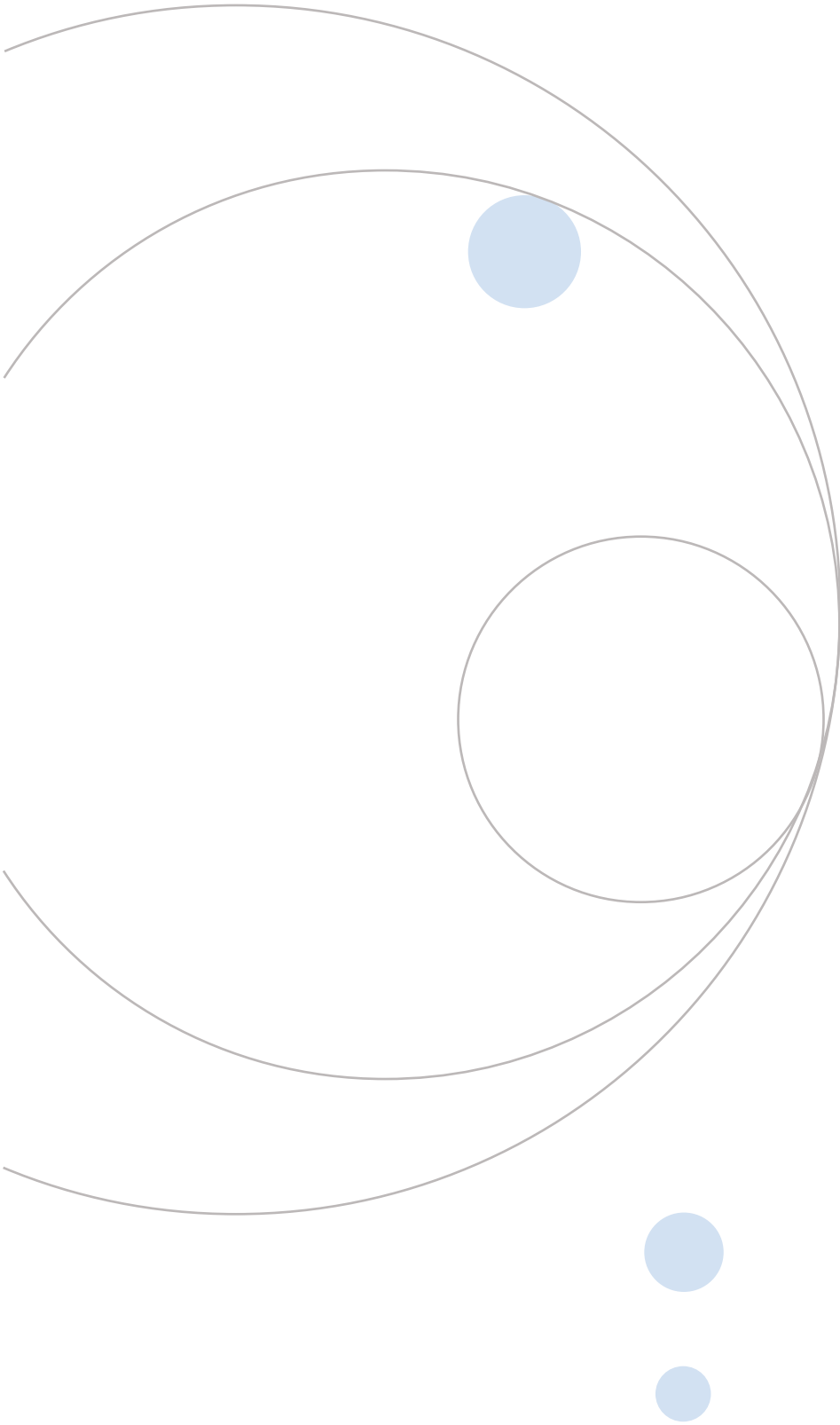




Avilla Rancho Vistoso East and West

Traffic Impact Analysis

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

January 2022 - 1st Submittal
June 2022 - 2nd Submittal
Project No. 21-1550

Prepared For:
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**AVILLA RANCHO VISTOSO EAST & WEST
PARCELS 5-U & 7-I
TRAFFIC IMPACT ANALYSIS REPORT**

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

Prepared for:
NexMetro Communities
2355 E Camelback Road, Suite 805
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June 2022 – 2nd Submittal

CivTech Project No. 21-1550

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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 87 multi-family home “casitas” and the Parcel 7-I residential development will be for 118 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 1,464 weekday daily trips, 109 trips during the AM Peak Hour (26 in/ 83 out), and 129 trips during the PM Peak Hour (82 in/ 47 out).

SITE ACCESS DRIVEWAYS

There are a total of five (5) site access driveways.

- Access B – Is located along the south side of Woodburne Avenue and will be an “emergency/secondary access only” driveway located approximately 1,230 feet west of Rancho Vistoso Boulevard. No vehicle trips are anticipated to use this site access driveway; therefore, no site-generated trips will be assigned to this driveway.
- 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.
- 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.

- Access E – Is an exit only driveway for the residents of Avilla Rancho Vistoso East. Access E will align with the existing access aisle in front of the Safeway. It is assumed that 40% of Avilla Rancho Vistoso East traffic will exit from the Access E and the remaining 60% will use Access D.
- Access F – Is an “emergency/secondary access only” located approximately 420-feet east of Access E. Access F will align with the access aisle behind the Safeway.

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 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.

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.
- **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 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

- 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 87 multi-family home “casitas” and the Parcel 7-I residential development will be for 118 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 five (5) site access driveways.

- Access B – Is located along the south side of Woodburne Avenue and will be an “emergency/secondary access only” driveway located approximately 1,230 feet west of Rancho Vistoso Boulevard. No vehicle trips are anticipated to use this site access driveway; therefore, no site-generated trips will be assigned to this driveway.
- 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.
- 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.
- Access E – Is an exit only driveway for the residents of Avilla Rancho Vistoso East. Access E will align with the existing access aisle/PAAL in front of the Safeway. It is assumed that 40% of Avilla Rancho Vistoso East traffic will exit from the Access E and the remaining 60% will use Access D.
- Access F – Is an “emergency/secondary access only” located approximately 420-feet east of Access E. Access F will align with the access aisle behind the Safeway.

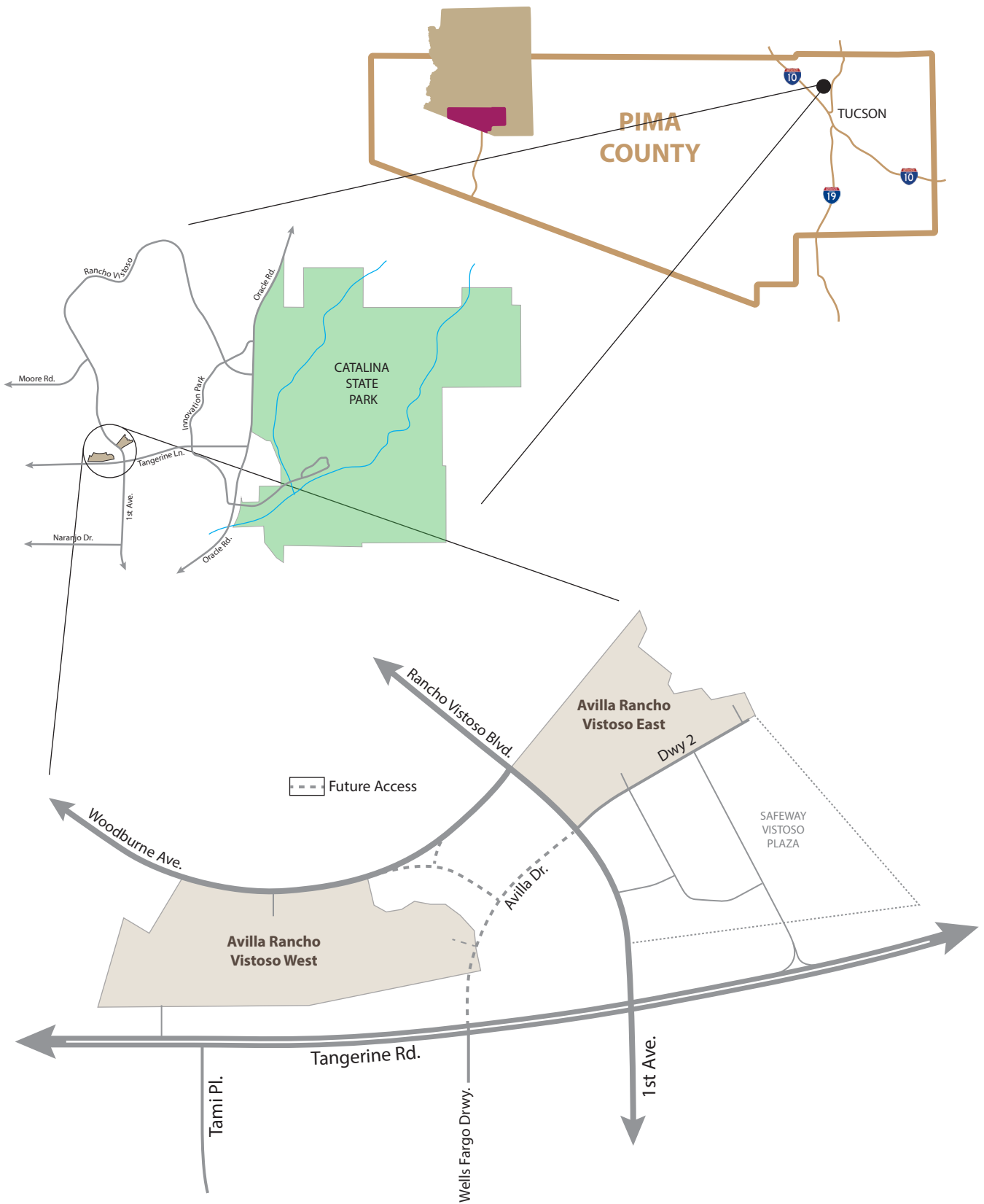


Figure 1: Vicinity Map

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.

Safeway Access Aisle is an existing access aisle around the north and east sides of the Safeway Shopping Center. There is also an access aisle between two of the out parcels on the north side which will align with the future main entrance into Avilla Rancho Vistoso East – Access D. The proposed Access E will align the Safeway east access aisle.

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 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

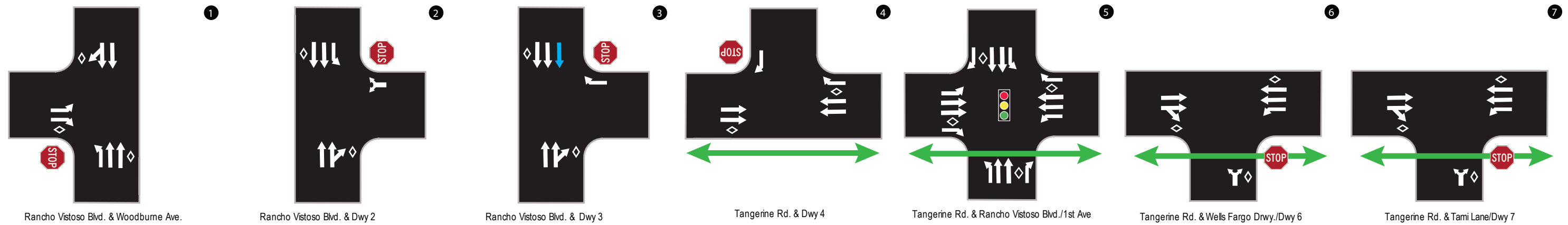
CivTech engaged Field Data Services of Arizona, Inc. /Veracity Traffic Group to record traffic volumes at three (3) Study Intersections within the project vicinity. Peak Hour volume turning movement counts were performed for 24-hours on Wednesday, October 20, 2021. Peak Hour turning movement counts were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

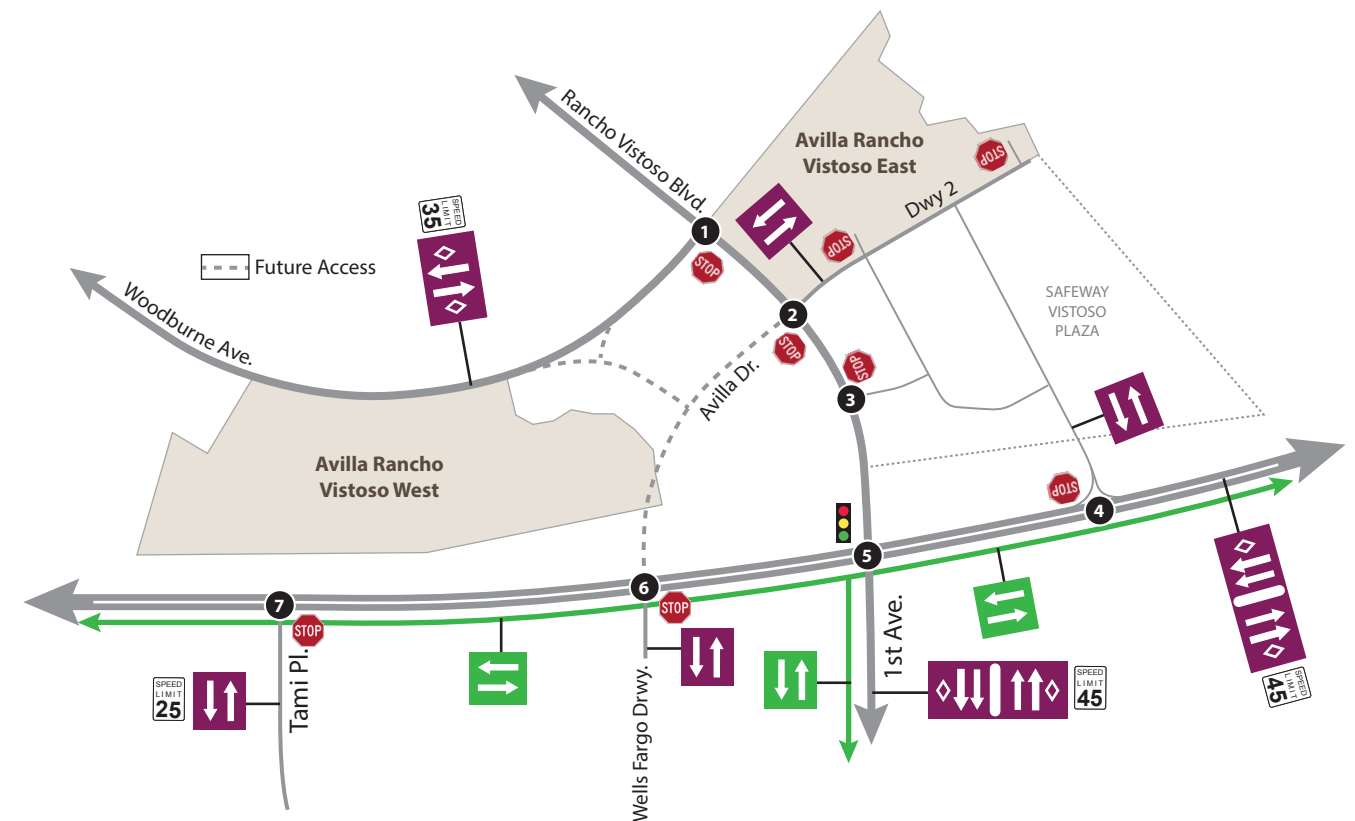
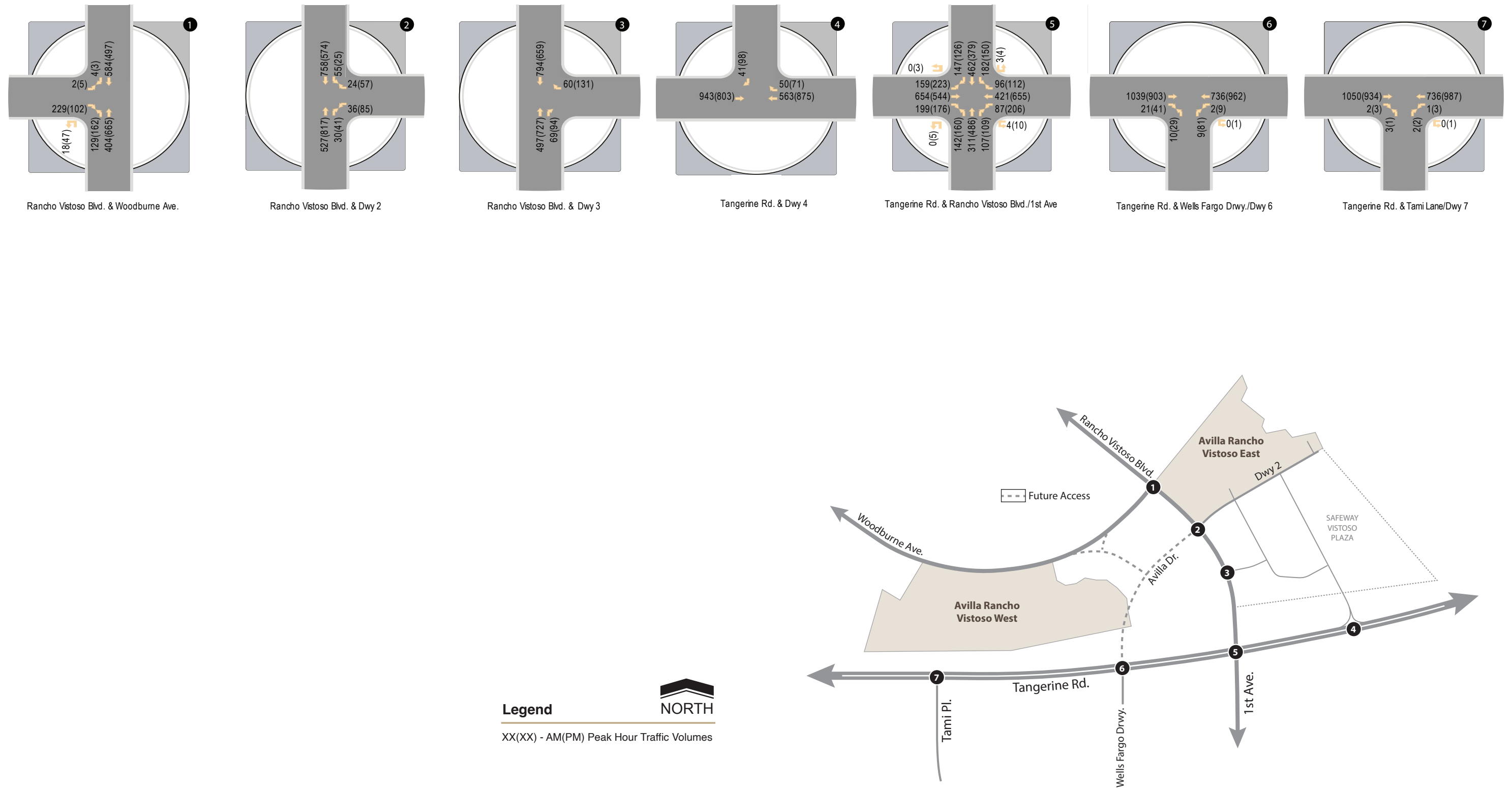


Figure 2: Existing Lane Configurations and Traffic Controls



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 SB EB WB	D (C) C (C) D (E) 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.

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 utilized the exiting hourly vehicle distribution percentages provided by the ITE based on LUC 210 to calculate the hourly exiting 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 Warrants 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 five (5) site access driveways.

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

Vistoso Boulevard. No vehicle trips are anticipated to use this site access driveway; therefore, no site-generated trips will be assigned to this driveway.

- 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.
- 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.
- Access E – Is an exit only driveway for the residents of Avilla Rancho Vistoso East. Access E will align with the existing access aisle in front of the Safeway. It is assumed that 40% of Avilla Rancho Vistoso East traffic will exit from the Access E and the remaining 60% will use Access D.
- Access F – Is an “emergency/secondary access only” located approximately 420-feet east of Access E. Access F will align with the access aisle behind the Safeway. The proposed development Site Plans and Access 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 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.

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.



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, 3^d 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	87 DUs	24%	76%	63%	37%		
Avilla Rancho Vistoso West	220	Apartments	14.879	118 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	632	0.57	12	38	50	0.67	37	21	58
Avilla Rancho Vistoso West	7.05	832	0.50	14	45	59	0.60	45	26	71
Totals Trips		1,464		26	83	109		82	47	129

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 [87 DUs]	$T_{Day} = 87 \times 6.41 + 75.31 = 632$	$T_{AM} = 87 \times 0.31 + 22.85 = 50$	$T_{PM} = 87 \times 0.43 + 20.55 = 58$
Apartments [118 DUs]	$T_{Day} = 118 \times 6.41 + 75.31 = 832$	$T_{AM} = 118 \times 0.31 + 22.85 = 59$	$T_{PM} = 118 \times 0.43 + 20.55 = 71$

The proposed development is anticipated to generate 1,464 weekday daily trips, 109 trips during the AM Peak Hour (26 in/ 83 out), and 129 trips during the PM Peak Hour (82 in/ 47 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. 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.

