



CITY OF LAGUNA HILLS TRAFFIC COMMISSION

REGULAR MEETING AGENDA Wednesday, March 17, 2021 – 7:00 PM

Chris Bieber - Commissioner

Anna Lisa Lukes - Commissioner

Manuel Hernandez - Commissioner

Susan Caskey - Commissioner

Mark Schaff - 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 Election of Chair

Recommendation: That the Traffic Commission Elect a New Chair.

2 Election of Vice Chair

Recommendation: That the Traffic Commission Elect a New Vice Chair.

1. PUBLIC COMMENTS

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

2. MINUTES**2.1 Minutes**

Recommendation: That the Traffic Commission Approve the Minutes of January 20, 2021.

3. PRESENTATIONS**3.1 Presentation of Traffic Engineering Principles**

Recommendation: That the Traffic Commission Receive an Oral Report from Hartzog and Crabill, Inc.

4. ADMINISTRATIVE REPORTS**4.1 Establishment of Permit Parking Control in the Ridgefield Neighborhood**

Recommendation: That the Traffic Commission Recommend to the City Council the Establishment of a Permit Parking Program and No Parking During Street Sweeping Hours in the Ridgefield Neighborhood Along the Streets of Sierra Bonita Drive, La Cienega Street, and Los Cerros Drive.

4.2 Nellie Gail Ranch Equestrian Crossing Review Update

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

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 May 19, 2021, at 7:00 PM in the City Council Chamber, located at 24035 El Toro Road, Laguna Hills California.

CERTIFICATION

I, KENNETH H. ROSENFELD, Interim 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 March 12, 2021, at 5:00 pm.



Interim City Manager/Director of Public Services

March 12, 2021

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: March 17, 2021
TO: Traffic Commissioners
FROM: Amber M. Shah P.E.
Associate Civil Engineer
ISSUE: Election of Chair

RECOMMENDATION: That the Traffic Commission Elect a New Chair.



City of Laguna Hills

Traffic Commission

Staff Report

DATE: March 17, 2021
TO: Traffic Commissioners
FROM: Amber M. Shah P.E.
Associate Civil Engineer
ISSUE: Election of Vice Chair

RECOMMENDATION: That the Traffic Commission Elect a New Vice Chair.



City of Laguna Hills

Traffic Commission

Staff Report

DATE: March 17, 2021
TO: Traffic Commissioners
FROM: Amber M. Shah P.E.
Associate Civil Engineer
ISSUE: Minutes

RECOMMENDATION: That the Traffic Commission Approve the Minutes of January 20, 2021.

ATTACHMENTS:

- Minutes Jan 20 2021

**CITY OF LAGUNA HILLS
TRAFFIC COMMISSION MEETING
REGULAR MEETING MINUTES
JANUARY 20, 2021**

CALL TO ORDER

The Regular Meeting of the Traffic Commission of the City of Laguna Hills, California, was called to order by Vice Chair Mackey 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: Vice Chair Chris Mackey, Commissioner Chris Bieber, Commissioner Hernandez, Commissioner Anna Lisa Lukes, and Commissioner Larry Woodruff.

1. PUBLIC COMMENTS

There were no public comments.

2. MINUTES

THE TRAFFIC COMMISSION APPROVED THE MINUTES OF THE NOVEMBER 20, 2019, REGULAR MEETING, BY M/COMMISSIONER BIEBER, S/COMMISSIONER LUKES.

APPROVED BY A VOTE OF 5-0.

3. PRESENTATIONS

There were no presentations.

4. ADMINISTRATIVE REPORTS

4.1 NELLIE GAIL RANCH EQUESTRIAN CROSSING REVIEW

Associate Engineer Amber Shah, indicated staff met with the Nellie Gail Ranch Equestrian Ad Hoc Committee (Committee) to evaluate equestrian crossings in the Nellie Gail Ranch community. The Committee requested an evaluation of the driveway crossing at the Nellie Gail Ranch Owners Association Equestrian Center on Nellie Gail Road southerly of Oso Parkway and traffic controls at nearby intersections. Based upon the Committee's inquiries and requests, and in accordance with the Residential Streets Management Policy, staff initiated a review of the Nellie Gail Equestrian Center driveway/equestrian crossing and three intersections

**TRAFFIC COMMISSION MEETING
JANUARY 20, 2021**

along Nellie Gail Road at Empty Saddle Drive, Hidden Trail Road and Rocking Horse Lane. The Traffic Engineers of Hartzog & Crabill, Inc., (HCI) were retained and completed a traffic control and operational review of the Nellie Gail Equestrian Center driveway/equestrian crossing and analyses of the three intersections.

The traffic control and operational review of the driveway/equestrian crossing at the Nellie Gail Equestrian Center on Nellie Gail Road, determined the existing traffic control installations at the equestrian crossing are satisfactory and supported by a zero-collision recorded history. Access improvements to the existing equestrian tunnel under Nellie Gail Road southerly of Oso Parkway are recommended as an incentive for equestrians to use this alternate trail crossing location.

Each of the three intersection multi-way stop sign analyses along Nellie Gail Road at Empty Saddle Drive, Hidden Trail Road and Rocking Horse Lane, determined 3-way stop sign installations are not warranted at any of the intersections 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, it is recommended the Traffic Commission recommend installation of yield line marking at the intersection of Rocking Horse Lane and Nellie Gail Road to improve recognition of the equestrian trail crossing at this location as recommended by staff and described in this report.

Pamela Fraser, of the Nellie Gail Trail and Safety Committee, spoke in favor of additional traffic control at three trail crossings.

THE TRAFFIC COMMISSION RECOMMENDED TO CONTINUE THIS ITEM TO A FUTURE MEETING FOR ADDITIONAL DATA COLLECTION. BY, M/COMMISSIONER WOODRUFF, S/COMMISSIONER BIEBER. APPROVED BY A VOTE OF 5-0.

5. INFORMATIONAL ITEMS

5.1 SHERIFF'S DEPARTMENT VERBAL REPORT

Sergeant McFatridge indicated the Sheriff's Department created a new email address traffic@lagunahillsca.gov for the traffic enforcement team. Sergeant McFatridge said the City currently has three deputies trained in traffic and speed enforcement, and will have an additional four deputies trained by May of 2021. Sergeant McFatridge requested residents provide information through the new email address to help the Sheriff's Department allocate traffic enforcement resources effectively.

**TRAFFIC COMMISSION MEETING
JANUARY 20, 2021**

5.2 RADAR SPEED TRAILER

Staff submitted the schedule for the radar trailer.

**THE TRAFFIC COMMISSION RECEIVED AND FILED THE REPORT.
BY M/COMMISSIONER LUKES, S/COMMISSIONER BIEBER.
APPROVED BY A VOTE OF 5-0.**

6. COMMISSIONER COMMENTS

Commissioner Woodruff indicated his term expired with the January meeting. Commissioner Woodruff said he served his first term in 1997, and returned in 2015. He praised Director Rosenfield, Associate Engineer Shah, and Administrative Assistant Comella for their reports and presentation materials. He said it was a pleasure to learn about the City's issues, and serve with his fellow Commissioners.

Vice Chair Mackey indicated her term expired with the January meeting. Vice Chair Mackey served on the Traffic Commission for two years, and the Parks and Recreation Commission for 6 years. Vice Chair Mackey thanked City Staff and fellow Commissioners, and said they were a pleasure to work with.

7. ADJOURNMENT

There being no further business before the Traffic Commission at this session, Vice Chair Mackey declared the meeting adjourned at 8:09 p.m.

Prepared By:

Amber Shah, P.E.
Associate Civil Engineer

Approved By:

Chair

Attachment: Minutes Jan 20 2021 (2369 : Minutes)



City of Laguna Hills

Traffic Commission

Staff Report

DATE: March 17, 2021
TO: Traffic Commissioners
FROM: Amber M. Shah P.E.
Associate Civil Engineer
ISSUE: Presentation of Traffic Engineering Principles

RECOMMENDATION: That the Traffic Commission Receive an Oral Report from Hartzog and Crabill, Inc.

Hartzog and Crabill, Inc., will present to the Traffic Commission an educational presentation of traffic engineering principles. This is an informational presentation and no action is required by the Traffic Commission.



City of Laguna Hills

Traffic Commission

Staff Report

DATE: March 17, 2021
TO: Traffic Commissioners
FROM: Amber M. Shah P.E.
Associate Civil Engineer
ISSUE: Establishment of Permit Parking Control in the Ridgefield Neighborhood

RECOMMENDATION: That the Traffic Commission Recommend to the City Council the Establishment of a Permit Parking Program and No Parking During Street Sweeping Hours in the Ridgefield Neighborhood Along the Streets of Sierra Bonita Drive, La Cienega Street, and Los Cerros Drive.

SUMMARY:

In 2015, residents requested implementation of parking controls in the “Ridgefield Neighborhood” along the streets of Sierra Bonita Drive, La Cienega Street, Los Cerros Drive and Rio Grande. The residents were concerned with controlling overflow parking from other areas of the community. Based upon the resident’s concerns, and in accordance with the Laguna Hills Municipal Code (LHMC), staff sent two parking control surveys to the residents of the Ridgefield Neighborhood to gauge their interest in parking controls. No consensus on parking controls receiving support from a two-thirds (67%) majority of the neighborhood (the threshold of support required by the LHMC was met. Subsequently, a resident of the Ridgefield Neighborhood contacted staff in August 2018 with a request to revisit the implementation of permit-based parking controls which would otherwise prohibit general overnight parking in their neighborhood. Staff provided a petition form, as permitted by the LHMC, for the resident to circulate by any resident of residential property abutting the proposed Residential Permit Parking Area. Last year, the resident submitted signed petitions indicating support of a minimum of 67% of the residents for a permit parking program. However, Traffic Commission meetings were cancelled due to the COVID-19 pandemic. Now that meetings have resumed, Staff recommends the Traffic Commission

Establishment of Permit Parking Control in the Ridgefield Neighborhood

March 17, 2021

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recommend to the City Council the establishment of a no overnight permit parking program including no parking during street sweeping hours in the Ridgefield Neighborhood along the streets of Sierra Bonita Drive, La Cienega Street and Los Cerros Drive.

BACKGROUND:

In 2015, residents requested implementation of parking controls in the “Ridgefield Neighborhood” along the streets of Sierra Bonita, La Cienega, Los Cerros and Rio Grande. The residents were concerned with controlling overflow parking from other areas of the community. Based upon the resident’s concerns, and in accordance with the LHMC, staff sent a parking control survey to the residents of the Ridgefield Neighborhood on June 24, 2015, providing a menu of parking control choices but did not receive an adequate response from the neighborhood. Staff re-surveyed the neighborhood on August 18, 2015. The response rate improved to 75% but no clear consensus on a choice of parking controls receiving support from a two-thirds (67%) majority of the neighborhood (the threshold of support required by the LHMC could be reached. Therefore, implementation of a permit parking program was not supported at that time. This matter was presented to the Traffic Commission on July 15, 2015, and the associated Report is attached for background information.

Subsequently, a resident of the Ridgefield Neighborhood contacted staff in August 2018 with a request to revisit the implementation of permit-based parking controls which would otherwise prohibit general overnight parking in their neighborhood. Staff provided a petition form, as permitted by the LHMC, for the resident to circulate by any resident of residential property abutting the proposed Residential Permit Parking Area. The area included the streets of Sierra Bonita Drive, La Cienega Street and Los Cerros Drive, all of which are public residential streets within the Ridgefield Community south of Aliso Hills Drive. There are 40 single family residences within the affected area. Please see attached Vicinity Map.

According to LHMC Chapter 11-24, Residential Permit Parking Program, permit parking can be established only if 67% or more of the affected residents support it. Based upon the petitions submitted by the resident in 2020, signatures for thirty-two (32) of the affected residences were obtained in support of a no overnight permit parking zone and of those, ownership of 27 residences were able to be verified resulting in support of 67% of the affected residences. Staff is recommending the Traffic Commission recommend to the City Council establishment of a no overnight permit parking program in the Ridgefield Neighborhood along the streets of Sierra Bonita Drive, La Cienega

Establishment of Permit Parking Control in the Ridgefield Neighborhood

March 17, 2021

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Street and Los Cerros Drive. In making this recommendation, Staff cautions that the overflow community parking will likely move onto Rio Grande Street, or other streets in the neighborhood.

In addition to the establishment of a Permit Parking Zone, the petition stipulated and Staff recommends, the establishment of no parking during the days and hours of street sweeping. This would occur on the second and fourth Wednesday of each month and the no parking control would be limited to a four-hour block of time.

The implementation of a Permit Parking Zone would also include the following provisions:

- One parking decal per each vehicle registered to the property address
- Four guest permits/placards
- Unlimited one-day special event permits upon request
- An annual \$15.00 administrative fee per each parking decal

FISCAL IMPACT:

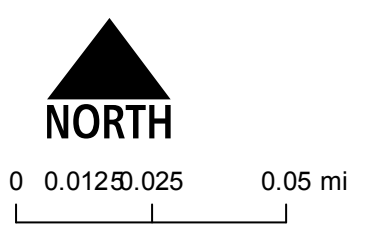
The Permit Parking Program proposed for the Neighborhood will require some administrative staff time, the printing of permit decals, and the posting of signs. The cost of the permit decals shall be recovered through an annual fee to the permit applicants of \$15 per decal. There is an estimated cost of \$1,000 for the installation of signage to implement both the Permit Parking and Street Sweeping Parking Controls. Funds are available for this work in the FY 2020-2021 Public Works Maintenance budget.

ATTACHMENTS:

- Ridgefield Vicinity Map
- Ridgefield Permit Parking Petitions
- Traffic Commission Agenda Item 4.2_07-15-2015



Attachment: Ridgefield Vicinity Map (2366 : Establishment of Permit Parking Control in the Ridgefield Neighborhood)



VICINITY MAP - RIDGEFIELD NEIGHBORHOOD



PETITION FOR OVERNIGHT RESIDENTIAL PERMIT PARKING

RIDGEFIELD NEIGHBORHOOD

For Sierra Bonita Drive, La Cienega Street and Los Cerros Drive Only

24592
no

Pursuant to Laguna Hills Municipal Code (LHMC) Chapter 11-24, Residential Permit Parking Program, the establishment of a residential permit parking area shall only be considered by the City after a City form petition, signed by residents representing sixty-seven percent (67%) of the properties abutting the residential street upon which permit parking is proposed has been presented to the City. The City Clerk shall review the petition and determine ownership by reference to the latest available assessment role, or by such proof of subsequent acquisition of title as may be provided by the owner. This Petition may be circulated by any resident of residential property abutting the proposed Residential Permit Parking Area.

LHMC Residential Parking Permit Program Regulations include the following:

1. One annual parking decal can be issued to every non-commercial vehicle registered to a resident of the property with an annual permit fee of \$15 per each parking decal.
- 2) Upon application, four guest parking permit placards are issued to each residential property with at least one paid parking decal, subject to annual renewal.
- 3) Upon application, residents may receive additional guest one-day permit placards for special events at no additional charge.
- 4) All parking decals and guest permit placards are numbered and registered with the OC Sheriff's Department for parking enforcement purposes.

By signing this petition, I hereby petition the Mayor and City Council of the City of Laguna Hills to establish a limited "Residential Parking Permit Program" to restrict overnight parking of vehicles on my street in accordance with the Residential Permit Parking Regulations stated above. I further understand and agree that if a Residential Parking Permit program is established for my street in accordance with the LHMC that the City also intends, as well, to implement a "No Parking During Hours and Days of Street Sweeping" restriction.

PRINT NAME	ADDRESS	SIGNATURE
KATHLEEN SPALONE	26092 Los Cerros	Kathleen Spalone
RENE WILLIAMS	26096 Los Cerros	Rene Williams
CARVL HORTON	24662 La Cienega	Carvl Horton
Patricia Thee	24542 La Cienega	Patricia Thee
Rod Duclos	24671 La Cienega	Rod Duclos
Mike Amos	24681 La Cienega	Mike Amos
Jill Lewis	24691 La Cienega	Jill Lewis
DAVE HILL	24642 La Cienega	Dave Hill
Colleen Chday	24612 La Cienega St	Colleen Chday

PETITION FOR OVERNIGHT RESIDENTIAL PERMIT PARKING

RIDGEFIELD NEIGHBORHOOD

For Sierra Bonita Drive, La Cienega Street and Los Cerros Drive Only

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PRINT NAME	ADDRESS	SIGNATURE
Cheryl Wieland	24602 La Cienega	Cheryl Wieland
Duke COBARRAS	24612 La Cienega	[Signature]
Ken A. Harris	24652 La Cienega	[Signature]
Michele Green	24672 La Cienega	Michele Green

PETITION FOR OVERNIGHT RESIDENTIAL PERMIT PARKING

RIDGEFIELD NEIGHBORHOOD

For Sierra Bonita Drive, La Cienega Street and Los Cerros Drive Only

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PRINT NAME	ADDRESS	SIGNATURE
John Anderson	24661 LACIENEGAST	John E Anderson

PETITION FOR OVERNIGHT RESIDENTIAL PERMIT PARKING

RIDGEFIELD NEIGHBORHOOD

For Sierra Bonita Drive, La Cienega Street and Los Cerros Drive Only

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PRINT NAME	ADDRESS	SIGNATURE
Jean L. Merrell	26085 Los Cerros	Jean L. Merrell
Tracy M	26071 Los Cerros	Tracy M
Poly Zweigle	24582 La Cienega	Poly Zweigle
Brandon Falkenham	24552 La Cienega	Brandon Falkenham
Garry Koert	26081 Los Cerros	Garry Koert
Aric MABIN	26092 Los Cerros	Aric MABIN
Melissa Frueh	26091 Los Cerros	Melissa Frueh
Shelli Halseth	24541 La Cienega	Shelli Halseth
Valery Hunt	25361 La Cienega	Valery Hunt

PETITION FOR OVERNIGHT RESIDENTIAL PERMIT PARKING

RIDGEFIELD NEIGHBORHOOD

For Sierra Bonita Drive, La Cienega Street and Los Cerros Drive Only

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PRINT NAME	ADDRESS	SIGNATURE
Rosanne Moore	24591 La Cienega St	Rosanne Moore
Timothy Hillis	24611 LA CIENEGA ST	Timothy M. Hillis
STEPHAN CATANZARO	24621 LA CIENEGA ST	Steph Catanzaro
CHELSEA ARMSTRONG	24532 LA CIENEGA ST	Chelsea Armstrong
Al Pagani	24512 La Cienega	Al Pagani
Carline McMahon	24502 La Cienega	C. McMahon
Ken W Colzie	24511 La Cienega	Ken W. Colzie
Kerim Moran	24521 LA Cienega ST	Kerim Moran
Lydia Tucciaroli	24531 LA Cienega	Lydia Tucciaroli

PETITION FOR OVERNIGHT RESIDENTIAL PERMIT PARKING

RIDGEFIELD NEIGHBORHOOD

For Sierra Bonita Drive, La Cienega Street and Los Cerros Drive Only

Pursuant to Laguna Hills Municipal Code (LHMC) Chapter 11-24, Residential Permit Parking Program, the establishment of a residential permit parking area shall only be considered by the City after a City form petition, signed by residents representing sixty-seven percent (67%) of the properties abutting the residential street upon which permit parking is proposed has been presented to the City. The City Clerk shall review the petition and determine ownership by reference to the latest available assessment role, or by such proof of subsequent acquisition of title as may be provided by the owner. This Petition may be circulated by any resident of residential property abutting the proposed Residential Permit Parking Area.

