



CITY OF LAGUNA HILLS TRAFFIC COMMISSION

REGULAR MEETING AGENDA Wednesday, March 20, 2024 – 7:00 PM

Michael Caputo - Chair

Neel Patel - Vice Chair
Mark Schaff - Commissioner

Manuel Hernandez - Commissioner
Scott Miller – Commissioner

Location: City Council Chamber, 24035 El Toro Road, Laguna Hills, CA 92653

Any person wishing to address the Traffic Commission on any matter, whether or not it appears on this Agenda, is asked to complete a "Request to Speak" form available on the table at the back of the Chamber. The completed form is to be submitted to the Recording Secretary prior to an individual being heard by the Traffic Commission. Completion of the form is voluntary. All persons may attend the meeting regardless of whether this form is completed.

Members of the public wishing to address the Traffic Commission can do so during the Public Comments portion of the Agenda with a time limitation of three minutes per person, an overall time limit of ten minutes for any one subject, and a total time limit of thirty minutes for Public Comments. If you are commenting on an Agenda item, your comments will be heard at the time that item is scheduled on the Agenda. If you are addressing the Commission on an item not listed on the Agenda, the Traffic Commission is prohibited by law from discussing or taking any action on that item.

CALL TO ORDER

Resolution No. 96-04-09-1 established rules of decorum for public meetings held by the City of Laguna Hills. Resolution No. 96-04-09-1 is available on the table at the back of the City Council Chamber.

PLEDGE OF ALLEGIANCE

ROLL CALL OF COMMISSION MEMBERS

1. PUBLIC COMMENTS

This is the time to address the Traffic Commission on any matter not listed on this Agenda that is within the subject matter jurisdiction of the Commission. Public Comments are limited to three minutes per person, an overall time limit of ten minutes for any one subject, and a total time limit of thirty minutes.

2. MINUTES

2.1 Minutes

Recommendation: That the Traffic Commission approve the minutes of January 17, 2024.

3. PRESENTATIONS

4. ADMINISTRATIVE REPORTS

4.1 Grissom Road and Pike Road Multi-Way Stop Control Warrant Analysis Overview

Recommendation: That the Traffic Commission recommend that City staff install a multi-way (3-way) stop sign including applicable "STOP AHEAD" signs and markings in advance of the intersection.

4.2 Review of Traffic Conditions on Terra Bella Avenue and La Cuesta Avenue

Recommendation: That the Traffic Commission recommend that the City Engineer add Terra Bella Avenue and La Cuesta Avenue to the portable radar speed-feedback trailer rotational deployment list, conduct another speed survey in 90 days, and that Police Services conduct increased law enforcement on Terra Bella Avenue.

4.3 Discussion of Agenda Items Presented at the March 12, 2024 City Council Meeting: 1) Item 7.2.1: Studying No Overnight Parking in North Laguna Hills and the Urban Village Specific Area; and 2) Item 7.2.2: Studying a Change to the Residential Permit Parking Program that Would Reduce Guest Permit Parking Passes from Four Permits to One Permit Per Household.

Recommendation: That the Traffic Commission: 1) Receive and file the report; and 2) Provide direction to City staff on these issues.

5. INFORMATIONAL ITEMS

5.1. Sheriff's Department Verbal Report

6. COMMISSIONER COMMENTS

7. ADJOURNMENT

The next Regular Meeting of the Traffic Commission will be May 15, 2024, at 7:00 p.m. in the City Council Chamber, located at 24035 El Toro Road, Laguna Hills California.

CERTIFICATION

I, JOE AMES. P.E., T.E., Public Works Director/City Engineer of the City of Laguna Hills, do hereby certify that a copy of the foregoing Agenda was posted at Laguna Hills City Hall, Laguna Hills Community Center, and the Courtyard at La Paz Center by March 15, 2024, at 5:00 p.m.



Joe Ames, P.E., T.E., Public Works Director/City Engineer

March 15, 2024
Date

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, you should contact the office of the Public Works Director/City Engineer at (949) 707-2650. Notification 48 hours prior to the meeting will enable the City to make reasonable arrangements to assure access.

Materials related to an item on this Agenda submitted to the Commission after distribution of the Agenda packet are available for public inspection in the Public Services Department at 24035 El Toro Road, Laguna Hills, California, during normal business hours.



City of Laguna Hills

Traffic Commission

Staff Report

DATE: March 20, 2024
TO: Traffic Commissioners
FROM: Joe Ames
Public Works Director/City Engineer
ISSUE: Minutes

RECOMMENDATION: That the Traffic Commission approve the minutes of January 17, 2024.

ATTACHMENTS:

- Minutes January 17 2024

**CITY OF LAGUNA HILLS
TRAFFIC COMMISSION**

**REGULAR MEETING
MINUTES
Wednesday, January 17, 2024**

CALL TO ORDER

The meeting was called to order at 7:00 p.m. by Chair Michael Caputo.

PLEDGE OF ALLEGIANCE

ROLL CALL OF COMMISSION MEMBERS

Attendee Name	Title	Status	Arrived
Michael Caputo	Chair	Present	
Neel Patel	Vice Chair	Present	
Manuel Hernandez	Commissioner	Absent	
Mark Schaff	Commissioner	Present	

1. PUBLIC COMMENTS

There were no Public Comments.

2. MINUTES

2.1 Minutes

Recommendation: That the Traffic Commission approve the minutes of November 15, 2023.

RESULT:	APPROVED [UNANIMOUS]
MOVER:	Neel Patel, Vice Chair
SECONDER:	Mark Schaff, Commissioner
AYES:	Michael Caputo, Chair, Neel Patel, Vice Chair, Mark Schaff, Commissioner
ABSENT:	Manuel Hernandez, Commissioner

3. PRESENTATIONS

There were no Presentations.

4. ADMINISTRATIVE REPORTS

4.1 Santa Vittoria Drive and San Remo Drive Speed Survey Review

Recommendation: That the Traffic Commission receive and file the report.

RESULT:	RECEIVE AND FILE [UNANIMOUS]
MOVER:	Mark Schaff, Commissioner
SECONDER:	Michael Caputo, Chair
AYES:	Michael Caputo, Chair, Neel Patel, Vice Chair, Mark Schaff, Commissioner
ABSENT:	Manuel Hernandez, Commissioner

4.2 Review of Traffic Conditions on Wilkes Place and Grissom Road

Recommendation: That the Traffic Commission recommend that the City Engineer add Grissom Road to the portable radar speed-feedback trailer rotational deployment list and conduct another speed survey in 90 days, and that Police Services conduct increased law (speed) enforcement on Grissom Road.

The Traffic Commission received the following public comments:

Resident Wendy Wilcox addressed the Traffic Commission in favor of reviewing the traffic conditions on Wilkes Place and Grissom Road and specifically requested the installation of speed humps on Grissom Road.

Resident Nicholas D'Antoni addressed the Traffic Commission in favor of reviewing the traffic conditions on Wilkes Place and Grissom Road.

Resident Carly Hiegler addressed the Traffic Commission in favor of reviewing the traffic conditions on Wilkes Place and Grissom Road.

RESULT:	APPROVED [UNANIMOUS]
MOVER:	Mark Schaff, Commissioner
SECONDER:	Michael Caputo, Chair
AYES:	Michael Caputo, Chair, Neel Patel, Vice Chair, Mark Schaff, Commissioner
ABSENT:	Manuel Hernandez, Commissioner

5. INFORMATIONAL ITEMS

5.1. Sheriff's Department Verbal Report

Captain Burk introduced Sergeant Karen Loddy as the City's new Administrative Sergeant and indicated Sgt. Loddy would attend future Traffic Commission meetings.

Attachment: Minutes January 17 2024 (3462 : Minutes)

6. MATTERS AGENDIZED AND PRESENTED BY TRAFFIC COMMISSION MEMBERS

6.1 Studying the Implementation of Overnight Parking Restrictions Within North Laguna Hills and the Urban Village Specific Plan Areas

Recommendation: That the Traffic Commission: 1) Receive a presentation from Vice Chair Patel; and 2) Direct City staff to present a staff report to the City Council allowing the Traffic Commission to look into overnight parking restrictions within commercial areas of North Laguna Hills and the Urban Village Specific Plan area. (City Staff is interpreting *to look into* as *to research the feasibility of.*)

RESULT:	APPROVED [UNANIMOUS]
MOVER:	Neel Patel, Vice Chair
SECONDER:	Mark Schaff, Commissioner
AYES:	Michael Caputo, Chair, Neel Patel, Vice Chair, Mark Schaff, Commissioner
ABSENT:	Manuel Hernandez, Commissioner

6.2 Studying a Change to the Residential Permit Parking Program that Would Reduce Guest Permit Parking Passes from Four Permits to One Permit Per Household

Recommendation: That the Traffic Commission: 1) Receive a presentation from Vice Chair Patel; and 2) Direct City staff to ask the City Attorney the feasibility of reducing existing and future permit parking guest passes, implementing new time and use restrictions on guest passes and for City staff to report back to the Traffic Commission with the City Attorney’s determination.

RESULT:	APPROVED [UNANIMOUS]
MOVER:	Michael Caputo, Chair
SECONDER:	Neel Patel, Vice Chair
AYES:	Michael Caputo, Chair, Neel Patel, Vice Chair, Mark Schaff, Commissioner
ABSENT:	Manuel Hernandez, Commissioner

7. COMMISSIONER COMMENTS

Attachment: Minutes January 17 2024 (3462 : Minutes)

Vice Chair Patel indicated a resident asked the City to implement a right turn only at Rickenbacker Road and La Paz Road, restricting left hand turns onto La Paz Road.

Chair Caputo indicated he has received complaints from residents regarding traffic congestion along the OCTA/Caltrans I-5 South County Improvements Project. Chair Caputo mentioned City staff corresponds with OCTA and Caltrans on a regular basis concerning traffic impacts to our City.

8. ADJOURNMENT

There being no further business before the Traffic Commission at this session, Chair Caputo declared the meeting adjourned at 8:40 p.m.

Julie Comella, Administrative Assistant

ATTEST:

Michael Caputo, Chair

Approved at meeting of March 20, 2024

Attachment: Minutes January 17 2024 (3462 : Minutes)



City of Laguna Hills

Traffic Commission

Staff Report

DATE: March 20, 2024

TO: Traffic Commissioners

FROM: Joe Ames
Public Works Director/City Engineer

ISSUE: Grissom Road and Pike Road Multi-Way Stop Control Warrant Analysis Overview

RECOMMENDATION: That the Traffic Commission recommend that City staff install a multi-way (3-way) stop sign including applicable "STOP AHEAD" signs and markings in advance of the intersection.

SUMMARY:

Staff received a request from a resident of the community to evaluate the need for all-way stop sign control at the intersection of Grissom Road and Pike Road to address speeding vehicles along Pike Road. Currently, there is one-way stop control facing northbound Grissom Road traffic, however, cross-traffic (Pike Road and the western leg of Grissom Road) is uncontrolled. Upon review, it was determined that a multi-way stop sign is not warranted based on the California Manual of Uniform Traffic Control Devices warrant analysis guidelines; however, the installation of a multi-way stop would enhance traffic safety at the intersection.

BACKGROUND:

Grissom Road is a local collector street traversing in the north-south and east-west direction. Pike Road is a local collector street traversing in the east-west direction. Both roadways provide space for one lane in each direction and meet in a T-intersection. On-street parking is allowed on both sides of the street. There are no marked crosswalks across any leg of the intersection. The posted speed limit on both roadways is 25 MPH. It should be noted that Valencia Elementary School is located nearby, just south of La Paz Road. Please see the attached Vicinity Map.

Grissom Road and Pike Road Multi-Way Stop Control Warrant Analysis Overview

March 20, 2024

Page 2

Residents have contacted staff regarding their concerns about the number of speeding vehicles on Pike Road and the safety of pedestrians near the T-intersection of Grissom Road and Pike Road. A request was made to evaluate the need for a multi-way stop at the intersection.

Upon receiving the request, City staff contacted Hartzog & Crabill, Inc., (HCI) the City's traffic engineering consultant, to perform a multi-way stop sign warrant analysis, traffic volume review, and sight-distance review. Based on the guidelines of the California Manual on Uniform Traffic Control Devices (MUTCD), HCI reviewed the accident history, traffic volumes, and visibility at the intersection. In summary, an accident history review from the California Highway Patrol (CHP) Statewide Integrated Traffic Records System (SWITRS) from January 2018 through November 2023 revealed no reported collisions. The collision warrant requires a minimum of five (5) reported, correctible accidents within a 12-month period, and therefore does not trigger the requirement of a multi-way stop sign. The traffic volumes were also not sufficient to trigger the requirement of a multi-way stop sign at the T-intersection. Moreover, the sight distance analysis revealed adequate stopping sight distance at the intersection. However, it should be noted that parked vehicles near the intersection would likely impair driver visibility for motorists approaching the existing one-way stop sign. Please see the attached report for details.

