



CITY OF LAGUNA HILLS TRAFFIC COMMISSION

REGULAR MEETING AGENDA

Wednesday, September 18, 2019 – 7:00 PM

Len Herman - Chair

Chris Mackey - Vice Chair

Anna Lisa Lukes - Commissioner

Chris Bieber - Commissioner

Larry Woodruff - Commissioner

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

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

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

CALL TO ORDER

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

PLEDGE OF ALLEGIANCE

ROLL CALL OF COMMISSION MEMBERS

1. PUBLIC COMMENTS

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

2. MINUTES**2.1 Minutes**

Recommendation: That the Traffic Commission Approve the Minutes of July 17, 2019.

3. PRESENTATIONS**4. ADMINISTRATIVE REPORTS****4.1 Multi-Way Stop Sign Evaluation - Buckskin Drive at Mustang Drive**

Recommendation: That the Traffic Commission Recommend to the City Council the Installation of a One-Way Stop Sign on Mustang Drive at Buckskin Drive.

4.2 Extension of Gordon Road No Parking Zone for Sight Distance Near Imperial Drive (Private Street)

Recommendation: That the Traffic Commission Recommend to the City Council the Extension of the Existing No Parking Zone on the Southerly Side of Gordon Road Near Imperial Drive (Private Street) for Sight Distance.

5. INFORMATIONAL ITEMS**5.1 Sheriff's Department Verbal Report****5.2 Radar Speed Trailer**

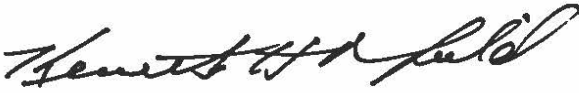
Recommendation: That the Traffic Commission Receive and File the Report.

6. COMMISSIONER COMMENTS**7. ADJOURNMENT**

The next Regular Meeting of the Traffic Commission will be November 20, 2019, at 7:00 PM in the City Council Chamber, located at 24035 El Toro Road, Laguna Hills California.

CERTIFICATION

I, KENNETH H. ROSENFELD, Assistant City Manager/Director of Public Services 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 13, 2019, at 5:00 pm.



Assistant City Manager/Director of Public Services

September 13, 2019

Date

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, you should contact the office of the City Engineer at (714) 707-2650. Notification 48 hours prior to the meeting will enable the City to make reasonable arrangements to assure access.

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



City of Laguna Hills

Traffic Commission

Staff Report

DATE: September 18, 2019
TO: Traffic Commissioners
FROM: Amber M. Shah P.E.
Associate Civil Engineer
ISSUE: Minutes

RECOMMENDATION: That the Traffic Commission Approve the Minutes of July 17, 2019.

ATTACHMENTS:

- Minutes 7-17-19

**CITY OF LAGUNA HILLS
TRAFFIC COMMISSION MEETING
REGULAR MEETING MINUTES
JULY 17, 2019**

CALL TO ORDER

The Regular Meeting of the Traffic Commission of the City of Laguna Hills, California, was called to order by Chair Herman at 7:00 PM in the Laguna Hills City Council Chamber, 24035 El Toro Road, Laguna Hills, California.

PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was led by Vice Chair Mackey.

ROLL CALL OF COMMISSION MEMBERS

Present: Chair Len Herman, Vice Chair Chris Mackey, Commissioner Chris Bieber, Commissioner Anna Lisa Lukes, Commissioner Larry Woodruff.

1. PUBLIC COMMENTS

There were no Public Comments.

2. MINUTES

**THE TRAFFIC COMMISSION APPROVED THE MINUTES OF THE MAY 15, 2019, REGULAR MEETING, BY M/COMMISSIONER LUKES, S/COMMISSIONER WOODRUFF.
APPROVED BY A VOTE OF 5-0.**

3. PRESENTATIONS

There were no Presentations.

4. ADMINISTRATIVE REPORTS

4.1 SCHOOL CROSSING GUARD NEED ASSESSMENT AT PASEO DE VALENCIA AND MACKENZIE STREET

Associate Civil Engineer Amber Shah indicated the City Council was contacted by a resident regarding students walking to Valencia Elementary School along Paseo de Valencia as it crosses Mackenzie Street. Based upon the residents concern, and in accordance with the Residential Streets Management Policy, Staff initiated a review of school walking patterns during the morning and afternoon peak-hour school time to collect data required by the California Manual on Uniform Traffic Control Devices (CA MUTCD) on adult crossing guard criteria and to determine if the standards are met for deployment of additional adult crossing guards.

Staff observed and collected peak-hour school-age pedestrian crossing data during a typical midweek school day on Tuesday, May 21, 2019, from 7:45 - 8:45 AM and from

**CITY OF LAGUNA HILLS
TRAFFIC COMMISSION MEETING
REGULAR MEETING MINUTES
JULY 17, 2019**

2:15 – 3:15 PM at the side street stop sign controlled T-intersection of Mackenzie Street at Paseo de Valencia.

The CA MUTCD criteria identifying the need for a school crossing guard is a pedestrian count of at least 40 school pedestrians for each of any two hours of the day and a minimum of 500 vehicles per hour during any period when the school pedestrians are going to or from school crossing at a stop sign controlled crossing.

The combined total of 26 school age pedestrians was observed in the morning and afternoon, versus the required minimum 40 pedestrians in any two hour period. The combined vehicular volume for the morning and afternoon times was 203 vehicles, which did not meet the minimum vehicular volume requirement of at least 500 vehicles per hour during any period when school pedestrians are present at the stop sign controlled crossing. Ms. Shah indicated, based upon the data collected during the field evaluation, this intersection did not satisfy the criteria for an adult crossing guard per the latest CA MUTCD guidelines.

