
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1390	-	857
Mov Cap-2 Maneuver	-	-	539
Stage 1	-	-	776
Stage 2	-	-	802

Approach	EB	WB	SB
HCM Control Delay, s	7.5	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1390	-	-	-	857
HCM Lane V/C Ratio	0.084	-	-	-	0.004
HCM Control Delay (s)	7.8	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.3	-	-	-	0

APPENDIX K

2026 BUILD PEAK HOUR ANALYSIS

21-1550 Avilla Rancho Vistoso
2026 Total AM

1: Rancho Vistoso Blvd. & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	2.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↗	↗↗	
Traffic Vol, veh/h	0	259	0	459	661	5
Future Vol, veh/h	0	259	0	459	661	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	282	0	499	718	5
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	362	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	635	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	635	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	15.1	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	635	-	-		
HCM Lane V/C Ratio	-	0.443	-	-		
HCM Control Delay (s)	-	15.1	-	-		
HCM Lane LOS	-	C	-	-		
HCM 95th %tile Q(veh)	-	2.3	-	-		

21-1550 Avilla Rancho Vistoso
2026 Total PM

1: Rancho Vistoso Blvd. & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↗	↗↗	
Traffic Vol, veh/h	0	115	0	758	562	3
Future Vol, veh/h	0	115	0	758	562	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	125	0	824	611	3
Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	-	307	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	689	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	689	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB	SB			
HCM Control Delay, s	11.4	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR		
Capacity (veh/h)	-	689	-	-		
HCM Lane V/C Ratio	-	0.181	-	-		
HCM Control Delay (s)	-	11.4	-	-		
HCM Lane LOS	-	B	-	-		
HCM 95th %tile Q(veh)	-	0.7	-	-		

21-1550 Avilla Rancho Vistoso
2026 Total AM

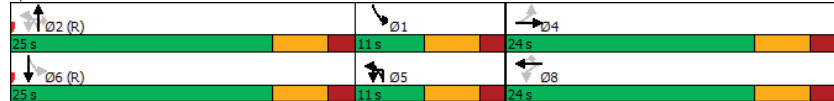
2: Rancho Vistoso Blvd. & Avilla Dr.
Timings

Lane Group	EBL	EBT	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔		↔	↔		↔	↔	↔	↔	↔
Traffic Volume (vph)	2	0	79	0	27	20	150	596	46	62	858
Future Volume (vph)	2	0	79	0	27	20	150	596	46	62	858
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	pm+pt	NA	Perm	pm+pt	NA
Protected Phases		4		8			5	2		1	6
Permitted Phases	4		8		8	2	2		2	6	
Detector Phase	4	4	8	8	8	5	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	11.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	24.0	24.0	24.0	24.0	24.0	11.0	11.0	25.0	25.0	11.0	25.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%	18.3%	18.3%	41.7%	41.7%	18.3%	41.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		2.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		8.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lag	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Rancho Vistoso Blvd. & Avilla Dr.



21-1550 Avilla Rancho Vistoso
2026 Total PM

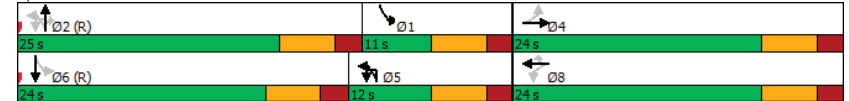
2: Rancho Vistoso Blvd. & Avilla Dr.
Timings

Lane Group	EBL	EBT	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔		↔	↔		↔	↔	↔	↔	↔
Traffic Volume (vph)	6	0	117	0	64	53	197	924	83	28	649
Future Volume (vph)	6	0	117	0	64	53	197	924	83	28	649
Turn Type	Perm	NA	Perm	NA	Perm	pm+pt	pm+pt	NA	Perm	pm+pt	NA
Protected Phases		4		8			5	2		1	6
Permitted Phases	4		8		8	2	2		2	6	
Detector Phase	4	4	8	8	8	5	5	2	2	1	6
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	11.0	11.0	24.0	24.0	11.0	24.0
Total Split (s)	24.0	24.0	24.0	24.0	24.0	12.0	12.0	25.0	25.0	11.0	24.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	40.0%	20.0%	20.0%	41.7%	41.7%	18.3%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0
Lead/Lag						Lag	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?						Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 60
 Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated

Splits and Phases: 2: Rancho Vistoso Blvd. & Avilla Dr.