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PRINT NAME	ADDRESS	SIGNATURE
John F. Anderson	24651 La Cienega St	John F. Anderson
Arnold + Elizabeth Gasser	24342 La Cienega	Arnold + Elizabeth Gasser



City of Laguna Hills Traffic Commission Staff Report

DATE: 07/15/15

TO: TRAFFIC COMMISSIONERS

FROM: HUMZA JAVED, P.E.
ASSOCIATE CIVIL ENGINEER

ISSUE: PARKING CONTROL SURVEY (PERMIT PARKING) IN THE RIDGEFIELD
COMMUNITY NEIGHBORHOOD

RECOMMENDATION: THAT THE TRAFFIC COMMISSION REQUEST STAFF TO
RE-SURVEY THE RIDGEFIELD NEIGHBORHOOD FOR POTENTIAL PARKING
CONTROLS.

SUMMARY:

The City recently received a letter petition signed by several residents of the Ridgefield Community regarding the implementation of parking controls along the streets of Sierra Bonita, La Cienega, Los Cerros, and Rio Grande. The residents were concerned with overflow parking from the adjacent Crestline condominiums and the Via Lomas community. Staff issued a survey on June 24, 2015, to collect responses from the residents regarding a number of parking control options. Unfortunately, staff did not receive an adequate number of responses back in order to proceed with a recommendation. Staff proposes to re-send the survey in order to identify the neighborhood's desire for parking controls and report back at the next Traffic Commission meeting. It is recommended that the Traffic Commission request Staff to re-survey the neighborhood prior to the establishment of any parking controls.

BACKGROUND:

Recently, several residents of the Ridgefield Community (specifically the streets of La Cienega, Los Cerros, and Rio Grande) contacted staff regarding their concerns about observed "out of neighborhood" parking in their neighborhood. They expressed their views that residents of the Crestline Condominiums and the Via Lomas community are parking within their neighborhood; limiting the number of available parking spaces for the single family homes; generating additional noise; and contributing to litter debris in the community.

Agenda Report
 Parking Controls In The Ridgefield
 Community Neighborhood
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Sierra Bonita, Los Cerros, La Cienega, and Rio Grande are all public residential streets within the Ridgefield Community south of Aliso Hills Drive. There are 56 single family residences within the affected area. Please see attached Vicinity Map.

In response to resident complaints, staff has performed site surveys in this neighborhood and has determined there is out of neighborhood parking that is occurring. Moreover, Staff has also requested the Sheriff's Department to patrol the streets to get their feedback on the issue. A number of residents attended the March 18, 2015, Traffic Commission meeting and requested parking controls along their street. Subsequently, Staff received a signed letter petition from several residents requesting permit parking. In accordance with the City's policy, a survey was sent out to the neighborhood with a number of parking control options. The survey was sent out to 56 residences. Only 38 (68%) were returned. Multiple residents voted on more than one option. The results of the survey are below:

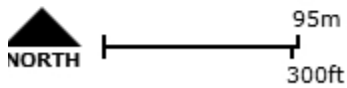
PARKING CONTROL	VOTES	PERCENTAGE
No Overnight Parking	9	16%
Permit Parking	26	46%
No Parking during St Sweeping	7	12.5%
No Parking Controls	6	11%

According to Laguna Hills Municipal Code (LHMC) Chapter 11-24, Residential Permit Parking Program, permit parking can be established if 67% or more of the affected residents support it. As shown above, there is not enough support for a permit parking control. Because there was only a 68% response to the survey, it is recommended that Staff re-survey the neighborhood to seek a higher response rate. Staff has also received a request from some of the residents to add another option for a permit parking control from only 10:00 p.m. to 6:00 a.m. daily. This option will be added in the next survey.

According to Crestline, there have been no changes to their parking requirements within their community. Staff reminded Crestline representatives to inform their residents of the City's permit parking program along Gordon Road. Staff also requested Crestline to consider restricting garages for vehicle parking and not storage of other items. Crestline is receptive to Staff's comments and has assured Staff that they will discuss these issues with their Board.

ATTACHMENTS:

- Vicinity Map



Date: 07/08/15

VICINITY MAP





City of Laguna Hills

Traffic Commission

Staff Report

DATE: March 17, 2021
TO: Traffic Commissioners
FROM: Amber M. Shah P.E.
Associate Civil Engineer
ISSUE: Nellie Gail Ranch Equestrian Crossing Review Update

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

SUMMARY:

Staff met with the Nellie Gail Ranch Equestrian Ad Hoc Committee (Committee) in the fall of 2020 to evaluate equestrian crossings in the Nellie Gail Ranch community. The Committee requested an evaluation of the driveway crossing at the Nellie Gail Ranch Owners Association Equestrian Center on Nellie Gail Road southerly of Oso Parkway and expressed concerns about traffic controls at nearby intersections. Based upon the Committee's concerns and in accordance with the Residential Streets Management Policy, staff initiated a review of the Nellie Gail Equestrian Center driveway/equestrian crossing and three intersections along Nellie Gail Road at Empty Saddle Drive, Hidden Trail Road and Rocking Horse Lane. The Traffic Engineers of Hartzog & Crabill, Inc., (HCI) were retained and completed a traffic control and operational review of the Nellie Gail Equestrian Center driveway/equestrian crossing and analyses of the three intersections. The report was presented at the January 2021 meeting of the Traffic Commission, and is attached to this report for reference. Public comments in response to the report received via email prior to the January 2021 meeting were distributed to the Traffic Commissioners in advance of the meeting, acknowledged at the meeting and are also attached for reference. The Traffic Commission continued the matter for further data collection. Staff committed to providing an update at this meeting to be followed by a final report with recommendations at the May 2021 meeting of the Traffic Commission.

In response to the public comments received and Nellie Gail Ranch Equestrian Committee's request, staff is currently evaluating implementation of speed humps in the vicinity of the Equestrian Center Crossing in accordance with the Residential Streets Management Policy which requires the following minimum criteria are met:

- 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.

Criteria c and f have been determined to have been met. Data collection is currently underway for the evaluation of the street grade (criteria e) and a second radar speed survey (criteria b) is scheduled in April 2021. Should both of these criteria be satisfied, next steps would include a survey of the affected residents (criteria a) and Police and Fire Department approval (criteria d).

Nellie Gail Ranch Equestrian Crossing Review Update

March 17, 2021

Page 3

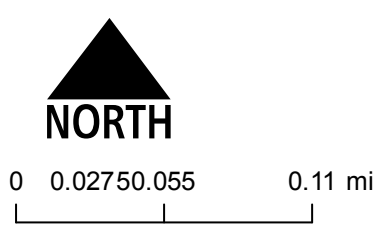
The Committee also requested Rectangular Rapid Flashing Beacons (RRFB) in the median at and in advance of the Equestrian Center Crossing, and at Empty Saddle Drive and Rocking Horse Lane. Two Speed Feedback Signs (SFS) along Nellie Gail Road were also requested by the Committee. These requests are also currently being evaluated and will be addressed in the May 2021 staff report.

ATTACHMENTS:

- Nellie Gail Equestrian Crossings Vicinity Map
- Traffic Commission Agenda Item 4.1_01-20-2021
- Public Comments



Attachment: Nellie Gail Equestrian Crossings Vicinity Map (2368 : Nellie Gail Ranch Equestrian Crossing Review Update)



VICINITY MAP - NELLIE GAIL EQUESTRIAN CROSSINGS





City of Laguna Hills

Traffic Commission

Staff Report

DATE: January 20, 2021
TO: Traffic Commissioners
FROM: Amber M. Shah P.E.
 Associate Civil Engineer
ISSUE: Nellie Gail Ranch Equestrian Crossing Reivew

RECOMMENDATION: That the Traffic Commission Recommend to the City Council: (1) An equestrian trail connection from Nellie Gail Ranch Owners Association Equestrian Center to the Nellie Gail Road Trail Tunnel southerly of Oso Parkway be developed; and (2) There be an installation of yield line markings at the intersection of Rocking Horse Lane and Nellie Gail Road to facilitate the existing equestrian crossing at this location.

SUMMARY:

Staff met with the Nellie Gail Ranch Equestrian Ad Hoc Committee (Committee) to evaluate equestrian crossings in the Nellie Gail Ranch community. The Committee requested an evaluation of the driveway crossing at the Nellie Gail Ranch Owners Association Equestrian Center on Nellie Gail Road southerly of Oso Parkway and expressed concerns about traffic controls at nearby intersections. Based upon the Committee's concerns and in accordance with the Residential Streets Management Policy, staff initiated a review of the Nellie Gail Equestrian Center driveway/equestrian crossing and three intersections along Nellie Gail Road at Empty Saddle Drive, Hidden Trail Road and Rocking Horse Lane. The Traffic Engineers of Hartzog & Crabill, Inc., (HCI) were retained and completed a traffic control and operational review of the Nellie Gail Equestrian Center driveway/equestrian crossing and analyses of the three intersections.

The traffic control and operational review of the driveway/equestrian crossing at the Nellie Gail Equestrian Center on Nellie Gail Road, determined the existing traffic control

installations at the equestrian crossing are satisfactory and supported by a zero-collision recorded history. Access improvements to the existing equestrian tunnel under Nellie Gail Road southerly of Oso Parkway is recommended as an incentive for equestrians to use this alternate trail crossing location.

Each of the three intersection multi-way stop sign analyses along Nellie Gail Road at Empty Saddle Drive, Hidden Trail Road and Rocking Horse Lane, determined 3-way stop sign installations are not warranted at any of the intersections 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, it is recommended the Traffic Commission recommend installation of yield line marking at the intersection of Rocking Horse Lane and Nellie Gail Road to improve the equestrian trail crossing at this location as recommended by staff and described in this report.

BACKGROUND:

In 2012, the City Council approved the establishment of a staff directed Committee to review equestrian trail crossing markings and signage in and around the Nellie Gail Ranch community. Since the formation of the Committee, enhancements were made to numerous equestrian crossings. This effort included substantial improvements to the at-grade crossing at the Nellie Gail Equestrian Center driveway/equestrian crossing on Nellie Gail Road southerly of Oso Parkway. Recently, the Committee contacted Staff with a request for a new evaluation of the driveway/equestrian crossing at the Nellie Gail Equestrian Center due to recent safety concerns. The Committee also requested an evaluation of other traffic controls at nearby intersections.

Based upon the Committee's request and in accordance with the Residential Streets Management Policy, staff initiated a review of the Nellie Gail Equestrian Center driveway/equestrian crossing location and three intersections along Nellie Gail Road. The Traffic Engineers of Hartzog & Crabill, Inc., (HCI) were retained and completed a traffic control and operational review of the Nellie Gail Equestrian Center driveway/equestrian crossing on Nellie Gail Road and multi-way stop sign analyses of three intersections along Nellie Gail Road at 1) Empty Saddle Drive, 2) Hidden Trail Road, and 3) Rocking Horse lane. The control of traffic is based upon the application of principles of Engineering, Education of the roadway users and Enforcement of regulations. The analysis provided by HCI addresses the Engineering aspects of Traffic Control.

The traffic control and operational review of the driveway/equestrian crossing at the Nellie Gail Equestrian Center on Nellie Gail Road, performed by HCI, attached, determined the existing traffic control installations at the equestrian crossing are consistent with standards and provide appropriate traffic controls. This conclusion is partially supported by a zero-collision recorded history as well as the other determinations described in their report. No change in traffic controls is recommended. Members of the Nellie Gail Equestrian Committee did express concerns about vehicle speeds and did provide verbal reports of “near-miss” traffic collisions at the crossing location.

The analysis of the Equestrian Center driveway/equestrian crossing location included the collection of vehicular speed data. Both 24-hour speed trend data and spot speed radar study data was collected. Nellie Gail Road has a posted speed limit of 25 miles per hour (mph). Historic data collection throughout the City on 25 mph speed limit streets has found that the prevailing traffic speed, the 85th percentile speed, is typically between 32 and 34 mph without any records of adverse traffic collision history. As shown in the HCI report, the 24-hour speed trend data is in the 35-39 mph range and the radar speed studies are in the 33-34 mph range for both directions of traffic. While the radar speed studies are considered to be a more accurate measure of speeds, and those speeds are not unusual, the overall information collected on speed data indicates vehicular speeds are higher than desirable or appropriate for the given conditions.

Accordingly, as there are anecdotal reports of near miss traffic collisions and higher speeds than appropriate, Staff 1) will work with the Sherrieff’s Department on additional enforcement in this area as resources permit and 2) recommends the Equestrian Committee and Nellie Gail Ranch Owners Association work with the City to extend equestrian trail access from the Equestrian Center to the existing equestrian tunnel under Nellie Gail Road providing a separation between equestrians and vehicles when crossing Nellie Gail Road. If equestrian riders are concerned with the at-grade crossing location when leaving the Equestrian Center, they should have the opportunity to avail themselves of the existing tunnel.

The Committee also inquired about the installation of In-Roadway Warning Lights (IRWL) as a potential option to increase driver awareness at equestrian crossings. Included in HCI’s report is a review of the effectiveness of IRWL versus the existing

Rectangular Rapid Flashing Beacons (RRFB) located at the Nellie Gail Equestrian Center driveway/equestrian crossing location. RRFB have been found to be the most effective and cost-efficient crosswalk device in recent studies. Whereas, IRWL devices have been found to be difficult for drivers to see in daylight and when following other vehicles. Damage to IRWLs and malfunction issues are also a significant drawback as they are embedded into the asphalt.

Each of the three intersection multi-way stop sign analyses along Nellie Gail Road at Empty Saddle Drive, Hidden Trail Road and Rocking Horse Lane, performed by HCI, attached, determined 3-way stop sign installations are not warranted at any of the intersections 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. It is noted that Stop Signs are explicitly described in the MUTCD as not a speed control device; rather, they are only a right of way assignment control. Accordingly, the City cannot utilize Stop Signs for speed control. Existing one way stop controls are already installed on Empty Saddle Drive, Hidden Trail Road and Rocking Horse Lane at Nellie Gail Road, and additional stop sign installations were not warranted. However, installation of yield line markings at Rocking Horse Lane in both directions along Nellie Gail Road were recommended in addition to the existing Equestrian Crossing warning signs posted at this intersection to further advise motorists of the existence of this equestrian crossing location. Based upon the findings in these reports, staff concurs with the recommendation to install yield line markings at the intersection of Rocking Horse Lane and Nellie Gail Road.

FISCAL IMPACT:

The installation of yield line markings have an anticipated cost of \$300. Funds are available for this work in the 2020-2021 Fiscal Year Public Works Maintenance Budget.

ATTACHMENTS:

- Vicinity Map
- Hartzog and Crabill Traffic Control Operational Review - Nellie Gail at Equestrian Center - 12-03-20
- Hartzog and Crabill Multi Way Stop Sign Analysis - Nellie Gail at Empty Saddle - 11-23-20
- Hartzog and Crabill Multi Way Stop Sign Analysis - Nellie Gail at Hidden Trail - 11-24-20

Nellie Gail Ranch Equestrian Crossing Reivew

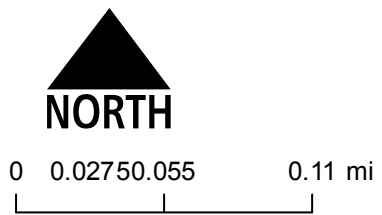
January 20, 2021

Page 5

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- Hartzog and Crabill Multi Way Stop Sign Analysis - Nellie Gail at Rocking Horse - 11-25-20



VICINITY MAP - NELLIE GAIL EQUESTRIAN CROSSINGS



TRAFFIC CONTROL AND OPERATIONAL REVIEW

NELLIE GAIL ROAD AT THE EQUESTRIAN CENTER (S/o OSO PARKWAY) IN THE CITY OF LAGUNA HILLS, CA DECEMBER 3, 2020

INTRODUCTION

The City of Laguna Hills requested Hartzog & Crabill, Inc. (HCI) to complete a Traffic Control and Operational Review at the Nellie Gail Equestrian Center driveway/equestrian crossing location. This location is along Nellie Gail Road, approximately 450 feet south of Oso Parkway.

The location is a typical driveway intersection with Nellie Gail Road running in the north-south directions and the Equestrian Center driveway running in the east-west directions, on the east side of Nellie Gail Road. The intersection is located west of the I-5 Freeway and south of Oso Parkway (*see Location Map below*). The location is entirely within the City of Laguna Hills jurisdiction. At the present time, there are no stop controls on Nellie Gail Road (i.e., it is uncontrolled); however, there is an existing Rectangular Rapid Flashing Beacon (RRFB) push-button warning light crossing system for the equestrian crossing location.



