



Michael Caputo
Chair

Neel Patel
Vice Chair

Mark Jones
Commissioner

Scott Miller
Commissioner

Mark Schaff
Commissioner

City of Laguna Hills Traffic Commission

Regular Meeting Agenda
Wednesday, September 17, 2025 - 6:00 PM

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, as determined by the Chair, 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 Commissioner Members

1. Public Comment

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 as determined by the Chair and a total time limit of thirty minutes.

2. Minutes Approval

2.1 Approval of Minutes for July 16, 2025, Traffic Commission Meeting

Recommendation: That the Traffic Commission approve the Minutes of the July 16, 2025, Traffic Commission meeting.

3. Presentations

4. Administrative Reports

4.1 Vista Viejo at Bridlewood Drive Sight Distance and Multi-Way Stop Control Evaluation

Recommendation: That the Traffic Commission receive City staff report and provide recommendations.

4.2 Aliso Hills Drive at La Cienega and Aliso Hills Drive at El Segundo Street Sight Distance and Multi-Way Stop Control Evaluation

Recommendation: That the Traffic Commission recommend the installation of a high-visibility marked crosswalk at Aliso Hills and El Segundo Drive and installation of signage at Aliso Hills and La Cienega prohibiting pedestrian crossings.

5. Informational Items

5.1 Sheriff's Department Verbal Report

5.2 City Engineer's Verbal Report

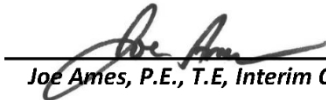
6. Commissioner Comments

Adjournment

The next Regular Meeting of the Traffic Commission will be November 19, 2025, at 6:00 p.m. in the City Council Chamber, located at 24035 El Toro Road, Laguna Hills, California.

CERTIFICATION

I, JOE AMES, P.E., T.E., Interim City Manager 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 September 12, 2025, at 5:00p.m.,



Joe Ames, P.E., T.E., Interim City Manager

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) 707-2651. 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**

**REGULAR MEETING
MINUTES
Wednesday, July 16, 2025**

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.

The meeting was called to order at 6:00 p.m. by Chair Caputo.

PLEDGE OF ALLEGIANCE

Chair Caputo led the pledge of Allegiance.

ROLL CALL OF COMMISSION MEMBERS

Attendee Name	Title	Status	Arrived
Mike Caputo	Chair	Present	
Neel Patel	Vice Chair	Present	
Mark Jones	Commissioner	Present	
Scott Miller	Commissioner	Present via Teleconference (Zoom)	
Mark Schaff	Commissioner	Present	

1. PUBLIC COMMENTS

Lowell Reed, a resident, encouraged the Traffic Commission to reach out to the community more before acting on the request of one resident versus gauging the interest of the entire population. Mr. Reed asked the Commissioners to involve the community when the City plans to alter traffic controls and signage that may affect the residents in the area.

2. MINUTES

2.1 Minutes

Recommendation: That the Traffic Commission approve the minutes of May 21, 2025.

RESULT:	APPROVED [5-0]
MOVER:	Scott Miller, Commissioner
SECONDER:	Neel Patel, Vice Chair
AYES:	Mike Caputo, Chair, Mark Jones, Commissioner, Scott Miller, Commissioner, Neel Patel, Vice Chair, Mark Schaff, Commissioner
NOES:	None

3. PRESENTATIONS

There were no Presentations.

4. ADMINISTRATIVE REPORTS

4.1 Exploring Citywide Street Sweeping Parking Restriction

Interim City Manager Joe Ames reviewed the information provided in the staff report and responded to Commissioner requests for additional information.

Lowell Reed, a resident, spoke against enforcement of no parking during street sweeping, and indicated the City should not implement a new costly enforcement program because one person complained.

Recommendation: That the Traffic Commission direct staff to investigate the number of cars impeding street sweeping, conduct a public awareness campaign on the existing street sweeping program, and report back to the Traffic Commission in four months with the results of staff's efforts.

RESULT:	APPROVED [5-0]
MOVER:	Mike Caputo, Chair
SECONDER:	Mark Jones, Commissioner
AYES:	Mike Caputo, Chair, Mark Jones, Commissioner, Scott Miller, Commissioner, Neel Patel, Vice Chair, Mark Schaff, Commissioner
NOES:	None

5. INFORMATIONAL ITEMS

5.1. Sheriff's Department Verbal Report

Captain Burk provided a verbal report to the Commission.

5.2. City Engineer's Verbal Report

Interim City Manager/City Engineer Joe Ames provided a verbal report to the Commission.

6. COMMISSIONER COMMENTS

Commissioner Schaff thanked Mr. Ames and staff for the remarkable job they do. Mr. Schaff indicated the proposed Paseo de Valencia bike lane upgrades are fundamental to the future of our community and will serve as an asset to draw people to the City. Mr. Schaff also indicated he would like to focus on the cost versus benefit analysis of future street sweeping parking enforcement discussions.

Vice Chair Patel indicated he wanted to remind the residents watching at home to participate in public meetings and provide their input to the City and other agencies to help shape future policies and projects. Mr. Patel seconded the performance of City staff and the other commissioners.

Commissioner Miller thanked Mr. Ames for the City Engineer verbal report overview and said the public needs to see and know the great things happening in the City. Mr. Miller complimented staff and their responsiveness to residents' questions and requests for service. Mr. Miller indicated the public needs a platform to learn about ongoing projects in the City and he will do whatever he can to help inform the public and make them aware of all the positive work performed in the City.

7. ADJOURNMENT

There being no further business before the Traffic Commission at this session, Chair Caputo declared the meeting adjourned at 8:15 p.m.

Julie Comella, Traffic Commission Secretary

ATTEST:

Mike Caputo, Chair

Approved at meeting of September 17, 2025



City of Laguna Hills Traffic Commission Staff Report

Date: September 17, 2025
To: Traffic Commissioners
From: Samantha Vu, Assistant Engineer
Issue: Vista Viejo at Bridlewood Drive Sight Distance and Multi-Way Stop Control Evaluation

Recommendation: That the Traffic Commission receive City staff report and provide recommendations.

Background:

Staff received a request from a resident of the community to evaluate the need for multi-way stop control at the intersection of Vista Viejo and Bridlewood Drive due to concerns of safety and speeding vehicles. Speeding on Bridlewood Drive has been an ongoing topic and was previously evaluated in 2018 and 2019. Attached are previous city staff reports on the history of the topic. Since the inception of this study, additional signage, striping, and, most recently, a painted median with round raised dots on Vista Viejo have been installed to address safety concerns.

Upon receiving the request, City staff contacted Hartzog and Crabill, Inc. (HCI), the City's traffic engineering consultant, to perform a multiway stop control warrant analysis.

As a reminder, the California Manual of Uniform Traffic Control Devices provides guidelines (warrants) which should be met prior to installation of multi-way stop control. The following criteria should be considered in the engineering study for a multi-way STOP sign installation:

Guidance:

The decision to install multi-way stop control should be based on an engineering study.

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:

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.*

In the attached report, HCI found that:

- Zero (0) non-correctible collisions occurred at the intersection in a 5-year period.
 1. It should be noted that there was a recent pedestrian vs. vehicle incident at the intersection involving a minor stepping into the roadway in front of an oncoming vehicle on August 8th that is not included in the HCI report. However, this incident is not considered to be a correctible collision and would not be counted in the warrant analysis.
- The intersection experiences only 64% of the required vehicular volume entering the intersection from the major street approaches and only 12% of the required vehicular volume entering the intersection from the minor street approaches.
- Visibility for approaching drivers on Bridlewood Drive at Vista Viejo is sufficient.
- The combined criteria were not met. Furthermore, the combined criteria does not meet 80% of the requirements either.

Based on this summarized data, HCI does not recommend multi-way stop control at the intersection, however, as requested by the Traffic Commission at the May 2025 Traffic Commission meeting, a 6-month speed survey is scheduled to commence in November in accordance with the Residential Streets Management Policy.

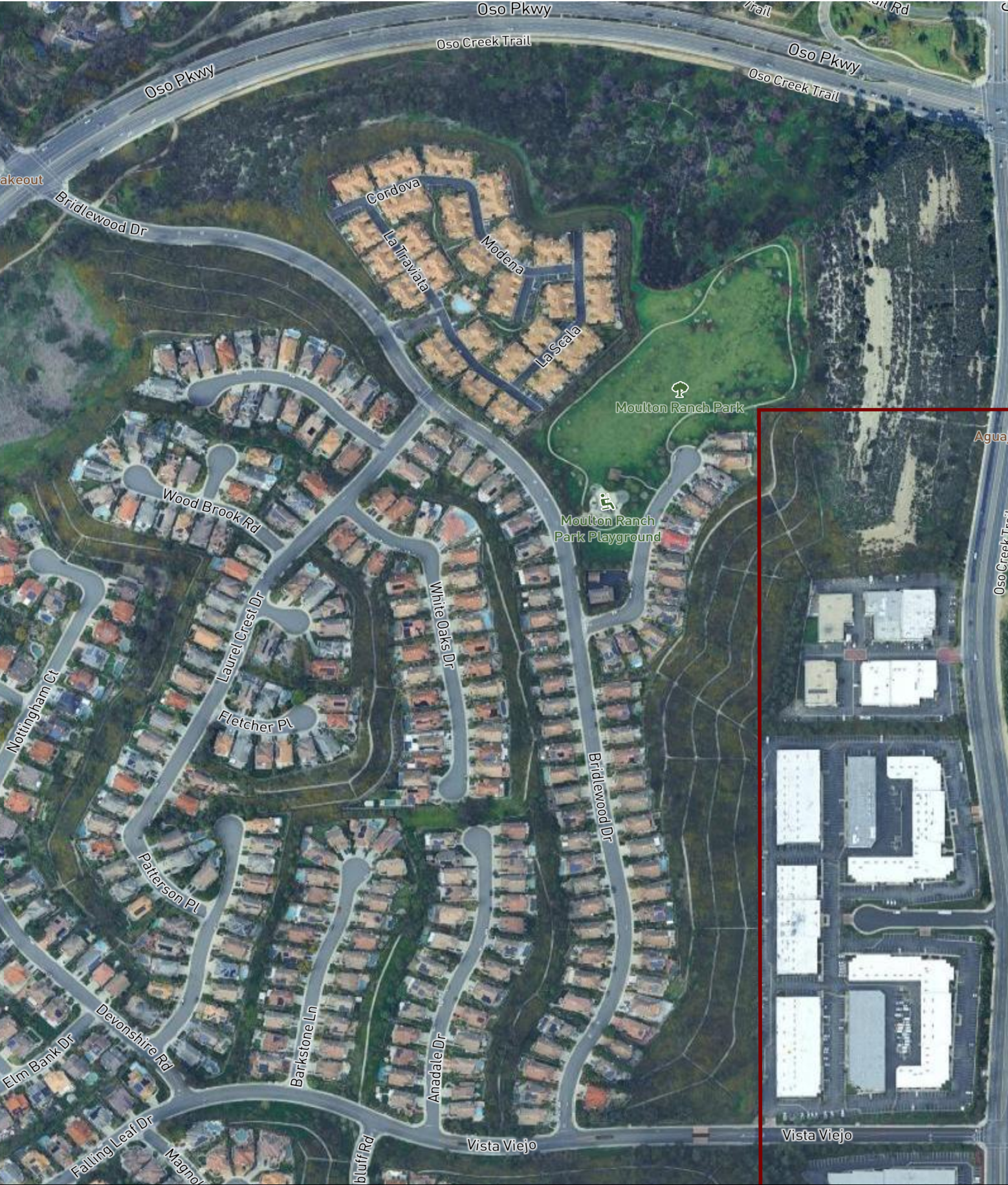
Fiscal Impact:

There is no fiscal impact associate with this report.

Attachments:

1. Vicinity Map - Bridlewood and Vista Viejo
2. HCI Stop Sign Warrant Analysis - Vista Viejo at Bridlewood - 09-11-25
3. Traffic Commission Item 4.2 July 18, 2018
4. Traffic Commission Item 4.2 January 16, 2019
5. Traffic Commission Item 4.5 November 20, 2019
6. Traffic Commission Item 4.2 March 19, 2025
7. Traffic Commission Item 4.1, May 21, 2025

Bridlewood Drive and Vista Viejo



1" = 350 ft	Vicinity Map	03/10/2025	
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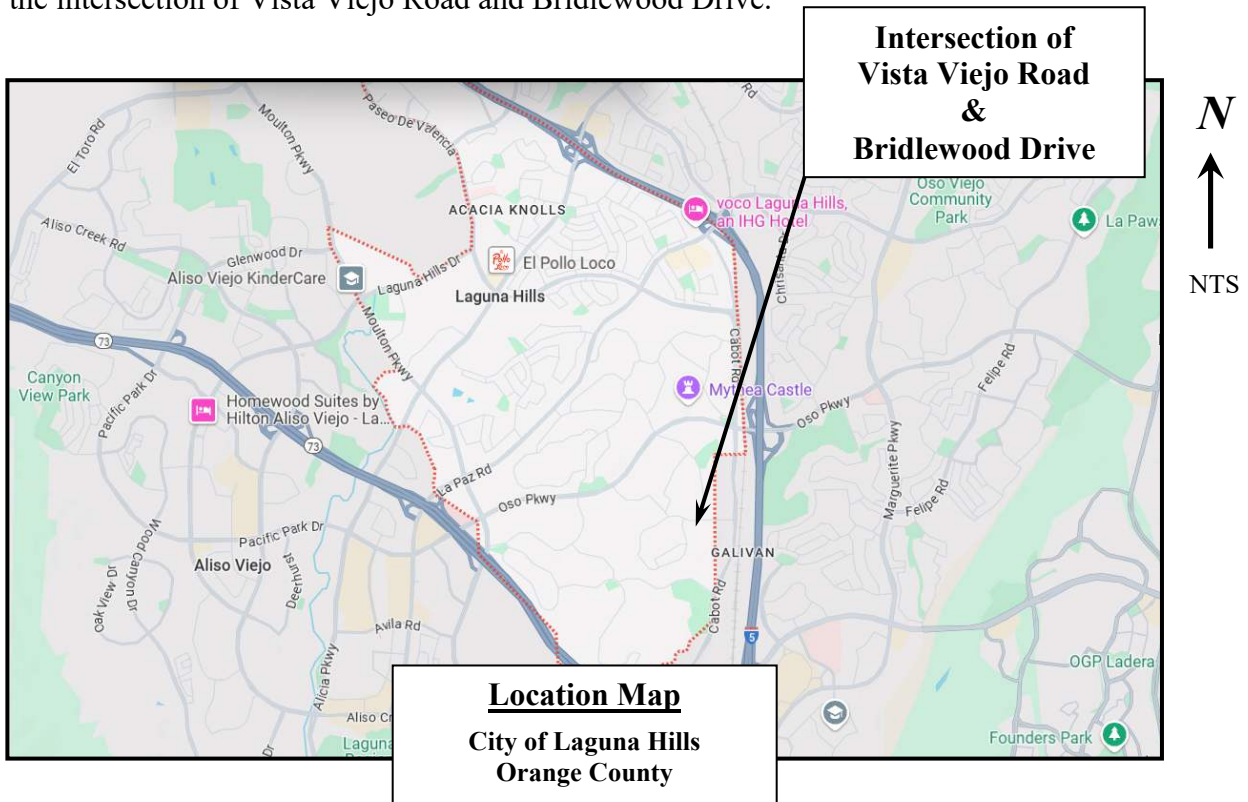
MULTIWAY STOP CONTROL WARRANTS ANALYSIS

INTERSECTION OF VISTA VIEJO ROAD AND BRIDLEWOOD DRIVE IN THE CITY OF LAGUNA HILLS, CA SEPTEMBER 11, 2025

INTRODUCTION

The City of Laguna Hills requested Hartzog & Crabill, Inc. (HCI) to complete a Multiway Stop Warrants Analysis at the intersection of Vista Viejo Road and Bridlewood Drive. This analysis was completed in order to verify if a 3-Way Stop sign installation is warranted and recommended based on meeting standard guidelines.

The location is a 3-Way intersection with Vista Viejo Road running in the east-west directions and Bridlewood Drive running in the north-south directions. The intersection is located just west of the 5 Freeway and south of Oso Parkway (*see Location Map below*). The T-intersection is located in the southeast area of the City of Laguna Hills, entirely within the City jurisdiction. At the present time, there is a 1-Way stop control at the intersection of Vista Viejo Road and Bridlewood Drive.



BACKGROUND

Vista Viejo Road is an east-west collector roadway with non-facing, single-family residential properties on both sides of the street. At the intersection with Bridlewood Drive, the roadway is approximately 40 feet wide curb-to-curb on the west leg, and approximately 44 feet wide on the east leg. The 2-lane roadway provides for one lane of traffic in each direction, which are separated by small center landscaped medians (i.e., no centerline striping). There are no marked crosswalks across Vista Viejo Road at or near the intersection. The roadway has concrete curb, gutter, and sidewalk improvements on both sides. At the intersection with Bridlewood Drive, Vista Viejo Road has a posted speed limit of 30 MPH. It is noted, as a driver turns into Vista Viejo Road from Cabot Road, the posted speed limit of 35 MPH decreases to 30 MPH along Vista Viejo Road as it transitions westerly from the City of Mission Viejo jurisdiction to the City of Laguna Hills jurisdiction. On-street parking is not allowed on either side of the street via No Parking Any Time posted signs. Currently, there are no STOP signs on Vista Viejo Road (i.e., uncontrolled) at its intersection with Bridlewood Drive. ***See Exhibit 1 (next page) for photo images of Vista Viejo Road.***

Bridlewood Drive is a north-south local-collector roadway with single-family residential properties on both sides of the street. At the intersection with Vista Viejo Road, which is the southerly terminus of Bridlewood Drive, the roadway is approximately 40 feet wide curb-to-curb. The 2-lane roadway provides for one lane of traffic in each direction, which are separated by a shorter double-yellow centerline stripe at the intersection. There are no marked crosswalks across Bridlewood Drive at or near the intersection. The roadway has concrete curb, gutter, and sidewalk improvements on both sides. Bridlewood Drive has a posted speed limit of 25 MPH. On-street parking is allowed on both sides of the street. There is currently a 1-Way STOP sign control on the southbound approach of Bridlewood Drive at its intersection with Vista Viejo Road. ***See Exhibit 2 (following page) for a photo image of Bridlewood Drive.***

EXHIBIT 1



VISTA VIEJO ROAD (*Looking Eastbound*) at BRIDLEWOOD DRIVE



VISTA VIEJO ROAD (*Looking Westbound*) at BRIDLEWOOD DRIVE

EXHIBIT 2



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. 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 categorized as ‘sideswipe’, ‘rear-end’, and ‘hit object’ collisions are generally not considered susceptible to correction, unless further review indicates otherwise. The latest available collision history was gathered by HCI from the California Highway Patrol (CHP) Statewide Integrated Traffic Records System website (i-SWITRS), which is where local jurisdictions such as cities report their collisions.

Collision History (continued)

A comprehensive 5-year traffic collision history summary report was prepared for this intersection and reviewed for collisions susceptible to correction by the installation of a multi-way stop. Table 1 below provides the most recent summary of collision history occurring at or near this intersection.

**TABLE 1
SWITRS COLLISION SUMMARY**

Intersection	2020-21		2022		2023		2024 - 2025	
	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?
Vista Viejo Rd at Bridlewood Dr		None reported		None reported		None reported	08/08/25	Vehicle/Ped.*

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

* No additional details at this time. The incident report was not available for review.

As shown, there have been zero (0) reported collisions at or near this intersection over the past (5) years of available SWITRS collision data. As noted above, HCI has been made aware of a vehicle vs. pedestrian incident on August 8, 2025 by City staff; however, the incident report was not made available in time to include in this analysis. Since the collision warrant requires a minimum of (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 prepared traffic collision database report is included in Appendix B.

Traffic Volumes

HCI collected Average Daily Traffic (ADT) vehicular approach counts to the intersection on Tuesday, May 6, 2025 in order to account for vehicles that typically use this T-intersection. The ADT approach count for Vista Viejo Road is 2,692 vehicles per day with the highest AM peak-hour approach volume having 219 vehicles, and 247 vehicles in the PM peak-hour. The ADT approach count for Bridlewood Drive is 293 vehicles with the highest AM peak-hour approach volume having 28 vehicles, and 34 vehicles in the PM peak-hour. Table 2 (next page) provides a breakdown of the approach volumes.

The traffic volume data collected for this intersection 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
Vista Viejo Road	Eastbound	1,348	50%	136 (8 – 9AM)
	Westbound	1,344	50%	141 (3 – 4PM)
Bridlewood Drive				
	Southbound	293	100%	34 (5 - 6PM)

Bridlewood Drive is considered the ‘through’ or ‘major’ street at this residential T-intersection since it carries higher volumes from both approaches, and drivers are not required to slow down, or even stop, before proceeding straight through the intersection. In comparison, Bridlewood Drive is considered the ‘minor’ street as southbound drivers on Bridlewood Drive are required to stop at Vista Viejo 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 the case, as Bridlewood Drive carries approximately 10% of the entire traffic entering the intersection (Vista Viejo Road carries 90% 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 speed limit on Vista Viejo Road is 30 MPH. Field observations during our 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-collector type roadways. As the speed limit is 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 on the next page.

Traffic Volumes (continued)

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 direction, 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
VISTA VIEJO ROAD AT BRIDLEWOOD DRIVE

Part 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, Results: No, average (193) vehicles per hour Only 64% of the required hourly traffic volume	<i>and</i>	Part 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, Results: No, average (24) vehicles per hour Only 12% of the required hourly traffic volume	<i>but</i>	Part 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 above values. Results: No, 85th percentile speed on major-street does not exceed 40 mph
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As shown above, the average hourly intersection approach traffic volumes for the highest 8-hour period did not satisfy both Parts 1 and 2 (64% major street / 12% minor street). Therefore, the minimum traffic volume warrant is not satisfied.

Visibility

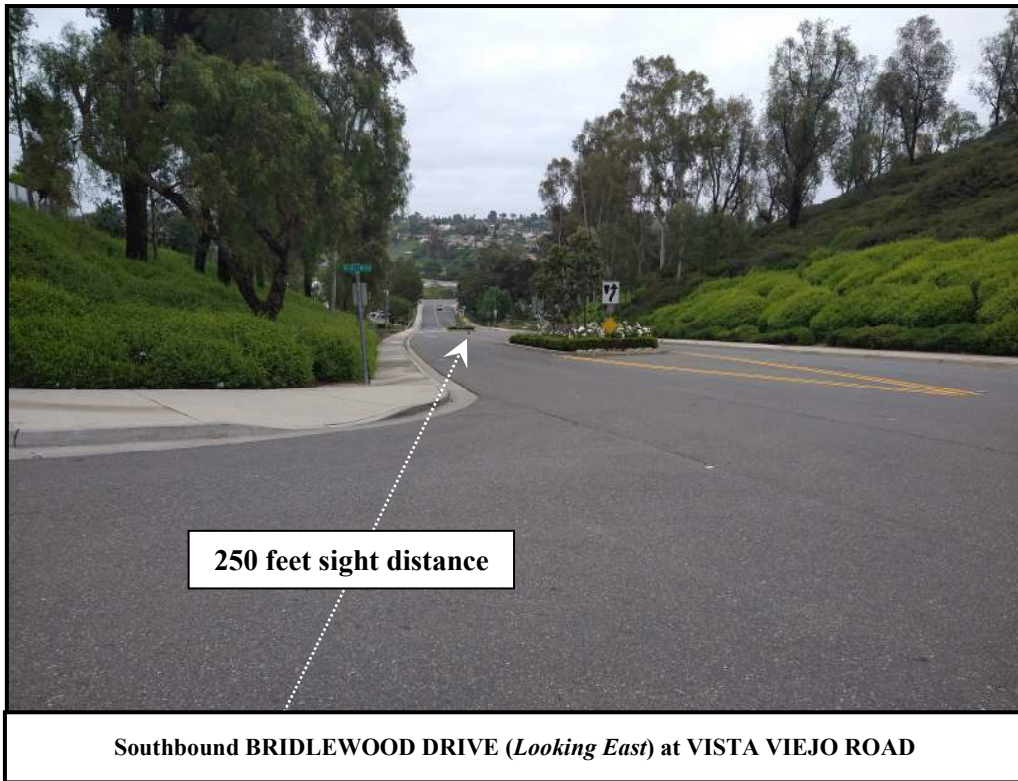
Impaired visibility, or restricted sight distance, due to the geometry of the intersection and possible obstructions was carefully considered during our field-review of the surrounding residential neighborhood property environment. The geometry of the intersection includes an approximate 90° angle, which is favorable for side-street sight distance. Vista Viejo Road has a consistent, gradual incline in the westbound direction, while Bridlewood Drive has a slight, gradual incline in the northbound direction.

Driver sight distance was measured from the side-street approach to the intersection, as southbound traffic on Bridlewood Drive is required to stop, before proceeding to make a left-turn or right-turn onto Vista Viejo Road. The measured distance was derived from the stopping sight distance guidelines found in the California MUTCD (*see Appendix D*). In this reference, a 30 MPH roadway speed recommends a minimum Stopping Sight Distance of 200 feet. However, it is likely that the 85th percentile speeds typically exceed the 30 MPH posted speed limit. Therefore, a 35 MPH speed limit was used as a more conservative measure, which has a minimum sight distance of 250 feet. This distance was used when looking towards approaching, uncontrolled traffic along Vista Viejo Road. More specifically, this stopping sight distance was field-measured from a typical ‘stopped’ vehicle location on Bridlewood Drive at the intersection looking towards the oncoming lanes of cross-traffic on Vista Viejo Road. An orange cone was placed at this distance and a photograph was taken from a stopped driver’s perspective (i.e., approximately 3.5 feet in height).

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

As Exhibit 3 shows, when looking from Bridlewood Drive, a driver does have a clear line of sight to the minimum sight distance of 250 feet when looking both ways on Vista Viejo Road.

EXHIBIT 3



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., Vista Viejo 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 (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. HCI was made aware of a vehicle vs. pedestrian incident on August 8, 2025 by City staff; however, the incident report was not made available in time to include in this analysis. 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. 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 in 1) above). The 80% combined criteria was also not met as both 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 verified and found to be adequate as there is one street light located on the southwest corner. In regards to pedestrian and bicycle activity, field observations confirmed a low-to-medium activity of both.

MULTIWAY STOP ANALYSIS SUMMARY (continued)

It was also determined that southbound Bridlewood Drive drivers do have a clear line of sight when stopped and looking both ways at Vista Viejo Road traffic.

Therefore, based upon engineering judgment, it is determined that stopping traffic on Vista Viejo Road at Bridlewood Drive is not required to enhance traffic safety at this T-intersection.

RECOMMENDATION

In overall consideration of the analysis criteria in this report, a multi-way (3-Way) Stop sign installation is not recommended for the intersection of Vista Viejo Road and Bridlewood Drive. There are no other recommendations at this time.

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).

Option:

^{10b} YIELD or STOP signs may be used at a channelized turn lane if it is separated from the adjacent travel lanes moving in same direction by an island and the channelized turn lane is not controlled by a traffic control signal.

Standard:

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 Caltrans 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 Caltrans. Refer to CVC 21353.

Support:

¹⁷ Caltrans 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.**

Section 2B.08 YIELD Sign (R1-2)

Standard:

01 The YIELD (R1-2) sign (see Figure 2B-1) shall be a downward-pointing equilateral triangle with a wide red border and the legend YIELD in red on a white background.

Support:

02 The YIELD sign assigns right-of-way to traffic on certain approaches to an intersection. Vehicles controlled by a YIELD sign need to slow down to a speed that is reasonable for the existing conditions or stop when necessary to avoid interfering with conflicting traffic.

Section 2B.09 YIELD Sign Applications

Option:

01 YIELD signs may be installed:

- A. On the approaches to a through street or highway where conditions are such that a full stop is not always required.**
- B. At the second crossroad of a divided highway, where the median width at the intersection is 30 feet or greater. In this case, a STOP or YIELD sign may be installed at the entrance to the first roadway of a divided highway, and a YIELD sign may be installed at the entrance to the second roadway.**
- C. For a channelized turn lane that is separated from the adjacent travel lanes by an island, even if the adjacent lanes at the intersection are controlled by a highway traffic control signal or by a STOP sign.**
- D. At an intersection where a special problem exists and where engineering judgment indicates the problem to be susceptible to correction by the use of the YIELD sign.**
- E. Facing the entering roadway for a merge-type movement if engineering judgment indicates that control is needed because acceleration geometry and/or sight distance is not adequate for merging traffic operation.**

Standard:

02 A YIELD (R1-2) sign shall be used to assign right-of-way at the entrance to a roundabout. YIELD signs at roundabouts shall be used to control the approach roadways and shall not be used to control the circulatory roadway.

03 Other than for all of the approaches to a roundabout, YIELD signs shall not be placed on all of the approaches to an intersection.

Section 2B.10 STOP Sign or YIELD Sign Placement

Standard:

01 The STOP or YIELD sign shall be installed on the near side of the intersection on the right-hand side of the approach to which it applies. When the STOP or YIELD sign is installed at this required location and the sign visibility is restricted, a Stop Ahead sign (see Section 2C.36) shall be installed in advance of the STOP sign or a Yield Ahead sign (see Section 2C.36) shall be installed in advance of the YIELD sign.

02 The STOP or YIELD sign shall be located as close as practical to the intersection it regulates, while optimizing its visibility to the road user it is intended to regulate.

02a YIELD signs shall not be erected upon the approaches to more than one of the intersecting streets. Refer to CVC 21356.

03 STOP signs and YIELD signs shall not be mounted on the same post.

04 No items other than inventory stickers, sign installation dates, and bar codes shall be affixed to the fronts of STOP or YIELD signs, and the placement of these items shall be in the border of the sign.

05 No items other than official traffic control signs, inventory stickers, sign installation dates, anti-vandalism stickers, and bar codes shall be mounted on the backs of STOP or YIELD signs.

06 No items other than retroreflective strips (see Section 2A.21) or official traffic control signs shall be mounted on the fronts or backs of STOP or YIELD signs supports.

APPENDIX B

SWITRS COLLISION HISTORY

CITY OF LAGUNA HILLS
INTERSECTION OF VISTA VIEJO ROAD AND BRIDLEWOOD DRIVE
5-YEAR SWITRS COLLISION DATABASE
JAN. 1, 2020 THROUGH DEC. 31, 2024

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.
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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

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

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

APPENDIX C

AVERAGE DAILY TRAFFIC (ADT)

COUNT DATA

VOLUME

Bridlewood Dr & Vista Viejo Rd

Day: Tuesday
Date: 5/6/2025

Highest 8 Hours per Side-Street Perspective.

City: Laguna Hills
Project #: CA25_010050_001

DAILY TOTALS						NB	SB					Total
						0	293					2,985
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL	
0:00	0	0	1	1	2	12:00	0	4	20	28	52	
0:15	0	0	0	1	1	12:15	0	4	18	20	42	
0:30	0	0	0	0	0	12:30	0	2	25	20	47	
0:45	0	0	0	1	0	12:45	0	6	16	21	45	186
1:00	0	0	1	2	3	13:00	0	6	29	22	57	
1:15	0	0	0	0	0	13:15	0	7	26	18	51	
1:30	0	0	0	1	1	13:30	0	4	23	21	48	
1:45	0	0	0	1	0	13:45	0	7	24	20	48	204
2:00	0	0	0	0	0	14:00	0	3	21	26	50	
2:15	0	0	0	0	0	14:15	0	5	32	23	60	
2:30	0	0	0	1	1	14:30	0	2	30	27	59	
2:45	0	0	0	0	0	14:45	0	4	14	23	52	221
3:00	0	1	1	0	2	15:00	0	3	20	33	56	
3:15	0	0	1	0	1	15:15	0	7	33	36	76	
3:30	0	0	0	0	0	15:30	0	2	32	27	61	
3:45	0	0	1	3	1	15:45	0	6	18	21	72	265
4:00	0	0	0	0	0	16:00	0	8	23	34	65	
4:15	0	0	0	0	0	16:15	0	5	33	34	72	
4:30	0	0	0	0	0	16:30	0	9	20	21	50	
4:45	0	1	1	4	6	16:45	0	1	23	15	34	221
5:00	0	1	2	0	3	17:00	0	12	24	30	66	
5:15	0	0	5	0	5	17:15	0	8	28	28	64	
5:30	0	2	10	1	13	17:30	0	11	24	26	61	
5:45	0	2	5	5	11	17:45	0	3	34	20	56	247
6:00	0	0	7	4	11	18:00	0	2	18	28	48	
6:15	0	3	7	3	13	18:15	0	1	19	21	41	
6:30	0	2	14	7	23	18:30	0	5	20	30	55	
6:45	0	2	7	8	15	18:45	0	5	13	13	45	189
7:00	0	3	29	17	49	19:00	0	1	14	16	31	
7:15	0	9	32	6	47	19:15	0	0	14	17	31	
7:30	0	5	36	16	57	19:30	0	8	10	23	41	
7:45	0	11	28	30	62	19:45	0	3	12	7	32	135
8:00	0	7	50	16	73	20:00	0	6	8	22	36	
8:15	0	4	29	28	61	20:15	0	1	8	21	30	
8:30	0	5	27	18	50	20:30	0	3	9	16	28	
8:45	0	4	20	30	55	20:45	0	4	14	7	31	125
9:00	0	5	27	16	48	21:00	0	1	8	22	31	
9:15	0	3	23	16	42	21:15	0	0	6	12	18	
9:30	0	3	20	19	42	21:30	0	0	3	9	12	
9:45	0	3	14	25	38	21:45	0	0	1	3	14	75
10:00	0	7	19	18	44	22:00	0	1	3	9	13	
10:15	0	3	19	14	36	22:15	0	0	2	5	7	
10:30	0	3	18	19	40	22:30	0	0	2	2	4	
10:45	0	11	24	18	44	22:45	0	0	1	0	4	28
11:00	0	6	16	17	39	23:00	0	0	1	0	1	
11:15	0	7	22	22	51	23:15	0	0	2	2	4	
11:30	0	3	24	18	45	23:30	0	0	0	2	2	
11:45	0	7	23	28	45	23:45	0	0	1	4	2	9
TOTALS	123		589		368	TOTALS	170		759		976	1905
SPLIT %	11.4%		54.5%		34.1%	SPLIT %	8.9%		39.8%		51.2%	63.8%

DAILY TOTALS						NB	SB					Total
						0	293					2,985
AM Peak Hour	7:15	7:15	7:45	7:30	PM Peak Hour	17:00	15:15	15:15	15:15	15:15		
AM Pk Volume	32	148	83	253	PM Pk Volume	34	109	142	274			
Pk Hr Factor	0.727	0.740	0.741	0.866	Pk Hr Factor	0.708	0.826	0.789	0.901			
7 - 9 Volume	0	48	263	143	4 - 6 Volume	0	57	187	224	468		
7 - 9 Peak Hour	7:15	7:15	7:45	7:30	4 - 6 Peak Hour	17:00	17:00	17:00	17:00	17:00		
7 - 9 Pk Volume	0	32	148	83	4 - 6 Pk Volume	0	34	96	117	247		
Pk Hr Factor	0.000	0.727	0.740	0.741	Pk Hr Factor	0.000	0.708	0.857	0.886	0.936		

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 - 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.)

*** Posted speed limit, off-peak 85th-percentile speed prior to work starting, or other anticipated operating speed in mph.

Table 6C-2. Stopping Sight Distance as a Function of Speed on Level Roads.
(Used as suggested longitudinal buffer space length or location for flagger station)

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 in mph.

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



City of Laguna Hills

Traffic Commission

Staff Report

DATE: July 18, 2018
TO: Traffic Commissioners
FROM: Kenneth H. Rosenfield P.E.
Assistant City Manager/Director of Public Services
ISSUE: Review of Traffic Conditions on Bridlewood Drive and Devonshire Road

RECOMMENDATION: That the Traffic Commission Request Staff Monitor the Speed of Vehicles and Repeat the Speed Survey of Bridlewood Drive Between Vista Viejo Road and Laurel Crest Drive in Six Months Time.

SUMMARY:

Staff was recently contacted by a resident of Moulton Ranch regarding concerns of vehicular speeding and traffic collisions on Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive, and on Devonshire Road, between Falling Leaf Drive and Nottingham Court. Please see the attached Vicinity Map. Based upon the resident's concern and in accordance with the Residential Streets Management Policy, staff initiated a review of the travel speeds, traffic volume and traffic collision history on Bridlewood Drive and on Devonshire Road.