Although the warrant analysis criteria were not met, primarily based upon engineering judgment, a multi-way (3-way) stop sign installation is recommended for the T-intersection of Grissom Road and Pike Road to enhance traffic safety. This may include the installation of certain on-street parking restrictions near the intersection, to increase the visibility of the all-way stop control.

FISCAL IMPACT:

The anticipated installation cost of the required signing and striping is \$4,000.00 Funds are available for this work in the 2023-24 Fiscal Year Public Works Maintenance Budget.

ATTACHMENTS:

- Grissom Road and Pike Road Vicinity Map
- Hartzog & Crabill, Inc. Multi-Way Stop Control Warrant Analysis - Grissom Road and Pike Road, January 23, 2024

Grissom Road and Pike Road



Attachment: Grissom Road and Pike Road Vicinity Map (3466 : Grissom Road and Pike Road Multi-Way

1" = 259 ft

Vicinity Map

03/12/2024



This map may represent a visual display of related geographic information. Data provided here on is not guarantee of actual field conditions. To be sure of complete accuracy, please contact the responsible staff for most up-to-date information.

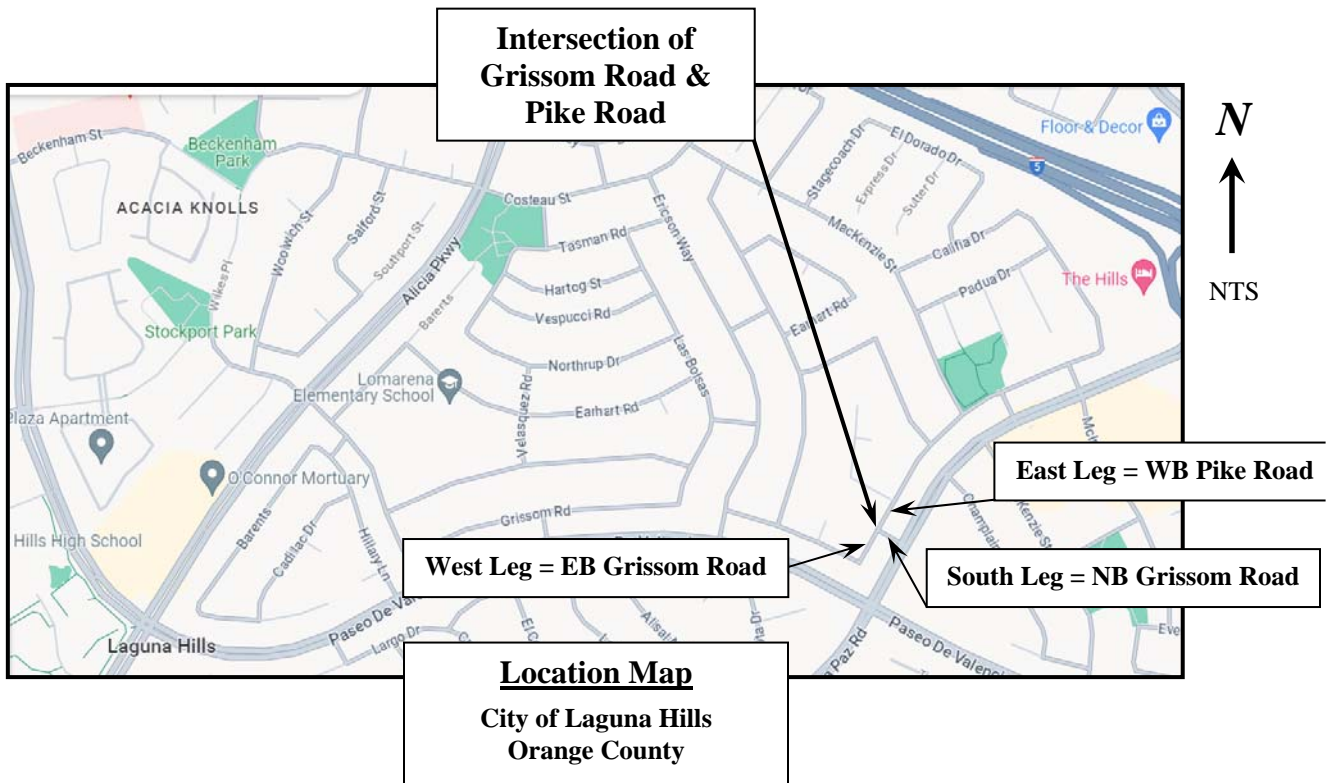
MULTIWAY STOP CONTROL WARRANTS ANALYSIS

**INTERSECTION OF GRISSOM ROAD AND PIKE ROAD
IN THE CITY OF LAGUNA HILLS, CA
JANUARY 23, 2024**

INTRODUCTION

The City of Laguna Hills requested Hartzog & Crabill, Inc. (HCI) to complete a Multiway Stop Warrants Analysis at the intersection of Grissom Road and Pike Road. This analysis was completed in order to verify if a three-way stop sign installation is warranted and recommended based on meeting standard guidelines.

The location is a typical T-intersection; however, Grissom Road runs diagonally in both the east-west and north-south directions, and Pike Road runs diagonally in the east-west directions. The intersection is located east of Paseo de Valencia and just north of La Paz Road (see Location Map below). The intersection is entirely within the City of Laguna Hills jurisdiction. At the present time, there is a one-way stop control on northbound Grissom Road (i.e., Pike Road and the other part of Grissom Road are uncontrolled).



Attachment: Hartzog & Crabill, Inc. Multi-Way Stop Control Warrant Analysis - Grissom Road and Pike Road, January 23, 2024 (3466 : Grissom

BACKGROUND

Grissom Road is a diagonal north-south and east-west local-collector roadway (i.e., the roadway changes direction via a 90 degree turn at the intersection with Pike Road). It has single-family residential properties on both sides of the street. It is noted, that Valencia Elementary School is located nearby, just south of La Paz Road. At the intersection with Pike Road, the roadway is approximately 36 feet wide curb-to-curb. The 2-lane roadway provides for one lane of traffic in each direction, which are separated by a single-yellow skip centerline, as well as a double-yellow centerline stripe. There are no marked crosswalks across Grissom Road at or near the intersection. The roadway does have curb, gutter, parkway, and sidewalk improvements on both sides. Grissom Road has a posted speed limit of 25 MPH, as well as a ‘25’ pavement marking located at/near the speed limit sign. On-street parking is allowed on both sides of the street. There is a posted STOP sign, a white ‘STOP’ pavement marking, and a limit line facing northbound Grissom Road at its T-intersection with Pike Road.

See Exhibit 1 (next page) for photo images of Grissom Road.

Pike Road is a diagonal east-west local-collector roadway with single-family residential properties on both sides of the street. At its intersection with Grissom Road, which is the westerly terminus of Pike Road, the roadway is approximately 36 feet wide. The 2-lane roadway provides for one lane of traffic in each direction which are separated by a single-yellow skip centerline stripe. There are no marked crosswalks across Pike Road at or near the intersection. The roadway does have curb, gutter, parkway, and sidewalk improvements on both sides. Pike Road does have a posted speed limit of 25 MPH, as well as a ‘25’ pavement marking located at/near the speed limit sign. Currently, there are no STOP signs on Pike Road (i.e., uncontrolled) at its intersection with Grissom Road.

See Exhibit 2 (following page) for a photo image of Pike Road.

Multiway Stop Sign Warrants Analysis – Grissom Road at Pike Road, in Laguna Hills, CA

EXHIBIT 1



GRISSOM ROAD (Looking Eastbound) @ PIKE ROAD/GRISSOM ROAD



GRISSOM ROAD (Looking Northbound) @ GRISSOM ROAD/PIKE ROAD

Attachment: Hartzog & Crabill, Inc. Multi-Way Stop Control Warrant Analysis - Grissom Road and Pike Road, January 23, 2024 (3466 : Grissom

EXHIBIT 2



PIKE ROAD (*Looking Westbound*) @ GRISSOM ROAD

Attachment: Hartzon & Crabill, Inc. Multi-Way Stop Control Warrant Analysis - Grissom Road and Pike Road, January 23, 2024 (3466 : Grissom

WARRANT GUIDELINES

As is common practice with many municipal agencies, the City of Laguna Hills follows State guidelines for determining if traffic control devices, such as multi-way stop signs, should be installed. Therefore, the prevailing source used for this analysis is the State of California Manual on Uniform Traffic Control Devices (*California MUTCD*). The California MUTCD contains minimum guidelines regarding traffic volumes, collisions, speeds, visibility, and other criteria in order to satisfy the requirements, in this case, for the recommendation and installation of a multi-way (3-way) stop.

The California MUTCD **Multi-way Stop** Applications Guidance criteria are described in the following four main parts:

- 1) As an interim measure where traffic control signals are justified;
- 2) Reported crashes – five or more in a 12-month period that are susceptible to correction by a multi-way stop installation;
- 3) Minimum traffic and pedestrian volumes, speeds, and delay; and,
- 4) Where a combination of the above criteria are all satisfied to 80 percent.

If any one, or a combination, of these criteria is met, then a multi-way stop application should be considered. If these criteria are not met, the installation of an unwarranted multi-way stop sign installation is typically not recommended.

The California MUTCD guidelines describing Right-of-Way at Intersections, STOP Sign Applications, Multi-way Stop Applications, and Yield Sign Applications are included in Appendix A.

MULTIWAY STOP ANALYSIS

The California MUTCD **Multi-way Stop** Applications section contains guidelines, such as minimum collisions and traffic volumes necessary for the justification of multi-way stop control. The general guidelines given for a stop sign application begin with using engineering judgment for the installation of a stop sign(s) on a street entering a through highway and where high speeds on the cross street make entry difficult, or due to restricted view, or when crash records indicate a need for control by a stop sign. Further guidance criteria found in the California MUTCD include the following important statements: *“YIELD or STOP signs should not be used for speed control... In most cases, the street carrying the lowest volume of traffic should be controlled... A STOP (R1-1) sign is not a ‘cure-all’ and is not a substitute for other traffic control devices. Often, the need for a STOP (R1-1) sign can be eliminated if the sight distance is increased by removing obstructions... A YIELD or STOP sign should not be installed on the higher volume roadway unless justified by an engineering study... Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal...”*

Collision History

The guidelines for **Multi-way Stop** Applications contained in the California MUTCD regarding collisions, or crashes, require a minimum of five (5) reported crashes occurring in a 12-month period that are susceptible to correction by a multi-way stop installation in order to satisfy this warrant. Such crashes include right-turn and left-turn collisions, as well as right-angle collisions (i.e., broadside, or head-on) and pedestrian-vehicle collisions. Other types of collisions categorized as ‘sideswipe’, ‘rear-end’, and ‘hit object’ type collisions are generally not considered susceptible to correction by a multiway stop, unless further review indicates otherwise. The latest available collision history for the intersection was gathered by HCI from the State of California Highway Patrol (CHP) Statewide Integrated Traffic Records System website (*i-SWITRS*), which is where local jurisdictions, such as cities, report their collisions.

Multiway Stop Sign Warrants Analysis – Grissom Road at Pike Road, in Laguna Hills, CA

Collision History (continued)

A comprehensive 5-year traffic collision history summary report was prepared for this intersection. Table 1 below provides the most recent summary of collision history occurring at or near this intersection.

**TABLE 1
SWITRS COLLISION SUMMARY**

Intersection	2018-19		2020		2021		2022 – NOV. 23	
	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?
Grissom Road at Pike Road		None reported		None reported		None reported		None reported

Notes: Information above is derived per the latest 5-year intersection traffic collision database report gathered from CHP-SWITRS (*i-SWITRS website*).

- 1) Type of Coll. = Type of Collision (*i.e., broadside, rear-end, etc.*)
- 2) Correctible? = Yes / No

As shown above, there have been no (0) reported collisions at or near this intersection over the past five (5) years of available SWITRS collision data. Since the collision warrant requires a minimum of five (5) reported crashes susceptible to correction by a multi-way stop, to occur within a 12-month period, the collision warrant is not satisfied.

The SWITRS traffic collision data report is included in Appendix B.