Traffic Control & Operational Review:
Nellie Gail Equestrian Center Driveway/Equestrian Crossing Location, in Laguna Hills, CA

BACKGROUND

Nellie Gail Road is a north-south local-collector roadway with single-family residential properties on both sides of the street, along with an equestrian center on the east side of the street near Oso Parkway. At the intersection with the Equestrian Center driveway/equestrian crossing location, the roadway is approximately 60 feet wide, and the 2-lane roadway provides for one lane of traffic in each direction, which are separated by a raised landscaped center median. There are no marked crosswalks across Nellie Gail Road at or near the intersection. The roadway does have curb, gutter, sidewalk, and parkway improvements on the east side, and curb, gutter and parkway on the west side. There is a north-south equestrian path along the west side of the roadway. Nellie Gail Road has a posted speed limit of 25 MPH. On-street parking is prohibited on both sides of the street via No Parking Anytime signs. Currently, there are no STOP signs on Nellie Gail Road (i.e., uncontrolled) at its intersection with the Equestrian Center driveway/equestrian crossing location. As mentioned, there is an existing solar-powered Rectangular Rapid Flashing Beacon (RRFB) push-button warning light crossing system supplementing the equestrian crossing warning signs and yield line markings at this location.

The Equestrian Center Driveway is an east-west local driveway leading into the equestrian center parking lot and property. At the T-intersection with Nellie Gail Road, the driveway is approximately 20 feet wide. The 2-lane roadway provides for one lane of traffic in each direction, which are not separated by any centerline striping. There are no marked crosswalks across the Equestrian Center driveway/equestrian crossing location. The driveway does not have curb, gutter, and sidewalk improvements on either side. There is no STOP sign or 'STOP' pavement marking, or white limit line on the westbound approach of the Equestrian Center driveway at its intersection with Nellie Gail Road (i.e., uncontrolled). However, being a driveway, and not a public street, a STOP sign is not required or expected to be installed at this Equestrian Center location, for the same reason most other driveways are not typically posted with a STOP sign.

Traffic Control & Operational Review:
Nellie Gail Equestrian Center Driveway/Equestrian Crossing Location in Laguna Hills, CA

DATA COLLECTION

As part of this particular review, the City requested collision history, a 24-hour speed count, and radar spot surveys to be included in the data collection.

Collision History

The latest available collision history for the driveway/equestrian crossing location 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. Table 1 below provides the most recent summary of collision history occurring at or near this intersection.

TABLE 1
SWITRS COLLISION SUMMARY

Intersection	2015-16		2017-18		2019		2020	
	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?
Nellie Gail Road at Equestrian Center driveway / Equestrian Crossing Location (450' S/o of Oso Pkwy)		<i>None reported</i>		<i>None reported</i>		<i>None reported</i>		<i>None reported</i>

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

As shown above, there have been no (0) reported collisions, at or near this location over the past (5) years of available SWITRS collision data. ***The SWITRS traffic collision data report prepared for this location is included in Appendix A.***

Traffic Control & Operational Review:
Nellie Gail Equestrian Center Driveway/Equestrian Crossing Location in Laguna Hills, CA

DATA COLLECTION (continued)

24-hour Speed Counts

This 5 consecutive day speed count was taken via machine counter and road tubes on Nellie Gail Road, north of Empty Saddle, just south of the raised landscaped center median. The results are summarized below:

<i>Thursday, October 29, 2020</i>	<u>Average Speed (mph)</u>	<u>85th percentile Speed (mph)</u>
Northbound	30	35
Southbound	32	38
Both Directions	31	37

<i>Friday, October 30, 2020</i>	<u>Average Speed (mph)</u>	<u>85th percentile Speed (mph)</u>
Northbound	30	36
Southbound	33	39
Both Directions	32	38

<i>Saturday, October 31, 2020</i>	<u>Average Speed (mph)</u>	<u>85th percentile Speed (mph)</u>
Northbound	30	35
Southbound	32	39
Both Directions	31	37

<i>Sunday, November 1, 2020</i>	<u>Average Speed (mph)</u>	<u>85th percentile Speed (mph)</u>
Northbound	30	36
Southbound	32	39
Both Directions	31	38

<i>Monday, November 2, 2020</i>	<u>Average Speed (mph)</u>	<u>85th percentile Speed (mph)</u>
Northbound	30	35
Southbound	33	38
Both Directions	31	37

As shown above, the speeds were relatively consistent each day, and are higher than the posted speed limit of 25 mph. The southbound speeds were also consistently higher than northbound. ***The actual speed count data can be found attached in Appendix B.***

*Traffic Control & Operational Review:
Nellie Gail Equestrian Center Driveway/Equestrian Crossing Location in Laguna Hills, CA*

DATA COLLECTION (continued)

Spot Speed Radar Surveys

As a comparison, these one-hour spot speed radar surveys were taken via a person certified to use a radar speed gun at three (3) different locations along Nellie Gail Road. In general, radar results are shown to be more accurate than road tubes. The results are summarized below:

1. Nellie Gail Road, 470 feet South of Oso Parkway (at/near the Equestrian Center)

Thursday, October 29, 2020 from 11:00am to Noon

	<u>50th percentile Speed (mph)</u>	<u>85th percentile Speed (mph)</u>
Northbound	28	33
Southbound	28	32
Both Directions	28	33

2. Nellie Gail Road, north of Empty Saddle Drive, just south of Raised Median

Thursday, October 29, 2020 from 12:30pm to 1:30pm

	<u>50th percentile Speed (mph)</u>	<u>85th percentile Speed (mph)</u>
Northbound	28	33
Southbound	28	35
Both Directions	28	34

3. Nellie Gail Road, between Empty Saddle Drive and Hidden Trail Road

Thursday, October 29, 2020 from 2:00pm to 3:00pm

	<u>50th percentile Speed (mph)</u>	<u>85th percentile Speed (mph)</u>
Northbound	31	36
Southbound	26	31
Both Directions	29	34

As shown above, the radar speeds were relatively consistent each day, and the 85th percentile speeds are higher than the posted speed limit of 25 mph. ***The actual radar spot speed study data can be found attached in Appendix C.***

***Traffic Control & Operational Review:
Nellie Gail Equestrian Center Driveway/Equestrian Crossing Location in Laguna Hills, CA***

TRAFFIC CONTROL REVIEW

Traffic Signing & Striping

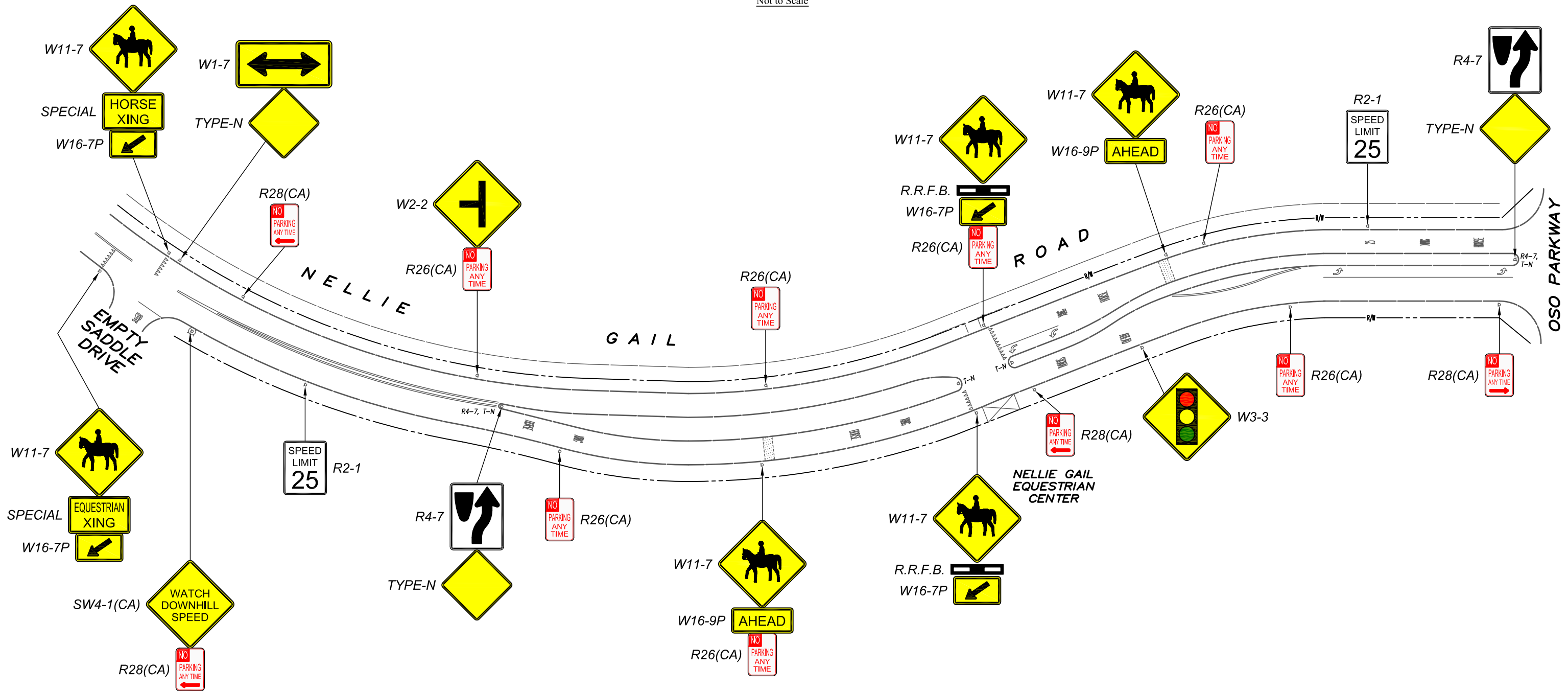
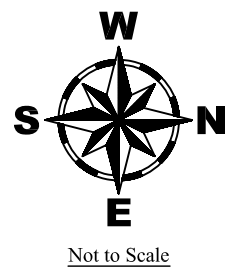
During our field-review on Wednesday, November 18, HCI staff walked Nellie Gail Road at/near the Equestrian Center driveway in both directions in order to review all the traffic signing & striping, including rumble strips, and RRFBs. The following page contains an exhibit of all the signing & striping improvements. Below is a summary:

Southbound Starting at Oso Parkway Heading towards Equestrian Entrance:

- “HORSE XING” advanced white pavement markings at/near Oso Parkway.
- “25” white pavement marking, along with a posted 25 MPH Speed Limit sign.
- “Notice 24-hour Security Patrol” sign posted on side of road.
- “No Parking Any Time” regulatory sign posted on side of road.
- “Equestrian Xing Ahead” advanced warning signs posted on side of road.
- Rumble strips composed of 4 rows of white raised pavement markers located at the above advanced sign posting.
- “HORSE XING” white pavement markings, with white yield line pavement markings at the Equestrian Center driveway.
- RRFB post with “Equestrian Xing” warning sign, Arrow pointing down, w/push buttons, and a “No Parking Any Time” sign.
- “No Parking Any Time” regulatory sign posted on side of road.
- “Side Road” T-intersection advance warning sign posted on side of road in advance of Empty Saddle, and a “No Parking Any Time” regulatory sign.
- “No Parking Any Time” regulatory sign posted on side of road.
- “Horse Xing” warning signs, Arrow pointing down, with white yield line pavement markings at Empty Saddle Drive.

Northbound Starting at Empty Saddle Dr Heading towards Oso Parkway:

- “Equestrian Xing” warning signs, Arrow pointing down, with white yield line pavement markings at Empty Saddle Drive.
- “WATCH DOWNHILL SPEED” warning sign, and a “No Parking Any Time” sign posted on side of road.
- “25 MPH Speed Limit” regulatory sign posted on side of road.
- “Raised Center Median” regulatory and warning signs posted in center of road.
- “No Parking Any Time” regulatory sign posted on side of road.
- “HORSE XING” advanced white pavement markings north of Empty Saddle.
- “Equestrian Xing Ahead” advanced warning signs posted on side of road, along with a “No Parking Any Time” sign.
- Rumble strips composed of 4 rows of white raised pavement markers located at the above advanced sign posting.
- “HORSE XING” white pavement markings, and white yield line pavement markings at the Equestrian Center driveway.
- Solar-powered RRFB post with “Equestrian Xing” warning sign, Arrow pointing down, and with push buttons.
- “No Parking Any Time” regulatory sign posted on side of road.
- “SIGNAL AHEAD” white pavement markings, along with a “Signal Ahead” sign posted on the side of the road.
- “No Parking Any Time” regulatory sign posted on side of road.
- “No Parking Any Time” regulatory sign posted on traffic signal pole located at Oso Parkway.



EXISTING CONDITIONS
Nellie Gail Road
CITY OF LAGUNA HILLS

*Traffic Control & Operational Review:
Nellie Gail Equestrian Center Driveway/Equestrian Crossing Location in Laguna Hills, CA*

OPERATIONAL REVIEW

RRFB System

During our field-review on Wednesday, November 18, HCI staff physically activated all the push-buttons at the Equestrian Center driveway/equestrian crossing location (both pedestrian and equestrian buttons), and verified that the existing solar-powered Rectangular Rapid Flashing Beacon (RRFB) system was working properly. All push buttons and RRFB LED yellow warning lights were operating as intended. The actual RRFB LED light bar that has two alternating yellow warning lights is located on the post just under the “Equestrian Crossing” warning sign on each side of the roadway.

In summary, when either a pedestrian or equestrian push one of the buttons at this equestrian crossing location, the post-mounted RRFB LED yellow warning light bars on each side of the roadway activate and continue to flash away toward drivers on Nellie Gail Road for at least 30 seconds, giving warning that someone is crossing the street. Staff tested the time to cross Nellie Gail Road several times by foot, and was able to cross the street each time within the 30 seconds of flashing yellow warning.

*Traffic Control & Operational Review:
Nellie Gail Equestrian Center Driveway/Equestrian Crossing Location in Laguna Hills, CA*

OPERATIONAL REVIEW (continued)

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 property environment. The geometry of the driveway intersection includes an approximate 90° angle, and northbound Nellie Gail Road has a gradual vertical curvature (downgrade) heading into and beyond the Equestrian Center driveway.

Driver sight distance was measured from the side-street approach, as westbound traffic on the Equestrian Center driveway is required to stop, before proceeding to make a left or right-turn onto Nellie Gail Road. The measured distance was derived from the stopping sight distance guidelines found in the California MUTCD (*see Appendix D*). In this reference, a 25 MPH roadway speed recommends a minimum Stopping Sight Distance of 155 feet. However, as shown, the 85th percentile speeds exceed the 25 MPH posted speed limit. Therefore, a 30 MPH speed limit was used as a more conservative measure, which has a minimum sight distance of 200 feet. This distance was used when looking towards approaching, uncontrolled traffic along Nellie Gail Road. More specifically, this stopping sight distance was field-measured from a typical ‘stopped’ vehicle location at the Equestrian Center driveway looking towards the oncoming lanes of cross-traffic on Nellie Gail Road. An orange cone was placed at this distance and a photograph was taken from a stopped driver’s perspective (i.e., approximately 4.5’ high above ground).

(See sight distance photos in Exhibits 1 & 2 on the following pages).

As the exhibits show, when looking from the Equestrian Center driveway, a driver does have a clear line of sight to the minimum 200-foot sight distance when looking both ways on Nellie Gail Road. It is important to note, since this location is an equestrian crossing, it is expected that equestrians having a higher field of view than a vehicle (i.e., approximately 8.5 feet above ground) also have a clear line of sight to the minimum sight distance of 200 feet along Nellie Gail Road, which was also verified in the field.

*Traffic Control & Operational Review:
Nellie Gail Equestrian Center Driveway/Equestrian Crossing Location in Laguna Hills, CA*

EXHIBIT 1



*Traffic Control & Operational Review:
Nellie Gail Equestrian Center Driveway/Equestrian Crossing Location in Laguna Hills, CA*

EXHIBIT 2



Eastbound EQUESTRIAN CENTER DRIVEWAY (Looking North) @ NELLIE GAIL ROAD



Eastbound EQUESTRIAN CENTER DRIVEWAY (Looking South) @ NELLIE GAIL ROAD

*Traffic Control & Operational Review:
Nellie Gail Equestrian Center Driveway/Equestrian Crossing Location in Laguna Hills, CA*

OPERATIONAL REVIEW (continued)

Equestrian Tunnel

There is an existing equestrian tunnel perpendicular under Nellie Gail Road, located just north of the Equestrian Center driveway/equestrian crossing location, and south of Oso Parkway. There is no direct equestrian path to the tunnel from the east side of Nellie Gail Road. HCI staff field-checked this tunnel path from the west side of the Equestrian Center driveway intersection, and followed the equestrian path northerly down towards the tunnel. The concrete and corrugated metal tunnel was large enough for equestrians to pass safely from the west side of Nellie Gail Road to the east side, and back. HCI staff walked back the equestrian path from the east side of Nellie Gail Road, through the tunnel to the west side of Nellie Gail Road, and continued back to the Equestrian Center driveway/equestrian crossing location. The entire time it took to complete the tunnel path on foot was approximately 2 minutes and 15 seconds.

Equestrian Input

During our field review, HCI staff was able to speak with an equestrian that had just crossed Nellie Gail Road at the Equestrian Center driveway/equestrian crossing location. When discussing the tunnel, the equestrian mentioned that it is a viable alternative path for access to the Equestrian Center from the west side of Nellie Gail Road, and is “just less convenient” than to use than the Equestrian Center driveway/equestrian crossing location.

In discussing the Equestrian Center driveway crossing location, the equestrian provided the following couple of quotes: “Drivers are speeding over the speed limit, especially in the northbound direction” and “Drivers are on their phones, especially at night”. Meaning that certain drivers are speeding over the posted 25 MPH speed limit, distracted and not paying enough attention to safely slow/stop for the equestrians crossing.

*Traffic Control & Operational Review:
Nellie Gail Equestrian Center Driveway/Equestrian Crossing Location in Laguna Hills, CA*

IN-ROADWAY WARNING LIGHT REVIEW

The City also received a question by the public regarding the possibility of adding ground flashing pavement lights, or In-Roadway Warning Lights (IRWL). These traffic control devices are typically installed along both sides of a marked crosswalk and operate upon pedestrian activation.