21-1550 Avilla Rancho Vistoso
2026 Total AM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔			↔	↔		↔	↔	↔	↔	↔
Traffic Volume (veh/h)	2	0	15	79	0	27	20	150	596	46	62	858
Future Volume (veh/h)	2	0	15	79	0	27	20	150	596	46	62	858
Initial Q (Ob), 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	No		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	2	0	16	86	0	29	163	648	50	67	933	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	71	5	76	244	0	136	694	1125	502	773	1125	
Arrive On Green	0.09	0.00	0.09	0.09	0.00	0.09	0.30	0.32	0.32	0.30	0.32	
Sat Flow, veh/h	89	92	1452	1444	0	1585	1781	3554	1585	1781	1777	3647
Grp Volume(v), veh/h	18	0	0	86	0	29	163	648	50	67	933	
Grp Sat Flow(s),veh/h/ln	1634	0	0	1444	0	1585	1781	1777	1585	1781	1777	
Q Serve(g_s), s	0.0	0.0	0.0	2.8	0.0	1.0	0.0	9.1	1.3	0.0	14.6	
Cycle Q Clear(g_c), s	0.6	0.0	0.0	3.4	0.0	1.0	0.0	9.1	1.3	0.0	14.6	
Prop In Lane	0.11		0.89	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	207	0	0	244	0	136	694	1125	502	773	1125	
V/C Ratio(X)	0.09	0.00	0.00	0.35	0.00	0.21	0.23	0.58	0.10	0.09	0.83	
Avail Cap(c_a), veh/h	542	0	0	543	0	476	694	1125	502	773	1125	
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	26.3	0.0	0.0	26.6	0.0	25.6	14.2	17.1	14.5	9.5	19.0	
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.9	0.0	0.8	0.2	2.1	0.4	0.0	7.1	
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	
%ile BackOfQ(95%),veh/ln	0.4	0.0	0.0	2.1	0.0	0.7	2.5	6.2	0.8	0.7	10.1	
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.5	0.0	0.0	27.5	0.0	26.3	14.4	19.3	14.9	9.6	26.1	
LnGrp LOS	C	A	A	C	A	C	B	B	B	A	C	
Approach Vol, veh/h		18			115			861				1000
Approach Delay, s/veh		26.5			27.2			18.1				25.0
Approach LOS		C			C			B				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	23.9	25.0		11.1	23.9	25.0		11.1				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	19.0		18.0	5.0	19.0		18.0				
Max Q Clear Time (g_c+I1), s	2.0	11.1		2.6	2.0	16.6		5.4				
Green Ext Time (p_c), s	0.0	2.5		0.0	0.1	1.3		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C

Notes
User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
2026 Total PM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔			↔	↔		↔	↔	↔	↔	↔
Traffic Volume (veh/h)	6	0	9	117	0	64	53	197	924	83	28	649
Future Volume (veh/h)	6	0	9	117	0	64	53	197	924	83	28	649
Initial Q (Ob), 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	No		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	7	0	10	127	0	70	214	1004	90	30	705	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	109	28	75	298	0	193	710	1125	502	602	1066	
Arrive On Green	0.12	0.00	0.12	0.12	0.00	0.12	0.28	0.32	0.32	0.26	0.30	
Sat Flow, veh/h	199	233	617	1462	0	1585	1781	3554	1585	1781	1777	3647
Grp Volume(v), veh/h	17	0	0	127	0	70	214	1004	90	30	705	
Grp Sat Flow(s),veh/h/ln	1049	0	0	1462	0	1585	1781	1777	1585	1781	1777	
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	2.4	0.0	16.1	2.5	0.0	10.4	
Cycle Q Clear(g_c), s	4.9	0.0	0.0	4.9	0.0	2.4	0.0	16.1	2.5	0.0	10.4	
Prop In Lane	0.41		0.59	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	213	0	0	298	0	193	710	1125	502	602	1066	
V/C Ratio(X)	0.08	0.00	0.00	0.43	0.00	0.36	0.30	0.89	0.18	0.05	0.66	
Avail Cap(c_a), veh/h	474	0	0	548	0	476	710	1125	502	602	1066	
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	23.4	0.0	0.0	25.3	0.0	24.2	14.0	19.5	14.9	15.9	18.3	
Incr Delay (d2), s/veh	0.2	0.0	0.0	1.0	0.0	1.1	0.2	10.8	0.8	0.0	3.2	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	0.4	0.0	0.0	3.1	0.0	1.7	3.6	12.2	1.7	0.5	7.8	
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.6	0.0	0.0	26.2	0.0	25.3	14.2	30.3	15.6	15.9	21.6	
LnGrp LOS	C	A	A	C	A	C	B	C	B	B	C	
Approach Vol, veh/h		17			197			1308				735
Approach Delay, s/veh		23.6			25.9			26.7				21.3
Approach LOS		C			C			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	21.7	25.0		13.3	22.7	24.0		13.3				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	5.0	19.0		18.0	6.0	18.0		18.0				
Max Q Clear Time (g_c+I1), s	2.0	18.1		6.9	2.0	12.4		6.9				
Green Ext Time (p_c), s	0.0	0.6		0.0	0.2	2.3		0.6				

Intersection Summary	
HCM 6th Ctrl Delay	24.9
HCM 6th LOS	C

Notes
User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
2026 Total AM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (veh/h)	0
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(q_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

21-1550 Avilla Rancho Vistoso
2026 Total PM

2: Rancho Vistoso Blvd. & Avilla Dr.
HCM 6th Signalized Intersection Summary

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	0
Future Volume (veh/h)	0
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	2
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(q_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

21-1550 Avilla Rancho Vistoso
2026 Total AM

3: Rancho Vistoso Blvd. & Vistoso Plaza Central Drwy.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑↑	↑↑			↑↑
Traffic Vol, veh/h	0	68	578	78	0	951
Future Vol, veh/h	0	68	578	78	0	951
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	74	628	85	0	1034

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	357	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	*866	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	1	-
Mov Cap-1 Maneuver	-	*866	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	866	-
HCM Lane V/C Ratio	-	0.085	-
HCM Control Delay (s)	-	9.5	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	0.3	-

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

21-1550 Avilla Rancho Vistoso
2026 Total PM

3: Rancho Vistoso Blvd. & Vistoso Plaza Central Drwy.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑↑	↑↑			↑↑
Traffic Vol, veh/h	0	148	874	106	0	776
Future Vol, veh/h	0	148	874	106	0	776
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	161	950	115	0	843