Traffic Volumes

HCI collected Average Daily Traffic (ADT) vehicular approach counts to the intersection on Thursday, November 9, 2023, as well as 12-hour pedestrian counts, in order to account for traffic that uses this intersection on a typical day. The ADT approach count for Grissom Road is 950 vehicles per day, with the highest AM peak-hour approach volume having 81 vehicles and 85 vehicles in the PM peak-hour. The ADT approach count for Pike Road is 448 vehicles, with the highest AM peak-hour approach volume having 44 vehicles and 38 vehicles in the PM peak-hour. Table 2 (next page) provides a breakdown of the approach volumes. ***The traffic volume data collected for this location is included in Appendix C.***

Traffic Volumes (continued)

TABLE 2
HIGHEST 24-HOUR INTERSECTION APPROACH VEHICLE COUNTS

Street	Direction	ADT Volume	Directional Split	Highest Hourly Volume
Grissom Road	Eastbound	448	47%	42 (8 – 9 PM)
	Northbound	502	53%	19 (3 – 4 PM)
Pike Road				
	Westbound	448	100%	52 (4 – 5 PM)

Due to the street name change, both the eastbound and westbound approaches of Grissom Road and Pike Road are considered the ‘through’ or ‘major’ street at this residential T-intersection, since they carry higher volumes from both approaches, and drivers are not required to slow down, or even stop, before proceeding straight through the intersection. In comparison, the northbound approach of Grissom Road is considered the ‘minor’ street as northbound drivers on Grissom Road are required to stop at Pike Road and look both ways before proceeding to make a left-turn or right-turn. It is typically expected that the traffic volumes on the minor street are significantly less than those on the major street. As can be seen from the table above, this is not the case, as northbound Grissom Road carries approximately 1/3 (36%) of the entire traffic entering the intersection (eastbound and westbound Grissom Road/Pike Road carries approximately 64% of entering traffic).

A part of the California MUTCD guideline criteria also calls for a reduction in the required minimum volumes when the critical approach speed (*or 85th-percentile speed*) on the major street exceeds 40 MPH. If this is the case, the minimum vehicular volumes to be met for a multiway stop sign installation are reduced to 70%. As mentioned, the posted speed limits on both intersecting streets are 25 MPH. Field observations during our late morning site visit also confirmed vehicles were not regularly speeding over the speed limit near the intersection, but were considered typical and what may be expected for two-lane local-type roadways.

Multiway Stop Sign Warrants Analysis – Grissom Road at Pike Road, in Laguna Hills, CA

Traffic Volumes (continued)

As the posted speed limits are considerably less than the 40 MPH limit required to reduce traffic volumes, the 70% minimum volumes for a multi-way stop sign analysis are not applicable, and the 100% minimum volumes were analyzed. It is important to note that the highest hourly vehicle traffic counts shown in Table 2 above are given for the highest one-hour of traffic for each approach, and serve as a good indicator to compare with the required minimum hourly traffic volumes in the California MUTCD multi-way stop guidelines. It must also be mentioned that the average hourly minimum volumes for a multi-way stop application are to be satisfied for any eight (8) hours of an average day (not just for one hour in a day). Table 3 below shows the California MUTCD minimum traffic volume guidelines for a Multi-way Stop Application in comparison with the highest 8-hour traffic count data collected at this intersection. Both Parts 1 and 2 of the minimum volume warrants below must be satisfied in order to fulfill the traffic volume warrant.

**TABLE 3
MULTIWAY STOP SIGN WARRANT FOR MINIMUM TRAFFIC VOLUMES
GRISSOM ROAD AT PIKE ROAD**

<p style="text-align: center;">Part 1.</p> <p>The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any (8) hours of an average day,</p> <p style="text-align: center;">Results:</p> <p>No, average (70) vehicles per hour</p> <p>Only 23.3% of the required hourly traffic volume</p>	<i>and</i>	<p style="text-align: center;">Part 2.</p> <p>The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same (8) hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour,</p> <p style="text-align: center;">Results:</p> <p>No, average (45) vehicles per hour</p> <p>Only 22.5% of the required hourly traffic volume</p>	<i>but</i>	<p style="text-align: center;">Part 3.</p> <p>If the 85th-percentile approach speed of the major-street traffic exceeds 65 km/h or exceeds 40 mph, the minimum vehicular volume warrants are (70) percent of the above values.</p> <p style="text-align: center;">Results:</p> <p>No, 85th percentile speed on major-street does not exceed 40 mph</p>
---	------------	---	------------	---

As shown above, the average hourly intersection approach traffic volumes for the highest 8-hour period, including pedestrians, did not satisfy both Parts 1 and 2 (23% major street / 23% minor street). Therefore, the minimum traffic volume warrant is not satisfied.

Multiway Stop Sign Warrants Analysis – Grissom Road at Pike Road, in Laguna Hills, CA

Visibility

Impaired visibility, or restricted sight distance, due to the geometry of the intersection and possible obstructions, was carefully considered during our field-review of the surrounding residential neighborhood environment. The geometry of the intersection includes an approximate 90° angle. Pike Road has a gradual decline in the westbound direction as you approach the intersection with Grissom Road. Northbound Grissom Road has a decline in the northbound direction as you move closer to the intersection from La Paz Road.

Driver sight distance was measured from the side-street approach to the intersection, as northbound traffic on Grissom Road coming from La Paz Road is required to stop, before proceeding to make a left-turn or right-turn onto Grissom Road/Pike Road. The measured distance was derived from the stopping sight distance guidelines found in the California MUTCD (*see Appendix D*). In this reference, a 25 MPH roadway speed recommends a minimum Stopping Sight Distance of 155 feet. However, it is likely that the 85th percentile speeds typically exceed the 25 MPH posted speed limit. Therefore, a 30 MPH speed limit, which has a minimum sight distance of 200 feet, was used as a more conservative measure. This distance was used when looking towards approaching, uncontrolled traffic along eastbound Grissom Road and westbound Pike Road. More specifically, this stopping sight distance was field-measured from a typical ‘stopped’ vehicle location on northbound Grissom Road at the intersection looking towards the oncoming lanes of cross-traffic on Grissom Road/Pike Road. An orange cone was placed at this distance and a photograph was taken from a stopped driver’s perspective (i.e., approx. 3.5 feet in height).

(See sight distance photos in Exhibit 3 on the following page).

As Exhibit 3 shows, when looking from northbound Grissom Road, a driver does have a clear line of sight to the minimum sight distance of 200 feet when looking both ways on Grissom Road. However, it is noted, if vehicles are parked on the street near the intersection, they will likely block a side-street driver’s visibility to see the full distance.

Multiway Stop Sign Warrants Analysis – Grissom Road at Pike Road, in Laguna Hills, CA

EXHIBIT 3



Northbound GRISSOM ROAD (*Looking East*) @ PIKE ROAD



Northbound GRISSOM ROAD (*Looking West*) @ GRISSOM ROAD

Attachment: Hartzog & Crabill, Inc. Multi-Way Stop Control Warrant Analysis - Grissom Road and Pike Road, January 23, 2024 (3466 : Grissom

MULTIWAY STOP ANALYSIS SUMMARY

The analysis of the four (4) main criteria provided in the California MUTCD regarding **Multi-way Stop** Applications showed that this intersection did not meet the minimum guidelines to justify stopping the major roadway (i.e., eastbound Grissom Road and westbound Pike Road). The four main criteria analyzed were: 1) As an interim measure where traffic control signals are justified; 2) Reported collisions – a correctible crash problem; 3) Traffic and pedestrian volumes, speeds, and delay; and 4) Where a combination of the above criteria are satisfied to 80 percent.

In summary, the collision history at the intersection resulted in no (0) SWITRS-reported collisions during the last five years of available data, where the minimum guideline calls for at least five (5) correctible collisions in a 12-month period. The average minimum hourly street volumes required for a multi-way stop to be satisfied for any eight (8) hours in an average day did not come close to being satisfied. Excessive delay to any approach was not observed in terms of vehicles stopping and waiting for a gap on the major roadway due to the overall lower traffic volumes at the intersection.

Therefore, since intersection collision history and traffic volumes did not satisfy the minimum guidelines, it can also be derived that a traffic signal is not justified as an interim measure at this intersection (as mentioned above in the first criteria). The 80% combined criteria were also not met as both the collisions and minimum traffic volumes were not satisfied to this percentage. If the California MUTCD criteria are not met, the location is typically not recommended for installation of a multi-way stop.

However, engineering judgment should always be included in any decision regarding traffic safety improvements. Intersection lighting was also verified and found to be adequate as there is one 70 Watt street light located along the northerly area of the intersection.

MULTIWAY STOP ANALYSIS SUMMARY (continued)

It was also determined during our site visit that northbound Grissom Road drivers do have a clear line of sight when stopped and looking both ways at Grissom Road/Pike Road traffic. However, it is important to note, if/when vehicles are parked on the street near the intersection, they may likely block a side-street driver’s visibility to see the full stopping sight distance of 200 feet. As such, consideration may be given to prohibit on-street parking along the south-side of Grissom Road/Pike Road for at least one and up to two parking spaces nearest to the intersection.

Lastly, in regards to pedestrian and bicycle activity, during our late morning site visit there were no pedestrians and bicyclists observed crossing the intersection. Therefore, a low-to-medium activity of pedestrians and bicyclists was assumed. However, as part of the data collection, HCI gathered 12-hour pedestrian count data (7am – 7pm) at this intersection on Thursday, November 9, 2023, in order to account for pedestrians that use this intersection on a typical day. The pedestrian data includes both adults and children, with results as summarized below:

<u>Peak-Hour</u>	<u>Total Pedestrians Crossing</u>	<u>West Leg</u>	<u>South Leg</u>
AM peak-hour of 7:45am	52	30	20
PM peak-hour of 2:00pm	53	27	26

It is noted, as part of the CA MUTCD Multi-way STOP Application Option criteria for an engineering study, consideration may be given for the need to control vehicle/pedestrian conflicts..., as well as an intersection of two residential neighborhood collector streets of similar design and operating characteristics... Since both criteria may be considered at this location, based upon overall engineering judgment, including approximately equal vehicular traffic volumes on all three approaches, possible restricted visibility due to on-street parking near the intersection, and crossing pedestrians, it is determined that a multiway Stop would enhance traffic safety at this intersection.

Multiway Stop Sign Warrants Analysis – Grissom Road at Pike Road, in Laguna Hills, CA

RECOMMENDATION

In overall consideration of the analysis criteria in this report, primarily based upon engineering judgment, a multi-way (3-way) Stop sign installation is recommended for the T-intersection of Grissom Road and Pike Road. The 3-way Stop recommendation includes the installation of applicable Stop Ahead signs and markings in advance of the intersection. Lastly, this may include installation of certain on-street parking restrictions near the intersection per the attached CA MUTCD guideline in **Appendix E**.

If approved, the total cost for the installation of a 3-way Stop at this T-intersection, including administration and construction, is estimated at \$4,000.00.

APPENDIX A

**MULTIWAY STOP APPLICATIONS
GUIDELINES:**

CALIFORNIA MUTCD

Standard:

03 Except as provided in Paragraphs 4 and 5, the minimum sizes for regulatory signs facing traffic on multi-lane conventional roads shall be as shown in the Multi-lane column of Table 2B-1 and 2B-1(CA).

Option:

04 Where the posted speed limit is 35 mph or less on a multi-lane highway or street, other than for a STOP sign, the minimum size shown in the Single Lane column in Table 2B-1 and 2B-1(CA) may be used.

05 Where a regulatory sign, other than a STOP sign, is placed on the left-hand side of a multi-lane roadway in addition to the installation of the same regulatory sign on the right-hand side or the roadway, the size shown in the Single Lane column in Table 2B-1 and 2B-1(CA) may be used for both the sign on the right-hand side and the sign on the left-hand side of the roadway.

Standard:

06 A minimum size of 36 x 36 inches shall be used for STOP signs that face multi-lane approaches.

07 Where side roads intersect a multi-lane street or highway that has a speed limit of 45 mph or higher, the minimum size of the STOP signs facing the side road approaches, even if the side road only has one approach lane, shall be 36 x 36 inches.

08 Where side roads intersect a multi-lane street or highway that has a speed limit of 40 MPH or lower, the minimum size of the STOP signs facing the side road approaches shall be as shown in the Single Lane or Multi-lane columns of Table 2B-1 and 2B-1(CA) based on the number of approach lanes on the side street approach.

Guidance:

09 The minimum sizes for regulatory signs facing traffic on exit and entrance ramps should be as shown in the column of Table 2B-1 and 2B-1(CA) that corresponds to the mainline roadway classification (Expressway or Freeway). If a minimum size is not provided in the Freeway column, the minimum size in the Expressway column should be used. If a minimum size is not provided in the Freeway or Expressway Column, the size in the Oversized column should be used.

Section 2B.04 Right-of-Way at Intersections**Support:**

01 State or local laws written in accordance with the "Uniform Vehicle Code" (see Section 1A.11) establish the right-of-way rule at intersections having no regulatory traffic control signs such that the driver of a vehicle approaching an intersection must yield the right-of-way to any vehicle or pedestrian already in the intersection. When two vehicles approach an intersection from different streets or highways at approximately the same time, the right-of-way rule requires the driver of the vehicle on the left to yield the right-of-way to the vehicle on the right. The right-of-way can be modified at through streets or highways by placing YIELD (R1-2) signs (see Sections 2B.08 and 2B.09) or STOP (R1-1) signs (see Sections 2B.05 through 2B.07) on one or more approaches.