The State of California Manual on Uniform Traffic Control Devices (CA MUTCD) describes this type of traffic control device as follows:

In-Roadway Lights are special types of highway traffic signals installed in the roadway surface to warn users that they are approaching a condition on or adjacent to the roadway that might not be readily apparent and might require the road users to slow down and/or come to a stop.

Below are some of the applicable guidelines found in the California MUTCD for installation of this type of traffic control device:

Section 4N.02 In-Roadway Warning Lights at Crosswalks

Standard:

- *If used, In-Roadway Warning Lights at crosswalks shall be installed only at marked crosswalks with applicable warning signs. They shall not be used at crosswalks controlled by YIELD signs, STOP signs, or traffic signals.*
- *They shall display a flashing yellow light when actuated.*
- *Consideration for whether the crossing is controlled or uncontrolled.*

Traffic Control & Operational Review:
Nellie Gail Equestrian Center Driveway/Equestrian Crossing Location in Laguna Hills, CA

IN-ROADWAY WARNING LIGHT REVIEW (continued)

- *An engineering traffic study to determine if In-Roadway Warning Lights are compatible with the safety and operation of nearby intersections, which may or may not be, controlled by traffic signals or STOP/YIELD signs.*
- *At least 40 pedestrians regularly use the crossing during each of any two hours (not necessarily consecutive) during a 24-hour period.*
- *The vehicular volume through the crossing exceeds 200 vehicles per hour in urban areas or 140 vehicles per hour in rural areas during peak-hour pedestrian usage.*
- *The critical approach speed (85th percentile speed) is 45 mph or less.*
- *In-Roadway Warning Lights are visible to drivers at the minimum stopping sight distance for the posted speed limit.*
- *Public education on In-Roadway Warning Lights is conducted for new installations.*

The California MUTCD guidelines in Chapter 4N. In-Roadway Lights can be found in Appendix E.

It is important to note, the existing Equestrian Center driveway/equestrian crossing location does not have a marked crosswalk across Nellie Gail Road, but only Yield line pavement markings where vehicles are to wait on each approach lane when the RRFBs are activated. However, if the location was modified with a marked crosswalk, the addition of IRWLs at this existing RRFB warning location is a possible traffic control device that may be considered appropriate upon the completion of an IRWL evaluation.

*Traffic Control & Operational Review:
Nellie Gail Equestrian Center Driveway/Equestrian Crossing Location in Laguna Hills, CA*

IN-ROADWAY WARNING LIGHT REVIEW (continued)

In summary, if there is further interest in the addition/installation of IRWLs at this RRFB location, a site specific evaluation should be completed. If so, IRWLs may be considered at this Equestrian Center driveway/equestrian crossing location, upon completion of the following:

- Design and Installation of a Marked Crosswalk.
- Conduct and Engineering Traffic Study for IRWLs, which also includes:
- At least 40 pedestrians/equestrians crossing during each of any 2 hours in a day.
- At least 200 vehicles during each of the same 2 hours in a day.

RRFB VS. IRWL OPINION

Since an IRWL evaluation was not completed as part of this evaluation report, the following opinion as to the relative effectiveness of the existing RRFB installation versus the addition of the IRWL is offered for the City's consideration:

- Recent studies of the top three safety beacons rank the RRFB as the most effective and cost-efficient crosswalk device.
- Tests prove the RRFB can heighten driver yield rates by up to 96% and reduce pedestrian crashes by 47%.
- Due to the high-intensity LEDs installed at heights to capture drivers' awareness from greater distances day and night, RRFBs outperform traditional crosswalk warning lights.
- Drivers react sooner at the sight of a flashing RRFB, even under challenging conditions, such as inclement weather, headlight glare, and limited visibility.
- Studies find two RRFB devices work well; however, safety margins improve with four or more RRFB devices on roadways with heavy traffic or higher speed limits with multiple lanes.

The cost to furnish and install an RRFB system can vary depending on site conditions and the number and type of RRFBs used. An average cost for an RRFB complete system is \$22,250 including installation, labor, and materials.

*Traffic Control & Operational Review:
Nellie Gail Equestrian Center Driveway/Equestrian Crossing Location in Laguna Hills, CA*

RRFB VS. IRWL OPINION (continued)

In comparison to RRFBs, research shows the IRWLs did decline motorists' speeds; however, the rate of yielding became less over time in some cases as drivers became more familiar with the crosswalk treatment. Also, drivers have difficulty seeing the devices in daylight, and the flashing lights are also difficult to see when following other vehicles.

Damage to the IRWLs and malfunction issues remain a significant drawback as they are embedded into the asphalt. Several jurisdictions are removing IRWL systems due to unreliability, maintenance costs, and ineffectiveness compared with other safety beacons.

The cost to furnish and install an IRWL system can vary depending on the manufacturer, roadway widths, and project specific installation factors. An average cost for an IRWL complete system is \$17,620.

Therefore, it is our opinion that the existing RRFB system located at the Equestrian Center driveway/equestrian crossing location works well. If the City desires to improve the location, adding 2 more RRFBs in the median would work better than adding IRWLs.

Several RRFB related published studies are provided below:

1. **US Department of Transportation:** Sept – Oct [Innovator newsletter](#) – *States Step up to Enhance Pedestrian Safety, Spectacular Seven*. (2019).
2. **Carmanah:** <https://carmanah.com/articles/an-overview-of-the-most-effective-crosswalk-treatments/>. (October 7, 2019)
3. **Federal Highway Administration** – The National Academies of Sciences, Engineering, Medicine – *Crash Modification Factors Clearinghouse* – [Study Details for Uncontrolled Pedestrian Crossing Treatments](#). (2017).
4. **Federal Highway Administration**– *Evaluation of Pedestrian Hybrid Beacons and Rapid Flashing Beacon* – [report](#). (2016) (PDF).
5. **Federal Highway Administration** – [Effects of Yellow Rectangular Rapid-Flashing Beacons on Yielding Multilane Uncontrolled Crosswalks](#). (2010).
6. **Transportation Research Board** – *An Analysis of the Effects of Stutter Flash LED Beacons to Increase Yielding to Pedestrians Using Multilane Crosswalks*. (2009). [RRFB](#)

*Traffic Control & Operational Review:
Nellie Gail Equestrian Center Driveway/Equestrian Crossing Location in Laguna Hills, CA*

OVERALL RESULTS & FINDINGS

Nellie Gail Road at the Equestrian Center Driveway/Equestrian Crossing Location

Collision Data Results = 0 in past five years

24-hour Speed Count – 85th Percentile Results = 37 MPH

Spot Speed Radar Survey – 85th Percentile Results = 33 MPH

Traffic Control Review:

- ✓ “HORSE XING” advanced white pavement markings.
- ✓ “25” white pavement marking, along with a posted 25 MPH Speed Limit sign.
- ✓ “Equestrian Xing Ahead” advanced warning signs posted on side of road.
- ✓ Rumble strips composed of 4 rows of white raised pavement markers located at the above advanced sign posting.
- ✓ “HORSE XING” white pavement markings, along with white yield line pavement markings at the Equestrian Center driveway location.
- ✓ Solar-powered RRFB system on posts with “Equestrian Xing” warning signs and Arrow pointing downward, with push buttons.

HCI staff physically activated all the push-buttons at this Equestrian Center driveway/equestrian crossing location (both pedestrian and equestrian buttons), and verified that the RRFB system was working properly. All push buttons and RRFB LED yellow warning lights were operating as intended. Also, when looking from the Equestrian Center driveway/equestrian crossing location, a driver does have a clear line of sight to the minimum 200-foot sight distance when looking both ways on Nellie Gail Road. Since this location is an equestrian crossing, it is expected that equestrians, having a higher field of view than a vehicle (i.e., approximately 8.5 feet above ground vs. 4.5 feet), also have a clear line of sight to the minimum sight distance of 200 feet along Nellie Gail Road. There is also an existing equestrian tunnel that is located under Nellie Gail Road, just north of Equestrian Center driveway/equestrian crossing location and south of Oso Parkway, which is a viable alternative. Finally, in regards to RRFB vs IRWL, it is our opinion that the existing RRFB system works well. If the City desires to improve the location, adding 2 RRFBs in the center median is better than IRWLs.

RECOMMENDATIONS

In overall consideration of the traffic control and operational review of the Nellie Gail Road Equestrian Center driveway/equestrian crossing location, the existing traffic control installations are satisfactory and supported by the zero collision history. There are no other recommendations at this time.

APPENDIX A

SWITRS COLLISION HISTORY

CITY OF LAGUNA HILLS
5-YEAR SWITRS COLLISION DATABASE
INTERSECTION OF NELLIE GAIL RD AT EQUESTRIAN CENTER S/o OSO PKWY
JAN. 1, 2015 - SEPTEMBER 30, 2020

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	ROA SURF
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None 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 Influenza
 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 B

24-HOUR SPEED COUNT DATA

SPEED

Nellie Gail Rd Bet. Empty Saddle Dr & Oso Pkwy

4.2.b

Day: Thursday
Date: 10/29/2020

City: Laguna Hills
Project #: CA20_010022_010

Summary

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
00:00 AM	0	0	1	5	2	4	0	0	0	0	0	0	0	12
01:00	0	0	0	0	0	2	0	1	0	0	0	0	0	3
02:00	0	0	2	1	0	0	0	0	0	0	0	0	0	3
03:00	0	0	0	0	2	0	0	0	0	0	0	0	0	2
04:00	0	0	0	1	2	0	0	0	0	0	0	0	0	3
05:00	0	0	1	4	5	2	1	0	0	0	0	0	0	13
06:00	0	0	4	9	21	10	0	0	0	0	0	0	0	44
07:00	0	0	10	36	47	29	5	0	0	0	0	0	0	127
08:00	0	1	13	44	63	22	9	1	0	0	0	0	0	153
09:00	0	1	7	42	64	35	1	0	0	0	0	0	0	150
10:00	0	5	16	34	44	22	2	2	0	0	0	0	0	125
11:00	3	6	18	58	70	30	3	1	0	0	0	0	0	189
12:00 PM	0	4	16	61	57	28	4	0	0	0	0	0	0	170
13:00	0	2	14	50	50	35	4	1	0	0	0	0	0	156
14:00	0	3	23	45	54	25	5	2	0	0	0	0	0	157
15:00	1	2	17	60	80	43	8	1	0	0	0	0	0	212
16:00	0	2	19	72	102	51	4	0	0	0	0	0	0	250
17:00	1	1	35	73	74	38	6	1	1	0	0	0	0	230
18:00	1	2	24	53	84	30	13	0	1	0	0	0	0	208
19:00	0	1	5	44	52	30	5	2	0	0	0	0	0	139
20:00	0	1	10	22	26	15	7	2	1	0	0	0	0	84
21:00	0	0	5	11	13	13	5	2	0	0	0	0	0	49
22:00	0	1	3	4	9	6	0	2	0	0	0	0	0	25
23:00	0	0	4	2	3	4	0	0	0	0	0	0	0	13
Totals	6	32	247	731	924	474	82	18	3					2517
% of Totals	0%	1%	10%	29%	37%	19%	3%	1%	0%					100%

AM Volumes	3	13	72	234	320	156	21	5	0	0	0	0	0	824
% AM	0%	1%	3%	9%	13%	6%	1%	0%						33%
AM Peak Hour	11:00	11:00	11:00	11:00	11:00	09:00	08:00	10:00						11:00
Volume	3	6	18	58	70	35	9	2						189
PM Volumes	3	19	175	497	604	318	61	13	3	0	0	0	0	1693
% PM	0%	1%	7%	20%	24%	13%	2%	1%	0%					67%
PM Peak Hour	15:00	12:00	17:00	17:00	16:00	16:00	18:00	14:00	17:00					16:00
Volume	1	4	35	73	102	51	13	2	1					250
Directional Peak Periods All Speeds			AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
			Volume			Volume			Volume			Volume		
			280	↔		326	↔		480	↔		1431	↔	
				11%			13%			19%			57%	

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	98th
Nellie Gail Rd	Summary	26	31	31	37	40	29

SPEED

Nellie Gail Rd Bet. Empty Saddle Dr & Oso Pkwy

4.2.b

Day: Friday

Date: 10/30/2020

City: Laguna Hills

Project #: CA20_010022_010

Summary

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
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	1	1	0	0	0	0	0	0	0	0	2
02:00	0	0	0	1	1	0	0	0	0	0	0	0	0	2
03:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
04:00	0	0	0	5	1	0	0	0	0	0	0	0	0	6
05:00	0	0	1	6	11	2	1	0	0	0	0	0	0	21
06:00	0	2	2	13	20	4	3	0	0	0	0	0	0	44
07:00	0	1	6	30	32	26	5	0	0	0	0	0	0	100
08:00	0	3	7	46	52	30	4	0	0	0	0	0	0	142
09:00	0	6	8	32	47	28	14	3	0	0	0	0	0	138
10:00	1	8	11	38	38	34	8	5	0	0	0	0	0	143
11:00	1	3	15	53	51	24	6	5	0	0	0	0	0	158
12:00 PM	0	8	13	53	42	40	5	2	0	0	0	0	0	163
13:00	0	2	16	24	53	34	11	1	0	0	0	0	0	141
14:00	1	5	14	47	61	33	7	3	0	0	0	0	0	171
15:00	0	2	21	51	73	43	11	0	0	0	0	0	0	201
16:00	0	0	13	57	82	29	6	2	1	0	0	0	0	190
17:00	0	5	12	45	64	45	12	1	0	1	0	0	0	185
18:00	1	3	14	41	63	29	7	1	0	0	0	0	0	159
19:00	0	5	16	43	45	33	5	0	1	0	0	0	0	148
20:00	1	0	8	22	31	13	4	1	2	0	0	0	0	82
21:00	0	1	6	17	15	7	2	0	0	0	0	0	0	48
22:00	0	0	1	6	13	10	2	1	0	1	0	0	0	34
23:00	0	0	2	8	8	6	4	1	1	0	0	0	0	30
Totals	5	54	186	640	804	470	117	26	5	2				2309
% of Totals	0%	2%	8%	28%	35%	20%	5%	1%	0%	0%				100%

AM Volumes	2	23	50	226	254	148	41	13	0	0	0	0	0	757
% AM	0%	1%	2%	10%	11%	6%	2%	1%						33%
AM Peak Hour	10:00	10:00	11:00	11:00	08:00	10:00	09:00	10:00						11:00
Volume	1	8	15	53	52	34	14	5						158
PM Volumes	3	31	136	414	550	322	76	13	5	2	0	0	0	1552
% PM	0%	1%	6%	18%	24%	14%	3%	1%	0%	0%				67%
PM Peak Hour	14:00	12:00	15:00	16:00	16:00	17:00	17:00	14:00	20:00	17:00				15:00
Volume	1	8	21	57	82	45	12	3	2	1				201
Directional Peak Periods			AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Speeds			Volume		%	Volume		%	Volume		%	Volume		%
			242	↔	10%	304	↔	13%	375	↔	16%	1388	↔	60%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	98th
Nellie Gail Rd	Summary	26	32	32	38	41	23

SPEED

Nellie Gail Rd Bet. Empty Saddle Dr & Oso Pkwy

4.2.b

Day: Saturday

Date: 10/31/2020

City: Laguna Hills

Project #: CA20_010022_010

Summary

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
00:00 AM	0	0	0	2	2	2	1	0	0	0	0	0	0	7
01:00	0	0	2	2	0	0	0	0	0	0	0	0	0	4
02:00	0	0	0	0	0	1	0	0	0	0	0	0	0	1
03:00	0	0	0	1	1	0	0	0	0	0	0	0	0	2
04:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
05:00	0	0	2	1	5	3	0	0	0	0	0	0	0	11
06:00	1	1	4	6	19	5	4	0	0	0	0	0	0	40
07:00	0	1	6	18	33	17	3	0	0	0	0	0	0	78
08:00	0	2	13	35	33	11	2	2	0	0	0	0	0	98
09:00	2	4	13	37	45	21	5	3	0	0	0	0	0	130
10:00	1	5	11	48	42	23	6	3	1	0	0	0	0	140
11:00	0	3	20	38	62	30	9	1	0	0	0	0	0	163
12:00 PM	0	4	16	47	66	36	5	1	0	0	0	0	0	175
13:00	0	2	7	36	53	27	13	1	0	0	0	0	0	139
14:00	1	5	14	44	53	18	6	0	0	0	0	0	0	141
15:00	0	3	11	49	60	22	7	0	1	0	0	0	0	153
16:00	2	6	8	57	56	24	9	1	0	0	0	0	0	163
17:00	0	1	19	47	61	27	8	3	0	0	0	0	0	166
18:00	0	4	18	49	52	28	8	1	1	0	0	0	0	161
19:00	1	5	25	52	47	22	4	1	0	0	0	0	0	157
20:00	1	4	12	43	31	10	2	1	1	0	0	0	0	105
21:00	1	5	4	17	33	13	4	0	0	0	0	0	0	77
22:00	0	1	3	15	31	6	6	2	0	0	0	0	0	64
23:00	0	2	3	12	9	7	2	0	0	0	0	0	0	35
Totals	10	58	211	657	794	353	104	20	4					2211
% of Totals	0%	3%	10%	30%	36%	16%	5%	1%	0%					100%

AM Volumes	4	16	71	189	242	113	30	9	1	0	0	0	0	675
% AM	0%	1%	3%	9%	11%	5%	1%	0%	0%					31%
AM Peak Hour	09:00	10:00	11:00	10:00	11:00	11:00	11:00	09:00	10:00					11:00
Volume	2	5	20	48	62	30	9	3	1					163
PM Volumes	6	42	140	468	552	240	74	11	3	0	0	0	0	1536
% PM	0%	2%	6%	21%	25%	11%	3%	0%	0%					69%
PM Peak Hour	16:00	16:00	19:00	16:00	12:00	12:00	13:00	17:00	15:00					12:00
Volume	2	6	25	57	66	36	13	3	1					175

Directional Peak Periods All Speeds		AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes	
	Volume		%		%		%		%
	176	↔	8%	314	↔	14%	329	↔	63%

Street Name	Direction	Percentiles				
		15th	50th	Average	85th	95th
Nellie Gail Rd	Summary	25	31	31	37	41