**THE TRAFFIC COMMISSION RECEIVED AND FILED THE REPORT.
BY M/CHAIR HERMAN, S/VICE CHAIR MACKEY.
APPROVED BY A VOTE OF 5-0.**

**4.2 MODIFICATION OF THE NO PARKING DURING STREET SWEEPING
HOURS ON VIA LOMAS**

Associate Civil Engineer Amber Shah, indicated Staff received a request from the Sheriff's Department regarding the hours of street sweeping operations on Via Lomas. The Sheriff's Department stated they had observed vehicular conflicts between the significant number of vehicles parked on the street that are required to move off the street during street sweeping hours and vehicles seeking egress from the adjacent multiple family dwelling units parking lots along Via Lomas during the 8:00 a.m. peak hour, when the no parking during street sweeping hours are in effect. Based upon a field review of the current site conditions and the Sheriff's Department input, Staff recommended a modification of the no parking during street sweeping hours from 8:00 a.m. to 12:00 p.m. to 10:00 a.m. to 2:00 p.m. on the second and fourth Wednesday of each month.

**THE TRAFFIC COMMISSION RECOMMENDED TO THE CITY COUNCIL A
MODIFICATION OF THE NO PARKING DURING STREET SWEEPING HOURS ON
VIA LOMAS FROM 8:00 A.M. – 12:00 P.M. TO 10:00 A.M. – 2:00 P.M. ON THE
SECOND AND FOURTH WEDNESDAY OF EACH MONTH.
BY M/VICE CHAIR MACKEY, S/COMMISSIONER WOODRUFF.
APPROVED BY A VOTE OF 5-0.**

Attachment: Minutes 7-17-19 (1953 : Minutes)

**CITY OF LAGUNA HILLS
TRAFFIC COMMISSION MEETING
REGULAR MEETING MINUTES
JULY 17, 2019**

5. INFORMATIONAL ITEMS

5.1 SHERIFF'S DEPARTMENT VERBAL REPORT

Sergeant McFatridge indicated the Sheriff's Department increased enforcement activities on Oso Parkway significantly due to observed concerns regarding speeding vehicles. Regarding the school related pedestrian activity, the Sheriff's Department will also have an increased presence at all schools as the school year begins and monitor and enforce all traffic conditions to ensure the safety of the students.

5.2 RADAR SPEED TRAILER

Staff submitted the schedule for the radar trailer.

6. COMMISSIONER COMMENTS

Commissioner Bieber commented the Traffic Commission should recognize the efforts of Community Service Officer Matthew Padilla for suggesting the City modify the hours of street sweeping to make the Via Lomas resident's life easier.

7. ADJOURNMENT

There being no further business before the Traffic Commission at this session, Chair Herman declared the meeting adjourned at 7:22 p.m.

Prepared By:

Amber Shah, P.E.
Associate Civil Engineer

Approved By:

Chair Len Herman

Attachment: Minutes 7-17-19 (1953 : Minutes)



City of Laguna Hills

Traffic Commission

Staff Report

DATE: September 18, 2019
TO: Traffic Commissioners
FROM: Amber M. Shah P.E.
Associate Civil Engineer
ISSUE: Multi-Way Stop Sign Evaluation - Buckskin Drive at Mustang Drive

RECOMMENDATION: That the Traffic Commission Recommend to the City Council the Installation of a One-Way Stop Sign on Mustang Drive at Buckskin Drive.

SUMMARY:

Staff was contacted by a resident regarding traffic conflict concerns at the uncontrolled T-intersection of Buckskin Drive at Mustang Drive. Based upon the resident's concerns and in accordance with the Residential Streets Management Policy, staff initiated a multi-way stop sign evaluation of the intersection of Buckskin Drive at Mustang Drive. The multi-way stop sign analysis, performed by Hartzog & Crabill, Inc., attached, determined a 3-way stop sign installation is not warranted at this intersection based upon the minimum guidelines established by the California Manual on Uniform Traffic Control Devices (MUTCD) for traffic volumes, traffic collision history and site conditions. However, a one-way stop sign installation is recommended as a "side street" stop control for the southbound approach of Mustang Drive at Buckskin Drive to improve right-of-way assignment. Based upon the findings in the report, staff concurs with the recommendation to install a side street stop sign on Mustang Drive at Buckskin Drive to affirmatively assign the right of way at the intersection.

FISCAL IMPACT:

Multi-Way Stop Sign Evaluation - Buckskin Drive at Mustang Drive

September 18, 2019

Page 2

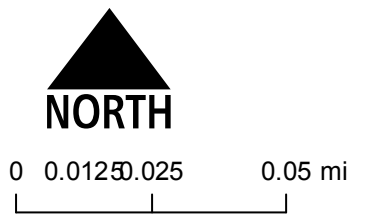
The installation of a stop sign, pavement marking and white limit line have an anticipated cost of \$800. Funds are available for this work in the 2019-20 Fiscal Year Public Works Maintenance Budget.

ATTACHMENTS:

- Vicinity Map - Buckskin Drive at Mustang Drive
- Multi Way Stop Sign Analysis Buckskin Drive at Mustang Drive



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NECC, © OpenStreetMap contributors, and the GIS User Community



VICINITY MAP - BUCKSKIN DRIVE AT MUSTANG DRIVE





Trammell Hartzog, President
Gerald J. Stock, PE, TE,
Executive Vice-President

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Suite 101
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Phone: (714) 731-9455
FAX: (714) 731-9498

www.hartzog-crabill.com

August 19, 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: Multi-way Stop Sign Analysis - Buckskin Drive at Mustang Drive

Dear Mr. Rosenfield:

Hartzog & Crabill, Inc. (HCI) has completed a Multi-Way Stop Sign Warrant Analysis for the subject intersection. As you will see in the attached report, our recommendation is for denial for a multi-way stop sign installation at this time.