Guidance:

02 Engineering judgment should be used to establish intersection control. The following factors should be considered:

- A. Vehicular, bicycle, and pedestrian traffic volumes on all approaches;**
- B. Number and angle of approaches;**
- C. Approach speeds;**
- D. Sight distance available on each approach; and**
- E. Reported crash experience.**

03 YIELD or STOP signs should be used at an intersection if one or more of the following conditions exist:

- A. An intersection of a less important road with a main road where application of the normal right-of-way rule would not be expected to provide reasonable compliance with the law;**
- B. A street entering a designated through highway or street; and/or**
- C. An unsignalized intersection in a signalized area.**

04 In addition, the use of YIELD or STOP signs should be considered at the intersection of two minor streets or local roads where the intersection has more than three approaches and where one or more of the following conditions exist:

- A. The combined vehicular, bicycle, and pedestrian volume entering the intersection from all approaches averages more than 2,000 units per day;
- B. The ability to see conflicting traffic on an approach is not sufficient to allow a road user to stop or yield in compliance with the normal right-of-way rule if such stopping or yielding is necessary; and/or
- C. Crash records indicate that five or more crashes that involve the failure to yield the right-of-way at the intersection under the normal right-of-way rule have been reported within a 3-year period, or that three or more such crashes have been reported within a 2-year period.

05 YIELD or STOP signs should not be used for speed control.

Support:

06 Section 2B.07 contains provisions regarding the application of multi-way STOP control at an intersection.

Guidance:

07 Once the decision has been made to control an intersection, the decision regarding the appropriate roadway to control should be based on engineering judgment. In most cases, the roadway carrying the lowest volume of traffic should be controlled.

08 A YIELD or STOP sign should not be installed on the higher volume roadway unless justified by an engineering study.

Support:

09 The following are considerations that might influence the decision regarding the appropriate roadway upon which to install a YIELD or STOP sign where two roadways with relatively equal volumes and/or characteristics intersect:

- A. Controlling the direction that conflicts the most with established pedestrian crossing activity or school walking routes;
- B. Controlling the direction that has obscured vision, dips, or bumps that already require drivers to use lower operating speeds; and
- C. Controlling the direction that has the best sight distance from a controlled position to observe conflicting traffic.

Standard:

10 Because the potential for conflicting commands could create driver confusion, YIELD or STOP signs shall not be used in conjunction with any traffic control signal operation, except in the following cases:

- A. If the signal indication for an approach is a flashing red at all times;
- B. If a minor street or driveway is located within or adjacent to the area controlled by the traffic control signal, but does not require separate traffic signal control because an extremely low potential for conflict exists; or
- C. If a channelized turn lane is separated from the adjacent travel lanes by an island and the channelized turn lane is not controlled by a traffic control signal.

10a STOP signs shall not be erected at any entrance to an intersection controlled by traffic signals. Refer to CVC 21355(a).

11 Except as provided in Section 2B.09, STOP signs and YIELD signs shall not be installed on different approaches to the same unsignalized intersection if those approaches conflict with or oppose each other.

12 Portable or part-time STOP or YIELD signs shall not be used except for emergency and temporary traffic control zone purposes.

13 A portable or part-time (folding) STOP sign that is manually placed into view and manually removed from view shall not be used during a power outage to control a signalized approach unless the maintaining agency establishes that the signal indication that will first be displayed to that approach upon restoration of power is a flashing red signal indication and that the portable STOP sign will be manually removed from view prior to stop-and-go operation of the traffic control signal.

Option:

14 A portable or part-time (folding) STOP sign that is electrically or mechanically operated such that it only displays the STOP message during a power outage and ceases to display the STOP message upon restoration of power may be used during a power outage to control a signalized approach.

Support:

¹⁵ Section 9B.03 contains provisions regarding the assignment of priority at a shared-use path/ roadway intersection.

Section 2B.05 STOP Sign (R1-1) and ALL WAY Plaque (R1-3P)

Standard:

⁰¹ **When it is determined that a full stop is always required on an approach to an intersection, a STOP (R1-1) sign (see Figure 2B-1) shall be used.**

⁰² **The STOP sign shall be an octagon with a white legend and border on a red background.**

⁰³ **Secondary legends shall not be used on STOP sign faces.**

⁰⁴ **At intersections where all approaches are controlled by STOP signs (see Section 2B.07), an ALL WAY supplemental plaque (R1-3P) shall be mounted below each STOP sign. The ALL WAY plaque (see Figure 2B-1) shall have a white legend and border on a red background.**

⁰⁵ **The ALL WAY plaque shall only be used if all intersection approaches are controlled by STOP signs.**

⁰⁶ **Supplemental plaques with legends such as 2-WAY, 3-WAY, 4-WAY, or other numbers of ways shall not be used with STOP signs.**

Support:

⁰⁷ The use of the CROSS TRAFFIC DOES NOT STOP (W4-4P) plaque (and other plaques with variations of this word message) is described in Section 2C.59.

Guidance:

⁰⁸ *Plaques with the appropriate alternative messages of TRAFFIC FROM LEFT (RIGHT) DOES NOT STOP (W4-4aP) or ONCOMING TRAFFIC DOES NOT STOP (W4-4bP) should be used at intersections where STOP signs control all but one approach to the intersection, unless the only non-stopped approach is from a one-way street.*

Option:

⁰⁹ An EXCEPT RIGHT TURN (R1-10P) plaque (see Figure 2B-1) may be mounted below the STOP sign if an engineering study determines that a special combination of geometry and traffic volumes is present that makes it possible for right-turning traffic on the approach to be permitted to enter the intersection without stopping.

Support:

¹⁰ The design and application of Stop Beacons are described in Section 4L.05.

¹¹ **A STOP (R1-1) sign is not a "cure-all" and is not a substitute for other traffic control devices. Often, the need for a STOP (R1-1) sign can be eliminated if the sight distance is increased by removing obstructions.**

Through Highways

Option:

¹² STOP (R1-1) signs may be installed either at or near the entrance to a State highway, except at signalized intersections, or at any location so as to control traffic within an intersection. Refer to CVC 21352 and 21355. See Section 1A.11 for information regarding this publication.

Support:

¹³ When STOP (R1-1) signs or traffic control signals have been erected at all entrances, a highway constitutes a through highway. Refer to CVC 600.

¹⁴ Authority to place STOP (R1-1) signs facing State highway traffic is delegated to the Department of Transportation's District Directors.

Option:

¹⁵ **Local authorities may designate any highway under their jurisdiction as a through highway and install STOP (R1-1) signs in a like manner. Refer to CVC 21354.**

Standard:

¹⁶ **No local authority shall erect or maintain any STOP (R1-1) sign or other traffic control device requiring a stop, on any State highway, except by permission of the Department of Transportation. Refer to CVC 21353.**

Support:

¹⁷ The Department of Transportation will grant such permission only when an investigation indicates that the STOP (R1-1) sign will benefit traffic.

Section 2B.06 STOP Sign Applications

Guidance:

- 01 At intersections where a full stop is not necessary at all times, consideration should first be given to using less restrictive measures such as YIELD signs (see Sections 2B.08 and 2B.09).*
- 02 The use of STOP signs on the minor-street approaches should be considered if engineering judgment indicates that a stop is always required because of one or more of the following conditions:*
- A. The vehicular traffic volumes on the through street or highway exceed 6,000 vehicles per day;*
 - B. A restricted view exists that requires road users to stop in order to adequately observe conflicting traffic on the through street or highway; and/or*
 - C. Crash records indicate that three or more crashes that are susceptible to correction by the installation of a STOP sign have been reported within a 12-month period, or that five or more such crashes have been reported within a 2-year period. Such crashes include right-angle collisions involving road users on the minor-street approach failing to yield the right-of-way to traffic on the through street or highway.*

Support:

- 03 The use of STOP signs at grade crossings is described in Sections 8B.04 and 8B.05.*

Section 2B.07 Multi-Way Stop Applications

Support:

01 Multi-way stop control can be useful as a safety measure at intersections if certain traffic conditions exist. Safety concerns associated with multi-way stops include pedestrians, bicyclists, and all road users expecting other road users to stop. Multi-way stop control is used where the volume of traffic on the intersecting roads is approximately equal.

02 The restrictions on the use of STOP signs described in Section 2B.04 also apply to multi-way stop applications.

Guidance:

- 03 The decision to install multi-way stop control should be based on an engineering study.*
- 04 The following criteria should be considered in the engineering study for a multi-way STOP sign installation:*
- A. Where traffic control signals are justified, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the installation of the traffic control signal.*
 - B. Five or more reported crashes in a 12-month period that are susceptible to correction by a multi-way stop installation. Such crashes include right-turn and left-turn collisions as well as right-angle collisions.*
 - C. Minimum volumes:*
 - 1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 vehicles per hour for any 8 hours of an average day; and*
 - 2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 units per hour for the same 8 hours, with an average delay to minor-street vehicular traffic of at least 30 seconds per vehicle during the highest hour; but*
 - 3. If the 85th-percentile approach speed of the major-street traffic exceeds 40 mph, the minimum vehicular volume warrants are 70 percent of the values provided in Items 1 and 2.*
 - D. Where no single criterion is satisfied, but where Criteria B, C.1, and C.2 are all satisfied to 80 percent of the minimum values. Criterion C.3 is excluded from this condition.*

Option:

- 05 Other criteria that may be considered in an engineering study include:*
- A. The need to control left-turn conflicts;*
 - B. The need to control vehicle/pedestrian conflicts near locations that generate high pedestrian volumes;*
 - C. Locations where a road user, after stopping, cannot see conflicting traffic and is not able to negotiate the intersection unless conflicting cross traffic is also required to stop; and*
 - D. An intersection of two residential neighborhood collector (through) streets of similar design and operating characteristics where multi-way stop control would improve traffic operational characteristics of the intersection.*

APPENDIX B

SWITRS COLLISION HISTORY

CITY OF LAGUNA HILLS
INTERSECTION OF GRISSOM ROAD AND PIKE ROAD
5-YEAR SWITRS COLLISION DATABASE
JAN. 1, 2018 - NOV. 30, 2023

CASE ID	COLL. DATE	COLL. TIME	PRIMARY ROAD	SECONDARY ROAD	DIST.	DIR.	INTERS.	WEATH.	COLL. SEVERITY	PRIM. COLL. FACT.	PCF VIOL. CAT.	PCF VIOL.	HIT AND RUN	TYPE OF COLL.	MOTOR VEHICLE INVOLVED WITH	ROAD SURF
---------	------------	------------	--------------	----------------	-------	------	---------	--------	----------------	-------------------	----------------	-----------	-------------	---------------	-----------------------------	-----------

No collisions reported

NOTES:

Weather 1
A - Clear
B - Cloudy
C - Raining
D - Snowing
E - Fog
F - Other
G - Wind
-- Not Stated

Collision Severity
1 - Fatal
2 - Injury (Severe)
3 - Injury (Other Visible)
4 - Injury (Complaint of Pain)
0 - PDO (Property Damage Only)

Primary Collision Factor
A - (Vehicle) Code Violation
B - Other Improper Driving
C - Other Than Driver
D - Unknown
E - Fell Asleep
-- Not Stated

Motor Vehicle Involved With:
A - Non-Collision
B - Pedestrian
C - Other Motor Vehicle
D - Motor Vehicle on Other Roadway
E - Parked Motor Vehicle
F - Train
G - Bicycle
H - Animal
I - Fixed Object
J - Other Object
-- Not Stated

PCF Violation Category
01 - Driving or Bicycling Under Influence
02 - Impeding Traffic
03 - Unsafe Speed
04 - Following Too Closely
05 - Wrong Side of Road
06 - Improper Passing
07 - Unsafe Lane Change
08 - Improper Turning
09 - Automobile ROW
10 - Pedestrian ROW
11 - Pedestrian Violation
12 - Traffic Signals and Signs
13 - Hazardous Parking
14 - Lights
15 - Brakes
16 - Other Equipment
17 - Other Hazardous Violation
18 - Other Than Driver (or Ped)
19 -
20 -
21 - Unsafe Starting or Backing
22 - Other Improper Driving
23 - Pedestrian or "Other" Under the Influence
24 - Fell Asleep
00 - Unknown
-- Not Stated

Hit and Run
F - Felony
M - Misdemeanor
N - Not Hit & Run

Road Surface
A - Dry
B - Wet
C - Snowy or Icy
D - Slippery
-- Not Stated

Type of Collision
A - Head-On
B - Sideswipe
C - Rear-End
D - Broadside
E - Hit Object
F - Overturned
G - Vehicle/Pedestrian
H - Other
-- Not Stated

Attachment: Hartzon & Crabill, Inc. Multi-Way Stop Control Warrant Analysis - Grissom Road and Pike

APPENDIX C

AVERAGE DAILY TRAFFIC (ADT) COUNTS & 12-HOUR PEDESTRIAN COUNTS

Prepared by National Data & Surveying Services

VOLUME
Grissom Rd at Pike Rd

Day: Thursday
Date: 11/09/2023

Highest 8 Hours.