The Traffic Engineers of Hartzog & Crabill, Inc., (HCI) completed the attached June 1, 2018, study of the traffic attributes of Bridlewood Drive from Vista Viejo Road to Laurel Crest Drive and Devonshire Road from Falling Leaf Drive to Nottingham Court. The speed surveys, performed by HCI, as shown in the study, determined the 85th percentile speeds on Bridlewood Drive and Devonshire Road as 37.1 mph and 32.9 mph, respectively.

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Review of Traffic Conditions on Bridlewood Drive and Devonshire Road
July 18, 2018
Page 2

The 85th percentile speed measurement of Bridlewood Drive is higher than expected and considered to be unacceptable for a residential character street. The study also determined 24.6% of the vehicles on Bridlewood Drive were exceeding 34 mph, which is also a higher percentage than the expected percentage, typically at approximately 15%.

The 85th percentile speed measurement of Devonshire Road was fully within the expected range. Staff's long term experience has found the typical prevailing speed range for such streets to be between 32 and 34 mph, without adverse traffic collision history. Hence, the 85th percentile speed on Devonshire of 32 mph is not of concern for this residential character street.

The traffic count data, for both Bridlewood Drive and Devonshire Road, revealed the 24-hr volumes to be very low for a typical residential street that is a connecting, or through, street to other neighborhoods. The traffic volumes are not significant and no action is needed in response to this data.

A five-year traffic collision history review of Bridlewood Drive was also included in the study which determined three traffic collisions, including one not identified in the collision data from SWITRS but noted based on the attached photographic evidence provided by a resident, had occurred on Bridlewood Drive during this time. None of the traffic collisions were identified as speed-related.

The five-year traffic collision history review of Devonshire Road identified a single traffic collision which was not identified as speed-related and is not considered significant for the purposes of this report.

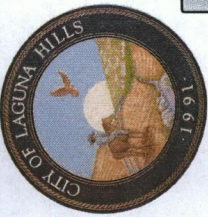
Concentrated police enforcement of driver behavior is the best and appropriate remedy for residential streets vehicular speeding and is recommended for Bridlewood Drive. Staff will work with the Orange County Sheriff's Department on enforcement activity in this area and will also post the radar trailer in this area to increase driver education as to the appropriate speed on Bridlewood Drive. Staff will also provide the Moulton Ranch Homeowners Association (HOA) with a traffic safety article to be included in their newsletter for the residents of their HOA. In addition, a follow-up speed survey is recommended to be performed in six months. Should the speeding issue remain, the next incremental action will be evaluated. Currently, there are 25 mph pavement

Review of Traffic Conditions on Bridlewood Drive and Devonshire Road
July 18, 2018
Page 3

legends and 25 mph signs posted at multiple locations along Bridlewood Drive between Vista Viejo Road and Laurel Crest Drive. While no changes to existing traffic controls are currently proposed, the number and locations of speed limit signage and pavement markings will also be reviewed following the repeat speed survey.

ATTACHMENTS:

- Vicinity Map
- Photograph
- Traffic Evaluation



VICINITY MAP - BRIDLEWOOD DRIVE & DEVONSHIRE ROAD



Attachment: Photograph (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire Road)





Trammell Hartzog, President
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

June 1, 2018

Mr. Kenneth H. Rosenfield, PE
Assistant City Manager/Public Services Director
City of Laguna Hills
24035 El Toro Road
Laguna Hills, CA 92653

**Subject: Traffic Data Evaluation - Letter of Opinion -
Speeding and Collision Concerns along Bridlewood Drive
and Also along Devonshire Road**

Dear Mr. Rosenfield,

Pursuant to your request, Hartzog & Crabill, Inc. (HCI) has prepared this traffic engineering evaluation regarding residential concerns of speeding and collisions along the following two (2) street segments:

- 1) Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive
- 2) Devonshire Road, between Falling Leaf Drive and Nottingham Court

BACKGROUND

Bridlewood Drive

Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive, is a 40-foot wide, 2-lane, north-south residential collector roadway. At the project limits, there is a 1-way stop at Vista Viejo Road and a 3-way stop at Laurel Crest Drive. There is no centerline striping along the entire segment, with exception of a short length of double-yellow centerline at the project limits.

There are posted 25 MPH speed limit signs along Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive. There are also '25' pavement markings adjacent to the sign postings. On-street parking is allowed along both sides of Bridlewood Drive.

Devonshire Road

Devonshire Road, between Falling Leaf Drive and Nottingham Court, is a 40-foot wide, 2-lane, north-south residential collector roadway. At the project limits, both intersections have 1-way stop controls. There is no centerline striping along the entire segment, with exception of a short length of double-yellow centerline at the project limits.

There are posted 25 MPH speed limit signs along Devonshire Road between Falling Leaf Drive and Nottingham Court. There are also '25' pavement markings adjacent to the sign postings. On-street parking is allowed along both sides of Devonshire Road.

Consulting Traffic Engineers to Government Agencies

Mr. Kenneth H. Rosenfield, PE
 June 1, 2018
 Page 2 of 5

TRAVEL SPEED DATA

To determine travel speeds on Bridlewood Drive and on Devonshire Road, a spot speed radar survey was conducted along each of these residential collector roadways on Wednesday, May 16, 2018, and Thursday, May 17, 2018, respectively. Tables 1 & 2 below summarize the radar speed data.

TABLE 1
SPEED SURVEY SUMMARY
BRIDLEWOOD DRIVE, FROM VISTA VIEJO ROAD TO LAUREL CREST DRIVE

Speed-Count Summary	From Vista Viejo Road to Laurel Crest Drive
85 th Percentile Speed	37.1 MPH
Median Speed	29.5 MPH
15th Percentile Speed	25.0 MPH
10 MPH Pace Speed	25-34 MPH
Average Daily Traffic (ADT)	722 vehicles

As shown above, the 85th percentile speed on Bridlewood Drive was recorded at 37.1 MPH. This data shows that higher than typical travel speeds are occurring above the posted 25 MPH speed limit.

TABLE 2
SPEED SURVEY SUMMARY
DEVONSHIRE ROAD, FROM FALLING LEAF DRIVE TO NOTTINGHAM COURT

Speed-Count Summary	From Falling Leaf Drive to Nottingham Court
85 th Percentile Speed	32.9 MPH
Median Speed	27.9 MPH
15th Percentile Speed	25.0 MPH
10 MPH Pace Speed	25-34 MPH
Average Daily Traffic (ADT)	590 vehicles

As shown above, the 85th percentile speed on Devonshire Road was recorded at 32.9 MPH. This data shows that typical travel speeds are occurring for a posted 25 MPH speed limit street. All radar survey data is attached to this letter.

Mr. Kenneth H. Rosenfield, PE
 June 1, 2018
 Page 3 of 5

TRAFFIC VOLUME DATA

Bridlewood Drive

Average Daily Traffic (ADT) counts were collected for the segment of Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive, on Wednesday, May 2, 2018. The ADT, or 24-hour two-way traffic volume, along this segment resulted in 722 vehicles.

A two-lane collector street generally has a Level-of-Service (LOS) 'D' capacity of 11,300 vehicles per day. Consequently, the existing traffic volume is well under the roadway capacity.

Devonshire Road

Average Daily Traffic (ADT) counts were collected for the segment of Devonshire Road, between Falling Leaf Drive and Nottingham Court, on Wednesday, May 2, 2018. The ADT, or 24-hour two-way traffic volume, along this segment resulted in 590 vehicles.

As mentioned, a two-lane collector street generally has a Level-of-Service (LOS) 'D' capacity of 11,300 vehicles per day. Consequently, the existing traffic volume is well under the roadway capacity. All traffic volume data is included in the appendix.

COLLISION DATA

Bridlewood Drive

HCI obtained collision data for the past five (5) years, between January 1, 2013 – February 28, 2018, from the Statewide Integrated Traffic Records System website (*i-SWITRS*) database to determine the number of collisions occurring on this segment of Bridlewood Drive. Table 3 below presents the summary collision data.

TABLE 3
TRAFFIC COLLISION DATA SUMMARY
BRIDLEWOOD DRIVE, FROM VISTA VIEJO ROAD TO LAUREL CREST DRIVE

YEAR	NUMBER OF COLLISIONS	FATAL	INJURY	PROPERTY DAMAGE ONLY
2013	1	0	1	0
2014	0	0	0	0
2015	0	0	0	0
2016	0	0	0	0
2017	1	0	0	1
2018 *	1	0	0	1

* Available SWITRS data was only up to February 2018 at the time of report preparation.

Mr. Kenneth H. Rosenfield, PE
June 1, 2018
Page 4 of 5

COLLISION DATA (continued)

As shown above, there were a total of three (3) collisions reported along this segment within the last (5) years. The collisions were recorded as Rear End and Head-On types, and categorized as Driving or Bicycling Under Influence and Automobile ROW. As such, there were no collisions determined as 'speed-related'. Consequently, there are no other recommendations regarding collisions at this time.

It is noted, a resident provided the City with photographic evidence of a two vehicle traffic collision having occurred on Bridlewood Drive on April 5, 2018. The Sheriff's Department reported that no police report was written as the parties described no injuries and stated they would settle the matter on their own. Accordingly, we have no details on the cause of this traffic collision.

Devonshire Road

HCI also obtained collision data for the past five (5) years, between January 1, 2013 – February 28, 2018, from the Statewide Integrated Traffic Records System website (*i-SWITRS*) database to determine the number of collisions occurring on the subject segment of Devonshire Road. Table 4 below presents the summary collision data.

**TABLE 4
TRAFFIC COLLISION DATA SUMMARY
DEVONSHIRE ROAD, FROM FALLING LEAF DRIVE TO NOTTINGHAM COURT**

YEAR	NUMBER OF COLLISIONS	FATAL	INJURY	PROPERTY DAMAGE ONLY
2013	0	0	0	0
2014	0	0	0	0
2015	0	0	0	0
2016	0	0	0	0
2017	1	0	1	0
2018 *	0	0	0	0

* Available SWITRS data was only up to February 2018 at the time of report preparation.

As shown above, there was only one (1) collision reported along this segment within the last (5) years. This collision was recorded as a Rear End type, and categorized as Improper Turning. As such, there were no collisions determined as 'speed-related'. Consequently, there are no other recommendations regarding collisions at this time. The comprehensive 5-year segment collision history reports are attached to this letter.

Mr. Kenneth H. Rosenfield, PE
June 1, 2018
Page 5 of 5

RECOMMENDATIONS

As speeding was verified on Bridlewood Drive, it is recommended that an incremental approach be taken to address the higher travel speeds. Initial steps include:

- increased law enforcement.
- deployment of portable radar speed-feedback trailers.
- neighborhood watch committee meeting to help make all residents aware of speeding.

It has been our pleasure to prepare this letter of opinion regarding speeds, traffic volumes, and collisions on Bridlewood Drive, and also on Devonshire Road. 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

Attachments: Radar Speed Data (Qty. 2)
 ADT Volume Data (Qty. 2)
 Collision History (Qty. 2)

Attachment: Traffic Evaluation (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire Road)

Speed Data

RADAR SPEED DISTRIBUTION SHEET

HCI**CITY OF LAGUNA HILLS****BRIDLEWOOD DRIVE****LAUREL CREST DR TO VISTA VIEJO**

DATE: 5/16/2018

SURVEY BY:

C. BUENDIA

TIME: 9:00 AM - 10:00 AM

CHECKED BY:

JERRY STOCK

SPEED	CUMMULATIVE PERCENT					
	20	40	60	80	100	
60					X	100.0%
59					X	100.0%
58					X	100.0%
57					X	100.0%
56					X	100.0%
55					X	100.0%
54					X	100.0%
53					X	100.0%
52					X	100.0%
51					X	100.0%
50					X	100.0%
49					X	100.0%
48					X	100.0%
47					X	100.0%
46					X	100.0%
45					X	100.0%
44					X	100.0%
43					X	100.0%
42					X	98.1%
41					X	98.1%
40					X	96.2%
39					X	94.3%
38					X	92.5%
37					X	86.8%
36					X	83.0%
35					X	77.4%
34					X	75.5%
33					X	67.9%
32					X	64.2%
31					X	56.6%
30					X	49.1%
29					X	41.5%
28					X	34.0%
27					X	28.3%
26					X	18.9%
25					X	17.0%
24					X	5.7%
23					X	3.8%
22					X	3.8%
21					X	1.9%
20					X	1.9%
19					X	0.0%
18					X	0.0%
17					X	0.0%
16					X	0.0%
15					X	0.0%

-- -85PCT

}PACE

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UPPER LIMIT 10 MPH PACE: 34 MPH

LOWER LIMIT 10 MPH PACE: 25 MPH

PERCENT OVER PACE: 24.5 %

PERCENT IN PACE: 69.8 %

PERCENT UNDER PACE: 5.7 %

85th PERCENTILE SPEED: 36.5 MPH

MEDIAN SPEED: 30.1 MPH

15th PERCENTILE SPEED: 24.8 MPH

Attachment: Traffic Evaluation (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire Road)

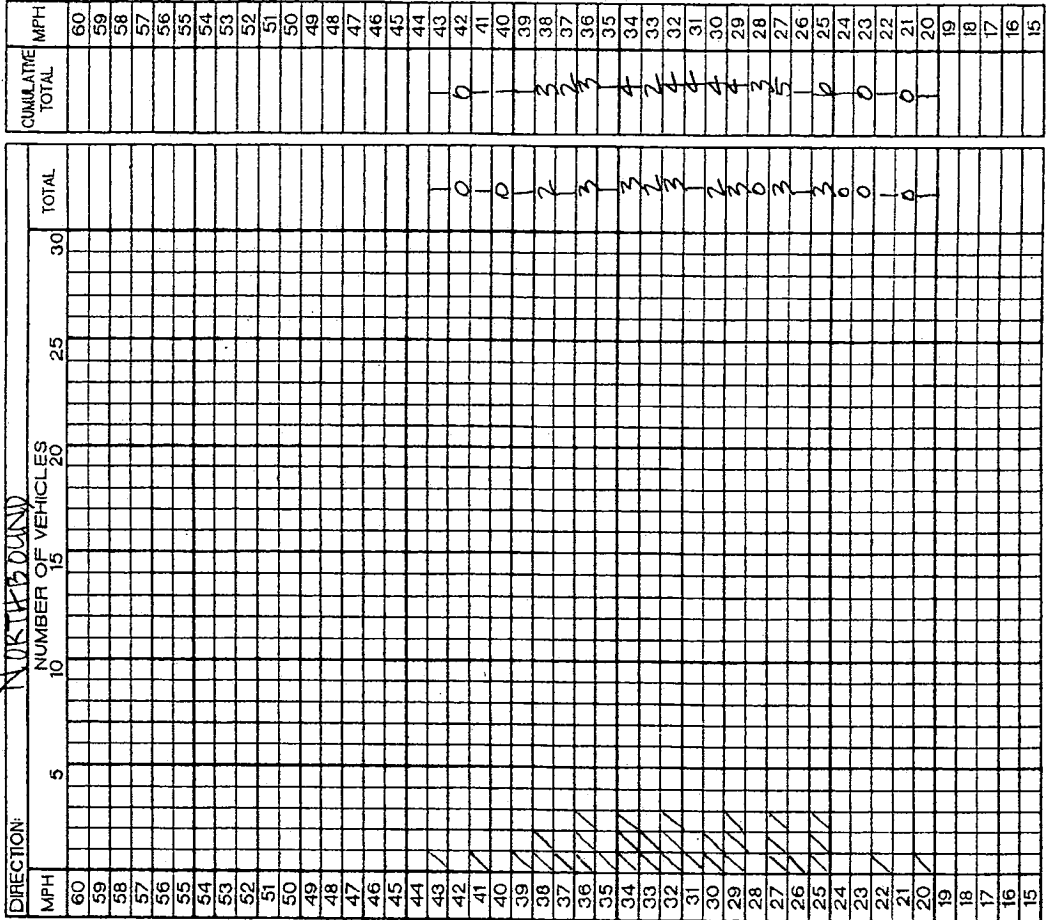
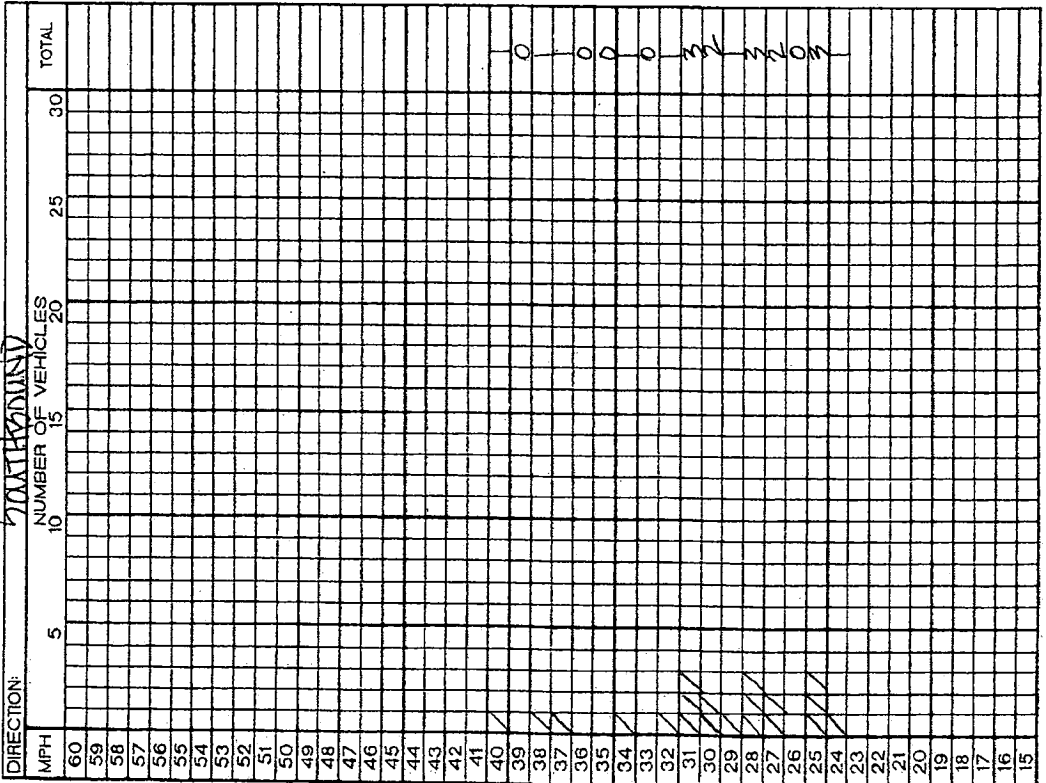
wood Spot Spd 2018-01

Radar Speed Survey Field Sheet

HARTOG AND CRIBELL
COUNTY ENGINEER
1017 East 10th Street
Tulsa, Oklahoma 74103

AGENCY: CITY OF LAWRENCE HILLS
STREET: BRIDLEWOOD
LOCATION: LAUREL CREST DR TO VISTA VIEJO

WEATHER: SUNNY DATE: 5-16-18
ROAD CONDITION: Dry START TIME: 9:00 AM
OBSERVER: CATHY BUENDIA END TIME: 10:00 AM VHB



CUMULATIVE TOTAL	MPH
	60
	59
	58
	57
	56
	55
	54
	53
	52
	51
	50
	49
	48
	47
	46
	45
	44
	43
	42
	41
	40
	39
	38
	37
	36
	35
	34
	33
	32
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	28
	27
	26
	25
	24
	23
	22
	21
	20
	19
	18
	17
	16
	15

RADAR SPEED DISTRIBUTION SHEET

HCI**CITY OF LAGUNA HILLS**BRIDLEWOOD DRIVELAUREL CREST DR TO VISTA VIEJO

DATE: 5/16/2018

SURVEY BY:

C. BUENDIA

TIME: 10:00 AM - 11:00 AM

CHECKED BY:

JERRY STOCK

SPEED	CUMMULATIVE PERCENT					
	20	40	60	80	100	
60						x 100.0%
59						x 100.0%
58						x 100.0%
57						x 100.0%
56						x 100.0%
55						x 100.0%
54						x 100.0%
53						x 100.0%
52						x 100.0%
51						x 100.0%
50						x 98.4%
49						x 98.4%
48						x 98.4%
47						x 98.4%
46						x 98.4%
45						x 98.4%
44						x 98.4%
43						x 98.4%
42						x 98.4%
41						x 96.7%
40						x 95.1%
39						x 93.4%
38						x 91.8%
37						x 82.0%
36						x 78.7%
35						x 78.7%
34						x 75.4%
33						x 67.2%
32						x 63.9%
31						x 60.7%
30						x 57.4%
29						x 50.8%
28						x 45.9%
27						x 34.4%
26						x 18.0%
25						x 13.1%
24						x 8.2%
23						x 6.6%
22						x 4.9%
21						x 4.9%
20						x 3.3%
19						x 1.6%
18						x 0.0%
17						x 0.0%
16						x 0.0%
15						x 0.0%

---85PCT

75.4% } PACE
67.2% } PACE
63.9% } PACE
60.7% } PACE
57.4% } PACE
50.8% } PACE
45.9% } PACE ---MEAN
34.4% } PACE
18.0% } PACE
13.1% } PACE ---15PCT

UPPER LIMIT 10 MPH PACE: 34 MPH
LOWER LIMIT 10 MPH PACE: 25 MPH
PERCENT OVER PACE: 24.6 %
PERCENT IN PACE: 67.2 %
PERCENT UNDER PACE: 8.2 %

85th PERCENTILE SPEED: 37.3 MPH
MEDIAN SPEED: 28.8 MPH
15th PERCENTILE SPEED: 25.4 MPH

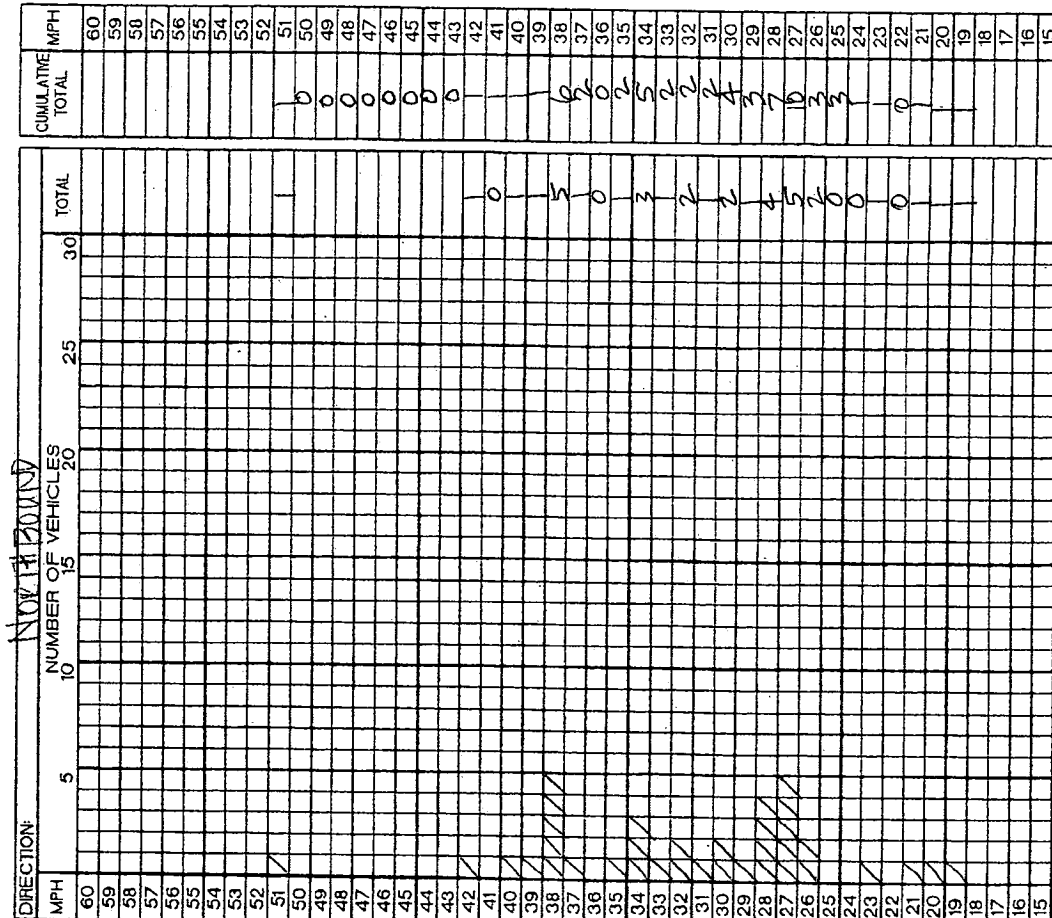
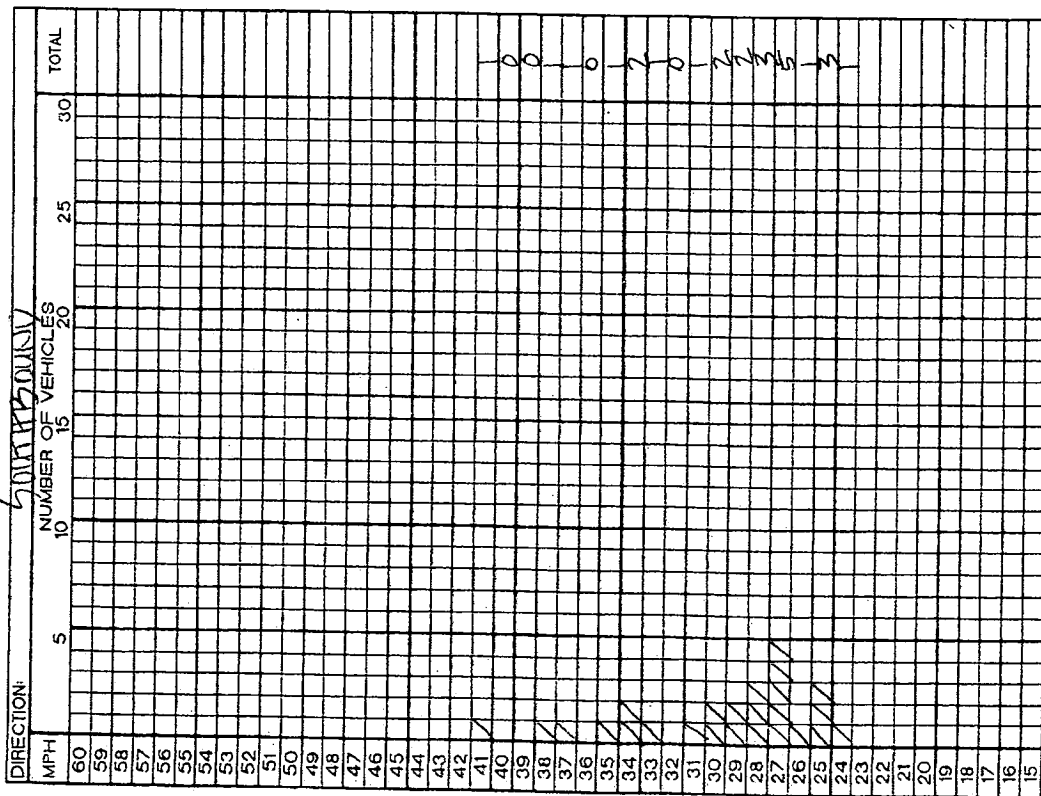
wood Spot Spd 2018-02

Radar Speed Survey Field Sheet

HARTZOG AND CRABILL
COUNTY HEALTH OFFICE
1021 N. Main, P.O. Box 101, Suite 101, 92
(909) 444-1000

AGENCY: CITY OF LAGUNA HILLS
STREET: BRIDLEWOOD
LOCATION: LAUREL CREST & TO VISTA VIEJO

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: CATHY BUENDIA
DATE: 5-16-18
START TIME: 10:00 AM
END TIME: 11:00 AM



Attachment: Traffic Evaluation (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire

RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

BRIDLEWOOD DRIVE

DATE: 5/16/2018

TIME: 9:00 AM - 11:00 AM

LAUREL CREST DR TO VISTA VIEJO

SURVEY BY:

C. BUENDIA

CHECKED BY:

JERRY STOCK

SPEED		CUMMULATIVE PERCENT					
		20	40	60	80	100	
60						x	100.0%
59						x	100.0%
58						x	100.0%
57						x	100.0%
56						x	100.0%
55						x	100.0%
54						x	100.0%
53						x	100.0%
52						x	100.0%
51						x	100.0%
50						x	99.1%
49						x	99.1%
48						x	99.1%
47						x	99.1%
46						x	99.1%
45						x	99.1%
44						x	99.1%
43						x	99.1%
42						x	98.2%
41						x	97.4%
40						x	95.6%
39						x	93.9%
38						x	92.1%
37					x		84.2%
36					x		80.7%
35					x		78.1%
34					x		75.4% }PACE
33					x		67.5% }PACE
32					x		64.0% }PACE
31				x			58.8% }PACE
30				x			53.5% }PACE
29				x			46.5% }PACE ---MEAN
28			x				40.4% }PACE
27		x					31.6% }PACE
26		x					18.4% }PACE
25		x					14.9% }PACE ---15PCT
24	x						7.0%
23	x						5.3%
22	x						4.4%
21	x						3.5%
20	x						2.6%
19	x						0.9%
18	x						0.0%
17	x						0.0%
16	x						0.0%
15	x						0.0%

UPPER LIMIT 10 MPH PACE:	34	MPH
LOWER LIMIT 10 MPH PACE:	25	MPH
PERCENT OVER PACE:	24.6	%
PERCENT IN PACE:	68.4	%
PERCENT UNDER PACE:	7.0	%

85th PERCENTILE SPEED:	37.1	MPH
MEDIAN SPEED:	29.5	MPH
15th PERCENTILE SPEED:	25.0	MPH

rod Spot Spd 2018-CUM

Attachment: Traffic Evaluation (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire Road)

RADAR SPEED DISTRIBUTION SHEET

HCI**CITY OF LAGUNA HILLS****DEVONSHIRE ROAD****FALLING LEAF DR TO NOTTINGHAM CT**

DATE: 5/17/2018

SURVEY BY:

C. BUENDIA

TIME: 9:00 AM - 10:00 AM

CHECKED BY:

JERRY STOCK

SPEED	CUMMULATIVE PERCENT					
	20	40	60	80	100	
60					X	100.0%
59					X	100.0%
58					X	100.0%
57					X	100.0%
56					X	100.0%
55					X	100.0%
54					X	100.0%
53					X	100.0%
52					X	100.0%
51					X	100.0%
50					X	100.0%
49					X	100.0%
48					X	100.0%
47					X	100.0%
46					X	100.0%
45					X	100.0%
44					X	100.0%
43					X	100.0%
42					X	100.0%
41					X	100.0%
40					X	100.0%
39					X	100.0%
38					X	100.0%
37					X	100.0%
36					X	96.9%
35					X	96.9%
34					X	96.9%
33					X	93.8% } PACE
32					X	78.1% } PACE ---85PCT
31					X	78.1% } PACE
30					X	75.0% } PACE
29					X	71.9% } PACE
28					X	62.5% } PACE
27					X	50.0% } PACE ---MEAN
26					X	46.9% } PACE
25					X	28.1% } PACE
24					X	21.9% } PACE
23					X	9.4% ---15PCT
22					X	9.4%
21					X	3.1%
20					X	3.1%
19					X	0.0%
18					X	0.0%
17					X	0.0%
16					X	0.0%
15					X	0.0%

UPPER LIMIT 10 MPH PACE: 34 MPH

LOWER LIMIT 10 MPH PACE: 25 MPH

PERCENT OVER PACE: 6.3 %

PERCENT IN PACE: 84.4 %

PERCENT UNDER PACE: 9.4 %

85th PERCENTILE SPEED: 33.4 MPH

MEDIAN SPEED: 28.0 MPH

15th PERCENTILE SPEED: 24.5 MPH

Attachment: Traffic Evaluation (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire Road)

Devonshire 2018-01

Radar Speed Survey Field Sheet

HARTZOG AND CRABILL II

[illegible]

AGENCY: CITY OF LAGUNA HILLS
STREET: DENONSHIRE ROAD
LOCATION: FALLING LEAF DR. TO NOTTINGHAM CT

WEATHER: SMOKY DATE: 05-17-18
ROAD CONDITION: DRY START TIME: 9:00 AM
OBSERVER: CATHY BUENDIA END TIME: 10:00 AM

Attachment: Traffic Evaluation (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire

DIRECTION: <u>SOUTHBOUND</u>		NUMBER OF VEHICLES		TOTAL		
MPH	5	10	15	20	25	30
60						
59						
58						
57						
56						
55						
54						
53						
52						
51						
50						
49						
48						
47						
46						
45						
44						
43						
42						
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20						
19						
18						
17						
16						
15						

AVERAGE SPEED: _____ PACE SPEED: _____
CRITICAL SPEED: _____
CUMULATIVE (BOTH DIRECTIONS) _____

[illegible]

AVERAGE
SPEED: _____

CRITICAL
SPEED: _____

PACE
SPEED: _____

RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

DEVONSHIRE ROAD
FALLING LEAF DR TO NOTTINGHAM CT
DATE: 5/17/2018
SURVEY BY:
C. BUENDIA
TIME: 10:00 AM - 11:00 AM
CHECKED BY:
JERRY STOCK

SPEED	CUMMULATIVE PERCENT					
	20	40	60	80	100	
60					X	100.0%
59					X	100.0%
58					X	100.0%
57					X	100.0%
56					X	100.0%
55					X	100.0%
54					X	100.0%
53					X	100.0%
52					X	100.0%
51					X	100.0%
50					X	100.0%
49					X	100.0%
48					X	100.0%
47					X	100.0%
46					X	100.0%
45					X	100.0%
44					X	100.0%
43					X	100.0%
42					X	100.0%
41					X	100.0%
40					X	100.0%
39					X	100.0%
38					X	100.0%
37					X	100.0%
36					X	95.7%
35					X	95.7%
34					X	95.7%
33					X	95.7%
32					X	95.7%
31					X	95.7%
30					X	95.7%
29					X	95.7%
28					X	95.7%
27					X	95.7%
26					X	95.7%
25					X	95.7%
24					X	95.7%
23					X	95.7%
22					X	95.7%
21					X	95.7%
20					X	95.7%
19					X	95.7%
18					X	95.7%
17					X	95.7%
16					X	95.7%
15					X	95.7%

UPPER LIMIT 10 MPH PACE: 34 MPH
 LOWER LIMIT 10 MPH PACE: 25 MPH
 PERCENT OVER PACE: 4.3 %
 PERCENT IN PACE: 95.7 %
 PERCENT UNDER PACE: 0.0 %

85th PERCENTILE SPEED: 30.8 MPH
 MEDIAN SPEED: 27.8 MPH
 15th PERCENTILE SPEED: 25.6 MPH

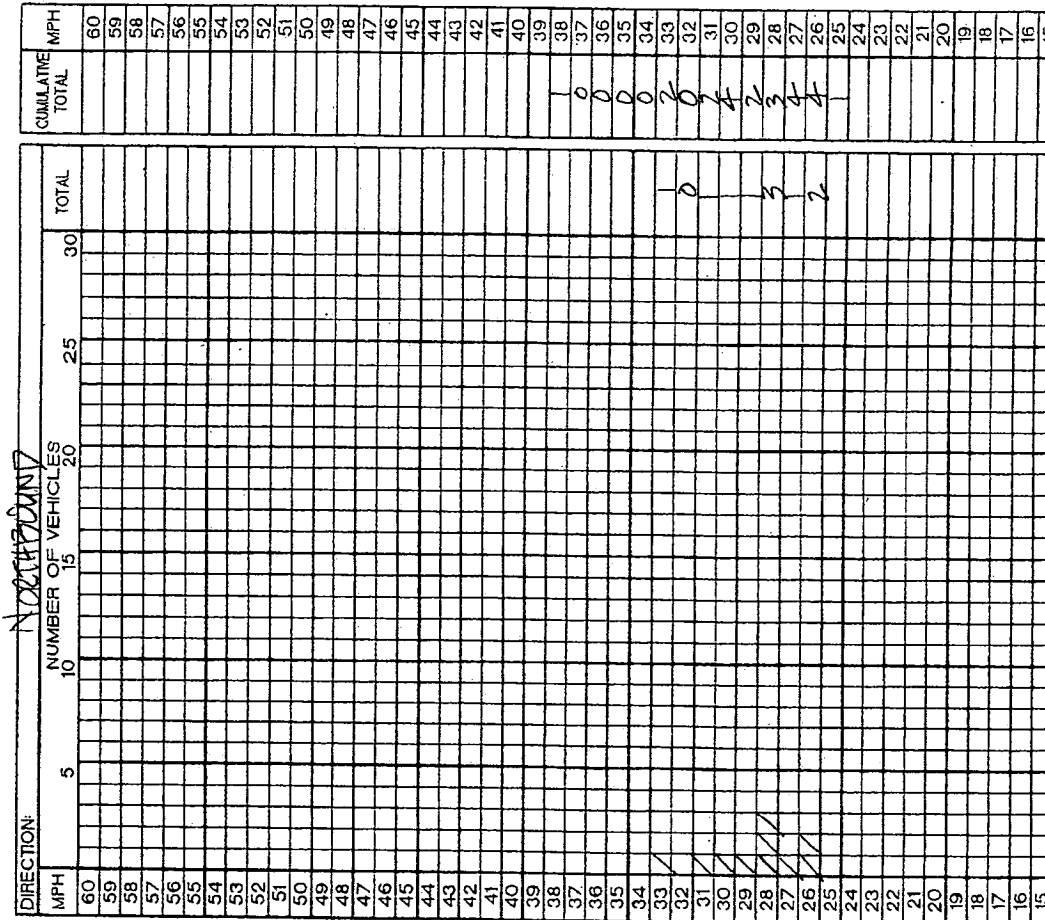
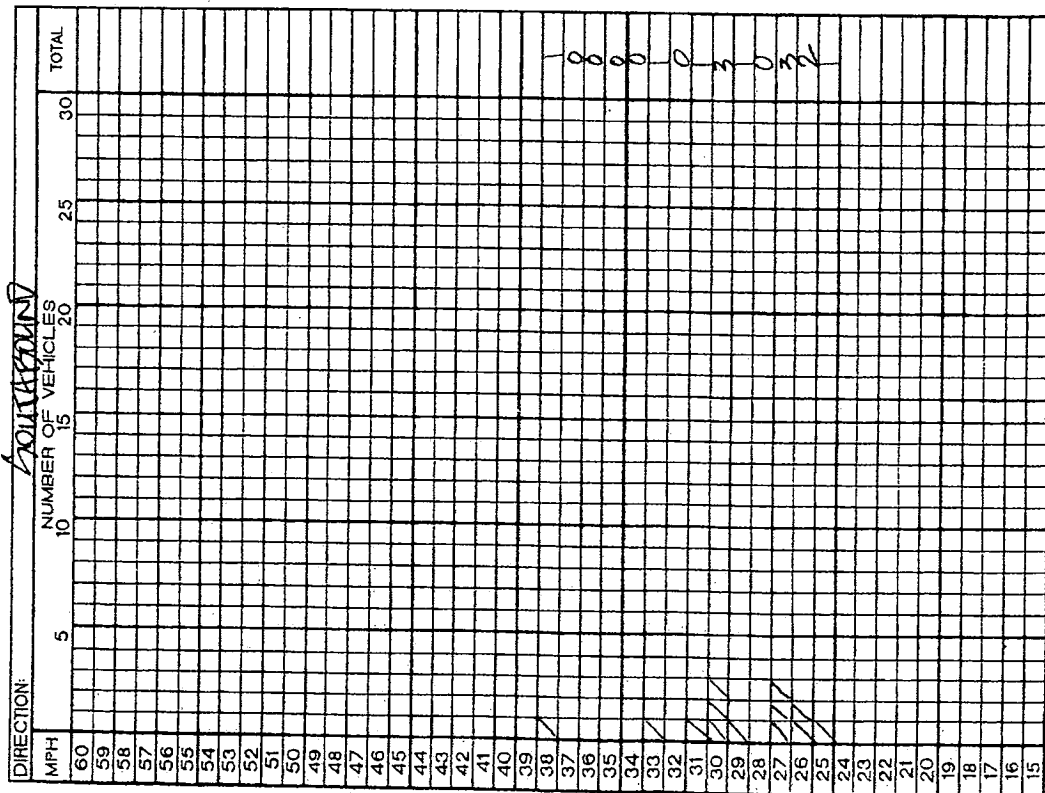
Devonshire 2018-02

Radar Speed Survey Field Sheet

HARIZOG AND CRABILL
Consulting Traffic Engineers
11321 W. 12th St., Suite 100, Boise, ID 83725
(208) 333-8300

AGENCY: CITY OF LAGUNA HILLS
STREET: DEVONSHIRE ROAD
LOCATION: FALING LEAF DR TO NOTTINGHAM CT.