The analysis was completed in response to the City's request to verify if a multi-way stop sign installation is warranted, and recommended based on meeting standard guidelines. The California Manual of Uniform Traffic Control Devices (California MUTCD) was used for defining the requirements for a multi-way stop sign installation. At the present time, the intersection is un-controlled on all approaches. In overall consideration of existing conditions, and no multi-way stop warrants found satisfied, a multi-way stop sign installation is not recommended at this time. However, a one-way stop sign installation is recommended for the southbound approach of Mustang Drive to improve right-of-way assignment and assist with sight distance. This recommendation includes the installation of a STOP sign and pavement marking, as well as a white limit line. If approved, the cost for this recommendation is estimated at \$800.00.

It has been our pleasure to prepare this analysis for the City of Laguna Hills. If you have any questions or need more information, please feel free to call me at (714) 731-9455.

Very truly yours,
HARTZOG & CRABILL, INC.

A handwritten signature in blue ink, appearing to read 'Gerald J. Stock', is written over a horizontal line.

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

Attach: Multi-way Stop Control Warrants Analysis Report

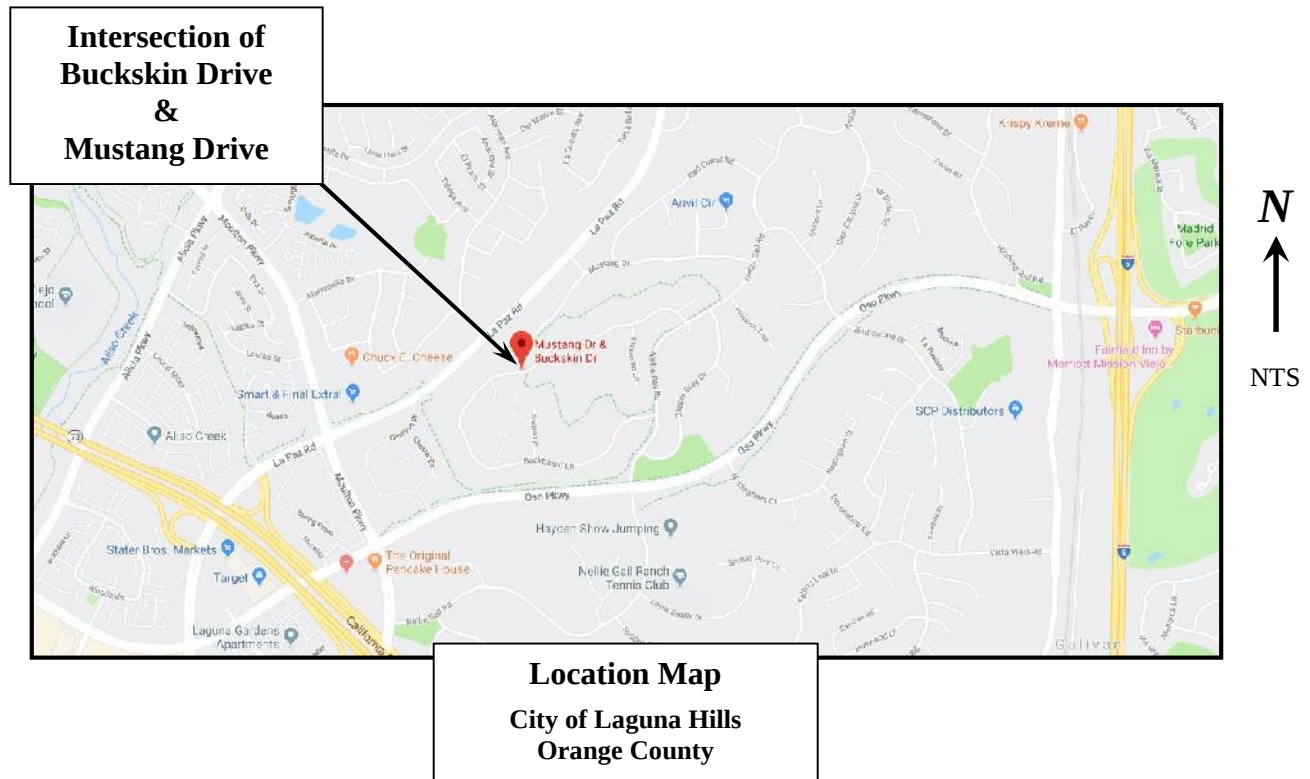
Attachment: Multi Way Stop Sign Analysis Buckskin Drive at Mustang Drive (1950 : Multi-Way Stop Sign Evaluation - Buckskin Drive at

MULTIWAY STOP CONTROL WARRANTS ANALYSIS BUCKSKIN DRIVE AT MUSTANG DRIVE IN THE CITY OF LAGUNA HILLS, CA

INTRODUCTION

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

The location is a typical T-intersection with Buckskin Drive running diagonally in the east-west directions and Mustang Drive running diagonally in the north-south directions. The intersection is located south of La Paz Road and east of Moulton Parkway (*see Location Map below*). The intersection is entirely within the City of Laguna Hills jurisdiction. At the present time, there is no intersection traffic control installed on either street (i.e., uncontrolled approaches).