City: Laguna Hills
Project #: CA23_010115_002

DAILY TOTALS					NB	SB	EB	WB	Total		
					502	0	448	448	1,398		
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
0:00	0		2	1	3	12:00	3		6	7	16
0:15	0		0	0	0	12:15	6		10	7	23
0:30	0		0	0	0	12:30	8		14	9	31
0:45	0		0	2	0	12:45	8	25	6	36	29
1:00	0		0	0	0	13:00	6		6	5	17
1:15	0		0	0	0	13:15	15		9	9	33
1:30	1		0	0	1	13:30	12		9	9	30
1:45	0	1	0	0	0	13:45	5	38	7	31	8
2:00	0		0	0	0	14:00	15		5	6	26
2:15	0		0	0	0	14:15	12		10	13	35
2:30	0		0	1	1	14:30	12		9	10	31
2:45	0		0	0	0	14:45	9	48	9	33	9
3:00	0		0	0	0	15:00	10		5	5	20
3:15	0		0	0	0	15:15	9		6	5	20
3:30	0		0	2	2	15:30	7		8	15	30
3:45	0		1	1	0	15:45	6	32	12	31	7
4:00	0		0	0	0	16:00	10		7	3	20
4:15	0		0	0	0	16:15	15		10	10	35
4:30	0		0	0	0	16:30	12		6	12	30
4:45	0		1	1	1	16:45	15	52	9	32	7
5:00	0		1	1	2	17:00	11		11	10	32
5:15	0		1	2	3	17:15	14		9	4	27
5:30	0		0	1	1	17:30	11		10	8	29
5:45	0		0	2	1	17:45	12	48	7	37	10
6:00	0		3	3	6	18:00	7		4	10	21
6:15	1		3	2	6	18:15	12		5	6	23
6:30	3		2	6	11	18:30	7		9	4	20
6:45	3	7	8	16	5	18:45	11	37	5	23	7
7:00	9		8	8	25	19:00	3		6	2	11
7:15	4		8	8	20	19:15	9		5	6	20
7:30	9		15	15	39	19:30	8		5	3	16
7:45	5	27	11	42	6	19:45	2	22	4	20	5
8:00	11		11	14	36	20:00	8		3	2	13
8:15	15		17	15	47	20:15	5		3	0	8
8:30	8		5	7	20	20:30	8		4	3	15
8:45	5	39	9	42	8	20:45	2	23	4	14	1
9:00	4		6	7	17	21:00	5		2	1	8
9:15	10		4	8	22	21:15	3		2	0	5
9:30	4		12	10	26	21:30	4		1	1	6
9:45	4	22	6	28	11	21:45	4	16	2	7	0
10:00	4		2	5	11	22:00	3		1	2	6
10:15	9		2	5	16	22:15	1		1	1	3
10:30	5		6	10	21	22:30	4		1	1	6
10:45	5	23	5	15	5	22:45	1	9	2	5	0
11:00	9		5	3	17	23:00	1		4	4	9
11:15	7		5	6	18	23:15	1		3	1	5
11:30	5		8	10	23	23:30	0		1	1	2
11:45	10	31	2	20	6	23:45	0	2	2	10	0
TOTALS	150		169	193	512	TOTALS	352		279	255	886
SPLIT %	29.3%		33.0%	37.7%	36.6%	SPLIT %	39.7%		31.5%	28.8%	63.4

DAILY TOTALS					NB	SB	EB	WB	Total		
					502	0	448	448	1,398		
AM Peak Hour	7:30		7:30	7:30	7:30	PM Peak Hour	16:15		16:45	16:15	16:1
AM Pk Volume	40		54	50	144	PM Pk Volume	53		39	39	128
Pk Hr Factor	0.667		0.794	0.833	0.766	Pk Hr Factor	0.883		0.886	0.813	0.91
7 - 9 Volume	66	0	84	81	231	4 - 6 Volume	100	0	69	64	233
7 - 9 Peak Hour	7:30		7:30	7:30	7:30	4 - 6 Peak Hour	16:15		16:45	16:15	16:1
7 - 9 Pk Volume	40	0	54	50	144	4 - 6 Pk Volume	53	0	39	39	128
Pk Hr Factor	0.667	0.000	0.794	0.833	0.766	Pk Hr Factor	0.883	0.000	0.886	0.813	0.91

Attachment: Hartzon & Crabill, Inc. Multi-Way Stop Control Warrant Analysis - Grissom Road and Pike Road, January 23, 2024 (3466 : Grissom

Prepared by National Data & Surveying Services

Pedestrian Study

Location: Pike Rd/Grissom Rd & Grissom Rd
 City: Laguna Hills

Date: 11/08/2023
 Day: Wednesday

TIME	Peds						TOTAL
	EAST LEG		WEST LEG		SOUTH LEG		
	EB	WB	EB	WB	NB	SB	
7:00 AM	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	1	2
7:30 AM	0	0	0	0	0	0	0
7:45 AM	0	0	1	0	0	1	2
8:00 AM	0	0	11	0	0	8	19
8:15 AM	0	0	9	7	2	9	27
8:30 AM	0	0	0	2	1	1	4
8:45 AM	0	0	0	0	0	1	1
9:00 AM	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0
9:30 AM	0	1	0	0	0	1	2
9:45 AM	0	0	0	0	1	0	1
10:00 AM	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	1	1
10:30 AM	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0
11:00 AM	0	0	1	0	0	0	1
11:15 AM	0	0	0	0	1	0	1
11:30 AM	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0
12:00 PM	0	0	1	0	1	0	2
12:15 PM	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	1	1
12:45 PM	0	0	0	0	0	0	0
1:00 PM	0	0	0	0	1	0	1
1:15 PM	0	0	0	0	0	0	0
1:30 PM	0	0	0	0	1	0	1
1:45 PM	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	1	1
2:15 PM	0	0	1	0	0	3	4
2:30 PM	0	0	2	21	22	0	45
2:45 PM	0	0	0	3	0	0	3
3:00 PM	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	2	2
4:30 PM	0	2	0	0	2	0	4
4:45 PM	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	1	1
5:45 PM	0	0	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0
Totals	0	3	26	33	33	31	126

Attachment: Hartzon & Crabill, Inc. Multi-Way Stop Control Warrant Analysis - Grissom Road and Pike Road, January 23, 2024 (3466 : Grissom

APPENDIX D

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

CALIFORNIA MUTCD

Table 6C-1. Recommended Advance Warning Sign ~~Minimum~~ Spacing

Road Type	Distance Between Signs*		
	A	B	C
Urban (low speed) - 25 mph or less	100 feet	100 feet	100 feet
Urban (high speed) - more than 25 mph to 40 mph	250 feet	250 feet	250 feet
Urban (high speed) - more than 40 mph	350 feet	350 feet	350 feet
Rural	500 feet	500 feet	500 feet
Expressway / Freeway	1,000 feet	1,500 feet	2,640 feet

* ~~Speed category to be determined by the highway agency.~~

** The column headings A, B, and C are the dimensions shown in Figures 6H-1 through 6H-46. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The "first sign" is the sign in a three-sign series that is closest to the TTC zone. The "third sign" is the sign that is furthest upstream from the TTC zone.)

Table 6C-2. Stopping Sight Distance as a Function of Speed

Speed*	Distance
20 mph	115 feet
25 mph	155 feet
30 mph	200 feet
35 mph	250 feet
40 mph	305 feet
45 mph	360 feet
50 mph	425 feet
55 mph	495 feet
60 mph	570 feet
65 mph	645 feet
70 mph	730 feet
75 mph	820 feet



* Posted speed, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed.
Can also be used as Stopping Sight Distance as suggested buffer space length or location for flagger station.

Table 6C-3. Taper Length Criteria for Temporary Traffic Control Zones

Type of Taper	Taper Length
Merging Taper	at least L
Shifting Taper	at least 0.5 L
Shoulder Taper	at least 0.33 L
One-Lane, Two-Way Traffic Taper	50 feet minimum, 100 feet maximum
Downstream Taper	50 feet minimum, 100 feet maximum

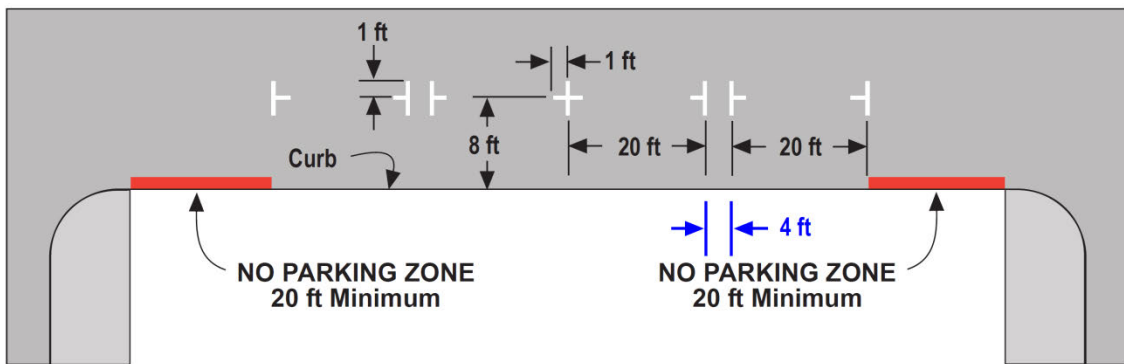
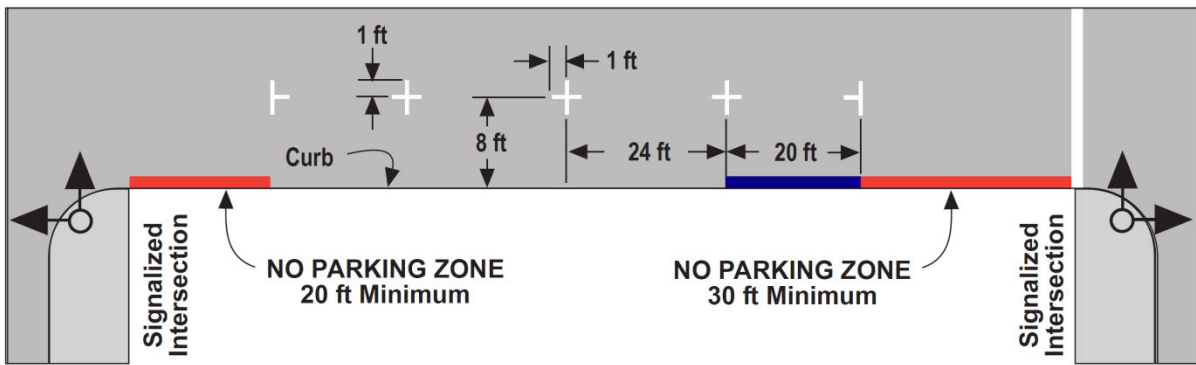
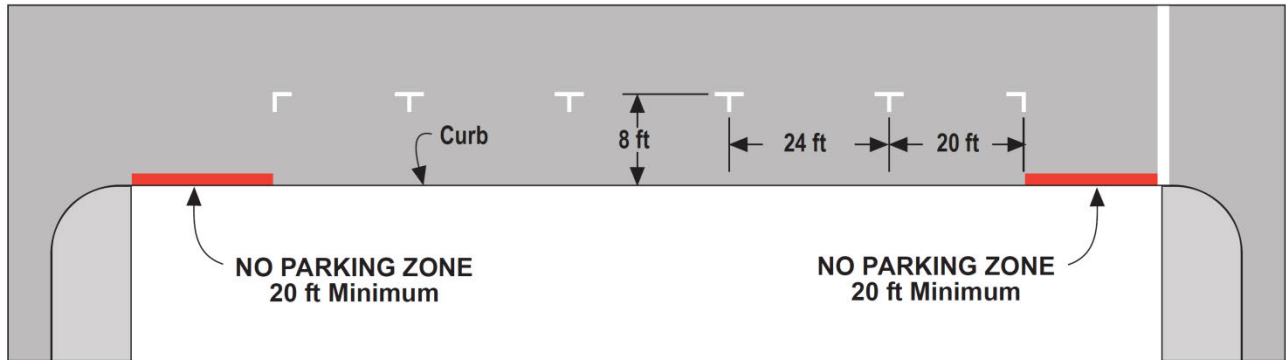
Note: Use Table 6C-4 to calculate L

APPENDIX E

CALIFORNIA MUTCD

EXAMPLES OF NO PARKING ZONES AT INTERSECTIONS:

Figure 3B-21 (CA). Examples of Parking Space Markings



NOT TO SCALE

NOTES:

1. For Parking Stalls along the left side curb on one-way streets, markings may be placed on the curb delineating the ends of the individual stalls.
2. All stall markings are made with 4 in wide white lines. The shape is optional.
3. The parking stall cross line, 8 ft from the curb, may be continuous longitudinally.