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	533	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	*715	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	1	-
Mov Cap-1 Maneuver	-	*715	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	715	-
HCM Lane V/C Ratio	-	0.225	-
HCM Control Delay (s)	-	11.5	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.9	-

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

21-1550 Avilla Rancho Vistoso
2026 Total AM

4: Tangerine Rd. & Vistoso Plaza Lower Drwy.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	1101	647	57	0	46
Future Vol, veh/h	0	1101	647	57	0	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1197	703	62	0	50
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	352
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	644
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	644
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	11.1			
HCM LOS			B			
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	644		
HCM Lane V/C Ratio	-	-	-	0.078		
HCM Control Delay (s)	-	-	-	11.1		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0.3		

21-1550 Avilla Rancho Vistoso
2026 Total PM

4: Tangerine Rd. & Vistoso Plaza Lower Drwy.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	928	1023	80	0	111
Future Vol, veh/h	0	928	1023	80	0	111
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1009	1112	87	0	121
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	556
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0	475
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	475
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	15.1			
HCM LOS			C			
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	475		
HCM Lane V/C Ratio	-	-	-	0.254		
HCM Control Delay (s)	-	-	-	15.1		
HCM Lane LOS	-	-	-	C		
HCM 95th %tile Q(veh)	-	-	-	1		

21-1550 Avilla Rancho Vistoso
2026 Total AM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
Timings

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations	↖	↗	↘	↙	↘	↗	↖	↙	↘	↗	↖	↘
Traffic Volume (vph)	184	749	233	5	98	479	117	164	357	121	3	230
Future Volume (vph)	184	749	233	5	98	479	117	164	357	121	3	230
Turn Type	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	pm+pt
Protected Phases	7	4		3	3	8		5	2		1	1
Permitted Phases	4		4	8	8		8	2		2	6	6
Detector Phase	7	4	4	3	3	8	8	5	2	2	1	1
Switch Phase												
Minimum Initial (s)	10.0	5.0	5.0	10.0	10.0	5.0	5.0	10.0	5.0	5.0	10.0	10.0
Minimum Split (s)	16.0	40.3	40.3	16.0	16.0	40.3	40.3	16.0	40.3	40.3	16.0	16.0
Total Split (s)	20.0	47.0	47.0	16.0	16.0	43.0	43.0	19.0	46.0	46.0	21.0	21.0
Total Split (%)	15.4%	36.2%	36.2%	12.3%	12.3%	33.1%	33.1%	14.6%	35.4%	35.4%	16.2%	16.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0									
Total Lost Time (s)	6.0	6.0	6.0									
Lead/Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	None	Max	Max	None	C-Max	C-Max	None	None

Intersection Summary

Cycle Length: 130

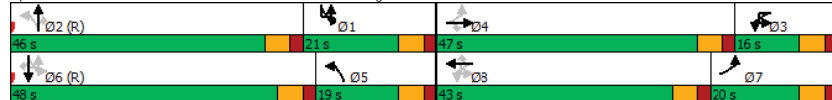
Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.



21-1550 Avilla Rancho Vistoso
2026 Total PM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
Timings

Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations	↖	↗	↘	↙	↙	↘	↗	↖	↙	↘	↗	↖
Traffic Volume (vph)	3	263	620	204	11	233	750	151	6	189	567	123
Future Volume (vph)	3	263	620	204	11	233	750	151	6	189	567	123
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm	pm+pt	pm+pt	NA	Perm
Protected Phases	7	7	4		3	3	8		5	5	2	
Permitted Phases	4	4		4	8	8		8	2	2		2
Detector Phase	7	7	4	4	3	3	8	8	5	5	2	2
Switch Phase												
Minimum Initial (s)	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	16.0	16.0	40.3	40.3	16.0	16.0	40.3	40.3	16.0	16.0	40.3	40.3
Total Split (s)	27.0	27.0	42.0	42.0	27.0	27.0	42.0	42.0	16.0	16.0	44.0	44.0
Total Split (%)	20.8%	20.8%	32.3%	32.3%	20.8%	20.8%	32.3%	32.3%	12.3%	12.3%	33.8%	33.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0					0.0	0.0		
Total Lost Time (s)		6.0	6.0	6.0					6.0	6.0		
Lead/Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	Max	Max	None	None	Max	Max	None	None	C-Max	C-Max

Intersection Summary

Cycle Length: 130

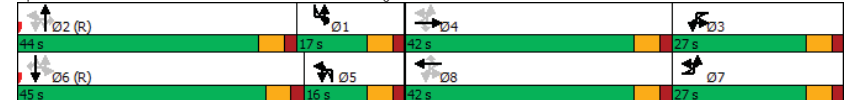
Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green, Master Intersection

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.



21-1550 Avilla Rancho Vistoso
2026 Total AM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
Timings

Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	540	177
Future Volume (vph)	540	177
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6
Switch Phase		
Minimum Initial (s)	5.0	5.0
Minimum Split (s)	40.3	40.3
Total Split (s)	48.0	48.0
Total Split (%)	36.9%	36.9%
Yellow Time (s)	4.0	4.0
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.0	6.0
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	C-Max	C-Max

Intersection Summary

21-1550 Avilla Rancho Vistoso
2026 Total PM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
Timings

Lane Group	SBU	SBL	SBT	SBR
Lane Configurations		↑	↑↑	↑
Traffic Volume (vph)	5	184	439	149
Future Volume (vph)	5	184	439	149
Turn Type	pm+pt	pm+pt	NA	Perm
Protected Phases	1	1	6	
Permitted Phases	6	6		6
Detector Phase	1	1	6	6
Switch Phase				
Minimum Initial (s)	10.0	10.0	5.0	5.0
Minimum Split (s)	16.0	16.0	40.3	40.3
Total Split (s)	17.0	17.0	45.0	45.0
Total Split (%)	13.1%	13.1%	34.6%	34.6%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	C-Max