Multiway Stop Sign Warrants Analysis - Buckskin Dr at Mustang Dr, in the City of Laguna Hills, CA**BACKGROUND**

Buckskin Drive is a curvilinear, east-west local roadway with primarily single-family residential properties on both sides of the street. At the intersection with Mustang Drive, the roadway is approximately 40 feet wide, and the 2-lane roadway provides for one lane of traffic in each direction, which are not separated by centerline striping. There are no marked crosswalks across Buckskin Drive at/near the intersection. However, there are advance Horse Xing pavement markings, as well as Yield limit line pavement markings and Equestrian Xing warning signs located just east of the intersection. The roadway does have curb, gutter, and sidewalk improvements on the north side of the street and only curb and gutter on the south side. Buckskin Drive has a posted speed limit of 25 MPH. On-street parking is allowed on both sides of the street. Currently, there are no STOP signs or other types of traffic control on Buckskin Drive (uncontrolled) at its intersection with Mustang Drive.

See Exhibit 1 (next page) for photo images of Buckskin Drive.

Mustang Drive is a curvilinear, north-south local roadway with primarily single-family residential properties on both sides of the street. At the T-intersection with Buckskin Drive, which is the southerly terminus of Mustang Drive, the roadway is approximately 40 feet wide. The 2-lane roadway provides for one lane of traffic in each direction, which are not separated by centerline striping. There are no marked crosswalks across Mustang Drive. The roadway does have curb, gutter, parkway and sidewalk improvements on the west side and only curb and gutter on the east side. Mustang Drive has a posted speed limit of 25 MPH, along with an adjacent '25' pavement marking. On-street parking is allowed on both sides of the street. Currently, there is no STOP sign or other types of traffic control on Mustang Drive (uncontrolled) at its intersection with Buckskin Drive.

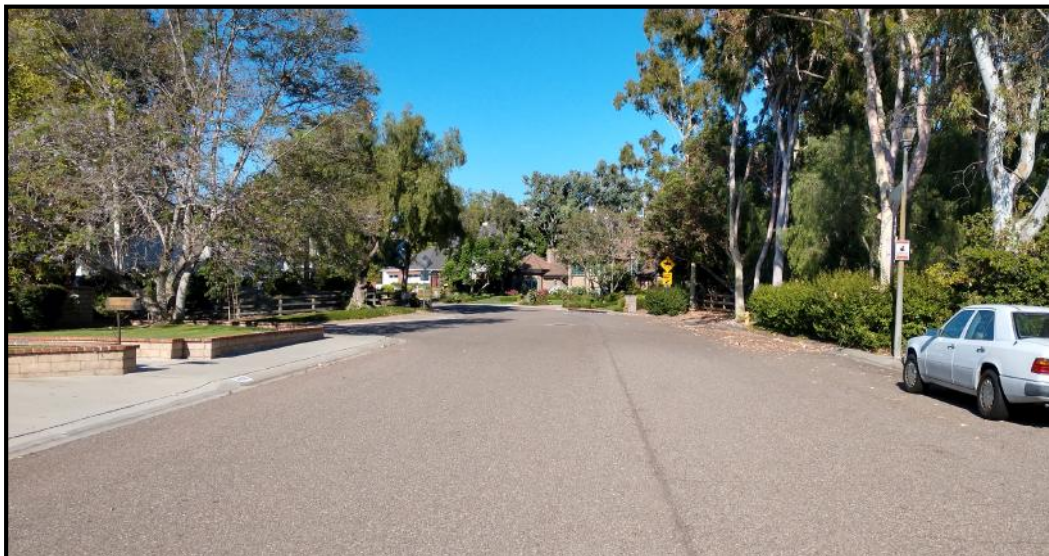
See Exhibit 2 (following page) for a photo image of Mustang Drive.

Multiway Stop Sign Warrants Analysis - Buckskin Dr at Mustang Dr, in the City of Laguna Hills, CA

EXHIBIT 1



BUCKSKIN DRIVE (LOOKING WESTBOUND) @ MUSTANG DRIVE



BUCKSKIN DRIVE (LOOKING EASTBOUND) @ MUSTANG DRIVE

Multiway Stop Sign Warrants Analysis - Buckskin Dr at Mustang Dr, in the City of Laguna Hills, CA

EXHIBIT 2



MUSTANG DRIVE (LOOKING SOUTHBOUND) @ BUCKSKIN DRIVE

*Multiway Stop Sign Warrants Analysis - Buckskin Dr at Mustang Dr, in the City of Laguna Hills, CA***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 3-way (multi-way) stop or a one-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 Sign Warrants Analysis - Buckskin Dr at Mustang Dr, in the City of Laguna Hills, CA

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- and left-turn collisions, as well as right-angle collisions (i.e., broadside, or head-on) and pedestrian-vehicle collisions. The latest available collision history for the intersection was gathered by HCI from the State of California Highway Patrol (CHP) Statewide Integrated Traffic Records System website (*i-SWITRS*). 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 (*next page*) provides the most recent summary of collision history occurring at or near this intersection.