City of Laguna Hills

Traffic Commission

Staff Report

DATE: March 20, 2024

TO: Traffic Commissioners

FROM: Joe Ames
Public Works Director/City Engineer

ISSUE: Review of Traffic Conditions on Terra Bella Avenue and La Cuesta Avenue

RECOMMENDATION: That the Traffic Commission recommend that the City Engineer add Terra Bella Avenue and La Cuesta Avenue to the portable radar speed-feedback trailer rotational deployment list, conduct another speed survey in 90 days, and that Police Services conduct increased law enforcement on Terra Bella Avenue.

SUMMARY:

Staff was recently contacted by a resident regarding concerns of vehicular speeding on Terra Bella Avenue, from La Cuesta to Aliso Hills Drive and La Cuesta Avenue, from Del Monte Street to Terra Bella Avenue. Based upon the resident's concern and in accordance with the Residential Streets Management Policy, staff initiated a review of the vehicular speeds and traffic collision history in the requested area. The data collected showed no excessive speeds on Terra Bella Avenue and La Cuesta Avenue.

BACKGROUND:

Terra Bella Avenue, between Aliso Hills Drive and La Cuesta Avenue, is a 40-foot wide, 2-lane, curvy, residential collector roadway. The only traffic control on this segment is a one-way stop at the intersection with Aliso Hills Drive. There is no roadway striping along this segment. There are no posted speed limit signs along Terra Bella Avenue, between Aliso Hills Drive and La Cuesta Avenue. Although there are no posted speed limits, this roadway is considered a local residential roadway; therefore, a prima facie speed limit for local residential streets of 25 MPH is applicable. On-street parking is allowed on both sides of the roadway.

Review of Traffic Conditions on Terra Bella Avenue and La Cuesta Avenue

March 20, 2024

Page 2

La Cuesta Avenue, between Del Monte Street and Terra Bella Avenue, is a 36-foot wide, 2-lane, residential roadway that has an approximate 90-degree bend near Terra Bella Avenue. There are no traffic controls, roadway striping, or posted speed limit signs along this segment. Although there are no posted speed limits, this roadway is considered a local residential roadway; therefore, a prima facie speed limit for local residential streets of 25 MPH is applicable. On-street parking is allowed on both sides of the roadway. Please see the attached Vicinity Map.

Residents have contacted staff regarding their concerns about the number of speeding vehicles on Terra Bella Avenue and the safety of pedestrians along the street. Based upon the resident's concern and in accordance with the Residential Streets management Policy, staff initiated a review of the requested area.

Upon receiving the request, staff contracted the services of Hartzog & Crabill, Inc. (HCI) to perform a traffic speed review, traffic volume review, and traffic collision history review for the requested area. A summary of the speed survey counts, performed by HCI, as shown in the study can be seen in Table 1 below.

Table 1: Speed Survey Summary

Roadway Tube Speed-Count Data Summary	Terra Bella Avenue		La Cuesta Avenue Del Monte Street to Terra Bella Avenue
	North of Natama Court	South of Natama Court	
85th Percentile Speed	31 MPH	32 MPH	29 MPH
Average Speed	25 MPH	26 MPH	23 MPH
50th Percentile Speed	26 MPH	27 MPH	24 MPH

Staff's experience has found the typical prevailing speed range for such streets to be 32 and 34 MPH, without traffic safety concerns. The 85th percentile speeds are below this range and the 24-hour volumes were low for a typical residential street. Please see attached report for details.

An accident history review from the California Highway Patrol (CHP) Statewide Integrated Traffic Records System (SWITRS) from January 2019 through December 2023 revealed a total of two (2) reported collisions on Terra Bella Avenue, and no reported collisions on La Cuesta Avenue. These collisions were recorded as Other and Broadside types and neither were categorized as Unsafe Speed. In general, the collision analysis requires a minimum of five (5) reported, correctible accidents within a 12-month period, and therefore does not trigger safety recommendations.

Review of Traffic Conditions on Terra Bella Avenue and La Cuesta Avenue

March 20, 2024

Page 3

To address traffic safety concerns, the Residential Streets Traffic Management Policy outlines procedures and incremental solutions. Generally, actions to address speeding issues on residential streets will only be recommended if the prevailing speed is above 32 to 34 MPH, if unusual conditions exist on the roadway, or if there are documented speed-related traffic collisions. Although Terra Bella Avenue and La Cuesta Avenue do not exceed 34 MPH on average, the speeding that was observed was inconsistent and isolated. In this case, the Policy recommends an incremental approach, which includes:

- Increased law enforcement
- Frequent deployment of portable radar speed-feedback trailers.
- The use of traffic control, regulatory signs and markings, warning signs, and striping.

It should be noted that the implementation of physical devices has additional criteria to be considered during assessment. According to the Residential Streets Traffic Management Policy, the following minimum criteria must be met to consider the implementation of physical devices:

- a. At least 67% of the affected residents of the street and adjacent area streets support the implementation of the physical device. The streets to be used to evaluate the support for the physical device will be those that reasonably can be inferred to draw traffic to the street of concern.
- b. The prevailing speed of traffic has been documented to be greater than 34 MPH for at least two radar speed surveys taken 90 days apart as part of the follow-up evaluation of all other traffic controls used to address the issue.
- c. At least 1,500 vehicles traverse the street in a 24-hour period.
- d. The location meets the approval of the Police and Fire Department related to adequate response time of safety vehicles.
- e. The grade of the street shall not exceed 6%.
- f. The street must have a length of at least 1,300 feet and be able to accommodate a minimum of three speed humps unless otherwise directed by the City Council.
- g. Other issues related to traffic engineering will be considered as deemed appropriate by the City Traffic Engineer.

Based upon the Policy, City staff recommends that an incremental approach continue to be followed by adding Terra Bella Avenue and La Cuesta Avenue to the portable radar speed-feedback trailer rotational deployment list, conducting another speed survey in 90 days, and requesting that Police Services conduct increased law (speed) enforcement on Terra Bella Avenue and La Cuesta Avenue.

Review of Traffic Conditions on Terra Bella Avenue and La Cuesta Avenue

March 20, 2024

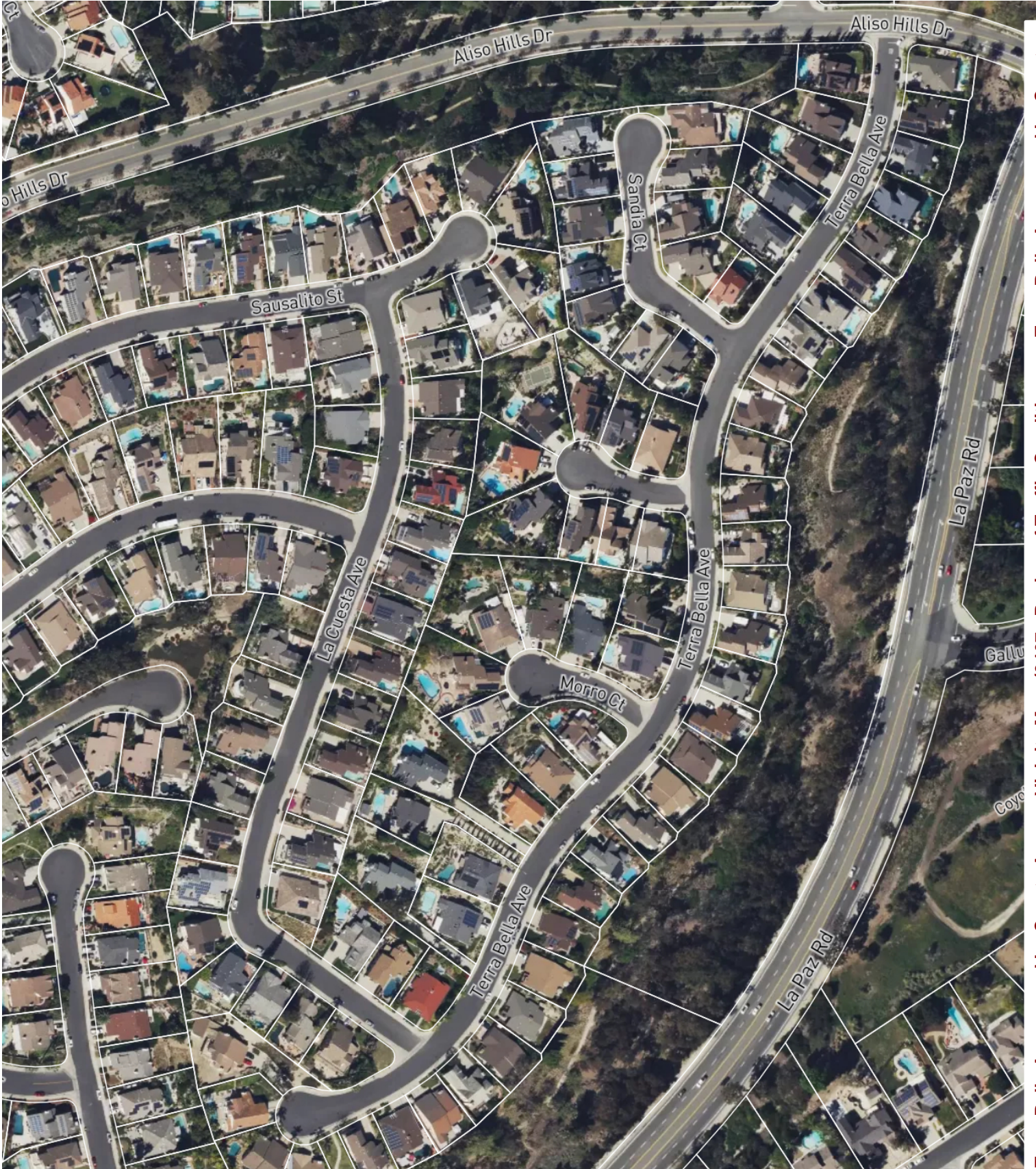
Page 4

FISCAL IMPACT:

There is no fiscal impact due to the results of the speed survey.

ATTACHMENTS:

- Terra Bella Avenue and La Cuesta Avenue Vicinity Map
- Hartzog & Crabill, Inc. - Evaluation of Terra Bella & La Cuesta, February 5, 2024



Attachment: Terra Bella Avenue and La Cuesta Avenue Vicinity Map (3467 : Review of Traffic Conditions on Terra Bella Avenue and La Cuesta

1" = 256 ft

Vicinity Map

03/12/2024



This map may represent a visual display of related geographic information. Data provided here on is not guarantee of actual field conditions. To be sure of complete accuracy, please contact the responsible staff for most up-to-date information.



Gerald J. Stock, PE, TE
Executive Vice President

17852 E. 17th Street
Suite 101
Tustin, CA 92780

Phone: (714) 731-9455
FAX: (714) 731-9498

www.hartzog-crabill.com

February 5, 2024

Mr. Joe Ames, P.E.
Public Works Director/City Engineer
City of Laguna Hills
24035 El Toro Road
Laguna Hills, CA 92653

**Subject: Traffic Data Evaluation - Letter of Opinion -
Speeding Concerns along Terra Bella Avenue and
along La Cuesta Avenue**

Dear Mr. Ames,

Pursuant to your request, Hartzog & Crabill, Inc. (HCI) has prepared this traffic engineering evaluation regarding residential concerns of speeding along the following roadway segments:

- Terra Bella Avenue, from La Cuesta Avenue to Aliso Hills Drive
- La Cuesta Avenue, from Del Monte Street to Terra Bella Avenue.

The following data was gathered/performed on both segments as part of this evaluation:

- 1) Collect 24-hour travel speed-volume counts
- 2) Review traffic collision history
- 3) Site visit to verify existing traffic controls, including signing/stripping

BACKGROUND

Terra Bella Avenue, between Aliso Hills Drive and La Cuesta Avenue, is a 40-foot wide, 2-lane, curvy, north-south residential collector roadway. At the northerly project limit of Aliso Hills Drive, the roadway has the only traffic control on this segment, as a 1-Way Stop (i.e., there are no other traffic controls along this segment). There is no roadway striping along this segment. There are no posted speed limit signs along Terra Bella Avenue, between Aliso Hills Drive and La Cuesta Avenue. Although there are no posted speed limits, this roadway is considered a local residential roadway; therefore, a *prima facie* speed limit for local residential streets of 25 MPH is applicable. On-street parking is allowed on both sides of the roadway.