Intersection Summary

21-1550 Avilla Rancho Vistoso
2026 Total AM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL
Lane Configurations	↔	↗	↘		↖	↗	↘	↔	↗	↘		↖
Traffic Volume (veh/h)	184	749	233	5	98	479	117	164	357	121	3	230
Future Volume (veh/h)	184	749	233	5	98	479	117	164	357	121	3	230
Initial Q (Ob), 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
Parking Bus, Adj	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		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870		1870	1870	1870	1870	1870	1870		1870
Adj Flow Rate, veh/h	200	814	253		107	521	127	178	388	132		250
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92		0.92
Percent Heavy Veh, %	2	2	2		2	2	2	2	2	2		2
Cap, veh/h	371	1121	500		232	1011	451	357	1093	488		460
Arrive On Green	0.11	0.32	0.32		0.08	0.28	0.28	0.10	0.31	0.31		0.12
Sat Flow, veh/h	1781	3554	1585		1781	3554	1585	1781	3554	1585		1781
Grp Volume(v), veh/h	200	814	253		107	521	127	178	388	132		250
Grp Sat Flow(s),veh/h/ln	1781	1777	1585		1781	1777	1585	1781	1777	1585		1781
Q Serve(g_s), s	0.0	26.4	16.9		0.0	16.0	8.1	0.0	11.0	8.2		0.0
Cycle Q Clear(g_c), s	0.0	26.4	16.9		0.0	16.0	8.1	0.0	11.0	8.2		0.0
Prop In Lane	1.00		1.00		1.00		1.00		1.00			1.00
Lane Grp Cap(c), veh/h	371	1121	500		232	1011	451	357	1093	488		460
V/C Ratio(X)	0.54	0.73	0.51		0.46	0.52	0.28	0.50	0.35	0.27		0.54
Avail Cap(c_a), veh/h	374	1121	500		235	1011	451	357	1093	488		460
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	45.3	39.5	36.3		53.5	39.0	36.2	44.8	35.0	34.0		39.3
Incr Delay (d2), s/veh	5.5	4.1	3.6		6.4	1.9	1.6	3.9	0.9	1.4		3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0
%ile BackOfQ(95%),veh/ln	10.4	17.4	11.2		6.5	11.4	5.9	9.4	8.4	5.9		12.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	43.6	39.9		59.9	40.9	37.7	48.7	35.9	35.3		43.0
LnGrp LOS	D	D	D		E	D	D	D	D	D		D
Approach Vol, veh/h	1267			755				698				
Approach Delay, s/veh	44.0			43.0				39.0				
Approach LOS	D			D				D				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.2	46.0	15.8	47.0	19.2	48.0	19.8	43.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	15.0	40.0	10.0	41.0	13.0	42.0	14.0	37.0				
Max Q Clear Time (g_c+I1), s	2.0	13.0	2.0	28.4	2.0	19.4	2.0	18.0				
Green Ext Time (p_c), s	1.7	2.8	0.4	7.8	1.0	4.3	1.4	6.3				

Intersection Summary

HCM 6th Ctrl Delay	41.4
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
2026 Total PM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations	↔	↗	↘	↗		↖	↗	↘	↔	↗	↘	↖
Traffic Volume (veh/h)	3	263	620	204	11	233	750	151	6	189	567	123
Future Volume (veh/h)	3	263	620	204	11	233	750	151	6	189	567	123
Initial Q (Ob), 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
Parking Bus, Adj	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		No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870		1870	1870	1870	1870	1870	1870		1870
Adj Flow Rate, veh/h	286	674	222		253	815	164		205	616		134
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92		0.92
Percent Heavy Veh, %	2	2	2		2	2	2		2	2		2
Cap, veh/h	323	984	439		354	984	439		394	1039		463
Arrive On Green	0.13	0.28	0.28		0.13	0.28	0.28		0.11	0.29		0.29
Sat Flow, veh/h	1781	3554	1585		1781	3554	1585		1781	3554		1585
Grp Volume(v), veh/h	286	674	222		253	815	164		205	616		134
Grp Sat Flow(s),veh/h/ln	1781	1777	1585		1781	1777	1585		1781	1777		1585
Q Serve(g_s), s	13.7	22.0	15.3		8.3	28.0	10.8		0.0	19.3		8.5
Cycle Q Clear(g_c), s	13.7	22.0	15.3		8.3	28.0	10.8		0.0	19.3		8.5
Prop In Lane	1.00		1.00		1.00		1.00		1.00			1.00
Lane Grp Cap(c), veh/h	323	984	439		354	984	439		394	1039		463
V/C Ratio(X)	0.89	0.68	0.51		0.71	0.83	0.37		0.52	0.59		0.29
Avail Cap(c_a), veh/h	379	984	439		410	984	439		394	1039		463
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Uniform Delay (d), s/veh	52.5	41.9	39.5		48.9	44.1	37.9		43.2	39.4		35.6
Incr Delay (d2), s/veh	28.1	3.9	4.1		11.7	8.0	2.4		3.9	2.5		1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0
%ile BackOfQ(95%),veh/ln	16.9	15.1	10.4		13.4	18.9	7.9		10.4	13.3		6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.6	45.8	43.6		60.6	52.1	40.3		47.1	41.9		37.1
LnGrp LOS	F	D	D		E	D	D		D	D		D
Approach Vol, veh/h	1182			1232				955				
Approach Delay, s/veh	53.8			52.3				42.3				
Approach LOS	D			D				D				
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	21.1	44.0	22.9	42.0	20.1	45.0	22.9	42.0				
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0				
Max Green Setting (Gmax), s	11.0	38.0	21.0	36.0	10.0	39.0	21.0	36.0				
Max Q Clear Time (g_c+I1), s	3.6	21.3	10.3	24.0	2.0	16.1	15.7	30.0				
Green Ext Time (p_c), s	0.9	3.9	1.7	6.4	1.0	3.4	1.2	4.1				