Multiway Stop Sign Warrants Analysis - Buckskin Dr at Mustang Dr, in the City of Laguna Hills, CA

Collision History (continued)

TABLE 1
SWITRS COLLISION SUMMARY

Intersection	2013-14		2015		2016		2017-18	
	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?
Buckskin Drive at Mustang Drive		None reported		None reported		None reported		None reported

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

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

As shown, there have been no reported collisions, at or near this intersection over the past (5) years of available SWITRS collision data. 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 SWITRS traffic collision data report is included in Appendix B.***

Traffic Volumes

HCI collected Average Daily Traffic (ADT) vehicular approach counts on Tuesday, July 9, 2019 in order to account for vehicles that typically use this T-intersection. The ADT approach count for Buckskin Drive is 389 vehicles per day with the highest AM peak-hour approach volume having 33 vehicles, and 32 vehicles in the PM peak-hour. The ADT approach count for Mustang Drive is 366 vehicles with the highest AM peak-hour approach volume having 25 vehicles, and 45 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.***

Multiway Stop Sign Warrants Analysis - Buckskin Dr at Mustang Dr, in the City of Laguna Hills, CA

Traffic Volumes (continued)

TABLE 2
HIGHEST 24-HOUR INTERSECTION APPROACH VEHICLE COUNTS
BUCKSKIN DRIVE AT MUSTANG DRIVE

Street	Direction	ADT Volume	Directional Split	Highest Hourly Volume
Buckskin Drive	Eastbound	175	45%	16 (9 - 10AM)
	Westbound	214	55%	19 (8 - 9AM) (10-11AM)
Mustang Drive				
	Southbound	366	100%	45 (6 - 7PM)

Buckskin Drive is considered the ‘through’ or ‘major’ street at this residential T-intersection since it carries slightly higher volumes, and drivers are not required to slow down, or even stop, before proceeding straight, left or right. In comparison, Mustang Drive is considered the ‘minor’ street as drivers on Mustang Drive are required to slow to a stop at Buckskin Drive and look both ways before making a left or right turn. It is typically expected that the traffic volumes on the minor street are significantly less than those on the major street. As can be seen from the table above, this is not the case, as Mustang Drive carries approximately 48% of the entire traffic entering the intersection (Buckskin Drive carries 52% 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 limits on both streets are 25 MPH. Field observations during our site visit confirmed vehicles were not regularly speeding over the speed limit near the intersection, but were considered typical and what may be expected for two-lane local-type roadways. As the speed limits are 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.

Multiway Stop Sign Warrants Analysis - Buckskin Dr at Mustang Dr, in the City of Laguna Hills, CA

Traffic Volumes (continued)

It is important to note that the hourly vehicle traffic counts shown in Table 2 above are given for the highest 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).

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
BUCKSKIN DRIVE AT MUSTANG 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 (25) vehicles per hour Meets 8% of the required hourly traffic volume	and	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 (28) vehicles per hour Meets 14% of the required hourly traffic volume	but	Part 3. If the 85th-percentile approach speed of the major-street traffic exceeds 65 km/h or exceeds 40 mph, the minimum vehicular volume warrants are (70) percent of the above values. 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 (8% major street / 14% minor street). Therefore, the minimum traffic volume warrant is not satisfied.

Multiway Stop Sign Warrants Analysis - Buckskin Dr at Mustang Dr, in the City of Laguna Hills, CA**Visibility**

Impaired visibility, or restricted sight distance, due to the geometry of the intersection and possible obstructions was carefully considered during our field-review of the surrounding residential property environment. The geometry of the intersection includes an approximate 90° angle, and both roadways have gradual horizontal and vertical curvature going away from the intersection.

Driver sight distance was measured from the side-street approach to the intersection, as southbound traffic on Mustang Drive is required to stop, before proceeding to make a left or right-turn. The measured distance was derived from the stopping sight distance guidelines found in the California MUTCD (*see Appendix D*). In this reference, a 25 MPH roadway speed recommends a minimum Stopping Sight Distance of 155 feet. This distance was used when looking towards approaching, uncontrolled traffic along Buckskin Drive. More specifically, this stopping sight distance was field-measured from a typical ‘stopped’ vehicle location on Mustang Drive at the intersection looking towards the oncoming lanes of cross-traffic on Buckskin Drive. An orange cone was placed at this distance and a photograph was taken from a stopped driver’s perspective.

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

As Exhibit 3 shows, when looking from Mustang Drive, a driver does have a clear line of sight to the minimum sight distance at 155 feet when looking westerly. However, when looking easterly, the horizontal roadway curvature of Buckskin Drive does not provide the minimum sight distance.

Multiway Stop Sign Warrants Analysis - Buckskin Dr at Mustang Dr, in the City of Laguna Hills, CA

EXHIBIT 3



Southbound BUCKSKIN DRIVE (Looking West) @ MUSTANG DRIVE



Southbound BUCKSKIN DRIVE (Looking East) @ MUSTANG DRIVE

Multiway Stop Sign Warrants Analysis - Buckskin Dr at Mustang Dr, in the City of Laguna Hills, CA**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 (Buckskin 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 the intersection resulted in (0) SWITRS-reported correctible collisions during the last five years of available data, where the minimum guideline calls for at least five (5) correctible collisions in a 12-month period. The average minimum hourly minor street traffic volumes required for a multi-way stop that are to be satisfied for any eight (8) hours in an average day were also not close to being met. 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 above). The 80% combined criteria were also not met as both the collisions and minimum traffic volumes were not satisfied to this percentage. If the California MUTCD criteria is 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 was one street light post on the southwest corner area. In regards to pedestrian and bicycle activity, field observations confirmed a low activity of both. However, it was determined that a driver does not have a clear line of sight when looking easterly from Mustang Drive due to the roadway curvature.

Multiway Stop Sign Warrants Analysis - Buckskin Dr at Mustang Dr, in the City of Laguna Hills, CA

MULTIWAY STOP ANALYSIS SUMMARY (continued)

Therefore, based upon engineering judgment, it is determined that stopping traffic on Buckskin Drive at Mustang Drive is not required at this time to enhance the traffic safety at this intersection.