Consulting Traffic Engineers to Government Agencies

Mr. Joe Ames, P.E.

February 5, 2024

Page 2 of 8

BACKGROUND (continued)

La Cuesta Avenue, between Del Monte Street and Terra Bella Avenue, is a 36-foot wide, 2-lane, residential roadway that has an approximate 90-degree bend near Terra Bella Avenue. There are no traffic controls along this roadway segment. There is no roadway striping along this segment. There are no posted speed limit signs along this segment. Although there are no posted speed limits, this roadway is considered a local residential roadway; therefore, a *prima facie* speed limit for local residential streets of 25 MPH is applicable. On-street parking is allowed on both sides of the roadway.

TRAVEL SPEED DATA

To determine vehicular travel speeds along Terra Bella Avenue, 24-hour roadway tube speed-counts were conducted at (2) locations along this residential roadway on Tuesday, November 28, 2023 (see all gathered count data attached in Appendix). The two tables below summarize the speed-count data:

**SPEED SURVEY SUMMARY
TERRA BELLA AVENUE, ALISO HILLS DRIVE TO LA CUESTA AVENUE**

Roadway Tube Speed-Count Data Summary	North of Natama Court (Higher SB Direction)
85 th Percentile Speed	31 MPH
Average Speed	25 MPH
50th Percentile Speed	26 MPH

Roadway Tube Speed-Count Data Summary	South of Natama Court (Higher SB Direction)
85 th Percentile Speed	32 MPH
Average Speed	26 MPH
50th Percentile Speed	27 MPH

As shown in the two tables above, the highest 85th-percentile speed on Terra Bella Avenue was recorded as 32 MPH. Although this speed is higher than the *prima facie* speed limit for a local residential street of 25 MPH, this data is not considered excessive for this roadway.

Mr. Joe Ames, P.E.

February 5, 2024

Page 3 of 8

TRAVEL SPEED DATA (continued)

Similarly, to determine vehicular travel speeds along La Cuesta Avenue, 24-hour roadway tube speed-counts were conducted at (1) location along this residential roadway on Tuesday, November 28, 2023 (see all gathered count data attached in Appendix). The table below summarizes the speed-count data:

**SPEED SURVEY SUMMARY
LA CUESTA AVENUE, DEL MONTE STREET TO TERRA BELLA AVENUE**

Roadway Tube Speed-Count Data Summary	Del Monte to Terra Bella (Higher SB Direction)
85 th Percentile Speed	29 MPH
Average Speed	23 MPH
50th Percentile Speed	24 MPH

As shown in the table above, the highest 85th-percentile speed on La Cuesta Avenue was recorded as 29 MPH. Although this speed is higher than the *prima facie* speed limit for a local residential street of 25 MPH, this data is not considered excessive for this roadway.

TRAFFIC VOLUME DATA

As part of the speed-count data collection, Average Daily Traffic (ADT) counts were also collected for these two roadways.

The ADT, or 24-hour two-way traffic volume, along Terra Bella Avenue resulted in 607 vehicles. Similarly, the ADT along La Cuesta Avenue resulted in 164 vehicles.

Per the Orange County Highway Design Manual (see attached in Appendix), a 2-lane undivided commuter, or collector, type of roadway generally has a Level-of-Service (LOS) range as follows:

- LOS 'A' capacity of 7,500 vehicles per day
- LOS 'D' capacity of 11,300 vehicles per day.

Consequently, the existing traffic volumes for both roadways are still well under the roadway capacity, and there are no recommendations regarding traffic volumes.

Mr. Joe Ames, P.E.
 February 5, 2024
 Page 4 of 8

COLLISION DATA

HCI obtained the most recent, raw, citywide collision data that has been reported during the past five (5) years (between January 1, 2019 – December 31, 2023) from the Statewide Integrated Traffic Records System website (*i*-SWITRS) database. HCI then reviewed and prepared a collision history report to determine the number of collisions occurring on these particular segments of Terra Bella Avenue and La Cuesta Avenue (*see prepared collision history data attached in Appendix*). The tables below present the summary collision data:

TRAFFIC COLLISION DATA SUMMARY TERRA BELLA AVENUE, FROM ALISO HILLS DRIVE TO LA CUESTA AVENUE

YEAR	NUMBER OF COLLISIONS	FATAL	INJURY	PROPERTY DAMAGE ONLY
2019	0	0	0	0
2020	0	0	0	0
2021	1	0	0	1
2022	0	0	0	0
2023	1	0	1	0

* Available SWITRS data was up to December 31, 2023 at the time of report preparation.

As shown above, there were a total of two (2) collisions reported along Terra Bella Avenue within the last (5) years. These collisions were recorded as Other and Broadside types. The two collisions were categorized as Unsafe Starting and Backing, and Wrong Side of Road. Neither of the reported collisions was categorized as Unsafe Speed; therefore, there are no other recommendations regarding collisions at this time.

TRAFFIC COLLISION DATA SUMMARY LA CUESTA AVENUE, FROM DEL MONTE STREET TO TERRA BELLA AVENUE

YEAR	NUMBER OF COLLISIONS	FATAL	INJURY	PROPERTY DAMAGE ONLY
2019	0	0	0	0
2020	0	0	0	0
2021	0	0	0	0
2022	0	0	0	0
2023	0	0	0	0

* Available SWITRS data was up to December 31, 2023 at the time of report preparation.

As shown above, there were zero (0) collisions reported along La Cuesta Avenue within the last (5) years. There are no other recommendations regarding collisions at this time.

Mr. Joe Ames, P.E.
February 5, 2024
Page 5 of 8

FIELD REVIEW

Our evaluation tasks included performing a field-review of the project segments of Terra Bella Avenue and La Cuesta Avenue for verification of existing conditions. HCI included the following photographs as representative of existing conditions. As shown, the asphalt roadway is considered in good condition; consequently, there are no other field recommendations at this time.



Terra Bella Avenue (*Looking Northbound*) from La Cuesta Avenue



Terra Bella Avenue (*Looking Northbound*) at Morro Court

Mr. Joe Ames, P.E.
February 5, 2024
Page 6 of 8

FIELD REVIEW (continued)



Terra Bella Avenue (Looking Northbound) towards Natama Court



Terra Bella Avenue (Looking Northbound) north of Sandia Court

Attachment: Hartzog & Crabill, Inc. - Evaluation of Terra Bella & La Cuesta, February 5, 2024 (3467 : Review of Traffic Conditions on Terra Bella

Mr. Joe Ames, P.E.
February 5, 2024
Page 7 of 8

FIELD REVIEW (continued)



La Cuesta Avenue (Looking Southbound) from Del Monte Street



La Cuesta Avenue (Looking Eastbound) from bend in road

Attachment: Hartzog & Crabill, Inc. - Evaluation of Terra Bella & La Cuesta, February 5, 2024 (3467 : Review of Traffic Conditions on Terra Bella

Mr. Joe Ames, P.E.
 February 5, 2024
 Page 8 of 8

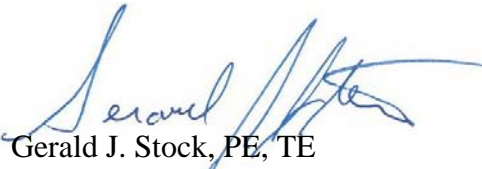
FINDINGS AND CONCLUSIONS

As speeding was not verified on either Terra Bella Avenue or on La Cuesta Avenue excessively above the *prima facie* 25 MPH speed limit, there are no recommendations at this time. However, if the City may desire to consider further implementation for traffic calming, then an incremental approach is suggested to be taken to address travel speeds. Initial steps that may be considered include:

- Request increased law enforcement
- Installation of 25 MPH speed limit regulatory signs
- Installation of '25' pavement markings at the speed limit sign locations.
- Installation of Watch Downhill Speed warning signs
- Deployment of portable radar speed-feedback trailers
- Hold a Neighborhood Watch meeting to help make all residents aware of speeding
- Installation of a yellow centerline to divide the roadway lanes
- Installation of semi-permanent radar speed feedback signs

It has been our pleasure to prepare this letter of opinion regarding Terra Bella Avenue and La Cuesta Avenue. If you may have any questions or need additional information, please feel free to call us anytime at (714) 731-9455.

Sincerely,
HARTZOG & CRABILL, INC.


 Gerald J. Stock, PE, TE
 Executive Vice President
 City & Traffic Engineering Services

Attachments: Speed-Count Data
 Orange County HDM Roadway Capacity guideline
 Collision History

Speed-Count Data

SPEED

Terra Bella Ave Bet. Natama Ct & Aliso Hills Dr

4.2.b

Day: Tuesday
Date: 11/28/2023

City: Laguna Hills
Project #: CA23_010123_002s

South Bound

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
0:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	1
1:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:00	1	0	2	2	3	0	0	0	0	0	0	0	0	8
6:00	0	1	5	2	0	1	0	0	0	0	0	0	0	9
7:00	3	4	7	14	3	2	0	0	0	0	0	0	0	33
8:00	2	0	8	14	8	0	1	0	0	0	0	0	0	33
9:00	3	3	4	7	8	0	0	0	0	0	0	0	0	25
10:00	0	1	3	9	6	1	0	0	0	0	0	0	0	20
11:00	1	0	5	8	3	0	0	0	0	0	0	0	0	17
12:00 PM	0	0	3	7	6	0	0	0	0	0	0	0	0	16
13:00	0	3	6	7	2	0	0	0	0	0	0	0	0	18
14:00	1	1	9	9	6	1	1	0	0	0	0	0	0	28
15:00	1	2	9	10	3	0	1	0	0	0	0	0	0	26
16:00	3	3	8	4	0	0	0	0	0	0	0	0	0	18
17:00	0	3	7	4	1	0	0	0	0	0	0	0	0	15
18:00	1	5	6	6	1	1	0	0	0	0	0	0	0	20
19:00	0	1	4	7	3	0	0	0	0	0	0	0	0	15
20:00	0	2	3	3	2	0	0	0	0	0	0	0	0	10
21:00	0	0	2	2	0	0	0	0	0	0	0	0	0	4
22:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
23:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Totals	17	29	93	117	55	6	3							320
% of Totals	5%	9%	29%	37%	17%	2%	1%							100%

AM Volumes	11	9	35	57	31	4	1	0	0	0	0	0	0	148
% AM	3%	3%	11%	18%	10%	1%	0%							46%
AM Peak Hour	7:00	7:00	8:00	7:00	8:00	7:00	8:00							7:00
Volume	3	4	8	14	8	2	1							33
PM Volumes	6	20	58	60	24	2	2	0	0	0	0	0	0	172
% PM	2%	6%	18%	19%	8%	1%	1%							54%
PM Peak Hour	16:00	18:00	14:00	15:00	12:00	14:00	14:00							14:00
Volume	3	5	9	10	6	1	1							28

Directional Peak Periods All Speeds	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume	%	Volume	%	Volume	%	Volume	%
	66	↔ 21%	34	↔ 11%	33	↔ 10%	187	↔ 58%

Street Name	Direction	Percentiles					AVT
		15th	50th	Average	85th	95th	
Terra Bella Ave	North Bound	19	24	24	29	33	2
Terra Bella Ave	South Bound	20	26	25	31	34	320

Attachment: Hartzog & Crabill, Inc. - Evaluation of Terra Bella & La Cuesta, February 5, 2024 (3467 :

SPEED

Terra Bella Ave Bet. La Cuesta Ave & Natama Ct

4.2.b

Day: Tuesday
Date: 11/28/2023

City: Laguna Hills
Project #: CA23_010123_001s

South Bound

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
0:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
7:00	2	1	1	2	0	1	0	0	0	0	0	0	0	7
8:00	1	1	3	1	2	0	0	0	0	0	0	0	0	8
9:00	1	0	0	1	4	0	0	0	0	0	0	0	0	6
10:00	0	0	1	4	0	0	0	0	0	0	0	0	0	5
11:00	0	0	1	4	3	1	0	0	0	0	0	0	0	9
12:00 PM	1	0	0	4	2	1	0	0	0	0	0	0	0	8
13:00	0	1	1	5	0	1	0	0	0	0	0	0	0	8
14:00	2	1	2	4	2	0	0	0	0	0	0	0	0	11
15:00	0	0	4	4	3	0	0	0	0	0	0	0	0	11
16:00	1	1	2	4	1	1	0	0	0	0	0	0	0	10
17:00	0	2	5	7	1	0	0	0	0	0	0	0	0	15
18:00	0	0	2	4	3	0	0	0	0	0	0	0	0	9
19:00	0	2	1	2	1	0	0	0	0	0	0	0	0	6
20:00	0	1	2	1	2	0	0	0	0	0	0	0	0	6
21:00	0	0	0	1	1	0	0	0	0	0	0	0	0	2
22:00	0	0	0	1	2	0	0	0	0	0	0	0	0	3
23:00	1	0	0	1	0	0	0	0	0	0	0	0	0	2
Totals	9	10	27	52	27	5								130
% of Totals	7%	8%	21%	40%	21%	4%								100%