Intersection Summary

HCM 6th Ctrl Delay	48.2
HCM 6th LOS	D

Notes

User approved ignoring U-Turning movement.

21-1550 Avilla Rancho Vistoso
2026 Total AM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	540	177
Future Volume (veh/h)	540	177
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	587	192
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1148	512
Arrive On Green	0.32	0.32
Sat Flow, veh/h	3554	1585
Grp Volume(v), veh/h	587	192
Grp Sat Flow(s),veh/h/ln	1777	1585
Q Serve(g_s), s	17.4	12.1
Cycle Q Clear(q_c), s	17.4	12.1
Prop In Lane	1.00	
Lane Grp Cap(c), veh/h	1148	512
V/C Ratio(X)	0.51	0.37
Avail Cap(c_a), veh/h	1148	512
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	35.7	33.9
Incr Delay (d2), s/veh	1.6	2.1
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.1	8.5
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	37.3	36.0
LnGrp LOS	D	D
Approach Vol, veh/h	1029	
Approach Delay, s/veh	38.4	
Approach LOS	D	
Timer - Assigned Phs		

21-1550 Avilla Rancho Vistoso
2026 Total PM

5: 1st Ave./Rancho Vistoso Blvd. & Tangerine Rd.
HCM 6th Signalized Intersection Summary

Movement	SBU	SBL	SBT	SBR
Lane Configurations		↑	↑↑	↑
Traffic Volume (veh/h)	5	184	439	149
Future Volume (veh/h)	5	184	439	149
Initial Q (Qb), veh	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00
Work Zone On Approach	No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	
Adj Flow Rate, veh/h	200	477	162	
Peak Hour Factor	0.92	0.92	0.92	
Percent Heavy Veh, %	2	2	2	
Cap, veh/h	365	1066	476	
Arrive On Green	0.12	0.30	0.30	
Sat Flow, veh/h	1781	3554	1585	
Grp Volume(v), veh/h	200	477	162	
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	
Q Serve(g_s), s	1.6	14.1	10.4	
Cycle Q Clear(q_c), s	1.6	14.1	10.4	
Prop In Lane	1.00	1.00	1.00	
Lane Grp Cap(c), veh/h	365	1066	476	
V/C Ratio(X)	0.55	0.45	0.34	
Avail Cap(c_a), veh/h	365	1066	476	
HCM Platoon Ratio	1.00	1.00	1.00	
Upstream Filter(I)	1.00	1.00	1.00	
Uniform Delay (d), s/veh	46.1	36.8	35.5	
Incr Delay (d2), s/veh	4.7	1.4	1.9	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	10.2	10.3	7.5	
Unsig. Movement Delay, s/veh				
LnGrp Delay(d),s/veh	50.8	38.1	37.4	
LnGrp LOS	D	D	D	
Approach Vol, veh/h		839		
Approach Delay, s/veh		41.0		
Approach LOS		D		
Timer - Assigned Phs				

21-1550 Avilla Rancho Vistoso
2026 Total AM

6: Avilla Dr. & Tangerine Rd.
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	4	1180	24	2	844	5	11	0	10	17	0	14
Future Vol, veh/h	4	1180	24	2	844	5	11	0	10	17	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	150	-	-	0	-	50	0	-	50
Veh in Median Storage, #	-	0	-	-	0	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	0	-	-	0	-	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	1283	26	2	917	5	12	0	11	18	0	15

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	922	0	0	1309
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	4.14
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22
Pot Cap-1 Maneuver	*1120	-	-	524
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	-
Mov Cap-1 Maneuver	*1120	-	-	524
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	32.8	22.6
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	92	409	*1120	-	-	524	-	-	147	748
HCM Lane V/C Ratio	0.13	0.027	0.004	-	-	0.004	-	-	0.126	0.02
HCM Control Delay (s)	49.9	14	8.2	-	-	11.9	-	-	33	9.9
HCM Lane LOS	E	B	A	-	-	B	-	-	D	A
HCM 95th %tile Q(veh)	0.4	0.1	0	-	-	0	-	-	0.4	0.1

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

21-1550 Avilla Rancho Vistoso
2026 Total PM

6: Avilla Dr. & Tangerine Rd.
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗		↔ ↗	
Traffic Vol, veh/h	14	1033	46	1	10	1094	17	33	0	92	10	0
Future Vol, veh/h	14	1033	46	1	10	1094	17	33	0	92	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	-	150	-	0	-	50	0	-	50
Veh in Median Storage, #	-	0	-	-	0	-	0	-	-	0	-	-
Grade, %	-	0	-	-	0	-	0	-	-	0	-	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	1123	50	1	11	1189	18	36	0	100	11	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	1207	0	0	1173
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.14	-	-	6.44
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.52
Pot Cap-1 Maneuver	*926	-	-	257
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	1	-	-	-
Mov Cap-1 Maneuver	*926	-	-	505
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	22.7	30.8
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	128	453	*926	-	-	505	-	-	97	619
HCM Lane V/C Ratio	0.28	0.221	0.016	-	-	0.024	-	-	0.112	0.014
HCM Control Delay (s)	43.7	15.2	9	-	-	12.3	-	-	46.7	10.9
HCM Lane LOS	E	C	A	-	-	B	-	-	E	B
HCM 95th %tile Q(veh)	1.1	0.8	0.1	-	-	0.1	-	-	0.4	0