RECOMMENDATIONS

In overall consideration of the analysis criteria in this report, a multi-way (3-way) stop sign installation is not recommended at this time for the intersection of Buckskin Drive and Mustang Drive.

However, a one-way stop sign installation is recommended for the southbound approach of Mustang Drive in order to improve right-of-way assignment and assist with sight distance. This recommendation includes the installation of a STOP sign and STOP pavement marking, as well as a white limit line on Mustang Drive. If approved, the cost for this recommendation is estimated at \$800.00.

APPENDIX A

**MULTIWAY STOP APPLICATIONS
GUIDELINES:**

CALIFORNIA MUTCD

Standard:

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

Option:

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

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

Standard:

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

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

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

Guidance:

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

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

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

Guidance:

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

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

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

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

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

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

Support:

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

Guidance:

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

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

Support:

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

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

Standard:

- 10 Because the potential for conflicting commands could create driver confusion, YIELD or STOP signs shall not be used in conjunction with any traffic control signal operation., except in the following cases:
- A. If the signal indication for an approach is a flashing red at all times;
 - B. If a minor street or driveway is located within or adjacent to the area controlled by the traffic control signal, but does not require separate traffic signal control because an extremely low potential for conflict exists; or
 - C. If a channelized turn lane is separated from the adjacent travel lanes by an island and the channelized turn lane is not controlled by a traffic control signal.

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

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

APPENDIX B

SWITRS COLLISION HISTORY

CITY OF LAGUNA HILLS
INTERSECTION OF MUSTANG DRIVE AND BUCKSKIN DRIVE
5-YEAR SWITRS COLLISION DATABASE
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.
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NO COLLISIONS REPORTED FOR THE SUBJECT INTERSECTION.

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 Influe
 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

Prepared by National Data & Surveying Services

VOLUME

Mustang Dr & Buckskin Dr

Day: Tuesday
Date: 7/9/2019

Highest 8 hours

City: Laguna Hills
Project #: CA19_1140_001

DAILY TOTALS					NB	SB	EB					WB	Total			
					0	366						175	214	755		
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL				
00:00	0	0	0	0	0		12:00	0	7	3	7	17				
00:15	0	0	0	0	0		12:15	0	5	6	8	19				
00:30	0	0	0	0	0		12:30	0	4	1	3	8				
00:45	0	0	1	1	0	1	12:45	0	6	22	2	12	0	18	8	52
01:00	0	0	0	0	0		13:00	0	6	1	2	9				
01:15	0	0	0	0	0		13:15	0	10	2	3	15				
01:30	0	2	0	1	3		13:30	0	6	2	7	15				
01:45	0	0	2	0	0	1	13:45	0	6	28	0	5	6	18	12	51
02:00	0	0	0	0	0		14:00	0	4	3	2	9				
02:15	0	1	0	0	1		14:15	0	4	5	0	9				
02:30	0	0	0	0	0		14:30	0	7	3	6	16				
02:45	0	0	1	0	0	1	14:45	0	9	24	2	13	4	12	15	49
03:00	0	1	0	0	1		15:00	0	7	4	1	12				
03:15	0	0	0	0	0		15:15	0	5	2	3	10				
03:30	0	0	0	0	0		15:30	0	6	3	5	14				
03:45	0	0	1	1	1	2	15:45	0	6	24	2	11	0	9	8	44
04:00	0	0	0	0	0		16:00	0	6	5	2	13				
04:15	0	0	0	0	0		16:15	0	3	2	9	14				
04:30	0	1	0	1	2		16:30	0	10	3	2	15				
04:45	0	0	1	1	1	3	16:45	0	4	23	5	15	4	17	13	55
05:00	0	1	1	1	3		17:00	0	7	1	4	12				
05:15	0	0	0	0	0		17:15	0	4	3	1	8				
05:30	0	0	0	1	1		17:30	0	7	5	6	18				
05:45	0	0	1	0	1	3	17:45	0	12	30	4	13	2	13	18	56
06:00	0	1	0	0	1		18:00	0	8	1	1	10				
06:15	0	0	1	4	5		18:15	0	17	2	5	24				
06:30	0	1	1	2	4		18:30	0	11	4	3	18				
06:45	0	4	6	4	3	9	18:45	0	9	45	1	8	2	11	12	64
07:00	0	3	3	2	8		19:00	0	8	7	77	2	98	17		
07:15	0	1	5	1	7		19:15	0	3	0	0	3				
07:30	0	3	3	3	9		19:30	0	7	2	5	14				
07:45	0	2	9	4	15	10	19:45	0	3	21	0	9	3	10	6	40
08:00	0	4	7	4	15		20:00	0	6	3	1	10				
08:15	0	2	2	7	11		20:15	0	5	2	2	9				
08:30	0	2	3	6	11		20:30	0	4	2	0	6				
08:45	0	7	15	2	14	2	20:45	0	6	21	4	11	0	3	10	35
09:00	0	8	4	2	14		21:00	0	3	0	5	8				
09:15	0	4	3	5	12		21:15	0	4	0	0	4				
09:30	0	5	6	4	15		21:30	0	5	0	1	6				
09:45	0	4	21	3	16	6	21:45	0	2	14	1	1	0	6	3	21
10:00	0	4	1	5	10		22:00	0	4	0	2	6				
10:15	0	6	2	4	12		22:15	0	4	0	0	4				
10:30	0	3	1	4	8		22:30	0	2	0	0	2				
10:45	0	5	18	3	7	6	22:45	0	1	11	2	2	0	2	3	15
11:00	0	7	1	3	11		23:00	0	2	0	1	3				
11:15	0	7	3	4	14		23:15	0	1	0	1	2				
11:30	0	6	3	4	13		23:30	0	0	0	0	0				
11:45	0	5	25	6	13	3	23:45	0	0	3	0	0	2	0	5	
TOTALS	100				75	93	268	TOTALS	266				100	121	487	
SPLIT %	37.3%				28.0%	34.7%	35.5%	SPLIT %	54.6%				20.5%	24.8%	64.5	