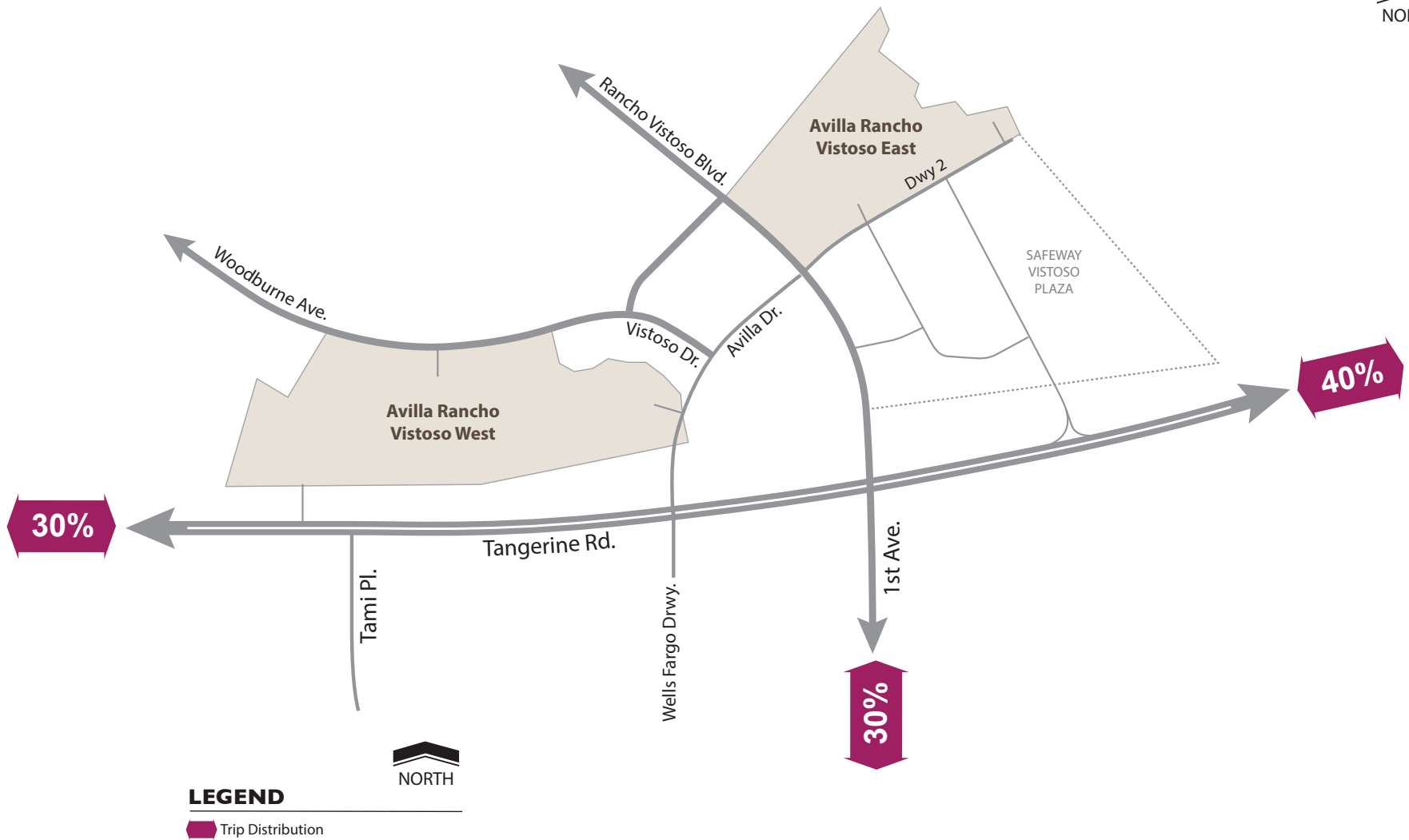


Figure 5: Trip Distribution

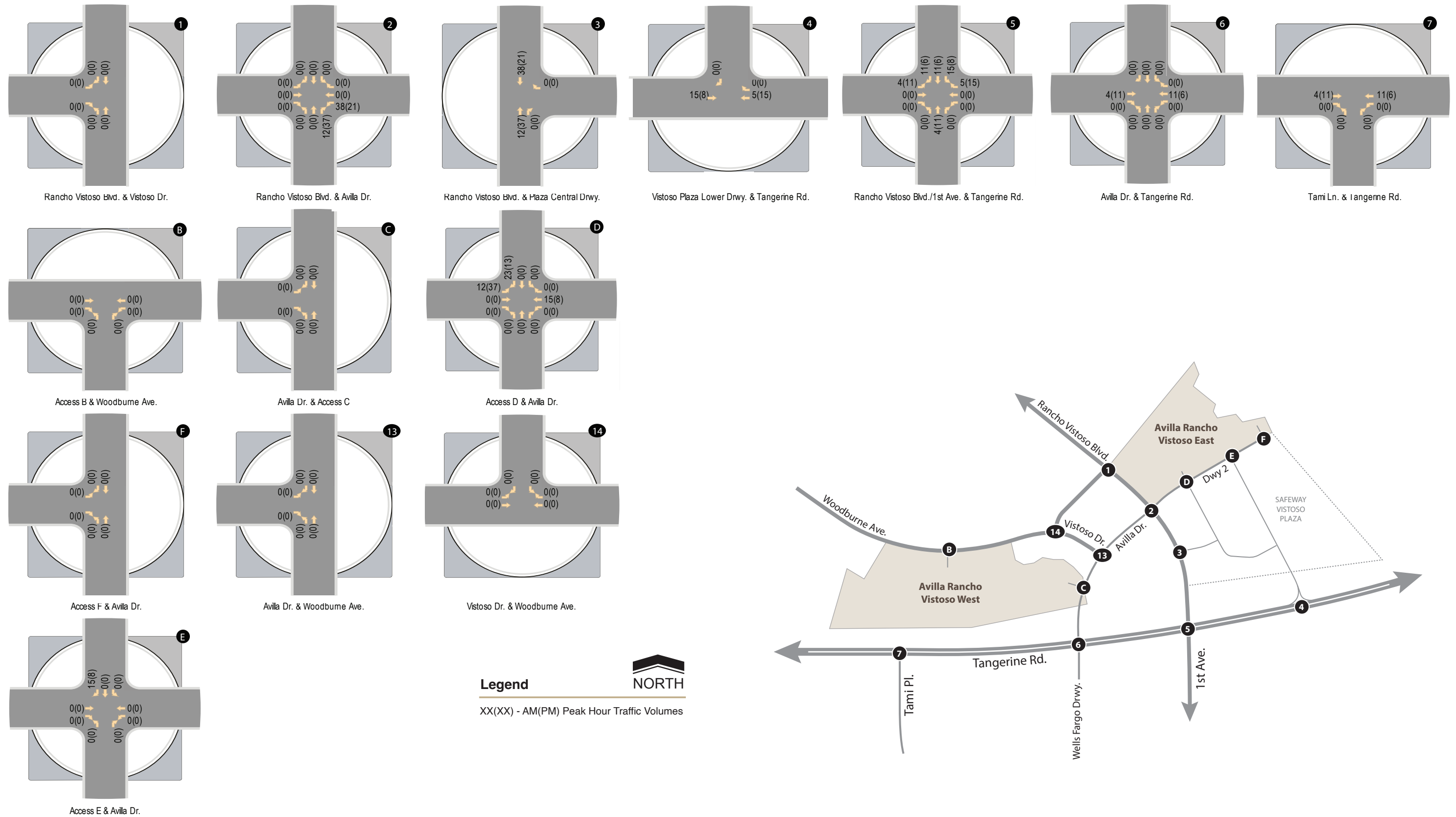


Figure 6: 2023 Site Generated Traffic Volumes

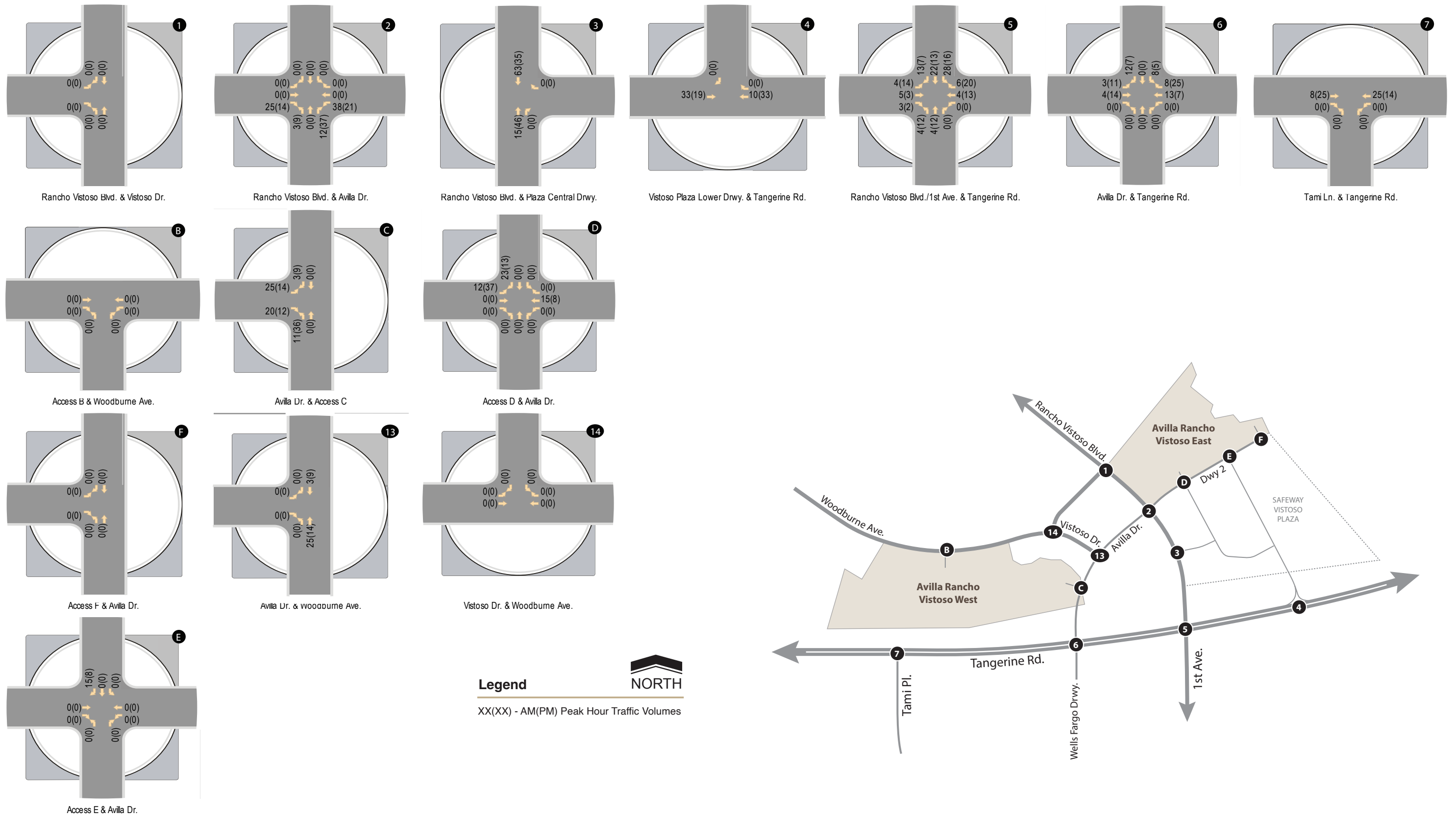


Figure 7: 2026 Site Generated Traffic Volumes

FUTURE BACKGROUND TRAFFIC

CivTech researched historical daily traffic volumes from the ADOT Transportation Data Management System (TDMC) 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**.

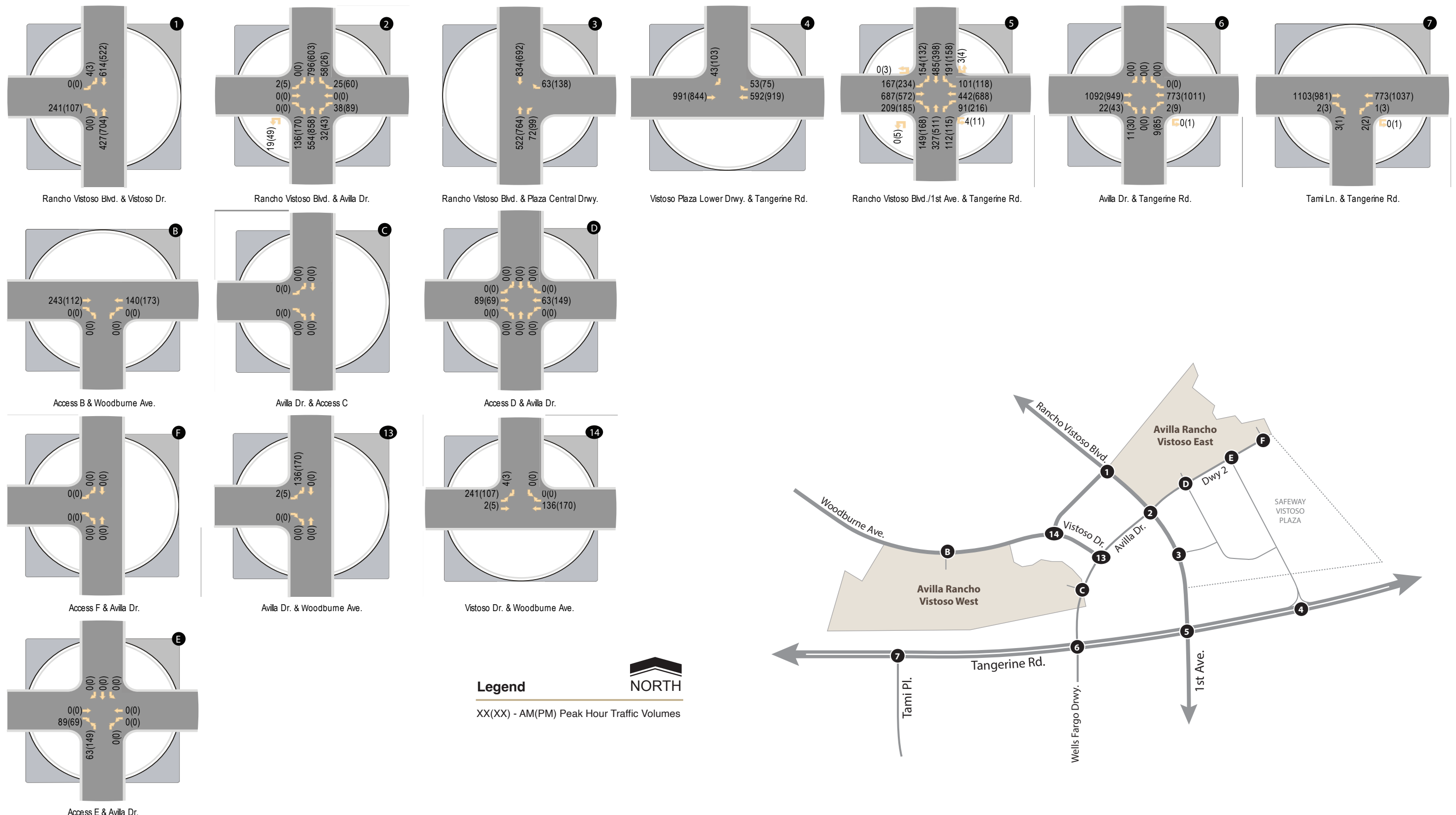


Figure 8: 2023 Background Traffic Volumes

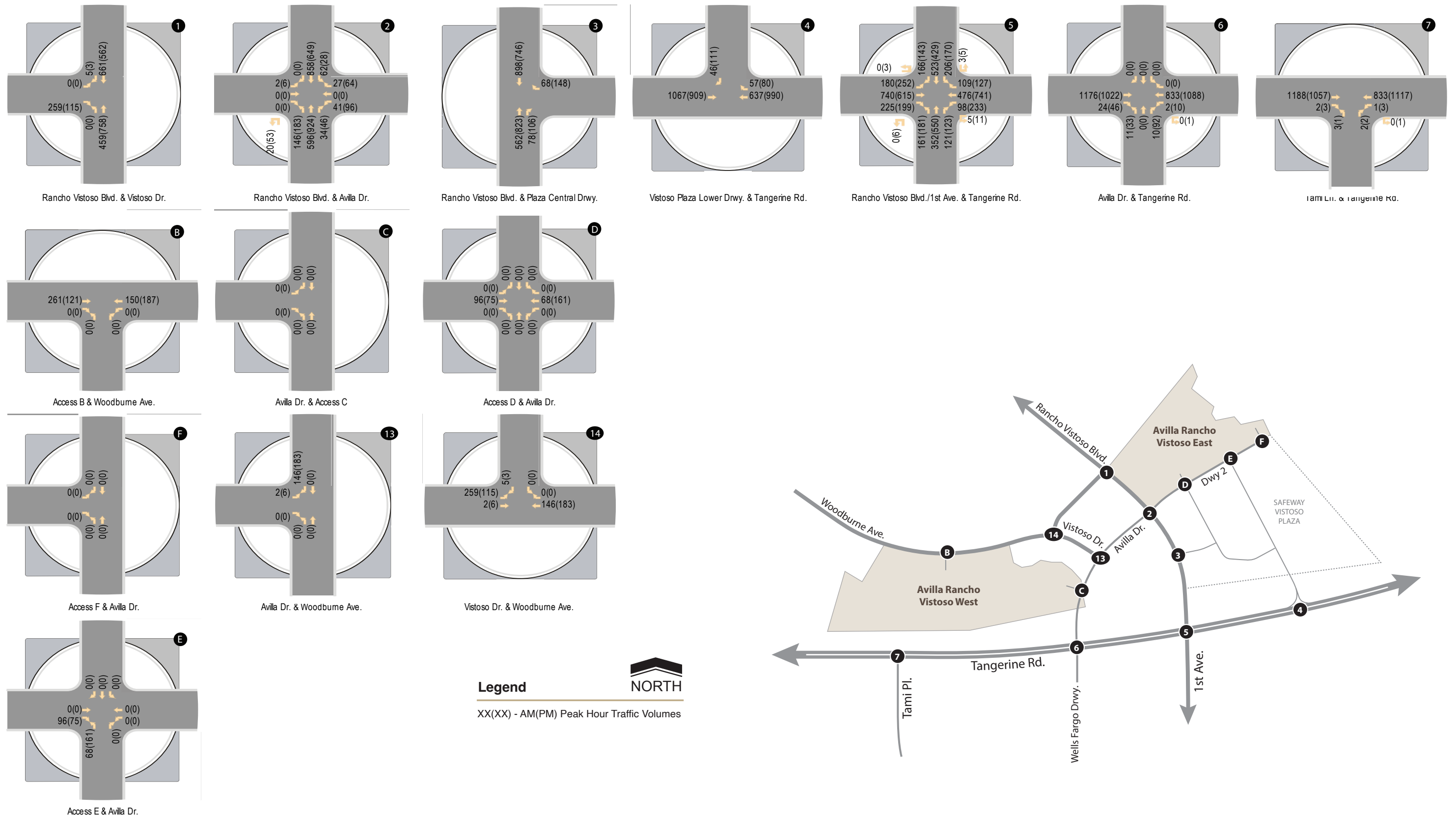


Figure 9: 2026 Background Traffic Volumes

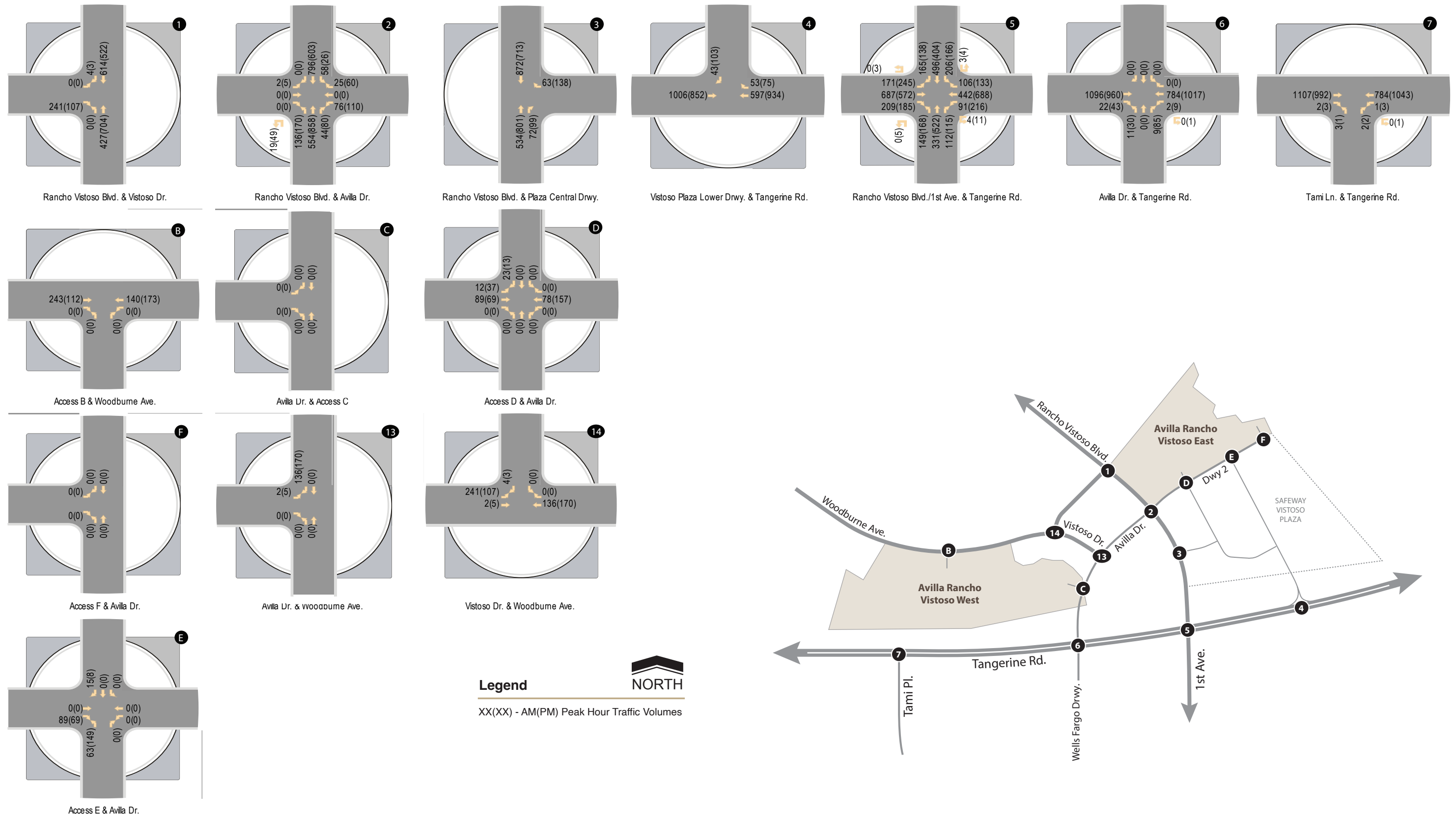


Figure 10: 2023 Total Traffic Volumes

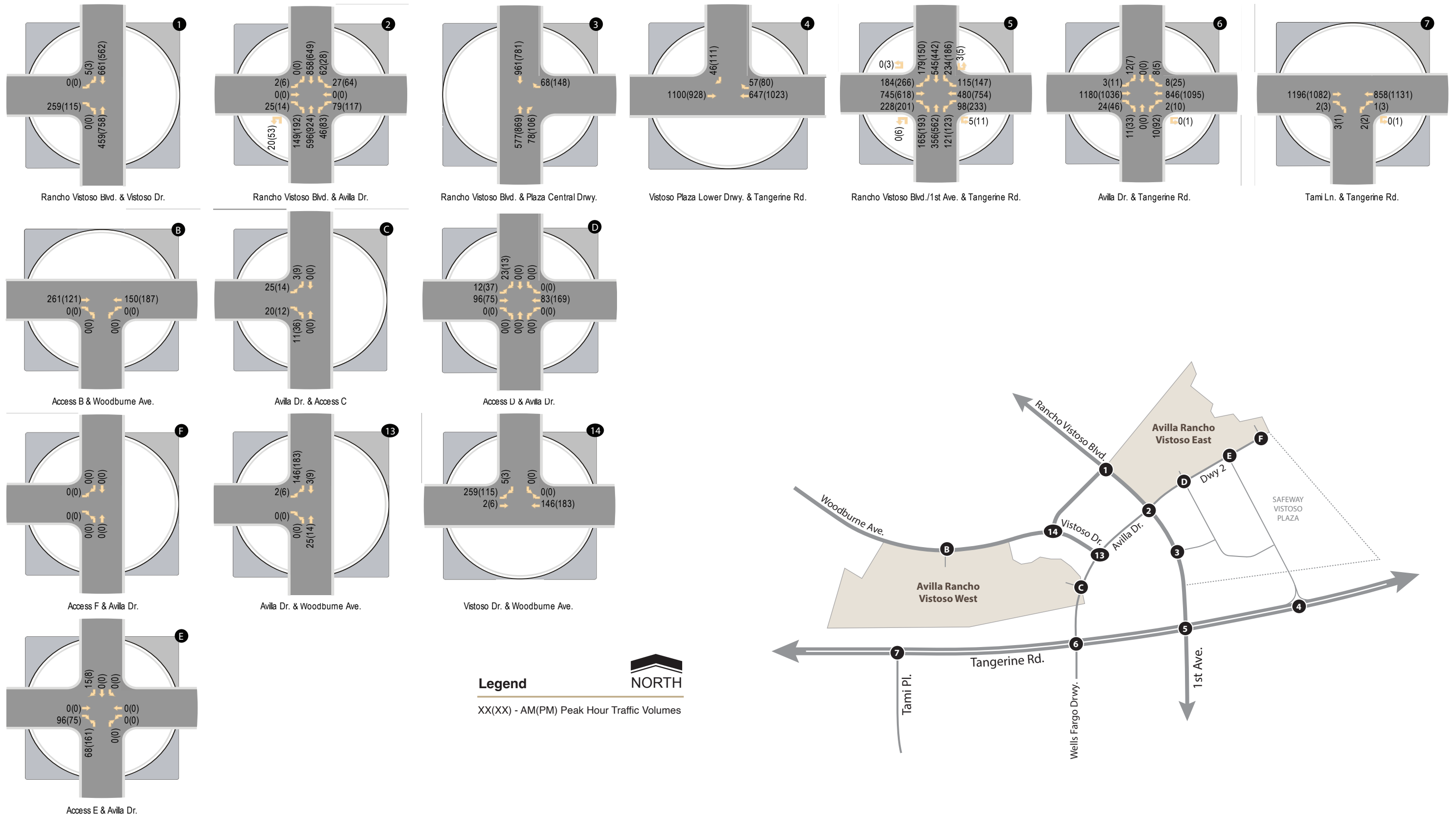


Figure 11: 2026 Total Traffic Volumes

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	A (A)	A (A)	A (A)	A (B)
			SB	A (A)	A (A)	A (A)	B (B)
			EB	C (C)	C (C)	C (C)	C (C)
			WB	C (C)	C (C)	C (C)	C (C)
			Overall	A (A)	A (A)	A (A)	B (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)	C (D)	C (D)	D (D)
			SB	C (C)	C (C)	C (C)	C (C)
			EB	D (E)	D (D)	E (E)	D (E)
			WB	D (D)	D (D)	E (E)	D (E)
			Overall	D (D)	D (D)	D (D)	D (D)
6	Drwy. 6/Avilla Dr. & Tangerine Rd.	1-Way Stop (NB)	NB Shared	C (C)	C (C)		
			WB Left	B (B)	B (B)		
		2- Way Stop (NB/SB)	NB Left			E (E)	E (E)
			NB Shared			B (C)	B (C)
			SB Left			-	D (E)
			SB shared			-	A (B)
			EB Left			-	A (A)
			WB Left			B (B)	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				
10	Avilla Dr. & Access C	1-Way Stop (EB)	NB Shared EB Shared				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)
12	Drwy. 2/Avilla Dr. & Access E	1-Way Stop (SB)	NB Shared		A (A)		A (A)
13	Avilla Dr. & Vistoso Dr.	1-Way Stop (EB)	EB Shared	A (A)	A (A)	A (A)	A (A)
14	Woodburne Ave. & Woodburne Ave. /Vistoso Dr.	1-Way Stop (SB)	SB Shared	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)

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 49.3 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.

TURN LANE WARRANTING AND QUEUE LENGTH ANALYSIS

RIGHT-TURN LANES

The Town of Oro Valley defers 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:

- the combination of through traffic volume and turning traffic volume,
- the posted roadway speed, and
- 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. & Driveway 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)	847(1103)	45 MPH	2 lanes	15(11)	12(8)	-	5(16)	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.

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	-	60'	⁽⁵⁾ 60'
			SB Left	55'	25'	⁽²⁾ 150'
			EB Left	-	25'	⁽²⁾ 110'
			WB Left	-	95'	⁽²⁾ 150'
			NB Right	-	25'	⁽²⁾ 110'
5	Tangerine Rd & Rancho Vistoso Blvd./1 st Ave.	Signalized	NB Left	300'	275'	300'
			SB Left	540'	315'	540'
			EB Left	245'	455'	⁽⁶⁾ 245'
			WB Left	260'	355'	260'
			NB Right	300'	180'	300'
			SB Right	100'	225'	100'
			EB Right	240'	290'	240'
			WB Right	430'	190'	430'
6	Avilla Dr. & Tangerine Rd.	2-Way stop (NB/SB)	NB Left	-	30'	⁽⁴⁾ No Change
			SB Left	-	25'	⁽²⁾ 110'
			EB Left	-	<25'	⁽²⁾ 150'
			WB Left	120'	25'	120'
13	Avilla Dr. & Vistoso Dr.	1-Way Stop (EB)	EB Shared	-	<25'	⁽²⁾ 110'
14	Woodburne Ave. & Woodburne Ave./Vistoso Dr.	1-Way Stop (SB)	SB Shared	-	<25'	⁽²⁾ 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 50' to 100'.

(6) The physical constraint of the median limit 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**.