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

21-1550 Avilla Rancho Vistoso
2026 Total AM

7: Tami Pl. & Tangerine Rd.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↑	↑↑	↑	↑
Traffic Vol, veh/h	1196	2	1	858	3	2
Future Vol, veh/h	1196	2	1	858	3	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1300	2	1	933	3	2

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0 1302	0 1770 651
Stage 1	-	-	- 1301 -
Stage 2	-	-	- 469 -
Critical Hdwy	-	- 4.14	- 6.84 6.94
Critical Hdwy Stg 1	-	-	- 5.84 -
Critical Hdwy Stg 2	-	-	- 5.84 -
Follow-up Hdwy	-	- 2.22	- 3.52 3.32
Pot Cap-1 Maneuver	-	- 528	- *119 411
Stage 1	-	-	- *219 -
Stage 2	-	-	- *706 -
Platoon blocked, %	-	-	- 1
Mov Cap-1 Maneuver	-	- 528	- *119 411
Mov Cap-2 Maneuver	-	-	- *119 -
Stage 1	-	-	- *219 -
Stage 2	-	-	- *705 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	27.4
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	166	-	-	528	-
HCM Lane V/C Ratio	0.033	-	-	0.002	-
HCM Control Delay (s)	27.4	-	-	11.8	-
HCM Lane LOS	D	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

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

21-1550 Avilla Rancho Vistoso
2026 Total PM

7: Tami Pl. & Tangerine Rd.
HCM 6th TWSC

Intersection							
Int Delay, s/veh	0						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑	↑↑	↑	↑
Traffic Vol, veh/h	1082	3	1	3	1131	1	2
Future Vol, veh/h	1082	3	1	3	1131	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	150	-	0	-
Veh in Median Storage, #	0	-	-	-	0	0	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	1176	3	1	3	1229	1	2

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0 1179 1179	0 1801 590
Stage 1	-	-	- 1178 -
Stage 2	-	-	- 623 -
Critical Hdwy	-	- 6.44 4.14	- 6.84 6.94
Critical Hdwy Stg 1	-	-	- 5.84 -
Critical Hdwy Stg 2	-	-	- 5.84 -
Follow-up Hdwy	-	- 2.52 2.22	- 3.52 3.32
Pot Cap-1 Maneuver	-	- 255 588	- *158 451
Stage 1	-	-	- *255 -
Stage 2	-	-	- *584 -
Platoon blocked, %	-	-	- 1
Mov Cap-1 Maneuver	-	- 443 443	- *157 451
Mov Cap-2 Maneuver	-	-	- *157 -
Stage 1	-	-	- *255 -
Stage 2	-	-	- *579 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	18.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	278	-	-	443	-
HCM Lane V/C Ratio	0.012	-	-	0.01	-
HCM Control Delay (s)	18.1	-	-	13.2	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0	-	-	0	-

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

21-1550 Avilla Rancho Vistoso
2026 Total AM

8: Tangerine Rd. & Access A
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	1190	836	0	0	0
Future Vol, veh/h	0	1190	836	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1293	909	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 455
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.32
Pot Cap-1 Maneuver	0	-	- - - 0 *748
Stage 1	0	-	- - - 0 -
Stage 2	0	-	- - - 0 -
Platoon blocked, %	-	-	- - - 1
Mov Cap-1 Maneuver	-	-	- - - *748
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
2026 Total PM

8: Tangerine Rd. & Access A
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑			↑
Traffic Vol, veh/h	0	1060	1118	0	0	0
Future Vol, veh/h	0	1060	1118	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1152	1215	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 608
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - - 6.94
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - - 3.32
Pot Cap-1 Maneuver	0	-	- - - 0 *619
Stage 1	0	-	- - - 0 -
Stage 2	0	-	- - - 0 -
Platoon blocked, %	-	-	- - - 1
Mov Cap-1 Maneuver	-	-	- - - *619
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

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

21-1550 Avilla Rancho Vistoso
2026 Total AM

9: Access B & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↕		↕	
Traffic Vol, veh/h	261	0	0	150	0	0
Future Vol, veh/h	261	0	0	150	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	284	0	0	163	0	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	284	0	447	284
Stage 1	-	-	-	-	284	-
Stage 2	-	-	-	-	163	-
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	-	-	1278	-	569	755
Stage 1	-	-	-	-	764	-
Stage 2	-	-	-	-	866	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1278	-	569	755
Mov Cap-2 Maneuver	-	-	-	-	569	-
Stage 1	-	-	-	-	764	-
Stage 2	-	-	-	-	866	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	0			
HCM LOS				A		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1278	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-	-
HCM Lane LOS	A	-	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	0	-	-