DAILY TOTALS					NB	SB	EBWB				Total
					0	366					175
AM Peak Hour	10:45	07:15	11:30	11:30	PM Peak Hour	17:45	16:00	16:15	18:15	18:1	
AM Pk Volume	25	19	22	63	PM Pk Volume	48	15	19		71	
Pk Hr Factor	0.893	0.679	0.688	0.829	Pk Hr Factor	0.706	0.750	0.528		0.74	
7 - 9 Volume	0	24	29	82	4 - 6 Volume	0	53	28	30	111	
7 - 9 Peak Hour	08:00	07:15	07:45	08:00	4 - 6 Peak Hour	17:00	16:00	16:15		17:0	
7 - 9 Pk Volume	0	15	19	48	4 - 6 Pk Volume	0	30	15	19	56	
Pk Hr Factor	0.000	0.536	0.679	0.750	Pk Hr Factor	0.000	0.625	0.750	0.528	0.77	

Attachment: Multi Way Stop Sign Analysis Buckskin Drive at Mustang Drive (1950 : Multi-Way Stop Sign Evaluation - Buckskin Drive at

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: September 18, 2019
TO: Traffic Commissioners
FROM: Amber M. Shah P.E.
Associate Civil Engineer
ISSUE: Extension of Gordon Road No Parking Zone for Sight Distance Near Imperial Drive (Private Street)

RECOMMENDATION: That the Traffic Commission Recommend to the City Council the Extension of the Existing No Parking Zone on the Southerly Side of Gordon Road Near Imperial Drive (Private Street) for Sight Distance.

SUMMARY:

Staff was contacted by a resident regarding sight distance limitations on Gordon Road near Imperial Drive, a private street. Please see the attached Vicinity Map. Based upon the resident's concern, staff performed a site evaluation and determined restricting parking in this location will improve sight distance for vehicles exiting Imperial Drive. Additionally, a new traffic signal was recently installed on Moulton Parkway at Gordon Road requiring the establishment of a no parking zone on the northerly side of Gordon Road for 100 feet easterly of Moulton Parkway for a right turn lane as identified on the attached layout sketch.

BACKGROUND:

Gordon Road is a cul de sac street, accessed from Moulton Parkway between Alicia Parkway and La Paz Road, which provides access to Moulton Niguel Water District facilities and two multi-family residential communities on private streets accessed from Gordon Road. Parking is currently permitted on Gordon Road except at previously designated no parking zones at the end of the cul de sac and at a fire hydrant.

Extension of Gordon Road No Parking Zone for Sight Distance Near Imperial Drive (Private Street)

September 18, 2019

Page 2

Recently, staff was contacted by a resident regarding sight distance limitations on the southerly side of Gordon Road immediately adjacent to Imperial Drive, a private street. Staff reviewed the resident's concern, and upon performing a site evaluation, determined that restricting parking in this location will improve sight distance for exiting vehicles. It is recommended that the no parking regulation be extended for 30 feet westerly of Imperial Drive as identified on the attached layout sketch. This no parking area will provide appropriate sight distance for vehicles given the geometric layout and design of Gordon Road.

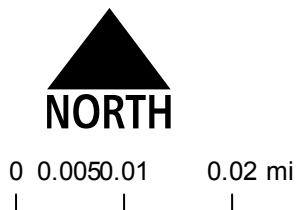
Additionally, a new traffic signal was recently installed on Moulton Parkway at Gordon Road requiring the establishment of a no parking zone on the northerly side of Gordon Road for 100 feet easterly of Moulton Parkway for a right turn lane as identified on the attached layout sketch.

FISCAL IMPACT:

The relocation of one existing "No Parking" sign has an anticipated cost of \$150. Funds are available for this work in the 2019-20 Fiscal Year Public Works Maintenance Budget.