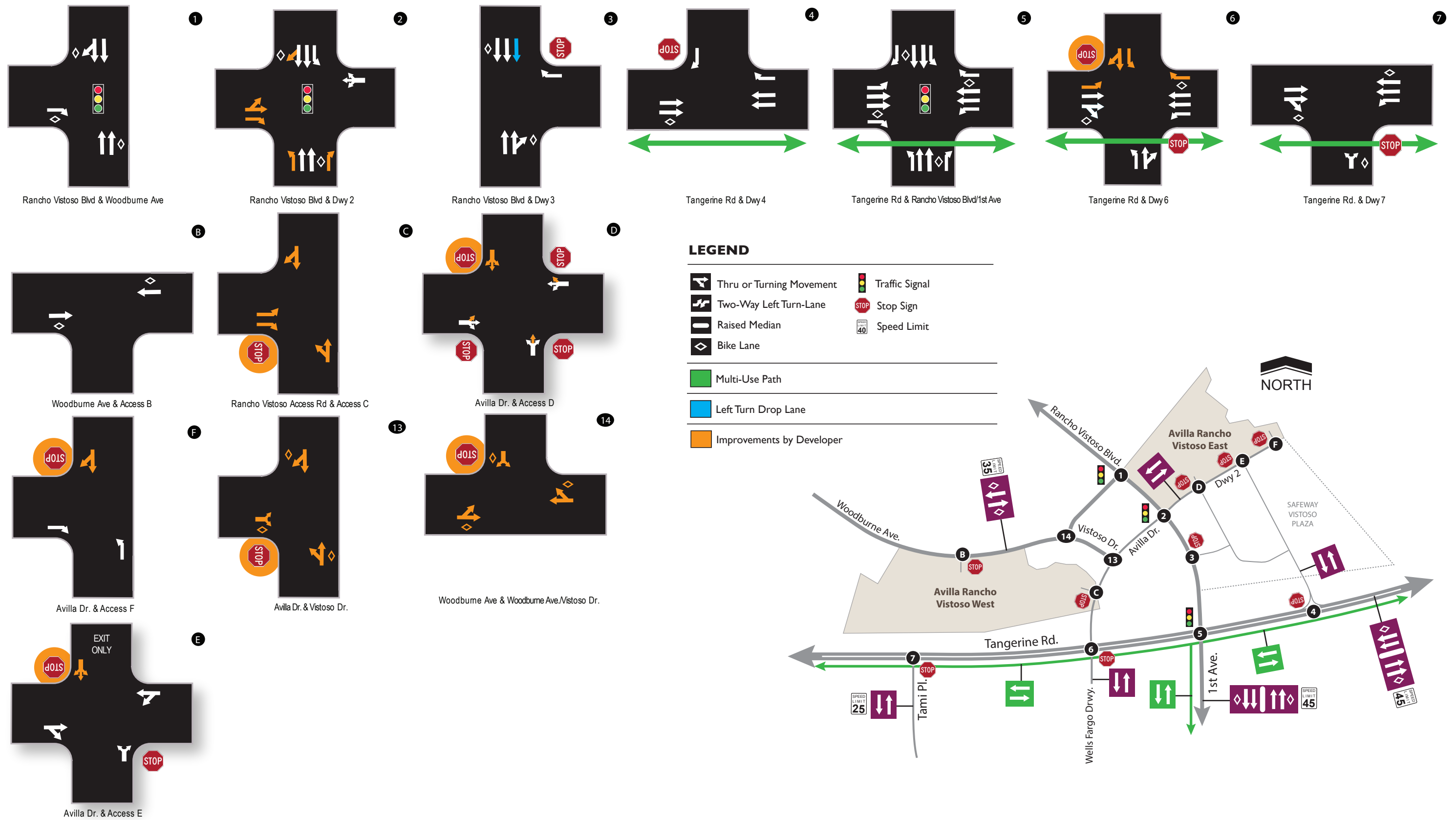


Figure 12: Proposed Lane Configurations and Traffic Controls

CONCLUSIONS

The following conclusions and recommendations have been documented in this TIA

GENERAL

- The proposed development is anticipated to generate 1,464 weekday daily trips, 109 trips during the AM Peak Hour (26 in/ 83 out), and 129 trips during the PM Peak Hour (82 in/ 47 out).

SITE ACCESS DRIVEWAYS

There are a total of five (5) site access driveways.

- Access B – Is located along the south side of Woodburne Avenue and will be an “emergency/secondary access only” driveway located approximately 1,230 feet west of Rancho Vistoso Boulevard. No vehicle trips are anticipated to use this site access driveway; therefore, no site-generated trips will be assigned to this driveway.
- 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.
- 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.
- Access E – Is an exit only driveway for the residents of Avilla Rancho Vistoso East. Access E will align with the existing access aisle in front of the Safeway. It is assumed that 40% of Avilla Rancho Vistoso East traffic will exit from the Access E and the remaining 60% will use Access D.
- Access F – Is an “emergency/secondary access only” located approximately 420-feet east of Access E. Access F will align with the access aisle behind the Safeway.

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 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.

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.
- **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 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

- 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

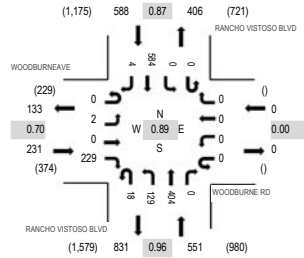
REVIEW COMMENTS AND RESPONSES (Reserved)

APPENDIX B

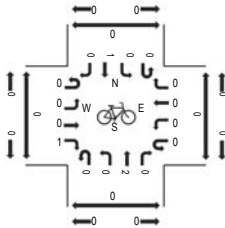
EXISTING TRAFFIC COUNTS

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

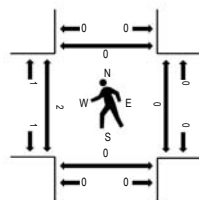
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



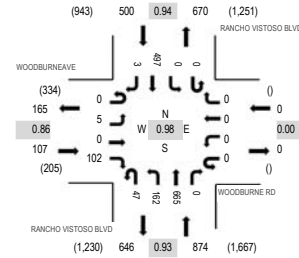
Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

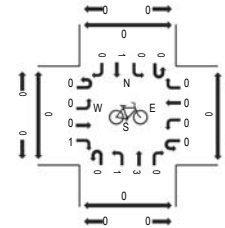
Interval Start Time	WOODBURNE AVE				WOODBURNE RD				RANCHO VISTOSO BLVD				RANCHO VISTOSO BLVD					Rolling Hour	Pedestrian Crossings				
	Eastbound				Westbound				Northbound				Southbound						Total	West	East	South	North
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	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

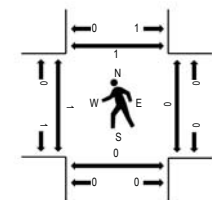
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WOODBURNE AVE				WOODBURNE RD				RANCHO VISTOSO BLVD				RANCHO VISTOSO BLVD					Rolling Hour	Pedestrian Crossings			
	Eastbound				Westbound				Northbound				Southbound						West	East	South	North
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total					
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
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GPS Coordinates: 32.426904, -110.961451

				Daily Totals		
				NB	SB	Combined
					1141	1466
						2607
AM				PM		
Split %	49.6%	50.4%	37.0%		40.3%	59.7%
						63.0%
Peak Hour	10:00	11:00	11:00		13:45	16:00
Volume	96	140	236		106	148
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
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	1	1	13:45	0	0	44	172
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
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
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
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
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
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
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
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
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
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

Total Vol.	689	459	1147	1145	925	2069
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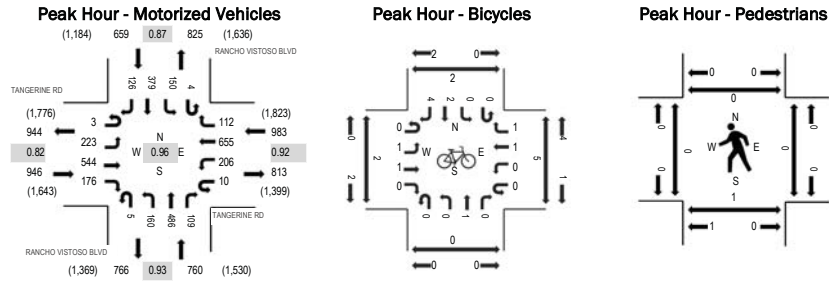
GPS Coordinates: 32.425817, -110.960942

				Daily Totals		
				NB	SB	Combined
					1833	1383
						3216
AM				PM		
Split %	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

Project# 21-1651-003

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

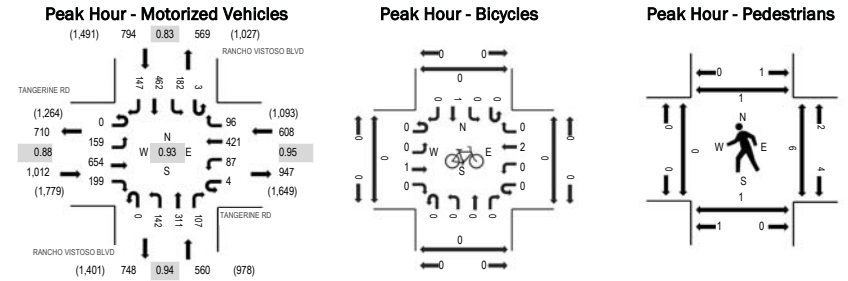


Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	TANGERINE RD Eastbound				TANGERINE RD Westbound				RANCHO VISTOSO BLVD Northbound				RANCHO VISTOSO BLVD Southbound				Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		Total	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

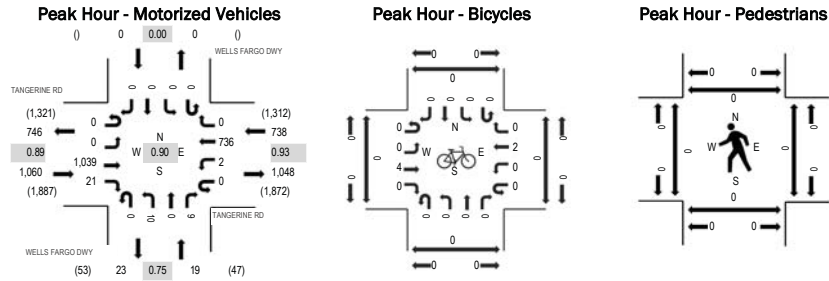


Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	TANGERINE RD				TANGERINE 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	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

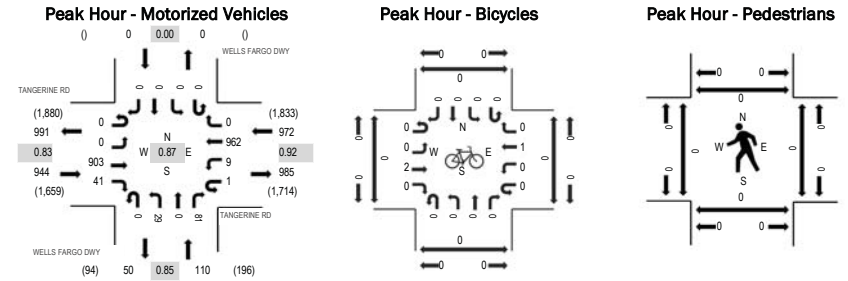


Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	TANGERINE RD Eastbound				TANGERINE RD Westbound				WELLS FARGO DWY Northbound				WELLS FARGO DWY Southbound				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	199	1	0	0	99	0	0	0	0	2	0	0	0	0	301	1,688	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
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
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
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
8:15 AM	0	0	201	3	0	2	166	0	0	3	0	4	0	0	0	0	379		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
8:45 AM	0	0	200	8	0	3	135	0	0	3	0	8	0	0	0	0	357		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
Peak Hour	0	0	1,039	21	0	2	736	0	0	10	0	9	0	0	0	0	1,817		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



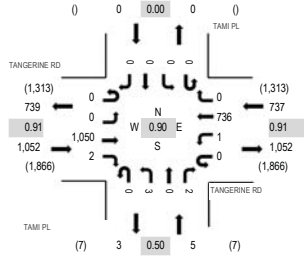
Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

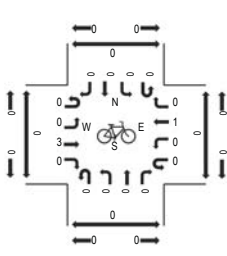
Interval Start Time	TANGERINE RD Eastbound				TANGERINE RD Westbound				WELLS FARGO DWY Northbound				WELLS FARGO DWY Southbound				Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		West	East	South	North
4:00 PM	0	0	216	12	0	0	247	0	0	3	0	19	0	0	0	0	497	2,026	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
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
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
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
5:15 PM	0	0	182	10	0	3	243	0	0	13	0	18	0	0	0	0	469		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
5:45 PM	0	0	152	8	0	1	158	0	0	9	0	7	0	0	0	0	335		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
Peak Hour	0	0	903	41	1	9	962	0	0	29	0	81	0	0	0	0	2,026		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

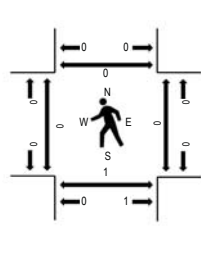
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



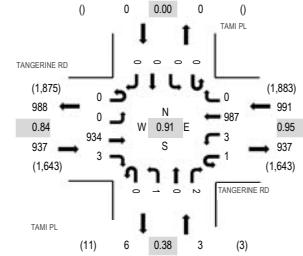
Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

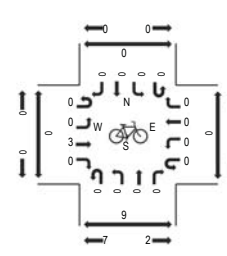
Interval Start Time	TANGERINE RD Eastbound				TANGERINE RD Westbound				TAMI PL Northbound				TAMI PL Southbound				Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		West	East	South	North
7:00 AM	0	0	203	0	0	0	1	100	0	0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

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

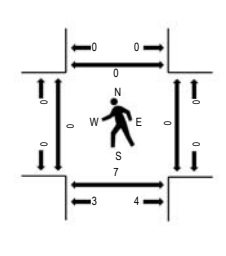
Peak Hour - Motorized Vehicles



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				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	0	483	1,931	0	0	2
4:15 PM	0	0	229	1	0	1	254	0	0	0	0	1	0	0	0	0	486	1,882	0	0	0
4:30 PM	0	0	278	0	0	1	254	0	0	0	0	0	0	0	0	0	533	1,858	0	0	2
4:45 PM	0	0	200	1	1	0	227	0	0	0	0	0	0	0	0	0	429	1,708	0	0	3
5:00 PM	0	0	165	1	1	2	265	0	0	0	0	0	0	0	0	0	434	1,598	0	0	1
5:15 PM	0	0	197	0	0	0	265	0	0	0	0	0	0	0	0	0	462		0	0	1
5:30 PM	0	0	186	0	1	0	196	0	0	0	0	0	0	0	0	0	383		0	0	1
5:45 PM	0	0	155	2	1	0	161	0	0	0	0	0	0	0	0	0	319		3	0	1
Count Total	0	0	1,637	6	4	5	1,874	0	0	1	0	2	0	0	0	0	3,529		3	0	11
Peak Hour	0	0	934	3	1	3	987	0	0	1	0	2	0	0	0	0	1,931		0	0	7

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	3.4						
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	2	229	18	129	404	584	4
Future Vol, veh/h	2	229	18	129	404	584	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	150	-	150	-	-	-
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	2	249	20	140	439	635	4

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1177	320	639	639	0 - 0
Stage 1	637	-	-	-	-
Stage 2	540	-	-	-	-
Critical Hdwy	6.84	6.94	6.44	4.14	- - -
Critical Hdwy Stg 1	5.84	-	-	-	- - -
Critical Hdwy Stg 2	5.84	-	-	-	- - -
Follow-up Hdwy	3.52	3.32	2.52	2.22	- - -
Pot Cap-1 Maneuver	243	676	565	941	- - -
Stage 1	489	-	-	-	- - -
Stage 2	740	-	-	-	- - -
Platoon blocked, %	1	-	-	-	- - -
Mov Cap-1 Maneuver	194	676	794	794	- - -
Mov Cap-2 Maneuver	194	-	-	-	- - -
Stage 1	390	-	-	-	- - -
Stage 2	740	-	-	-	- - -

Approach	EB	NB	SB
HCM Control Delay, s	13.5	2.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	794	-	194	676	-	-
HCM Lane V/C Ratio	0.201	-	0.011	0.368	-	-
HCM Control Delay (s)	10.7	-	23.8	13.4	-	-
HCM Lane LOS	B	-	C	B	-	-
HCM 95th %tile Q(veh)	0.7	-	0	1.7	-	-

21-1550 Avilla Rancho Vistoso
Existing PM

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

Intersection							
Int Delay, s/veh	2.4						
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	5	102	47	162	665	497	3
Future Vol, veh/h	5	102	47	162	665	497	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	150	-	150	-	-	-
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	5	111	51	176	723	540	3

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1358	272	543	543	0 - 0
Stage 1	542	-	-	-	- - -
Stage 2	816	-	-	-	- - -
Critical Hdwy	6.84	6.94	6.44	4.14	- - -
Critical Hdwy Stg 1	5.84	-	-	-	- - -
Critical Hdwy Stg 2	5.84	-	-	-	- - -
Follow-up Hdwy	3.52	3.32	2.52	2.22	- - -
Pot Cap-1 Maneuver	230	726	650	1022	- - -
Stage 1	547	-	-	-	- - -
Stage 2	667	-	-	-	- - -
Platoon blocked, %	1	-	-	-	- - -
Mov Cap-1 Maneuver	169	726	862	862	- - -
Mov Cap-2 Maneuver	169	-	-	-	- - -
Stage 1	403	-	-	-	- - -
Stage 2	667	-	-	-	- - -

Approach	EB	NB	SB
HCM Control Delay, s	11.7	2.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	862	-	169	726	-	-
HCM Lane V/C Ratio	0.264	-	0.032	0.153	-	-
HCM Control Delay (s)	10.7	-	27	10.9	-	-
HCM Lane LOS	B	-	D	B	-	-
HCM 95th %tile Q(veh)	1.1	-	0.1	0.5	-	-

21-1550 Avilla Rancho Vistoso
Existing AM

2: Rancho Vistoso Blvd. & Driveway 2
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	36	24	527	30	55	758
Future Vol, veh/h	36	24	527	30	55	758
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	-	-	-	50	-
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	39	26	573	33	60	824

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1122	303	0	0	606
Stage 1	590	-	-	-	-
Stage 2	532	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22
Pot Cap-1 Maneuver	308	*881	-	-	1257
Stage 1	797	-	-	-	-
Stage 2	553	-	-	-	-
Platoon blocked, %	1	1	-	-	1
Mov Cap-1 Maneuver	293	*881	-	-	1257
Mov Cap-2 Maneuver	293	-	-	-	-
Stage 1	797	-	-	-	-
Stage 2	526	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.7	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	400	1257
HCM Lane V/C Ratio	-	-	0.163	0.048
HCM Control Delay (s)	-	-	15.7	8
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1

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

21-1550 Avilla Rancho Vistoso
Existing PM

2: Rancho Vistoso Blvd. & Driveway 2
HCM 6th TWSC

Intersection						
Int Delay, s/veh	5.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↔		↔	↔
Traffic Vol, veh/h	85	57	817	41	25	574
Future Vol, veh/h	85	57	817	41	25	574
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	-	-	-	50	-
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	92	62	888	45	27	624

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1277	467	0	0	933
Stage 1	911	-	-	-	-
Stage 2	366	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22
Pot Cap-1 Maneuver	158	542	-	-	729
Stage 1	352	-	-	-	-
Stage 2	672	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	152	542	-	-	729
Mov Cap-2 Maneuver	152	-	-	-	-
Stage 1	352	-	-	-	-
Stage 2	647	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	56	0	0.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	214	729
HCM Lane V/C Ratio	-	-	0.721	0.037
HCM Control Delay (s)	-	-	56	10.1
HCM Lane LOS	-	-	F	B
HCM 95th %tile Q(veh)	-	-	4.7	0.1

21-1550 Avilla Rancho Vistoso
Existing AM

3: Rancho Vistoso Blvd. & Driveway 3
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	*881	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	1	-
Mov Cap-1 Maneuver	-	*881	-
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)	-	-	881
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. & Driveway 3
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	*798	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	1	-
Mov Cap-1 Maneuver	-	*798	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	798
HCM Lane V/C Ratio	-	-	0.178
HCM Control Delay (s)	-	-	10.5
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.6

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. & Driveway 4
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. & Driveway 4
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	4.3	4.3	4.0	4.0	4.3	4.3	4.0	4.3	4.3	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		
Total Lost Time (s)	6.0	6.3	6.3		6.0	6.3	6.3	6.0	6.3	6.3		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
Recall Mode	None	Max	Max	None	None	Max	Max	None	C-Max	C-Max	None	None

Intersection Summary

Cycle Length: 130

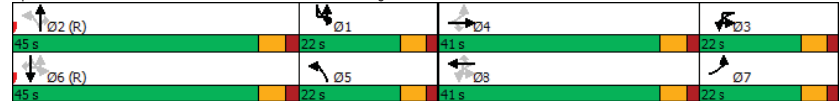
Actuated Cycle Length: 130

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)	14.5	14.5	40.3	40.3	14.5	14.5	40.3	40.3	14.5	14.5	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)	3.5	3.5	4.3	4.3	3.5	3.5	4.3	4.3	3.5	3.5	4.3	4.3
All-Red Time (s)	1.0	1.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0	1.0	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)		4.5	6.3	6.3		4.5	6.3	6.3		4.5	6.3	6.3
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

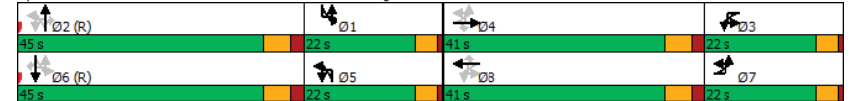
Actuated Cycle Length: 130

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

Natural Cycle: 110

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.
Timings

Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	462	147
Future Volume (vph)	462	147
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)	45.0	45.0
Total Split (%)	34.6%	34.6%
Yellow Time (s)	4.3	4.3
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.3	6.3
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	C-Max	C-Max
Intersection Summary		

21-1550 Avilla Rancho Vistoso
Existing PM

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

Lane Group	SBU	SBL	SBT	SBR
Lane Configurations		↑	↑↑	↑
Traffic Volume (vph)	4	150	379	126
Future Volume (vph)	4	150	379	126
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)	14.5	14.5	40.3	40.3
Total Split (s)	22.0	22.0	45.0	45.0
Total Split (%)	16.9%	16.9%	34.6%	34.6%
Yellow Time (s)	3.5	3.5	4.3	4.3
All-Red Time (s)	1.0	1.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		4.5	6.3	6.3
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
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 (Qb), veh	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				
Adj Sat Flow, veh/h/ln	1870	1870	1870		1870	1870	1870	1870	1870	1870		1870
Adj Flow Rate, veh/h	173	711	216		95	458	104	154	338	116		198
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	327	949	423		243	949	423	526	1058	472		567
Arrive On Green	0.08	0.27	0.27		0.08	0.27	0.27	0.17	0.30	0.30		0.34
Sat Flow, veh/h	1781	3554	1585		1781	3554	1585	1781	3554	1585		1781
Grp Volume(v), veh/h	173	711	216		95	458	104	154	338	116		198
Grp Sat Flow(s),veh/h/ln	1781	1777	1585		1781	1777	1585	1781	1777	1585		1781
Q Serve(g_s), s	0.0	23.8	15.0		0.0	14.1	6.7	0.0	9.6	7.2		0.0
Cycle Q Clear(g_c), s	0.0	23.8	15.0		0.0	14.1	6.7	0.0	9.6	7.2		0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		1.00		1.00
Lane Grp Cap(c), veh/h	327	949	423		243	949	423	526	1058	472		567
V/C Ratio(X)	0.53	0.75	0.51		0.39	0.48	0.25	0.29	0.32	0.25		0.35
Avail Cap(c_a), veh/h	409	949	423		325	949	423	526	1058	472		567
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		2.00
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	47.4	43.7	40.4		52.5	40.1	37.4	30.5	35.4	34.6		22.9
Incr Delay (d2), s/veh	4.8	5.4	4.4		3.7	1.8	1.4	1.4	0.8	1.2		1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0
%ile BackOfQ(95%),veh/ln	9.5	16.3	10.3		5.5	10.3	4.9	6.8	7.5	5.2		6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	52.2	49.1	44.8		56.2	41.9	38.8	31.9	36.2	35.8		24.6
LnGrp LOS	D	D	D		E	D	D	C	D	D		C
Approach Vol, veh/h		1100				657			608			
Approach Delay, s/veh		48.7				43.4			35.0			
Approach LOS		D				D			D			
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	6.3	6.0	6.3	6.0	6.3	6.0	6.3				
Max Green Setting (Gmax), s	16.0	38.7	16.0	34.7	16.0	38.7	16.0	34.7				
Max Q Clear Time (g_c+I), s	2.0	11.6	2.0	25.8	2.0	12.4	2.0	16.1				
Green Ext Time (p_c), s	1.5	4.8	0.5	3.4	1.1	7.3	1.1	2.9				
Intersection Summary												
HCM 6th Ctrl Delay			38.1									
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 (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
Work Zone On Approach	No				No			No				
Adj Sat Flow, veh/h/ln	1870	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	268	776	346		335	860	384		588	1058		472
Arrive On Green	0.11	0.22	0.22		0.13	0.24	0.24		0.19	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	20.3	13.9		8.0	24.7	8.2		0.0	15.9		7.3
Cycle Q Clear(g_c), s	11.9	20.3	13.9		8.0	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	268	776	346		335	860	384		588	1058		472
V/C Ratio(X)	0.90	0.76	0.55		0.67	0.83	0.32		0.30	0.50		0.25
Avail Cap(c_a), veh/h	314	949	423		338	949	423		588	1058		472
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	54.9	47.6	45.1		49.8	46.7	40.5		27.3	37.7		34.6
Incr Delay (d2), s/veh	25.1	4.2	2.9		4.9	6.8	1.0		0.3	1.7		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	14.8	14.5	9.7		11.6	17.3	6.0		7.1	11.6		5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.0	51.8	48.1		54.8	53.5	41.5		27.5	39.3		35.9
LnGrp LOS	F	D	D		D	D	D		C	D		D
Approach Vol, veh/h		1024				1058				820		
Approach Delay, s/veh		57.8				52.3				36.3		
Approach LOS		E				D				D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	28.6	45.0	21.7	34.7	28.6	45.0	18.7	37.8				
Change Period (Y+Rc), s	4.5	6.3	4.5	6.3	4.5	6.3	4.5	6.3				
Max Green Setting (Gmax), s	17.5	38.7	17.5	34.7	17.5	38.7	17.5	34.7				
Max Q Clear Time (g_c+I), s	2.0	17.9	10.0	22.3	2.0	9.9	13.9	26.7				
Green Ext Time (p_c), s	0.4	3.9	0.4	6.1	0.4	3.4	0.2	4.8				
Intersection Summary												
HCM 6th Ctrl Delay			44.3									
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	1058	472
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	10.4	6.7
Cycle Q Clear(g_c), s	10.4	6.7
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1058	472
V/C Ratio(X)	0.47	0.34
Avail Cap(c_a), veh/h	1058	472
HCM Platoon Ratio	2.00	2.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	20.6	19.8
Incr Delay (d2), s/veh	1.5	1.9
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.6	4.3
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	22.1	21.8
LnGrp LOS	C	C
Approach Vol, veh/h	860	
Approach Delay, s/veh	22.6	
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	522	1058	472	
Arrive On Green	0.37	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	7.9	5.5	
Cycle Q Clear(g_c), s	0.0	7.9	5.5	
Prop In Lane		1.00	1.00	
Lane Grp Cap(c), veh/h	522	1058	472	
V/C Ratio(X)	0.31	0.39	0.29	
Avail Cap(c_a), veh/h	522	1058	472	
HCM Platoon Ratio	2.00	2.00	2.00	
Upstream Filter(I)	1.00	1.00	1.00	
Uniform Delay (d), s/veh	24.5	20.1	19.6	
Incr Delay (d2), s/veh	0.3	1.1	1.6	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	5.6	5.4	3.7	
Unsig. Movement Delay, s/veh				
LnGrp Delay(d),s/veh	24.8	21.2	21.1	
LnGrp LOS	C	C	C	
Approach Vol, veh/h		712		
Approach Delay, s/veh		22.0		
Approach LOS		C		
Timer - Assigned Phs				