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: CATHY BUENDIA
DATE: 5-17-18
START TIME: 10:00 AM
END TIME: 11:00 AM



102045046425102

Attachment: Traffic Evaluation (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire

RADAR SPEED DISTRIBUTION SHEET

HCI**CITY OF LAGUNA HILLS**DEVONSHIRE ROADFALLING LEAF DR TO NOTTINGHAM CT

DATE: 5/17/2018

SURVEY BY:

C. BUENDIA

TIME: 9:00 AM - 11:00 AM

CHECKED BY:

JERRY STOCK

SPEED	CUMMULATIVE PERCENT					
	20	40	60	80	100	
60						x 100.0%
59						x 100.0%
58						x 100.0%
57						x 100.0%
56						x 100.0%
55						x 100.0%
54						x 100.0%
53						x 100.0%
52						x 100.0%
51						x 100.0%
50						x 100.0%
49						x 100.0%
48						x 100.0%
47						x 100.0%
46						x 100.0%
45						x 100.0%
44						x 100.0%
43						x 100.0%
42						x 100.0%
41						x 100.0%
40						x 100.0%
39						x 100.0%
38						x 100.0%
37						x 96.4%
36						x 96.4%
35						x 96.4%
34						x 94.5% }PACE
33						x 85.5% }PACE
32						x 81.8% }PACE ---85PCT
31						x 80.0% }PACE
30						x 74.5% }PACE
29						x 61.8% }PACE
28						x 50.9% }PACE
27						x 43.6% }PACE ---MEAN
26						x 25.5% }PACE
25						x 14.5% }PACE ---15PCT
24	x					5.5%
23	x					5.5%
22	x					1.8%
21	x					1.8%
20	x					0.0%
19	x					0.0%
18	x					0.0%
17	x					0.0%
16	x					0.0%
15	x					0.0%

UPPER LIMIT 10 MPH PACE: 34 MPH

LOWER LIMIT 10 MPH PACE: 25 MPH

PERCENT OVER PACE: 5.5 %

PERCENT IN PACE: 89.1 %

PERCENT UNDER PACE: 5.5 %

85th PERCENTILE SPEED: 32.9 MPH

MEDIAN SPEED: 27.9 MPH

15th PERCENTILE SPEED: 25.0 MPH

Attachment: Traffic Evaluation (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire Road)

Devonshire 2018 CUM

ADT Volume Data

Prepared by NDS/ATD

VOLUME

Bridlewood Dr Bet. Vista Viejo Rd & Laurel Crest Dr

Day: Wednesday
Date: 5/2/2018City: Laguna Hills
Project #: CA18_1093_001

DAILY TOTALS					NB	SB	EB		WB		Total
					454	268					0
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL
00:00	0	0			0	12:00	5	10			15
00:15	1	1			2	12:15	6	9			15
00:30	0	0			0	12:30	7	3			10
00:45	0	1	0	1	2	12:45	7	25	4	26	51
01:00	0	0			0	13:00	5	2			7
01:15	0	0			0	13:15	6	4			10
01:30	0	0			0	13:30	8	4			12
01:45	0	0			0	13:45	2	21	9	19	40
02:00	0	0			0	14:00	8	7			15
02:15	0	0			0	14:15	7	4			11
02:30	0	0			0	14:30	7	5			12
02:45	0	0			0	14:45	9	31	5	21	52
03:00	0	0			0	15:00	5	7			12
03:15	0	0			0	15:15	9	5			14
03:30	0	0			0	15:30	3	6			9
03:45	0	0			0	15:45	8	25	4	22	47
04:00	1	1			2	16:00	12	5			17
04:15	0	0			0	16:15	10	7			17
04:30	1	0			1	16:30	6	3			9
04:45	1	3	0	1	4	16:45	11	39	3	18	57
05:00	1	1			2	17:00	4	2			6
05:15	0	0			0	17:15	4	3			7
05:30	2	0			2	17:30	15	10			25
05:45	1	4	0	1	5	17:45	9	32	5	20	52
06:00	2	1			3	18:00	4	2			6
06:15	1	1			2	18:15	10	8			18
06:30	5	0			5	18:30	10	4			14
06:45	2	10	1	3	13	18:45	7	31	6	20	51
07:00	9	3			12	19:00	12	7			19
07:15	8	5			13	19:15	3	1			4
07:30	7	4			11	19:30	4	4			8
07:45	15	39	4	16	55	19:45	4	23	3	15	38
08:00	11	7			18	20:00	4	1			5
08:15	11	4			15	20:15	4	1			5
08:30	16	5			21	20:30	4	3			7
08:45	7	45	2	18	63	20:45	3	15	1	6	21
09:00	9	6			15	21:00	4	1			5
09:15	11	1			12	21:15	3	2			5
09:30	8	4			12	21:30	2	4			6
09:45	4	32	4	15	47	21:45	1	10	0	7	17
10:00	4	2			6	22:00	0	4			4
10:15	6	4			10	22:15	0	2			2
10:30	11	4			15	22:30	2	0			2
10:45	8	29	5	15	44	22:45	1	3	0	6	9
11:00	6	8			14	23:00	1	1			2
11:15	7	4			11	23:15	0	0			0
11:30	13	2			15	23:30	0	0			0
11:45	8	34	3	17	51	23:45	1	2	0	1	3
TOTALS	197	87			284	TOTALS	257	181			438
SPLIT %	69.4%	30.6%			39.3%	SPLIT %	58.7%	41.3%			60.7

DAILY TOTALS				NB	SB					EB	WB					Total
				454	268					0	0					722
AM Peak Hour	07:45	11:45				07:45	PM Peak Hour	16:00	12:00				18:1			
AM Pk Volume	53	25				73	PM Pk Volume	39	26				64			
Pk Hr Factor	0.828	0.625				0.869	Pk Hr Factor	0.813	0.650				0.84			
7 - 9 Volume	84	34	0	0	118	4 - 6 Volume	71	38	0	0			109			
7 - 9 Peak Hour	07:45	07:15				07:45	4 - 6 Peak Hour	16:00	17:00				16:0			
7 - 9 Pk Volume	53	20	0	0	73	4 - 6 Pk Volume	39	20	0	0			57			
Pk Hr Factor	0.828	0.714	0.000	0.000	0.869	Pk Hr Factor	0.813	0.500	0.000	0.000			0.83			

Attachment: Traffic Evaluation (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire Road)

Prepared by NDS/ATD

VOLUME

Devonshire Rd Bet. Falling Leaf Dr & Nottingham Ct

Day: Wednesday
Date: 5/2/2018City: Laguna Hills
Project #: CA18_1093_002

DAILY TOTALS					NB	SB	EB					WB	Total
					174	416						0	0
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL		
00:00	0	0			0	12:00	2	9			11		
00:15	0	0			0	12:15	2	7			9		
00:30	0	0			0	12:30	3	6			9		
00:45	0	0			0	12:45	4	11	8	30	12	41	
01:00	0	0			0	13:00	2	5			7		
01:15	0	0			0	13:15	5	7			12		
01:30	0	0			0	13:30	3	5			8		
01:45	0	0			0	13:45	5	15	3	20	8	35	
02:00	0	0			0	14:00	6	7			13		
02:15	0	0			0	14:15	4	7			11		
02:30	0	0			0	14:30	5	5			10		
02:45	0	0			0	14:45	2	17	6	25	8	42	
03:00	1	0			1	15:00	3	10			13		
03:15	0	0			0	15:15	6	9			15		
03:30	0	0			0	15:30	7	10			17		
03:45	0	1	0		0	15:45	1	17	7	36	8	53	
04:00	0	0			0	16:00	0	6			6		
04:15	0	0			0	16:15	8	4			12		
04:30	0	0			0	16:30	4	9			13		
04:45	0	1	1		1	16:45	7	19	12	31	19	50	
05:00	0	0			0	17:00	3	11			14		
05:15	1	1			2	17:15	6	14			20		
05:30	0	0			0	17:30	3	12			15		
05:45	0	1	1	2	1	17:45	2	14	14	51	16	65	
06:00	1	1			2	18:00	2	14			16		
06:15	0	0			0	18:15	4	19			23		
06:30	0	5			5	18:30	2	7			9		
06:45	0	1	2	8	2	18:45	3	11	8	48	11	59	
07:00	1	2			3	19:00	3	8			11		
07:15	0	3			3	19:15	2	4			6		
07:30	5	1			6	19:30	4	4			8		
07:45	2	8	5	11	7	19:45	1	10	3	19	4	29	
08:00	2	6			8	20:00	1	6			7		
08:15	2	7			9	20:15	2	3			5		
08:30	6	4			10	20:30	1	1			2		
08:45	2	12	5	22	7	20:45	1	5	3	13	4	18	
09:00	3	10			13	21:00	0	2			2		
09:15	0	7			7	21:15	3	5			8		
09:30	4	4			8	21:30	1	4			5		
09:45	3	10	6	27	9	21:45	1	5	1	12	2	17	
10:00	1	9			10	22:00	0	6			6		
10:15	0	3			3	22:15	1	3			4		
10:30	2	5			7	22:30	0	0			0		
10:45	2	5	6	23	8	22:45	2	3	0	9	2	12	
11:00	2	7			9	23:00	1	1			2		
11:15	1	5			6	23:15	0	3			3		
11:30	3	5			8	23:30	0	0			0		
11:45	2	8	5	22	7	23:45	0	1	2	6	2	7	
TOTALS	46	116			162	TOTALS	128	300			428		
SPLIT %	28.4%	71.6%			27.5%	SPLIT %	29.9%	70.1%			72.5		

DAILY TOTALS					NB	SB	EB	WB	Total
					174	416	0	0	590
AM Peak Hour	08:15	09:00			08:15	PM Peak Hour	16:15	17:30	17:3
AM Pk Volume	13	27			39	PM Pk Volume	22	59	70
Pk Hr Factor	0.542	0.675			0.750	Pk Hr Factor	0.688	0.776	0.76
7 - 9 Volume	20	33	0	0	53	4 - 6 Volume	33	82	0
7 - 9 Peak Hour	07:45	07:45			07:45	4 - 6 Peak Hour	16:15	17:00	16:4
7 - 9 Pk Volume	12	22	0	0	34	4 - 6 Pk Volume	22	51	0
Pk Hr Factor	0.500	0.786	0.000	0.000	0.850	Pk Hr Factor	0.688	0.911	0.000

Attachment: Traffic Evaluation (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire Road)

Collision History

CITY OF LAGUNA HILLS
SWITRS COLLISION DATABASE
BRIDLEWOOD DRIVE, FROM VISTA VIEJO ROAD TO LAUREL CREST DRIVE
JAN. 1, 2013 - FEB. 28, 2018

CASE ID	COLL. DATE	COLL. TIME	PRIMARY ROAD	SECONDARY ROAD	DIST.	DIR.	INTERS.	WEATH.	1	SEVERITY	COLL. FACT.	PRIM. COLL. VIOL. CAT.	PCF VIOL. CAT.	PCF VIOL.	HIT AND RUN	TYPE OF COLL.	MOTOR VEHICLE INVOLVED WITH	ROA SURI
8361526	20170326	10	BRIDLEWOOD DR	VISTA VIEJO RD	488	N	N	A	A	0	A	A	1	23152	N	C	E	A
6174038	20130806	1741	VISTA VIEJO	BRIDLEWOOD LN	0		Y	A	A	4	A	A	9	21801	N	A	C	A

NOTES:

Weather 1	Collision Severity	Primary Collision Factor	PCF Violation Category	Hit and Run	Type of Collision
A - Clear	1 - Fatal	A - (Vehicle) Code Violation	01 - Driving or Bicycling Under Influence	F - Felony	A - Head-On
B - Cloudy	2 - Injury (Severe)	B - Other Improper Driving	02 - Impeding Traffic	M - Misdemeanor	B - Sideswipe
C - Raining	3 - Injury (Other Visible)	C - Other Than Driver	03 - Unsafe Speed	N - Not Hit & Run	C - Rear-End
D - Snowing	4 - Injury (Complaint of Pain)	D - Unknown	04 - Following Too Closely		D - Broadside
E - Fog	0 - PDO (Property Damage Only)	E - Fell Asleep	05 - Wrong Side of Road		E - Hit Object
F - Other		-- Not Stated	06 - Improper Passing		F - Overturned
G - Wind			07 - Unsafe Lane Change		G - Vehicle/Pedestrian
-- Not Stated			08 - Improper Turning		H - Other
			09 - Automobile ROW		-- Not Stated
			10 - Pedestrian ROW		
			11 - Pedestrian Violation		
			12 - Traffic Signals and Signs	Road Surface	
			13 - Hazardous Parking	A - Dry	
			14 - Lights	B - Wet	
			15 - Brakes	C - Snowy or Icy	
			16 - Other Equipment	D - Slippery	
			17 - Other Hazardous Violation	-- Not Stated	
			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		

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

CITY OF LAGUNA HILLS
SWITRS COLLISION DATABASE

DEVONSHIRE ROAD, FROM FALLING LEAF DRIVE TO NOTTINGHAM COURT

JAN. 1, 2013 - FEB. 28, 2018

CASE ID	8326285	COLL. DATE	20170220	COLL. TIME	2256	PRIMARY ROAD	DEVONSHIRE RD	SECONDARY ROAD	NORTH ELM BANK DR	DIST.	175	DIR.	N	INTERS.	A	WEATH.	1	SEVERITY	4	COLL. FACT.	A	PRIM. COLL. VIOL. CAT.	8	PCF VIOL. CAT.	22107	HIT AND RUN	N	HIT	C	TYPE OF COLL.	E	MOTOR VEHICLE INVOLVED WITH SURI	A
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NOTES:

Weather 1	Collision Severity	Primary Collision Factor	PCF Violation Category	Hit and Run	Type of Collision
A - Clear	1 - Fatal	A - (Vehicle) Code Violation	01 - Driving or Bicycling Under Influence	F - Felony	A - Head-On
B - Cloudy	2 - Injury (Severe)	B - Other Improper Driving	02 - Impeding Traffic	M - Misdemeanor	B - Sideswipe
C - Raining	3 - Injury (Other Visible)	C - Other Than Driver	03 - Unsafe Speed	N - Not Hit & Run	C - Rear-End
D - Snowing	4 - Injury (Complaint of Pain)	D - Unknown	04 - Following Too Closely		D - Broadside
E - Fog	0 - PDO (Property Damage Only)	E - Fell Asleep	05 - Wrong Side of Road		E - Hit Object
F - Other		-- Not Stated	06 - Improper Passing		F - Overturned
G - Wind			07 - Unsafe Lane Change		G - Vehicle/Pedestrian
-- Not Stated			08 - Improper Turning		H - Other
			09 - Automobile ROW		-- 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	

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	

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



City of Laguna Hills

Traffic Commission

Staff Report

DATE: January 16, 2019
TO: Traffic Commissioners
FROM: Amber Shah
Associate Engineer
ISSUE: Repeat Speed Survey on Bridlewood Drive

RECOMMENDATION: That the Traffic Commission Request Staff Implement Additional Pavement Legends and Markings on Southbound Bridlewood Drive Between Vista Viejo Road and Laurel Crest Drive and Repeat the Speed Survey of Bridlewood Drive in Six Months' Time.

SUMMARY:

Staff was contacted by a resident of Moulton Ranch in April 2018 regarding concerns of vehicular speeding and traffic collisions on Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive, and on Devonshire Road, between Falling Leaf Drive and Nottingham Court. Please see the attached Vicinity Map. Based upon the resident's concern and in accordance with the Residential Streets Management Policy, staff subsequently initiated a review of the vehicular speeds, traffic volume and traffic collision history on Bridlewood Drive and on Devonshire Road. The report presented at the July 18, 2018 meeting of the Traffic Commission concluded the 85th percentile speed measurement of Bridlewood Drive was higher than expected and considered to be unacceptable for a residential character street. Additional traffic speed enforcement and use of the radar trailer were utilized to address this issue. The Traffic Commission requested staff repeat the speed survey of Bridlewood Drive in six months' time.

In accordance with the Traffic Commission's request, the Traffic Engineers of Hartzog & Crabill, Inc., (HCI) completed the attached January 9, 2019, speed survey of Bridlewood Drive from Vista Viejo Road to Laurel Crest Drive. This speed survey determined the 85th percentile speed on Bridlewood Drive reduced from 37.1 mph, as recorded in the first

speed survey in May 2018, to 36.1 mph in December 2018. The 85th percentile speed measurement of Bridlewood Drive is still higher than expected and considered to be unacceptable for a residential character street. The study also determined the percent of vehicles on Nellie Gail Road exceeding 34 mph has only slightly declined from 24.6% to 24.2% which is also a higher percentage than the expected percentage, typically at approximately 15%.

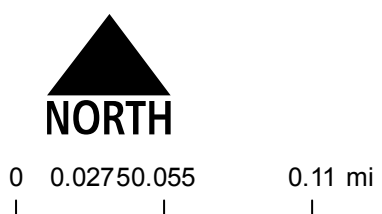
Based upon the results of this speed survey indicating vehicular speed remains an issue on Bridlewood Drive, staff field reviewed the existing number and locations of speed limit signage and pavement markings. Currently, there are 25 mph pavement legends and 25 mph signs posted at multiple locations along northbound Bridlewood Drive between Vista Viejo Road and Laurel Crest Drive and 25 mph signage but no pavement legends along southbound Bridlewood Drive. Staff recommends painting two “25” mph pavement legends adjacent to the posted speed limits signs along southbound Bridlewood Drive and “Stop Ahead” pavement markings in advance of the stop sign at Vista Viejo Road. Continued concentrated police enforcement of driver behavior is the best and appropriate remedy for residential streets vehicular speeding and is recommended for Bridlewood Drive. Staff will continue to work with the Sheriff’s Department on enforcement activity in this area and will also post the radar trailer in this area to increase driver education as to the appropriate speed on Bridlewood Drive. In addition, a follow-up speed survey is recommended to be performed in six months’ time. Should the speeding issue remain, the next incremental action will be evaluated.

ATTACHMENTS:

- Vicinity Map - Bridlewood Drive
- Traffic Study
- Bridlewood Dr Traffic Commission Agenda Item 4.2 7-18-18



VICINITY MAP - BRIDLEWOOD DRIVE





Trammell Hartzog, President
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

January 9, 2019

Mr. Kenneth H. Rosenfield, PE
Assistant City Manager/Public Services Director
City of Laguna Hills
24035 El Toro Road
Laguna Hills, CA 92653

Subject: Letter of Opinion – Speeding, Cut-through Traffic, and Collision Concerns along Wilkes Place and Grissom Road, and Speeding Along Bridlewood Drive and Nellie Gail Road

Dear Mr. Rosenfield,

Pursuant to your request, Hartzog & Crabill, Inc. (HCI) has prepared this traffic engineering evaluation regarding resident concerns of speeding and cut-through traffic, along with review of collisions, on the following two street segments:

- Wilkes Place, south of Alicia Parkway, and
- Grissom Road, east of Wilkes Place.

This evaluation also includes follow-up spot speed radar surveys along the two following two segments:

- Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive,
- Nellie Gail Road, between Oso Parkway and Hidden Trail Road.

BACKGROUND

Wilkes Place

Wilkes Place, between Alicia Parkway and Grissom Road, is a 36-foot to 40-foot wide, 2-lane, diagonal north-south residential collector roadway. At the project limits, there is a traffic signal at Alicia Parkway and a 90 degree bend at Grissom Road. There is double-yellow and single-yellow skip centerline striping along the entire segment. There is also an uncontrolled, marked yellow crosswalk across Wilkes Place at Barents Street, along with SCHOOL XING warning signs and advance SLOW SCHOOL XING pavement markings. There is a posted 25 MPH speed limit sign just south of Alicia Parkway. On-street parking is allowed along both sides of Wilkes Place.

BACKGROUND (continued)

Grissom Road

Grissom Road, between Wilkes Place and Las Bolsas Street, is a 36-foot wide, 2-lane, east-west residential collector roadway. At the project limits, there are 90-degree bends with double-yellow centerlines delineating the curves only. There is no centerline striping along the entire segment, and no posted speed limit signs. On-street parking is allowed along both sides of Grissom Road. An intersecting T-intersection with Velasquez Road connects to Paseo de Valencia.

Bridlewood Drive

Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive, is a 40-foot wide, 2-lane, north-south residential collector roadway. At the project limits, there is a 1-way stop at Vista Viejo Road and a 3-way stop at Laurel Crest Drive. There is no centerline striping along the entire segment, with exception of a short length of double-yellow centerline at the project limits. There are posted 25 MPH speed limit signs along Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive. There are also '25' pavement markings adjacent to the sign postings. On-street parking is allowed along both sides of Bridlewood Drive.

Nellie Gail Road

Nellie Gail Road, between Oso Parkway and Hidden Trail Road, is a 40-foot wide, curvy 2-lane, residential collector roadway. There is a traffic signal control at Oso Parkway and a one-way Stop control at Hidden Trail Road. There is a double-yellow centerline stripe along the entire segment, and a raised landscaped center median at Oso Parkway. There are Equestrian Xings with posted warning signs within this segment, along with other advance Side Street warning signs. There are posted 25 MPH speed limit signs along Nellie Gail Road between Oso Parkway and Hidden Trail Road. There is also a '25' pavement marking adjacent to the sign posting just south of Oso Parkway. On-street parking is allowed along both sides of Nellie Gail Road.

TRAVEL SPEED DATA

To determine travel speeds on the four (4) segments of:

- 1) Wilkes Place, between Alicia Parkway and Grissom Road;
- 2) Grissom Road, between Wilkes Place and Las Bolsas Street;
- 3) Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive;
- 4) Nellie Gail Road, between Oso Parkway and Hidden Trail Road;

a spot speed radar survey was conducted on each of the locations on Tuesday, December 11, and on Wednesday, December 12, 2018. Tables 1 and 2 (next page) summarize the spot speed radar survey data.

TRAVEL SPEED DATA (continued)

TABLE 1
SPEED SURVEY SUMMARY
WILKES PLACE, FROM ALICIA PARKWAY TO GRISSOM ROAD
GRISSOM ROAD, FROM WILKES PLACE TO LAS BOLSAS STREET

Speed Summary	Along Wilkes Place Segment	Along Grissom Road Segment
Posted Speed Limit	25 MPH	25 MPH
85 th Percentile Speed	30 MPH	28.4 MPH
Average Speed	25 MPH	25.2 MPH
10 MPH Pace Range	21 - 30 MPH	20 - 29 MPH
Percent of Vehicles in Pace	74.1%	87.3%

Source: Hartzog & Crabill, Inc., 2018.

TABLE 2
SPEED SURVEY SUMMARY
BRIDLEWOOD DRIVE, FROM VISTA VIEJO ROAD TO LAUREL CREST DRIVE
NELLIE GAIL ROAD, FROM OSO PARKWAY TO HIDDEN TRAIL ROAD

Speed Summary	Along Bridlewood Drive Segment	Along Nellie Gail Road Segment
Posted Speed Limit	25 MPH	25 MPH
85 th Percentile Speed	36.1 MPH	34.8 MPH
Average Speed	29.3 MPH	30.9 MPH
10 MPH Pace Range	25 - 34 MPH	26 - 35 MPH
Percent of Vehicles in Pace	70.7%	77.0%

Source: Hartzog & Crabill, Inc., 2018.

As shown above, the 85th percentile speeds on Wilkes Place and Grissom Road were recorded at 30 MPH and 28.4 MPH, respectively. This data shows that typical travel speeds are occurring for a posted 25 MPH speed limit street. The 85th percentile speeds on Bridlewood Drive and Nellie Gail Road were recorded at 36.1 MPH and 34.8 MPH, respectively. This data shows that higher travel speeds are occurring along Bridlewood Drive. It is noted, back in March 2018, the 85th percentile speed on Bridlewood Drive was recorded at 37.1 MPH. In May 2018, the 85th percentile speed on Nellie Gail Road was recorded at 39 MPH, which has reduced to a typical speed for this type of roadway.

The overall speed radar survey data is attached to this letter.

TRAVEL SPEED DATA (continued)

In an effort to lower overall speeds on Bridlewood Drive, the City may want to consider taking an incremental approach that may include the following:

- increased law enforcement
- frequent deployment of portable radar speed-feedback trailers
- neighborhood watch committee meeting to help make all residents aware of speeding

TRAFFIC VOLUME DATA

Average Daily Traffic (ADT) counts were collected for the two (2) segments of Wilkes Place and Grissom Road on Wednesday, December 12, 2018. The ADT, or 24-hour two-way traffic volume, along these segments resulted in 838 and 494 vehicles, respectively.

A two-lane collector street generally has a Level-of-Service (LOS) 'D' capacity of 11,300 vehicles per day. Consequently, the current traffic volumes are well under the roadway capacity, and there are no other recommendations regarding traffic volume data to provide at this time.

The ADT count data collected as part of this evaluation is attached to this letter.

COLLISION DATA

HCI obtained collision data for the past six (6) years, between January 1, 2013 – November 30, 2018, from the Statewide Integrated Traffic Records System website (*i-SWITRS*) database to determine the number of collisions occurring on the two (2) segments of Wilkes Place and Grissom Road.

Tables 3 and 4 (next page) presents the summary collision data.

COLLISION DATA (continued)

TABLE 3
TRAFFIC COLLISION DATA SUMMARY
WILKES PLACE, FROM ALICIA PARKWAY TO GRISSOM ROAD

YEAR	NUMBER OF COLLISIONS	FATAL	INJURY	PROPERTY DAMAGE ONLY
2013	0	0	0	0
2014	0	0	0	0
2015	0	0	0	0
2016	3	0	3	0
2017	0	0	0	0
2018 *	0	0	0	0

* Available SWITRS data up to November 2018 at the time of report preparation.

As shown above, there have been a total of three (3) collisions reported within the last six (6) years on Wilkes Place. It is noted, all three collisions occurred at the intersection of Wilkes Place and Alicia Parkway. There were no collisions determined as ‘speed-related’.

TABLE 4
TRAFFIC COLLISION DATA SUMMARY
GRISSOM ROAD, FROM WILKES PLACE TO LAS BOLSAS STREET

YEAR	NUMBER OF COLLISIONS	FATAL	INJURY	PROPERTY DAMAGE ONLY
2013	0	0	0	0
2014	0	0	0	0
2015	0	0	0	0
2016	0	0	0	0
2017	0	0	0	0
2018 *	1	0	0	1

* Available SWITRS data up November 2018 at the time of report preparation.

As shown above, there has been a total of one (1) collision reported within the last six (6) years on Grissom Road. This collision occurred at the intersection of Grissom Road and Las Bolsas Street, and was not determined as ‘speed-related’.

Consequently, there are no other recommendations regarding collision data on these two segments at this time.

The comprehensive 6-year segment collision history reports are attached to this letter.

CUT-THROUGH TRAFFIC

An Origin and Destination (O&D) study (i.e., license plate survey) was conducted on Wednesday, December 12, 2018 during the AM peak period (7 - 9am) to quantify the amount of traffic that are likely using Wilkes Place and Grissom Road as a short-cut.

The study collected license plate numbers in a 5-minute interval basis for all vehicles entering and exiting Wilkes Place at the project limit of Alicia Parkway, and also entering and exiting Velasquez Road at Paseo de Valencia (via Grissom Road).

Table 5 below shows a summary of the license plate matches recorded per each hour.

TABLE 5
ORIGIN-DESTINATION LICENSE PLATE MATCHES
USING WILKES PLACE AND GRISSOM ROAD

Path	7:00:00 AM	7:05:00 AM	7:45:00 AM	7:50:00 AM	8:05:00 AM	8:10:00 AM	8:15:00 AM	8:50:00 AM	8:55:00 AM	Total
2 to 1	1	1	1		3		1			7
1 to 2				2	1	2	1	1	1	8
Grand Total	1	1	1	2	4	2	2	1	1	15

The numbers (1 to 2 & 2 to 1) in Table 5 above refer to vehicles entering from and exiting to as follows:

Location 1 - Wilkes Place, just south of Alicia Parkway.

Location 2 - Velasquez Road, just north of Paseo de Valencia (short leg leading to Grissom Road).

The overall Origin-Destination Study spreadsheet is attached to this letter.

Per the ADT count data collected, the hourly traffic volumes for these same peak hours are compared as follows:

<u>Hour</u>	<u>ADT Traffic Volume</u>	<u>Cut-Thru</u>	<u>Cut-Thru/Volume</u>
7-8 AM	48	5	10%
8-9 AM	170	10	6%

As shown above, the actual hourly percentages are very low for what may be considered 'cut-through' traffic. Consequently, there are no recommendations regarding 'cut-through' traffic at this time.

SUMMARY

Wilkes Place and Grissom Road

In summary, the traffic data on Wilkes Place and Grissom Road resulted in the following:

- ✓ typical travel speeds are occurring for these 25 MPH speed limit streets;
- ✓ traffic volumes are well-below the traffic carrying capacity of the two roadways;
- ✓ there is no traffic collision history related to traffic speeds along these segments; and,
- ✓ 'cut-through' traffic is determined as very low.

Bridlewood Drive and Nellie Gail Road

In summary, the recent speed data on Bridlewood Drive and Nellie Gail Road resulted in the following:

- ✓ higher than typical travel speeds are occurring along Bridlewood Drive.
- ✓ the Nellie Gail Road speed results are typical and do not result in recommended actions.

RECOMMENDATIONS

Wilkes Place and Grissom Road

In review of the existing School Xing signage on Wilkes Place, it is recommended to update the signage to the newer standard signs with fluorescent yellow-green background.

Bridlewood Drive

In order to address the higher travel speeds along Bridlewood Drive, it is recommended that an incremental approach continue to be followed, which includes:

- increased law enforcement.
- frequent deployment of portable radar speed-feedback trailers.
- neighborhood watch committee meeting to help make all residents aware of speeding.