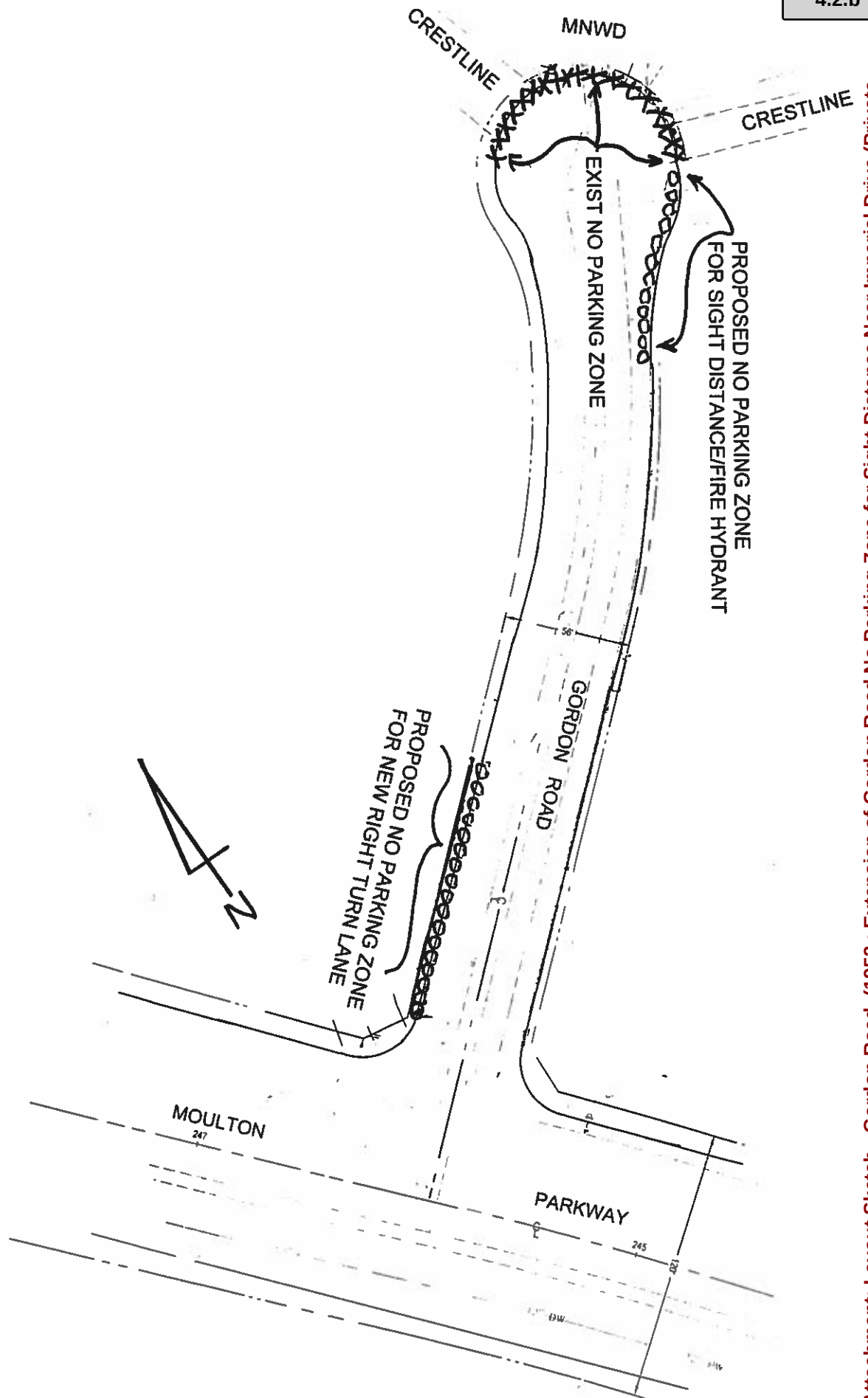
ATTACHMENTS:

- Vicinity Map - Gordon Road
- Layout Sketch - Gordon Road



VICINITY MAP - GORDON ROAD





Attachment: Layout Sketch - Gordon Road (1952 : Extension of Gordon Road No Parking Zone for Sight Distance Near Imperial Drive (Private



City of Laguna Hills

Traffic Commission

Staff Report

DATE: September 18, 2019
TO: Traffic Commissioners
FROM: Amber M. Shah P.E.
Associate Civil Engineer
ISSUE: Radar Speed Trailer

RECOMMENDATION: That the Traffic Commission Receive and File the Report.

ATTACHMENTS:

- Radar Speed Trailer Schedule

CITY OF LAGUNA HILLS

SEPTEMBER 2019

RADAR TRAILER SCHEDULE (RAINY DAYS EXCLUDED)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2 HOLIDAY	3 NB Paseo de Valencia N/O Beckenham 45 MPH	4 SB Paseo de Valencia N/O Laguna Hills 45 MPH	5 NB Paseo de Valencia N/O Beckenham 45 MPH	6	7
8	9	10	11	12	13	14
15	16	17 EB Alicia Pkwy W/O Wilkes 45 MPH	18 WB Alicia Pkwy W/O Wilkes 45 MPH	19 EB La Paz Rd W/O Monte Vista 45 MPH	20	21
22	23	24 Rapid Falls W/O Sundowner 25 MPH	25 Bridlewood S/O Laurel Crest 25 MPH	26 Santa Vittoria S/O Bassano East 30 MPH	27	29
29	30					

Attachment: Radar Speed Trailer Schedule (1951 : Radar Speed Trailer)

CITY OF LAGUNA HILLS

OCTOBER 2019

RADAR TRAILER SCHEDULE (RAINY DAYS EXCLUDED)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8 Nellie Gail E/O Empty Saddle 25 MPH	9 Rapid Falls W/O Sundowner 25 MPH	10 Glen Canyon S/O Nellie Gail 25 MPH	11	12
13	14	15	16	17	18	19
20	21	22 Alameda W/O El Prado 25 MPH	23 Bridlewood S/O Laurel Crest 25 MPH	24 Santa Vittoria N/O Ridge Route 30 MPH	25	26
27	28	29	30	31		

Attachment: Radar Speed Trailer Schedule (1951 : Radar Speed Trailer)

CITY OF LAGUNA HILLS

NOVEMBER 2019
RADAR TRAILER SCHEDULE (RAINY DAYS EXCLUDED)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5 Bridlewood S/O Laurel Crest 25 MPH	6 Woodbluff S/O Middleridge 25 MPH	7 Nellie Gail E/O Empty Saddle 25 MPH	8	9
10	11 HOLIDAY	12	13	14	15	16
17	18	19 Glen Canyon W/O Nellie Gail 25 MPH	20 Lost Colt E/O Beargrass 25 MPH	21	22	23
24	25	26	27	28 HOLIDAY	29 HOLIDAY	30

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