21-1550 Avilla Rancho Vistoso
Existing AM

6: Wells Fargo Drwy. & Tangerine Rd.
HCM 6th TWSC

Intersection							
Int Delay, s/veh	0.2						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑		↔	↑↑	↔		
Traffic Vol, veh/h	1039	21	2	736	10	9	
Future Vol, veh/h	1039	21	2	736	10	9	
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	1129	23	2	800	11	10	

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1152	0	1545
Stage 1	-	-	-	1141	-
Stage 2	-	-	-	404	-
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	-	-	602	-	*182
Stage 1	-	-	-	*267	-
Stage 2	-	-	-	*727	-
Platoon blocked, %	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	602	-	*182
Mov Cap-2 Maneuver	-	-	-	*182	-
Stage 1	-	-	-	*267	-
Stage 2	-	-	-	*725	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	255	-	-	602	-
HCM Lane V/C Ratio	0.081	-	-	0.004	-
HCM Control Delay (s)	20.4	-	-	11	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

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

21-1550 Avilla Rancho Vistoso
Existing PM

6: Wells Fargo Drwy./ Dwy 6 & Tangerine Rd.
HCM 6th TWSC

Intersection							
Int Delay, s/veh	1.1						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↔	↑↑	↔	
Traffic Vol, veh/h	903	41	1	9	962	29	81
Future Vol, veh/h	903	41	1	9	962	29	81
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	982	45	1	10	1046	32	88

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1026	1027	0
Stage 1	-	-	-	-	1005
Stage 2	-	-	-	-	545
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	-	-	319	672	-
Stage 1	-	-	-	-	*315
Stage 2	-	-	-	-	*649
Platoon blocked, %	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	584	584	-
Mov Cap-2 Maneuver	-	-	-	-	*227
Stage 1	-	-	-	-	*315
Stage 2	-	-	-	-	*637

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	382	-	-	584	-
HCM Lane V/C Ratio	0.313	-	-	0.019	-
HCM Control Delay (s)	18.7	-	-	11.3	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	1.3	-	-	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
Stage 1	-	-	-	-	1142
Stage 2	-	-	-	-	402
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	-	-	607	-	*183
Stage 1	-	-	-	-	*266
Stage 2	-	-	-	-	*727
Platoon blocked, %	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	607	-	*183
Mov Cap-2 Maneuver	-	-	-	-	*183
Stage 1	-	-	-	-	*266
Stage 2	-	-	-	-	*726

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	241	-	-	607	-
HCM Lane V/C Ratio	0.023	-	-	0.002	-
HCM Control Delay (s)	20.3	-	-	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./ Dwy 7 & 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	0	1562
Stage 1	-	-	-	-	1017
Stage 2	-	-	-	-	545
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	-	-	323	677	-
Stage 1	-	-	-	-	*310
Stage 2	-	-	-	-	*649
Platoon blocked, %	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	531	531	-
Mov Cap-2 Maneuver	-	-	-	-	*224
Stage 1	-	-	-	-	*310
Stage 2	-	-	-	-	*644

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	357	-	-	531	-
HCM Lane V/C Ratio	0.009	-	-	0.008	-
HCM Control Delay (s)	15.2	-	-	11.8	-
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

APPENDIX D

TRAFFIC SIGNAL WARRANT ANALYSIS

Derive from Peak Hour

Existing AM Peak Hour

Volumes																									
	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
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 Vistoco 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																							
Lanes (M/m):	<u>1/1</u>	<u>2+1</u>	<u>2+2+</u>	<u>1/2+</u>			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Minimum Reqmts	500	600	600	500																										
(100% ^a)	150	150	200	200																										
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	350	420	420	350	420	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	
(70% ^c)	105	105	140	140	140	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	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	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	
Condition B					Interruption of Cont. Traffic	Criteria	Hour																							
Lanes (M/m):	<u>1/1</u>	<u>2+1</u>	<u>2+2+</u>	<u>1/2+</u>			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Minimum Reqmts	750	900	900	750																										
(100% ^a)	75	75	100	100																										
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	525	630	630	525	630	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	
(70% ^c)	53	53	70	70	70	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	
Warrant met?	Yes					No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	
Combination					of Conditions A & B	Criteria	Hour																							
Lanes (M/m):	<u>1/1</u>	<u>2+1</u>	<u>2+2+</u>	<u>1/2+</u>			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Condition A	400	480	480	400																										
(80% ^b)	120	120	160	160																										
Condition B	600	720	720	600																										
(80% ^b)	60	60	80	80																										
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	280	336	336	280	336	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	
(56% ^d)	84	84	112	112	112	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	
Condition B	420	504	504	420	504	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	
(56% ^d)	42	42	56	56	56	No	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	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	
Warrant 2, Four Hour Vehicular Volume						Criteria	Hour																							
Lanes (M/m):	<u>1/1</u>	<u>2+1</u>	<u>2+2+</u>	<u>1/2+</u>	<u>2/2</u>		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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	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	Yes	No	No	No	No	No	
Warrant 3, Peak Hour						Criteria	Hour																							
Lanes (M/m):	<u>1/1</u>	<u>2+1</u>	<u>2+2+</u>	<u>1/2+</u>	<u>2/2</u>		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
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	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																									
	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
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 Vistoco 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	500	600	600	500																										
(100% ^a)	150	150	200	200																										
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	350	420	420	350	420	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
(70% ^c)	105	105	140	140	140	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Warrant met?	No	No	No	No	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	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	750	900	900	750																										
(100% ^b)	75	75	100	100																										
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	525	630	630	525	630	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
(70% ^c)	53	53	70	70	70	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
Warrant met?	Yes	Yes	Yes	Yes	Yes	No	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>																										
Condition A	400	480	480	400																										
(80% ^b)	120	120	160	160																										
Condition B	600	720	720	600																										
(80% ^b)	60	60	80	80																										
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	280	336	336	280	336	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
(56% ^c)	84	84	112	112	112	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
Condition B	420	504	504	420	504	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
(56% ^c)	42	42	56	56	56	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
Warrant met?	No	No	No	No	No	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

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

Warrant 3, Peak Hour

Lanes (M/m):	<u>1/1</u>	<u>2+/1</u>	<u>2+/2+</u>	<u>1/2+</u>	<u>2/2</u>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
100% See to the right																													
70% See to the right																													
Warrant met?	Yes	Yes	Yes	Yes	Use	No	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																									
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
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 Vistoco 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 500 600 600 500																										
(100%) 150 150 200 200																										
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 350 420 420 350 420	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
(70%) 105 105 140 140 140	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	Yes	No	No	No	No	No	No	No
Warrant met? No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	Yes	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 750 900 900 750																										
(100%) 75 75 100 100																										
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 525 630 630 525 630	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
(70%) 53 53 70 70 70	No	No	No	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	No	No	No	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>																										
Condition A 400 480 480 400																										
(80%) 120 120 160 160																										
Condition B 600 720 720 600																										
(80%) 60 60 80 80																										
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 280 336 336 280 336	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
(56%) 84 84 112 112 112	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Condition B 420 504 504 420 504	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
(56%) 42 42 56 56 56	No	No	No	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? No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No

Warrant 2, Four Hour Vehicular Volume

Lanes (M/m): <u>1/1</u> <u>2+/1</u> <u>2+/2+</u> <u>1/2+</u> <u>2/2</u>	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
100% See to the right																										
70% See to the right	Use											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	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No

Warrant 3, Peak Hour

Lanes (M/m): <u>1/1</u> <u>2+/1</u> <u>2+/2+</u> <u>1/2+</u> <u>2/2</u>	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
100% See to the right																										
70% See to the right	Use											Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
Warrant met? Yes	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	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	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																									
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
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 Vistoco 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
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	500	600	600	500																										
(100% ^a)	150	150	200	200																										
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	350	420	420	350	420	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
(70% ^c)	105	105	140	140	140	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No
Warrant met?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	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	750	900	900	750																										
(100% ^b)	75	75	100	100																										
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	525	630	630	525	630	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
(70% ^c)	53	53	70	70	70	No	No	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	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No	No	No	No	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):	<u>1/1</u>	<u>2+/1</u>	<u>2+/2+</u>	<u>1/2+</u>																										
Condition A	400	480	480	400																										
(80% ^b)	120	120	160	160																										
Condition B	600	720	720	600																										
(80% ^b)	60	60	80	80																										
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	280	336	336	280	336	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
(56% ^c)	84	84	112	112	112	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Condition B	420	504	504	420	504	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
(56% ^c)	42	42	56	56	56	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No
Warrant met?	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	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																														
Warrant met?	Yes	Yes	Yes	Yes	Use	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	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																														
Warrant met?	Yes	Yes	Yes	Yes	Use	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	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	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

2018-2020

CRASH STATISTICS										Involvement										Rancho Vistoso Blvd & Woodburne Ave															
2018-2020										# Incidents	Totals	# Motorists	# Non-Motorists																						
Incidents										14	26 Veh	29	0																						
Fatal										0	0 Ppl	0	0																						
Injury										2	3 Ppl	0	0																						
PDO										12	22 Veh			Hit & Run?										0											
Peds/Bikes Summary										Intersection Related?										1															
										Injuries																									
										Incidents	Persons	Fatal	Non-Fatal											Code	No.										
Pedestrian:										0	0	0	0	JunctionRelation																					
Bicycle:										0	0	0	0	NOT_JUNCTION_RELATED										0	4										
										INTERSECTION_NON_INTERCHANGE										1	1														
										INTERSECTION_RELATED_NON_INTERCHANGE										2	0														
										ENTRANCE_EXIT_RAMP_NON_INTERCHANGE										3	3														
										RAILWAY_GRADE_CROSSING										4	0														
										CROSSOVER_RELATED										5	0														
										FRONTAGE_ROAD_NON_INTERCHANGE										6	4														
										DRIVEWAY										7	2														
										ALLEY_ACCESS_RELATED										8	0														
										UNKNOWN_NON_INTERCHANGE										9	0														
										THRU_ROADWAY										10	0														
										INTERSECTION_INTERCHANGE										11	0														
										INTERSECTION_RELATED_INTERCHANGE										12	0														
										ENTRANCE_EXIT_RAMP_INTERCHANGE										13	0														
										FRONTAGE_ROAD_INTERCHANGE										14	0														
										OTHER_PART_OF_INTERCHANGE										15	0														
										<not defined>										16	0														
										UNKNOWN_INTERCHANGE										17	0														
										UNKNOWN_JUNCTION										18	0														
										UNKNOWN										99	0														
										OTHER_NON_INTERCHANGE										109	0														
										Check Total											14														
										CollisionManner																									
										SINGLE_VEHICLE										1	2														
										ANGLE (front to side)(other than left turn)										2	2														
										LEFT_TURN										3	5														
										REAR_END										4	3														
										HEAD_ON										5	0														
										SIDESWIPE_SAME_DIRECTION										6	2														
										SIDESWIPE_OPPOSITE_DIRECTION										7	0														
										REAR_TO_SIDE										8	0														
										REAR_TO_REAR										9	0														
										OTHER										97	0														
										UNKNOWN										99	0														
										Check Total											14														
										TravelDirection																									
										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															
										Check Total											14														
										Weekday																									
										Sunday										1	2														
										Monday										2	2														
										Tuesday										3	0														
										Wednesday										4	0														
										Thursday										5	2														
										Friday										6	6														
										Saturday										7	2														
										Check Total											14														
										First Harmful Event										Code	No.														
										OVERTURN_ROLLOVER										1	0														
										FIRE_EXPLOSION										2	0														
										IMMERSION										3	0														
										JACKKNIFE										4	0														
										CARGO_EQUIPMENT_LOSS_SHIFT										5	0														
										FELL_JUMPED_FROM_VEHICLE										6	0														
										THROWN_OR_FALLING_OBJECT										7	0														
										OTHER_NON_COLLISION										8	0														
										EQUIPMENT_FAILURE_TIRES_BRAKES										9	0														
										SEPARATION_OF_UNITS										10	0														
										RAN_OFF_ROAD_RIGHT										11	0														
										RAN_OFF_ROAD_LEFT										12	0														
										CROSS_MEDIAN										13	0														
										CROSS_CENTERLINE										14	0														
										DOWNHILL_RUNAWAY										15	0														
										MOTOR_VEHICLE_IN_TRANSPORT										16	12														
										PEDESTRIAN										17	0														
										PEDALCYCLE										18	0														
										RAILWAY_VEHICLE_TRAIN_ENGINE										19	0														
										LIGHT_RAILWAY_RAILCAR_VEHICLE										20	0														
										ANIMAL_WILD_NON_GAME										21	0														
										ANIMAL_WILD_GAME										22	0														
										ANIMAL_PET										23	0														
										ANIMAL_LIVESTOCK										24	0														
										PARKED_MOTOR_VEHICLE										25	0														
										WORK_ZONE_MAINTENANCE_EQUIPMENT										26	0														
										STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT										27	0														
										OTHER_NON_FIXED_OBJECT										28	0														
										IMPACT_ATTENUATOR_CRASH_CUSHION										29	0														
										BRIDGE_OVERHEAD_STRUCTURE										30	0														
										BRIDGE_RAIL										31	0														
										CULVERT										32	0														
										CURB										33	2														
										DITCH										34	0														
										EMBANKMENT										35	0														
										GUARDRAIL_FACE										36	0														
										GUARDRAIL_END										37	0														
										CONCRETE_TRAFFIC_BARRIER										38	0														
										CABLE_TRAFFIC_BARRIER										39	0														
										OTHER_TRAFFIC_BARRIER										40	0														
										TREE_BUSH_STUMP_STANDING										41	0														
										TRAFFIC_SIGN_SUPPORT										42	0														
										TRAFFIC_SIGNAL_SUPPORT										43	0														
										UTILITY_POLE_LIGHT_SUPPORT										44	0														
										OTHER_POST_POLE_OR_SUPPORT										45	0														
										FENCE										46	0														
										MAILBOX										47	0														
										BUILDING										48	0														
										OTHER_FIXED_OBJECT										49	0														
										UNKNOWN										99	0														
										Not Reported										255	0														
										Check Total											14														
										Code No.																									
										Month																									
										January										1	2														
										February										2	0														
										March										3	1														
										April										4	0														
										May										5	0														
										June										6	1														
										July										7	1														
										August										8	1														
										September										9	1														
										October										10	1														
										November										11	1														
										December										12	5														
										Total											14														
										(Unit) SurfaceCondition																									
										DRY										1	23														
										WET										2	3														
										SNOW										3	0														
										SLUSH										4	0														
										ICE_FROST										5	0														
										WATER_STANDING_MOVING										6	0														
										SAND										7	0														
										MUD_DIRT_GRAVEL										8	0														
										OIL										9	0														
										OTHER										97	0														
										UNKNOWN										99	0														
										Total											26														
										Additional Useful Information																									
										Vehicle Action Codes																									
										1 GOING_STRAIGHT_AHEAD																									
										2 SLOWING_IN_TRAFFICWAY																									
										3 STOPPED_IN_TRAFFICWAY																									
										4 MAKING_LEFT_TURN																									
										5 MAKING_RIGHT_TURN																									
										6 MAKING_U_TURN																									
										7 OVERTAKING_PASSING																									
										8 CHANGING_LANES																									
										9 NEGOTIATING_A_CURVE																									
										10 BACKING																									
										11 Avoiding_Vehicle_Object_Pedestrian																									
										12 ENTERING_PARKING_POSITION																									
										13 LEAVING_PARKING_POSITION																									
										14 PROPERLY_PARKED																									
										15 IMPROPERLY_PARKED																									
										16 DRIVERLESS_MOVING_VEHICLE																									
										17 CROSSING_ROAD																									
										18 WALKING_WITH_TRAFFIC																									
										19 WALKING_AGAINST_TRAFFIC																									
										20 STANDING																									
										21 LYING																									
										22 GETTING_ON_OR_OFF_VEHICLE																									
										23 WORKING_ON_OR_PUSHING_VEHICLE																									
										24 WORKING_ON_ROAD																									
										97 OTHER																									
										99 UNKNOWN																									
										Body Styles																									
										-1 NOT_REPORTED																									
										1 \Passenger Vehicles, including RVs																									
										53 /																									
										54 \TRUCKS																									
										88 /																									
										89 \MOBILEHOME (NOT RVS)																									
										92 /																									
										93 \TRAILERS																									
										120 /																									
										121 \MOTORCYCLES																									
										128 /																									
										254 UNKNOWN																									
										255 NOT_REPORTED																									

<----- LOCATION ----->							<-DATE & TIME->						<----- UNITS ----->												<----- PERSON ----->												<----- SEVERITY ----->												<----- GENERAL ----->											
INCIDENT	ON	STREET	MP	OFF-SET	DIRECTION	INTERSECT STREET	NCIC	NCIC	YYMMDD	HH:MM	DW	TOTAL	SRFCND	ALGMT	GRADE	DFCTS	BSTYLE	TRDR	UACT	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	1	1	1	1	20	1	0		1	0	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	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	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													
3583924	10	WOODBURNE		P	0	Rancho Vistoso Blvd	1007	1007	191013	13:13	1	2	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	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	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		0	41	N	6		1	0	1	1	7		0		1		0	255	1	0	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	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	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	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	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

<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	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

2018-2020

		Involvement			
		# Incidents	Totals	# Motorists	# Non-Motorists
<u>Incidents</u>		12	22 Veh	25	0
Fatal		0	0 Ppl	0	0
Injury		1	1 Ppl	0	0
PDO		11	20 Veh		
<u>Peds/Bikes Summary</u>					
		Incidents	<u>Injuries</u>		
			Persons	Fatal	Non-Fatal
Pedestrian:		0	0	0	0
Bicycle:		0	0	0	0
		Code	No.		
<u>LightCondition</u>				<u>JunctionRelation</u>	
DAYLIGHT		1	11	NOT_JUNCTION_RELATED	0 4
DAWN		2	0	INTERSECTION_NON_INTERCHANGE	1 1
DUSK		3	0	INTERSECTION_RELATED_NON_INTERCHANGE	2 0
DARK_LIGHTED		4	1	ENTRANCE_EXIT_RAMP_NON_INTERCHANGE	3 1
DARK_NOT_LIGHTED		5	0	RAILWAY_GRADE_CROSSING	4 0
DARK_UNKNOWN_LIGHTING		6	0	CROSSOVER_RELATED	5 0
UNKNOWN		99	0	FRONTAGE_ROAD_NON_INTERCHANGE	6 4
Check Total			12	DRIVEWAY	7 2
				ALLEY_ACCESS_RELATED	8 0
<u>Weather</u>				UNKNOWN_NON_INTERCHANGE	9 0
CLEAR		1	10	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			12	Check Total	12
				<u>CollisionManner</u>	
<u>TrafficWayType</u>				SINGLE_VEHICLE	1 2
ONE_WAY_TRAFFICWAY		1	0	ANGLE (front to side)(other than left turn)	2 2
TWO_WAY_NOT_DIVIDED		2	1	LEFT_TURN	3 4
ED_WITH_CONTINUOUS_LEFT_TURN_LANE		3	0	REAR_END	4 2
UNPROTECTED_PAINTED_4_FEET_MEDIAN		4	10	HEAD_ON	5 0
DED_POSITIVE_MEDIAN_BARRIER		5	0	SIDESWIPE_SAME_DIRECTION	6 2
UNKNOWN		99	1	SIDESWIPE_OPPOSITE_DIRECTION	7 0
Check Total			12	REAR_TO_SIDE	8 0
				REAR_TO_REAR	9 0
				OTHER	97 0
				UNKNOWN	99 0
				Check Total	12
				<u>TravelDirection</u>	
<u>Weekday</u>				1 NORTH	N
Sunday		1	1	2 SOUTH	S
Monday		2	1	3 EAST	E
Tuesday		3	0	4 WEST	W
Wednesday		4	0	5 NORTHWEST	NW
Thursday		5	2	6 NORTHEAST	NE
Friday		6	6	7 SOUTHWEST	SW
Saturday		7	2	8 SOUTHEAST	SE
Check Total			12	99 UNKNOWN	99

		Code	No.
<u>First Harmful Event</u>			
OVERTURN_ROLLOVER		1	0
FIRE_EXPLOSION		2	0
IMMERSION		3	0
JACKKNIFE		4	0
CARGO_EQUIPMENT_LOSS_SHIFT		5	0
FELL_JUMPED_FROM_VEHICLE		6	0
THROWN_OR_FALLING_OBJECT		7	0
OTHER_NON_COLLISION		8	0
EQUIPMENT_FAILURE_TIRES_BRAKES		9	0
SEPARATION_OF_UNITS		10	0
RAN_OFF_ROAD_RIGHT		11	0
RAN_OFF_ROAD_LEFT		12	0
CROSS_MEDIAN		13	0
CROSS_CENTERLINE		14	0
DOWNHILL_RUNAWAY		15	0
MOTOR_VEHICLE_IN_TRANSPORT		16	10
PEDESTRIAN		17	0
PEDALCYCLE		18	0
RAILWAY_VEHICLE_TRAIN_ENGINE		19	0
LIGHT_RAILWAY_RAILCAR_VEHICLE		20	0
ANIMAL_WILD_NON_GAME		21	0
ANIMAL_WILD_GAME		22	0
ANIMAL_PET		23	0
ANIMAL_LIVESTOCK		24	0
PARKED_MOTOR_VEHICLE		25	0
WORK_ZONE_MAINTENANCE_EQUIPMENT		26	0
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT		27	0
OTHER_NON_FIXED_OBJECT		28	0
IMPACT_ATTENUATOR_CRASH_CUSHION		29	0
BRIDGE_OVERHEAD_STRUCTURE		30	0
BRIDGE_RAIL		31	0
CULVERT		32	0
CURB		33	2
DITCH		34	0
EMBANKMENT		35	0
GUARDRAIL_FACE		36	0
GUARDRAIL_END		37	0
CONCRETE_TRAFFIC_BARRIER		38	0
CABLE_TRAFFIC_BARRIER		39	0
OTHER_TRAFFIC_BARRIER		40	0
TREE_BUSH_STUMP_STANDING		41	0
TRAFFIC_SIGN_SUPPORT		42	0
TRAFFIC_SIGNAL_SUPPORT		43	0
UTILITY_POLE_LIGHT_SUPPORT		44	0
OTHER_POST_POLE_OR_SUPPORT		45	0
FENCE		46	0
MAILBOX		47	0
BUILDING		48	0
OTHER_FIXED_OBJECT		49	0
UNKNOWN		99	0
Not Reported		255	0
Check Total			12

		Code	No.
		Month	
		January	1 2
		February	2 0
		March	3 1
		April	4 0
		May	5 0
		June	6 1
		July	7 1
		August	8 1
		September	9 0
		October	10 0
		November	11 1
		December	12 5
		Total	12
		(Unit) SurfaceCondition	
		DRY	1 19
		WET	2 3
		SNOW	3 0
		SLUSH	4 0
		ICE_FROST	5 0
		WATER_STANDING_MOVING	6 0
		SAND	7 0
		MUD_DIRT_GRAVEL	8 0
		OIL	9 0
		OTHER	97 0
		UNKNOWN	99 0
		Total	22

Rancho Visoto & Upper Plaza

Additional Useful Information

<u>Vehicle Action Codes</u>	
1	GOING_STRAIGHT_AHEAD
2	SLOWING_IN_TRAFFICWAY
3	STOPPED_IN_TRAFFICWAY
4	MAKING_LEFT_TURN
5	MAKING_RIGHT_TURN
6	MAKING_U_TURN
7	OVERTAKING_PASSING
8	CHANGING_LANES
9	NEGOTIATING_A_CURVE
10	BACKING
11	Avoiding_Vehicle_Object_Pedestrian
12	ENTERING_PARKING_POSITION
13	LEAVING_PARKING_POSITION
14	PROPERLY_PARKED
15	IMPROPERLY_PARKED
16	DRIVERLESS_MOVING_VEHICLE
17	CROSSING_ROAD
18	WALKING_WITH_TRAFFIC
19	WALKING_AGAINST_TRAFFIC
20	STANDING
21	LYING
22	GETTING_ON_OR_OFF_VEHICLE
23	WORKING_ON_OR_PUSHING_VEHICLE
24	WORKING_ON_ROAD
97	OTHER
99	UNKNOWN