Mr. Kenneth H. Rosenfield, PE

January 9, 2019

Page 8 of 8

It has been our pleasure to prepare this letter of opinion regarding speeds, traffic volumes, collisions, and cut-through traffic on these project segments. If you 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

Attachments: Spot Speed Radar Data
 ADT Traffic Volume Data
 Collision History Data
 Origin-Destination Study

Spot Speed Radar Data

SUMMARY OF SPOT SPEED SURVEYS DECEMBER 2018

STREET LOCATION	EXISTING SPEED LIMIT	RECOMMENDED SPEED LIMIT	85 TH PERCENTILE SPEED	AVERAGE SPEED	10 MPH PACE RANGE	PERCENT OF VEHICLES IN PACE	DAY / DATE / TIME
<u>BRIDLEWOOD DRIVE</u>							
LAUREL CREST TO VISTA VIEJO	25	-	36.1	29.3	25-34	70.7	WED / 12-12-18 / MID-DAY (12:15 - 2:00)
<u>GRISSOM ROAD</u>							
WILKES PL TO LAS BOLSAS ST	25	-	28.4	25.2	20-29	87.3	TUES / 12-11-18 / MID-DAY (12:15 – 2:00)
<u>NELLIE GAIL ROAD</u>							
OSO PKWY TO HIDDEN TRAIL RD	25	-	34.8	30.9	26-35	77.0	WED / 12-12-18 / MID-DAY (11:00 – 12:00)
<u>WILKES PLACE</u>							
ALICIA PKWY TO GRISSOM RD	25	-	30.0	25.0	21-30	74.1	TUES / 12-11-18 / MID-DAY (10:45 – 12:15)

Radar Speed Survey Field Sheet

HARTZOG AND CRABILL INC.
Consulting Traffic Engineers
17592 Irvine Blvd., Suite 122 Tustin CA 92680
(714) 731-9455

AGENCY: CITY OF LAGUNA HILLS
STREET: BRIDLEWOOD
LOCATION: VISTA VIEJO RD TO LAUREL CREST DR

WEATHER: SUNNY DATE: 12-12-18
ROAD CONDITION: DRY START TIME: 12:15 PM
OBSERVER: CATHY BUENDIA END TIME: 2:00 PM VUB

DIRECTION: <u>SOUTHBOUND</u>						
MPH	5	NUMBER OF VEHICLES				TOTAL
		10	15	20	25	30
60						
59						
58						
57						
56						
55						
54						
53						
52						
51						
50						
49						
48						
47	/					1
46						0
45						0
44	/					1
43	/					1
42						0
41						0
40	/					1
39	//					2
38						0
37						0
36						0
35	/					1
34	//					2
33	//					2
32	//					2
31	//					2
30	//					2
29	//					2
28	//					2
27	//					2
26	//					2
25	//					2
24	//					2
23						0
22						0
21						0
20	/					1
19						
18						
17						
16						
15						

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____
CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: <u>NORTHBOUND</u>						
MPH	5	NUMBER OF VEHICLES				TOTAL
		10	15	20	25	30
60						
59						
58						
57						
56						
55						
54						
53						
52						
51						
50						
49						
48						
47	/					1
46						0
45	/					1
44						0
43						0
42						0
41	//					2
40						0
39	//					2
38						0
37	//					3
36						0
35	//					4
34	/					1
33	//					4
32	//					6
31	//					4
30	//					3
29	//					2
28	//					6
27						0
26	//					2
25	//					5
24	/					1
23	//					2
22	/					1
21						0
20	/					1
19						
18						
17						
16						
15						

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

BRIDLEWOOD DRIVE

DATE: 12/12/2018

TIME: 12:15 PM - 2:00 PM

LAUREL CREST DR TO VISTA VIEJO

SURVEY BY: C. BUENDIA

CHECKED BY: JERRY STOCK

SPEED	NUMBER OF VEHICLES																				VEH.	PCT.	CUM. PCT.
60																							100.0%
																							100.0%
																							100.0%
																							100.0%
																							100.0%
55																							100.0%
																							100.0%
																							100.0%
																							100.0%
50																							100.0%
																							100.0%
																							100.0%
	X	X																			2	2.0%	100.0%
																					0	0.0%	98.0%
45	X																				1	1.0%	98.0%
	X																				1	1.0%	97.0%
	X																				1	1.0%	96.0%
																					0	0.0%	94.9%
	X	X																			2	2.0%	94.9%
40	X																				1	1.0%	92.9%
	X	X	X	X																	4	4.0%	91.9%
																					0	0.0%	87.9%
	X	X	X																		3	3.0%	87.9%
																					0	0.0%	84.8%
35	X	X	X	X	X																5	5.1%	84.8%
	X	X	X	X																	4	4.0%	79.8%
	X	X	X	X	X																5	5.1%	75.8%
	X	X	X	X	X	X	X														7	7.1%	70.7%
	X	X	X	X	X	X	X	X	X												9	9.1%	63.6%
30	X	X	X	X	X	X															6	6.1%	54.5%
	X	X	X	X																	4	4.0%	48.5%
	X	X	X	X	X	X	X	X	X	X	X										11	11.1%	44.4%
	X	X	X	X	X	X	X	X													8	8.1%	33.3%
	X	X	X	X	X																5	5.1%	25.3%
25	X	X	X	X	X	X	X	X	X	X	X										11	11.1%	20.2%
	X	X	X	X																	4	4.0%	9.1%
	X	X	X																		3	3.0%	5.1%
	X																				1	1.0%	2.0%
																					0	0.0%	1.0%
20	X																				1	1.0%	1.0%
																							0.0%
																							0.0%
																							0.0%
																							0.0%
15																							0.0%
TOTAL VEHICLES																					99		

UPPER LIMIT 10 MPH PACE: 34 MPH

LOWER LIMIT 10 MPH PACE: 25 MPH

PERCENT OVER PACE: 24.2 %

PERCENT IN PACE: 70.7 %

PERCENT UNDER PACE: 9.1 %

85th PERCENTILE SPEED: 36.1 MPH

MEDIAN SPEED: 29.3 MPH

15th PERCENTILE SPEED: 24.5 MPH

Radar Speed Survey Field Sheet

HARTZOG AND CRABILL INC.
Consulting Traffic Engineers
11592 Irvine Blvd., Suite 122 Irvine CA 92618
(714) 731-9455

AGENCY: CITY OF LAJUNA HILLS
STREET: GRISSOM ROAD
LOCATION: WILKES PL TO LAS BOISAS ST.

WEATHER: SUNNY DATE: 12-11-18
ROAD CONDITION: DRY START TIME: 12:15 PM
OBSERVER: CATHY BUENDIA END TIME: 2:00 PM

DIRECTION: <u>WESTBOUND</u>										
MPH	NUMBER OF VEHICLES									
	5	10	15	20	25	30	TOTAL			
60										
59										
58										
57										
56										
55										
54										
53										
52										
51										
50										
49										
48										
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17										
16										
15										

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____
CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: <u>EASTBOUND</u>										
MPH	NUMBER OF VEHICLES									
	5	10	15	20	25	30	TOTAL			
60										
59										
58										
57										
56										
55										
54										
53										
52										
51										
50										
49										
48										
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22										
21										
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19										
18										
17										
16										
15										

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

HCI

CHECKED BY: JERRY STOCK

UPPER LIMIT 10 MPH PACE:	29	MPH
LOWER LIMIT 10 MPH PACE:	20	MPH
PERCENT OVER PACE:	12.7	%
PERCENT IN PACE:	87.3	%
PERCENT UNDER PACE:	0.0	%

85th PERCENTILE SPEED:	28.4	MPH
MEDIAN SPEED:	25.2	MPH
15th PERCENTILE SPEED:	22.6	MPH

Radar Speed Survey Field Sheet

HARTZOG AND CRABILL INC.
Consulting Traffic Engineers
17592 Irvine Blvd., Suite 122, Tustin, CA 92680
(714) 731-9455

AGENCY: CITY OF LAGUNA HILLS
STREET: NEVUE GAIL ROAD
LOCATION: 050 PKWY TO HIDDEN TRAIL RD

WEATHER: SUNNY DATE: 12-12-18
ROAD CONDITION: DRY START TIME: 11:00 AM
OBSERVER: CATHY BUENDIA END TIME: 12:00 PM ✓

DIRECTION: <u>SOUTHBOUND</u>										
MPH	NUMBER OF VEHICLES									
	5	10	15	20	25	30	TOTAL			
60										
59										
58										
57										
56										
55										
54										
53										
52										
51										
50										
49										
48										
47										
46										
45										
44										
43	/						2			
42	/						0			
41	/						1			
40							0			
39							0			
38	/						1			
37	/	/					4			
36	/	/					0			
35	/	/	/				7			
34	/	/	/	/			4			
33	/	/	/	/			4			
32	/	/	/	/	/		6			
31	/	/	/	/	/		2			
30	/	/	/	/	/		3			
29	/	/	/	/	/		9			
28	/	/	/	/	/		4			
27	/	/	/	/	/		4			
26	/	/	/	/	/		5			
25	/	/	/	/	/		4			
24	/	/	/	/	/		2			
23	/	/	/	/	/		1			
22	/	/	/	/	/		0			
21	/	/	/	/	/		0			
20	/	/	/	/	/		1			
19										
18										
17										
16										
15										

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____
CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION: <u>NORTHBOUND</u>										
MPH	NUMBER OF VEHICLES									
	5	10	15	20	25	30	TOTAL	CUMULATIVE TOTAL	MPH	
60									60	
59									59	
58									58	
57									57	
56									56	
55									55	
54									54	
53									53	
52									52	
51									51	
50									50	
49									49	
48									48	
47									47	
46									46	
45									45	
44									44	
43								2	43	
42								0	42	
41								1	41	
40							1	1	40	
39	/						2	2	39	
38	/						0	1	38	
37	/	/					4	8	37	
36	/	/					2	2	36	
35	/	/	/				10	17	35	
34	/	/	/	/			7	11	34	
33	/	/	/	/			5	9	33	
32	/	/	/	/	/		8	14	32	
31	/	/	/	/	/		9	11	31	
30	/	/	/	/	/		4	7	30	
29	/	/	/	/	/		4	13	29	
28	/	/	/	/	/		7	11	28	
27	/	/	/	/	/		0	4	27	
26	/	/	/	/	/		5	10	26	
25	/	/	/	/	/		1	5	25	
24	/	/	/	/	/		3	5	24	
23	/	/	/	/	/		0	1	23	
22	/	/	/	/	/		1	2	22	
21	/	/	/	/	/		1	1	21	
20	/	/	/	/	/			1	20	
19									19	
18									18	
17									17	
16									16	
15									15	

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

HCI

NELLIE GAIL ROAD

TIME: 11:00 AM - 12:00 PM

CHECKED BY: JERRY STOCK

UPPER LIMIT 10 MPH PACE:	35	MPH
LOWER LIMIT 10 MPH PACE:	26	MPH
PERCENT OVER PACE:	12.2	%
PERCENT IN PACE:	77.0	%
PERCENT UNDER PACE:	10.8	%

85th PERCENTILE SPEED:	34.8	MPH
MEDIAN SPEED:	30.9	MPH
15th PERCENTILE SPEED:	25.6	MPH

Radar Speed Survey Field Sheet

HARTZOG AND CRABILL INC.
 Consulting Traffic Engineers
 17592 Irvine Blvd., Suite 122, Tustin, CA 92680
 (714) 731-9455

AGENCY: CITY OF LAGUNA HILLS
 STREET: WILKES PLACE
 LOCATION: ALICIA PKWY TO GRISSOM RD

WEATHER: SUNNY DATE: 12-11-18
 ROAD CONDITION: DRY START TIME: 10:45 AM
 OBSERVER: CATHY BUENDIA END TIME: 12:15 PM VUL

DIRECTION: <u>SOUTHBOUND</u>						
MPH	NUMBER OF VEHICLES					TOTAL
	5	10	15	20	25	30
60						
59						
58						
57						
56						
55						
54						
53						
52						
51						
50						
49						
48						
47						
46						
45						
44						
43						
42						
41						
40						
39						
38						
37						
36	/					1
35						0
34						0
33	//					2
32	//					2
31						0
30	//					2
29	//					1
28						0
27	//					3
26						0
25	//					3
24	//					1
23	//					2
22	//					1
21	//					5
20	//					4
19						0
18	/					1
17						
16						
15						

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____
 CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION:						
MPH	NUMBER OF VEHICLES					TOTAL
	5	10	15	20	25	30
60						
59						
58						
57						
56						
55						
54						
53						
52						
51						
50						
49						
48						
47						
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42						
41						
40						
39						
38	/					1
37						0
36						0
35						0
34						0
33						0
32	/					1
31	/					1
30	//					4
29	//					2
28	//					4
27	/					1
26	//					2
25	//					3
24	//					2
23						0
22	//					2
21	//					2
20						0
19						0
18	/					1
17						
16						
15						

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____

CUMULATIVE TOTAL	MPH
	60
	59
	58
	57
	56
	55
	54
	53
	52
	51
	50
	49
	48
	47
	46
	45
	44
	43
	42
	41
	40
	39
1	38
0	37
0	36
0	35
0	34
0	33
2	32
3	31
1	30
6	29
3	28
4	27
4	26
2	25
6	24
3	23
2	22
3	21
7	20
4	19
0	18
2	17
	16
	15

HCI

CHECKED BY: JERRY STOCK

15th PERCENTILE SPEED: 20.3 MPH

ADT Traffic Volume Data

VOLUME

Wilkes Pl Bet. Alicia Pkwy & Grissom Rd

Day: Wednesday
Date: 12/12/2018City: Laguna Hills
Project #: CA18_1262_001

DAILY TOTALS					NB	SB	EB					WB	Total
					465	373						0	0
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL		
00:00	2	2			4	12:00	10	6			16		
00:15	1	1			2	12:15	6	3			9		
00:30	0	1			1	12:30	3	7			10		
00:45	0	3	0	4	0	12:45	3	22	9	25	12	47	
01:00	0	0			0	13:00	6	21			27		
01:15	0	1			1	13:15	55	12			67		
01:30	0	0			0	13:30	15	4			19		
01:45	0	0	1		0	13:45	3	79	6	43	9	122	
02:00	0	0			0	14:00	6	1			7		
02:15	0	0			0	14:15	3	0			3		
02:30	1	0			1	14:30	3	7			10		
02:45	0	1	0		0	14:45	5	17	3	11	8	28	
03:00	0	1			1	15:00	6	6			12		
03:15	0	0			0	15:15	1	6			7		
03:30	0	0			0	15:30	4	5			9		
03:45	0	0	1		0	15:45	5	16	1	18	6	34	
04:00	0	0			0	16:00	6	2			8		
04:15	1	1			2	16:15	5	8			13		
04:30	0	0			0	16:30	8	7			15		
04:45	1	2	1	2	2	16:45	5	24	7	24	12	48	
05:00	2	0			2	17:00	4	10			14		
05:15	2	1			3	17:15	7	11			18		
05:30	4	0			4	17:30	9	7			16		
05:45	3	11	0	1	3	17:45	6	26	2	30	8	56	
06:00	1	0			1	18:00	6	9			15		
06:15	2	1			3	18:15	2	5			7		
06:30	2	2			4	18:30	2	6			8		
06:45	7	12	2	5	9	18:45	5	15	8	28	13	43	
07:00	3	2			5	19:00	0	5			5		
07:15	6	3			9	19:15	1	2			3		
07:30	7	4			11	19:30	5	3			8		
07:45	12	28	11	20	23	19:45	3	9	10	20	13	29	
08:00	68	29			97	20:00	2	8			10		
08:15	34	3			37	20:15	2	3			5		
08:30	13	5			18	20:30	1	5			6		
08:45	11	126	7	44	18	20:45	3	8	6	22	9	30	
09:00	2	7			9	21:00	4	3			7		
09:15	4	5			9	21:15	0	5			5		
09:30	3	1			4	21:30	0	2			2		
09:45	5	14	4	17	9	21:45	2	6	1	11	3	17	
10:00	2	1			3	22:00	1	4			5		
10:15	6	6			12	22:15	1	3			4		
10:30	4	6			10	22:30	1	0			1		
10:45	4	16	4	17	8	22:45	1	4	0	7	1	11	
11:00	5	8			13	23:00	1	0			1		
11:15	8	3			11	23:15	0	2			2		
11:30	6	2			8	23:30	2	2			4		
11:45	4	23	3	16	7	23:45	0	3	2	6	2	9	
TOTALS	236	128			364	TOTALS	229	245			474		
SPLIT %	64.8%	35.2%			43.4%	SPLIT %	48.3%	51.7%			56.6%		

DAILY TOTALS					NB	SB	EB	WB	Total
					465	373	0	0	838
AM Peak Hour	07:45	07:45		07:45	PM Peak Hour	12:45	12:30		12:45
AM Pk Volume	127	48		175	PM Pk Volume	79	49		125
Pk Hr Factor	0.467	0.414		0.451	Pk Hr Factor	0.359	0.583		0.466
7 - 9 Volume	154	64	0	0	4 - 6 Volume	50	54	0	0
7 - 9 Peak Hour	07:45	07:45		07:45	4 - 6 Peak Hour	17:00	16:30		16:45
7 - 9 Pk Volume	127	48	0	0	4 - 6 Pk Volume	26	35	0	0
Pk Hr Factor	0.467	0.414	0.000	0.000	Pk Hr Factor	0.722	0.795	0.000	0.000

VOLUME

Grissom Rd Bet. Wilkes Pl & Las Bolsas

Day: Wednesday
Date: 12/12/2018City: Laguna Hills
Project #: CA18_1262_002

DAILY TOTALS					NB	SB	EB					WB	Total		
					0	0	259					235	494		
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL			
00:00			0	0	0		12:00			3	1	4			
00:15			0	0	0		12:15			2	2	4			
00:30			0	0	0		12:30			4	0	4			
00:45			0	0	0		12:45			1	10	5	8	6	18
01:00			0	1	1		13:00			8	4	12			
01:15			0	0	0		13:15			4	16	20			
01:30			0	0	0		13:30			7	1	8			
01:45			0	0	1	0	13:45			4	23	2	23	6	46
02:00			1	0	1		14:00			5	3	8			
02:15			0	0	0		14:15			8	4	12			
02:30			0	0	0		14:30			4	4	8			
02:45			0	1	0	0	14:45			3	20	6	17	9	37
03:00			0	1	1		15:00			7	3	10			
03:15			0	0	0		15:15			2	2	4			
03:30			0	0	0		15:30			3	4	7			
03:45			0	0	1	0	15:45			6	18	8	17	14	35
04:00			0	0	0		16:00			4	2	6			
04:15			1	0	1		16:15			6	3	9			
04:30			0	2	2		16:30			2	5	7			
04:45			1	2	3	5	16:45			9	21	4	14	13	35
05:00			0	0	0		17:00			8	2	10			
05:15			0	1	1		17:15			13	4	17			
05:30			0	0	0		17:30			3	7	10			
05:45			0	1	2	1	17:45			11	35	8	21	19	56
06:00			0	1	1		18:00			8	1	9			
06:15			3	3	6		18:15			6	2	8			
06:30			0	4	4		18:30			4	2	6			
06:45			3	6	4	12	18:45			1	19	4	9	5	28
07:00			2	1	3		19:00			4	2	6			
07:15			2	5	7		19:15			1	3	4			
07:30			4	8	12		19:30			4	1	5			
07:45			10	18	6	20	19:45			4	13	6	12	10	25
08:00			7	5	12		20:00			4	1	5			
08:15			4	11	15		20:15			1	1	2			
08:30			4	4	8		20:30			3	1	4			
08:45			2	17	4	24	20:45			0	8	0	3	0	11
09:00			6	2	8		21:00			3	1	4			
09:15			3	5	8		21:15			0	0	0			
09:30			0	5	5		21:30			3	1	4			
09:45			2	11	3	15	21:45			2	8	1	3	3	11
10:00			2	2	4		22:00			0	1	1			
10:15			4	3	7		22:15			1	1	2			
10:30			4	4	8		22:30			1	0	1			
10:45			2	12	2	11	22:45			0	2	0	2	0	4
11:00			6	5	11		23:00			0	0	0			
11:15			2	4	6		23:15			0	0	0			
11:30			3	3	6		23:30			0	2	2			
11:45			3	14	1	13	23:45			1	1	0	2	1	3
TOTALS	81				104	185	TOTALS	178				131	309		
SPLIT %	43.8%				56.2%	37.4%	SPLIT %	57.6%				42.4%	62.6%		

DAILY TOTALS			NB	SB	EB				WB		Total
			0	0							259
AM Peak Hour			07:30	07:30	07:30	PM Peak Hour			17:00	12:45	17:00
AM Pk Volume			25	30	55	PM Pk Volume			35	26	56
Pk Hr Factor			0.625	0.682	0.859	Pk Hr Factor			0.673	0.406	0.737
7 - 9 Volume	0	0	35	44	79	4 - 6 Volume	0	0	56	35	91
7 - 9 Peak Hour			07:30	07:30	07:30	4 - 6 Peak Hour			17:00	17:00	17:00
7 - 9 Pk Volume	0	0	25	30	55	4 - 6 Pk Volume	0	0	35	21	56
Pk Hr Factor	0.000	0.000	0.625	0.682	0.859	Pk Hr Factor	0.000	0.000	0.673	0.656	0.737

Collision History Data

CITY OF LAGUNA HILLS
5-YEAR SWITRS COLLISION DATABASE
WILKES PLACE, FROM ALICIA PARKWAY TO GRISSOM ROAD
JAN. 1, 2013 - NOV. 30, 2018

CASE ID	COLLISION 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.
8090227	20160704	2315	ALICIA PKWY	WILKES PL	0		Y	A	4	D	0		N	A	C	A
8180551	20161113	2008	ALICIA PKWY	WILKES PL	0		Y	A	3	A	12	21453	N	D	C	A
8197315	20161122	935	ALICIA PKWY	WILKES PL	0		Y	A	4	A	12	21453	N	D	C	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 On

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 Ir
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

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

Road Surface

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

CITY OF LAGUNA HILLS
5-YEAR SWITRS COLLISION DATABASE
GRISSOM ROAD, FROM WILKES PLACE TO LAS BOLSAS AVENUE
JAN. 1, 2013 - NOV. 30, 2018

CASE ID	COLLISION 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.
8636969	20180503	1229	GRISSOM RD	LAS BOLSAS AV	0		Y	A	0	A	8	22107	M	D	E	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 On

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 Ir
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

Type of Collision

A - Head-On
B - Sideswipe
C - Rear-End
D - Broadside
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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

Road Surface

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

Origin-Destination Study Data

Prepared by National Data and Surveying Services

Origin and Destination Study

Day: Wednesday

Date: 12/12/2018

City: Laguna Hills

Project: 18-1263

Path	7:00:00 AM	7:05:00 AM	7:45:00 AM	7:50:00 AM	8:05:00 AM	8:10:00 AM	8:15:00 AM	8:50:00 AM	8:55:00 AM	Total
2 to 1	1	1	1		3		1			7
1 to 2				2	1	2	1	1	1	8
Grand Total	1	1	1	2	4	2	2	1	1	15

Location ID	Street
1	Wilkes Place S/O Alicia Pkwy
2	Velasquez Road N/O Paseo de Valencia
*All times correspond to vehicle origin time	



City of Laguna Hills

Traffic Commission

Staff Report

DATE: July 18, 2018
TO: Traffic Commissioners
FROM: Kenneth H. Rosenfield P.E.
Assistant City Manager/Director of Public Services
ISSUE: Review of Traffic Conditions on Bridlewood Drive and Devonshire Road

RECOMMENDATION: That the Traffic Commission Request Staff Monitor the Speed of Vehicles and Repeat the Speed Survey of Bridlewood Drive Between Vista Viejo Road and Laurel Crest Drive in Six Months Time.

SUMMARY:

Staff was recently contacted by a resident of Moulton Ranch regarding concerns of vehicular speeding and traffic collisions on Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive, and on Devonshire Road, between Falling Leaf Drive and Nottingham Court. Please see the attached Vicinity Map. Based upon the resident's concern and in accordance with the Residential Streets Management Policy, staff initiated a review of the travel speeds, traffic volume and traffic collision history on Bridlewood Drive and on Devonshire Road.

The Traffic Engineers of Hartzog & Crabill, Inc., (HCI) completed the attached June 1, 2018, study of the traffic attributes of Bridlewood Drive from Vista Viejo Road to Laurel Crest Drive and Devonshire Road from Falling Leaf Drive to Nottingham Court. The speed surveys, performed by HCI, as shown in the study, determined the 85th percentile speeds on Bridlewood Drive and Devonshire Road as 37.1 mph and 32.9 mph, respectively.

Review of Traffic Conditions on Bridlewood Drive and Devonshire Road

July 18, 2018

Page 2

The 85th percentile speed measurement of Bridlewood Drive is higher than expected and considered to be unacceptable for a residential character street. The study also determined 24.6% of the vehicles on Bridlewood Drive were exceeding 34 mph, which is also a higher percentage than the expected percentage, typically at approximately 15%.

The 85th percentile speed measurement of Devonshire Road was fully within the expected range. Staff's long term experience has found the typical prevailing speed range for such streets to be between 32 and 34 mph, without adverse traffic collision history. Hence, the 85th percentile speed on Devonshire of 32 mph is not of concern for this residential character street.

The traffic count data, for both Bridlewood Drive and Devonshire Road, revealed the 24-hr volumes to be very low for a typical residential street that is a connecting, or through, street to other neighborhoods. The traffic volumes are not significant and no action is needed in response to this data.

A five-year traffic collision history review of Bridlewood Drive was also included in the study which determined three traffic collisions, including one not identified in the collision data from SWITRS but noted based on the attached photographic evidence provided by a resident, had occurred on Bridlewood Drive during this time. None of the traffic collisions were identified as speed-related.

The five-year traffic collision history review of Devonshire Road identified a single traffic collision which was not identified as speed-related and is not considered significant for the purposes of this report.

Concentrated police enforcement of driver behavior is the best and appropriate remedy for residential streets vehicular speeding and is recommended for Bridlewood Drive. Staff will work with the Orange County Sheriff's Department on enforcement activity in this area and will also post the radar trailer in this area to increase driver education as to the appropriate speed on Bridlewood Drive. Staff will also provide the Moulton Ranch Homeowners Association (HOA) with a traffic safety article to be included in their newsletter for the residents of their HOA. In addition, a follow-up speed survey is recommended to be performed in six months. Should the speeding issue remain, the next incremental action will be evaluated. Currently, there are 25 mph pavement

Review of Traffic Conditions on Bridlewood Drive and Devonshire Road

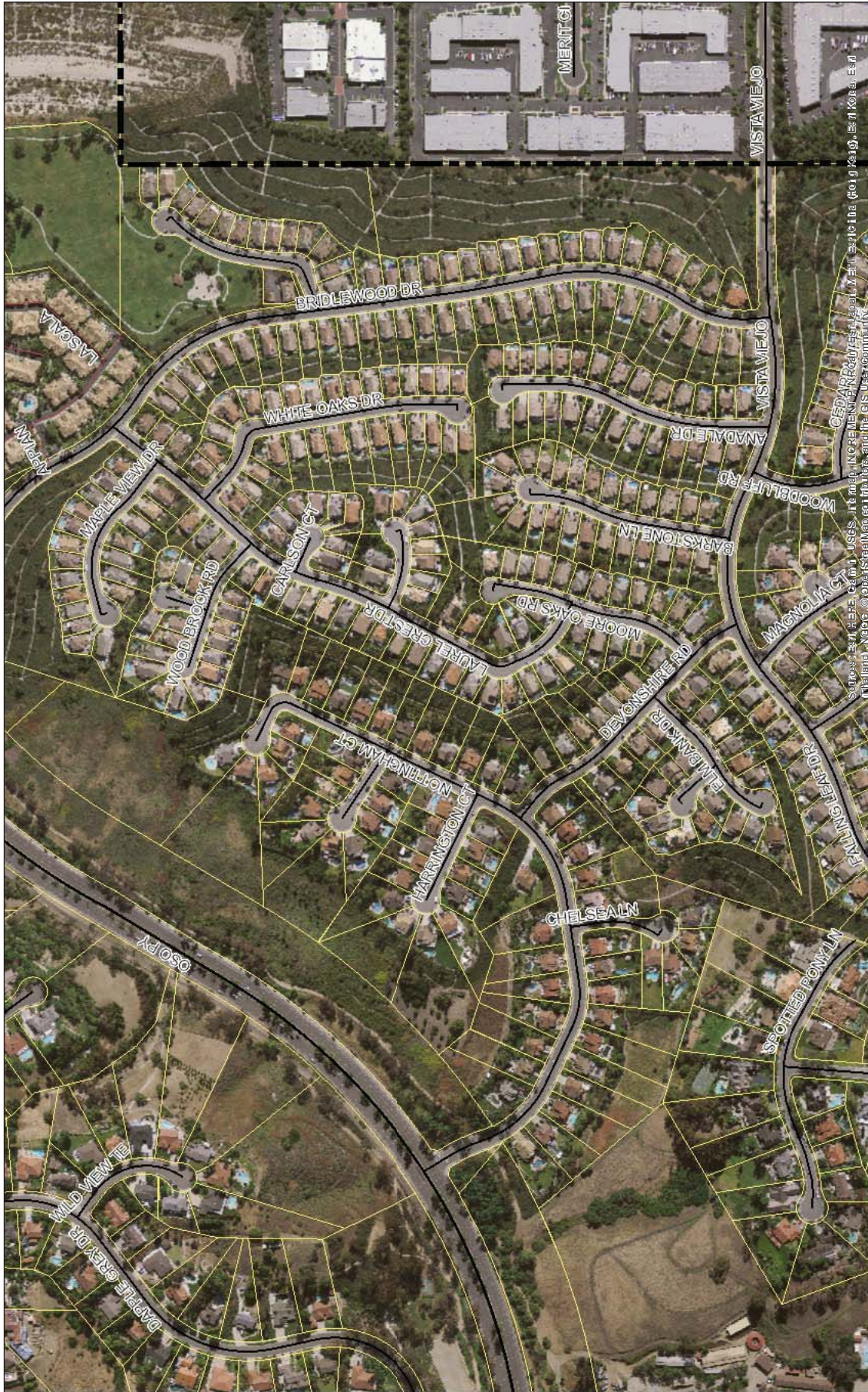
July 18, 2018

Page 3

legends and 25 mph signs posted at multiple locations along Bridlewood Drive between Vista Viejo Road and Laurel Crest Drive. While no changes to existing traffic controls are currently proposed, the number and locations of speed limit signage and pavement markings will also be reviewed following the repeat speed survey.

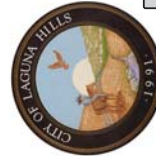
ATTACHMENTS:

- Vicinity Map
- Photograph
- Traffic Evaluation



0 0.02750.055 0.11 mi

VICINITY MAP - BRIDLEWOOD DRIVE & DEVONSHIRE ROAD







Trammell Hartzog, President
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

June 1, 2018

Mr. Kenneth H. Rosenfield, PE
Assistant City Manager/Public Services Director
City of Laguna Hills
24035 El Toro Road
Laguna Hills, CA 92653

**Subject: Traffic Data Evaluation - Letter of Opinion -
Speeding and Collision Concerns along Bridlewood Drive
and Also along Devonshire Road**

Dear Mr. Rosenfield,

Pursuant to your request, Hartzog & Crabill, Inc. (HCI) has prepared this traffic engineering evaluation regarding residential concerns of speeding and collisions along the following two (2) street segments:

- 1) Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive
- 2) Devonshire Road, between Falling Leaf Drive and Nottingham Court

BACKGROUND

Bridlewood Drive

Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive, is a 40-foot wide, 2-lane, north-south residential collector roadway. At the project limits, there is a 1-way stop at Vista Viejo Road and a 3-way stop at Laurel Crest Drive. There is no centerline striping along the entire segment, with exception of a short length of double-yellow centerline at the project limits.

There are posted 25 MPH speed limit signs along Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive. There are also '25' pavement markings adjacent to the sign postings. On-street parking is allowed along both sides of Bridlewood Drive.

Devonshire Road

Devonshire Road, between Falling Leaf Drive and Nottingham Court, is a 40-foot wide, 2-lane, north-south residential collector roadway. At the project limits, both intersections have 1-way stop controls. There is no centerline striping along the entire segment, with exception of a short length of double-yellow centerline at the project limits.

There are posted 25 MPH speed limit signs along Devonshire Road between Falling Leaf Drive and Nottingham Court. There are also '25' pavement markings adjacent to the sign postings. On-street parking is allowed along both sides of Devonshire Road.

Mr. Kenneth H. Rosenfield, PE
 June 1, 2018
 Page 2 of 5

TRAVEL SPEED DATA

To determine travel speeds on Bridlewood Drive and on Devonshire Road, a spot speed radar survey was conducted along each of these residential collector roadways on Wednesday, May 16, 2018, and Thursday, May 17, 2018, respectively. Tables 1 & 2 below summarize the radar speed data.

TABLE 1
SPEED SURVEY SUMMARY
BRIDLEWOOD DRIVE, FROM VISTA VIEJO ROAD TO LAUREL CREST DRIVE

Speed-Count Summary	From Vista Viejo Road to Laurel Crest Drive
85 th Percentile Speed	37.1 MPH
Median Speed	29.5 MPH
15th Percentile Speed	25.0 MPH
10 MPH Pace Speed	25-34 MPH
Average Daily Traffic (ADT)	722 vehicles

As shown above, the 85th percentile speed on Bridlewood Drive was recorded at 37.1 MPH. This data shows that higher than typical travel speeds are occurring above the posted 25 MPH speed limit.

TABLE 2
SPEED SURVEY SUMMARY
DEVONSHIRE ROAD, FROM FALLING LEAF DRIVE TO NOTTINGHAM COURT

Speed-Count Summary	From Falling Leaf Drive to Nottingham Court
85 th Percentile Speed	32.9 MPH
Median Speed	27.9 MPH
15th Percentile Speed	25.0 MPH
10 MPH Pace Speed	25-34 MPH
Average Daily Traffic (ADT)	590 vehicles

As shown above, the 85th percentile speed on Devonshire Road was recorded at 32.9 MPH. This data shows that typical travel speeds are occurring for a posted 25 MPH speed limit street. All radar survey data is attached to this letter.

Mr. Kenneth H. Rosenfield, PE
 June 1, 2018
 Page 3 of 5

TRAFFIC VOLUME DATA

Bridlewood Drive

Average Daily Traffic (ADT) counts were collected for the segment of Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive, on Wednesday, May 2, 2018. The ADT, or 24-hour two-way traffic volume, along this segment resulted in 722 vehicles.

A two-lane collector street generally has a Level-of-Service (LOS) 'D' capacity of 11,300 vehicles per day. Consequently, the existing traffic volume is well under the roadway capacity.

Devonshire Road

Average Daily Traffic (ADT) counts were collected for the segment of Devonshire Road, between Falling Leaf Drive and Nottingham Court, on Wednesday, May 2, 2018. The ADT, or 24-hour two-way traffic volume, along this segment resulted in 590 vehicles.

As mentioned, a two-lane collector street generally has a Level-of-Service (LOS) 'D' capacity of 11,300 vehicles per day. Consequently, the existing traffic volume is well under the roadway capacity. All traffic volume data is included in the appendix.

COLLISION DATA

Bridlewood Drive

HCI obtained collision data for the past five (5) years, between January 1, 2013 – February 28, 2018, from the Statewide Integrated Traffic Records System website (*i-SWITRS*) database to determine the number of collisions occurring on this segment of Bridlewood Drive. Table 3 below presents the summary collision data.

TABLE 3
TRAFFIC COLLISION DATA SUMMARY
BRIDLEWOOD DRIVE, FROM VISTA VIEJO ROAD TO LAUREL CREST DRIVE

YEAR	NUMBER OF COLLISIONS	FATAL	INJURY	PROPERTY DAMAGE ONLY
2013	1	0	1	0
2014	0	0	0	0
2015	0	0	0	0
2016	0	0	0	0
2017	1	0	0	1
2018 *	1	0	0	1

* Available SWITRS data was only up to February 2018 at the time of report preparation.

Mr. Kenneth H. Rosenfield, PE

June 1, 2018

Page 4 of 5

COLLISION DATA (continued)

As shown above, there were a total of three (3) collisions reported along this segment within the last (5) years. The collisions were recorded as Rear End and Head-On types, and categorized as Driving or Bicycling Under Influence and Automobile ROW. As such, there were no collisions determined as ‘speed-related’. Consequently, there are no other recommendations regarding collisions at this time.

It is noted, a resident provided the City with photographic evidence of a two vehicle traffic collision having occurred on Bridlewood Drive on April 5, 2018. The Sheriff’s Department reported that no police report was written as the parties described no injuries and stated they would settle the matter on their own. Accordingly, we have no details on the cause of this traffic collision.

Devonshire Road

HCI also obtained collision data for the past five (5) years, between January 1, 2013 – February 28, 2018, from the Statewide Integrated Traffic Records System website (*i-SWITRS*) database to determine the number of collisions occurring on the subject segment of Devonshire Road. Table 4 below presents the summary collision data.

**TABLE 4
TRAFFIC COLLISION DATA SUMMARY
DEVONSHIRE ROAD, FROM FALLING LEAF DRIVE TO NOTTINGHAM COURT**

YEAR	NUMBER OF COLLISIONS	FATAL	INJURY	PROPERTY DAMAGE ONLY
2013	0	0	0	0
2014	0	0	0	0
2015	0	0	0	0
2016	0	0	0	0
2017	1	0	1	0
2018 *	0	0	0	0

* Available SWITRS data was only up to February 2018 at the time of report preparation.

As shown above, there was only one (1) collision reported along this segment within the last (5) years. This collision was recorded as a Rear End type, and categorized as Improper Turning. As such, there were no collisions determined as ‘speed-related’. Consequently, there are no other recommendations regarding collisions at this time. The comprehensive 5-year segment collision history reports are attached to this letter.

Mr. Kenneth H. Rosenfield, PE
June 1, 2018
Page 5 of 5

RECOMMENDATIONS

As speeding was verified on Bridlewood Drive, it is recommended that an incremental approach be taken to address the higher travel speeds. Initial steps include:

- increased law enforcement.
- deployment of portable radar speed-feedback trailers.
- neighborhood watch committee meeting to help make all residents aware of speeding.