SPEED

Nellie Gail Rd Bet. Empty Saddle Dr & Oso Pkwy

4.2.b

Day: Sunday

Date: 11/1/2020

City: Laguna Hills

Project #: CA20_010022_010

Summary

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
00:00 AM	0	0	2	10	3	2	0	1	0	0	0	0	0	18
01:00	0	0	1	3	2	2	2	1	0	0	0	0	0	11
02:00	0	0	0	3	4	0	0	0	0	0	0	0	0	7
03:00	0	0	0	2	1	0	0	0	0	0	0	0	0	3
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	1	1	2	2	0	0	0	0	0	0	0	6
06:00	0	0	0	3	8	4	1	0	0	0	0	0	0	16
07:00	0	0	8	8	15	9	0	0	0	0	0	0	0	40
08:00	0	1	4	13	21	12	4	0	0	0	0	0	0	55
09:00	0	1	16	29	37	17	11	3	0	0	0	0	0	114
10:00	0	1	5	30	31	15	6	0	0	0	0	0	0	88
11:00	1	3	8	40	38	20	7	1	1	0	0	0	0	119
12:00 PM	0	4	12	37	46	25	9	2	0	0	0	0	0	135
13:00	2	2	9	33	43	18	3	0	0	0	0	0	0	110
14:00	0	4	12	26	48	29	6	0	0	0	0	0	0	125
15:00	1	5	19	35	41	22	6	1	0	0	0	0	0	130
16:00	1	3	14	54	33	13	8	1	0	0	0	0	0	127
17:00	1	1	14	29	39	23	5	1	0	0	0	0	0	113
18:00	0	1	6	26	29	23	4	0	0	0	0	0	0	89
19:00	1	1	5	13	25	9	6	1	0	0	0	0	0	61
20:00	0	0	8	11	20	8	3	0	1	0	0	0	0	51
21:00	0	1	1	6	7	7	2	1	0	0	0	0	0	25
22:00	0	0	2	1	7	3	3	2	0	0	0	0	0	18
23:00	0	0	0	2	3	0	1	0	0	0	0	0	0	6
Totals	7	28	147	415	503	263	87	15	2					1467
% of Totals	0%	2%	10%	28%	34%	18%	6%	1%	0%					100%

AM Volumes	1	6	45	142	162	83	31	6	1	0	0	0	0	477
% AM	0%	0%	3%	10%	11%	6%	2%	0%	0%					33%
AM Peak Hour	11:00	11:00	09:00	11:00	11:00	11:00	09:00	09:00	11:00					11:00
Volume	1	3	16	40	38	20	11	3	1					119
PM Volumes	6	22	102	273	341	180	56	9	1	0	0	0	0	990
% PM	0%	1%	7%	19%	23%	12%	4%	1%	0%					67%
PM Peak Hour	13:00	15:00	15:00	16:00	14:00	14:00	12:00	12:00	20:00					12:00
Volume	2	5	19	54	48	29	9	2	1					135
Directional Peak Periods			AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes					
All Speeds			Volume	%	Volume	%	Volume	%	Volume	%	Volume	%		
			95	↔	6%	245	↔	17%	240	↔	16%	887	↔	60%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	98th
Nellie Gail Rd	Summary	25	31	31	38	42	14

SPEED

Nellie Gail Rd Bet. Empty Saddle Dr & Oso Pkwy

4.2.b

Day: Monday

Date: 11/2/2020

City: Laguna Hills

Project #: CA20_010022_010

Summary

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
00:00 AM	0	0	0	1	2	1	1	1	0	0	0	0	0	6
01:00	0	0	1	2	0	0	0	0	0	0	0	0	0	3
02:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	3	0	0	0	0	0	0	0	0	0	3
05:00	0	1	1	1	5	1	0	0	0	0	0	0	0	9
06:00	0	1	2	12	20	7	2	0	0	0	0	0	0	44
07:00	0	1	7	23	38	16	4	0	0	0	0	0	0	89
08:00	0	1	11	41	52	22	5	0	0	0	0	0	0	132
09:00	0	2	11	34	54	29	9	1	0	0	0	0	0	140
10:00	1	4	10	35	56	32	7	4	0	0	0	0	0	149
11:00	1	4	8	40	40	18	3	2	0	0	0	0	0	116
12:00 PM	0	5	18	51	55	31	5	1	0	0	0	0	0	166
13:00	1	3	9	35	59	26	5	6	0	0	0	0	0	144
14:00	0	4	22	37	49	28	4	0	0	0	0	0	0	144
15:00	0	1	19	54	57	27	1	0	1	0	0	0	0	160
16:00	0	4	18	54	83	35	5	1	0	0	0	0	0	200
17:00	0	1	17	66	90	42	11	1	0	0	0	0	0	228
18:00	0	1	15	54	53	26	7	0	0	0	0	0	0	156
19:00	0	0	15	35	34	12	5	1	0	0	0	0	0	102
20:00	0	1	9	39	25	10	4	0	1	0	0	0	0	89
21:00	0	0	3	15	12	10	1	0	1	0	0	0	0	42
22:00	0	1	3	6	6	1	1	1	0	0	0	0	0	19
23:00	0	0	0	5	1	2	2	0	0	0	0	0	0	10
Totals	3	35	199	643	792	376	82	19	3					2152
% of Totals	0%	2%	9%	30%	37%	17%	4%	1%	0%					100%

AM Volumes	2	14	51	192	268	126	31	8	0	0	0	0	0	692
% AM	0%	1%	2%	9%	12%	6%	1%	0%						32%
AM Peak Hour	10:00	10:00	08:00	08:00	10:00	10:00	09:00	10:00						10:00
Volume	1	4	11	41	56	32	9	4						149
PM Volumes	1	21	148	451	524	250	51	11	3	0	0	0	0	1460
% PM	0%	1%	7%	21%	24%	12%	2%	1%	0%					68%
PM Peak Hour	13:00	12:00	14:00	17:00	17:00	17:00	17:00	13:00	15:00					17:00
Volume	1	5	22	66	90	42	11	6	1					228
Directional Peak Periods			AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Speeds			Volume		%	Volume		%	Volume		%	Volume		%
			221	↔	10%	310	↔	14%	428	↔	20%	1193	↔	55%

Street Name	Direction	Percentiles				
		15th	50th	Average	85th	95th
Nellie Gail Rd	Summary	26	31	31	37	40

APPENDIX C

SPOT SPEED RADAR SURVEY DATA

Spot Speed Study

Prepared by: National Data & Surveying Services

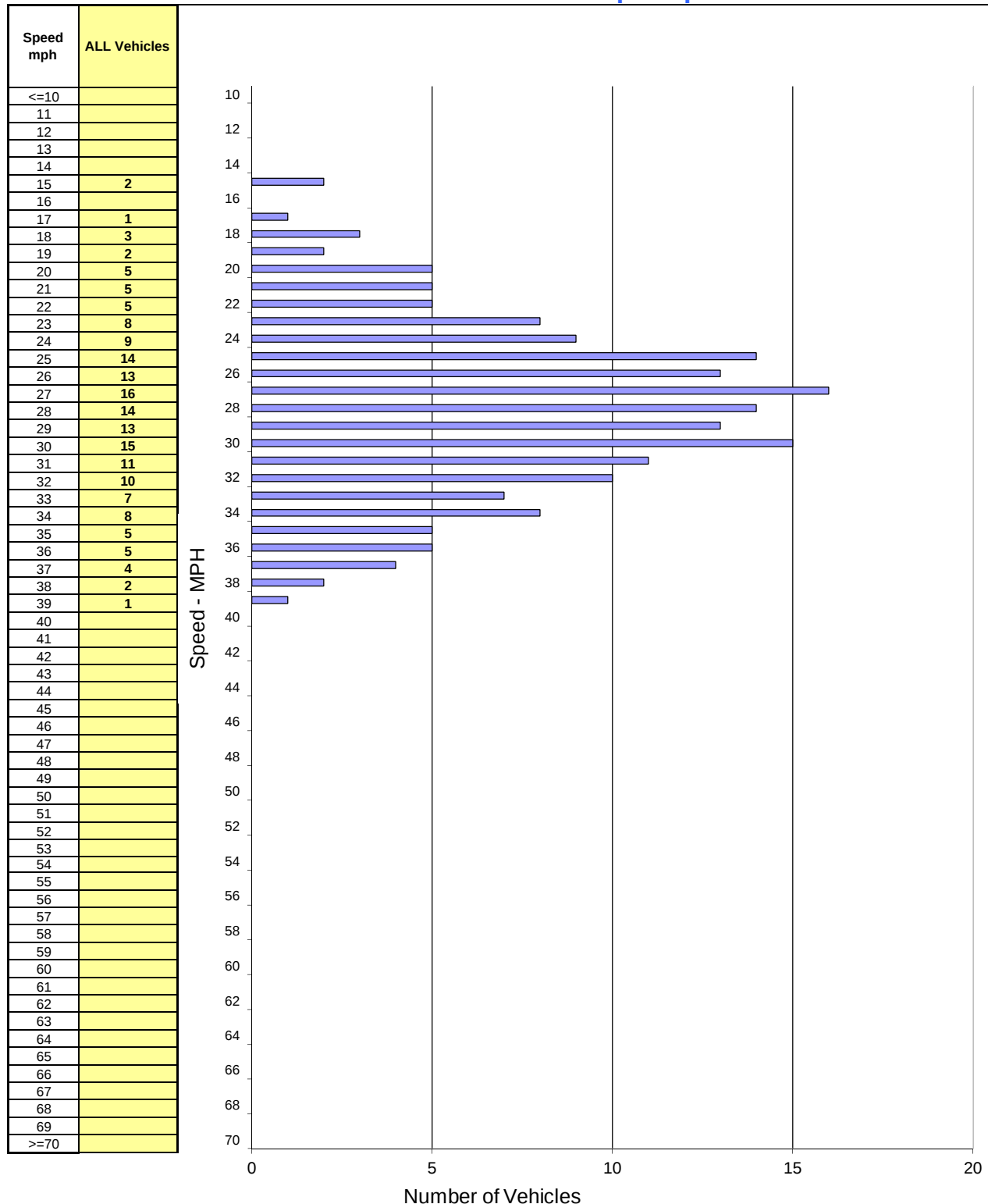
City of Laguna Hills

DATE: 10/29/2020
TIME: 11:00-12:00

Location: Nellie Gail Rd 470' S/O Oso Pkwy
Posted Speed: 25 MPH Clear/Dry

Project #: 20-010023-001

Northbound & Southbound Spot Speeds



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
ALL	178	15 - 39	28 mph	33 mph	23 - 32	123	69%	12% / 23	18% / 32

Attachment: Traffic Commission Agenda Item 4.1_01-20-2021 (2368 : Nellie Gail Ranch Equestrian Crossing Review Update)

Spot Speed Study

Prepared by: National Data & Surveying Services

City of Laguna Hills

DATE: 10/29/2020

Location: Nellie Gail Rd Bet., north of Empty Saddle, just south of raised median)

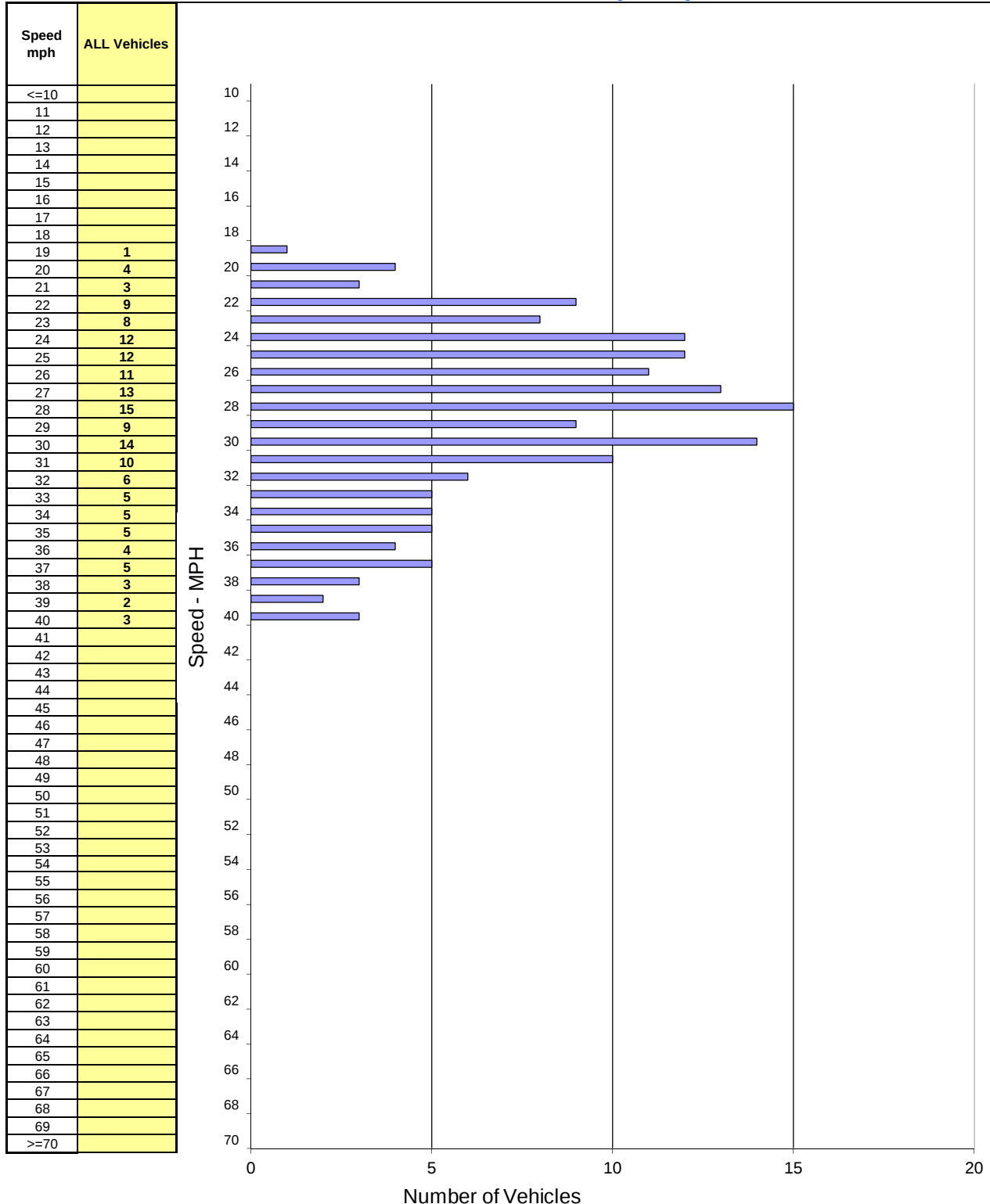
TIME: 12:30-13:30

Posted Speed: 25 MPH

Clear/Dry

Project #: 20-010023-002

Northbound & Southbound Spot Speeds



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
ALL	159	19 - 40	28 mph	34 mph	22 - 31	113	71%	5% / 8	24% / 38

Attachment: Traffic Commission Agenda Item 4.1_01-20-2021 (2368 : Nellie Gail Ranch Equestrian Crossing Review Update)

Spot Speed Study

Prepared by: National Data & Surveying Services

City of Laguna Hills

DATE: 10/29/2020

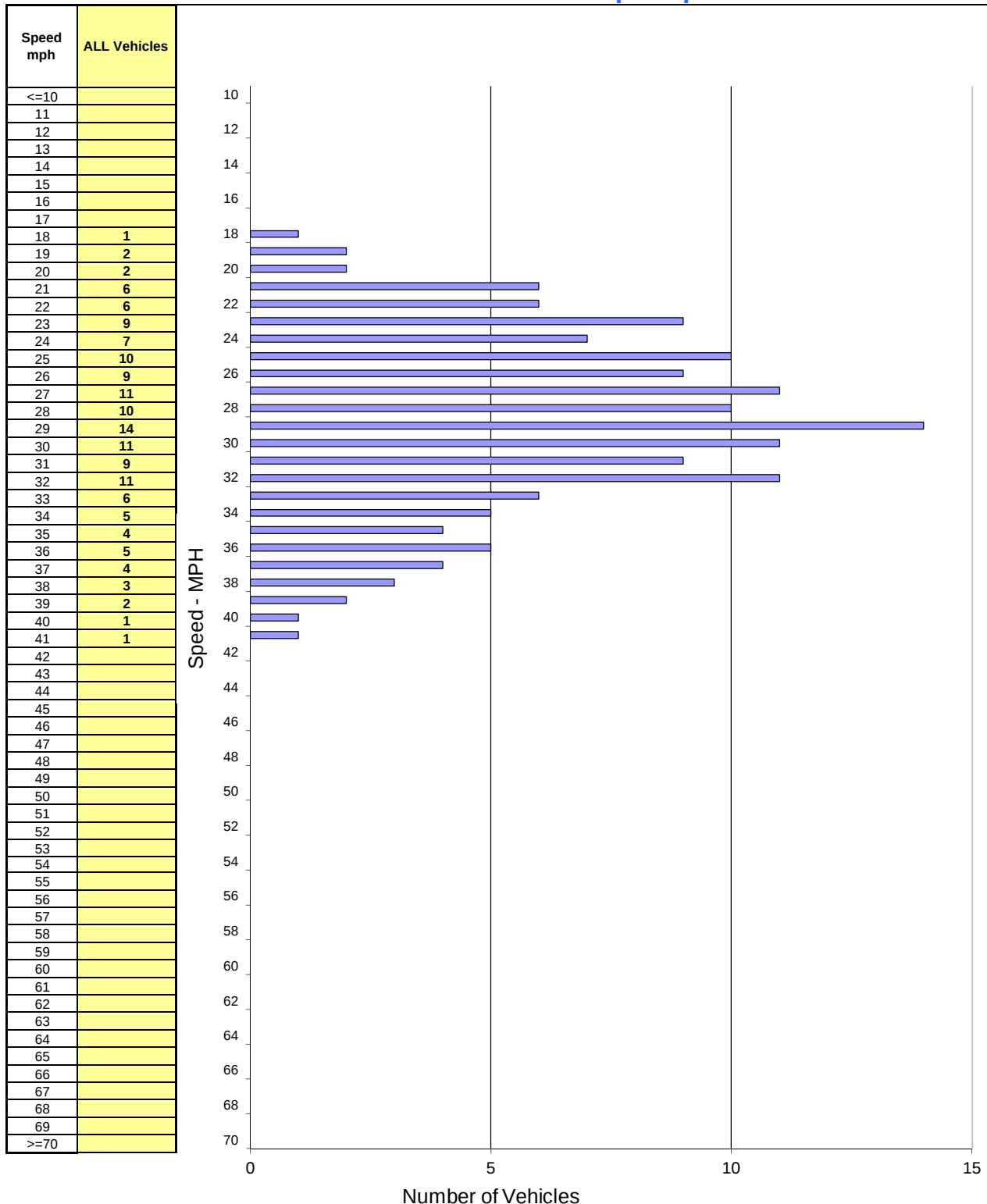
Location: Nellie Gail Rd Bet. Hidden Trail Rd & Empty Saddle Dr

TIME: 14:00-15:00

Posted Speed: 25 MPH Clear/Dry

Project #: 20-010023-003

Northbound & Southbound Spot Speeds



SPEED PARAMETERS									
Class	Count	Range	50th Percentile	85th Percentile	10 MPH Pace	# in Pace	Percent in Pace	% / # Below Pace	% / # Above Pace
ALL	149	18 - 41	29 mph	34 mph	23 - 32	101	68%	11% / 17	21% / 31

Attachment: Traffic Commission Agenda Item 4.1_01-20-2021 (2368 : Nellie Gail Ranch Equestrian Crossing Review Update)

APPENDIX D

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

CALIFORNIA MUTCD

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

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

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

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

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

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

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

Can also be used as Stopping Sight Distance as suggested buffer space length or location for flagger station.