<u>Body Styles</u>	
-1	NOT_REPORTED
1	\Passenger Vehicles, including RVs
53	/
54	\TRUCKS
88	/
89	\MOBILEHOME (NOT RVS)
92	/
93	\TRAILERS
120	/
121	\MOTORCYCLES
128	/
254	UNKNOWN
255	NOT REPORTED

<-----LOCATION----->						<-DATE & TIME-><-----UNITS----->												<-----PERSON----->												<-----SEVERITY----->												<-----GENERAL----->													
INCIDENT	ON	STREET	MP	OFF-SET	D R	DIS-TANCE	INTERSECT STREET	NCIC	NCIC	YYMMDD	HH:MM	W	TAL	U1	U2	1	2	1	2	DFCTS	U1	U2	BSTYLE	U1	U2	TRDR	U1	U2	UACT	U1	U2	TTL	TTL	TYP	INJR	VLTN	PHSCND	NON	INCIDENTS	INJURIES	FATALITIES	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			3	0	1	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	1	2		0		1	2	0		1		0		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				
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	1	7		0			1		0		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 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

2018-2019

2018-2019				
	# Incidents	Totals	# Motorists	# Non-Motorists
<u>Incidents</u>	4	8 Veh	11	0
Fatal	0	0 Ppl	0	0
Injury	2	2 Ppl	0	0
PDO	2	4 Veh		
<u>Peds/Bikes Summary</u>		<u>Injuries</u>		
	Incidents	Persons	Fatal	Non-Fatal
Pedestrian:	0	0	0	0
Bicycle:	0	0	0	0
				INTERSECTION
	<u>Code</u>	<u>No.</u>		ENTRANCE_RELATIONSHIP
<u>LightCondition</u>				
DAYLIGHT	1	3		
DAWN	2	0		FRONTAGE_ROAD_RELATIONSHIP
DUSK	3	0		
DARK_LIGHTED	4	1		
DARK_NOT_LIGHTED	5	0		
DARK_UNKNOWN_LIGHTING	6	0		
UNKNOWN	99	0		
Check Total		4		INTERSECTION_RELATIONSHIP
				ENTRANCE_RELATIONSHIP
<u>Weather</u>				
CLEAR	1	4		
CLOUDY	2	0		
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0		
RAIN	4	0		
SNOW	5	0		
SEVERE_CROSSWINDS	6	0		
BLOWING_SAND_SOIL_DIRT	7	0		
FOG_SMOG_SMOKE	8	0		
BLOWING_SNOW	9	0		
OTHER	97	0		
UNKNOWN	99	0		ANGLE
Check Total		4		
<u>TrafficWayType</u>				
ONE_WAY_TRAFFICWAY	1	0		
TWO_WAY_NOT_DIVIDED	2	0		SIDEWALK
DED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	0		
_UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	4		
IDED_POSITIVE_MEDIAN_BARRIER	5	0		
UNKNOWN	99	0		
Check Total		4		
<u>Weekday</u>				
Sunday	1	0		
Monday	2	0		
Tuesday	3	2		
Wednesday	4	0		
Thursday	5	0		
Friday	6	1		
Saturday	7	1		
Check Total		4		

Rancho Vista & Central Driveway

	<u>Code</u>	<u>No.</u>		<u>Code No.</u>	<u>Additional Useful Information</u>
<u>First Harmful Event</u>			<u>Month</u>		
OVERTURN_ROLLOVER	1	0	January	1 0	<u>Vehicle Action Codes</u>
FIRE_EXPLOSION	2	0	February	2 1	1 GOING_STRAIGHT_AHEAD
IMMERSSION	3	0	March	3 2	2 SLOWING_IN_TRAFFICWAY
JACKKNIFE	4	0	April	4 0	3 STOPPED_IN_TRAFFICWAY
CARGO_EQUIPMENT_LOSS_SHIFT	5	0	May	5 0	4 MAKING_LEFT_TURN
FELL_JUMPED_FROM_VEHICLE	6	0	June	6 0	5 MAKING_RIGHT_TURN
THROWN_OR_FALLING_OBJECT	7	0	July	7 0	6 MAKING_U_TURN
OTHER_NON_COLLISION	8	0	August	8 0	7 OVERTAKING_PASSING
EQUIPMENT_FAILURE_TIRES_BRAKES	9	0	September	9 0	8 CHANGING_LANES
SEPARATION_OF_UNITS	10	0	October	10 0	9 NEGOTIATING_A_CURVE
RAN_OFF_ROAD_RIGHT	11	0	November	11 1	10 BACKING
RAN_OFF_ROAD_LEFT	12	0	December	12 0	11 Avoiding_Vehicle_Object_Pedestrian
CROSS_MEDIAN	13	0	Total	4	12 ENTERING_PARKING_POSITION
CROSS_CENTERLINE	14	0			13 LEAVING_PARKING_POSITION
DOWNHILL_RUNAWAY	15	0	<u>(Unit) SurfaceCondition</u>		14 PROPERLY_PARKED
MOTOR_VEHICLE_IN_TRANSPORT	16	4	DRY	1 8	15 IMPROPERLY_PARKED
PEDESTRIAN	17	0	WET	2 0	16 DRIVERLESS_MOVING_VEHICLE
PEDALCYCLE	18	0	SNOW	3 0	17 CROSSING_ROAD
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0	SLUSH	4 0	18 WALKING_WITH_TRAFFIC
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0	ICE_FROST	5 0	19 WALKING_AGAINST_TRAFFIC
ANIMAL_WILD_NON_GAME	21	0	WATER_STANDING_MOVING	6 0	20 STANDING
ANIMAL_WILD_GAME	22	0	SAND	7 0	21 LYING
ANIMAL_PET	23	0	MUD_DIRT_GRAVEL	8 0	22 GETTING_ON_OR_OFF_VEHICLE
ANIMAL_LIVESTOCK	24	0	OIL	9 0	23 WORKING_ON_OR_PUSHING_VEHICLE
PARKED_MOTOR_VEHICLE	25	0	OTHER	97 0	24 WORKING_ON_ROAD
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0	UNKNOWN	99 0	97 OTHER
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0	Total	8	99 UNKNOWN
OTHER_NON_FIXED_OBJECT	28	0			
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0			<u>Body Styles</u>
BRIDGE_OVERHEAD_STRUCTURE	30	0			-1 NOT_REPORTED
BRIDGE_RAIL	31	0			1 \Passenger Vehicles, including RVs
CULVERT	32	0			53 /
CURB	33	0			54 \TRUCKS
DITCH	34	0			88 /
EMBANKMENT	35	0			89 \MOBILEHOME (NOT RVS)
GUARDRAIL_FACE	36	0			92 /
GUARDRAIL_END	37	0			93 \TRAILERS
CONCRETE_TRAFFIC_BARRIER	38	0			120 /
CABLE_TRAFFIC_BARRIER	39	0			121 \MOTORCYCLES
OTHER_TRAFFIC_BARRIER	40	0			128 /
TREE_BUSH_STUMP_STANDING	41	0			254 UNKNOWN
TRAFFIC_SIGN_SUPPORT	42	0			255 NOT REPORTED
TRAFFIC_SIGNAL_SUPPORT	43	0			
UTILITY_POLE_LIGHT_SUPPORT	44	0			
OTHER_POST_POLE_OR_SUPPORT	45	0			
FENCE	46	0			
MAILBOX	47	0			
BUILDING	48	0			
OTHER_FIXED_OBJECT	49	0			
UNKNOWN	99	0			
Not Reported	255	0			
Check Total		4			

<----- LOCATION ----->						<-DATE & TIME->				<----- UNITS ----->														<----- PERSON ----->										<----- SEVERITY ----->										<----- GENERAL ----->																																	
INCIDENT	ON STREET	MP	OFF-SET	D-R	DIS-TANCE	INTERSECT STREET	NCIC	OFCR NCIC	YYMMDD	HH:MM	D-W	TO-TAL	SRFCND	U1	U2	ALGMT	1	2	GRADE	1	2	DFCTS	U1	U2	BSTYLE	U1	U2	TRDR	1	2	UACT	U1	U2	TTL	TTL	TYP	1	2	1	2	INJR	1	2	VLTN	D1	D2	PHSCND	D1	D2	NON	INCIDENTS	INJURIES	FATALITIES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	HE	CD	M	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	0	0	44	50	SW	N	4	1	2	4	1	2	0	1	1	2	1	20	1	0	0	255	1	1	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	0	44	30	SE	N	4	1	3	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	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	0	N	1	1	0	4	16	3																								

Rancho Vista & Central Driveway

SUMMARY BY YEAR

SEVERITY / INCIDENTS	2018	2019	2020	Totals	Checks
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					
SEVERITY / INVOLVMENT					
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					
COLLISION MANNER					
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

2018 - 2020

[illegible]

CRASH LISTING

Rancho Vistoso Blvd/ 1st Ave & Tangerine Rd

<-----LOCATION----->						<-DATE & TIME-><-----						UNITS										>>>									
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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	7	
LEFT_TURN	3	2	9	15	
REAR_END	4	5	7	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 STATISTICS

2018-2019

CRASH STATISTICS		Involvement			
2018-2019		# Incidents	Totals	# Motorists	# Non-Motorists
<u>Incidents</u>		2	3 Veh	3	0
Fatal	0	0 Ppl	0	0	
Injury	0	0 Ppl	0	0	
PDO	2	3 Veh			
<u>Peds/Bikes Summary</u>		<u>Injuries</u>			
	Incidents	Persons	Fatal	Non-Fatal	
Pedestrian:	0	0	0	0	
Bicycle:	0	0	0	0	
		<u>Code</u>	<u>No.</u>		
<u>LightCondition</u>					
DAYLIGHT	1	2			
DAWN	2	0			
DUSK	3	0			
DARK_LIGHTED	4	0			
DARK_NOT_LIGHTED	5	0			
DARK_UNKNOWN_LIGHTING	6	0			
UNKNOWN	99	0			
Check Total		2			
<u>Weather</u>					
CLEAR	1	0			
CLOUDY	2	1			
SLEET_HAIL_FREEZING_RAIN_OR_DRIZZLE	3	0			
RAIN	4	1			
SNOW	5	0			
SEVERE_CROSSWINDS	6	0			
BLOWING_SAND_SOIL_DIRT	7	0			
FOG_SMOG_SMOKE	8	0			
BLOWING_SNOW	9	0			
OTHER	97	0			
UNKNOWN	99	0			
Check Total		2			
<u>TrafficWayType</u>					
ONE_WAY_TRAFFICWAY	1	0			
TWO_WAY_NOT_DIVIDED	2	0			
ED_WITH_CONTINUOUS_LEFT_TURN_LANE	3	0			
UNPROTECTED_PAINTED_4_FEET_MEDIAN	4	2			
DED_POSITIVE_MEDIAN_BARRIER	5	0			
UNKNOWN	99	0			
Check Total		2			
		<u>TravelDirection</u>			
Sunday	1	0	1 NORTH	N	
Monday	2	1	2 SOUTH	S	
Tuesday	3	0	3 EAST	E	
Wednesday	4	0	4 WEST	W	
Thursday	5	0	5 NORTHWEST	NW	
Friday	6	0	6 NORTHEAST	NE	
Saturday	7	1	7 SOUTHWEST	SW	
Check Total		2	8 SOUTHEAST	SE	
			99 UNKNOWN	99	

		<u>Code</u>	<u>No.</u>
<u>First Harmful Event</u>			
OVERTURN_ROLLOVER	1	0	
FIRE_EXPLOSION	2	0	
IMMERSION	3	0	
JACKKNIFE	4	0	
CARGO_EQUIPMENT_LOSS_SHIFT	5	0	
FELL_JUMPED_FROM_VEHICLE	6	0	
THROWN_OR_FALLING_OBJECT	7	0	
OTHER_NON_COLLISION	8	0	
EQUIPMENT_FAILURE_TIRES_BRAKES	9	0	
SEPARATION_OF_UNITS	10	0	
RAN_OFF_ROAD_RIGHT	11	0	
RAN_OFF_ROAD_LEFT	12	0	
CROSS_MEDIAN	13	0	
CROSS_CENTERLINE	14	0	
DOWNHILL_RUNAWAY	15	0	
MOTOR_VEHICLE_IN_TRANSPORT	16	1	
PEDESTRIAN	17	0	
PEDALCYCLE	18	0	
RAILWAY_VEHICLE_TRAIN_ENGINE	19	0	
LIGHT_RAILWAY_RAILCAR_VEHICLE	20	0	
ANIMAL_WILD_NON_GAME	21	0	
ANIMAL_WILD_GAME	22	0	
ANIMAL_PET	23	0	
ANIMAL_LIVESTOCK	24	0	
PARKED_MOTOR_VEHICLE	25	0	
WORK_ZONE_MAINTENANCE_EQUIPMENT	26	0	
STRUCK_BY_FALLING_SHIFTING_CARGO_OR_OBJECT	27	0	
OTHER_NON_FIXED_OBJECT	28	0	
IMPACT_ATTENUATOR_CRASH_CUSHION	29	0	
BRIDGE_OVERHEAD_STRUCTURE	30	0	
BRIDGE_RAIL	31	0	
CULVERT	32	0	
CURB	33	0	
DITCH	34	0	
EMBANKMENT	35	0	
GUARDRAIL_FACE	36	0	
GUARDRAIL_END	37	0	
CONCRETE_TRAFFIC_BARRIER	38	0	
CABLE_TRAFFIC_BARRIER	39	0	
OTHER_TRAFFIC_BARRIER	40	0	
TREE_BUSH_STUMP_STANDING	41	1	
TRAFFIC_SIGN_SUPPORT	42	0	
TRAFFIC_SIGNAL_SUPPORT	43	0	
UTILITY_POLE_LIGHT_SUPPORT	44	0	
OTHER_POST_POLE_OR_SUPPORT	45	0	
FENCE	46	0	
MAILBOX	47	0	
BUILDING	48	0	
OTHER_FIXED_OBJECT	49	0	
UNKNOWN	99	0	
Not Reported	255	0	
Check Total		2	

		<u>Code</u>	<u>No.</u>
		<u>Month</u>	
	January	1	0
	February	2	0
	March	3	0
	April	4	0
	May	5	0
	June	6	0
	July	7	0
	August	8	0
	September	9	0
	October	10	0
	November	11	0
	December	12	2
	Total		2
		<u>(Unit) SurfaceCondition</u>	
	DRY	1	2
	WET	2	1
	SNOW	3	0
	SLUSH	4	0
	ICE_FROST	5	0
	WATER_STANDING_MOVING	6	0
	SAND	7	0
	MUD_DIRT_GRAVEL	8	0
	OIL	9	0
	OTHER	97	0
	UNKNOWN	99	0
	Total		3

		<u>Additional Useful Information</u>	
		<u>Vehicle Action Codes</u>	
	1 GOING_STRAIGHT_AHEAD		
	2 SLOWING_IN_TRAFFICWAY		
	3 STOPPED_IN_TRAFFICWAY		
	4 MAKING_LEFT_TURN		
	5 MAKING_RIGHT_TURN		
	6 MAKING_U_TURN		
	7 OVERTAKING_PASSING		
	8 CHANGING_LANES		
	9 NEGOTIATING_A_CURVE		
	10 BACKING		
	11 Avoiding_Vehicle_Object_Pedestrian		
	12 ENTERING_PARKING_POSITION		
	13 LEAVING_PARKING_POSITION		
	14 PROPERLY_PARKED		
	15 IMPROPERLY_PARKED		
	16 DRIVERLESS_MOVING_VEHICLE		
	17 CROSSING_ROAD		
	18 WALKING_WITH_TRAFFIC		
	19 WALKING_AGAINST_TRAFFIC		
	20 STANDING		
	21 LYING		
	22 GETTING_ON_OR_OFF_VEHICLE		
	23 WORKING_ON_OR_PUSHING_VEHICLE		
	24 WORKING_ON_ROAD		
	97 OTHER		
	99 UNKNOWN		
		<u>Body Styles</u>	
	-1 NOT_REPORTED		
	1 \Passenger Vehicles, including RVs		
	53 /		
	54 \TRUCKS		
	88 /		
	89 \MOBILEHOME (NOT RVS)		
	92 /		
	93 \TRAILERS		
	120 /		
	121 \MOTORCYCLES		
	128 /		
	254 UNKNOWN		
	255 NOT REPORTED		

<-----LOCATION----->								<-DATE & TIME-><-----UNITS----->								<-----PERSON----->												<-----SEVERITY----->												<-----GENERAL----->														
INCIDENT	ON	STREET	MP	OFF-SET	D-R	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	MOT	NON	1	2	D1	D2	D1	D2	LOC	PDO	INJ	FAT	TT	LT	MOT	NON	TT	LT	MOT	NON	R	CN	CN	REL	CD	CD	C
3470258	10	TANGERINE		P		100	Tami Pl	1007	1007	181210	14:37	2	1	2		1		1		0		32		W		8		1	0	1		1		2		0				1		0		0		N	1	4	0	4	41	1		
3606366	10	TANGERINE		P		0	Tami Pl	1007	1007	191207	10:47	7	2	1	1	1	1	1	0	0	0	31	47	E	E	2	1	2	0	1	1	1	1	97	1	0	0	255	1		0		0		N	1	2	6	4	16	4			

Tami Place & Tangerine Road

SUMMARY BY YEAR

SEVERITY / INCIDENTS	2018	2019	2020	Totals	Checks
Fatal Injury Incidents					
Non-fatal Injury Incidents					
PDO Incidents	1	1		2	
TOTALS	1	1		2	
Pedestrian Incidents					
Pedestrians Involved					
Bicycle Incidents					
Bicyclists Involved					
SEVERITY / INVOLVMENT					
Fatal Injuries					
Non-Fatal Injuries					
PDO Vehicles	1	2		3	
Pedestrians Fatally Injured					
Pedestrians Non-Fatally Injured					
Bicyclists Fatally Injured					
Bicyclists Non-Fatally Injured					
COLLISION MANNER					
SINGLE_VEHICLE	1	1		1	
ANGLE	2				
LEFT_TURN	3				
REAR_END	4	1		1	
HEAD_ON	5				
SIDESWIPE_SAME_DIRECTION	6				
IDESWIPE_OPPOSITE_DIRECTION	7				
REAR_TO_SIDE	8				
REAR_TO_REAR	9				
OTHER	97				
UNKNOWN	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	87 Dwelling Units	220	Multifamily Housing (Low-Rise Not Close to Rail)
7I Apartments(Low-Rise) Not Close to Rail	118 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)

Vehicular 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	(not used)
5U Apartments(Low-Rise) Not Close to Rail	FC: $T=6.41 \times X + 75.31$ [7.28]	FC: $T=0.31 \times X + 22.85$ [0.57]	FC: $T=0.43 \times X + 20.55$ [0.67]	
7I Apartments(Low-Rise) Not Close to Rail	FC: $T=6.41 \times X + 75.31$ [7.05]	FC: $T=0.31 \times X + 22.85$ [0.50]	FC: $T=0.43 \times X + 20.55$ [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				(not used)			
	% In	In	Out	Total	% In	In	Out	Total	% In	In	Out	Total	% In	In	Out	Total
5U Apartments(Low-Rise) Not Close to Rail	50%	316	316	632	24%	12	38	50	63%	37	21	58				
7I Apartments(Low-Rise) Not Close to Rail	50%	416	416	832	24%	14	45	59	63%	45	26	71				

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

21-1550 Avilla Rancho Vistoso
2023 Background 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 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	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	WBL	WBT	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	2	38	0	19	136	554	32	58	796
Future Volume (vph)	2	38	0	19	136	554	32	58	796
Turn Type	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases			8			2			6
Permitted Phases	4	8		2	2		2	6	
Detector Phase	4	8	8	2	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)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	42.5	42.5	42.5	42.5	42.5	42.5
Total Split (%)	34.6%	34.6%	34.6%	65.4%	65.4%	65.4%	65.4%	65.4%	65.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	C-Max	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
2023 Background PM

2: Rancho Vistoso Blvd. & Avilla Dr.
Timings

Lane Group	EBL	WBL	WBT	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	5	89	0	49	170	858	43	26	603
Future Volume (vph)	5	89	0	49	170	858	43	26	603
Turn Type	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases			8			2			6
Permitted Phases	4	8		2	2		2	6	
Detector Phase	4	8	8	2	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)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	42.5	42.5	42.5	42.5	42.5	42.5
Total Split (%)	34.6%	34.6%	34.6%	65.4%	65.4%	65.4%	65.4%	65.4%	65.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	C-Max	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
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 (Qb), veh	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
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	164	103	0	189	0	87		587	2866	1278	749	2866
Arrive On Green	0.06	0.00	0.00	0.06	0.00	0.06		1.00	1.00	1.00	0.81	0.81
Sat Flow, veh/h	1383	1870	0	1418	0	1585		640	3554	1585	791	3647
Grp Volume(v), veh/h	2	0	0	41	0	27		148	602	35	63	865
Grp Sat Flow(s),veh/h/ln	1383	1870	0	1418	0	1585		640	1777	1585	791	1777
Q Serve(g_s), s	0.1	0.0	0.0	1.8	0.0	1.1		1.6	0.0	0.0	1.1	4.0
Cycle Q Clear(g_c), s	1.2	0.0	0.0	1.8	0.0	1.1		5.7	0.0	0.0	1.1	4.0
Prop In Lane	1.00		0.00	1.00		1.00		1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	164	103	0	189	0	87		587	2866	1278	749	2866
V/C Ratio(X)	0.01	0.00	0.00	0.22	0.00	0.31		0.25	0.21	0.03	0.08	0.30
Avail Cap(c_a), veh/h	471	518	0	503	0	439		587	2866	1278	749	2866
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
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	30.1	0.0	0.0	29.9	0.0	29.5		0.2	0.0	0.0	1.3	1.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.6	0.0	2.0		1.0	0.2	0.0	0.2	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
%ile BackOfQ(95%),veh/ln	0.1	0.0	0.0	1.1	0.0	0.8		0.3	0.1	0.0	0.2	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	0.0	0.0	30.4	0.0	31.5		1.3	0.2	0.0	1.5	1.9
LnGrp LOS	C	A	A	C	A	C		A	A	A	A	A
Approach Vol, veh/h		2			68				785			928
Approach Delay, s/veh		30.1			30.9				0.4			1.9
Approach LOS		C			C				A			A
Timer - Assigned Phs	2			4		6			8			
Phs Duration (G+Y+Rc), s	56.9			8.1		56.9			8.1			
Change Period (Y+Rc), s	4.5			4.5		4.5			4.5			
Max Green Setting (Gmax), s	38.0			18.0		38.0			18.0			
Max Q Clear Time (g_c+I), s	7.7			3.2		6.0			3.8			
Green Ext Time (p_c), s	6.4			0.0		7.7			0.1			

Intersection Summary

HCM 6th Ctrl Delay	2.3
HCM 6th LOS	A

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 (Qb), veh	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
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	191	184	0	250	0	156		663	2712	1209	549	2712
Arrive On Green	0.10	0.00	0.00	0.10	0.00	0.10		1.00	1.00	1.00	0.76	0.76
Sat Flow, veh/h	1337	1870	0	1418	0	1585		778	3554	1585	574	3647
Grp Volume(v), veh/h	5	0	0	97	0	65		185	933	47	28	655
Grp Sat Flow(s),veh/h/ln	1337	1870	0	1418	0	1585		778	1777	1585	574	1777
Q Serve(g_s), s	0.2	0.0	0.0	4.3	0.0	2.5		1.6	0.0	0.0	0.8	3.5
Cycle Q Clear(g_c), s	2.7	0.0	0.0	4.3	0.0	2.5		5.1	0.0	0.0	0.8	3.5
Prop In Lane	1.00		0.00	1.00		1.00		1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	191	184	0	250	0	156		663	2712	1209	549	2712
V/C Ratio(X)	0.03	0.00	0.00	0.39	0.00	0.42		0.28	0.34	0.04	0.05	0.24
Avail Cap(c_a), veh/h	429	518	0	503	0	439		663	2712	1209	549	2712
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
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	28.8	0.0	0.0	28.4	0.0	27.5		0.2	0.0	0.0	1.9	2.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.0	0.0	1.8		1.0	0.3	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.0	0.0	2.6	0.0	1.8		0.3	0.2	0.0	0.1	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.9	0.0	0.0	29.3	0.0	29.3		1.2	0.3	0.1	2.1	2.4
LnGrp LOS	C	A	A	C	A	C		A	A	A	A	A
Approach Vol, veh/h		5			162				1165			683
Approach Delay, s/veh		28.9			29.3				0.5			2.4
Approach LOS		C			C				A			A
Timer - Assigned Phs	2			4		6			8			
Phs Duration (G+Y+Rc), s	54.1			10.9		54.1			10.9			
Change Period (Y+Rc), s	4.5			4.5		4.5			4.5			
Max Green Setting (Gmax), s	38.0			18.0		38.0			18.0			
Max Q Clear Time (g_c+I), s	7.1			4.7		5.5			6.3			
Green Ext Time (p_c), s	9.9			0.0		5.4			0.4			

Intersection Summary

HCM 6th Ctrl Delay	3.5
HCM 6th LOS	A

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(g_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(g_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 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	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
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	-	0.077	-
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

21-1550 Avilla Rancho Vistoso
2023 Background 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	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
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 Background 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	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		

21-1550 Avilla Rancho Vistoso
2023 Background 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	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)	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	4.3	4.3	4.0	4.0	4.3	4.3	4.0	4.3	4.3	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
Total Lost Time (s)	6.0	6.3	6.3		6.0	6.3	6.3	6.0	6.3	6.3		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