It has been our pleasure to prepare this letter of opinion regarding speeds, traffic volumes, and collisions on Bridlewood Drive, and also on Devonshire Road. 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

Attachments: Radar Speed Data (Qty. 2)
 ADT Volume Data (Qty. 2)
 Collision History (Qty. 2)

Speed Data

RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

BRIDLEWOOD DRIVE
LAUREL CREST DR TO VISTA VIEJO

DATE: 5/16/2018

SURVEY BY:

C. BUENDIA

TIME: 9:00 AM - 10:00 AM

CHECKED BY:

JERRY STOCK

SPEED	CUMMULATIVE PERCENT					
	20	40	60	80	100	
60					X	100.0%
59					X	100.0%
58					X	100.0%
57					X	100.0%
56					X	100.0%
55					X	100.0%
54					X	100.0%
53					X	100.0%
52					X	100.0%
51					X	100.0%
50					X	100.0%
49					X	100.0%
48					X	100.0%
47					X	100.0%
46					X	100.0%
45					X	100.0%
44					X	100.0%
43					X	100.0%
42					X	98.1%
41					X	98.1%
40					X	96.2%
39					X	94.3%
38					X	92.5%
37					X	86.8%
36				X		83.0%
35				X		77.4%
34				X		75.5%
33				X		67.9%
32				X		64.2%
31			X			56.6%
30			X			49.1%
29			X			41.5%
28		X				34.0%
27		X				28.3%
26	X					18.9%
25	X					17.0%
24	X					5.7%
23	X					3.8%
22	X					3.8%
21	X					1.9%
20	X					1.9%
19	X					0.0%
18	X					0.0%
17	X					0.0%
16	X					0.0%
15	X					0.0%

---85PCT

---MEAN

---15PCT

UPPER LIMIT 10 MPH PACE: 34 MPH
 LOWER LIMIT 10 MPH PACE: 25 MPH
 PERCENT OVER PACE: 24.5 %
 PERCENT IN PACE: 69.8 %
 PERCENT UNDER PACE: 5.7 %

85th PERCENTILE SPEED: 36.5 MPH
 MEDIAN SPEED: 30.1 MPH
 15th PERCENTILE SPEED: 24.8 MPH

wood Spot Spd 2018-01

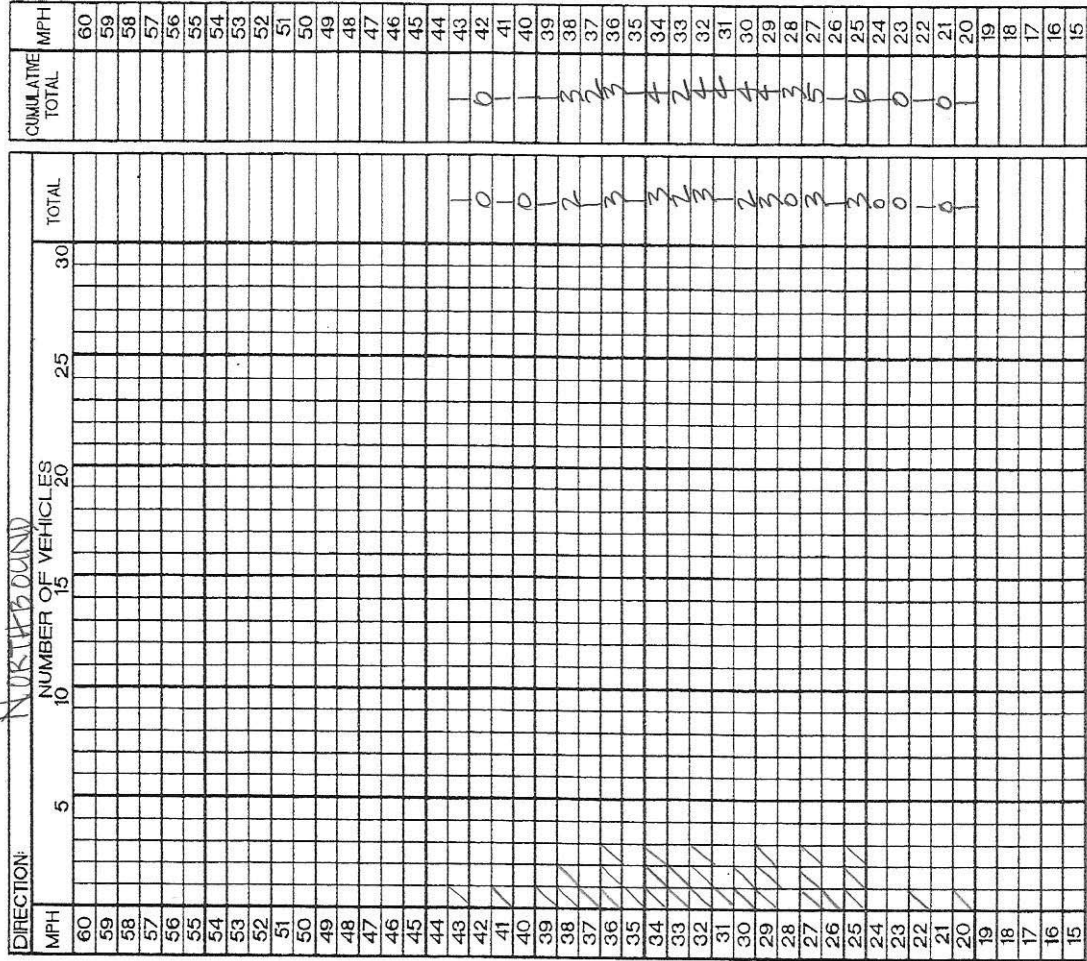
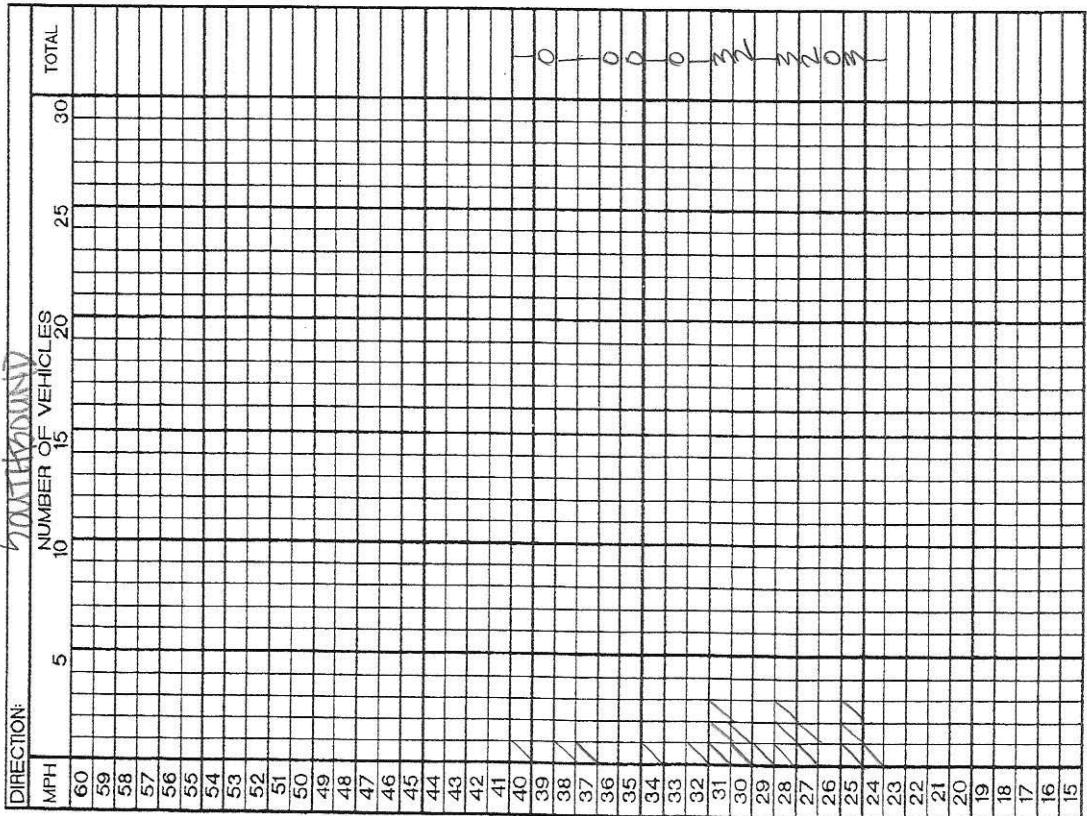
Attachment: Traffic Evaluation (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire Road)

Radar Speed Survey Field Sheet

HARTZOG AND CRABILL I
 Consulting Traffic Engineers
 10331 Santa Rita Blvd., Suite 102, San Jose, CA 95128
 (408) 251-5422

WEATHER: SUNNY DATE: 5-16-18
 ROAD CONDITION: DRY START TIME: 9:00 AM
 OBSERVER: CATHY BUENDIA END TIME: 10:00 AM VLM

AGENCY: CITY OF LAGUNA HILLS
 STREET: BRIDLEWOOD
 LOCATION: LAUREL CREST DR TO VISTA VIEJO



RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

BRIDLEWOOD DRIVE

LAUREL CREST DR TO VISTA VIEJO

DATE: 5/16/2018

SURVEY BY:

C. BUENDIA

TIME: 10:00 AM - 11:00 AM

CHECKED BY:

JERRY STOCK

SPEED	CUMMULATIVE PERCENT					
	20	40	60	80	100	
60					X	100.0%
59					X	100.0%
58					X	100.0%
57					X	100.0%
56					X	100.0%
55					X	100.0%
54					X	100.0%
53					X	100.0%
52					X	100.0%
51					X	100.0%
50					X	98.4%
49					X	98.4%
48					X	98.4%
47					X	98.4%
46					X	98.4%
45					X	98.4%
44					X	98.4%
43					X	98.4%
42					X	98.4%
41					X	96.7%
40					X	95.1%
39					X	93.4%
38					X	91.8%
37				X		82.0%
36				X		78.7%
35				X		78.7%
34				X		75.4%
33				X		67.2%
32				X		63.9%
31				X		60.7%
30				X		57.4%
29				X		50.8%
28				X		45.9%
27				X		34.4%
26				X		18.0%
25				X		13.1%
24				X		8.2%
23				X		6.6%
22				X		4.9%
21				X		4.9%
20				X		3.3%
19				X		1.6%
18				X		0.0%
17				X		0.0%
16				X		0.0%
15				X		0.0%

--85PCT

---MEAN

---15PCT

UPPER LIMIT 10 MPH PACE: 34 MPH
 LOWER LIMIT 10 MPH PACE: 25 MPH
 PERCENT OVER PACE: 24.6 %
 PERCENT IN PACE: 67.2 %
 PERCENT UNDER PACE: 8.2 %

85th PERCENTILE SPEED: 37.3 MPH
 MEDIAN SPEED: 28.8 MPH
 15th PERCENTILE SPEED: 25.4 MPH

wood Spot Spd 2018-02

Attachment: Traffic Evaluation (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire Road)

RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

BRIDLEWOOD DRIVE
LAUREL CREST DR TO VISTA VIEJO
DATE: 5/16/2018
SURVEY BY:
C. BUENDIA
TIME: 9:00 AM - 11:00 AM
CHECKED BY:
JERRY STOCK

SPEED	CUMMULATIVE PERCENT					
	20	40	60	80	100	
60					X	100.0%
59					X	100.0%
58					X	100.0%
57					X	100.0%
56					X	100.0%
55					X	100.0%
54					X	100.0%
53					X	100.0%
52					X	100.0%
51					X	100.0%
50					X	99.1%
49					X	99.1%
48					X	99.1%
47					X	99.1%
46					X	99.1%
45					X	99.1%
44					X	99.1%
43					X	99.1%
42					X	98.2%
41					X	97.4%
40					X	95.6%
39					X	93.9%
38					X	92.1%
37				X		84.2%
36				X		80.7%
35				X		78.1%
34				X		75.4% }PACE
33			X			67.5% }PACE
32			X			64.0% }PACE
31			X			58.8% }PACE
30			X			53.5% }PACE
29			X			46.5% }PACE ---MEAN
28			X			40.4% }PACE
27		X				31.6% }PACE
26	X					18.4% }PACE
25	X					14.9% }PACE ---15PCT
24	X					7.0%
23	X					5.3%
22	X					4.4%
21	X					3.5%
20	X					2.6%
19	X					0.9%
18	X					0.0%
17	X					0.0%
16	X					0.0%
15	X					0.0%

UPPER LIMIT 10 MPH PACE: 34 MPH
 LOWER LIMIT 10 MPH PACE: 25 MPH
 PERCENT OVER PACE: 24.6 %
 PERCENT IN PACE: 68.4 %
 PERCENT UNDER PACE: 7.0 %

85th PERCENTILE SPEED: 37.1 MPH
 MEDIAN SPEED: 29.5 MPH
 15th PERCENTILE SPEED: 25.0 MPH

od Spot Spd 2018-CUM

Attachment: Traffic Evaluation (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire Road)

RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

DEVONSHIRE ROAD
FALLING LEAF DR TO NOTTINGHAM CT

DATE: 5/17/2018

SURVEY BY:

C. BUENDIA

TIME: 9:00 AM - 10:00 AM

CHECKED BY:

JERRY STOCK

SPEED	CUMMULATIVE PERCENT					
	20	40	60	80	100	
60					X	100.0%
59					X	100.0%
58					X	100.0%
57					X	100.0%
56					X	100.0%
55					X	100.0%
54					X	100.0%
53					X	100.0%
52					X	100.0%
51					X	100.0%
50					X	100.0%
49					X	100.0%
48					X	100.0%
47					X	100.0%
46					X	100.0%
45					X	100.0%
44					X	100.0%
43					X	100.0%
42					X	100.0%
41					X	100.0%
40					X	100.0%
39					X	100.0%
38					X	100.0%
37					X	96.9%
36					X	96.9%
35					X	96.9%
34					X	93.8% }PACE
33				X	X	78.1% }PACE -- -85PCT
32				X		78.1% }PACE
31				X		75.0% }PACE
30				X		71.9% }PACE
29			X			62.5% }PACE
28			X			50.0% }PACE ---MEAN
27			X			46.9% }PACE
26		X				28.1% }PACE
25		X				21.9% }PACE
24	X					9.4% -- -15PCT
23	X					9.4%
22	X					3.1%
21	X					3.1%
20	X					0.0%
19	X					0.0%
18	X					0.0%
17	X					0.0%
16	X					0.0%
15	X					0.0%

UPPER LIMIT 10 MPH PACE: 34 MPH
 LOWER LIMIT 10 MPH PACE: 25 MPH
 PERCENT OVER PACE: 6.3 %
 PERCENT IN PACE: 84.4 %
 PERCENT UNDER PACE: 9.4 %

85th PERCENTILE SPEED: 33.4 MPH
 MEDIAN SPEED: 28.0 MPH
 15th PERCENTILE SPEED: 24.5 MPH

Attachment: Traffic Evaluation (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire Road)

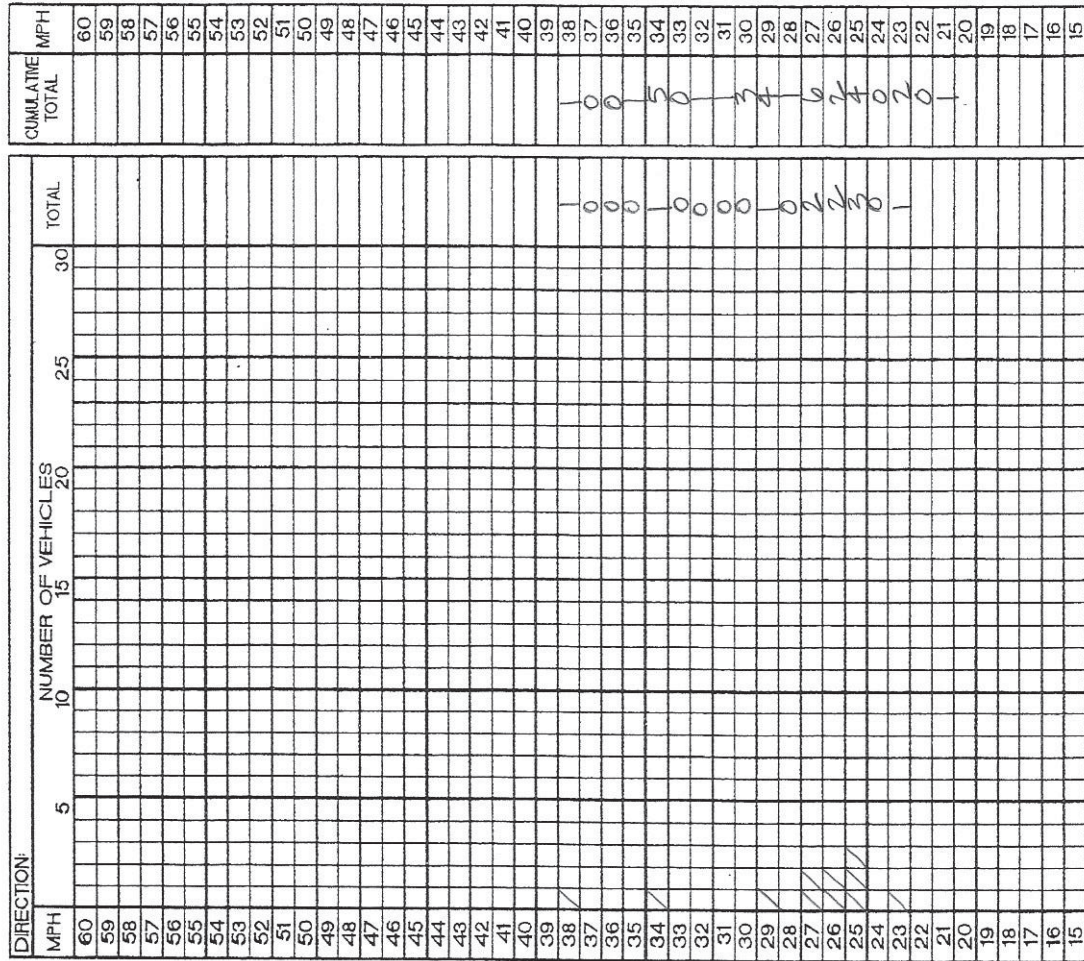
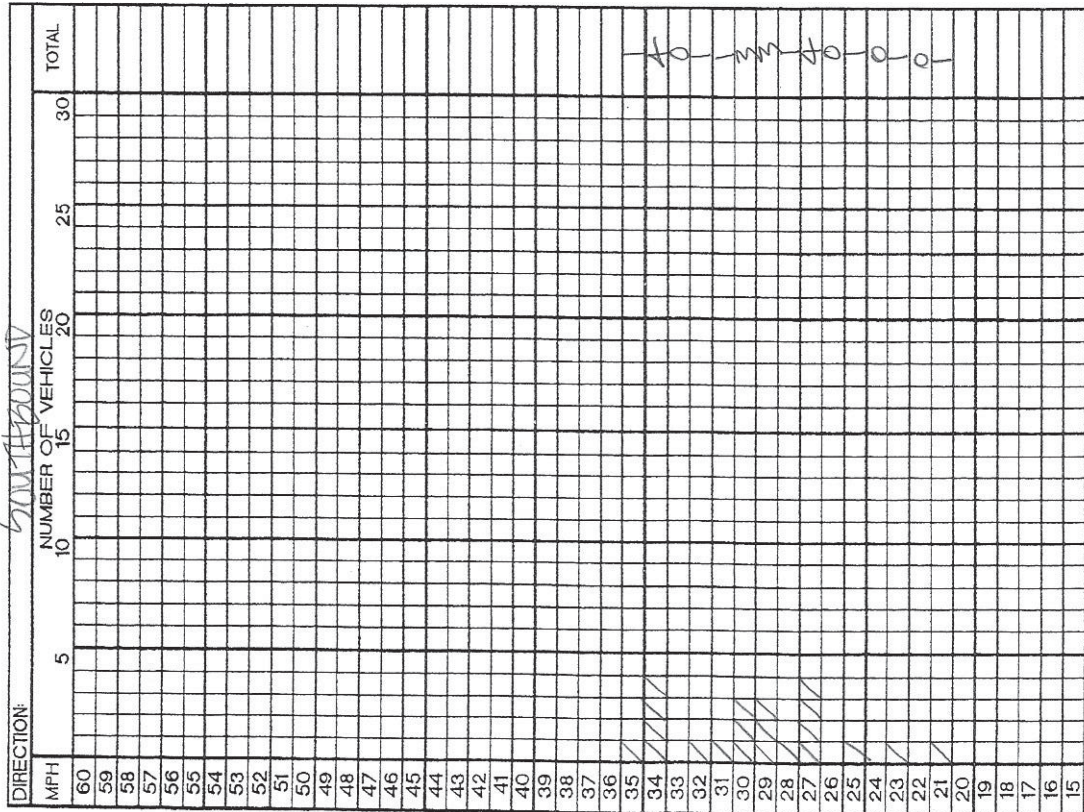
Devonshire 2018-01

Radar Speed Survey Field Sheet

HARTZOG AND CRABILL II
Countywide Traffic Report
11241 Hwy. Rd., Suite 101, Dallas, TX 75242
(214) 731-4462

AGENCY: CITY OF LAGUNA HILLS
STREET: DEVONSHIRE ROAD
LOCATION: FALLING LEAF DR. TO NOTTINGHAM CT

WEATHER: sunny DATE: 05-17-18
ROAD CONDITION: dry START TIME: 9:00 AM
OBSERVER: CATHY BUENDIA END TIME: 10:00 AM



1 0 0 0 1 0 0 0 0 0 2 2 2 0 1

1 0 0 5 0 2 4 6 2 4 0 2 0 1

RADAR SPEED DISTRIBUTION SHEET

HCI**CITY OF LAGUNA HILLS**DEVONSHIRE ROADFALLING LEAF DR TO NOTTINGHAM CT

DATE: 5/17/2018

SURVEY BY:

C. BUENDIA

TIME: 10:00 AM - 11:00 AM

CHECKED BY:

JERRY STOCK

SPEED	CUMMULATIVE PERCENT					
	20	40	60	80	100	
60					X	100.0%
59					X	100.0%
58					X	100.0%
57					X	100.0%
56					X	100.0%
55					X	100.0%
54					X	100.0%
53					X	100.0%
52					X	100.0%
51					X	100.0%
50					X	100.0%
49					X	100.0%
48					X	100.0%
47					X	100.0%
46					X	100.0%
45					X	100.0%
44					X	100.0%
43					X	100.0%
42					X	100.0%
41					X	100.0%
40					X	100.0%
39					X	100.0%
38					X	100.0%
37					X	100.0%
36					X	95.7%
35					X	95.7%
34					X	95.7% }PACE
33					X	95.7% }PACE
32					X	95.7% }PACE
31					X	87.0% }PACE
30					X	87.0% }PACE
29					X	78.3% }PACE -- 85PCT
28					X	60.9% }PACE
27					X	52.2% }PACE
26					X	39.1% }PACE ---MEAN
25	X				X	21.7% }PACE
24	X				X	4.3% }PACE ---15PCT
23	X				X	0.0%
22	X				X	0.0%
21	X				X	0.0%
20	X				X	0.0%
19	X				X	0.0%
18	X				X	0.0%
17	X				X	0.0%
16	X				X	0.0%
15	X				X	0.0%

UPPER LIMIT 10 MPH PACE: 34 MPH

LOWER LIMIT 10 MPH PACE: 25 MPH

PERCENT OVER PACE: 4.3 %

PERCENT IN PACE: 95.7 %

PERCENT UNDER PACE: 0.0 %

85th PERCENTILE SPEED: 30.8 MPH

MEDIAN SPEED: 27.8 MPH

15th PERCENTILE SPEED: 25.6 MPH

Devonshire 2018-02

Radar Speed Survey Field Sheet

HARTZOG AND CRABILL
Consulting Traffic Engineers
1532 West 1st St., Suite 102, San Jose, CA 95128
(415) 731-5400

AGENCY: CITY OF LAGUNA HILLS
STREET: DEVONSHIRE ROAD
LOCATION: FALLING LEAF DR TO NOTTINGHAM CT.

WEATHER: SUNNY
ROAD CONDITION: DRY
OBSERVER: CATHY BUENDIA
DATE: 5-17-18
START TIME: 10:00 AM
END TIME: 11:00 AM

DIRECTION:	NUMBER OF VEHICLES				TOTAL
	5	10	15	20	
MPH					
60					
59					
58					
57					
56					
55					
54					
53					
52					
51					
50					
49					
48					
47					
46					
45					
44					
43					
42					
41					
40					
39					
38					
37					
36					
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22					
21					
20					
19					
18					
17					
16					
15					

AVERAGE SPEED: _____ PACE SPEED: _____
CRITICAL SPEED: _____
CUMULATIVE (BOTH DIRECTIONS) _____

DIRECTION:	NUMBER OF VEHICLES				TOTAL
	5	10	15	20	
MPH					
60					
59					
58					
57					
56					
55					
54					
53					
52					
51					
50					
49					
48					
47					
46					
45					
44					
43					
42					
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22					
21					
20					
19					
18					
17					
16					
15					

AVERAGE SPEED: _____ PACE SPEED: _____
CRITICAL SPEED: _____

CUMULATIVE TOTAL	MPH
	60
	59
	58
	57
	56
	55
	54
	53
	52
	51
	50
	49
	48
	47
	46
	45
	44
	43
	42
	41
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	18
	17
	16
	15

0209646425-000

RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

DEVONSHIRE ROAD
FALLING LEAF DR TO NOTTINGHAM CT
DATE: 5/17/2018
SURVEY BY:
C. BUENDIA
TIME: 9:00 AM - 11:00 AM
CHECKED BY:
JERRY STOCK

SPEED	CUMMULATIVE PERCENT					
	20	40	60	80	100	
60					X	100.0%
59					X	100.0%
58					X	100.0%
57					X	100.0%
56					X	100.0%
55					X	100.0%
54					X	100.0%
53					X	100.0%
52					X	100.0%
51					X	100.0%
50					X	100.0%
49					X	100.0%
48					X	100.0%
47					X	100.0%
46					X	100.0%
45					X	100.0%
44					X	100.0%
43					X	100.0%
42					X	100.0%
41					X	100.0%
40					X	100.0%
39					X	100.0%
38					X	100.0%
37					X	100.0%
36					X	96.4%
35					X	96.4%
34					X	94.5% }PACE
33				X		85.5% }PACE
32				X		81.8% }PACE ---85PCT
31				X		80.0% }PACE
30				X		74.5% }PACE
29			X			61.8% }PACE
28			X			50.9% }PACE
27		X				43.6% }PACE ---MEAN
26	X					25.5% }PACE
25	X					14.5% }PACE ---15PCT
24	X					5.5%
23	X					5.5%
22	X					1.8%
21	X					1.8%
20	X					0.0%
19	X					0.0%
18	X					0.0%
17	X					0.0%
16	X					0.0%
15	X					0.0%

UPPER LIMIT 10 MPH PACE: 34 MPH
 LOWER LIMIT 10 MPH PACE: 25 MPH
 PERCENT OVER PACE: 5.5 %
 PERCENT IN PACE: 89.1 %
 PERCENT UNDER PACE: 5.5 %

85th PERCENTILE SPEED: 32.9 MPH
 MEDIAN SPEED: 27.9 MPH
 15th PERCENTILE SPEED: 25.0 MPH

Devonshire 2018 CUM

Attachment: Traffic Evaluation (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire Road)

ADT Volume Data

Prepared by NDS/ATD

VOLUME

Bridlewood Dr Bet. Vista Viejo Rd & Laurel Crest Dr

Day: Wednesday

Date: 5/2/2018

City: Laguna Hills

Project #: CA18_1093_001

DAILY TOTALS					NB	SB	EB					WB	Total
					454	268						0	0
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL		
00:00	0	0			0	12:00	5	10			15		
00:15	1	1			2	12:15	6	9			15		
00:30	0	0			0	12:30	7	3			10		
00:45	0	1	0	1	0	12:45	7	25	4	26	11		
01:00	0	0			0	13:00	5	2			7		
01:15	0	0			0	13:15	6	4			10		
01:30	0	0			0	13:30	8	4			12		
01:45	0	0			0	13:45	2	21	9	19	11		
02:00	0	0			0	14:00	8	7			15		
02:15	0	0			0	14:15	7	4			11		
02:30	0	0			0	14:30	7	5			12		
02:45	0	0			0	14:45	9	31	5	21	14		
03:00	0	0			0	15:00	5	7			12		
03:15	0	0			0	15:15	9	5			14		
03:30	0	0			0	15:30	3	6			9		
03:45	0	0			0	15:45	8	25	4	22	12		
04:00	1	1			2	16:00	12	5			17		
04:15	0	0			0	16:15	10	7			17		
04:30	1	0			1	16:30	6	3			9		
04:45	1	3	0	1	1	16:45	11	39	3	18	14		
05:00	1	1			2	17:00	4	2			6		
05:15	0	0			0	17:15	4	3			7		
05:30	2	0			2	17:30	15	10			25		
05:45	1	4	0	1	1	17:45	9	32	5	20	14		
06:00	2	1			3	18:00	4	2			6		
06:15	1	1			2	18:15	10	8			18		
06:30	5	0			5	18:30	10	4			14		
06:45	2	10	1	3	3	18:45	7	31	6	20	13		
07:00	9	3			12	19:00	12	7			19		
07:15	8	5			13	19:15	3	1			4		
07:30	7	4			11	19:30	4	4			8		
07:45	15	39	4	16	19	19:45	4	23	3	15	7		
08:00	11	7			18	20:00	4	1			5		
08:15	11	4			15	20:15	4	1			5		
08:30	16	5			21	20:30	4	3			7		
08:45	7	45	2	18	9	20:45	3	15	1	6	4		
09:00	9	6			15	21:00	4	1			5		
09:15	11	1			12	21:15	3	2			5		
09:30	8	4			12	21:30	2	4			6		
09:45	4	32	4	15	8	21:45	1	10	0	7	1		
10:00	4	2			6	22:00	0	4			4		
10:15	6	4			10	22:15	0	2			2		
10:30	11	4			15	22:30	2	0			2		
10:45	8	29	5	15	13	22:45	1	3	0	6	1		
11:00	6	8			14	23:00	1	1			2		
11:15	7	4			11	23:15	0	0			0		
11:30	13	2			15	23:30	0	0			0		
11:45	8	34	3	17	11	23:45	1	2	0	1	1		
TOTALS	197	87			284	TOTALS	257	181			438		
SPLIT %	69.4%	30.6%			39.3%	SPLIT %	58.7%	41.3%			60.7		

DAILY TOTALS					NB	SB	EB	WB	Total
					454	268	0	0	722
AM Peak Hour	07:45	11:45		07:45	PM Peak Hour	16:00	12:00		18:15
AM Pk Volume	53	25		73	PM Pk Volume	39	26		64
Pk Hr Factor	0.828	0.625		0.869	Pk Hr Factor	0.813	0.650		0.84
7 - 9 Volume	84	34	0	0	4 - 6 Volume	71	38	0	0
7 - 9 Peak Hour	07:45	07:15		07:45	4 - 6 Peak Hour	16:00	17:00		16:00
7 - 9 Pk Volume	53	20	0	0	4 - 6 Pk Volume	39	20	0	0
Pk Hr Factor	0.828	0.714	0.000	0.000	Pk Hr Factor	0.813	0.500	0.000	0.000

Attachment: Traffic Evaluation (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire Road)

Prepared by NDS/ATD

VOLUME

Devonshire Rd Bet. Falling Leaf Dr & Nottingham Ct

Day: Wednesday

Date: 5/2/2018

City: Laguna Hills

Project #: CA18_1093_002

DAILY TOTALS					NB	SB	EB					WB	Total
					174	416						0	0
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL		
00:00	0	0			0	12:00	2	9			11		
00:15	0	0			0	12:15	2	7			9		
00:30	0	0			0	12:30	3	6			9		
00:45	0	0			0	12:45	4	11	8	30	12	41	
01:00	0	0			0	13:00	2	5			7		
01:15	0	0			0	13:15	5	7			12		
01:30	0	0			0	13:30	3	5			8		
01:45	0	0			0	13:45	5	15	3	20	8	35	
02:00	0	0			0	14:00	6	7			13		
02:15	0	0			0	14:15	4	7			11		
02:30	0	0			0	14:30	5	5			10		
02:45	0	0			0	14:45	2	17	6	25	8	42	
03:00	1	0			1	15:00	3	10			13		
03:15	0	0			0	15:15	6	9			15		
03:30	0	0			0	15:30	7	10			17		
03:45	0	1	0		0	15:45	1	17	7	36	8	53	
04:00	0	0			0	16:00	0	6			6		
04:15	0	0			0	16:15	8	4			12		
04:30	0	0			0	16:30	4	9			13		
04:45	0	1	1		1	16:45	7	19	12	31	19	50	
05:00	0	0			0	17:00	3	11			14		
05:15	1	1			2	17:15	6	14			20		
05:30	0	0			0	17:30	3	12			15		
05:45	0	1	1	2	1	17:45	2	14	14	51	16	65	
06:00	1	1			2	18:00	2	14			16		
06:15	0	0			0	18:15	4	19			23		
06:30	0	5			5	18:30	2	7			9		
06:45	0	1	2	8	2	18:45	3	11	8	48	11	59	
07:00	1	2			3	19:00	3	8			11		
07:15	0	3			3	19:15	2	4			6		
07:30	5	1			6	19:30	4	4			8		
07:45	2	8	5	11	7	19:45	1	10	3	19	4	29	
08:00	2	6			8	20:00	1	6			7		
08:15	2	7			9	20:15	2	3			5		
08:30	6	4			10	20:30	1	1			2		
08:45	2	12	5	22	7	20:45	1	5	3	13	4	18	
09:00	3	10			13	21:00	0	2			2		
09:15	0	7			7	21:15	3	5			8		
09:30	4	4			8	21:30	1	4			5		
09:45	3	10	6	27	9	21:45	1	5	1	12	2	17	
10:00	1	9			10	22:00	0	6			6		
10:15	0	3			3	22:15	1	3			4		
10:30	2	5			7	22:30	0	0			0		
10:45	2	5	6	23	8	22:45	2	3	0	9	2	12	
11:00	2	7			9	23:00	1	1			2		
11:15	1	5			6	23:15	0	3			3		
11:30	3	5			8	23:30	0	0			0		
11:45	2	8	5	22	7	23:45	0	1	2	6	2	7	
TOTALS	46	116			162	TOTALS	128	300			428		
SPLIT %	28.4%	71.6%			27.5%	SPLIT %	29.9%	70.1%			72.5		
DAILY TOTALS					NB	SB	EB					WB	Total
					174	416						0	0

DAILY TOTALS					NB	SB	EB	WB	Total
					174	416	0	0	590
AM Peak Hour	08:15	09:00			08:15	PM Peak Hour	16:15	17:30	17:30
AM Pk Volume	13	27			39	PM Pk Volume	22	59	70
Pk Hr Factor	0.542	0.675			0.750	Pk Hr Factor	0.688	0.776	0.76
7 - 9 Volume	20	33	0	0	53	4 - 6 Volume	33	82	115
7 - 9 Peak Hour	07:45	07:45			07:45	4 - 6 Peak Hour	16:15	17:00	16:4
7 - 9 Pk Volume	12	22	0	0	34	4 - 6 Pk Volume	22	51	68
Pk Hr Factor	0.500	0.786	0.000	0.000	0.850	Pk Hr Factor	0.688	0.911	0.000

Attachment: Traffic Evaluation (1635 : Review of Traffic Conditions on Bridlewood Drive and Devonshire Road)

Collision History

JAN. 1, 2013 - FEB. 28, 2013

CASE ID	COLL. DATE	COLL. TIME	PRIMARY ROAD	SECONDARY ROAD	DIST.	DIR.	INTERS.	WEATH.	COLL. SEVERITY	PRIM. COLL. FACT.	PCF	HIT AND RUN VIOL.	PCF VIOL.	HIT AND RUN VIOL.	TYPE OF COLL.	MOTOR VEHICLE INVOLVED WITH	ROA SURI
											CAT.						
8361526	20170326	10	BRIDLEWOOD DR	VISTA VIEJO RD	488	N	N	A	0	A	1	23152	N	C	E	A	
6174038	20130806	1741	VISTA VIEJO	BRIDLEWOOD LN	0		Y	A	4	A	9	21801	N	A	C	A	

NOTES:

Weather 1	Collision Severity	Primary Collision Factor	PCF Violation Category	Hit and Run	Type of Collision
A - Clear	1 - Fatal	A - (Vehicle) Code Violation	01 - Driving or Bicycling Under Influence	F - Felony	A - Head-On
B - Cloudy	2 - Injury (Severe)	B - Other Improper Driving	02 - Impeding Traffic	M - Misdemeanor	B - Sideswipe
C - Raining	3 - Injury (Other Visible)	C - Other Than Driver	03 - Unsafe Speed	N - Not Hit & Run	C - Rear-End
D - Snowing	4 - Injury (Complaint of Pain)	D - Unknown	04 - Following Too Closely		D - Broadside
E - Fog	0 - PDO (Property Damage Only)	E - Fell Asleep	05 - Wrong Side of Road		E - Hit Object
F - Other		-- Not Stated	06 - Improper Passing		F - Overturned
G - Wind			07 - Unsafe Lane Change		G - Vehicle/Pedestrian
-- Not Stated			08 - Improper Turning		H - Other
			09 - Automobile ROW		-- Not Stated

Motor Vehicle Involved With:

Road Surface	
A - Non-Collision	11 - Pedestrian Violation
B - Pedestrian	12 - Traffic Signals and Signs
C - Other Motor Vehicle	13 - Hazardous Parking
D - Motor Vehicle on Other Roadway	14 - Lights
E - Parked Motor Vehicle	15 - Brakes
F - Train	16 - Other Equipment
G - Bicycle	17 - Other Hazardous Violation
H - Animal	18 - Other Than Driver (or Ped)
I - Fixed Object	19 -
J - Other Object	20 -
-- Not Stated	21 - Unsafe Starting or Backing
	22 - Other Improper Driving
	23 - Pedestrian or "Other" Under the Influence
	24 - Fell Asleep
	00 - Unknown
	-- Not Stated

JAN. 1, 2013 - FEB. 28, 2018																
CASE ID	COLL. DATE	COLL. TIME	PRIMARY ROAD	SECONDARY ROAD	DIST.	DIR.	INTERS.	WEATH.	COLL. SEVERITY	PRIM. COLL. FACT.	PCF VIOL CAT.	HIT AND RUN VIOL.	TYPE OF COLL.	MOTOR VEHICLE INVOLVED WITH	ROA SURR	
83326285	20170220	2256	DEVONSHIRE RD	NORTH ELM BANK DR	175		N	A	4	A	8	22107	N	C	E	A

NOTES:

Weather 1	Collision Severity	Primary Collision Factor	PCF Violation Category	Hit and Run	Type of Collision
A - Clear	1 - Fatal	A - (Vehicle) Code Violation	01 - Driving or Bicycling Under Influence	F - Felony	A - Head-On
B - Cloudy	2 - Injury (Severe)	B - Other Improper Driving	02 - Impeding Traffic	M - Misdemeanor	B - Sideswipe
C - Raining	3 - Injury (Other Visible)	C - Other Than Driver	03 - Unsafe Speed	N - Not Hit & Run	C - Rear-End
D - Snowing	4 - Injury (Complaint of Pain)	D - Unknown	04 - Following Too Closely		D - Broadside
E - Fog	0 - PDO (Property Damage Only)	E - Fell Asleep	05 - Wrong Side of Road		E - Hit Object
F - Other		-- Not Stated	06 - Improper Passing		F - Overturned
G - Wind			07 - Unsafe Lane Change		G - Vehicle/Pedestrian
-- Not Stated			08 - Improper Turning		H - Other
			09 - Automobile ROW		-- Not Stated

Motor Vehicle Involved With:

	Road Surface
A - Non-Collision	
B - Pedestrian	A - Dry
C - Other Motor Vehicle	B - Wet
D - Motor Vehicle on Other Roadway	C - Snowy or Icy
E - Parked Motor Vehicle	D - Slippery
F - Train	- - Not Stated
G - Bicycle	
H - Animal	
- Fixed Object	
J - Other Object	
- - Not Stated	
	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



City of Laguna Hills Traffic Commission Staff Report

DATE: November 20, 2019

TO: TRAFFIC COMMISSIONERS

FROM: Amber M. Shah, P.E.
Associate Civil Engineer

ISSUE: REPEAT SPEED SURVEY ON BRIDLEWOOD DRIVE

RECOMMENDATION: TRAFFIC COMMISSION RECEIVE AND FILE

SUMMARY:

Staff was previously contacted by a resident of Moulton Ranch in April 2018 regarding concerns of vehicular speeding and collisions on Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive. Please see the attached Vicinity Map. Based upon the resident's concerns and in accordance with the Residential Streets Management Policy, staff subsequently initiated a traffic engineering evaluation of Bridlewood Drive between Vista Viejo Road and Laurel Crest Drive. The report presented at the July 18, 2018 meeting of the Traffic Commission concluded the 85th percentile speed measurement of Bridlewood Drive was higher than expected and considered to be unacceptable. Additional traffic speed enforcement and use of the radar trailer were utilized to address this issue. The Traffic Commission requested staff repeat the speed survey of Bridlewood Drive in six months' time.