AM Volumes	4	2	8	14	9	2	0	0	0	0	0	0	0	39
% AM	3%	2%	6%	11%	7%	2%								30%
AM Peak Hour	7:00	7:00	8:00	10:00	9:00	7:00								11:00
Volume	2	1	3	4	4	1								9
PM Volumes	5	8	19	38	18	3	0	0	0	0	0	0	0	91
% PM	4%	6%	15%	29%	14%	2%								70%
PM Peak Hour	14:00	17:00	17:00	17:00	15:00	12:00								17:00
Volume	2	2	5	7	3	1								15

Directional Peak Periods All Speeds	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes				
	Volume	%	Volume	%	Volume	%	Volume	%			
	15	↔	12%	16	↔	12%	25	↔	19%	74	↔

Street Name	Direction	Percentiles					AVT
		15th	50th	Average	85th	95th	
Terra Bella Ave	North Bound	16	24	23	30	34	1
Terra Bella Ave	South Bound	20	27	26	32	35	130

Attachment: Hartzog & Crabill, Inc. - Evaluation of Terra Bella & La Cuesta, February 5, 2024 (3467 :

SPEED

La Cuesta Ave Bet. Del Monte & Terra Bella Ave

4.2.b

Day: Tuesday
Date: 11/28/2023

City: Laguna Hills
Project #: CA23_010123_003s

South Bound

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
0:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00	2	1	1	3	1	0	0	0	0	0	0	0	0	8
8:00	0	1	0	2	1	0	0	0	0	0	0	0	0	4
9:00	0	0	1	1	1	0	0	0	0	0	0	0	0	3
10:00	0	0	0	2	0	0	0	0	0	0	0	0	0	2
11:00	0	3	2	1	0	0	0	0	0	0	0	0	0	6
12:00 PM	0	0	2	3	0	0	0	0	0	0	0	0	0	5
13:00	1	1	5	2	0	0	0	0	0	0	0	0	0	9
14:00	2	1	0	5	0	1	0	0	0	0	0	0	0	9
15:00	5	2	2	0	1	0	0	0	0	0	0	0	0	10
16:00	1	2	3	3	0	0	0	0	0	0	0	0	0	9
17:00	0	1	1	3	0	1	0	0	0	0	0	0	0	6
18:00	1	1	1	1	2	1	0	0	0	0	0	0	0	7
19:00	0	0	3	1	0	0	0	0	0	0	0	0	0	4
20:00	0	0	0	2	0	0	0	0	0	0	0	0	0	2
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
23:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
Totals	12	15	23	30	7	3								90
% of Totals	13%	17%	26%	33%	8%	3%								100%

AM Volumes	2	6	5	10	3	0	0	0	0	0	0	0	0	26
% AM	2%	7%	6%	11%	3%									29%
AM Peak Hour	7:00	11:00	11:00	7:00	7:00									7:00
Volume	2	3	2	3	1									8
PM Volumes	10	9	18	20	4	3	0	0	0	0	0	0	0	64
% PM	11%	10%	20%	22%	4%	3%								71%
PM Peak Hour	15:00	15:00	13:00	14:00	18:00	14:00								15:00
Volume	5	2	5	5	2	1								10

Directional Peak Periods All Speeds	AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes				
	Volume	%	Volume	%	Volume	%	Volume	%			
	12	↔	13%	14	↔	16%	15	↔	17%	49	↔

Street Name	Direction	Percentiles					Average
		15th	50th	85th	95th	99th	
La Cuesta Ave	North Bound	12	20	19	26	30	
La Cuesta Ave	South Bound	16	24	23	29	34	90

Attachment: Hartzog & Crabill, Inc. - Evaluation of Terra Bella & La Cuesta, February 5, 2024 (3467 :

Orange County HDM Roadway Capacity Guideline

TABLE 102.1

HIGHWAY CAPACITY VALUES**Transportation Corridors**

<u>Lane Configuration</u>	<u>Levels of Service*</u> <u>D</u>
12 lanes divided	205,000
10 lanes divided	175,000
8 lanes divided	145,000
6 lanes divided	115,000
4 lanes divided	65,000

Arterial Highways

<u>Type of Arterial</u>	<u>Lane Configuration</u>	<u>Levels of Service*</u>					
		A	B	C	D	E	F
Principal	8 lanes divided	45,000	52,500	60,000	67,500	75,000	-
Major	6 lanes divided	33,900	39,400	45,000	50,600	56,300	-
Primary	4 lanes divided	22,500	26,300	30,000	33,600	37,500	-
Secondary	4 lanes undivided	15,000	17,500	20,000	22,500	25,000	-
Commuter	2 lanes undivided	7,500	8,800	10,000	11,300	12,500	-

*The volumes shown in the table above are daily two way traffic volumes and assume that the highways are built to their ultimate typical section as shown in the Standard Plans.

(2) Levels of Service

Levels of service are usually defined as A thru F. Beyond level of service E, capacity has been exceeded, and arriving traffic will exceed the ability of a given street to accommodate it. A description of the meaning of the six Levels of Service (LOS) follows:

- (a) Level of Service A indicates no physical restriction on operating speeds.
- (b) Level of Service B indicates stable flow with few restrictions on operating speed.
- (c) Level of Service C indicates stable flow and more restrictions on speed and lane changing due to higher volumes of traffic.
- (d) Level of Service D indicates approaching unstable flow conditions with little freedom to maneuver and which may be tolerable for short periods.
- (e) Level of Service E is the absolute capacity of the road. It is characterized by unstable flow, lower operating speeds than LOS D, and some momentary stoppages.
- (f) Level of Service F indicates forced flow operation (more traffic demand than there is capacity on the road) where the highway acts as a storage area and many stoppages occur.

Collision History

CITY OF LAGUNA HILLS
TERRA BELLA AVENUE, BETWEEN ALISO HILLS DRIVE AND LA CUESTA AVENUE
5-YEAR SWITRS COLLISION DATABASE
JAN. 1, 2019 - DECEMBER 31, 2023

CASE ID	COLL. DATE	COLL. TIME	PRIMARY ROAD	SECONDARY ROAD	DIST.	DIR.	INTERS.	WEATH. 1	COLL. SEVERITY	PRIM. COLL. FACT.	PCF VIOL. CAT.	PCF VIOL.	HIT AND RUN	TYPE OF COLL.	MOTOR VEHICLE INVOLVED	
															WITH	ROAD SURF.
9233790	20210116	853	TERRA BELLA AV	MORRO CT	150	W	N	A	0	A	21	22106	M	H	E	A
9581157	20230513	1854	TERRA BELLA AV	ALISO HILLS DR	5	W	N	A	3	A	5	21650	N	D	G	A

NOTES:

Weather 1
A - Clear
B - Cloudy
C - Raining
D - Snowing
E - Fog
F - Other
G - Wind
-- Not Stated

Collision Severity
1 - Fatal
2 - Injury (Severe)
3 - Injury (Other Visible)
4 - Injury (Complaint of Pain)
0 - PDO (Property Damage Only)

Primary Collision Factor
A - (Vehicle) Code Violation
B - Other Improper Driving
C - Other Than Driver
D - Unknown
E - Fell Asleep
-- Not Stated

Motor Vehicle Involved With:
A - Non-Collision
B - Pedestrian
C - Other Motor Vehicle
D - Motor Vehicle on Other Roadway
E - Parked Motor Vehicle
F - Train
G - Bicycle
H - Animal
I - Fixed Object
J - Other Object
-- Not Stated

PCF Violation Category
01 - Driving or Bicycling Under Influence
02 - Impeding Traffic
03 - Unsafe Speed
04 - Following Too Closely
05 - Wrong Side of Road
06 - Improper Passing
07 - Unsafe Lane Change
08 - Improper Turning
09 - Automobile ROW
10 - Pedestrian ROW
11 - Pedestrian Violation
12 - Traffic Signals and Signs
13 - Hazardous Parking
14 - Lights
15 - Brakes
16 - Other Equipment
17 - Other Hazardous Violation
18 - Other Than Driver (or Ped)
19 -
20 -
21 - Unsafe Starting or Backing
22 - Other Improper Driving
23 - Pedestrian or "Other" Under the Influence
24 - Fell Asleep
00 - Unknown
-- Not Stated

Hit and Run
F - Felony
M - Misdemeanor
N - Not Hit & Run

Road Surface
A - Dry
B - Wet
C - Snowy or Icy
D - Slippery
-- Not Stated

Type of Collision
A - Head-On
B - Sideswipe
C - Rear-End
D - Broadside
E - Hit Object
F - Overturned
G - Vehicle/Pedestrian
H - Other
-- Not Stated

Attachment: Hartzog & Crabill, Inc. - Evaluation of Terra Bella & La Cuesta, February 5, 2024 (3467 :

CITY OF LAGUNA HILLS
LA CUESTA AVENUE, BETWEEN DEL MONTE STREET AND TERRA BELLA AVENUE
5-YEAR SWITRS COLLISION DATABASE
JAN. 1, 2019 - DECEMBER 31, 2023

CASE ID	COLL. DATE	COLL. TIME	PRIMARY ROAD	SECONDARY ROAD	DIST.	DIR.	INTERS.	WEATH.	1	COLL. SEVERITY	PRIM. COLL. FACT.	PCF VIOL. CAT.	HIT AND RUN	TYPE OF COLL.	MOTOR VEHICLE INVOLVED WITH	ROAD SURF
---------	------------	------------	--------------	----------------	-------	------	---------	--------	---	----------------	-------------------	----------------	-------------	---------------	-----------------------------	-----------

NO COLLISIONS REPORTED.

NOTES:

Weather 1
A - Clear
B - Cloudy
C - Raining
D - Snowing
E - Fog
F - Other
G - Wind
-- Not Stated

Collision Severity
1 - Fatal
2 - Injury (Severe)
3 - Injury (Other Visible)
4 - Injury (Complaint of Pain)
0 - PDO (Property Damage Only)

Primary Collision Factor
A - (Vehicle) Code Violation
B - Other Improper Driving
C - Other Than Driver
D - Unknown
E - Fell Asleep
-- Not Stated

PCF Violation Category
01 - Driving or Bicycling Under Influence
02 - Impeding Traffic
03 - Unsafe Speed
04 - Following Too Closely
05 - Wrong Side of Road
06 - Improper Passing
07 - Unsafe Lane Change
08 - Improper Turning
09 - Automobile ROW
10 - Pedestrian ROW
11 - Pedestrian Violation
12 - Traffic Signals and Signs
13 - Hazardous Parking
14 - Lights
15 - Brakes
16 - Other Equipment
17 - Other Hazardous Violation
18 - Other Than Driver (or Ped)
19 -
20 -
21 - Unsafe Starting or Backing
22 - Other Improper Driving
23 - Pedestrian or "Other" Under the Influence
24 - Fell Asleep
00 - Unknown
-- Not Stated

Hit and Run
F - Felony
M - Misdemeanor
N - Not Hit & Run

Road Surface
A - Dry
B - Wet
C - Snowy or Icy
D - Slippery
-- Not Stated

Type of Collision
A - Head-On
B - Sideswipe
C - Rear-End
D - Broadside
E - Hit Object
F - Overturned
G - Vehicle/Pedestrian
H - Other
-- Not Stated

Motor Vehicle Involved With:
A - Non-Collision
B - Pedestrian
C - Other Motor Vehicle
D - Motor Vehicle on Other Roadway
E - Parked Motor Vehicle
F - Train
G - Bicycle
H - Animal
I - Fixed Object
J - Other Object
-- Not Stated

Attachment: Hartzog & Crabill, Inc. - Evaluation of Terra Bella & La Cuesta, February 5, 2024 (3467 :



City of Laguna Hills

Traffic Commission

Staff Report

DATE: March 20, 2024

TO: Traffic Commissioners

FROM: Joe Ames
Public Works Director/City Engineer

ISSUE: Discussion of Agenda Items Presented at the March 12, 2024 City Council Meeting: 1) Item 7.2.1: Studying No Overnight Parking in North Laguna Hills and the Urban Village Specific Area; and 2) Item 7.2.2: Studying a Change to the Residential Permit Parking Program that Would Reduce Guest Permit Parking Passes from Four Permits to One Permit Per Household.

RECOMMENDATION: That the Traffic Commission: 1) Receive and file the report; and 2) Provide direction to City staff on these issues.

Public Works Director/City Engineer Joe Ames will provide an oral report on the direction City Council provided to City staff on the subject items.