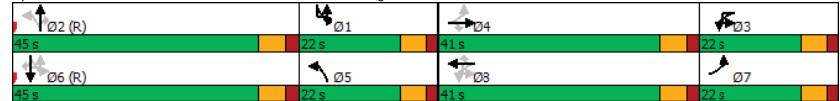
Actuated Cycle Length: 130

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	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	4.3	4.3	4.0	4.0	4.3	4.3	4.0	4.0	4.3	4.3
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
Total Lost Time (s)		6.0	6.3	6.3		6.0	6.3	6.3		6.0	6.3	6.3
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

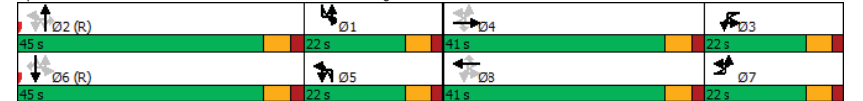
Actuated Cycle Length: 130

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.
Timings

Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	485	154
Future Volume (vph)	485	154
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)	45.0	45.0
Total Split (%)	34.6%	34.6%
Yellow Time (s)	4.3	4.3
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.3	6.3
Lead/Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes
Recall Mode	C-Max	C-Max
Intersection Summary		

21-1550 Avilla Rancho Vistoso
2023 Background PM

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

Lane Group	SBU	SBL	SBT	SBR
Lane Configurations		↑	↑↑	↑
Traffic Volume (vph)	4	158	398	132
Future Volume (vph)	4	158	398	132
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)	22.0	22.0	45.0	45.0
Total Split (%)	16.9%	16.9%	34.6%	34.6%
Yellow Time (s)	4.0	4.0	4.3	4.3
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	6.3	6.3
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
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 (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	
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	
Adj Sat Flow, veh/h/ln	1870	1870	1870		1870	1870	1870		1870	1870		1870
Adj Flow Rate, veh/h	182	747	227		99	480	110		162	355		208
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	318	949	423		234	949	423		516	1058		559
Arrive On Green	0.08	0.27	0.27		0.08	0.27	0.27		0.30	0.30		0.34
Sat Flow, veh/h	1781	3554	1585		1781	3554	1585		1781	3554		1781
Grp Volume(v), veh/h	182	747	227		99	480	110		162	355		208
Grp Sat Flow(s),veh/h/ln	1781	1777	1585		1781	1777	1585		1781	1777		1585
Q Serve(g_s), s	0.0	25.4	15.9		0.0	14.9	7.1		0.0	10.1		7.6
Cycle Q Clear(g_c), s	0.0	25.4	15.9		0.0	14.9	7.1		0.0	10.1		7.6
Prop In Lane	1.00		1.00		1.00		1.00		1.00			1.00
Lane Grp Cap(c), veh/h	318	949	423		234	949	423		516	1058		559
V/C Ratio(X)	0.57	0.79	0.54		0.42	0.51	0.26		0.31	0.34		0.37
Avail Cap(c_a), veh/h	401	949	423		316	949	423		516	1058		559
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	48.5	44.2	40.8		53.4	40.4	37.5		31.7	35.6		23.6
Incr Delay (d2), s/veh	5.8	6.6	4.8		4.4	1.9	1.5		1.2	0.9		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	10.1	17.7	11.1		5.9	11.1	5.3		7.5	8.1		7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.3	50.8	45.6		57.8	42.3	39.0		32.9	36.5		25.1
LnGrp LOS	D	D	D		E	D	D		C	D		C
Approach Vol, veh/h		1156				689			639			
Approach Delay, s/veh		50.3				44.0			35.5			
Approach LOS		D				D			D			
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	6.3	6.0	6.3	6.0	6.3	6.0	6.3				
Max Green Setting (Gmax), s	16.0	38.7	16.0	34.7	16.0	38.7	16.0	34.7				
Max Q Clear Time (g_c+I), s	2.0	12.1	2.0	27.4	2.0	13.1	2.0	16.9				
Green Ext Time (p_c), s	1.5	2.8	0.6	3.4	1.1	4.3	1.2	3.4				
Intersection Summary												
HCM 6th Ctrl Delay			38.9									
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 (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	
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			
Adj Sat Flow, veh/h/ln	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	803	358		345	883	394		513	1058		472
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	13.0	21.3	14.6		8.9	26.0	8.6		0.0	16.9		7.8
Cycle Q Clear(g_c), s	13.0	21.3	14.6		8.9	26.0	8.6		0.0	16.9		7.8
Prop In Lane	1.00		1.00		1.00		1.00		1.00			1.00
Lane Grp Cap(c), veh/h	280	803	358		345	883	394		513	1058		472
V/C Ratio(X)	0.91	0.77	0.56		0.68	0.85	0.32		0.36	0.52		0.26
Avail Cap(c_a), veh/h	291	949	423		345	949	423		513	1058		472
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	47.2	44.6		49.4	46.5	39.9		32.0	38.0		34.8
Incr Delay (d2), s/veh	34.3	4.6	2.9		10.4	7.8	1.0		1.5	1.9		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	16.2	15.1	10.1		12.8	18.2	6.3		8.4	12.2		5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.8	51.9	47.5		59.8	54.3	40.9		33.5	39.9		36.2
LnGrp LOS	F	D	D		E	D	D		C	D		D
Approach Vol, veh/h		1077				1111			863			
Approach Delay, s/veh		59.8				53.9			38.0			
Approach LOS		E				D			D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	25.2	45.0	24.2	35.7	25.2	45.0	21.2	38.6				
Change Period (Y+Rc), s	6.0	6.3	6.0	6.3	6.0	6.3	6.0	6.3				
Max Green Setting (Gmax), s	16.0	38.7	16.0	34.7	16.0	38.7	16.0	34.7				
Max Q Clear Time (g_c+I), s	2.0	18.9	10.9	23.3	2.0	10.5	15.0	28.0				
Green Ext Time (p_c), s	1.2	4.1	0.9	6.0	1.3	3.6	0.2	4.3				
Intersection Summary												
HCM 6th Ctrl Delay			46.1									
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	1058	472
Arrive On Green	0.60	0.60
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	11.1	7.0
Cycle Q Clear(g_c), s	11.1	7.0
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1058	472
V/C Ratio(X)	0.50	0.35
Avail Cap(c_a), veh/h	1058	472
HCM Platoon Ratio	2.00	2.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	20.7	19.9
Incr Delay (d2), s/veh	1.7	2.1
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.2	0.5
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	22.4	22.0
LnGrp LOS	C	C
Approach Vol, veh/h	902	
Approach Delay, s/veh	22.9	
Approach LOS	C	
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	446	1058	472	
Arrive On Green	0.29	0.60	0.60	
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	8.5	5.8	
Cycle Q Clear(g_c), s	0.0	8.5	5.8	
Prop In Lane		1.00	1.00	
Lane Grp Cap(c), veh/h	446	1058	472	
V/C Ratio(X)	0.39	0.41	0.30	
Avail Cap(c_a), veh/h	446	1058	472	
HCM Platoon Ratio	2.00	2.00	2.00	
Upstream Filter(I)	1.00	1.00	1.00	
Uniform Delay (d), s/veh	31.0	20.2	19.6	
Incr Delay (d2), s/veh	2.0	1.2	1.7	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	7.3	5.7	3.9	
Unsig. Movement Delay, s/veh				
LnGrp Delay(d),s/veh	33.0	21.4	21.3	
LnGrp LOS	C	C	C	
Approach Vol, veh/h		748		
Approach Delay, s/veh		24.0		
Approach LOS		C		
Timer - Assigned Phs				

21-1550 Avilla Rancho Vistoso (Signalized)
2023 Background AM

6: Wells Fargo Drwy./Dwy 6 & Tangerine Rd.
HCM 6th TWSC

Intersection							
Int Delay, s/veh	0.2						
Movement	EBT	EBR	WBL	WBT	NBL	NBR	
Lane Configurations	↑↑		↑	↑↑	↑		
Traffic Vol, veh/h	1092	22	2	773	11	9	
Future Vol, veh/h	1092	22	2	773	11	9	
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	1187	24	2	840	12	10	

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1211	0	1623
Stage 1	-	-	-	-	1199
Stage 2	-	-	-	-	424
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	-	-	572	-	*155
Stage 1	-	-	-	-	*248
Stage 2	-	-	-	-	*727
Platoon blocked, %	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	572	-	*155
Mov Cap-2 Maneuver	-	-	-	-	*155
Stage 1	-	-	-	-	*248
Stage 2	-	-	-	-	*725

Approach	EB	WB	NB
HCM Control Delay, s	0	0	23.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	219	-	-	572	-
HCM Lane V/C Ratio	0.099	-	-	0.004	-
HCM Control Delay (s)	23.2	-	-	11.3	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

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

21-1550 Avilla Rancho Vistoso (Signalized)
2023 Background PM

6: Wells Fargo Drwy./Dwy 6 & Tangerine Rd.
HCM 6th TWSC

Intersection							
Int Delay, s/veh	1.1						
Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑	↑↑	↑	
Traffic Vol, veh/h	949	43	1	9	1011	30	85
Future Vol, veh/h	949	43	1	9	1011	30	85
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	1032	47	1	10	1099	33	92

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1078	0	1628
Stage 1	-	-	-	-	1056
Stage 2	-	-	-	-	572
Critical Hdwy	-	-	6.44	4.14	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.52	2.22	3.52
Pot Cap-1 Maneuver	-	-	296	642	*212
Stage 1	-	-	-	-	*296
Stage 2	-	-	-	-	*623
Platoon blocked, %	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	552	552	*208
Mov Cap-2 Maneuver	-	-	-	-	*208
Stage 1	-	-	-	-	*296
Stage 2	-	-	-	-	*610

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	20.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	360	-	-	552	-
HCM Lane V/C Ratio	0.347	-	-	0.02	-
HCM Control Delay (s)	20.2	-	-	11.7	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	1.5	-	-	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	601
Stage 1	-	-	-	-	1200	-
Stage 2	-	-	-	-	422	-
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	-	-	577	-	*158	443
Stage 1	-	-	-	-	*248	-
Stage 2	-	-	-	-	*720	-
Platoon blocked, %	-	-	-	-	1	-
Mov Cap-1 Maneuver	-	-	577	-	*158	443
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	1640	535
Stage 1	-	-	-	-	-	1068	-
Stage 2	-	-	-	-	-	572	-
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	-	-	299	648	-	*219	490
Stage 1	-	-	-	-	-	*291	-
Stage 2	-	-	-	-	-	*607	-
Platoon blocked, %	-	-	-	-	-	1	-
Mov Cap-1 Maneuver	-	-	501	501	-	*217	490
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	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 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	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	-	

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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	W			W	W	
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	1	0	-	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	W			W	W	
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	1	0	-	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	-	-	-	-

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2023 Background 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	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	0	0	165	165	97	165	165	68
Stage 1	-	-	-	-	-	-	97	97	-	68	68	-
Stage 2	-	-	-	-	-	-	68	68	-	97	97	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1533	-	-	1496	-	-	800	728	959	800	728	995
Stage 1	-	-	-	-	-	-	910	815	-	942	838	-
Stage 2	-	-	-	-	-	-	942	838	-	910	815	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1533	-	-	1496	-	-	800	728	959	800	728	995
Mov Cap-2 Maneuver	-	-	-	-	-	-	800	728	-	800	728	-
Stage 1	-	-	-	-	-	-	910	815	-	942	838	-
Stage 2	-	-	-	-	-	-	942	838	-	910	815	-

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	-	-	-

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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	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	0	0	237	237	75	237	237	162
Stage 1	-	-	-	-	-	-	75	75	-	162	162	-
Stage 2	-	-	-	-	-	-	162	162	-	75	75	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1417	-	-	1524	-	-	717	664	986	717	664	883
Stage 1	-	-	-	-	-	-	934	833	-	840	764	-
Stage 2	-	-	-	-	-	-	840	764	-	934	833	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1417	-	-	1524	-	-	717	664	986	717	664	883
Mov Cap-2 Maneuver	-	-	-	-	-	-	717	664	-	717	664	-
Stage 1	-	-	-	-	-	-	934	833	-	840	764	-
Stage 2	-	-	-	-	-	-	840	764	-	934	833	-

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	-	-	-

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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			W	W	
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
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			W	W	
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
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 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	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
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 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	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
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 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	-
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	-
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	WBL	WBT	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	2	41	0	20	146	596	34	62	858
Future Volume (vph)	2	41	0	20	146	596	34	62	858
Turn Type	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases			8			2			6
Permitted Phases	4	8		2	2		2	6	
Detector Phase	4	8	8	2	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)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	42.5	42.5	42.5	42.5	42.5	42.5
Total Split (%)	34.6%	34.6%	34.6%	65.4%	65.4%	65.4%	65.4%	65.4%	65.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	C-Max	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
2026 Background PM

2: Rancho Vistoso Blvd. & Avilla Dr.
Timings

Lane Group	EBL	WBL	WBT	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	6	96	0	53	183	924	46	28	649
Future Volume (vph)	6	96	0	53	183	924	46	28	649
Turn Type	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases			8			2			6
Permitted Phases	4	8		2	2		2	6	
Detector Phase	4	8	8	2	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)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	42.5	42.5	42.5	42.5	42.5	42.5
Total Split (%)	34.6%	34.6%	34.6%	65.4%	65.4%	65.4%	65.4%	65.4%	65.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5		4.5	4.5	4.5	4.5	4.5
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	C-Max	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
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 (Qb), veh	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	1.00	1.00
Work Zone On Approach	No			No				No				No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870	1870	1870
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	166	107	0	192	0	91		551	2858	1275	719	2858
Arrive On Green	0.06	0.00	0.00	0.06	0.00	0.06		1.00	1.00	1.00	0.80	0.80
Sat Flow, veh/h	1381	1870	0	1418	0	1585		600	3554	1585	757	3647
Grp Volume(v), veh/h	2	0	0	45	0	29		159	648	37	67	933
Grp Sat Flow(s),veh/h/ln	1381	1870	0	1418	0	1585		600	1777	1585	757	1777
Q Serve(g_s), s	0.1	0.0	0.0	2.0	0.0	1.1		2.2	0.0	0.0	1.2	4.5
Cycle Q Clear(g_c), s	1.2	0.0	0.0	2.0	0.0	1.1		6.8	0.0	0.0	1.2	4.5
Prop In Lane	1.00		0.00	1.00		1.00		1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	166	107	0	192	0	91		551	2858	1275	719	2858
V/C Ratio(X)	0.01	0.00	0.00	0.23	0.00	0.32		0.29	0.23	0.03	0.09	0.33
Avail Cap(c_a), veh/h	469	518	0	503	0	439		551	2858	1275	719	2858
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
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	30.0	0.0	0.0	29.8	0.0	29.4		0.3	0.0	0.0	1.4	1.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.6	0.0	2.0		1.3	0.2	0.0	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
%ile BackOfQ(95%),veh/ln	0.1	0.0	0.0	1.2	0.0	0.8		0.4	0.1	0.0	0.2	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.0	0.0	0.0	30.4	0.0	31.4		1.6	0.2	0.0	1.6	2.0
LnGrp LOS	C	A	A	C	A	C		A	A	A	A	A
Approach Vol, veh/h		2			74				844			1000
Approach Delay, s/veh		30.0			30.8				0.4			2.0
Approach LOS		C			C				A			A

Timer - Assigned Phs												
Phs Duration (G+Y+Rc), s	56.8		8.2		56.8		8.2					
Change Period (Y+Rc), s	4.5		4.5		4.5		4.5					
Max Green Setting (Gmax), s	38.0		18.0		38.0		18.0					
Max Q Clear Time (g_c+I), s	8.8		3.2		6.5		4.0					
Green Ext Time (p_c), s	7.1		0.0		8.5		0.2					

Intersection Summary												
HCM 6th Ctrl Delay		2.4										
HCM 6th LOS		A										

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 (Qb), veh	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	1.00	1.00
Work Zone On Approach	No			No				No				No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870	1870	1870
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	195	196	0	259	0	166		628	2690	1200	516	2690
Arrive On Green	0.10	0.00	0.00	0.10	0.00	0.10		1.00	1.00	1.00	0.76	0.76
Sat Flow, veh/h	1331	1870	0	1418	0	1585		743	3554	1585	535	3647
Grp Volume(v), veh/h	7	0	0	104	0	70		199	1004	50	30	705
Grp Sat Flow(s),veh/h/ln	1331	1870	0	1418	0	1585		743	1777	1585	535	1777
Q Serve(g_s), s	0.3	0.0	0.0	4.6	0.0	2.7		2.1	0.0	0.0	0.9	3.9
Cycle Q Clear(g_c), s	3.0	0.0	0.0	4.6	0.0	2.7		6.1	0.0	0.0	0.9	3.9
Prop In Lane	1.00		0.00	1.00		1.00		1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	195	196	0	259	0	166		628	2690	1200	516	2690
V/C Ratio(X)	0.04	0.00	0.00	0.40	0.00	0.42		0.32	0.37	0.04	0.06	0.26
Avail Cap(c_a), veh/h	424	518	0	503	0	439		628	2690	1200	516	2690
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
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	28.7	0.0	0.0	28.1	0.0	27.3		0.2	0.0	0.0	2.0	2.4
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.0	0.0	1.7		1.3	0.4	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.0	0.0	2.8	0.0	1.9		0.4	0.3	0.0	0.1	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.7	0.0	0.0	29.1	0.0	29.0		1.6	0.4	0.1	2.3	2.6
LnGrp LOS	C	A	A	C	A	C		A	A	A	A	A
Approach Vol, veh/h		7			174				1253			735
Approach Delay, s/veh		28.7			29.1				0.6			2.6
Approach LOS		C			C				A			A

Timer - Assigned Phs												
Phs Duration (G+Y+Rc), s	53.7		11.3		53.7		11.3					
Change Period (Y+Rc), s	4.5		4.5		4.5		4.5					
Max Green Setting (Gmax), s	38.0		18.0		38.0		18.0					
Max Q Clear Time (g_c+I), s	8.1		5.0		5.9		6.6					
Green Ext Time (p_c), s	10.9		0.0		6.0		0.5					

Intersection Summary												
HCM 6th Ctrl Delay		3.6										
HCM 6th LOS		A										

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(g_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(g_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 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	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
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	9.6	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

21-1550 Avilla Rancho Vistoso
2026 Background 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	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
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	-
Stage 1	0	-	-
Stage 2	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

21-1550 Avilla Rancho Vistoso
2026 Background 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	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		

21-1550 Avilla Rancho Vistoso
2026 Background 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	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)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	10.0	10.0	5.0	5.0
Minimum Split (s)	9.5	33.3	33.3	9.5	9.5	33.3	33.3	9.5	23.0	23.0	9.5	9.5
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)	3.5	4.3	4.3	3.5	3.5	4.3	4.3	3.5	4.0	4.0	3.5	3.5
All-Red Time (s)	1.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.5	6.3	6.3		4.5	6.3	6.3	4.5	6.0	6.0		4.5
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

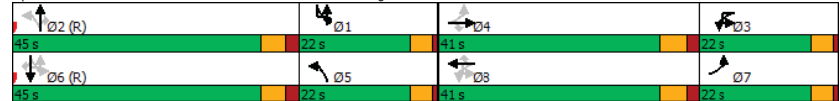
Actuated Cycle Length: 130

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

Natural Cycle: 80

Control Type: Actuated-Coordinated

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



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	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	4.3	4.3	4.0	4.0	4.3	4.3	4.0	4.0	4.3	4.3
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
Total Lost Time (s)		6.0	6.3	6.3		6.0	6.3	6.3		6.0	6.3	6.3
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

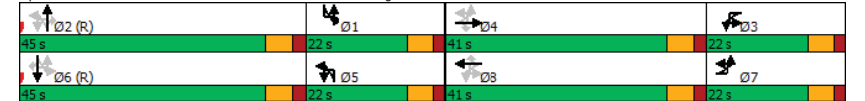
Actuated Cycle Length: 130

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 Background AM

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

↓ ↙		
Lane Group	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	523	166
Future Volume (vph)	523	166
Turn Type	NA	Perm
Protected Phases	6	
Permitted Phases		6
Detector Phase	6	6
Switch Phase		
Minimum Initial (s)	10.0	10.0
Minimum Split (s)	23.0	23.0
Total Split (s)	45.0	45.0
Total Split (%)	34.6%	34.6%
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 Background PM

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

↙ ↘ ↓ ↙				
Lane Group	SBU	SBL	SBT	SBR
Lane Configurations		↑	↑↑	↑
Traffic Volume (vph)	5	170	429	143
Future Volume (vph)	5	170	429	143
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)	22.0	22.0	45.0	45.0
Total Split (%)	16.9%	16.9%	34.6%	34.6%
Yellow Time (s)	4.0	4.0	4.3	4.3
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	6.3	6.3
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 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 (Qb), veh	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			
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		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	282	897	400		133	642	286		630	1066		674
Arrive On Green	0.12	0.25	0.25		0.04	0.18	0.18		0.24	0.30		0.48
Sat Flow, veh/h	1781	3554	1585		1781	3554	1585		1781	3554		1781
Grp Volume(v), veh/h	196	804	245		107	517	118		175	383		224
Grp Sat Flow(s),veh/h/ln	1781	1777	1585		1781	1777	1585		1781	1777		1585
Q Serve(g_s), s	8.0	28.4	17.8		3.6	18.1	8.6		0.0	11.0		8.3
Cycle Q Clear(g_c), s	8.0	28.4	17.8		3.6	18.1	8.6		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	282	897	400		133	642	286		630	1066		674
V/C Ratio(X)	0.70	0.90	0.61		0.80	0.80	0.41		0.28	0.36		0.33
Avail Cap(c_a), veh/h	316	949	423		295	949	423		630	1066		674
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		2.00
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	52.7	47.0	43.0		60.2	51.1	47.1		26.4	35.7		16.0
Incr Delay (d2), s/veh	5.7	10.7	2.4		10.5	3.2	0.9		0.2	0.9		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
%ile BackOfQ(95%),veh/ln	10.7	20.0	11.7		7.0	13.1	6.3		7.2	8.6		5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.4	57.7	45.4		70.8	54.3	48.1		26.7	36.6		16.2
LnGrp LOS	E	E	D		E	D	D		C	D		B
Approach Vol, veh/h	1245			742			690					
Approach Delay, s/veh	55.4			55.7			34.0					
Approach LOS	E			E			C					
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	35.7	45.0	10.2	39.1	35.7	45.0	19.5	29.8				
Change Period (Y+Rc), s	4.5	6.0	4.5	6.3	4.5	6.0	4.5	6.3				
Max Green Setting (Gmax), s	17.5	39.0	17.5	34.7	17.5	39.0	17.5	34.7				
Max Q Clear Time (g_c+I), s	2.0	13.0	5.6	30.4	2.0	14.2	10.0	20.1				
Green Ext Time (p_c), s	0.5	3.1	0.2	2.4	0.4	4.7	0.3	3.4				

Intersection Summary

HCM 6th Ctrl Delay	42.2
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 (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
Work Zone On Approach	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	949	423		329	949	423		463	1058		472
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	13.4	22.1	15.0		9.0	27.9	9.1		0.0	18.5		8.4
Cycle Q Clear(g_c), s	13.4	22.1	15.0		9.0	27.9	9.1		0.0	18.5		8.4
Prop In Lane	1.00		1.00		1.00		1.00		1.00			1.00
Lane Grp Cap(c), veh/h	299	949	423		329	949	423		463	1058		472
V/C Ratio(X)	0.92	0.70	0.51		0.77	0.85	0.33		0.43	0.57		0.28
Avail Cap(c_a), veh/h	306	949	423		336	949	423		463	1058		472
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	43.0	40.4		50.8	45.2	38.3		36.1	38.5		35.0
Incr Delay (d2), s/veh	34.4	4.4	4.4		15.8	9.4	2.0		2.3	2.2		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	15.2	10.3		14.0	19.1	6.7		9.3	12.8		6.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.2	47.4	44.8		66.6	54.5	40.3		38.4	40.7		36.5
LnGrp LOS	F	D	D		E	D	D		D	D		D
Approach Vol, veh/h	1158			1196			929					
Approach Delay, s/veh	56.6			55.4			39.6					
Approach LOS	E			E			D					
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	22.5	45.0	21.5	41.0	22.5	45.0	21.5	41.0				
Change Period (Y+Rc), s	6.0	6.3	6.0	6.3	6.0	6.3	6.0	6.3				
Max Green Setting (Gmax), s	16.0	38.7	16.0	34.7	16.0	38.7	16.0	34.7				
Max Q Clear Time (g_c+I), s	2.0	20.5	11.0	24.1	2.0	11.3	15.4	29.9				
Green Ext Time (p_c), s	1.4	7.0	1.0	3.6	1.3	6.9	0.2	2.3				

Intersection Summary

HCM 6th Ctrl Delay	46.3
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	0.60	0.60
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	12.2	7.6
Cycle Q Clear(g_c), s	12.2	7.6
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	2.00	2.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	20.6	19.7
Incr Delay (d2), s/veh	1.9	2.3
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.7	5.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	22.6	22.0
LnGrp LOS	C	C
Approach Vol, veh/h	972	
Approach Delay, s/veh	21.0	
Approach LOS	C	
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		394	1058	472
Arrive On Green		0.25	0.60	0.60
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	9.3	6.4
Cycle Q Clear(g_c), s		0.0	9.3	6.4
Prop In Lane		1.00		1.00
Lane Grp Cap(c), veh/h		394	1058	472
V/C Ratio(X)		0.47	0.44	0.33
Avail Cap(c_a), veh/h		394	1058	472
HCM Platoon Ratio		2.00	2.00	2.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		36.2	20.4	19.8
Incr Delay (d2), s/veh		4.0	1.3	1.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		8.5	6.0	4.1
Unsig. Movement Delay, s/veh				
LnGrp Delay(d),s/veh		40.2	21.7	21.6
LnGrp LOS		D	C	C
Approach Vol, veh/h			806	
Approach Delay, s/veh			25.9	
Approach LOS			C	
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	0	0	1748	2200	652	1548	2213	453	
Stage 1	-	-	-	-	-	-	1291	1291	-	909	909	-	
Stage 2	-	-	-	-	-	-	457	909	-	639	1304	-	
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94	
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-	
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-	
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32	
Pot Cap-1 Maneuver	*1106	-	-	527	-	-	*102	*52	411	*167	*51	*739	
Stage 1	-	-	-	-	-	-	*173	*232	-	*697	*611	-	
Stage 2	-	-	-	-	-	-	*697	*611	-	*431	*229	-	
Platoon blocked, %	1	-	-	-	-	-	1	1	1	1	1	1	
Mov Cap-1 Maneuver	*1106	-	-	527	-	-	*101	*52	411	*162	*50	*739	
Mov Cap-2 Maneuver	-	-	-	-	-	-	*101	*52	-	*162	*50	-	
Stage 1	-	-	-	-	-	-	*173	*232	-	*697	*609	-	
Stage 2	-	-	-	-	-	-	*694	*609	-	*420	*229	-	