In accordance with the Traffic Commission's request, a follow-up speed survey was performed in December 2018. Although the prevailing speed of traffic was lower than previous measurements, it was still higher than expected for a residential street. Therefore, staff recommended and subsequently installed additional signs and pavement legends on Bridlewood Drive. Continued concentrated police enforcement was also recommended in addition to a follow-up speed survey in six months' time.

In accordance with the recommendation at the January 16, 2019, meeting of the Traffic Commission, a new speed survey was performed in October 2019. This speed survey determined the prevailing speed of traffic was in the acceptable range in the morning but remained higher than expected in the afternoon time period. The City has already taken incremental steps to address this speeding issue and implemented all non-physical traffic control devices appropriate for this location. Based upon a collision history of two collisions

reported in the past 5 years with none categorized as unsafe speed, staff recommends continued concentrated police enforcement and posting of the radar trailer in this area.

BACKGROUND:

Staff was contacted by a resident of Moulton Ranch in April 2018 regarding concerns of vehicular speeding and traffic collisions on Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive, and on Devonshire Road, between Falling Leaf Drive and Nottingham Court. Please see the attached Vicinity Map. Based upon the resident's concern and in accordance with the Residential Streets Management Policy, staff subsequently initiated a review of the vehicular speeds, traffic volume and traffic collision history on Bridlewood Drive and separately on Devonshire Road. The report presented at the July 18, 2018 meeting of the Traffic Commission concluded the 85th percentile speed measurement of Bridlewood Drive was higher than expected and considered to be unacceptable for a residential character street. Additional traffic speed enforcement and use of the radar trailer were utilized to address this issue. The report concluded the 85th percentile speed on Devonshire Road was within expectations and no further action on that street was needed. The Traffic Commission requested staff repeat the speed survey of Bridlewood Drive in six months' time.

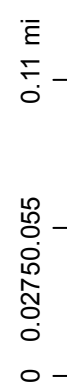
In accordance with the Traffic Commission's request, the Traffic Engineers of Hartzog & Crabill, Inc., (HCI) completed a speed survey of Bridlewood Drive from Vista Viejo Road to Laurel Crest Drive in December 2018. The report presented at the January 16, 2019, meeting of the Traffic Commission concluded the 85th percentile speed on Bridlewood Drive reduced from 37.1 mph, as recorded in the first speed survey in May 2018, to 36.1 mph in December 2018. Based upon the results of the December 2018 speed survey indicating vehicular speed continued to be an issue, staff field reviewed the existing number and locations of speed limit signage and pavement markings. Staff recommended and subsequently had painted two "25" mph pavement legends adjacent to the posted speed limits signs along southbound Bridlewood Drive and "Stop Ahead" pavement markings in advance of the stop sign at Vista Viejo Road. Continued concentrated police enforcement was also recommended in addition to a follow-up speed survey in six months' time.

In accordance with the recommendation at the January 16, 2019, meeting of the Traffic Commission, the Traffic Engineers of Hartzog & Crabill, Inc., (HCI) completed the attached November 7, 2019, speed survey of Bridlewood Drive from Vista Viejo Road to Laurel Crest Drive. This speed survey determined the 85th percentile speed on Bridlewood Drive in the morning was within the typical range of 34 – 36 mph but remained higher than expected at 37.3 mph in the afternoon. The results of this speed survey indicate vehicular speed remains an issue on Bridlewood Drive. The City has taken the incremental steps necessary to address this speeding issue and implemented all non-physical traffic control devices appropriate for this location. Based upon a collision history of two collisions reported in the past 5 years with none categorized as unsafe speed, staff recommends continued concentrated police enforcement of driver behavior is the best and appropriate remedy for Bridlewood Drive. Staff will continue to work with the Sheriff's Department on

enforcement activity in this area and will continue to post the radar trailer in this area to increase driver education as to the appropriate speed on Bridlewood Drive.

ATTACHMENT:

- Vicinity Map
- Hartzog & Crabill, Inc. November 7, 2019, Traffic Data Evaluation – Letter of Opinion – Speeding Data Follow-Up along Bridlewood Drive





Trammell Hartzog, President
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

November 7, 2019

Mr. Kenneth H. Rosenfield, PE
Assistant City Manager/Public Services Director
City of Laguna Hills
24035 El Toro Road
Laguna Hills, CA 92653

**Subject: Traffic Data Evaluation - Letter of Opinion -
Speeding Data Follow-Up along Bridlewood Drive**

Dear Mr. Rosenfield,

Pursuant to your request, Hartzog & Crabill, Inc. (HCI) has prepared this traffic engineering evaluation as a follow-up to our June 1, 2018 and January 9, 2019 evaluations regarding residential concerns of speeding along the street segment of Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive.

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

- 1) Two (2) radar speed surveys on Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive.

BACKGROUND

Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive, is a 40-foot wide, 2-lane, north-south residential collector roadway. At the project limits, there is a 1-way stop at Vista Viejo Road and a 3-way stop at Laurel Crest Drive. There is no centerline striping along the entire segment, with exception of a short length of double-yellow centerline at the project limits.

There are posted 25 MPH speed limit signs along Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive. There are also '25' pavement markings adjacent to the sign postings. On-street parking is allowed along both sides of Bridlewood Drive.

TRAVEL SPEED DATA

To determine current travel speeds on Bridlewood Drive, two spot speed radar surveys were conducted along this residential collector roadway on Thursday, October 24, 2019 (see attached). The tables below summarize the recent radar speed data collected.

SPEED SURVEY SUMMARY BRIDLEWOOD DRIVE, FROM VISTA VIEJO ROAD TO LAUREL CREST DRIVE

<u>9:00-10:00AM</u> Radar Speed Data Summary	Between Vista Viejo Road and Laurel Crest Drive
85 th Percentile Speed	36.3 MPH
Median Speed	29.6 MPH
15th Percentile Speed	24.0 MPH
10 MPH Pace Speed	23 - 32 MPH
Percent in Pace Speed	63.8%

<u>4:00-5:00PM</u> Radar Speed Data Summary	Between Vista Viejo Road and Laurel Crest Drive
85 th Percentile Speed	37.3 MPH
Median Speed	30.8 MPH
15th Percentile Speed	25.7 MPH
10 MPH Pace Speed	29 - 38 MPH
Percent in Pace Speed	63.9%

Source: Hartzog & Crabill, Inc., 2019.

As shown in the two tables above, the highest 85th-percentile speed on Bridlewood Drive was recorded in the afternoon at 37.3 MPH. This data shows that higher than typical travel speeds are occurring above the posted 25 MPH speed limit.

The critical speeds also appear to be consistently high when compared to the highest critical speeds recorded back in June 2018 and January 2019, which were 37.1 MPH and 36.1 MPH, respectively.

COLLISION DATA

HCI obtained the most recent, citywide collision data that was reported during the past five (5+) years from the Statewide Integrated Traffic Records System website (*i*-SWITRS) database.

HCI prepared an updated 5-year collision history report to determine the number of collisions occurring on this particular segment of Bridlewood Drive. The table below presents the summary collision data.

TRAFFIC COLLISION DATA SUMMARY BRIDLEWOOD DRIVE, FROM VISTA VIEJO ROAD TO LAUREL CREST DRIVE

Year	Number of Collisions	Fatal	Injury	Property Damage Only
2014	0	0	0	0
2015	0	0	0	0
2016	0	0	0	0
2017	1	0	0	1
2018	0	0	0	0
2019 *	1	0	0	1
TOTAL	2	0	0	2

* Available SWITRS data was up to June 30, 2019 at the time of report preparation.

As shown above, there were a total of two (2) collisions reported along this segment within the prior (5-1/2) years. These collisions were recorded as Rear End and Hit Object types. The two collisions were also categorized with primary collision factors that include Driving Under the Influence and Unsafe Starting or Backing. None (0) were categorized as Unsafe Speed; therefore, there are no other recommendations in regards to collisions at this time.

RECOMMENDATIONS

As speeding above the 25 MPH speed limit was verified on Bridlewood Drive, it is recommended to continue the incremental approach in order to address and lower the overall travel speeds. These incremental steps include:

- increased law enforcement of this segment.
- frequent deployment of portable radar speed-feedback trailers.
- neighborhood watch committee meeting to help make all residents aware of speeding.
- additional speed limit signage and pavement markings.

Mr. Kenneth H. Rosenfield, PE

November 7, 2019

Page 4 of 4

It has been our pleasure to prepare this follow-up letter of opinion regarding speeding concerns along Bridlewood Drive. 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

Attachment: Radar Speed Data

Speed Data

SUMMARY OF SPOT SPEED SURVEYS OCTOBER 2019

STREET LOCATION	EXISTING SPEED LIMIT	RECOMMENDED SPEED LIMIT	85 TH PERCENTILE SPEED	AVERAGE SPEED	10 MPH PACE RANGE	PERCENT OF VEHICLES IN PACE	DAY / DATE / TIME PERIOD
<u>BRIDLEWOOD DRIVE</u>							
LAUREL CREST TO VISTA VIEJO	25	-	36.3	29.6	23-32	63.8	THURS / 10-24-2019 / AM
	25	-	34.9	30.2	26-35	74.5	THURS / 10-24-2019 / AM
	25	-	36.2	29.9	26-35	67.9	THURS / 10-24-2019 / PM
	25	-	37.3	30.8	29-38	63.9	THURS / 10-24-2019 / PM
<u>SANTA VITTORIA DRIVE</u>							
CAMINITO JALISCO TO CAMINTO COSTA	25	-	34.9	31.2	27-36	78.4	TUES / 10-29-2019 / AM
	25	-	34.9	30.5	27-36	82.9	TUES / 10-29-2019 / AM
	25	-	38.1	32.9	28-37	69.3	TUES / 10-29-2019 / PM
	25	-	38.0	33.7	30-39	77.0	TUES / 10-29-2019 / PM

HARTOG AND CRABILL INC.
 Consulting Traffic Engineers
 11925 Lake Blvd., Suite 127, Irvine, CA 92618
 (714) 441-9100

Radar Speed Survey Field Sheet

WEATHER: SUNNY DATE: 10/24/19
 ROAD CONDITION: DRY START TIME: 9:00 AM
 OBSERVER: CATHY BUENDIA END TIME: 10:00 AM var

AGENCY: CITY OF LAGUNA HILLS
 STREET: BRIDLEWOOD
 LOCATION: VISTA VIEO TO LAUREL CREST

DIRECTION: <u>SOUTHBOUND</u>		NUMBER OF VEHICLES				TOTAL	MPH	CUMULATIVE TOTAL
5	10	15	20	25	30			
							60	
							59	
							58	
							57	
							56	
							55	
							54	
							53	
							52	
							51	
							50	
							49	
							48	
							47	
							46	
							45	
							44	
							43	
							42	
							41	
							40	
							39	
							38	
							37	
							36	
							35	
							34	
							33	
							32	
							31	
							30	
							29	
							28	
							27	
							26	
							25	
							24	
							23	
							22	
							21	
							20	
							19	
							18	
							17	
							16	
							15	

DIRECTION: <u>NORTHBOUND</u>		NUMBER OF VEHICLES				TOTAL	MPH	CUMULATIVE TOTAL
5	10	15	20	25	30			
							60	
							59	
							58	
							57	
							56	
							55	
							54	
							53	
							52	
							51	
							50	
							49	
							48	
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							45	
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							36	
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							32	
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							26	
							25	
							24	
							23	
							22	
							21	
							20	
							19	
							18	
							17	
							16	
							15	

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____
 CUMULATIVE (BOTH DIRECTIONS) _____

RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

BRIDLEWOOD DRIVE

DATE: 10/24/2019

TIME: 9:00 AM - 10:00 AM

LAUREL CREST DR TO VISTA VIEJO

SURVEY BY:

C. BUENDIA

CHECKED BY: _____

JERRY STOCK

SPEED	CUMMULATIVE PERCENT					
	20	40	60	80	100	
60						X 100.0%
59						X 100.0%
58						X 100.0%
57						X 100.0%
56						X 100.0%
55						X 100.0%
54						X 100.0%
53						X 100.0%
52						X 100.0%
51						X 100.0%
50						X 100.0%
49						X 100.0%
48						X 100.0%
47						X 100.0%
46						X 100.0%
45						X 100.0%
44						X 100.0%
43						X 100.0%
42						X 100.0%
41						X 95.7%
40						X 93.6%
39						X 91.5%
38						X 91.5%
37						X 89.4%
36						X 83.0%
35						X 78.7%
34						X 74.5%
33						X 72.3%
32						X 66.0%
31						X 61.7%
30						X 53.2%
29						X 44.7%
28						X 38.3%
27						X 34.0%
26						X 25.5%
25						X 21.3%
24						X 14.9%
23						X 12.8%
22						X 2.1%
21						X 0.0%
20						X 0.0%
19						X 0.0%
18						X 0.0%
17						X 0.0%
16						X 0.0%
15						X 0.0%

UPPER LIMIT 10 MPH PACE:	32	MPH
LOWER LIMIT 10 MPH PACE:	23	MPH
PERCENT OVER PACE:	34.0	%
PERCENT IN PACE:	63.8	%
PERCENT UNDER PACE:	2.1	%

85th PERCENTILE SPEED:	36.3	MPH
MEDIAN SPEED:	29.6	MPH
15th PERCENTILE SPEED:	24.0	MPH

Radar Speed Survey Field Sheet

HARTOG AND CRABILL INC.
 Consulting Traffic Engineers
 11951 Santa Monica Blvd., Suite 102, Torrance, CA 90503
 (310) 551-9333

AGENCY: CITY OF LAGUNA HILLS DATE: 10/24/19
 STREET: BRIDLEWOOD ROAD CONDITION: DRY START TIME: 10:00 AM
 LOCATION: VISTA VIEJO TO LAUREL CREST OBSERVER: CATHY BUENDIA END TIME: 11:00 AM VAR

DIRECTION: SOUTHBOUND

MPH	5	10	15	20	25	30	TOTAL
60							
59							
58							
57							
56							
55							
54							
53							
52							
51							
50							
49							
48							
47							
46							
45							
44							
43							
42							
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22							
21							
20							
19							
18							
17							
16							
15							

DIRECTION: NORTHBOUND

MPH	5	10	15	20	25	30	TOTAL
60							
59							
58							
57							
56							
55							
54							
53							
52							
51							
50							
49							
48							
47							
46							
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19							
18							
17							
16							
15							

AVERAGE SPEED: _____ PACE SPEED: _____
 CRITICAL SPEED: _____
 CUMULATIVE (BOTH DIRECTIONS) _____

AVERAGE SPEED: _____ PACE SPEED: _____
 CRITICAL SPEED: _____

RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

BRIDLEWOOD DRIVE

LAUREL CREST DR TO VISTA VIEJO

DATE: 10/24/2019

SURVEY BY:

C. BUENDIA

TIME: 10:00 AM - 11:00 AM

CHECKED BY:

JERRY STOCK

SPEED	CUMMULATIVE PERCENT					
	20	40	60	80	100	
60					X	100.0%
59					X	100.0%
58					X	100.0%
57					X	100.0%
56					X	100.0%
55					X	100.0%
54					X	100.0%
53					X	100.0%
52					X	100.0%
51					X	100.0%
50					X	100.0%
49					X	100.0%
48					X	100.0%
47					X	100.0%
46					X	100.0%
45					X	98.2%
44					X	98.2%
43					X	98.2%
42					X	98.2%
41					X	96.4%
40					X	94.5%
39					X	94.5%
38					X	92.7%
37					X	90.9%
36					X	85.5%
35					X	85.5% }PACE
34					X	80.0% }PACE ---85PCT
33					X	76.4% }PACE
32					X	67.3% }PACE
31					X	63.6% }PACE
30					X	47.3% }PACE ----MEAN
29					X	34.5% }PACE
28					X	30.9% }PACE
27					X	23.6% }PACE
26					X	18.2% }PACE
25					X	10.9% ---15PCT
24					X	9.1%
23					X	5.5%
22					X	3.6%
21					X	3.6%
20					X	3.6%
19					X	1.8%
18					X	1.8%
17					X	1.8%
16					X	0.0%
15					X	0.0%

UPPER LIMIT 10 MPH PACE: 35 MPH
 LOWER LIMIT 10 MPH PACE: 26 MPH
 PERCENT OVER PACE: 14.5 %
 PERCENT IN PACE: 74.5 %
 PERCENT UNDER PACE: 10.9 %

85th PERCENTILE SPEED: 34.9 MPH
 MEDIAN SPEED: 30.2 MPH
 15th PERCENTILE SPEED: 25.6 MPH

Bridlewood Spot Spd 2019-AM2

HARTZOG AND CRABILL INC.
Consulting Traffic Engineers
11591 Lake Blvd., Suite 414, San Diego, CA 92146
(619) 581-1400

Radar Speed Survey Field Sheet

WEATHER: SUNNY DATE: 10/24/19
ROAD CONDITION: DRY START TIME: 3:00 PM
OBSERVER: CATHY BUENDIA END TIME: 4:00 PM JAC

AGENCY: CITY OF LAGUNA HILLS
STREET: BRIDLEWOOD
LOCATION: VISTA VIEW TO LAUREL CREST

DIRECTION: <u>NORTHBOUND</u>		NUMBER OF VEHICLES					TOTAL	MPH	CUMULATIVE TOTAL
MPH	60	55	50	45	40	35	30		
60									
59									
58									
57									
56									
55									
54									
53									
52									
51									
50									
49									
48									
47									
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17									
16									
15									

AVERAGE SPEED: _____ CRITICAL SPEED: _____ PACE SPEED: _____
CUMULATIVE (BOTH DIRECTIONS) _____

PM-1

RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

BRIDLEWOOD DRIVE

LAUREL CREST DR TO VISTA VIEJO

DATE: 10/24/2019

SURVEY BY:

C. BUENDIA

TIME: 3:00 PM - 4:00 PM

CHECKED BY:

JERRY STOCK

SPEED	CUMMULATIVE PERCENT					
	20	40	60	80	100	
60					X	100.0%
59					X	100.0%
58					X	100.0%
57					X	100.0%
56					X	100.0%
55					X	100.0%
54					X	100.0%
53					X	100.0%
52					X	100.0%
51					X	98.7%
50					X	98.7%
49					X	98.7%
48					X	98.7%
47					X	98.7%
46					X	98.7%
45					X	98.7%
44					X	98.7%
43					X	96.2%
42					X	96.2%
41					X	96.2%
40					X	93.6%
39					X	91.0%
38					X	91.0%
37					X	87.2%
36					X	84.6%
35					X	80.8%
34					X	70.5%
33					X	64.1%
32					X	59.0%
31					X	56.4%
30					X	51.3%
29					X	42.3%
28					X	35.9%
27					X	25.6%
26					X	17.9%
25					X	12.8%
24					X	9.0%
23					X	5.1%
22					X	5.1%
21					X	5.1%
20					X	2.6%
19					X	0.0%
18					X	0.0%
17					X	0.0%
16					X	0.0%
15					X	0.0%

-- -85PCT

}PACE

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UPPER LIMIT 10 MPH PACE: 35 MPH
 LOWER LIMIT 10 MPH PACE: 26 MPH
 PERCENT OVER PACE: 19.2 %
 PERCENT IN PACE: 67.9 %
 PERCENT UNDER PACE: 12.8 %

85th PERCENTILE SPEED: 36.2 MPH
 MEDIAN SPEED: 29.9 MPH
 15th PERCENTILE SPEED: 25.4 MPH

Bridlewood Spot Spd 2019-PM1

HARTZOG AND CRABILL INC.
Consulting Traffic Engineers
17292 John Rd., Suite 102, John, CA 92039
(714) 731-9255

Radar Speed Survey Field Sheet

AGENCY: CITY OF LAGUNA HILLS

STREET: BRIDLEWOOD

LOCATION: VISTA VIEJO TO LAUREL CREST

WEATHER: SUNNY

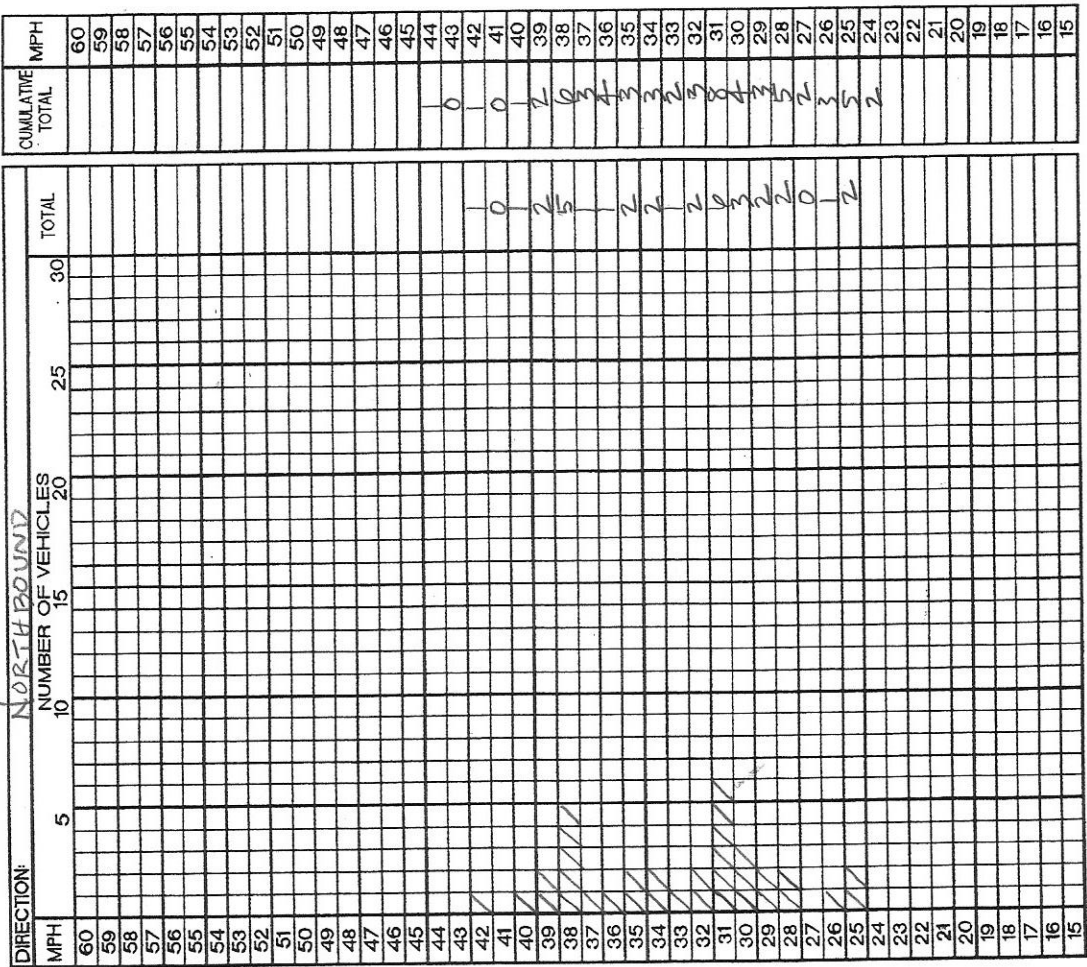
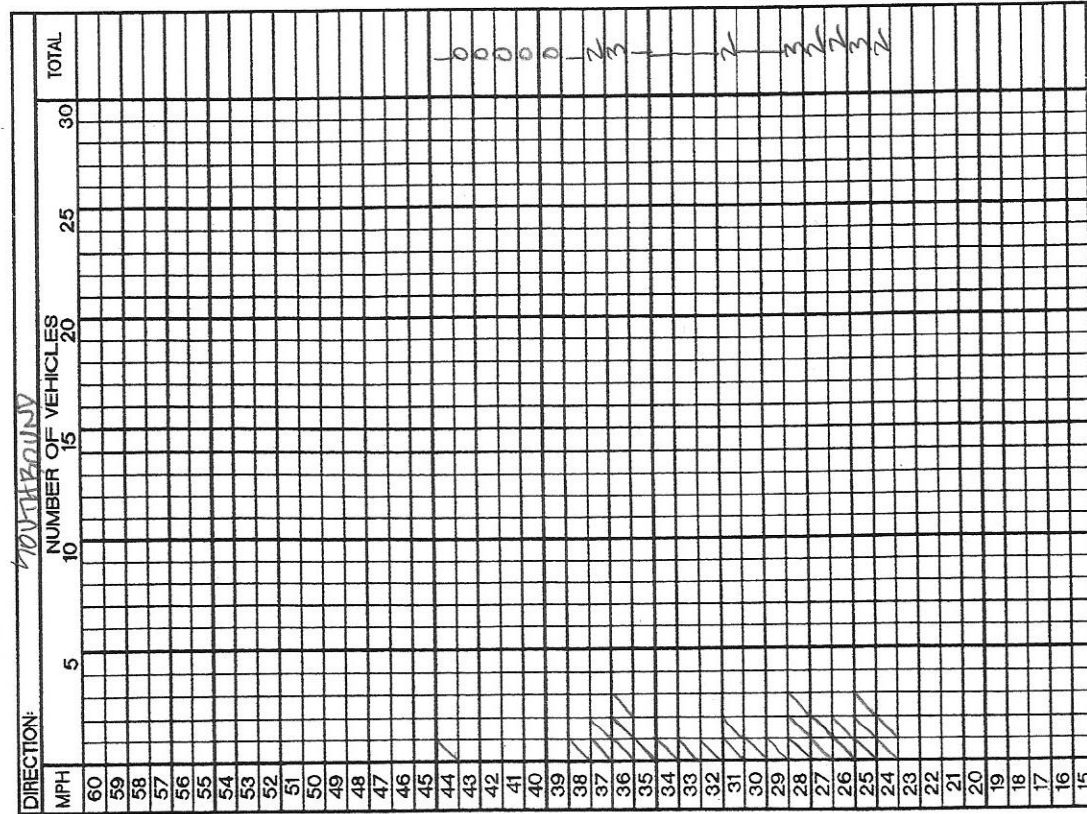
ROAD CONDITION: DRY

OBSERVER: CATHY BUENDIA

DATE: 10/24/19

START TIME: 4:00 PM

END TIME: 5:00 PM 1/19



RADAR SPEED DISTRIBUTION SHEET

HCI

CITY OF LAGUNA HILLS

BRIDLEWOOD DRIVE

LAUREL CREST DR TO VISTA VIEJO

DATE: 10/24/2019

SURVEY BY:

C. BUENDIA

TIME: 4:00 PM - 5:00 PM

CHECKED BY:

JERRY STOCK

SPEED	CUMMULATIVE PERCENT					
	20	40	60	80	100	
60					X	100.0%
59					X	100.0%
58					X	100.0%
57					X	100.0%
56					X	100.0%
55					X	100.0%
54					X	100.0%
53					X	100.0%
52					X	100.0%
51					X	100.0%
50					X	100.0%
49					X	100.0%
48					X	100.0%
47					X	100.0%
46					X	100.0%
45					X	100.0%
44					X	98.4%
43					X	98.4%
42					X	96.7%
41					X	96.7%
40					X	95.1%
39					X	91.8%
38					X	82.0%
37					X	77.0%
36					X	70.5%
35					X	65.6%
34					X	60.7%
33					X	57.4%
32					X	52.5%
31					X	39.3%
30					X	32.8%
29					X	27.9%
28					X	19.7%
27					X	16.4%
26					X	11.5%
25					X	3.3%
24					X	0.0%
23					X	0.0%
22					X	0.0%
21					X	0.0%
20					X	0.0%
19					X	0.0%
18					X	0.0%
17					X	0.0%
16					X	0.0%
15					X	0.0%

UPPER LIMIT 10 MPH PACE: 38 MPH
 LOWER LIMIT 10 MPH PACE: 29 MPH
 PERCENT OVER PACE: 8.2 %
 PERCENT IN PACE: 63.9 %
 PERCENT UNDER PACE: 27.9 %

85th PERCENTILE SPEED: 37.3 MPH
 MEDIAN SPEED: 30.8 MPH
 15th PERCENTILE SPEED: 25.7 MPH

Bridlewood Spot Spd 2019-PM2



City of Laguna Hills Traffic Commission Staff Report

Date: March 19, 2025
To: Chair and Commission Members
From: Samantha Vu, Assistant Engineer
Issue: Review of Traffic Conditions on Bridlewood Drive and Vista Viejo

Recommendation: That the Traffic Commission recommend that the City Engineer add Bridlewood Drive and Vista Viejo 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 Bridlewood Drive and Vista Viejo.

Background:

City staff was recently contacted by a resident of the community regarding concerns of vehicular speeding on Bridlewood Drive and Vista Viejo. Please see the attached Vicinity Map. Based upon the resident's concern and in accordance with the Residential Streets Management Policy, City staff initiated a review of the requested area.

City staff was previously contacted by a resident of Moulton Ranch in April 2018 regarding concerns of vehicular speeding and collisions on Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive. City staff subsequently initiated a traffic engineering evaluation of Bridlewood Drive between Vista Viejo Road and Laurel Crest Drive. The report presented at the July 18, 2018 meeting of the Traffic Commission concluded the 85th percentile speed measurement of Bridlewood Drive was higher than expected and considered to be unacceptable. Additional traffic speed enforcement and use of the radar trailer were utilized to address this issue. The Traffic Commission requested City staff repeat the speed survey of Bridlewood Drive in six months' time.

In accordance with the Traffic Commission's request, a follow-up speed survey was performed in December 2018. Although the prevailing speed of traffic was lower than previous measurements, it was still higher than expected for a residential street.

Therefore, City staff recommended and subsequently installed additional signs and pavement legends on Bridlewood Drive. Continued concentrated police enforcement was also recommended in addition to a follow-up speed survey in six months' time.

In accordance with the recommendation at the January 16, 2019, meeting of the Traffic Commission, a new speed survey was performed in October 2019. This speed survey determined the prevailing speed of traffic was in the acceptable range in the morning but remained higher than expected in the afternoon time period. At the time, it was determined that the appropriate steps were to continue concentrated police enforcement. Previous Traffic Commission reports are attached.

Due to the previous studies being more than two (2) years old, City staff contacted Counts Unlimited, Inc. to conduct a four (4) day speed survey in two locations. Please see the attached Speed Survey Location Map. Counts Unlimited, Inc. collected and reported the attached 96-hour speed survey on Bridlewood Drive and Vista Viejo, between January 3 and January 6, 2025. Table 1 below contains a summary of the results. It should be noted that Bridlewood Drive has a posted speed limit of 25 MPH. Vista Viejo has a posted speed limit of 35 MPH in the City of Mission Viejo which decreases to 30 MPH for the portion of the roadway that is in within the City of Laguna Hills.

Table 1: Speed Survey Summary

Speed Summary	Bridlewood Drive			Vista Viejo		
	NB	SB	Both	EB	WB	Both
85 th Percentile Speed (MPH)	35.5	34.25	35	36.75	33.75	35.5
Average Speed (MPH)	30.5	28.75	29.75	31.5	29	30.25
Percent of Vehicles in Pace (Within 26-35 MPH)	65.03%	57.75%	62.5%	56.55%	67.15%	61.38%

Staff's experience has found the typical prevailing speed range for such streets to be between 32 and 34 MPH, without traffic safety concerns. This is approximately 7-8 MPH above the posted speed limit. The speed survey counts determined the 85th percentile speeds on Bridlewood Drive as 35 MPH and 35.5 MPH on Vista Viejo. Based on the data in Table 1, the 85th percentile speeds were found to be high for Bridlewood Drive. Both streets experienced low vehicle volumes for a typical, residential streets; however, Bridlewood Drive and Vista Viejo had unusual spotty speeding which lead to a low percent of vehicles in pace for both streets.

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 Vista Viejo does not pose a traffic safety concern on average, the unusual spotty speeding poses a safety issue for residents. 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 devices, regulatory signs and markings, warning signs, and striping
- Physical devices like bolt-down speed cushions

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.