21-1550 Avilla Rancho Vistoso
2026 Total PM

9: Access B & Woodburne Ave.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↕		↕	
Traffic Vol, veh/h	121	0	0	187	0	0
Future Vol, veh/h	121	0	0	187	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	132	0	0	203	0	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	132	0	335	132
Stage 1	-	-	-	-	132	-
Stage 2	-	-	-	-	203	-
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	-	660	917
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	831	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1453	-	660	917
Mov Cap-2 Maneuver	-	-	-	-	660	-
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	831	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0	0			
HCM LOS				A		
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	-	-	-	1453	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-	-
HCM Lane LOS	A	-	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	0	-	-

21-1550 Avilla Rancho Vistoso
2026 Total AM

10: Avilla Dr. & Access C
HCM 6th TWSC

Intersection						
Int Delay, s/veh	7.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			U	U	
Traffic Vol, veh/h	15	31	10	0	0	4
Future Vol, veh/h	15	31	10	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	34	11	0	0	4

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	24	2	4	0	-
Stage 1	2	-	-	-	-
Stage 2	22	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	992	1082	1618	-	-
Stage 1	1021	-	-	-	-
Stage 2	1001	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	985	1082	1618	-	-
Mov Cap-2 Maneuver	985	-	-	-	-
Stage 1	1014	-	-	-	-
Stage 2	1001	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	7.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1618	-	1048	-	-
HCM Lane V/C Ratio	0.007	-	0.048	-	-
HCM Control Delay (s)	7.2	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

21-1550 Avilla Rancho Vistoso
2026 Total PM

10: Avilla Dr. & Access C
HCM 6th TWSC

Intersection						
Int Delay, s/veh	6.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			U	U	
Traffic Vol, veh/h	9	18	31	0	0	14
Future Vol, veh/h	9	18	31	0	0	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	20	34	0	0	15

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	76	8	15	0	-
Stage 1	8	-	-	-	-
Stage 2	68	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	927	1074	1603	-	-
Stage 1	1015	-	-	-	-
Stage 2	955	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	908	1074	1603	-	-
Mov Cap-2 Maneuver	908	-	-	-	-
Stage 1	994	-	-	-	-
Stage 2	955	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	7.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1603	-	1012	-	-
HCM Lane V/C Ratio	0.021	-	0.029	-	-
HCM Control Delay (s)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

21-1550 Avilla Rancho Vistoso
2026 Total AM

11: Avilla Dr. & Access D
HCM 6th ASC

Intersection												
Intersection Delay, s/veh	7.8											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Vol, veh/h	12	96	0	0	68	0	0	0	0	0	0	38
Future Vol, veh/h	12	96	0	0	68	0	0	0	0	0	0	38
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	104	0	0	74	0	0	0	0	0	0	41
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	8.3	7.6	0	7
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	0%	11%	0%	0%	0%
Vol Thru, %	100%	89%	100%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	108	0	68	38
LT Vol	0	12	0	0	0
Through Vol	0	96	0	68	0
RT Vol	0	0	0	0	38
Lane Flow Rate	0	117	0	74	41
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0	0.153	0	0.086	0.043
Departure Headway (Hd)	4.433	4.7	4.645	4.195	3.79
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	764	0	849	950
Service Time	2.434	2.424	2.368	2.249	1.79
HCM Lane V/C Ratio	0	0.153	0	0.087	0.043
HCM Control Delay	7.4	8.3	7.4	7.6	7
HCM Lane LOS	N	A	N	A	A
HCM 95th-tile Q	0	0.5	0	0.3	0.1

21-1550 Avilla Rancho Vistoso
2026 Total PM

11: Avilla Dr. & Access D
HCM 6th ASC

Intersection												
Intersection Delay, s/veh	8.3											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Vol, veh/h	37	75	0	0	161	0	0	0	0	0	0	21
Future Vol, veh/h	37	75	0	0	161	0	0	0	0	0	0	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	82	0	0	175	0	0	0	0	0	0	23
Number of Lanes	0	1	1	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	8.5	8.3	0	7.1
HCM LOS	A	A	-	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	0%	33%	0%	0%	0%
Vol Thru, %	100%	67%	100%	100%	0%
Vol Right, %	0%	0%	0%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	112	0	161	21
LT Vol	0	37	0	0	0
Through Vol	0	75	0	161	0
RT Vol	0	0	0	0	21
Lane Flow Rate	0	122	0	175	23
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0	0.163	0	0.202	0.025
Departure Headway (Hd)	4.651	4.825	4.66	4.164	4.021
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	0	743	0	856	896
Service Time	2.652	2.562	2.396	2.221	2.021
HCM Lane V/C Ratio	0	0.164	0	0.204	0.026
HCM Control Delay	7.7	8.5	7.4	8.3	7.1
HCM Lane LOS	N	A	N	A	A
HCM 95th-tile Q	0	0.6	0	0.8	0.1

21-1550 Avilla Rancho Vistoso
2026 Total AM

13: Avilla Dr. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			U	U	
Traffic Vol, veh/h	2	0	0	15	4	146
Future Vol, veh/h	2	0	0	15	4	146
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	0	0	16	4	159

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	100	84	163
Stage 1	84	-	-
Stage 2	16	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	899	975	1416
Stage 1	939	-	-
Stage 2	1007	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	899	975	1416
Mov Cap-2 Maneuver	899	-	-
Stage 1	939	-	-
Stage 2	1007	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1416	-	899	-	-
HCM Lane V/C Ratio	-	-	0.002	-	-
HCM Control Delay (s)	0	-	9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

21-1550 Avilla Rancho Vistoso
2026 Total PM

13: Avilla Dr. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			U	U	
Traffic Vol, veh/h	6	0	0	9	14	183
Future Vol, veh/h	6	0	0	9	14	183
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	0	0	10	15	199