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	-	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	1111	50	1	11	1183	0	36	0	100	0	0	

Major/Minor	Major1	Major2	Minor1	Minor2									
Conflicting Flow All	1183	0	0	1161	1161	0	0	1752	2343	581	1763	2368	592
Stage 1	-	-	-	-	-	-	-	1136	1136	-	1207	1207	-
Stage 2	-	-	-	-	-	-	-	616	1207	-	556	1161	-
Critical Hdwy	4.14	-	-	6.44	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*962	-	-	262	597	-	-	*139	*41	457	*135	*39	*643
Stage 1	-	-	-	-	-	-	-	*215	*275	-	*606	*532	-
Stage 2	-	-	-	-	-	-	-	*606	*532	-	*483	*268	-
Platoon blocked, %	1	-	-	-	-	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	*962	-	-	511	511	-	-	*136	*40	457	*103	*38	*643
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	*136	*40	-	*103	*38	-
Stage 1	-	-	-	-	-	-	-	*215	*275	-	*606	*519	-
Stage 2	-	-	-	-	-	-	-	*592	*519	-	*377	*268	-

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
Stage 1	-	-	-	-	1292
Stage 2	-	-	-	-	455
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	-	-	532	-	*128
Stage 1	-	-	-	-	*221
Stage 2	-	-	-	-	*698
Platoon blocked, %	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	532	-	*127
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	WBU	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	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	1149	3	1	3	1214	1	2

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1152	0	1766
Stage 1	-	-	-	-	1151
Stage 2	-	-	-	-	615
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	-	-	265	602	-
Stage 1	-	-	-	-	*263
Stage 2	-	-	-	-	*584
Platoon blocked, %	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	456	456	-
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
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
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	W			W	W	
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	1	0	-	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	W			W	W	
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	1	0	-	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 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	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	0	104
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	-	-	-

21-1550 Avilla Rancho Vistoso
2026 Background 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	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	0	82
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	W			W	W	
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	W			W	W	
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	

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	NBU	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔	↔	↔	↔
Traffic Volume (vph)	2	0	76	0	19	136	554	58	796
Future Volume (vph)	2	0	76	0	19	136	554	58	796
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)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	42.5	42.5	42.5	42.5	42.5
Total Split (%)	34.6%	34.6%	34.6%	34.6%	65.4%	65.4%	65.4%	65.4%	65.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0	
Total Lost Time (s)		4.5		4.5		4.5		4.5	
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
2023 Total 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	110	0	49	170	858	26	603
Future Volume (vph)	5	0	110	0	49	170	858	26	603
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)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	42.5	42.5	42.5	42.5	42.5
Total Split (%)	34.6%	34.6%	34.6%	34.6%	65.4%	65.4%	65.4%	65.4%	65.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0	
Total Lost Time (s)		4.5		4.5		4.5		4.5	
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
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	
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				
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	264	0	0	201	1	34		553	2555	203	710	2723
Arrive On Green	0.10	0.00	0.00	0.10	0.00	0.10		1.00	1.00	1.00	0.77	0.77
Sat Flow, veh/h	1604	0	0	1092	9	358		640	3334	265	782	3647
Grp Volume(v), veh/h	2	0	0	110	0	0		148	320	330	63	865
Grp Sat Flow(s),veh/h/ln	1604	0	0	1459	0	0		640	1777	1823	782	1777
Q Serve(g_s), s	0.0	0.0	0.0	4.7	0.0	0.0		2.1	0.0	0.0	1.3	4.9
Cycle Q Clear(g_c), s	0.1	0.0	0.0	4.8	0.0	0.0		7.0	0.0	0.0	1.3	4.9
Prop In Lane	1.00		0.00	0.75		0.25		1.00		0.15	1.00	
Lane Grp Cap(c), veh/h	264	0	0	236	0	0		553	1361	1397	710	2723
V/C Ratio(X)	0.01	0.00	0.00	0.47	0.00	0.00		0.27	0.24	0.24	0.09	0.32
Avail Cap(c_a), veh/h	515	0	0	501	0	0		553	1361	1397	710	2723
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
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	26.6	0.0	0.0	28.8	0.0	0.0		0.3	0.0	0.0	1.9	2.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.4	0.0	0.0		1.2	0.4	0.4	0.2	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
%ile BackOfQ(95%),veh/ln	0.0	0.0	0.0	3.1	0.0	0.0		0.3	0.3	0.3	0.3	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.6	0.0	0.0	30.2	0.0	0.0		1.5	0.4	0.4	2.2	2.7
LnGrp LOS	C	A	A	C	A	A		A	A	A	A	A
Approach Vol, veh/h	2			110				798			928	
Approach Delay, s/veh	26.6			30.2				0.6			2.6	
Approach LOS	C			C				A			A	
Timer - Assigned Phs	2			4				6			8	
Phs Duration (G+Y+Rc), s	54.3			10.7				54.3			10.7	
Change Period (Y+Rc), s	4.5			4.5				4.5			4.5	
Max Green Setting (Gmax), s	38.0			18.0				38.0			18.0	
Max Q Clear Time (g_c+I), s	9.0			2.1				6.9			6.8	
Green Ext Time (p_c), s	6.1			0.0				7.7			0.3	

Intersection Summary

HCM 6th Ctrl Delay	3.4
HCM 6th LOS	A

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
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	1.00	1.00
Work Zone On Approach	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	319	0	0	232	8	81		609	2323	217	502	2513
Arrive On Green	0.15	0.00	0.00	0.15	0.00	0.15		1.00	1.00	1.00	0.71	0.71
Sat Flow, veh/h	1350	0	0	909	54	522		778	3286	306	553	3647
Grp Volume(v), veh/h	5	0	0	185	0	0		185	505	515	28	655
Grp Sat Flow(s),veh/h/ln	1350	0	0	1486	0	0		778	1777	1815	553	1777
Q Serve(g_s), s	0.0	0.0	0.0	7.3	0.0	0.0		2.2	0.0	0.0	1.0	4.3
Cycle Q Clear(g_c), s	0.2	0.0	0.0	7.8	0.0	0.0		6.5	0.0	0.0	1.0	4.3
Prop In Lane	1.00		0.00	0.65		0.35		1.00		0.17	1.00	
Lane Grp Cap(c), veh/h	319	0	0	321	0	0		609	1256	1284	502	2513
V/C Ratio(X)	0.02	0.00	0.00	0.58	0.00	0.00		0.30	0.40	0.40	0.06	0.26
Avail Cap(c_a), veh/h	483	0	0	501	0	0		609	1256	1284	502	2513
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
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	23.3	0.0	0.0	26.5	0.0	0.0		0.3	0.0	0.0	2.9	3.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.6	0.0	0.0		1.3	1.0	0.9	0.2	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
%ile BackOfQ(95%),veh/ln	0.1	0.0	0.0	5.0	0.0	0.0		0.4	0.6	0.6	0.2	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.3	0.0	0.0	28.1	0.0	0.0		1.6	1.0	0.9	3.1	3.7
LnGrp LOS	C	A	A	C	A	A		A	A	A	A	A
Approach Vol, veh/h	5			185				1205			683	
Approach Delay, s/veh	23.3			28.1				1.0			3.6	
Approach LOS	C			C				A			A	
Timer - Assigned Phs	2			4				6			8	
Phs Duration (G+Y+Rc), s	50.5			14.5				50.5			14.5	
Change Period (Y+Rc), s	4.5			4.5				4.5			4.5	
Max Green Setting (Gmax), s	38.0			18.0				38.0			18.0	
Max Q Clear Time (g_c+I), s	8.5			2.2				6.3			9.8	
Green Ext Time (p_c), s	9.7			0.0				5.4			0.6	

Intersection Summary

HCM 6th Ctrl Delay	4.4
HCM 6th LOS	A

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(g_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(g_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 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	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

21-1550 Avilla Rancho Vistoso
2023 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	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		

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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)	5.0	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)	9.5	40.3	40.3	9.5	9.5	40.3	40.3	9.5	40.3	40.3	9.5	9.5
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)	3.5	4.3	4.3	3.5	3.5	4.3	4.3	3.5	4.3	4.3	3.5	3.5
All-Red Time (s)	1.0	2.0	2.0	1.0	1.0	2.0	2.0	1.0	2.0	2.0	1.0	1.0
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)	4.5	6.3	6.3		4.5	6.3	6.3	4.5	6.3	6.3		4.5
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

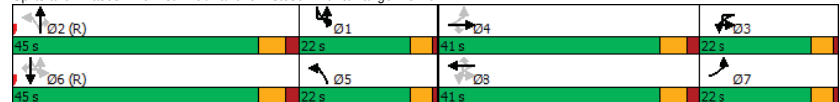
Actuated Cycle Length: 130

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

Natural Cycle: 100

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	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Lane Configurations		↰	↰↰	↰		↰	↰↰	↰		↰	↰↰	↰
Traffic Volume (vph)	3	245	572	185	11	216	688	133	5	168	522	115
Future Volume (vph)	3	245	572	185	11	216	688	133	5	168	522	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	5	5	2	2
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	5.0
Minimum Split (s)	9.5	9.5	22.5	22.5	9.5	9.5	22.5	22.5	9.5	9.5	22.5	22.5
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)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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)		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5
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

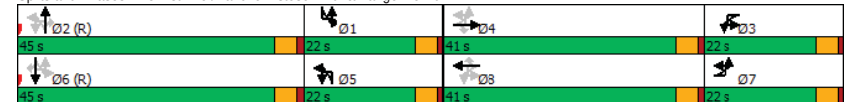
Actuated Cycle Length: 130

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

Natural Cycle: 70

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)	45.0	45.0
Total Split (%)	34.6%	34.6%
Yellow Time (s)	4.3	4.3
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.3	6.3
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	SBU	SBL	SBT	SBR
Lane Configurations		↑	↑↑	↑
Traffic Volume (vph)	4	166	404	138
Future Volume (vph)	4	166	404	138
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)	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	9.5	22.5	22.5
Total Split (s)	22.0	22.0	45.0	45.0
Total Split (%)	16.9%	16.9%	34.6%	34.6%
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0
Total Lost Time (s)		4.5	4.5	4.5
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
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 (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	
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	
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	249	949	423		165	949	423		620	1058		666
Arrive On Green	0.04	0.27	0.27		0.04	0.27	0.27		0.23	0.30		0.46
Sat Flow, veh/h	1781	3554	1585		1781	3554	1585		1781	3554		1781
Grp Volume(v), veh/h	186	747	227		99	480	115		162	360		224
Grp Sat Flow(s),veh/h/ln	1781	1777	1585		1781	1777	1585		1781	1777		1585
Q Serve(g_s), s	0.0	25.4	15.9		0.0	14.9	7.5		0.0	10.3		7.6
Cycle Q Clear(g_c), s	0.0	25.4	15.9		0.0	14.9	7.5		0.0	10.3		7.6
Prop In Lane	1.00		1.00		1.00		1.00		1.00			1.00
Lane Grp Cap(c), veh/h	249	949	423		165	949	423		620	1058		666
V/C Ratio(X)	0.75	0.79	0.54		0.60	0.51	0.27		0.26	0.34		0.34
Avail Cap(c_a), veh/h	421	949	423		337	949	423		620	1058		666
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		2.00
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	53.4	44.2	40.8		58.1	40.4	37.7		26.1	35.7		16.7
Incr Delay (d2), s/veh	4.4	6.6	4.8		3.4	1.9	1.6		0.2	0.9		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	10.2	17.3	10.9		5.8	10.8	0.3		6.3	8.0		5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.8	50.8	45.6		61.6	42.3	39.2		26.3	36.5		17.0
LnGrp LOS	E	D	D		E	D	D		C	D		B
Approach Vol, veh/h		1160				694				644		
Approach Delay, s/veh		50.9				44.6				33.9		
Approach LOS		D				D				C		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	34.5	45.0	9.5	41.0	34.5	45.0	9.5	41.0				
Change Period (Y+Rc), s	4.5	6.3	4.5	6.3	4.5	6.3	4.5	6.3				
Max Green Setting (Gmax), s	17.5	38.7	17.5	34.7	17.5	38.7	17.5	34.7				
Max Q Clear Time (g_c+I), s	2.0	12.3	2.0	27.4	2.0	13.5	2.0	16.9				
Green Ext Time (p_c), s	0.5	5.1	0.2	3.2	0.3	7.9	0.4	3.0				
Intersection Summary												
HCM 6th Ctrl Delay			38.3									
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 (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	
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	
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	293	998	445		323	998	445		559	1107		494
Arrive On Green	0.10	0.28	0.28		0.10	0.28	0.28		0.17	0.31		0.31
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	11.0	19.8	13.6		5.9	24.9	9.4		0.0	17.0		7.7
Cycle Q Clear(g_c), s	11.0	19.8	13.6		5.9	24.9	9.4		0.0	17.0		7.7
Prop In Lane	1.00		1.00		1.00		1.00		1.00			1.00
Lane Grp Cap(c), veh/h	293	998	445		323	998	445		559	1107		494
V/C Ratio(X)	0.91	0.62	0.45		0.73	0.75	0.33		0.33	0.51		0.25
Avail Cap(c_a), veh/h	351	998	445		380	998	445		559	1107		494
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	40.8	38.5		50.3	42.6	37.0		28.4	36.7		33.4
Incr Delay (d2), s/veh	23.9	2.9	3.3		5.7	5.2	1.9		0.3	1.7		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	13.7	9.4		12.1	16.9	6.9		7.5	11.9		5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.7	43.7	41.8		56.0	47.8	39.0		28.7	38.4		34.7
LnGrp LOS	E	D	D		E	D	D		C	D		C
Approach Vol, veh/h		1089				1128				875		
Approach Delay, s/veh		51.7				48.3				35.8		
Approach LOS		D				D				D		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	26.2	45.0	17.8	41.0	26.2	45.0	17.8	41.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	17.5	40.5	17.5	36.5	17.5	40.5	17.5	36.5				
Max Q Clear Time (g_c+I), s	2.0	19.0	7.9	21.8	2.0	10.0	13.0	26.9				
Green Ext Time (p_c), s	0.4	3.8	0.4	3.9	0.4	3.3	0.3	3.6				
Intersection Summary												
HCM 6th Ctrl Delay			41.1									
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	1058	472
Arrive On Green	0.60	0.60
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	11.5	7.7
Cycle Q Clear(g_c), s	11.5	7.7
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1058	472
V/C Ratio(X)	0.51	0.38
Avail Cap(c_a), veh/h	1058	472
HCM Platoon Ratio	2.00	2.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	20.8	20.0
Incr Delay (d2), s/veh	1.8	2.3
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.1	4.9
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	22.5	22.3
LnGrp LOS	C	C
Approach Vol, veh/h	942	
Approach Delay, s/veh	21.2	
Approach LOS	C	
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
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	489	1107	494	
Arrive On Green	0.33	0.62	0.62	
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	8.0	5.7	
Cycle Q Clear(g_c), s	0.0	8.0	5.7	
Prop In Lane		1.00	1.00	
Lane Grp Cap(c), veh/h	489	1107	494	
V/C Ratio(X)	0.37	0.40	0.30	
Avail Cap(c_a), veh/h	489	1107	494	
HCM Platoon Ratio	2.00	2.00	2.00	
Upstream Filter(I)	1.00	1.00	1.00	
Uniform Delay (d), s/veh	27.3	18.4	17.9	
Incr Delay (d2), s/veh	0.5	1.1	1.6	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	6.5	5.2	3.7	
Unsig. Movement Delay, s/veh				
LnGrp Delay(d),s/veh	27.8	19.4	19.5	
LnGrp LOS	C	B	B	
Approach Vol, veh/h		769		
Approach Delay, s/veh		21.4		
Approach LOS		C		
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	0	0	1633	2059	608	1452	2071	426
Stage 1	-	-	-	-	-	-	1203	1203	-	856	856	-
Stage 2	-	-	-	-	-	-	430	856	-	596	1215	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*1142	-	-	570	-	-	*125	*68	439	*193	*66	*763
Stage 1	-	-	-	-	-	-	*196	*256	-	*720	*631	-
Stage 2	-	-	-	-	-	-	*720	*631	-	*457	*252	-
Platoon blocked, %	1	-	-	-	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	*1142	-	-	570	-	-	*125	*67	439	*188	*65	*763
Mov Cap-2 Maneuver	-	-	-	-	-	-	*125	*67	-	*188	*65	-
Stage 1	-	-	-	-	-	-	*196	*256	-	*720	*628	-
Stage 2	-	-	-	-	-	-	*717	*628	-	*447	*252	-

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	1090	0	0	1642	2194	545	1649	2217	553
Stage 1	-	-	-	-	-	-	-	1067	1067	-	1127	1127	-
Stage 2	-	-	-	-	-	-	-	575	1127	-	522	1090	-
Critical Hdwy	4.14	-	-	6.44	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*998	-	-	291	636	-	-	*171	*57	482	*168	*54	*667
Stage 1	-	-	-	-	-	-	-	*237	*297	-	*629	*551	-
Stage 2	-	-	-	-	-	-	-	*629	*551	-	*506	*289	-
Platoon blocked, %	1	-	-	-	-	-	-	1	1	1	1	1	1
Mov Cap-1 Maneuver	*998	-	-	546	546	-	-	*169	*56	482	*134	*53	*667
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	*169	*56	-	*134	*53	-
Stage 1	-	-	-	-	-	-	-	*237	*297	-	*629	*540	-
Stage 2	-	-	-	-	-	-	-	*616	*540	-	*409	*289	-

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	603
Stage 1	-	-	-	-	1204	-
Stage 2	-	-	-	-	428	-
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	-	-	575	-	*154	442
Stage 1	-	-	-	-	*247	-
Stage 2	-	-	-	-	*720	-
Platoon blocked, %	-	-	-	-	1	-
Mov Cap-1 Maneuver	-	-	575	-	*154	442
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	1655	541	
Stage 1	-	-	-	-	-	1080	-	
Stage 2	-	-	-	-	-	575	-	
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	-	-	294	641	-	*211	485	
Stage 1	-	-	-	-	-	*287	-	
Stage 2	-	-	-	-	-	*607	-	
Platoon blocked, %	-	-	-	-	-	1	-	
Mov Cap-1 Maneuver	-	-	494	494	-	*209	485	
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	1109	787	0	0	0
Future Vol, veh/h	0	1109	787	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	1205	855	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 428
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	995	1044	0	0	0
Future Vol, veh/h	0	995	1044	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	1082	1135	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 568
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	W			W	W	
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	1	0	-	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	W			W	W	
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	1	0	-	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	-	-	-	-

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2023 Total AM

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

Intersection												
Intersection Delay, s/veh	7.5											
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	78	0	0	0	0	0	0	23
Future Vol, veh/h	12	89	0	0	78	0	0	0	0	0	0	23
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	85	0	0	0	0	0	0	25
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	1			1			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			1			1		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			1			1		
HCM Control Delay	7.7			7.5			0			6.9		
HCM LOS	A			A			-			A		
Lane	NBLn1	EBLn1	WBLn1	SBLn1								
Vol Left, %	0%	12%	0%	0%								
Vol Thru, %	100%	88%	100%	0%								
Vol Right, %	0%	0%	0%	100%								
Sign Control	Stop	Stop	Stop	Stop								
Traffic Vol by Lane	0	101	78	23								
LT Vol	0	12	0	0								
Through Vol	0	89	78	0								
RT Vol	0	0	0	23								
Lane Flow Rate	0	110	85	25								
Geometry Grp	1	1	1	1								
Degree of Util (X)	0	0.124	0.096	0.025								
Departure Headway (Hd)	4.288	4.064	4.06	3.665								
Convergence, Y/N	Yes	Yes	Yes	Yes								
Cap	0	883	882	959								
Service Time	2.381	2.088	2.088	1.754								
HCM Lane V/C Ratio	0	0.125	0.096	0.026								
HCM Control Delay	7.4	7.7	7.5	6.9								
HCM Lane LOS	N	A	A	A								
HCM 95th-tile Q	0	0.4	0.3	0.1								

21-1550 Avilla Rancho Vistoso
2023 Total PM

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

Intersection												
Intersection Delay, s/veh	7.9											
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	157	0	0	0	0	0	0	13
Future Vol, veh/h	37	69	0	0	157	0	0	0	0	0	0	13
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	171	0	0	0	0	0	0	14
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0
Approach	EB				WB		NB			SB		
Opposing Approach	WB				EB		SB			NB		
Opposing Lanes	1				1		1			1		
Conflicting Approach Left	SB				NB		EB			WB		
Conflicting Lanes Left	1				1		1			1		
Conflicting Approach Right	NB				SB		WB			EB		
Conflicting Lanes Right	1				1		1			1		
HCM Control Delay	7.8				8		0			7		
HCM LOS	A				A		-			A		
Lane	NBLn1	EBLn1	WBLn1	SBLn1								
Vol Left, %	0%	35%	0%	0%								
Vol Thru, %	100%	65%	100%	0%								
Vol Right, %	0%	0%	0%	100%								
Sign Control	Stop	Stop	Stop	Stop								
Traffic Vol by Lane	0	106	157	13								
LT Vol	0	37	0	0								
Through Vol	0	69	157	0								
RT Vol	0	0	0	13								
Lane Flow Rate	0	115	171	14								
Geometry Grp	1	1	1	1								
Degree of Util (X)	0	0.133	0.192	0.015								
Departure Headway (Hd)	4.569	4.157	4.045	3.948								
Convergence, Y/N	Yes	Yes	Yes	Yes								
Cap	0	860	886	912								
Service Time	2.569	2.195	2.075	1.948								
HCM Lane V/C Ratio	0	0.134	0.193	0.015								
HCM Control Delay	7.6	7.8	8	7								
HCM Lane LOS	N	A	A	A								
HCM 95th-tile Q	0	0.5	0.7	0								

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			W	W	
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
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			W	W	
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
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	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
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	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
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

21-1550 Avilla Rancho Vistoso
2023 Total AM

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

Intersection												
Int Delay, s/veh	4.2											
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	15
Future Vol, veh/h	0	0	89	0	0	0	63	0	0	0	0	15
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	16

Major/Minor	Major1		Major2		Minor1		Minor2				
Conflicting Flow All	-	0	0	97	0	58	50	49	50	98	1
Stage 1	-	-	-	-	-	49	49	-	1	1	-
Stage 2	-	-	-	-	-	9	1	-	49	97	-
Critical Hdwy	-	-	-	4.12	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1496	-	0	939	841	1020	950	792 1084
Stage 1	0	-	-	-	-	0	964	854	-	1022	895 -
Stage 2	0	-	-	-	-	0	1012	895	-	964	815 -
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1496	-	-	925	841	1020	950	792 1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	925	841	-	950	792 -
Stage 1	-	-	-	-	-	-	964	854	-	1022	895 -
Stage 2	-	-	-	-	-	-	997	895	-	964	815 -

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.2	8.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	925	-	-	1496	-	1084
HCM Lane V/C Ratio	0.074	-	-	-	-	0.015
HCM Control Delay (s)	9.2	-	-	0	-	8.4
HCM Lane LOS	A	-	-	A	-	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-	0

21-1550 Avilla Rancho Vistoso
2023 Total PM

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

Intersection												
Int Delay, s/veh	6.6											
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	8
Future Vol, veh/h	0	0	69	0	0	0	149	0	0	0	0	8
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	9

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	-	0	0	75	0	0	44	39	38	39	76	1
Stage 1	-	-	-	-	-	-	38	38	-	1	1	-
Stage 2	-	-	-	-	-	-	6	1	-	38	75	-
Critical Hdwy	-	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1524	-	0	958	853	1034	966	814	1084
Stage 1	0	-	-	-	-	0	977	863	-	1022	895	-
Stage 2	0	-	-	-	-	0	1016	895	-	977	833	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	1524	-	-	950	853	1034	966	814	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	950	853	-	966	814	-
Stage 1	-	-	-	-	-	-	977	863	-	1022	895	-
Stage 2	-	-	-	-	-	-	1008	895	-	977	833	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.6	8.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	950	-	-	1524	-	1084
HCM Lane V/C Ratio	0.17	-	-	-	-	0.008
HCM Control Delay (s)	9.6	-	-	0	-	8.3
HCM Lane LOS	A	-	-	A	-	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-	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	-
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	-
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	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔	↔	↔	↔	↔
Traffic Volume (vph)	2	0	79	0	149	596	62	858
Future Volume (vph)	2	0	79	0	149	596	62	858
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	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
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	15.0	31.3	11.2	27.5
Total Split (%)	34.6%	34.6%	34.6%	34.6%	23.1%	48.2%	17.2%	42.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		4.5		4.5		4.5		4.5
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, 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	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔	↔	↔	↔	↔
Traffic Volume (vph)	6	0	117	0	192	924	28	649
Future Volume (vph)	6	0	117	0	192	924	28	649
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA
Protected Phases		4		8	5	2	1	6
Permitted Phases	4		8					
Detector Phase	4	4	8	8	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
Minimum Split (s)	22.5	22.5	22.5	22.5	9.5	22.5	9.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	19.0	32.9	9.6	23.5
Total Split (%)	34.6%	34.6%	34.6%	34.6%	29.2%	50.6%	14.8%	36.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		4.5		4.5		4.5		4.5
Lead/Lag					Lead	Lag	Lead	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	C-Max	None	C-Max