City staff recommends an incremental approach to be followed by adding both Bridlewood Drive and Vista Viejo 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 Bridlewood Drive and Vista Viejo. If no change is observed using the incremental approach and the minimum criteria in the Residential Streets Traffic Management Policy are met, City staff will research the implementation of physical devices including cost and present it to the Traffic Commission at a future meeting.

Fiscal Impact:

City staff's recommendation will result in no new fiscal impact.

Attachments:

- 1. Vicinity Map
- 2. Traffic Commission Item 4.2, dated July 18, 2018
- 3. Traffic Commission Item 4.2, dated January 16, 2019
- 4. Traffic Commission Item 4.5, dated November 20, 2019
- 5. Speed Survey Location Map
- 6. Counts Unlimited, Inc. Speed Survey, January 3, 2025 through January 6, 2025



City of Laguna Hills Traffic Commission Staff Report

Date: May 21, 2025
To: Chair and Commission Members
From: Samantha Vu, Assistant Engineer
Issue: Review of Traffic Conditions on Bridlewood Drive and Vista Viejo

Recommendation: That the Traffic Commission recommend that the City Engineer install centerline striping and “Watch Downhill Speed” signs along Bridlewood Drive and Vista Viejo, as well as additional white “30” pavement legends along Vista Viejo and conduct another speed survey in six months, in accordance to the City Council’s Residential Streets Traffic Management Policy.

Background:

City staff was previously contacted by a resident of the community regarding concerns of vehicular speeding on Bridlewood Drive and Vista Viejo. Please see the attached Vicinity Map. Based upon the resident’s concern and in accordance with the Residential Streets Management Policy, City staff initiated a review of the requested area.

City staff was previously contacted by a resident of Moulton Ranch in April 2018 regarding concerns of vehicular speeding and collisions on Bridlewood Drive, between Vista Viejo Road and Laurel Crest Drive. City staff subsequently initiated a traffic engineering evaluation of Bridlewood Drive between Vista Viejo Road and Laurel Crest Drive. The report presented at the July 18, 2018 meeting of the Traffic Commission concluded that the 85th percentile speed measurement of Bridlewood Drive was higher than expected and considered to be unacceptable. Additional traffic speed enforcement and use of the radar trailer were utilized to address this issue. The Traffic Commission requested City staff repeat the speed survey of Bridlewood Drive in six months’ time.

In accordance with the Traffic Commission's request, a follow-up speed survey was performed in December 2018. Although the prevailing speed of traffic was lower than previous measurements, it was still higher than expected for a residential street. Therefore, City staff recommended and subsequently installed additional signs and pavement legends on Bridlewood Drive. Continued concentrated police enforcement was also recommended in addition to a follow-up speed survey in six months' time.

In accordance with the recommendation at the January 16, 2019, meeting of the Traffic Commission, a new speed survey was performed in October 2019. This speed survey determined the prevailing speed of traffic was in the acceptable range in the morning but remained higher than expected in the afternoon time period. At the time, it was determined that the appropriate steps were to continue concentrated police enforcement. Previous Traffic Commission reports are attached.

Due to the previous studies being more than two (2) years old, City staff contacted Counts Unlimited, Inc. to conduct a four (4) day speed survey in two locations in January 2025. Per direction of the Traffic Commission from the March, 19th 2025 meeting, City staff contacted Counts Unlimited, Inc. to conduct a four (4) day speed survey in four locations. Please see the attached Speed Survey Location Map. Counts Unlimited, Inc. collected and reported the attached 96-hour speed survey on Bridlewood Drive and Vista Viejo, between April 11 and April 14, 2025. Table 1 below contains a summary of the results as well as the previous January 2025 results for comparison. It should be noted that Bridlewood Drive has a posted speed limit of 25 MPH. Vista Viejo has a posted speed limit of 35 MPH in the City of Mission Viejo which decreases to 30 MPH for the portion of the roadway that is in within the City of Laguna Hills.

Table 1: April 2025 Speed Survey Summary

Speed Summary	Bridlewood			Vista Viejo		
	Jan.	April (South of Laurel Crest)	April (South of Meadow Crest)	Jan.	April (East of Devonshire)	April (East of Bridlewood)
85 th Percentile Speed (MPH)	35	29.5	36.5	35.5	33	40
Average Speed (MPH)	29.75	26.25	30.5	30.25	28	35.25
Percent of Vehicles in Pace	62.5%	76.68%	57.08%	61.38%	66.28%	62.28%
10 MPH Pace Speed	26-35	21-30	26-35	26-35	21-30	31-40

Staff's experience has found the typical prevailing speed range for such streets to be between 32 and 34 MPH, without traffic safety concerns. This is approximately 7-8 MPH above the posted speed limit. The speed survey determined the 85th percentile speeds on both streets have increased since the last speed survey. Both streets experienced low vehicle volumes for a typical, residential streets; however, Bridlewood Drive and Vista Viejo had unusual spotty speeding which led to a low percent of vehicles in pace for both streets.

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. 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 devices, regulatory signs and markings, warning signs, and striping

- Physical devices like bolt-down speed cushions

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.

Increased law enforcement and deployment of portable radar speed-feedback trailers were implemented after the previous traffic commission meeting. Due to the increase in speeding, City staff recommends an incremental approach to be followed by installing centerline striping and “Watch Downhill Speed” signs along Bridlewood Drive and Vista Viejo, as well as additional white “30” pavement legends along Vista Viejo and conduct another speed survey in six months, in accordance to the City Council’s Residential Streets Traffic Management Policy. If no change is observed using the incremental approach and the minimum criteria in the Residential Streets Traffic Management Policy are met, City staff will research the implementation of physical devices including cost and present it to the Traffic Commission at a future meeting.

Fiscal Impact:

The anticipated cost of the required signing and striping is \$3,500.00. Funds are available for this work in the 2024-25 Fiscal Year Public Works Maintenance Budget.

Attachments:

1. Vicinity Map
2. Traffic Commission Item 4.2, dated July 18, 2018
3. Traffic Commission Item 4.2, dated January 16, 2019
4. Traffic Commission Item 4.5, dated November 20, 2019
5. Traffic Commission Item 4.2, dated March 19, 2025
6. Speed Survey Location Map
7. Counts Unlimited, Inc. Speed Survey, April 11, 2025 through April 14, 2025



City of Laguna Hills Traffic Commission Staff Report

Date: September 17, 2025
To: Traffic Commissioners
From: Joe Ames, Interim City Manager
Issue: Aliso Hills Drive at La Cienega and Aliso Hills Drive at El Segundo Street Sight Distance and Multi-Way Stop Control Evaluation

Recommendation: That the Traffic Commission recommend the installation of a high-visibility marked crosswalk at Aliso Hills and El Segundo Drive and installation of signage at Aliso Hills and La Cienega prohibiting pedestrian crossings.

Background:

Staff received a request from a resident of the community to evaluate the need for all-way stop controls at the intersections of Aliso Hills Drive and El Segundo Street and Aliso Hills Drive and La Cienega Street to facilitate pedestrian crossings along Aliso Hills Drive. The resident specifically indicated that speed, vehicular traffic volume, and the lengthy distance to the nearest crosswalks at Alicia Parkway (bottom of hill) and at Alameda Avenue (top of hill) in front of Mendocino Park contribute to the need for all-way stop sign controls mid-block and/or crosswalks. Aliso Hills Drive is posted at 35 MPH.

Upon receiving the request, City staff contacted Hartzog and Crabill, Inc. (HCI), the City's traffic engineering consultant, to perform an all-way stop control and crosswalk warrant analysis.

As the Traffic Commission is aware, the California Manual of Uniform Traffic Control Devices provides guidelines (warrants) which should be met prior to installation of all-way stop control.

As a general rule, all-way stop control is used where the volume of traffic on the

intersecting roads is approximately equal.

The following criteria should be considered in the engineering study for a multi-way STOP sign installation:

Guidance:

The decision to install multi-way stop control should be based on an engineering study.

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:

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.

In the attached report, HCI found that:

- Only 1 non-correctible collision occurred at each intersection in a 5-year period.
- Vehicular traffic volumes did not come close to being satisfied for either intersection.
- Pedestrian volumes observed were low.
- Visibility for approaching drivers on Aliso Hills Drive to see a pedestrian crossing at El Segundo Drive is sufficient.
- Visibility for approaching drivers on Aliso Hills Drive to see a pedestrian crossing at La Cienega Street is not sufficient due to roadway curvature.

Based on this summarized data, HCI does not recommend all-way stop control at either intersection; however, does recommend installation of a high-visibility marked crosswalk at Aliso Hills and El Segundo Drive. The high-visibility marked crosswalk would include:

- Install a white, high-visibility marked crosswalk with ladder style bars across the west leg of Aliso Hills Drive to channelize pedestrian crossings at/near this intersection (including pedestrians that typically cross at nearby La Cienega).
- Install a new ADA pedestrian curb ramp on the south-side of Aliso Hills Drive.
- Install applicable PED XING fluorescent-yellow warning signs (W11-2 symbol sign with arrow diagonally pointing down) posted at the newly marked crosswalk.
- On each approach in advance of the newly marked crosswalk, install PED XING AHEAD posted signs and pavement markings.
- Lastly, the new high-visibility marked crosswalk is recommended to be supplemented by a Rectangular Rapid Flashing Beacons (RRFB) system to increase pedestrian crossing awareness for drivers approaching the intersection.

Further, Hartzog & Crabill does not recommend installation of a marked crosswalk at Aliso Hills Drive and La Cienega Street due to the roadway curvature, and suggested that a Side Road W2-2 warning sign be installed and signage prohibiting pedestrian crossing be installed to encourage pedestrians to cross at El Segundo where visibility is better.

Fiscal Impact:

The cost for engineering design, construction administration, and installation of the new high-visibility marked crosswalk, curb ramp, applicable roadway warning signage and markings, and RRFB system at the intersection of Aliso Hills Drive and El Segundo Street is estimated at \$35,000.00.

Attachments:

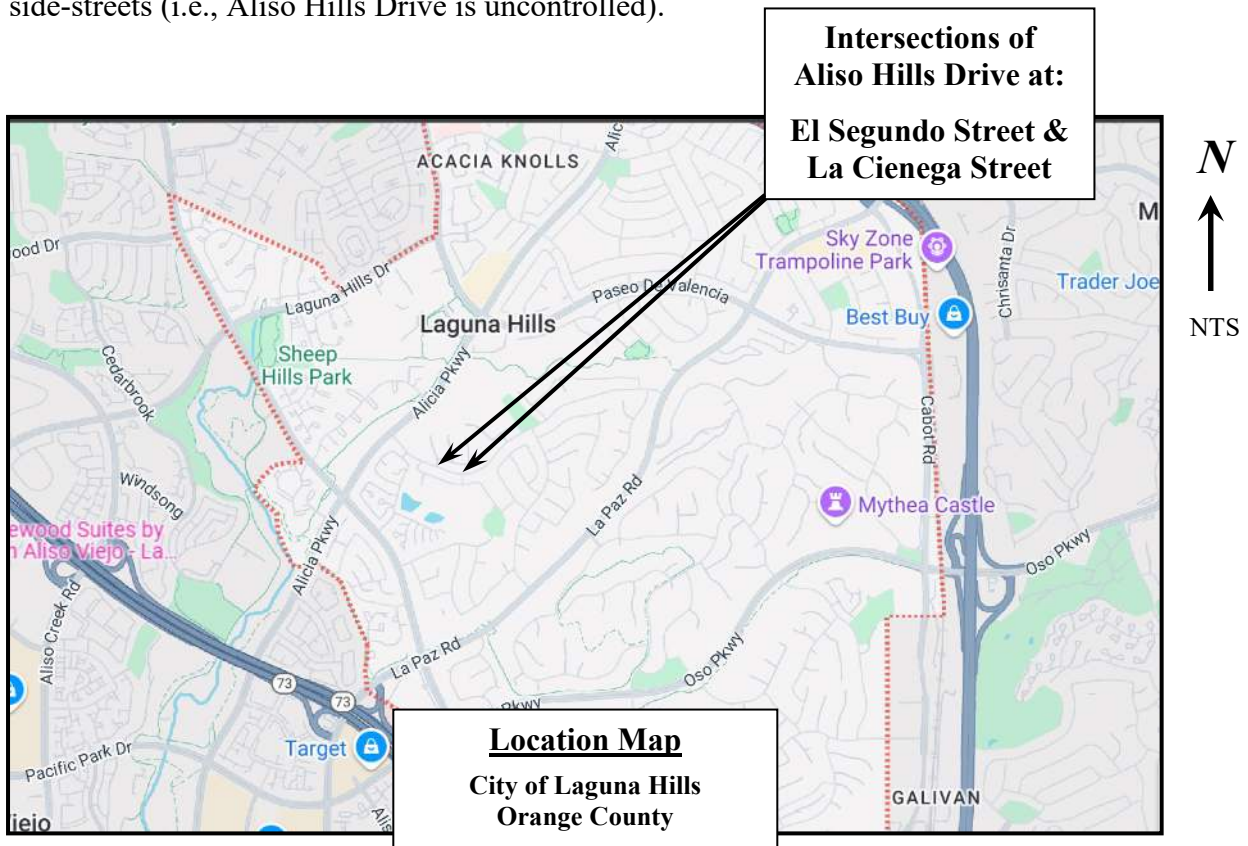
1. HCI Combined Stop Sign Warrant Analyses
2. Resident Request

MULTIWAY STOP CONTROL WARRANTS ANALYSIS FOR TWO LOCATIONS:

INTERSECTION OF ALISO HILLS DRIVE AND EL SEGUNDO STREET & INTERSECTION OF ALISO HILLS DRIVE AND LA CIENEGA STREET IN THE CITY OF LAGUNA HILLS, CA JULY 25, 2025

INTRODUCTION

The City of Laguna Hills requested Hartzog & Crabill, Inc. (HCI) to complete a Multiway Stop Warrants Analysis for two adjacent intersections along Aliso Hills Drive: at El Segundo Street and at La Cienega Street. This analysis was completed in order to verify if a three-way stop sign installation is warranted and recommended at both or either location based on meeting standard guidelines. The locations are typical T-intersections with Aliso Hills Drive running diagonally in the east-west directions, and El Segundo Street and La Cienega Street running in the north-south directions. The intersections are located south of Alicia Parkway, and east of Moulton Parkway (*see Location Map below*). Both intersections are located entirely within the City of Laguna Hills jurisdiction. At the present time, there is a 1-Way Stop control for each of these side-streets (i.e., Aliso Hills Drive is uncontrolled).



BACKGROUND

Aliso Hills Drive is a diagonal, east-west collector roadway, which has non-facing, single-family residential properties on both sides of the street. At the intersections with El Segundo Street and La Cienega Street, the roadway is approximately 40 feet wide curb-to-curb. The 2-lane roadway provides for one lane of traffic in each direction, which are separated by a double-yellow centerline. There are no marked crosswalks across Aliso Hills Drive at or near the two intersections. The roadway does have curb, gutter, parkway, and sidewalk improvements on both sides. Aliso Hills Drive has a posted speed limit of 35 MPH. On-street parking is prohibited on both sides of the street via No Parking signage. There is one Watch Downhill Speed warning sign posted at an advance location. Currently, there are no STOP signs, or other types of traffic control, on Aliso Hills Drive (i.e., uncontrolled) at its intersections with El Segundo Street and with La Cienega Street. *See Exhibits 1 & 3 (next pages) for applicable photo images of Aliso Hills Drive.*

At its intersection with Aliso Hills Drive, **El Segundo Street and La Cienega Street** are north-south local roadways, which have non-facing, single-family residential properties on both sides of the street. At their intersection with Aliso Hills Drive, which is the terminus of both these side-streets, the roadways are approximately 40 feet wide curb-to-curb. The 2-lane roadways provide for one lane of traffic in each direction, which are separated by a short 50-foot double-yellow centerline stripe. There are no marked crosswalks across either of these side-streets at or near the intersections. The roadways have curb, gutter, and sidewalk improvements on both sides. Both side-streets do not have a posted speed limit; however, these residential roadways have an applicable *prima facie* local speed limit of 25 MPH and do not require posting. Currently, there is a posted STOP sign, a white ‘STOP’ pavement marking, and a limit line facing both side-streets at their respective T-intersection with Aliso Hills Drive. *See Exhibits 2 & 4 (following pages) for applicable photo images of El Segundo Street and of La Cienega Street.*

EXHIBIT 1



ALISO HILLS DRIVE (Looking Eastbound) at EL SEGUNDO STREET



ALISO HILLS DRIVE (Looking Westbound) at EL SEGUNDO STREET

EXHIBIT 2



EL SEGUNDO STREET (*Looking Southbound*) at ALISO HILLS DRIVE

EXHIBIT 3



ALISO HILLS DRIVE (*Looking Eastbound*) at LA CIENEGA STREET



ALISO HILLS DRIVE (*Looking Westbound*) at LA CIENEGA STREET

EXHIBIT 4



LA CIENEGA STREET (*Looking Northbound*) at ALISO HILLS DRIVE

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 these intersections 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.

Collision History (continued)

A comprehensive 5-year traffic collision history summary report was prepared for each intersection. Tables 1 & 2 below provide the most recent summary of collision history occurring at or near these intersections.

**TABLE 1
SWITRS COLLISION SUMMARY**

Intersection	2020-21		2022		2023		2024	
	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?
Aliso Hills Dr at El Segundo St		None reported		None reported		None reported	05/25	Sideswipe / No

**TABLE 2
SWITRS COLLISION SUMMARY**

Intersection	2020-21		2022		2023		2024	
	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?
Aliso Hills Dr at La Cienega St		None reported		None reported		None reported	09/29	Rear-End / No

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 has been one (1) ‘non-correctible’ collision reported near each of these intersections over the past five (5) years of available SWITRS collision data, both located away from the intersections. 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 reports are included in Appendix B.***

Traffic Volumes

HCI collected Average Daily Traffic (ADT) vehicular approach counts to the intersections on Wednesday, February 26, 2025, including speed data via road tubes, as well as 12-hour daytime (7am to 7pm) pedestrian counts, in order to account for traffic that use these intersections on a typical day.

For the El Segundo Street intersection, the ADT bi-directional approach count for Aliso Hills Drive is 1,848 vehicles per day, with the highest AM peak-hour approach volume having 146 vehicles and 167 vehicles in the PM peak-hour. The ADT ‘approach’ count for El Segundo Street is 245 vehicles, with the highest AM peak-hour approach volume having 25 vehicles and 24 vehicles in the PM peak-hour.

For the La Cienega Street intersection, the ADT bi-directional approach count for Aliso Hills Drive is 1,663 vehicles per day, with the highest AM peak-hour approach volume having 143 vehicles and 154 vehicles in the PM peak-hour. The ADT ‘approach’ count for La Cienega Street is 179 vehicles, with the highest AM peak-hour approach volume having 23 vehicles and 19 vehicles in the PM peak-hour.

Tables 3 & 4 (below/next page) provide a breakdown of the approach volumes. ***The traffic volume data collected for these locations are included in Appendix C.***

TABLE 3
HIGHEST 24-HOUR INTERSECTION APPROACH VEHICLE COUNTS

Street	Direction	ADT Volume	Directional Split	Highest Hourly Volume
Aliso Hills Drive	Eastbound	957	52%	99 (6 – 7 PM)
	Westbound	891	48%	92 (8 – 9 AM)
El Segundo Street				
	Southbound	245	100%	25 (7 – 8 AM)

Traffic Volumes (continued)

TABLE 4
HIGHEST 24-HOUR INTERSECTION APPROACH VEHICLE COUNTS

Street	Direction	ADT Volume	Directional Split	Highest Hourly Volume
Aliso Hills Drive	Eastbound	838	50%	87 (8 – 9 AM)
	Westbound	825	50%	86 (6 – 7 PM)
La Cienega Street				
	Northbound	179	100%	23 (7 – 8 AM)

Aliso Hills Drive is considered the ‘through’ or ‘major’ street at these residential T-intersections, since it carries higher vehicular volumes from both approaches, and drivers are not required to slow down, or even stop, before proceeding straight through the intersection. In comparison, El Segundo Street and La Cienega Street are considered the ‘minor’ streets as approaching drivers are required to stop at Aliso Hills Drive 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 tables above, this is the case:

- as southbound El Segundo Street carries approximately twelve percent (12%) of the entire traffic entering the intersection (Aliso Hills Drive carries approximately 88% of entering traffic), and,
- as northbound La Cienega Street carries approximately ten percent (10%) of the entire traffic entering the intersection (Aliso Hills Drive carries approximately 90% 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%.

Traffic Volumes (continued)

As mentioned, the posted speed limit on Aliso Hills Drive is 35 MPH. Field observations during our weekday morning site visit confirmed vehicles were not regularly speeding over the speed limit near the intersections, but were considered typical and what may be expected for a two-lane collector-type roadway.

However, per the traffic count data collection, which included speed data on Aliso Hills Drive, the 85th percentile speed on Aliso Hills Drive resulted in 43 MPH and 44 MPH, respectively (*see Appendix C*).

Since the 85th-percentile speeds are greater than the 40 MPH required to reduce traffic volumes, the 70% minimum volumes for a multi-way stop sign analysis are applicable and used for this analysis.

It is important to note that the highest hourly vehicle traffic counts shown in Tables 3 & 4 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).

Tables 5 & 6 (next page) show 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 these intersections. Both Parts 1 and 2 of the minimum volume warrants below must be satisfied in order to fulfill this warrant.

Traffic Volumes (continued)

TABLE 5
MULTIWAY STOP SIGN WARRANT FOR MINIMUM TRAFFIC VOLUMES
ALISO HILLS DRIVE AT EL SEGUNDO STREET

Part 1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 (70%=210) vehicles per hour for any (8) hours of an average day, Results: No, average (140) vehicles per hour Only 67% of the required hourly traffic volume	<i>and</i>	Part 2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 (70%=140) 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, Results: No, average (21) vehicles per hour Only 15% of the required hourly traffic volume	<i>but</i>	Part 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 above values. Results: Yes, the 85th percentile speed on the major-street does exceed 40 mph
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TABLE 6
MULTIWAY STOP SIGN WARRANT FOR MINIMUM TRAFFIC VOLUMES
ALISO HILLS DRIVE AT LA CIENEGA STREET

Part 1. The vehicular volume entering the intersection from the major street approaches (total of both approaches) averages at least 300 (70%=210) vehicles per hour for any (8) hours of an average day, Results: No, average (129) vehicles per hour Only 61% of the required hourly traffic volume	<i>and</i>	Part 2. The combined vehicular, pedestrian, and bicycle volume entering the intersection from the minor street approaches (total of both approaches) averages at least 200 (70%=140) 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, Results: No, average (15) vehicles per hour Only 11% of the required hourly traffic volume	<i>but</i>	Part 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 above values. Results: Yes, the 85th percentile speed on the major-street does exceed 40 mph
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As shown in the tables above, the average hourly intersection approach traffic volumes (including pedestrians) for the highest 8-hour period, did not satisfy both Parts 1 and 2. Therefore, the minimum traffic volume warrant is not satisfied for either location.

Visibility

Impaired visibility, or restricted sight distance, due to the geometry of the intersections and possible obstructions, was carefully considered during our field-review of the surrounding residential neighborhood environment. The geometry of the intersections includes an approximate 90° angle. Aliso Hills Drive has a constant incline in the eastbound direction through these intersections. Each side-street has a slight decline as one moves closer to the intersection with Aliso Hills Drive.

Driver sight distance was measured from the side-street approaches to the intersections, since approaching drivers are required to stop, before proceeding to make a left-turn or right-turn onto Aliso Hills Drive. The measured distance was derived from the stopping sight distance ‘on downgrades’ guidelines found in the California MUTCD (*see Appendix D*). In this reference, a 35 MPH ‘downhill’ roadway posted speed recommends a minimum Stopping Sight Distance of 287 feet. However, the 85th-percentile speed was measured at 44 MPH. Therefore, a 45 MPH speed, which has a minimum ‘downhill’ sight distance of 427 feet, was used as a more conservative measure on the downgrade approaches. The standard sight distance of 360 feet was used for a speed of 45 MPH for the upgrade approaches. These distances were used when looking towards approaching, uncontrolled traffic along Aliso Hills Drive. More specifically, these stopping sight distances were field-measured from a typical ‘stopped’ vehicle location on El Segundo Street and on La Cienega Street at their respective intersection looking towards oncoming lanes of cross-traffic on Aliso Hills Drive. An orange cone was placed at the applicable 427-foot distance and 360-foot distances, and a photograph was taken from a stopped driver’s perspective (i.e., approximately 3.5 feet in height).

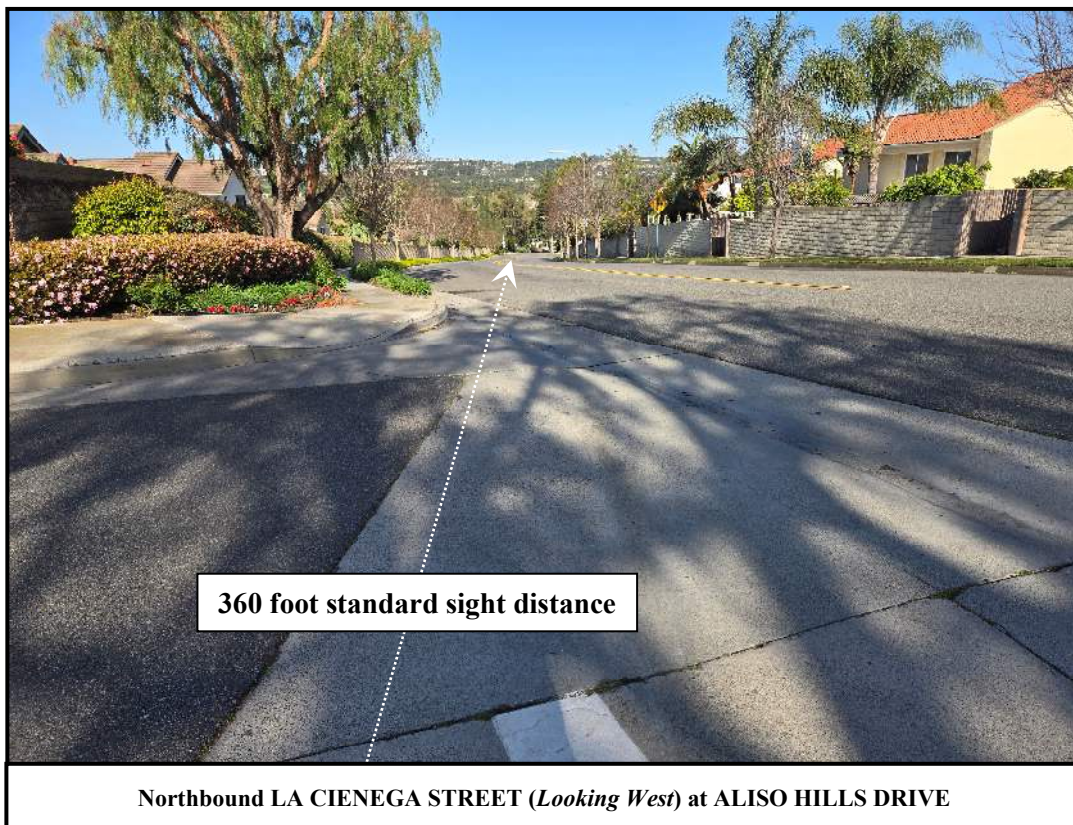
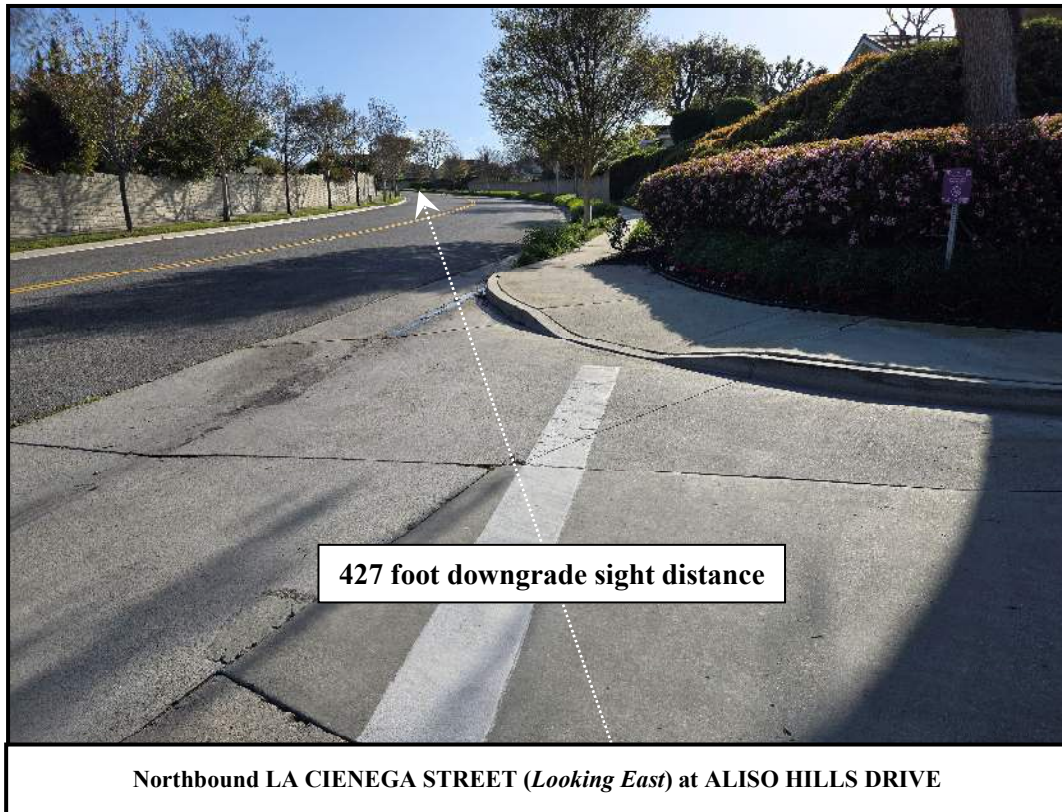
(See sight distance photos in Exhibits 5 & 6 on the following pages).

As Exhibits 5 & 6 show, when looking at oncoming traffic along Aliso Hills Drive, a side-street driver does have a clear line-of-sight to the minimum applicable sight distances of 427 feet and 360 feet when looking in each direction.

EXHIBIT 5



EXHIBIT 6



MULTIWAY STOP ANALYSIS SUMMARY

The analysis of the four (4) main criteria provided in the California MUTCD regarding **Multi-way Stop Applications** showed that both these intersections did not meet the minimum guidelines to justify stopping the major roadway (i.e., Aliso Hills Drive). 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 each intersection resulted in one (1) ‘non-correctible’ collision reported during the last five (5) years (occurring away from the intersection), 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. In terms of vehicles stopping and waiting for a gap on the major roadway, excessive delay to any approach was not observed due to the lower side-street traffic volumes at these intersections.

Therefore, since intersection collision histories 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 these intersections (as mentioned above as the first criteria). The 80% combined criteria was 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 LED street light pole located at each intersection.

MULTIWAY STOP ANALYSIS SUMMARY *(continued)*

It was also determined during our site visit that both El Segundo Street and La Cienega Street drivers do have a clear line-of-sight when stopped and looking both ways at oncoming traffic along Aliso Hills Drive.

Lastly, in regards to pedestrian activity, during our morning site visit there were no pedestrians observed crossing the uncontrolled roadway of Aliso Hills Drive at either of these intersections. Therefore, a low-to-medium activity of pedestrians was assumed. However, as part of the overall traffic count data collection, HCI gathered 12-hour pedestrian count data (on the same midweek day from 7am – 7pm) at both these intersections, in order to account for pedestrians that use these intersections on a typical day (*see Appendix C*). The results confirmed a low activity at each location (less than 1 pedestrian crossing per hour) as summarized below:

<u>Location</u>	<u>Peak-Period</u>	<u>Total Pedestrians Crossing</u>	<u>West Leg</u>	<u>East Leg</u>
El Segundo	7:00 AM to 7:00 PM	11	0	11
La Cienega	7:00 AM to 7:00 PM	7	4	3

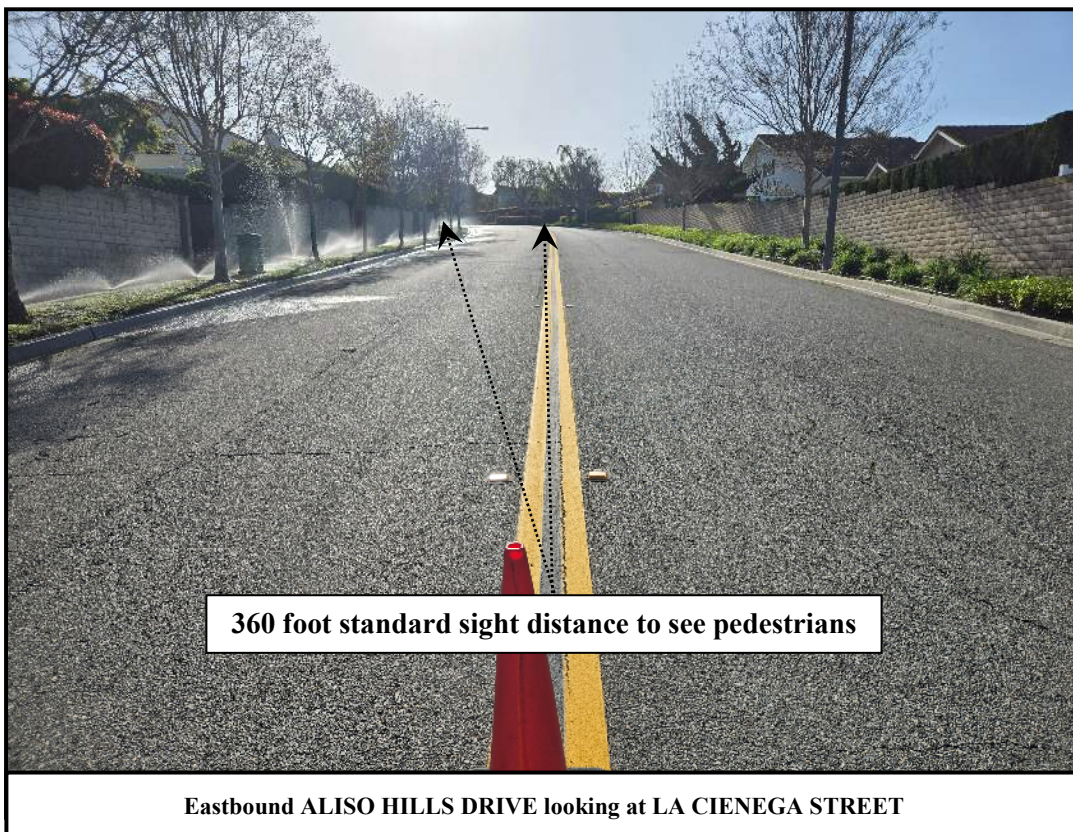
Although pedestrian volumes are low, it is important to note that the roadway curvature at La Cienega Street may not allow full visibility for an approaching driver along Aliso Hills Drive to see a pedestrian crossing from the north-side at this intersection. Therefore, pedestrian sight distance measurements were carefully reviewed at both locations from an approaching driver's perspective. (*See pedestrian sight distance photos in Exhibits 7 & 8 on the following pages*).

As Exhibit 7 shows, approaching drivers along Aliso Hills Drive do have clear visibility to see a pedestrian on both sides of El Segundo Street that may want to cross Aliso Hills Drive. However, as shown in Exhibit 8, approaching drivers along Aliso Hills Drive in the westbound direction do not have clear visibility to see a pedestrian on the north-side of La Cienega Street that may cross Aliso Hills Drive, due to the roadway curvature.