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	125	115	214
Stage 1	115	-	-
Stage 2	10	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	870	937	1356
Stage 1	910	-	-
Stage 2	1013	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	870	937	1356
Mov Cap-2 Maneuver	870	-	-
Stage 1	910	-	-
Stage 2	1013	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1356	-	870	-	-
HCM Lane V/C Ratio	-	-	0.007	-	-
HCM Control Delay (s)	0	-	9.2	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

21-1550 Avilla Rancho Vistoso
2026 Total AM

14: Woodburne Ave. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	259	2	146	0	0	5
Future Vol, veh/h	259	2	146	0	0	5
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	282	2	159	0	0	5

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	159	0	725
Stage 1	-	-	159
Stage 2	-	-	566
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1420	-	886
Stage 1	-	-	870
Stage 2	-	-	568
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1420	-	886
Mov Cap-2 Maneuver	-	-	314
Stage 1	-	-	697
Stage 2	-	-	568

Approach	EB	WB	SB
HCM Control Delay, s	8.1	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1420	-	-	-	886
HCM Lane V/C Ratio	0.198	-	-	-	0.006
HCM Control Delay (s)	8.2	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.7	-	-	-	0

21-1550 Avilla Rancho Vistoso
2026 Total PM

14: Woodburne Ave. & Vistoso Dr.
HCM 6th TWSC

Intersection						
Int Delay, s/veh	3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	115	6	183	0	0	3
Future Vol, veh/h	115	6	183	0	0	3
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	125	7	199	0	0	3

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	199	0	456
Stage 1	-	-	199
Stage 2	-	-	257
Critical Hdwy	4.12	-	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	2.218	-	3.518
Pot Cap-1 Maneuver	1373	-	842
Stage 1	-	-	835
Stage 2	-	-	786
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1373	-	842
Mov Cap-2 Maneuver	-	-	511
Stage 1	-	-	759
Stage 2	-	-	786

Approach	EB	WB	SB
HCM Control Delay, s	7.5	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1373	-	-	-	842
HCM Lane V/C Ratio	0.091	-	-	-	0.004
HCM Control Delay (s)	7.9	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.3	-	-	-	0

APPENDIX L

EXCERPT OF ADOT'S TGP 245

245 TURN LANE WARRANTS

The intent of this document is to offer guidance to warrant the installation of dedicated left or right turn lanes on state routes, whether during new construction, major reconstruction, or in the course of the encroachment permitting process. **The primary determining factors to warrant an exclusive turn lane shall be: (a) the combination of through traffic volume and turning traffic volume, (b) the posted roadway speed, and (c) the number of through lanes on the roadway.** Note: Dual right- or left-turn lanes should be considered when the turning volume exceeds 300 vehicles per hour. In addition to the criteria presented in the tables below, other factors should be taken into consideration when performing a warrant study such as: shoulder width, percentage of trucks, sight distance, highway grade, horizontal and vertical curvature and crash history.

Right-Turn Lane Warrants

Peak Hour Traffic Volume on the Highway in Advancing Direction	Minimum Peak Hour Right-turn Traffic Volume				
	# of thru lanes per direction				
	1		2		3
	< 45 MPH Posted Speed	≥ 45 MPH Posted Speed	< 45 MPH Posted Speed	≥ 45 MPH Posted Speed	All Speeds
≤ 200					
201 – 300	-	30	-	-	-
301 – 400	-	19	-	55	-
401 – 500	85	14	-	30	-
501 – 600	58	12	140	25	-
601 – 700	27	9	80	18	-
701 – 800	20	8	53	15	-
801 – 900	12	7	40	12	-
901 – 1000	9	6	30	11	-
1001 – 1100	8	5	23	9	18
1101 – 1200	7	5	18	8	16
1201 – 1300	6	4	14	8	15
1301 – 1400	6	4	11	6	12
1400+	5	3	8	6	10

Left-Turn Lane Warrants

Peak Hour Traffic Volume on the Highway in Advancing Direction	Minimum Peak Hour Left-turn Traffic Volume			
	# of thru lanes per direction			
	1		2 (Undivided)*	
	< 45 MPH Posted Speed	≥ 45 MPH Posted Speed	< 45 MPH Posted Speed	≥ 45 MPH Posted Speed
≤ 200	30	15	-	-
201 – 300	12	12	40	30
301 – 400	12	12	30	25
401 – 500	12	12	25	18
501 – 600	12	12	15	12
601 – 1000	12	12	10	8
1000+	12	8	10	8

*On non-freeway divided highways, left-turn or U-turn lanes should be provided at median breaks.

Volumes and traffic factors utilized should be based on data from ADOT's Multimodal Planning Division, or should be based on current traffic counts as approved by the Regional Traffic Engineer. For encroachment permits, analysis of the relevant through and turning traffic volumes should be completed in the design year as identified in ADOT Traffic Guidelines and Processes (TGP) 240. For new construction and major reconstruction, analysis should be performed based on data for the appropriate design year. Turn lane warrant studies should be reviewed and approved by the Regional Traffic Engineer. In cases where the State Highway section in question intersects a route under other jurisdiction, it is recommended that a turning movement analysis be performed on the intersecting route as well.

When it is determined that a turn lane is warranted, shoulder width should be provided as part of the turn lane design in accordance with the ADOT Roadway Design Guidelines, which should be used to determine the minimum continuous usable width of paved shoulder along the turn lanes. Turn lane design should also conform to the guidance in ADOT TGP430.