Intersection Summary

Cycle Length: 65

Actuated Cycle Length: 65

Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, 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	25	79	0	27	20	149	596	46	62	858
Future Volume (veh/h)	2	0	25	79	0	27	20	149	596	46	62	858
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		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	27	86	0	29	162	648	50	67	933	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	64	7	155	208	3	38	200	2127	164	96	2053	2053
Arrive On Green	0.10	0.00	0.10	0.10	0.00	0.10	0.22	1.00	1.00	0.05	0.58	0.58
Sat Flow, veh/h	46	66	1513	1086	28	376	1781	3343	258	1781	3647	3647
Grp Volume(v), veh/h	29	0	0	115	0	0	162	344	354	67	933	933
Grp Sat Flow(s),veh/h/ln	1625	0	0	1489	0	0	1781	1777	1824	1781	1777	1777
Q Serve(g_s), s	0.0	0.0	0.0	3.7	0.0	0.0	5.6	0.0	0.0	2.4	9.8	9.8
Cycle Q Clear(g_c), s	1.1	0.0	0.0	4.8	0.0	0.0	5.6	0.0	0.0	2.4	9.8	9.8
Prop In Lane	0.07		0.93	0.75		0.25	1.00		0.14	1.00		1.00
Lane Grp Cap(c), veh/h	225	0	0	249	0	0	200	1130	1160	96	2053	2053
V/C Ratio(X)	0.13	0.00	0.00	0.46	0.00	0.00	0.81	0.30	0.31	0.70	0.45	0.45
Avail Cap(c_a), veh/h	499	0	0	499	0	0	288	1130	1160	184	2053	2053
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	26.7	0.0	0.0	28.2	0.0	0.0	24.5	0.0	0.0	30.2	7.9	7.9
Incr Delay (d2), s/veh	0.3	0.0	0.0	1.3	0.0	0.0	10.8	0.7	0.7	8.7	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	0.0	0.0	3.1	0.0	0.0	4.5	0.4	0.4	2.1	5.0	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.9	0.0	0.0	29.6	0.0	0.0	35.3	0.7	0.7	39.0	8.6	8.6
LnGrp LOS	C	A	A	C	A	A	D	A	A	D	A	A
Approach Vol, veh/h	29			115			860			1000		
Approach Delay, s/veh	26.9			29.6			7.2			10.6		
Approach LOS	C			C			A			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	45.8		11.1	11.8	42.1		11.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	6.7	26.8		18.0	10.5	23.0		18.0				
Max Q Clear Time (g_c+I), s	4.4	2.0		3.1	7.6	11.8		6.8				
Green Ext Time (p_c), s	0.0	4.0		0.1	0.1	4.5		0.4				
Intersection Summary												
HCM 6th Ctrl Delay				10.5								
HCM 6th LOS				B								
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	14	117	0	64	53	192	924	83	28	649
Future Volume (veh/h)	6	0	14	117	0	64	53	192	924	83	28	649
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		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	15	127	0	70	209	1004	90	30	705	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	131	30	189	239	9	87	260	1965	176	57	1712	1712
Arrive On Green	0.16	0.00	0.16	0.16	0.00	0.16	0.10	0.40	0.40	0.03	0.48	0.48
Sat Flow, veh/h	350	185	1147	901	54	526	1781	3298	296	1781	3647	3647
Grp Volume(v), veh/h	22	0	0	197	0	0	209	541	553	30	705	705
Grp Sat Flow(s),veh/h/ln	1682	0	0	1481	0	0	1781	1777	1817	1781	1777	1777
Q Serve(g_s), s	0.0	0.0	0.0	7.6	0.0	0.0	7.5	14.9	14.9	1.1	8.3	8.3
Cycle Q Clear(g_c), s	0.7	0.0	0.0	8.3	0.0	0.0	7.5	14.9	14.9	1.1	8.3	8.3
Prop In Lane	0.32		0.68	0.64		0.36	1.00		0.16	1.00		1.00
Lane Grp Cap(c), veh/h	350	0	0	335	0	0	260	1058	1082	57	1712	1712
V/C Ratio(X)	0.06	0.00	0.00	0.59	0.00	0.00	0.80	0.51	0.51	0.52	0.41	0.41
Avail Cap(c_a), veh/h	518	0	0	499	0	0	397	1058	1082	140	1712	1712
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	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	23.0	0.0	0.0	26.1	0.0	0.0	28.4	12.4	12.4	31.0	10.9	10.9
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.6	0.0	0.0	6.7	1.8	1.7	7.2	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.0	0.0	5.3	0.0	0.0	6.6	10.8	11.0	1.0	5.4	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.1	0.0	0.0	27.7	0.0	0.0	35.1	14.1	14.1	38.2	11.6	11.6
LnGrp LOS	C	A	A	C	A	A	D	B	B	D	B	B
Approach Vol, veh/h	22			197			1303			735		
Approach Delay, s/veh	23.1			27.7			17.5			12.7		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	43.2		15.2	14.0	35.8		15.2				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	28.4		18.0	14.5	19.0		18.0				
Max Q Clear Time (g_c+I), s	3.1	16.9		2.7	9.5	10.3		10.3				
Green Ext Time (p_c), s	0.0	5.5		0.0	0.3	3.1		0.6				
Intersection Summary												
HCM 6th Ctrl Delay				16.9								
HCM 6th LOS				B								
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(g_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(g_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	577	78	0	961
Future Vol, veh/h	0	68	577	78	0	961
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	627	85	0	1045

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	356	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	869	106	0	781
Future Vol, veh/h	0	148	869	106	0	781
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	945	115	0	849

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	530	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	1100	647	57	0	46
Future Vol, veh/h	0	1100	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	1196	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
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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	745	228	5	98	480	115	165	356	121	3	234
Future Volume (vph)	184	745	228	5	98	480	115	165	356	121	3	234
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	4.3	4.3	4.0	4.0	4.3	4.3	4.0	4.3	4.3	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		
Total Lost Time (s)	6.0	6.3	6.3		6.0	6.3	6.3	6.0	6.3	6.3		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

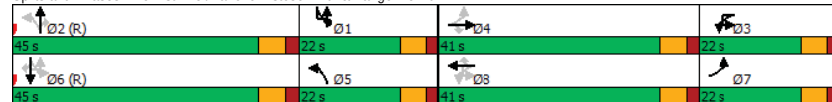
Actuated Cycle Length: 130

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	266	618	201	11	233	754	147	6	193	562	123
Future Volume (vph)	3	266	618	201	11	233	754	147	6	193	562	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	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	4.3	4.3	4.0	4.0	4.3	4.3	4.0	4.0	4.3	4.3
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
Total Lost Time (s)		6.0	6.3	6.3		6.0	6.3	6.3		6.0	6.3	6.3
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

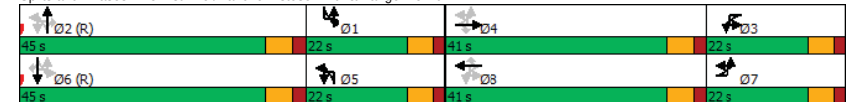
Actuated Cycle Length: 130

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)	545	179
Future Volume (vph)	545	179
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)	45.0	45.0
Total Split (%)	34.6%	34.6%
Yellow Time (s)	4.3	4.3
All-Red Time (s)	2.0	2.0
Lost Time Adjust (s)	0.0	0.0
Total Lost Time (s)	6.3	6.3
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	186	442	150
Future Volume (vph)	5	186	442	150
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)	22.0	22.0	45.0	45.0
Total Split (%)	16.9%	16.9%	34.6%	34.6%
Yellow Time (s)	4.0	4.0	4.3	4.3
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	6.3	6.3
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	745	228	5	98	480	115	165	356	121	3	234
Future Volume (veh/h)	184	745	228	5	98	480	115	165	356	121	3	234
Initial Q (Qb), veh	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	
Adj Sat Flow, veh/h/ln	1870	1870	1870		1870	1870	1870	1870	1870	1870		1870
Adj Flow Rate, veh/h	200	810	248		107	522	125	179	387	132		254
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	303	949	423		219	949	423	492	1058	472		544
Arrive On Green	0.08	0.27	0.27		0.08	0.27	0.27	0.17	0.30	0.30		0.34
Sat Flow, veh/h	1781	3554	1585		1781	3554	1585	1781	3554	1585		1781
Grp Volume(v), veh/h	200	810	248		107	522	125	179	387	132		254
Grp Sat Flow(s),veh/h/ln	1781	1777	1585		1781	1777	1585	1781	1777	1585		1781
Q Serve(g_s), s	1.6	28.1	17.7		1.3	16.4	8.2	0.0	11.2	8.3		0.0
Cycle Q Clear(g_c), s	1.6	28.1	17.7		1.3	16.4	8.2	0.0	11.2	8.3		0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		1.00		1.00
Lane Grp Cap(c), veh/h	303	949	423		219	949	423	492	1058	472		544
V/C Ratio(X)	0.66	0.85	0.59		0.49	0.55	0.30	0.36	0.37	0.28		0.47
Avail Cap(c_a), veh/h	385	949	423		302	949	423	492	1058	472		544
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00		2.00
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	50.4	45.2	41.4		54.7	40.9	37.9	35.2	36.0	35.0		25.7
Incr Delay (d2), s/veh	10.8	9.7	5.8		6.0	2.3	1.8	2.1	1.0	1.5		2.3
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
%ile BackOfQ(95%),veh/ln	11.2	19.3	11.9		6.4	11.7	6.0	8.6	8.5	6.0		9.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.3	54.9	47.3		60.7	43.2	39.7	37.3	37.0	36.4		28.0
LnGrp LOS	E	D	D		E	D	D	D	D	D		C
Approach Vol, veh/h	1258			754			698					
Approach Delay, s/veh	54.4			45.1			36.9					
Approach LOS	D			D			D					
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	6.3	6.0	6.3	6.0	6.3	6.0	6.3				
Max Green Setting (Gmax), s	16.0	38.7	16.0	34.7	16.0	38.7	16.0	34.7				
Max Q Clear Time (g_c+I), s	2.0	13.2	3.3	30.1	2.0	15.1	3.6	18.4				
Green Ext Time (p_c), s	1.8	5.5	0.6	2.4	1.3	8.5	1.4	3.2				
Intersection Summary												
HCM 6th Ctrl Delay	40.9											
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	266	618	201	11	233	754	147	6	193	562	123	
Future Volume (veh/h)	3	266	618	201	11	233	754	147	6	193	562	123	
Initial Q (Qb), veh		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		
Adj Sat Flow, veh/h/ln		1870	1870	1870		1870	1870	1870		1870	1870	1870	
Adj Flow Rate, veh/h		289	672	218		253	820	160		210	611	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		302	949	423		335	949	423		450	1058	472	
Arrive On Green		0.12	0.27	0.27		0.12	0.27	0.27		0.12	0.30	0.30	
Sat Flow, veh/h		1781	3554	1585		1781	3554	1585		1781	3554	1585	
Grp Volume(v), veh/h		289	672	218		253	820	160		210	611	134	
Grp Sat Flow(s),veh/h/ln		1781	1777	1585		1781	1777	1585		1781	1777	1585	
Q Serve(g_s), s		14.9	22.2	15.2		9.1	28.6	10.7		0.0	19.0	8.4	
Cycle Q Clear(g_c), s		14.9	22.2	15.2		9.1	28.6	10.7		0.0	19.0	8.4	
Prop In Lane		1.00		1.00		1.00		1.00		1.00		1.00	
Lane Grp Cap(c), veh/h		302	949	423		335	949	423		450	1058	472	
V/C Ratio(X)		0.96	0.71	0.52		0.76	0.86	0.38		0.47	0.58	0.28	
Avail Cap(c_a), veh/h		302	949	423		335	949	423		450	1058	472	
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		54.1	43.1	40.5		50.4	45.4	38.9		37.9	38.7	35.0	
Incr Delay (d2), s/veh		42.2	4.5	4.4		14.7	10.3	2.6		2.7	2.3	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		18.0	15.3	10.4		13.4	19.6	7.8		10.1	13.1	6.1	
Unsig. Movement Delay, s/veh													
LnGrp Delay(d),s/veh		96.3	47.5	44.9		65.1	55.8	41.4		40.6	41.0	36.5	
LnGrp LOS		F	D	D		E	E	D		D	D	D	
Approach Vol, veh/h		1179				1233				955			
Approach Delay, s/veh		59.0				55.8				40.3			
Approach LOS		E				E				D			
Timer - Assigned Phs	1	2	3	4	5	6	7	8					
Phs Duration (G+Y+Rc), s	22.0	45.0	22.0	41.0	22.0	45.0	22.0	41.0					
Change Period (Y+Rc), s	6.0	6.3	6.0	6.3	6.0	6.3	6.0	6.3					
Max Green Setting (Gmax), s	16.0	38.7	16.0	34.7	16.0	38.7	16.0	34.7					
Max Q Clear Time (g_c+I), s	2.0	21.0	11.1	24.2	2.0	11.7	16.9	30.6					
Green Ext Time (p_c), s	1.4	7.1	1.0	3.6	1.5	7.1	0.0	2.1					
Intersection Summary													
HCM 6th Ctrl Delay	47.3												
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)	545	179
Future Volume (veh/h)	545	179
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	592	195
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	1058	472
Arrive On Green	0.60	0.60
Sat Flow, veh/h	3554	1585
Grp Volume(v), veh/h	592	195
Grp Sat Flow(s),veh/h/ln	1777	1585
Q Serve(g_s), s	13.1	8.6
Cycle Q Clear(g_c), s	13.1	8.6
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	1058	472
V/C Ratio(X)	0.56	0.41
Avail Cap(c_a), veh/h	1058	472
HCM Platoon Ratio	2.00	2.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	21.1	20.2
Incr Delay (d2), s/veh	2.1	2.7
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.9	5.4
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	23.3	22.9
LnGrp LOS	C	C
Approach Vol, veh/h	1041	
Approach Delay, s/veh	24.3	
Approach LOS	C	
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	186	442	150
Future Volume (veh/h)	5	186	442	150
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		202	480	163
Peak Hour Factor		0.92	0.92	0.92
Percent Heavy Veh, %		2	2	2
Cap, veh/h		383	1058	472
Arrive On Green		0.25	0.60	0.60
Sat Flow, veh/h		1781	3554	1585
Grp Volume(v), veh/h		202	480	163
Grp Sat Flow(s),veh/h/ln		1781	1777	1585
Q Serve(g_s), s		0.0	9.7	6.8
Cycle Q Clear(g_c), s		0.0	9.7	6.8
Prop In Lane		1.00		1.00
Lane Grp Cap(c), veh/h		383	1058	472
V/C Ratio(X)		0.53	0.45	0.35
Avail Cap(c_a), veh/h		383	1058	472
HCM Platoon Ratio		2.00	2.00	2.00
Upstream Filter(I)		1.00	1.00	1.00
Uniform Delay (d), s/veh		37.7	20.4	19.8
Incr Delay (d2), s/veh		4.1	1.4	2.0
Initial Q Delay(d3),s/veh		0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		9.1	6.3	4.4
Unsig. Movement Delay, s/veh				
LnGrp Delay(d),s/veh		41.8	21.8	21.8
LnGrp LOS		D	C	C
Approach Vol, veh/h		845		
Approach Delay, s/veh		26.6		
Approach LOS		C		
Timer - Assigned Phs				

21-1550 Avilla Rancho Vistoso
2026 Total AM

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

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↱	↱		↱	↱		↱	↱		↱	↱	
Traffic Vol, veh/h	3	1180	24	2	846	8	11	0	10	8	0	12
Future Vol, veh/h	3	1180	24	2	846	8	11	0	10	8	0	12
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	3	1283	26	2	920	9	12	0	11	9	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	929	0	0	1309	0	0	1766	2235	655	1577	2244	465
Stage 1	-	-	-	-	-	-	1302	1302	-	929	929	-
Stage 2	-	-	-	-	-	-	464	933	-	648	1315	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1117	-	-	524	-	-	*95	48	409	151	47	*748
Stage 1	-	-	-	-	-	-	*170	229	-	704	617	-
Stage 2	-	-	-	-	-	-	*706	614	-	425	226	-
Platoon blocked, %	1	-	-	-	-	-	1	1	-	1	1	1
Mov Cap-1 Maneuver	1117	-	-	524	-	-	*93	47	409	146	47	*748
Mov Cap-2 Maneuver	-	-	-	-	-	-	*93	47	-	146	47	-
Stage 1	-	-	-	-	-	-	*169	228	-	701	615	-
Stage 2	-	-	-	-	-	-	*691	611	-	413	225	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	32.5	18.4
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	93	409	1117	-	-	524	-	-	146	748
HCM Lane V/C Ratio	0.129	0.027	0.003	-	-	0.004	-	-	0.06	0.017
HCM Control Delay (s)	49.3	14	8.2	-	-	11.9	-	-	31.2	9.9
HCM Lane LOS	E	B	A	-	-	B	-	-	D	A
HCM 95th %tile Q(veh)	0.4	0.1	0	-	-	0	-	-	0.2	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	1.4												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Vol, veh/h	11	1036	46	1	10	1095	25	33	0	92	5	0	7
Future Vol, veh/h	11	1036	46	1	10	1095	25	33	0	92	5	0	7
Conflicting Peds, #/hr	0	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	Stop
RT Channelized	-	-	None	-	-	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	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	1126	50	1	11	1190	27	36	0	100	5	0	8

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	1217	0	0	1176	1176	0	0	1794	2416	588	1815	2428	609
Stage 1	-	-	-	-	-	-	-	1175	1175	-	1228	1228	-
Stage 2	-	-	-	-	-	-	-	619	1241	-	587	1200	-
Critical Hdwy	4.14	-	-	6.44	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.52	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	*926	-	-	256	590	-	-	*135	*35	452	*127	*34	*619
Stage 1	-	-	-	-	-	-	-	*204	*264	-	*584	*512	-
Stage 2	-	-	-	-	-	-	-	*584	*512	-	*463	*256	-
Platoon blocked, %	1	-	-	-	-	-	-	1	1	-	1	1	1
Mov Cap-1 Maneuver	*926	-	-	503	503	-	-	*130	*34	452	*97	*32	*619
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	*130	*34	-	*97	*32	-
Stage 1	-	-	-	-	-	-	-	*201	*261	-	*576	*499	-
Stage 2	-	-	-	-	-	-	-	*563	*499	-	*356	*253	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	22.5	24.8
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	130	452	*926	-	-	503	-	-	97	619
HCM Lane V/C Ratio	0.276	0.221	0.013	-	-	0.024	-	-	0.056	0.012
HCM Control Delay (s)	42.9	15.2	8.9	-	-	12.3	-	-	44.3	10.9
HCM Lane LOS	E	C	A	-	-	B	-	-	E	B
HCM 95th %tile Q(veh)	1.1	0.8	0	-	-	0.1	-	-	0.2	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
Stage 1	-	-	-	-	1301
Stage 2	-	-	-	-	469
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	-	-	528	-	*119
Stage 1	-	-	-	-	*219
Stage 2	-	-	-	-	*706
Platoon blocked, %	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	528	-	*119
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	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	
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	1176	3	1	3	1229	1	2

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	1179	0	1801
Stage 1	-	-	-	-	1178
Stage 2	-	-	-	-	623
Critical Hdwy	-	-	6.44	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.52	-	3.52
Pot Cap-1 Maneuver	-	-	255	-	*158
Stage 1	-	-	-	-	*255
Stage 2	-	-	-	-	*584
Platoon blocked, %	-	-	-	-	1
Mov Cap-1 Maneuver	-	-	443	-	*157
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	1198	861	0	0	0
Future Vol, veh/h	0	1198	861	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	1302	936	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 468
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	1085	1132	0	0	0
Future Vol, veh/h	0	1085	1132	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	1179	1230	0	0	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 615
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
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	3.318
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 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
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	3.318
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 Total AM

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

Intersection						
Int Delay, s/veh	8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	25	20	11	0	0	3
Future Vol, veh/h	25	20	11	0	0	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	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	27	22	12	0	0	3

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	26	2	3
Stage 1	2	-	-
Stage 2	24	-	-
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	989	1082	1619
Stage 1	1021	-	-
Stage 2	999	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	982	1082	1619
Mov Cap-2 Maneuver	982	-	-
Stage 1	1014	-	-
Stage 2	999	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	7.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1619	- 1024	-	-
HCM Lane V/C Ratio	0.007	- 0.048	-	-
HCM Control Delay (s)	7.2	0 8.7	-	-
HCM Lane LOS	A	A A	-	-
HCM 95th %tile Q(veh)	0	- 0.1	-	-

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

Intersection						
Int Delay, s/veh	6.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	14	12	36	0	0	9
Future Vol, veh/h	14	12	36	0	0	9
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	15	13	39	0	0	10

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	83	5	10
Stage 1	5	-	-
Stage 2	78	-	-
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	919	1078	1610
Stage 1	1018	-	-
Stage 2	945	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	897	1078	1610
Mov Cap-2 Maneuver	897	-	-
Stage 1	994	-	-
Stage 2	945	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	7.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT EBLn1	SBT	SBR
Capacity (veh/h)	1610	- 972	-	-
HCM Lane V/C Ratio	0.024	- 0.029	-	-
HCM Control Delay (s)	7.3	0 8.8	-	-
HCM Lane LOS	A	A A	-	-
HCM 95th %tile Q(veh)	0.1	- 0.1	-	-

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

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	96	0	0	72	0	0	0	0	0	0	34
Future Vol, veh/h	12	96	0	0	72	0	0	0	0	0	0	34
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	13	104	0	0	78	0	0	0	0	0	0	37

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	78	0	0	104	0	0	227	208	104	208	208	78
Stage 1	-	-	-	-	-	-	130	130	-	78	78	-
Stage 2	-	-	-	-	-	-	97	78	-	130	130	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1520	-	-	1488	-	-	728	689	951	749	689	983
Stage 1	-	-	-	-	-	-	874	789	-	931	830	-
Stage 2	-	-	-	-	-	-	910	830	-	874	789	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1520	-	-	1488	-	-	696	683	951	744	683	983
Mov Cap-2 Maneuver	-	-	-	-	-	-	696	683	-	744	683	-
Stage 1	-	-	-	-	-	-	866	782	-	923	830	-
Stage 2	-	-	-	-	-	-	876	830	-	866	782	-

Approach	EB		WB		NB		SB
HCM Control Delay, s	0.8		0		0		8.8
HCM LOS					A		A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1520	-	-	1488	-	-	983
HCM Lane V/C Ratio	-	0.009	-	-	-	-	-	0.038
HCM Control Delay (s)	0	7.4	0	-	0	-	-	8.8
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0.1

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

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	37	75	0	0	163	0	0	0	0	0	0	19
Future Vol, veh/h	37	75	0	0	163	0	0	0	0	0	0	19
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	40	82	0	0	177	0	0	0	0	0	0	21

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	177	0	0	82	0	0	350	339	82	339	339	177
Stage 1	-	-	-	-	-	-	162	162	-	177	177	-
Stage 2	-	-	-	-	-	-	188	177	-	162	162	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1399	-	-	1515	-	-	605	582	978	615	582	866
Stage 1	-	-	-	-	-	-	840	764	-	825	753	-
Stage 2	-	-	-	-	-	-	814	753	-	840	764	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1399	-	-	1515	-	-	577	565	978	601	565	866
Mov Cap-2 Maneuver	-	-	-	-	-	-	577	565	-	601	565	-
Stage 1	-	-	-	-	-	-	815	741	-	800	753	-
Stage 2	-	-	-	-	-	-	795	753	-	815	741	-

Approach	EB		WB		NB		SB
HCM Control Delay, s	2.5		0		0		9.3
HCM LOS					A		A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1399	-	-	1515	-	-	866
HCM Lane V/C Ratio	-	0.029	-	-	-	-	-	0.024
HCM Control Delay (s)	0	7.6	0	-	0	-	-	9.3
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-	0.1

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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			↑	↑	
Traffic Vol, veh/h	2	0	0	25	3	146
Future Vol, veh/h	2	0	0	25	3	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	27	3	159

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	110	83	162
Stage 1	83	-	-
Stage 2	27	-	-
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	887	976	1417
Stage 1	940	-	-
Stage 2	996	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	887	976	1417
Mov Cap-2 Maneuver	887	-	-
Stage 1	940	-	-
Stage 2	996	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1417	-	887	-	-
HCM Lane V/C Ratio	-	-	0.002	-	-
HCM Control Delay (s)	0	-	9.1	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

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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			↑	↑	
Traffic Vol, veh/h	6	0	0	14	9	183
Future Vol, veh/h	6	0	0	14	9	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	15	10	199

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	125	110	209
Stage 1	110	-	-
Stage 2	15	-	-
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	943	1362
Stage 1	915	-	-
Stage 2	1008	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	870	943	1362
Mov Cap-2 Maneuver	870	-	-
Stage 1	915	-	-
Stage 2	1008	-	-

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)	1362	-	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	-	-

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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

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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

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

Intersection												
Int Delay, s/veh	4.2											
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	15
Future Vol, veh/h	0	0	96	0	0	0	68	0	0	0	0	15
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	16

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

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.3	8.4
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	920	-	-	1488	-	1084
HCM Lane V/C Ratio	0.08	-	-	-	-	0.015
HCM Control Delay (s)	9.3	-	-	0	-	8.4
HCM Lane LOS	A	-	-	A	-	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-	0

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

Intersection												
Int Delay, s/veh	6.6											
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	8
Future Vol, veh/h	0	0	75	0	0	0	161	0	0	0	0	8
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	9

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

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.7	8.3
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	946	-	-	1515	-	1084
HCM Lane V/C Ratio	0.185	-	-	-	-	0.008
HCM Control Delay (s)	9.7	-	-	0	-	8.3
HCM Lane LOS	A	-	-	A	-	A
HCM 95th %tile Q(veh)	0.7	-	-	0	-	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.