EXHIBIT 7



EXHIBIT 8



RECOMMENDATIONS

In overall consideration of the analysis criteria in this report, a multi-way (3-Way) stop sign installation is not recommended for the T-intersection of Aliso Hills Drive and El Segundo Street, or the T-intersection of Aliso Hills Drive and La Cienega Street. Following are specific recommendations for each of the two locations:

Intersection of Aliso Hills Drive and El Segundo Street:

Based on the layout of the residential neighborhood located north of Aliso Hills Drive, all pedestrians must head south towards El Segundo Street to enter or exit the neighborhood. As such, in regards to a possible marked crosswalk installation across Aliso Hills Drive at El Segundo Street, a high-visibility marked crosswalk is recommended for this intersection. More specifically, the recommendations for this specific location include:

- Install a white, high-visibility marked crosswalk with ladder style bars across the west leg of Aliso Hills Drive to channelize pedestrian crossings at/near this intersection (including pedestrians that typically cross at nearby La Cienega).
- Install a new ADA pedestrian curb ramp on the south-side of Aliso Hills Drive.
- Install applicable PED XING fluorescent-yellow warning signs (W11-2 symbol sign with arrow diagonally pointing down) posted at the newly marked crosswalk.
- On each approach in advance of the newly marked crosswalk, install PED XING AHEAD posted signs and pavement markings.
- Lastly, the new high-visibility marked crosswalk is recommended to be supplemented by a Rectangular Rapid Flashing Beacons (RRFB) system to increase pedestrian crossing awareness for drivers approaching the intersection.

The cost for engineering design, construction administration, and installation of the new high-visibility marked crosswalk, curb ramp, applicable roadway warning signage/markings, and RRFB system at the intersection of Aliso Hills Drive and El Segundo Street is estimated at \$35,000.00.

RECOMMENDATIONS (continued)

Intersection of Aliso Hills Drive and La Cienega Street:

In regards to a possible marked crosswalk across Aliso Hills Drive at La Cienega Street, installation of a marked crosswalk is not recommended. The recommendation for denial is due to the roadway curvature on Aliso Hills Drive that creates a "blind spot" for pedestrians crossing the street. Based on the posted speed limit of 35 MPH, there is adequate downhill sight distance at 287 feet. However, the speed data collected in this analysis resulted in an 85th percentile speed of 44 MPH. As such, based on a roadway speed of 45 MPH, which has a downhill sight distance of 427 feet, there are sight distance constraints for a westbound 'downhill' driver to see a pedestrian that may want to cross Aliso Hills Drive from the north-side of the street. Lastly, due to the lower pedestrian volumes at both adjacent locations, it makes sense to have all nearby pedestrians cross at only one location that has pedestrian crossing improvements. The El Segundo Street intersection has more straightforward approaches, where an Aliso Hills Drive driver can more easily see pedestrians crossing from an advance location. Therefore, the recommendations for this specific location are as follows:

- Since approaching drivers on Aliso Hills Drive do not have clear visibility to see a pedestrian that may cross Aliso Hills Drive from the north-side of the street due to the roadway curvature, it is recommended to install No Pedestrian Crossing (R9-3) signs and pedestrian barricades at this intersection. Pedestrians that typically cross this intersection may be directed to cross at the marked crosswalk recommended westerly at El Segundo Street. Since it will include an RRFB system, pedestrians should learn over time to cross at El Segundo Street. Due to the above reasons, prohibiting pedestrian crossings at La Cienega Street via signage encouraging them to cross at the next intersection that has pedestrian crossing improvements is the best option.
- The City may also consider installing a Side Road (W2-2) warning sign on Aliso Hills Drive facing both directions of traffic in advance of La Cienega Street.

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).

Option:

^{10b} YIELD or STOP signs may be used at a channelized turn lane if it is separated from the adjacent travel lanes moving in same direction by an island and the channelized turn lane is not controlled by a traffic control signal.

Standard:

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 Caltrans 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 Caltrans. Refer to CVC 21353.

Support:

- ¹⁷ Caltrans 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.**

Section 2B.08 YIELD Sign (R1-2)

Standard:

01 The YIELD (R1-2) sign (see Figure 2B-1) shall be a downward-pointing equilateral triangle with a wide red border and the legend YIELD in red on a white background.

Support:

02 The YIELD sign assigns right-of-way to traffic on certain approaches to an intersection. Vehicles controlled by a YIELD sign need to slow down to a speed that is reasonable for the existing conditions or stop when necessary to avoid interfering with conflicting traffic.

Section 2B.09 YIELD Sign Applications

Option:

01 YIELD signs may be installed:

- A. On the approaches to a through street or highway where conditions are such that a full stop is not always required.**
- B. At the second crossroad of a divided highway, where the median width at the intersection is 30 feet or greater. In this case, a STOP or YIELD sign may be installed at the entrance to the first roadway of a divided highway, and a YIELD sign may be installed at the entrance to the second roadway.**
- C. For a channelized turn lane that is separated from the adjacent travel lanes by an island, even if the adjacent lanes at the intersection are controlled by a highway traffic control signal or by a STOP sign.**
- D. At an intersection where a special problem exists and where engineering judgment indicates the problem to be susceptible to correction by the use of the YIELD sign.**
- E. Facing the entering roadway for a merge-type movement if engineering judgment indicates that control is needed because acceleration geometry and/or sight distance is not adequate for merging traffic operation.**

Standard:

02 A YIELD (R1-2) sign shall be used to assign right-of-way at the entrance to a roundabout. YIELD signs at roundabouts shall be used to control the approach roadways and shall not be used to control the circulatory roadway.

03 Other than for all of the approaches to a roundabout, YIELD signs shall not be placed on all of the approaches to an intersection.

Section 2B.10 STOP Sign or YIELD Sign Placement

Standard:

01 The STOP or YIELD sign shall be installed on the near side of the intersection on the right-hand side of the approach to which it applies. When the STOP or YIELD sign is installed at this required location and the sign visibility is restricted, a Stop Ahead sign (see Section 2C.36) shall be installed in advance of the STOP sign or a Yield Ahead sign (see Section 2C.36) shall be installed in advance of the YIELD sign.

02 The STOP or YIELD sign shall be located as close as practical to the intersection it regulates, while optimizing its visibility to the road user it is intended to regulate.

02a YIELD signs shall not be erected upon the approaches to more than one of the intersecting streets. Refer to CVC 21356.

03 STOP signs and YIELD signs shall not be mounted on the same post.

04 No items other than inventory stickers, sign installation dates, and bar codes shall be affixed to the fronts of STOP or YIELD signs, and the placement of these items shall be in the border of the sign.

05 No items other than official traffic control signs, inventory stickers, sign installation dates, anti-vandalism stickers, and bar codes shall be mounted on the backs of STOP or YIELD signs.

06 No items other than retroreflective strips (see Section 2A.21) or official traffic control signs shall be mounted on the fronts or backs of STOP or YIELD signs supports.

APPENDIX B

SWITRS COLLISION HISTORY

CITY OF LAGUNA HILLS
INTERSECTION OF ALISO HILLS DRIVE AND EL SEGUNDO STREET
5-YEAR SWITRS COLLISION DATABASE
JAN. 1, 2020 THROUGH DEC. 31, 2024

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.
9729395	20240525	5	ALISO HILLS	EL SEGUNDO	72	E	N	A	0	A	13	22515	N	B	I	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

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

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

Road Surface

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

CITY OF LAGUNA HILLS
INTERSECTION OF ALISO HILLS DRIVE AND LA CIENEGA STREET
5-YEAR SWITRS COLLISION DATABASE
JAN. 1, 2020 THROUGH DEC. 31, 2024

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.
9744602	20240929	1725	ALISO HILLS DR	LA CIENEGA ST	550	S	N	A	4	A	3	22350	N	C	C	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

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

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

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

APPENDIX C

AVERAGE DAILY TRAFFIC (ADT) & PEDESTRIAN COUNT DATA

VOLUME

Aliso Hills Dr W/O El Segundo St

Day: Wednesday
Date: 2/26/2025

Highest 8 Hours per Side Street Perspective.

City: Laguna Hills
Project #: CA25_010022_003

DAILY TOTALS					NB	SB	EB					WB	Total				
					0	245						957		891	2,093		
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL					
0:00	0	1	1	1	3		12:00	0	6	11	12	29					
0:15	0	0	1	0	1		12:15	0	2	14	15	31					
0:30	0	0	3	0	3		12:30	0	4	16	19	39					
0:45	0	0	1	0	5	1	12:45	0	6	18	16	57	12	58	34	133	
1:00	0	0	0	1	1		13:00	0	9	19	13	41					
1:15	0	0	0	1	1		13:15	0	5	19	15	39					
1:30	0	0	0	0	0		13:30	0	4	21	13	38					
1:45	0	1	1	0	2	4	13:45	0	3	21	14	73	13	54	30	148	
2:00	0	0	0	0	0		14:00	0	8	16	9	33					
2:15	0	1	1	2	4		14:15	0	5	9	11	25					
2:30	0	0	0	1	1		14:30	0	7	19	15	41					
2:45	0	1	2	0	1	3	14:45	0	4	24	22	66	18	53	44	143	
3:00	0	0	0	0	0		15:00	0	4	17	14	35					
3:15	0	0	0	0	0		15:15	0	3	18	18	39					
3:30	0	0	0	0	0		15:30	0	6	15	21	42					
3:45	0	0	0	0	0		15:45	0	10	23	35	85	11	64	56	172	
4:00	0	0	0	0	0		16:00	0	6	23	21	50					
4:15	0	0	2	0	2		16:15	0	3	18	24	45					
4:30	0	0	0	1	1		16:30	0	6	28	19	53					
4:45	0	1	1	0	2	1	16:45	0	3	18	18	87	16	80	37	185	
5:00	0	0	0	0	0		17:00	0	2	16	27	45					
5:15	0	0	1	0	1		17:15	0	6	22	17	45					
5:30	0	2	0	5	7		17:30	0	7	25	15	47					
5:45	0	0	2	2	3	8	17:45	0	2	17	12	75	26	85	40	177	
6:00	0	3	4	6	13		18:00	0	4	29	24	57					
6:15	0	1	2	2	5		18:15	0	3	24	10	37					
6:30	0	2	4	12	18		18:30	0	0	28	10	38					
6:45	0	2	8	5	15	10	18:45	0	5	12	18	99	12	56	35	167	
7:00	0	4	11	11	26		19:00	0	0	11	8	19					
7:15	0	7	8	26	41		19:15	0	0	8	13	21					
7:30	0	9	26	19	54		19:30	0	1	17	8	26					
7:45	0	5	25	14	59	23	19:45	0	2	3	14	50	4	33	20	86	
8:00	0	6	16	29	51		20:00	0	0	6	6	12					
8:15	0	6	15	24	45		20:15	0	0	11	5	16					
8:30	0	4	9	20	33		20:30	0	7	7	7	21					
8:45	0	2	18	14	35	164	20:45	0	0	7	13	37	5	23	18	67	
9:00	0	3	8	12	23		21:00	0	0	7	3	10					
9:15	0	4	14	14	32		21:15	0	0	7	3	10					
9:30	0	4	8	14	26		21:30	0	0	5	2	7					
9:45	0	3	14	12	24	105	21:45	0	2	2	6	25	3	11	11	38	
10:00	0	4	15	15	34		22:00	0	1	8	5	14					
10:15	0	3	12	9	24		22:15	0	1	4	2	7					
10:30	0	1	9	4	14		22:30	0	1	4	2	7					
10:45	0	2	10	11	29	101	22:45	0	1	4	2	18	1	10	4	32	
11:00	0	2	6	9	17		23:00	0	0	1	0	1					
11:15	0	5	13	17	35		23:15	0	0	1	1	2					
11:30	0	3	16	13	32		23:30	0	0	3	2	5					
11:45	0	4	14	17	31	115	23:45	0	0	0	5	0	3			8	
TOTALS	96		280		361		TOTALS	149		677		530		1356			
SPLIT %	13.0%		38.0%		49.0%		SPLIT %	11.0%		49.9%		39.1%		64.8%			

DAILY TOTALS					NB	SB	EBWB					Total
					0	245						957
AM Peak Hour	7:15	7:30	7:15	7:30	PM Peak Hour		15:15	15:45	16:15	15:45		
AM Pk Volume	27	71	97	192	PM Pk Volume		25	104	86	204		
Pk Hr Factor	0.750	0.683	0.836	0.889	Pk Hr Factor		0.625	0.743	0.796	0.911		
7 - 9 Volume	0	43	113	171	327	4 - 6 Volume	0	35	162	165	362	
7 - 9 Peak Hour	7:15	7:30	7:15	7:30	4 - 6 Peak Hour	16:00	16:00	16:15	16:00			
7 - 9 Pk Volume	0	27	71	97	192	4 - 6 Pk Volume	0	18	87	86	185	
Pk Hr Factor	0.000	0.750	0.683	0.836	0.889	Pk Hr Factor	0.000	0.750	0.777	0.796	0.873	

SPEED

Aliso Hills Dr W/O El Segundo St

Day: Wednesday

Date: 2/26/2025

City: Laguna Hills

Project #: CA25_010022_003e

East 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	3	1	1	0	0	0	0	0	0	5
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	1	0	1	0	0	0	0	0	0	0	2
5:00	0	0	0	0	0	1	2	0	0	0	0	0	0	3
6:00	0	0	0	6	5	4	0	0	0	0	0	0	0	15
7:00	1	3	1	14	14	18	4	4	0	0	0	0	0	59
8:00	0	0	0	4	15	23	10	2	0	0	0	0	0	54
9:00	0	0	3	8	16	9	5	1	0	0	0	0	0	42
10:00	0	1	0	3	17	14	11	1	0	0	0	0	0	47
11:00	0	0	0	6	19	17	9	1	0	0	0	0	0	52
12:00 PM	0	0	1	12	11	22	10	1	0	0	0	0	0	57
13:00	1	0	1	11	17	29	11	2	1	0	0	0	0	73
14:00	1	0	1	10	18	21	14	1	0	0	0	0	0	66
15:00	0	0	3	13	20	20	24	4	1	0	0	0	0	85
16:00	0	0	1	13	30	29	11	3	0	0	0	0	0	87
17:00	0	0	0	12	20	28	15	0	0	0	0	0	0	75
18:00	0	0	6	22	18	33	13	4	3	0	0	0	0	99
19:00	0	0	1	6	12	20	9	2	0	0	0	0	0	50
20:00	0	1	1	4	11	12	6	1	1	0	0	0	0	37
21:00	0	0	0	2	7	9	6	1	0	0	0	0	0	25
22:00	0	0	0	2	6	7	3	0	0	0	0	0	0	18
23:00	0	0	0	0	1	3	0	0	1	0	0	0	0	5
Totals	3	5	19	150	260	321	164	28	7					957
% of Totals	0%	1%	2%	16%	27%	34%	17%	3%	1%					100%

AM Volumes	1	4	4	43	89	88	42	9	0	0	0	0	0	280
% AM	0%	0%	0%	4%	9%	9%	4%	1%						29%
AM Peak Hour	7:00	7:00	9:00	7:00	11:00	8:00	10:00	7:00						7:00
Volume	1	3	3	14	19	23	11	4						59
PM Volumes	2	1	15	107	171	233	122	19	7	0	0	0	0	677
% PM	0%	0%	2%	11%	18%	24%	13%	2%	1%					71%
PM Peak Hour	13:00	20:00	18:00	18:00	16:00	18:00	15:00	15:00	18:00					18:00
Volume	1	1	6	22	30	33	24	4	3					99
Directional Peak Periods		AM 7-9				NOON 12-2				PM 4-6			Off Peak Volumes	
All Speeds		Volume		%		Volume		%		Volume		%	Volume	%
		113	↔	12%		130	↔	14%		162	↔	17%	552	58%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Aliso Hills Dr	East Bound	29	36	35	42	45	957
Aliso Hills Dr	West Bound	26	36	35	43	47	1030

SPEED

Aliso Hills Dr W/O La Cienega St

Day: Wednesday

Date: 2/26/2025

City: Laguna Hills

Project #: CA25_010022_002w

West 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	1	0	1	0	0	0	0	0	0	0	2
1:00	0	0	1	1	1	1	0	0	0	0	0	0	0	4
2:00	0	0	0	0	1	1	0	1	0	0	0	0	0	3
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
5:00	0	0	0	1	2	4	1	0	0	0	0	0	0	8
6:00	0	0	0	6	8	6	7	3	0	0	0	0	0	30
7:00	0	0	1	12	20	25	11	9	1	0	0	0	0	79
8:00	0	0	1	10	18	36	20	7	0	0	0	0	0	92
9:00	0	0	3	6	10	16	8	5	1	0	0	0	0	49
10:00	0	0	2	7	11	8	10	6	0	0	0	0	0	44
11:00	0	0	1	10	11	13	10	4	0	0	0	0	0	49
12:00 PM	0	1	1	6	12	22	11	3	2	0	0	0	0	58
13:00	0	0	2	9	16	11	7	9	0	0	0	0	0	54
14:00	0	0	3	6	16	10	11	5	2	0	0	0	0	53
15:00	0	0	2	3	11	24	18	5	1	0	0	0	0	64
16:00	0	0	1	6	21	21	25	5	1	0	0	0	0	80
17:00	0	0	3	14	32	20	11	3	2	0	0	0	0	85
18:00	0	0	2	9	16	15	12	1	1	0	0	0	0	56
19:00	0	0	1	2	8	14	4	2	2	0	0	0	0	33
20:00	0	0	0	3	9	7	4	0	0	0	0	0	0	23
21:00	0	0	2	3	2	3	1	0	0	0	0	0	0	11
22:00	0	0	2	1	3	1	3	0	0	0	0	0	0	10
23:00	0	0	1	0	0	2	0	0	0	0	0	0	0	3
Totals		1	29	116	229	261	174	68	13					891
% of Totals		0%	3%	13%	26%	29%	20%	8%	1%					100%

AM Volumes	0	0	9	54	83	111	67	35	2	0	0	0	0	361
% AM			1%	6%	9%	12%	8%	4%	0%					41%
AM Peak Hour			9:00	7:00	7:00	8:00	8:00	7:00	7:00					8:00
Volume			3	12	20	36	20	9	1					92
PM Volumes	0	1	20	62	146	150	107	33	11	0	0	0	0	530
% PM		0%	2%	7%	16%	17%	12%	4%	1%					59%
PM Peak Hour		12:00	14:00	17:00	17:00	15:00	16:00	13:00	12:00					17:00
Volume		1	3	14	32	24	25	9	2					85
Directional Peak Periods			AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Speeds			Volume	%		Volume	%		Volume	%		Volume	%	
			171	19%	↔	112	13%	↔	165	19%	↔	443	50%	↔

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Aliso Hills Dr	East Bound	30	36	36	43	47	838
Aliso Hills Dr	West Bound	29	36	36	43	48	891

Pedestrian Study

Location: El Segundo St & Aliso Hills Dr
City: Laguna Hills

Date: 2/26/2025
Day: Wednesday

TIME	Pedestrian								TOTAL
	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	1	0	0	0	0	0	1
7:30 AM	0	1	1	0	0	0	0	0	2
7:45 AM	0	0	1	1	0	0	0	0	2
8:00 AM	1	0	0	2	0	0	0	0	3
8:15 AM	0	0	0	0	0	1	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	0	0	0	1
9:00 AM	0	0	0	0	0	1	0	0	1
9:15 AM	0	1	1	0	0	0	0	0	2
9:30 AM	1	0	0	0	0	0	0	0	1
9:45 AM	0	0	1	1	0	1	0	0	3
10:00 AM	0	1	1	0	0	0	0	0	2
10:15 AM	0	0	1	1	1	0	0	0	3
10:30 AM	0	1	0	1	0	0	0	0	2
10:45 AM	0	0	1	0	0	0	0	0	1
11:00 AM	1	0	0	1	0	0	0	0	2
11:15 AM	0	0	1	1	0	1	0	0	3
11:30 AM	0	1	0	0	0	0	0	0	1
11:45 AM	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	2	0	0	0	0	0	2
12:30 PM	0	0	0	1	0	0	0	0	1
12:45 PM	0	0	2	1	0	2	0	0	5
1:00 PM	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0
1:30 PM	1	0	0	0	0	0	0	0	1
1:45 PM	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0
3:30 PM	0	1	0	0	0	0	0	0	1
3:45 PM	1	0	0	0	0	0	0	0	1
4:00 PM	1	0	0	1	0	0	0	0	2
4:15 PM	0	0	2	0	0	0	0	0	2
4:30 PM	0	0	2	0	0	0	0	0	2
4:45 PM	1	0	0	2	0	0	0	0	3
5:00 PM	0	0	0	0	0	1	0	0	1
5:15 PM	0	1	0	0	0	2	0	0	3
5:30 PM	0	1	0	0	0	1	0	0	2
5:45 PM	1	0	1	0	0	0	0	0	2
6:00 PM	0	0	0	0	0	0	0	0	0
6:15 PM	1	0	0	1	0	0	0	0	2
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	1	0	0	0	0	1
Totals	9	9	18	15	1	10	0	0	62



****NOTE: Sidewalk treated as south leg****

VOLUME

Aliso Hills Dr at La Cienega St

Day: Wednesday

Date: 2/26/2025

Highest 8 hours from a Side-Street Perspective

City: Laguna Hills

Project #: CA25_010022_004

DAILY TOTALS					NB	SB	EB					WB	Total			
					179	0	838					825	1,842			
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL				
0:00	0		0	1	1		12:00	3		11	8	22				
0:15	0		1	0	1		12:15	1		14	16	31				
0:30	0		3	0	3		12:30	2		12	21	35				
0:45	0		0	4	1	2	12:45	2	8	14	51	10	55	26	114	
1:00	0		0	1	1		13:00	1		16	13	30				
1:15	0		0	1	1		13:15	3		18	13	34				
1:30	0		0	0	0		13:30	2		17	12	31				
1:45	1	1	1	1	1	3	13:45	2	8	11	62	17	55	30	125	
2:00	0		0	0	0		14:00	1		14	8	23				
2:15	0		1	2	3		14:15	4		8	13	25				
2:30	0		0	1	1		14:30	3		18	13	34				
2:45	0		1	2	0	3	14:45	2	10	19	59	18	52	39	121	
3:00	0		0	0	0		15:00	5		18	13	36				
3:15	0		0	0	0		15:15	4		16	18	38				
3:30	0		0	0	0		15:30	0		12	21	33				
3:45	0		0	0	0		15:45	2	11	27	73	11	63	40	147	
4:00	0		0	0	0		16:00	1		19	24	44				
4:15	0		1	0	1		16:15	8		15	20	43				
4:30	0		0	1	1		16:30	2		25	19	46				
4:45	0		0	1	0	1	16:45	1	12	14	73	18	81	33	166	
5:00	0		0	0	0		17:00	3		14	25	42				
5:15	0		1	0	1		17:15	6		23	12	41				
5:30	2		0	3	5		17:30	5		20	12	37				
5:45	0	2	2	3	3	6	17:45	5	19	16	73	22	71	43	163	
6:00	1		4	5	10		18:00	5		24	19	48				
6:15	0		2	3	5		18:15	3		22	11	36				
6:30	4		3	9	16		18:30	3		24	7	34				
6:45	3	8	5	14	7	24	18:45	0	11	16	86	14	51	30	148	
7:00	5		11	8	24		19:00	1		10	7	18				
7:15	4		5	22	31		19:15	2		6	12	20				
7:30	8		29	12	49		19:30	0		17	8	25				
7:45	6	23	12	57	21	63	19:45	0	3	8	41	4	31	12	75	
8:00	7		15	27	49		20:00	0		4	8	12				
8:15	3		17	26	46		20:15	4		10	1	15				
8:30	6		10	18	34		20:30	1		6	6	13				
8:45	5	21	14	56	16	87	20:45	1	6	12	32	6	21	19	59	
9:00	0		7	12	19		21:00	0		6	4	10				
9:15	4		12	13	29		21:15	1		4	3	8				
9:30	5		7	12	24		21:30	0		1	3	4				
9:45	0	9	14	40	10	47	21:45	0	1	4	15	3	13	7	29	
10:00	2		13	16	31		22:00	1		6	4	11				
10:15	5		11	9	25		22:15	0		2	2	4				
10:30	0		7	6	13		22:30	2		1	0	3				
10:45	2	9	9	40	14	45	22:45	1	4	1	10	0	6	2	20	
11:00	3		7	6	16		23:00	0		1	0	1				
11:15	5		7	16	28		23:15	0		1	1	2				
11:30	1		14	12	27		23:30	0		2	1	3				
11:45	4	13	13	41	9	43	23:45	0		0	4	0	2	0	6	
TOTALS	86		259		324		669	TOTALS	93		579		501		1173	
SPLIT %	12.9%		38.7%		48.4%		36.3%	SPLIT %	7.9%		49.4%		42.7%		63.7%	

DAILY TOTALS					NB	SB	EBWB				Total
					179	0					838
AM Peak Hour	7:15		7:30	7:45	7:30	PM Peak Hour	17:15		15:45	16:15	15:45
AM Pk Volume	25		73	92	183	PM Pk Volume	21		86	82	173
Pk Hr Factor	0.781		0.629	0.852	0.934	Pk Hr Factor	0.875		0.796	0.820	0.940
7 - 9 Volume	44	0	113	150	307	4 - 6 Volume	31	0	146	152	329
7 - 9 Peak Hour	7:15		7:30	7:45	7:30	4 - 6 Peak Hour	17:00		16:30	16:15	16:00
7 - 9 Pk Volume	25	0	73	92	183	4 - 6 Pk Volume	19	0	76	82	166
Pk Hr Factor	0.781	0.000	0.629	0.852	0.934	Pk Hr Factor	0.792	0.000	0.760	0.820	0.902

SPEED**Aliso Hills Dr E/O La Cienega St**

Day: Wednesday

Date: 2/26/2025

City: Laguna Hills

Project #: CA25_010022_001w

West 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	1	0	1	0	0	0	0	0	0	2
1:00	0	0	0	1	2	0	0	0	0	0	0	0	0	3
2:00	0	0	0	0	0	2	0	1	0	0	0	0	0	3
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:00	0	0	0	0	1	5	0	0	0	0	0	0	0	6
6:00	1	0	0	0	7	11	3	2	0	0	0	0	0	24
7:00	0	0	0	5	6	29	13	9	1	0	0	0	0	63
8:00	0	0	1	3	17	33	23	10	0	0	0	0	0	87
9:00	0	0	0	5	11	15	11	4	1	0	0	0	0	47
10:00	0	1	1	3	11	14	11	4	0	0	0	0	0	45
11:00	0	0	0	3	9	15	11	5	0	0	0	0	0	43
12:00 PM	0	0	0	9	15	16	8	6	1	0	0	0	0	55
13:00	0	1	1	4	12	12	18	4	3	0	0	0	0	55
14:00	0	0	1	3	15	15	10	8	0	0	0	0	0	52
15:00	0	0	0	3	16	19	17	8	0	0	0	0	0	63
16:00	0	0	0	8	23	31	13	6	0	0	0	0	0	81
17:00	0	0	2	10	15	24	12	8	0	0	0	0	0	71
18:00	1	0	0	7	11	22	8	2	0	0	0	0	0	51
19:00	0	0	1	4	5	11	9	1	0	0	0	0	0	31
20:00	0	0	0	2	3	7	7	1	1	0	0	0	0	21
21:00	0	0	0	1	1	11	0	0	0	0	0	0	0	13
22:00	0	0	0	0	2	2	1	1	0	0	0	0	0	6
23:00	0	0	0	0	1	1	0	0	0	0	0	0	0	2
Totals	2	2	7	71	184	296	176	80	7					825
% of Totals	0%	0%	1%	9%	22%	36%	21%	10%	1%					100%

AM Volumes	1	1	2	20	65	125	73	35	2	0	0	0	0	324
% AM	0%	0%	0%	2%	8%	15%	9%	4%	0%					39%
AM Peak Hour	6:00	10:00	8:00	7:00	8:00	8:00	8:00	8:00	7:00					8:00
Volume	1	1	1	5	17	33	23	10	1					87
PM Volumes	1	1	5	51	119	171	103	45	5	0	0	0	0	501
% PM	0%	0%	1%	6%	14%	21%	12%	5%	1%					61%
PM Peak Hour	18:00	13:00	17:00	17:00	16:00	16:00	13:00	14:00	13:00					16:00
Volume	1	1	2	10	23	31	18	8	3					81
Directional Peak Periods		AM 7-9				NOON 12-2				PM 4-6			Off Peak Volumes	
All Speeds		Volume		%		Volume		%		Volume		%	Volume	%
		150	↔	18%		110	↔	13%		152	↔	18%	413	↔ 50%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Aliso Hills Dr	East Bound	30	36	36	43	46	784
Aliso Hills Dr	West Bound	31	37	37	44	48	825

SPEED**Aliso Hills Dr W/O La Cienega St****Day:** Wednesday**Date:** 2/26/2025**City:** Laguna Hills**Project #:** CA25_010022_002e**East 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	1	1	2	0	0	0	0	0	0	0	4
1:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2:00	0	0	0	2	0	0	0	0	0	0	0	0	0	2
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:00	0	0	0	0	1	0	2	0	0	0	0	0	0	3
6:00	0	0	0	2	9	3	0	0	0	0	0	0	0	14
7:00	0	1	1	15	18	13	5	3	1	0	0	0	0	57
8:00	0	0	0	7	14	19	9	6	1	0	0	0	0	56
9:00	0	0	2	5	14	13	4	2	0	0	0	0	0	40
10:00	0	1	1	3	11	11	7	5	1	0	0	0	0	40
11:00	1	0	1	2	9	11	16	1	0	0	0	0	0	41
12:00 PM	0	1	3	6	20	10	10	1	0	0	0	0	0	51
13:00	0	0	1	13	10	22	13	3	0	0	0	0	0	62
14:00	1	0	2	6	7	26	11	5	1	0	0	0	0	59
15:00	0	0	0	4	21	24	16	8	0	0	0	0	0	73
16:00	0	0	1	5	15	26	18	6	2	0	0	0	0	73
17:00	0	0	0	6	13	26	19	8	1	0	0	0	0	73
18:00	0	0	0	9	32	32	8	3	2	0	0	0	0	86
19:00	0	0	0	2	14	18	5	2	0	0	0	0	0	41
20:00	1	0	0	4	12	7	5	3	0	0	0	0	0	32
21:00	0	0	0	2	2	7	3	1	0	0	0	0	0	15
22:00	0	0	0	3	1	2	3	1	0	0	0	0	0	10
23:00	0	0	0	2	1	1	0	0	0	0	0	0	0	4
Totals	3	3	13	99	225	274	154	58	9					838
% of Totals	0%	0%	2%	12%	27%	33%	18%	7%	1%					100%

AM Volumes	1	2	6	37	77	73	43	17	3	0	0	0	0	259
% AM	0%	0%	1%	4%	9%	9%	5%	2%	0%					31%
AM Peak Hour	11:00	7:00	9:00	7:00	7:00	8:00	11:00	8:00	7:00					7:00
Volume	1	1	2	15	18	19	16	6	1					57
PM Volumes	2	1	7	62	148	201	111	41	6	0	0	0	0	579
% PM	0%	0%	1%	7%	18%	24%	13%	5%	1%					69%
PM Peak Hour	14:00	12:00	12:00	13:00	18:00	18:00	17:00	15:00	16:00					18:00
Volume	1	1	3	13	32	32	19	8	2					86
Directional Peak Periods		AM 7-9				NOON 12-2				PM 4-6			Off Peak Volumes	
All Speeds		Volume		%		Volume		%		Volume		%	Volume	%
		113	↔	13%		113	↔	13%		146	↔	17%	466	↔ 56%

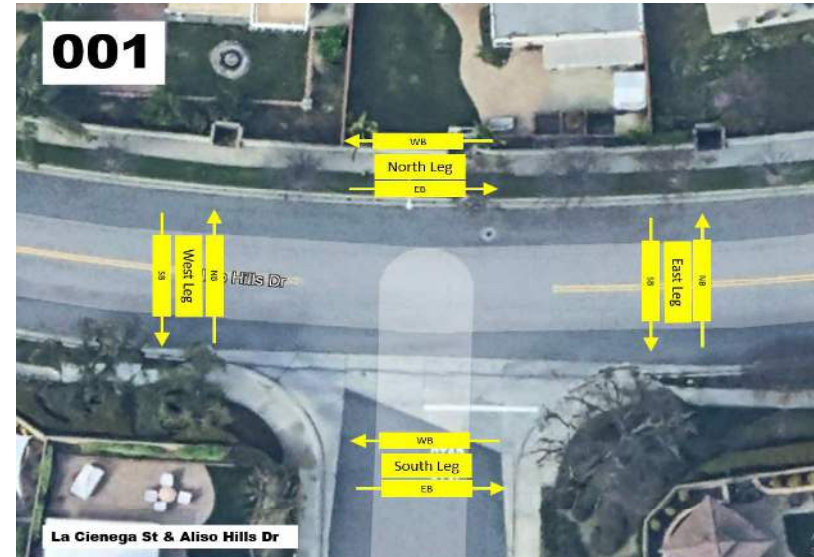
Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Aliso Hills Dr	East Bound	30	36	36	43	47	838
Aliso Hills Dr	West Bound	29	36	36	43	48	891

Pedestrian Study

Location: La Cienega St & Aliso Hills Dr
City: Laguna Hills

Date: 2/26/2025
Day: Wednesday

TIME	Pedestrian								TOTAL
	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	1	0	1	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0
8:00 AM	1	1	1	1	0	0	0	1	5
8:15 AM	0	0	0	0	1	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	0	0	0	1
9:00 AM	0	0	0	0	0	0	0	0	0
9:15 AM	0	1	1	0	0	0	0	1	3
9:30 AM	1	0	0	0	0	0	0	1	2
9:45 AM	0	1	0	1	1	0	0	0	3
10:00 AM	0	1	2	0	0	0	0	0	3
10:15 AM	0	0	0	1	0	0	0	0	1
10:30 AM	1	1	0	1	0	0	0	0	3
10:45 AM	0	0	2	0	0	0	0	0	2
11:00 AM	1	0	0	1	0	0	0	0	2
11:15 AM	0	1	1	0	0	0	0	0	2
11:30 AM	0	1	0	0	0	0	0	0	1
11:45 AM	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	2	0	0	0	0	0	2
12:30 PM	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	2	0	0	0	0	0	2
1:00 PM	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	0	0
1:30 PM	1	2	0	0	0	0	0	0	3
1:45 PM	0	0	0	0	0	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0
3:15 PM	0	1	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0
3:45 PM	0	1	0	0	0	0	0	0	1
4:00 PM	1	0	0	1	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	2	0	0	0	0	0	2
4:45 PM	1	0	0	2	0	0	0	0	3
5:00 PM	0	0	1	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	1	0	1
5:30 PM	0	1	0	0	0	0	0	0	1
5:45 PM	0	0	1	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0
6:15 PM	1	0	0	1	0	0	0	0	2
6:30 PM	0	0	0	0	0	0	0	0	0
6:45 PM	1	1	0	0	0	0	0	0	2
Totals	9	14	16	9	3	0	1	3	55



NOTE: Sidewalk treated as north leg

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 - 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.)

*** Posted speed limit, off-peak 85th-percentile speed prior to work starting, or other anticipated operating speed in mph.

Table 6C-2. Stopping Sight Distance as a Function of Speed on Level Roads.
(Used as suggested longitudinal buffer space length or location for flagger station)

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

'STANDARD' SIGHT DISTANCES.

* Posted speed, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph.

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

Table 6C-101(CA). Stopping Sight Distance as a Function of Speed on Downgrades.
(Used as suggested longitudinal buffer space length or location for flagger station)

Speed (mph)	% Downgrade (Buffer Space)		
	-3% (feet)	-6% (feet)	-9% (feet)
20	116	120	126
25	158	165	173
30	205	215	227
35	257	271	287
40	315	333	354
45	378	400	427
50	446	474	507
55	520	553	593
60	598	638	686
65	682	728	785
70	771	825	891
75	866	927	1003

'DOWNHILL' SIGHT
DISTANCES.



* Exhibit 3-2. A Policy on Geometric Design of Highways and Streets, AASHTO, 2001, p.115.

Danger Crossing Aliso Hills

Parks & Rec Meeting Submission February 5, 2025

Proposal:

- Cross walk with reflector bot dots
- Stop sign with cross walk
- Stop sign to slow traffic
- Speed humps

Problem:

- Cars speeding down or up the hill on Aliso Hills Drive
- Aliso Hills Drive curves and there is a blind spot for pedestrians crossing
- Resident pedestrian traffic crossing is dangerous between Sunrise side and La Cienega
- The only crosswalks are at Alicia Parkway (bottom of the hill) and Alameda (top of the hill)
- Aliso Hills Drive has consistent traffic activity
- Two known accidents on Aliso Hills near El Segundo Street in 2024



Scope of work:

Curb cuts for easement, ADA compliant, possible signage, restriping, creating new traffic habit, etc.

Submitted by: Elizabeth Stolarski, Laguna Hills Resident