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

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

Note: Use Table 6C-4 to calculate L

APPENDIX E

CHAPTER 4N. IN-ROADWAY LIGHTS

CALIFORNIA MUTCD

CHAPTER 4N. IN-ROADWAY LIGHTS

Section 4N.01 Application of In-Roadway Lights

Support:

⁰¹ In-Roadway Lights are special types of highway traffic signals installed in the roadway surface to warn road users that they are approaching a condition on or adjacent to the roadway that might not be readily apparent and might require the road users to slow down and/or come to a stop. This includes situations warning of marked school crosswalks, marked midblock crosswalks, marked crosswalks on uncontrolled approaches, marked crosswalks in advance of roundabouts as described in Chapter 3C, and other roadway situations involving pedestrian crossings.

Standard:

⁰² In-Roadway Lights shall not be used for any application that is not described in this Chapter.

⁰³ If used, In-Roadway Lights shall not exceed a height of 3/4 inch above the roadway surface.

⁰⁴ When used, In-Roadway Lights shall be flashed and shall not be steadily illuminated.

Support:

⁰⁵ Steadily illuminated lights installed in the roadway surface are considered to be internally illuminated raised pavement markers (see Section 3B.11).

Option:

⁰⁶ In-Roadway Lights may be flashed in a manner that includes a continuous flash of varying intensity and time duration that is repeated to provide a flickering effect (see Section 4N.02).

Section 4N.02 In-Roadway Warning Lights at Crosswalks

Option:

⁰¹ In-roadway lights may be installed at certain marked crosswalks, based on an engineering study or engineering judgment, to provide additional warning to road users.

Standard:

⁰² If used, In-Roadway Warning Lights at crosswalks shall be installed only at marked crosswalks with applicable warning signs. They shall not be used at crosswalks controlled by YIELD signs, STOP signs, or traffic control signals.

⁰³ If In-Roadway Warning Lights are used at a crosswalk, the following requirements shall apply:

A. Except as provided in Paragraphs 7 and 8, they shall be installed along both sides of the crosswalk and shall span its entire length.

B. They shall initiate operation based on pedestrian actuation and shall cease operation at a predetermined time after the pedestrian actuation or, with passive detection, after the pedestrian clears the crosswalk.

C. They shall display a flashing yellow light when actuated. The flash rate shall be at least 50, but no more than 60, flash periods per minute. If they are flashed in a manner that includes a continuous flash of varying intensity and time duration that is repeated to provide a flickering effect, the flickers or pulses shall not repeat at a rate that is between 5 and 30 per second to avoid frequencies that might cause seizures.

D. They shall be installed in the area between the outside edge of the crosswalk line and 10 feet from the outside edge of the crosswalk.

E. They shall face away from the crosswalk if unidirectional, or shall face away from and across the crosswalk if bidirectional.

⁰⁴ If used on one-lane, one-way roadways, a minimum of two In-Roadway Warning Lights shall be installed on the approach side of the crosswalk. If used on two-lane roadways, a minimum of three In-Roadway Warning Lights shall be installed along both sides of the crosswalk. If used on roadways with more than two lanes, a minimum of one In-Roadway Warning Light per lane shall be installed along both sides of the crosswalk.

Guidance:

05 If used, In-Roadway Warning Lights should be installed in the center of each travel lane, at the center line of the roadway, at each edge of the roadway or parking lanes, or at other suitable locations away from the normal tire track paths.

06 The location of the In-Roadway Warning Lights within the lanes should be based on engineering judgment.

Option:

07 On one-way streets, In-Roadway Warning Lights may be omitted on the departure side of the crosswalk.

08 Based on engineering judgment, the In-Roadway Warning Lights on the departure side of the crosswalk on the left side of a median may be omitted.

09 Unidirectional In-Roadway Warning Lights installed at crosswalk locations may have an optional, additional yellow light indication in each unit that is visible to pedestrians in the crosswalk to indicate to pedestrians in the crosswalk that the In-Roadway Warning Lights are in fact flashing as they cross the street. These yellow lights may flash with and at the same flash rate as the light module in which each is installed.

Guidance:

10 If used, the period of operation of the In-Roadway Warning Lights following each actuation should be sufficient to allow a pedestrian crossing in the crosswalk to leave the curb or shoulder and travel at a walking speed of 3.5 feet per second to at least the far side of the traveled way or to a median of sufficient width for pedestrians to wait. Where pedestrians who walk slower than 3.5 feet per second, or pedestrians who use wheelchairs, routinely use the crosswalk, a walking speed of less than 3.5 feet per second should be considered in determining the period of operation.

Standard:

11 If pedestrian pushbuttons are used to actuate the in-roadway lights, a Push Button To Turn On Warning Lights (with pushbutton symbol) (R10-25) sign (see Figure 2B-26) shall be mounted adjacent to immediately above or integral with each pedestrian pushbutton.

12 Where the period of operation is sufficient only for crossing from a curb or shoulder to a median of sufficient width for pedestrians to wait, median-mounted pedestrian actuators shall be provided.

13 In-Roadway Warning Lights (IRWLs) shall not be placed on or within the crosswalk markings. If the In-Roadway Warning Lights are activated by a push button, the PUSH BUTTON FOR PEDESTRIAN WARNING LIGHTS, CROSS WITH CAUTION (R62E(CA)) sign shall be used.

14 The following shall be considered when evaluating the need for In-Roadway Warning Lights:

- A. Whether the crossing is controlled or uncontrolled.**
- B. An engineering traffic study to determine if In-Roadway Warning Lights are compatible with the safety and operation of nearby intersections, which may or may not be, controlled by traffic signals or STOP/YIELD signs.**
- C. Standard traffic signs for crossings and crosswalk pavement markings are provided.**
- D. At least 40 pedestrians regularly use the crossing during each of any two hours (not necessarily consecutive) during a 24-hour period.**
- E. The vehicular volume through the crossing exceeds 200 vehicles per hour in urban areas or 140 vehicles per hour in rural areas during peak-hour pedestrian usage.**
- F. The critical approach speed (85th percentile) is 45 mph or less.**
- G. In-Roadway Warning Lights are visible to drivers at the minimum stopping sight distance for the posted speed limit.**
- H. Public education on In-Roadway Warning Lights is conducted for new installations.**

Option:

15 Overhead or roadside Flashing Yellow Beacons may be installed in conjunction with In-Roadway Warning Lights. In-Roadway Warning Lights may be installed independently, but are not necessarily intended to be a substitute for standard flashing beacons. Engineering judgment should be exercised.

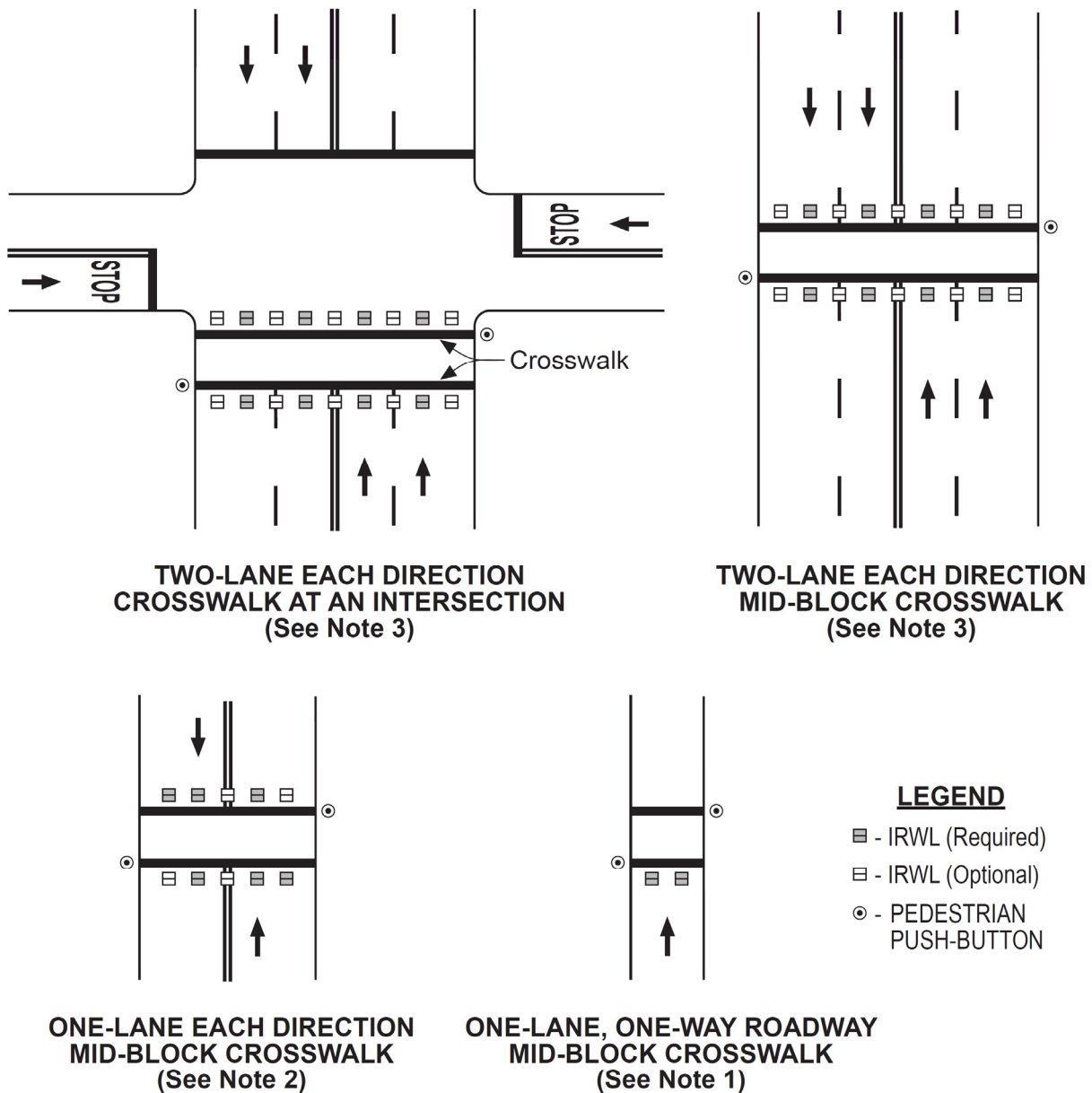
Guidance:

16 Typical applications of In-Roadway Warning Lights are shown in Figure 4N-101(CA).

Section 4N.101(CA) In-Roadway Warning Lights at Crosswalks Financing and Maintenance-State Highways Standard:

⁰¹ When In-Roadway Warning Lights are proposed by Caltrans on State highways, Caltrans shall pay the costs of installation and maintenance. When In-Roadway Warning Lights are proposed and installed by a local agency on State highways, the installation of In-Roadway Warning Lights shall be covered by an Encroachment Permit issued by the local Caltrans District Director. The local agency shall be responsible for installation and maintenance of the In-Roadway Warning Lights.

Figure 4N-101 (CA). Typical Layout for In-Roadway Warning Lights (IRWLs)



NOTES:

1. One-Lane, One-Way Roadways, a minimum of two IRWLs shall be installed on the approach side of the crosswalk.
2. One-Lane each direction, a minimum of three IRWLs shall be installed along both sides of the crosswalk.
3. Two-Lanes each direction, a minimum of one IRWLs per lane, shall be installed along both sides of the crosswalk.
4. IRWLs should be located off the tire tracks.

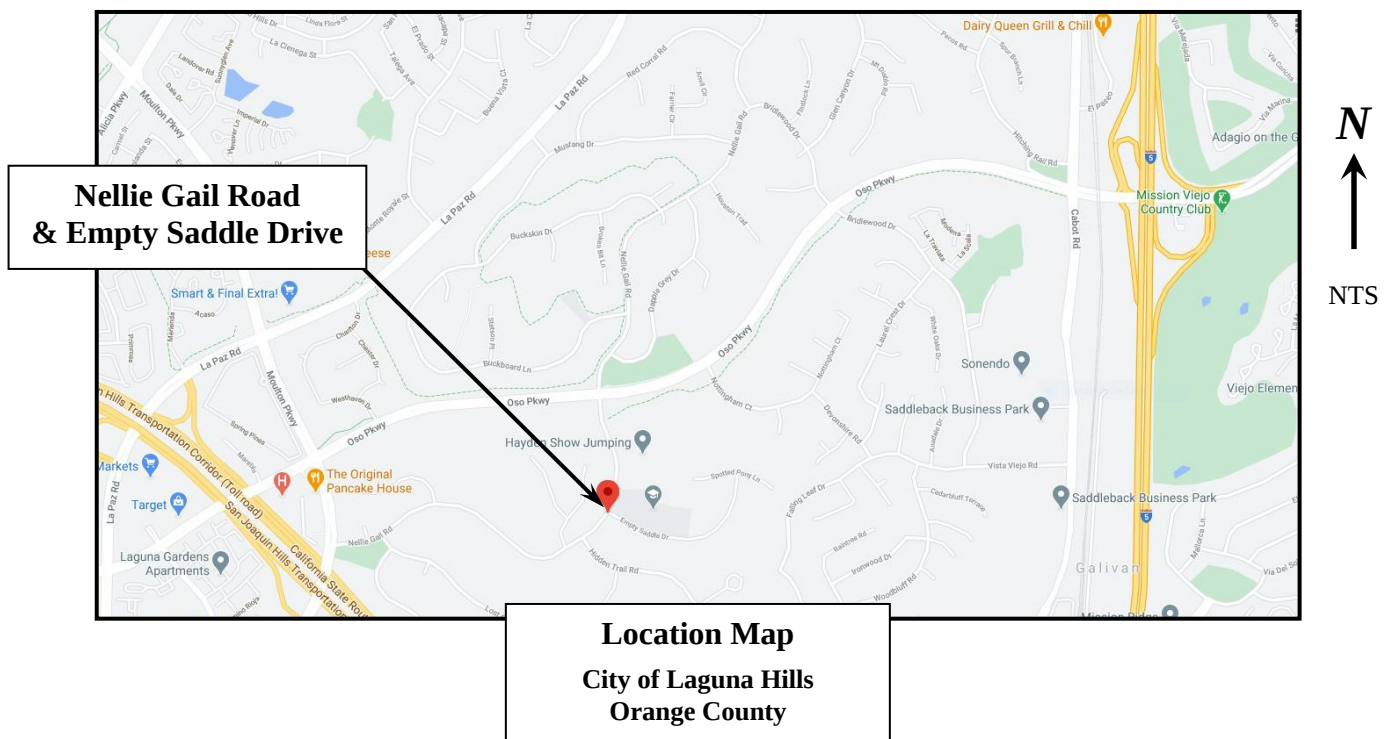
MULTIWAY STOP CONTROL WARRANTS ANALYSIS

NELLIE GAIL ROAD AT EMPTY SADDLE DRIVE IN THE CITY OF LAGUNA HILLS, CA NOVEMBER 25, 2020

INTRODUCTION

The City of Laguna Hills requested Hartzog & Crabill, Inc. (HCI) to complete a Multiway Stop Warrants Analysis at the intersection of Nellie Gail Road and Empty Saddle 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 Nellie Gail Road running in the north-south directions and Empty Saddle Drive running in the east-west directions. The intersection is located west of the I-5 Freeway and south of Oso Parkway (see *Location Map below*). The intersection is entirely within the City of Laguna Hills jurisdiction. At the present time, there is a one way stop control on Empty Saddle Drive (i.e., Nellie Gail Road is uncontrolled).



Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Empty Saddle Drive, in Laguna Hills, CA

BACKGROUND

Nellie Gail Road is a north-south local-collector roadway with single-family residential properties on both sides of the street, along with an equestrian center on the east side of the street near Oso Parkway. At the intersection with Empty Saddle Drive, the roadway is approximately 40 feet wide, and the 2-lane roadway provides for one lane of traffic in each direction, which are separated by double-yellow centerline striping. There are no marked crosswalks across Nellie Gail Road at or near the intersection. The roadway does have curb, gutter, parkway, and sidewalk improvements on the east side, and only curb and gutter on the west side. There are equestrian paths along both sides of the roadway. There are equestrian crossing warning signs posted and yield line markings along the south side of the intersection. There is a Watch Downhill Speed warning sign facing NB traffic, and an Offset Intersections warning sign facing SB traffic. Nellie Gail Road has a posted speed limit of 25 MPH. On-street parking is prohibited on both sides of the street via No Parking Anytime signs. Currently, there are no STOP signs on Nellie Gail Road (uncontrolled) at its intersection with Empty Saddle Drive. *See Exhibit 1 (next page) for photo images of Nellie Gail Road.*

Empty Saddle Drive is a east-west local roadway with single-family residential properties on both sides of the street, along with an equestrian center on the north side of the street near Nellie Gail Road. At the T-intersection with Nellie Gail Road, which is the westerly terminus of Empty Saddle Drive, the roadway is approximately 34 feet wide. The 2-lane roadway provides for one lane of traffic in each direction, which are not separated by any centerline striping. There are no marked crosswalks across Empty Saddle Drive. The roadway does have curb, gutter, and sidewalk improvements on the north side and only curb, gutter, and parkway on the south side. Empty Saddle Drive does not have a posted speed limit; however, the residential nature of this street results in a ‘*prima facie*’ speed limit of 25 MPH and does not require posting. There is a STOP sign, a white ‘STOP’ pavement marking, and a white limit line on Empty Saddle Drive at its intersection with Nellie Gail Road. *See Exhibit 2 (following page) for a photo image of Empty Saddle Drive.*

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Empty Saddle Drive, in Laguna Hills, CA

EXHIBIT 1



NELLIE GAIL ROAD (Looking Northbound) @ EMPTY SADDLE DRIVE



NELLIE GAIL ROAD (Looking Southbound) @ EMPTY SADDLE DRIVE

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Empty Saddle Drive, in Laguna Hills, CA

EXHIBIT 2



EMPTY SADDLE DRIVE (Looking Westbound) @ NELLIE GAIL ROAD

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Empty Saddle Drive, in 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 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 Sign Warrants Analysis – Nellie Gail Road at Empty Saddle Drive, in 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 – Nellie Gail Road at Empty Saddle Drive, in Laguna Hills, CA**Collision History (continued)**

TABLE 1
SWITRS COLLISION SUMMARY

Intersection	2015		2016		2017-18		2019-20	
	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?
Nellie Gail Road at Empty Saddle Drive		<i>None reported</i>	12/27	<i>Vehicle/Pedestrian 28' North</i>		<i>None reported</i>		<i>None reported</i>

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 only (1) reported collision, 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 to the intersection on Thursday, October 29, 2020 in order to account for vehicles that typically use this T-intersection. The ADT approach count for Nellie Gail Road is 2,220 vehicles per day with the highest AM peak-hour approach volume having 152 vehicles, and 216 vehicles in the PM peak-hour. The ADT approach count for Empty Saddle Drive is 699 vehicles with the highest AM peak-hour approach volume having 64 vehicles, and 100 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 – Nellie Gail Road at Empty Saddle Drive, in Laguna Hills, CA

Traffic Volumes (continued)

TABLE 2
HIGHEST 24-HOUR INTERSECTION APPROACH VEHICLE COUNTS
NELLIE GAIL ROAD AT EMPTY SADDLE DRIVE

Street	Direction	ADT Volume	Directional Split	Highest Hourly Volume
Nellie Gail Road	Northbound	966	44%	107 (3 - 4PM)
	Southbound	1,254	56%	117 (5 – 6PM)
Empty Saddle Drive				
	Westbound	699	100%	100 (4 - 5PM)

Nellie Gail Road is considered the ‘through’ or ‘major’ street at this residential T-intersection since it carries higher volumes, and drivers are not required to slow down, or even stop, before proceeding straight through the intersection. In comparison, Empty Saddle Drive is considered the ‘minor’ street as westbound drivers on Empty Saddle Drive are required to stop at Nellie Gail Road and look both ways before proceeding to make 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 remains the case, as Empty Saddle Drive carries approximately 24% of the entire traffic entering the intersection (Nellie Gail Road carries 76% 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 also confirmed vehicles were not regularly speeding over the speed limit near the intersection, but were considered typical and what may be expected for two-lane local-type roadways. 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 – Nellie Gail Road at Empty Saddle Drive, in Laguna Hills, CA

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 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
NELLIE GAIL ROAD AT EMPTY SADDLE 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 (164) vehicles per hour Meets 55% 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 (61) vehicles per hour Meets 31% 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 (55% *major street* / 31% *minor street*). Therefore, the minimum traffic volume warrant is not satisfied.

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Empty Saddle Drive, in Laguna Hills, CA

Visibility

Impaired visibility, or restricted sight distance, due to the geometry of the intersection and possible obstructions was carefully considered during our field-review of the surrounding residential property environment. The geometry of the intersection includes an approximate 90° angle, and both southbound Nellie Gail Road and Empty Saddle Drive have a gradual vertical curvature (downgrade) heading into the intersection.

Driver sight distance was measured from the side-street approach to the intersection, as westbound traffic on Empty Saddle Drive is required to stop, before proceeding to make a left or right-turn onto Nellie Gail Road. The measured distance was derived from the stopping sight distance guidelines found in the California MUTCD (*see Appendix D*). In this reference, a 25 MPH roadway speed recommends a minimum Stopping Sight Distance of 155 feet. However, the 85th percentile speeds typically exceed the 25 MPH posted speed limit. Therefore, a 30 MPH speed limit was used as a more conservative measure, which has a minimum sight distance of 200 feet. This distance was used when looking towards approaching, uncontrolled traffic along Nellie Gail Road. More specifically, this stopping sight distance was field-measured from a typical ‘stopped’ vehicle location on Empty Saddle Drive at the intersection looking towards the oncoming lanes of cross-traffic on Nellie Gail Road. An orange cone was placed at this distance and a photograph was taken from a stopped driver’s perspective (i.e, approx. 4.5 feet).

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

As Exhibit 3 shows, when looking from Empty Saddle Drive, a driver does have a clear line of sight to the minimum sight distance of 200 feet when looking both ways on Nellie Gail Road. It is important to note, since there is an equestrian crossing along the south side of the intersection, it is expected that equestrians having a higher field of view than a vehicle (i.e., approximately 8.5 feet above ground) also have a clear line of sight to the minimum sight distance of 200 feet along Nellie Gail Road.

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Empty Saddle Drive, in Laguna Hills, CA

EXHIBIT 3



Westbound EMPTY SADDLE DRIVE (Looking North) @ NELLIE GAIL ROAD



Westbound EMPTY SADDLE DRIVE (Looking South) @ NELLIE GAIL ROAD

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Empty Saddle Drive, in 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 (Nellie Gail 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 (1) SWITRS-reported correctible collision 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 satisfied. Excessive delay to any approach of the intersection 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 is one street light located on the northeast corner of the intersection. In regards to pedestrian, bicycle, and equestrian activity, field observations confirmed a low activity. It was also determined that westbound drivers and equestrians do have a clear line of sight when looking both ways at Nellie Gail Road from Empty Saddle Drive.

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Empty Saddle Drive, in Laguna Hills, CA

MULTIWAY STOP ANALYSIS SUMMARY (continued)

Therefore, based upon engineering judgment, it is determined that stopping traffic on Nellie Gail Road at Empty Saddle Drive is not required to enhance the traffic safety at this intersection.

RECOMMENDATION

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 Nellie Gail Road and Empty Saddle 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).

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

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

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

Option:

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

Support:

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

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

Standard:

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

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

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

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

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

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

Support:

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

Guidance:

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

Option:

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

Support:

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

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

Through Highways

Option:

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

Support:

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

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

Option:

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

Standard:

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

Support:

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

Section 2B.06 STOP Sign Applications

Guidance:

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

Support:

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

Section 2B.07 Multi-Way Stop Applications

Support:

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

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

Guidance:

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

Option:

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

APPENDIX B

SWITRS COLLISION HISTORY

CITY OF LAGUNA HILLS
5-YEAR SWITRS COLLISION DATABASE
INTERSECTION OF NELLIE GAIL RD AT EMPTY SADDLE DR
JAN. 1, 2015 - SEPTEMBER 30, 2020

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.
8207346	20161227	1357	NELLIE GAIL RD	EMPTY SADDLE DR	28	N	N	A	2	A	8	22107	F	G	B	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)

COUNT DATA

Prepared by National Data & Surveying Services

VOLUME

Nellie Gail Rd & Empty Saddle Dr

Day: Thursday
Date: 10/29/2020

Highest 8 hours.

City: Laguna Hills
Project #: CA20_010022_004

DAILY TOTALS					NB	SB	EB					WB	Total		
					966	1,254						0	699	2,919	
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL			
00:00	0	3		1	4		12:00	22	22		10	54			
00:15	1	1		0	2		12:15	14	20		8	42			
00:30	0	1		0	1		12:30	15	19		14	48			
00:45	1	2	1	6	0	1	12:45	19	70	22	83	13	45	54	198
01:00	0	2		0	2		13:00	18	24		9	51			
01:15	0	0		0	0		13:15	17	19		11	47			
01:30	0	0		1	1		13:30	17	19		12	48			
01:45	1	1	0	2	0	1	13:45	13	65	12	74	12	44	37	183
02:00	0	0		0	0		14:00	23	18		8	49			
02:15	1	0		0	1		14:15	19	18		11	48			
02:30	0	1		0	1		14:30	21	20		9	50			
02:45	0	1	1	2	0	1	14:45	18	81	30	86	7	35	55	202
03:00	0	0		0	0		15:00	19	18		9	46			
03:15	0	1		1	2		15:15	28	35		14	77			
03:30	0	1		0	1		15:30	26	32		14	72			
03:45	1	1	0	2	1	2	15:45	34	107	24	109	9	46	67	262
04:00	0	1		0	1		16:00	21	35		17	73			
04:15	0	0		0	0		16:15	26	31		31	88			
04:30	1	0		0	1		16:30	29	24		42	95			
04:45	0	1	1	2	1	1	16:45	22	98	24	114	10	100	56	312
05:00	0	1		0	1		17:00	18	34		26	78			
05:15	1	3		0	4		17:15	21	30		24	75			
05:30	1	0		0	1		17:30	12	26		15	53			
05:45	1	3	5	9	0	6	17:45	15	66	27	117	13	78	55	261
06:00	1	4		3	8		18:00	15	20		19	54			
06:15	1	5		1	7		18:15	10	28		13	51			
06:30	1	5		1	7		18:30	21	30		13	64			
06:45	6	9	16	30	3	8	18:45	16	62	28	106	15	60	59	228
07:00	11	22		5	38		19:00	9	15		31	55			
07:15	6	13		12	31		19:15	12	10		11	33			
07:30	10	20		4	34		19:30	11	18		6	35			
07:45	14	41	16	71	12	33	19:45	4	36	18	61	4	52	26	149
08:00	13	15		5	33		20:00	4	11		7	22			
08:15	26	18		10	54		20:15	4	10		7	21			
08:30	12	19		7	38		20:30	8	9		2	19			
08:45	21	72	28	80	8	30	20:45	5	21	8	38	5	21	18	80
09:00	23	23		6	52		21:00	3	8		1	12			
09:15	17	15		4	36		21:15	5	10		3	18			
09:30	12	17		7	36		21:30	2	5		8	15			
09:45	17	69	21	76	10	27	21:45	1	11	4	27	0	12	5	50
10:00	18	16		8	42		22:00	2	4		0	6			
10:15	20	12		8	40		22:15	4	4		2	10			
10:30	13	19		8	40		22:30	2	4		0	6			
10:45	12	63	16	63	10	34	22:45	4	12	3	15	1	3	8	30
11:00	14	18		13	45		23:00	2	2		0	4			
11:15	13	22		11	46		23:15	1	1		0	2			
11:30	22	16		19	57		23:30	0	2		2	4			
11:45	21	70	20	76	21	64	23:45	1	4	0	5	0	2	1	11
TOTALS	333	419		201	953		TOTALS	633	835		498	1964			
SPLIT %	34.9%	44.0%		21.1%	32.6%		SPLIT %	32.2%	42.5%		25.3%	67.4			

DAILY TOTALS					NB	SB	EB			WB	Total
					966	1,254	0			699	2,919
AM Peak Hour	08:15	08:15		11:00	11:15	PM Peak Hour	15:45	15:15		16:15	15:4
AM Pk Volume	82	88		64	219	PM Pk Volume	110	126		109	323
Pk Hr Factor	0.788	0.786		0.762	0.883	Pk Hr Factor	0.809	0.900		0.649	0.85
7 - 9 Volume	113	151	0	63	327	4 - 6 Volume	164	231	0	178	573
7 - 9 Peak Hour	08:00	08:00		07:45	08:00	4 - 6 Peak Hour	16:00	17:00		16:15	16:1
7 - 9 Pk Volume	72	80	0	34	182	4 - 6 Pk Volume	98	117	0	109	317
Pk Hr Factor	0.692	0.714	0.000	0.708	0.798	Pk Hr Factor	0.845	0.860	0.000	0.649	0.83

Attachment: Traffic Commission Agenda Item 4.1 01-20-2021 (2368 : Nellie Gail Ranch Equestrian Crossing Review Update)

APPENDIX D

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

CALIFORNIA MUTCD

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

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

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

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

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

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

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

Can also be used as Stopping Sight Distance as suggested buffer space length or location for flagger station.

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

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

Note: Use Table 6C-4 to calculate L

MULTIWAY STOP CONTROL WARRANTS ANALYSIS

NELLIE GAIL ROAD AT HIDDEN TRAIL ROAD IN THE CITY OF LAGUNA HILLS, CA NOVEMBER 24, 2020

INTRODUCTION

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

The location is a typical T-intersection with Nellie Gail Road running diagonally in the north-south directions and Hidden Trail Road running in the east-west directions. The intersection is located west of the I-5 Freeway and south of Oso Parkway (see *Location Map below*). The intersection is entirely within the City of Laguna Hills jurisdiction. At the present time, there is a one way stop control on Hidden Trail Road (i.e., Nellie Gail Road is uncontrolled).



Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Hidden Trail Road, in Laguna Hills, CA**BACKGROUND**

Nellie Gail Road is a north-south local-collector roadway with single-family residential properties on both sides of the street, along with an equestrian center on the east side of the street near Oso Parkway. At the intersection with Hidden Trail Road, the roadway is approximately 40 feet wide, and the 2-lane roadway provides for one lane of traffic in each direction, which are separated by double-yellow centerline striping. There are no marked crosswalks across Nellie Gail Road at or near the intersection. The roadway does have curb, gutter, and sidewalk improvements on the east side, and only curb and gutter on the west side. There are equestrian paths along both sides of the roadway. Nellie Gail Road 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 on Nellie Gail Road (i.e., uncontrolled) at its intersection with Hidden Trail Road.

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

Hidden Trail Road is an east-west local roadway with single-family residential properties on both sides of the street. At the T-intersection with Nellie Gail Road, which is the westerly terminus of Hidden Trail Road, the roadway is approximately 40 feet wide. The 2-lane roadway provides for one lane of traffic in each direction, which are separated by double-yellow centerline striping. There are no marked crosswalks across Hidden Trail Road. The roadway does have curb and gutter improvements on both sides. Hidden Trail Road does have a posted speed limit of 25 MPH. There is a STOP sign, a white ‘STOP’ pavement marking, and a white limit line on Hidden Trail Road at its intersection with Nellie Gail Road.

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

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Hidden Trail Road, in Laguna Hills, CA

EXHIBIT 1



NELLIE GAIL ROAD (Looking Northbound) @ HIDDEN TRAIL ROAD



NELLIE GAIL ROAD (Looking Southbound) @ HIDDEN TRAIL ROAD

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Hidden Trail Road, in Laguna Hills, CA

EXHIBIT 2



HIDDEN TRAIL ROAD (Looking Westbound) @ NELLIE GAIL ROAD

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Hidden Trail Road, in 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 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 Sign Warrants Analysis – Nellie Gail Road at Hidden Trail Road, in 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 – Nellie Gail Road at Hidden Trail Road, in Laguna Hills, CA

Collision History (continued)

TABLE 1
SWITRS COLLISION SUMMARY

Intersection	2015		2016		2017-18		2019-20	
	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?
Nellie Gail Road at Hidden Trail Road		<i>None reported</i>		<i>None reported</i>		<i>None reported</i>		<i>None reported</i>

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

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

As shown above, there have been (0) 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 to the intersection on Thursday, October 29, 2020 in order to account for vehicles that typically use this T-intersection. The ADT approach count for Nellie Gail Road is 1,612 vehicles per day with the highest AM peak-hour approach volume having 134 vehicles, and 142 vehicles in the PM peak-hour. The ADT approach count for Hidden Trail Road is 807 vehicles with the highest AM peak-hour approach volume having 74 vehicles, and 85 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 – Nellie Gail Road at Hidden Trail Road, in Laguna Hills, CA

Traffic Volumes (continued)

TABLE 2
HIGHEST 24-HOUR INTERSECTION APPROACH VEHICLE COUNTS
NELLIE GAIL ROAD AT HIDDEN TRAIL ROAD

Street	Direction	ADT Volume	Directional Split	Highest Hourly Volume
Nellie Gail Road	Northbound	648	40%	67 (4 - 5PM)
	Southbound	964	60%	84 (12 - 1PM)
Hidden Trail Road				
	Westbound	807	100%	85 (3 - 4PM)

Nellie Gail Road 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, Hidden Trail Road is considered the ‘minor’ street as westbound drivers on Hidden Trail Road are required to stop at Nellie Gail Road and look both ways before proceeding to make 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 really the case, as Hidden Trail Road carries approximately 33% of the entire traffic entering the intersection (Nellie Gail Road carries 67% 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 also confirmed vehicles were not regularly speeding over the speed limit near the intersection, but were considered typical and what may be expected for two-lane local-type roadways. 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 – Nellie Gail Road at Hidden Trail Road, in Laguna Hills, CA

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 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
NELLIE GAIL ROAD AT HIDDEN TRAIL ROAD

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 (107) vehicles per hour Meets 36% 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 (70) vehicles per hour Meets 35% 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 (36% *major street* / 35% *minor street*). Therefore, the minimum traffic volume warrant is not satisfied.

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Hidden Trail Road, in Laguna Hills, CA**Visibility**

Impaired visibility, or restricted sight distance, due to the geometry of the intersection and possible obstructions was carefully considered during our field-review of the surrounding residential property environment. The geometry of the intersection includes an approximate 90° angle, and both northbound Nellie Gail Road and Hidden Trail Road have a gradual vertical curvature (downgrade) heading into the intersection.

Driver sight distance was measured from the side-street approach to the intersection, as westbound traffic on Hidden Trail Road is required to stop, before proceeding to make a left or right-turn onto Nellie Gail Road. The measured distance was derived from the stopping sight distance guidelines found in the California MUTCD (*see Appendix D*). In this reference, a 25 MPH roadway speed recommends a minimum Stopping Sight Distance of 155 feet. However, the 85th percentile speeds typically exceed the 25 MPH posted speed limit. Therefore, a 30 MPH speed limit was used as a more conservative measure, which has a minimum sight distance of 200 feet. This distance was used when looking towards approaching, uncontrolled traffic along Nellie Gail Road. More specifically, this stopping sight distance was field-measured from a typical ‘stopped’ vehicle location on Hidden Trail Road at the intersection looking towards the oncoming lanes of cross-traffic on Nellie Gail Road. An orange cone was placed at this distance and a photograph was taken from a stopped driver’s perspective (i.e, approx. 4.5 feet).

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

As Exhibit 3 shows, when looking from Hidden Trail Road, a driver does have a clear line of sight to the minimum sight distance of 200 feet when looking both ways on Nellie Gail Road. It is important to note, there is not a marked and posted equestrian crossing across Nellie Gail Road at this location. If there was an equestrian crossing at this intersection, it is expected that equestrians having a higher field of view than a vehicle (i.e., approximately 8.5 feet above ground) would also have a clear line of sight to the minimum sight distance of 200 feet along Nellie Gail Road.

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Hidden Trail Road, in Laguna Hills, CA

EXHIBIT 3



Westbound HIDDEN TRAIL ROAD (Looking North) @ NELLIE GAIL ROAD



Westbound HIDDEN TRAIL ROAD (Looking South) @ NELLIE GAIL ROAD

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Hidden Trail Road, in 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 (Nellie Gail 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 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 street volumes required for a multi-way stop to be satisfied for any eight (8) hours in an average day were also not satisfied; however, they were approximate equal volumes per leg. 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 is one street light located on the northeast corner of the intersection. In regards to pedestrian, bicycle, and equestrian activity, field observations confirmed a low activity. There were 2 equestrians observed using the east side path during our field review. It was also determined that westbound drivers and equestrians do have a clear line of sight when looking both ways at Nellie Gail Road from Hidden Trail Road.

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Hidden Trail Road, in Laguna Hills, CA

MULTIWAY STOP ANALYSIS SUMMARY (continued)

Therefore, based upon engineering judgment, it is determined that stopping traffic on Nellie Gail Road at Hidden Trail Road is not required to enhance the traffic safety at this intersection.

RECOMMENDATION

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 Nellie Gail Road and Hidden Trail Road. 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).

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

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

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

Option:

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

Support:

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

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

Standard:

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

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

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

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

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

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

Support:

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

Guidance:

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

Option:

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

Support:

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

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

Through Highways

Option:

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

Support:

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

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

Option:

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

Standard:

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

Support:

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

Section 2B.06 STOP Sign Applications

Guidance:

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

Support:

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

Section 2B.07 Multi-Way Stop Applications

Support:

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

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

Guidance:

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

Option:

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

APPENDIX B

SWITRS COLLISION HISTORY

CITY OF LAGUNA HILLS
5-YEAR SWITRS COLLISION DATABASE
INTERSECTION OF NELLIE GAIL RD AT HIDDEN TRAIL RD
JAN. 1, 2015 - SEPTEMBER 30, 2020

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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None 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

Prepared by National Data & Surveying Services

VOLUME

Hidden Trail Rd & Nellie Gail Rd

Day: Thursday
Date: 10/29/2020

Highest 8 hours.

City: Laguna Hills
Project #: CA20_010022_007

DAILY TOTALS					NB	SB	EB				WB	Total					
					807	0					648	964	2,419				
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL						
00:00	0		0	3	3	12:00	23		11	20	54						
00:15	1		2	0	3	12:15	10		9	19	38						
00:30	0		1	0	1	12:30	19		11	23	53						
00:45	0	1	1	4	1	4	2	9	12:45	24	76	12	43	22	84	58	203
01:00	0		0	0	0	13:00	19		10	18	47						
01:15	0		0	0	0	13:15	20		12	19	51						
01:30	0		0	2	2	13:30	16		12	15	43						
01:45	0		1	1	0	2	1	3	13:45	14	69	18	52	14	66	46	187
02:00	0		0	0	0	14:00	19		17	20	56						
02:15	0		1	0	1	14:15	11		15	18	44						
02:30	0		0	0	0	14:30	11		12	22	45						
02:45	0		0	1	0	0	1	14:45	16	57	9	53	21	81	46	191	
03:00	0		0	0	0	15:00	15		11	17	43						
03:15	0		0	0	0	15:15	24		17	25	66						
03:30	0		0	0	0	15:30	17		17	21	55						
03:45	1	1	0	1	1	2	2	15:45	29	85	19	64	15	78	63	227	
04:00	0		0	1	1	16:00	13		16	20	49						
04:15	0		0	0	0	16:15	21		14	14	49						
04:30	0		1	0	1	16:30	19		23	27	69						
04:45	1	1	1	2	2	3	4	6	16:45	18	71	14	67	13	74	45	212
05:00	0		1	0	1	17:00	17		9	10	36						
05:15	0		2	0	2	17:15	25		9	17	51						
05:30	0		1	0	1	17:30	12		9	20	41						
05:45	1	1	2	6	2	2	5	9	17:45	15	69	8	35	16	63	39	167
06:00	1		1	1	3	18:00	19		5	20	44						
06:15	1		1	3	5	18:15	8		6	23	37						
06:30	2		1	2	5	18:30	19		14	23	56						
06:45	4	8	5	8	8	14	17	30	18:45	7	53	12	37	10	76	29	166
07:00	8		9	17	34	19:00	8		5	20	33						
07:15	6		7	12	25	19:15	8		6	9	23						
07:30	5		13	11	29	19:30	7		5	8	20						
07:45	11	30	11	40	11	51	33	121	19:45	6	29	2	18	10	47	18	94
08:00	7		6	14	27	20:00	3		5	10	18						
08:15	18		15	11	44	20:15	4		2	10	16						
08:30	11		8	14	33	20:30	4		4	10	18						
08:45	16	52	13	42	18	57	47	151	20:45	2	13	5	16	6	36	13	65
09:00	19		16	15	50	21:00	0		5	3	8						
09:15	18		7	10	35	21:15	7		1	10	18						
09:30	8		5	16	29	21:30	1		3	3	7						
09:45	11	56	12	40	14	55	37	151	21:45	1	9	1	10	3	19	5	38
10:00	9		11	11	31	22:00	1		2	3	6						
10:15	9		17	9	35	22:15	2		1	2	5						
10:30	11		8	20	39	22:30	3		1	3	7						
10:45	11	40	7	43	14	54	32	137	22:45	2	8	3	7	3	11	8	26
11:00	11		15	15	41	23:00	1		2	2	5						
11:15	15		10	23	48	23:15	1		0	1	2						
11:30	29		13	17	59	23:30	2		2	1	5						
11:45	19	74	15	53	26	81	60	208	23:45	0	4	2	6	1	5	3	15
TOTALS	264		240		20	324	828	TOTALS	543		408		640	159			
SPLIT %	31.9%		29.0%		39.1%	34.2%	SPLIT %	34.1%		25.6%		40.2%	65.8				

DAILY TOTALS					NB	SB	EB				WB	Total
					807	0	648				964	2,419
AM Peak Hour	11:15		11:00	11:45	11:15	PM Peak Hour	15:00		15:45	14:30	15:15	
AM Pk Volume	86		53	88	221	PM Pk Volume	85		72	85	233	
Pk Hr Factor	0.741		0.883	0.846	0.921	Pk Hr Factor	0.733		0.783	0.850	0.88	
7 - 9 Volume	82	0	82	108	272	4 - 6 Volume	140	0	102	137	379	
7 - 9 Peak Hour	08:00		07:30	08:00	08:00	4 - 6 Peak Hour	16:30		16:00	16:00	16:00	
7 - 9 Pk Volume	52	0	45	57	151	4 - 6 Pk Volume	79	0	67	74	212	
Pk Hr Factor	0.722	0.000	0.750	0.792	0.803	Pk Hr Factor	0.790	0.000	0.728	0.685	0.76	

Attachment: Traffic Commission Agenda Item 4.1 01-20-2021 (2368 : Nellie Gail Ranch Equestrian Crossing Review Update)

APPENDIX D

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

CALIFORNIA MUTCD

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

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

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

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

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

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

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

Can also be used as Stopping Sight Distance as suggested buffer space length or location for flagger station.

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

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

Note: Use Table 6C-4 to calculate L

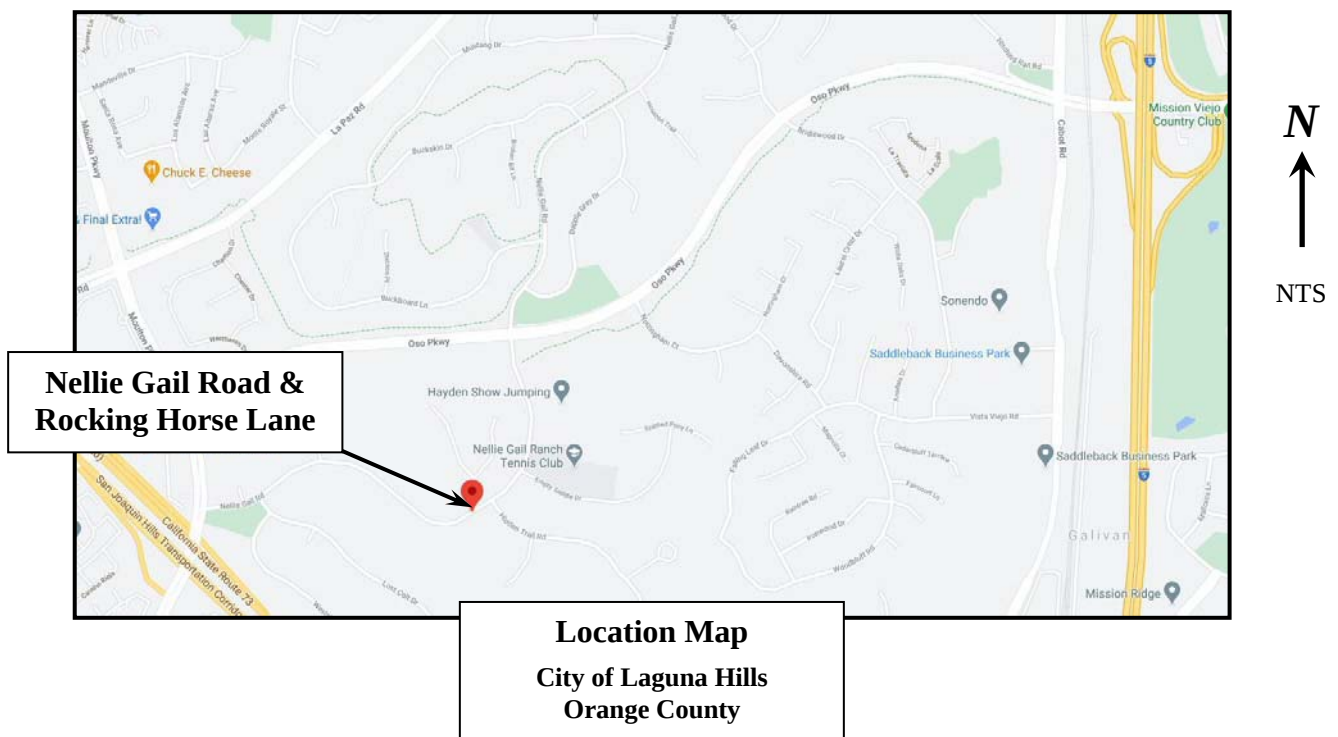
MULTIWAY STOP CONTROL WARRANTS ANALYSIS

NELLIE GAIL ROAD AT ROCKING HORSE LANE IN THE CITY OF LAGUNA HILLS, CA NOVEMBER 25, 2020

INTRODUCTION

The City of Laguna Hills requested Hartzog & Crabill, Inc. (HCI) to complete a Multiway Stop Warrants Analysis at the intersection of Nellie Gail Road and Rocking Horse Lane. 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 Nellie Gail Road running diagonally in the north-south directions and Rocking Horse Lane running diagonally in the east-west directions. The intersection is located west of the I-5 Freeway and south of Oso Parkway (see *Location Map below*). The intersection is entirely within the City of Laguna Hills jurisdiction. At the present time, there is a one way stop control on Rocking Horse Lane (i.e., Nellie Gail Road is uncontrolled).



Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Rocking Horse Lane, in Laguna Hills, CA

BACKGROUND

Nellie Gail Road is a north-south local-collector roadway with single-family residential properties on both sides of the street, along with an equestrian center on the east side of the street near Oso Parkway. At the intersection with Rocking Horse Lane, the roadway is approximately 40 feet wide, and the 2-lane roadway provides for one lane of traffic in each direction, which are separated by double-yellow centerline striping. There are no marked crosswalks across Nellie Gail Road at or near the intersection. It was also field-verified that there is no existing school bus stop located at/near Rocking Horse Lane. The roadway does have curb, gutter, parkway, and sidewalk improvements on the east side, and only curb and gutter on the west side. There are equestrian paths along both sides of the roadway. There are equestrian crossing warning signs posted at the intersection (without yield line markings). There is also an Offset Intersections warning sign facing NB traffic. Nellie Gail Road has a posted speed limit of 25 MPH, along with a '25' pavement marking. On-street parking is allowed on both sides of the street. Currently, there are no STOP signs on Nellie Gail Road (i.e., uncontrolled) at its intersection with Rocking Horse Lane. ***See Exhibit 1 (next page) for photo images of Nellie Gail Road.***

Rocking Horse Lane is an east-west local roadway with single-family residential properties on both sides of the street. At the T-intersection with Nellie Gail Road, which is the easterly terminus of Rocking Horse Lane, the roadway is approximately 34 feet wide. The 2-lane curvy roadway provides for one lane of traffic in each direction, which are separated by centerline striping at the intersection. There are no marked crosswalks across Rocking Horse Lane. The roadway does have curb, gutter, and parkway improvements on both sides. Rocking Horse Lane does not have a posted speed limit; however, the residential nature of this street results in a '*prima facie*' speed limit of 25 MPH and does not require posting. On-street parking is allowed on both sides of the street. There is a STOP sign, a white 'STOP' pavement marking, and a white limit line on Rocking Horse Lane at its intersection with Nellie Gail Road. ***See Exhibit 2 (following page) for a photo image of Rocking Horse Lane.***

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Rocking Horse Lane, in Laguna Hills, CA

EXHIBIT 1



NELLIE GAIL ROAD (Looking Northbound) @ ROCKING HORSE LANE



NELLIE GAIL ROAD (Looking Southbound) @ ROCKING HORSE LANE

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Rocking Horse Lane, in Laguna Hills, CA

EXHIBIT 2



ROCKING HORSE LANE (*Looking Eastbound*) @ NELLIE GAIL ROAD

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Rocking Horse Lane, in 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 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 Sign Warrants Analysis – Nellie Gail Road at Rocking Horse Lane, in 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 – Nellie Gail Road at Rocking Horse Lane, in Laguna Hills, CA**Collision History (continued)**

TABLE 1
SWITRS COLLISION SUMMARY

Intersection	2015		2016		2017-18		2019-20	
	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?
Nellie Gail Road at Rocking Horse Lane		<i>None reported</i>		<i>None reported</i>		<i>None reported</i>		<i>None reported</i>

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

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

As shown above, there have been (0) 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 to the intersection on Thursday, October 29, 2020 in order to account for vehicles that typically use this T-intersection. The ADT approach count for Nellie Gail Road is 1,144 vehicles per day with the highest AM peak-hour approach volume having 90 vehicles, and 99 vehicles in the PM peak-hour. The ADT approach count for Rocking Horse Lane is 152 vehicles with the highest AM peak-hour approach volume having 13 vehicles, and 16 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 – Nellie Gail Road at Rocking Horse Lane, in Laguna Hills, CA**Traffic Volumes (continued)**

TABLE 2
HIGHEST 24-HOUR INTERSECTION APPROACH VEHICLE COUNTS
NELLIE GAIL ROAD AT ROCKING HORSE LANE

Street	Direction	ADT Volume	Directional Split	Highest Hourly Volume
Nellie Gail Road	Westbound	597	52%	60 (12 - 1PM)
	Eastbound	547	48%	57 (4 – 5PM)
Rocking Horse Lane				
	Southbound	152	100%	16 (1 - 2PM)

Nellie Gail Road is considered the ‘through’ or ‘major’ street at this residential T-intersection since it carries higher volumes, and drivers are not required to slow down, or even stop, before proceeding straight through the intersection. In comparison, Rocking Horse Lane is considered the ‘minor’ street as eastbound drivers on Rocking Horse Lane are required to stop at Nellie Gail Road and look both ways before proceeding to make 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 the case, as Rocking Horse Lane carries approximately 12% of the entire traffic entering the intersection (Nellie Gail Road carries 88% 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 also confirmed vehicles were not regularly speeding over the speed limit near the intersection, but were considered typical and what may be expected for two-lane local-type roadways. 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 – Nellie Gail Road at Rocking Horse Lane, in Laguna Hills, CA

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 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
NELLIE GAIL ROAD AT ROCKING HORSE LANE

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 (82) vehicles per hour Meets 27% 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 (13) vehicles per hour Meets 7% 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 (27% *major street* / 7% *minor street*). Therefore, the minimum traffic volume warrant is not satisfied.

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Rocking Horse Lane, in Laguna Hills, CA**Visibility**

Impaired visibility, or restricted sight distance, due to the geometry of the intersection and possible obstructions was carefully considered during our field-review of the surrounding residential property environment. The geometry of the intersection includes an approximate 90° angle, and both northbound Nellie Gail Road and Rocking Horse Lane have a gradual vertical curvature (downgrade) heading into the intersection.

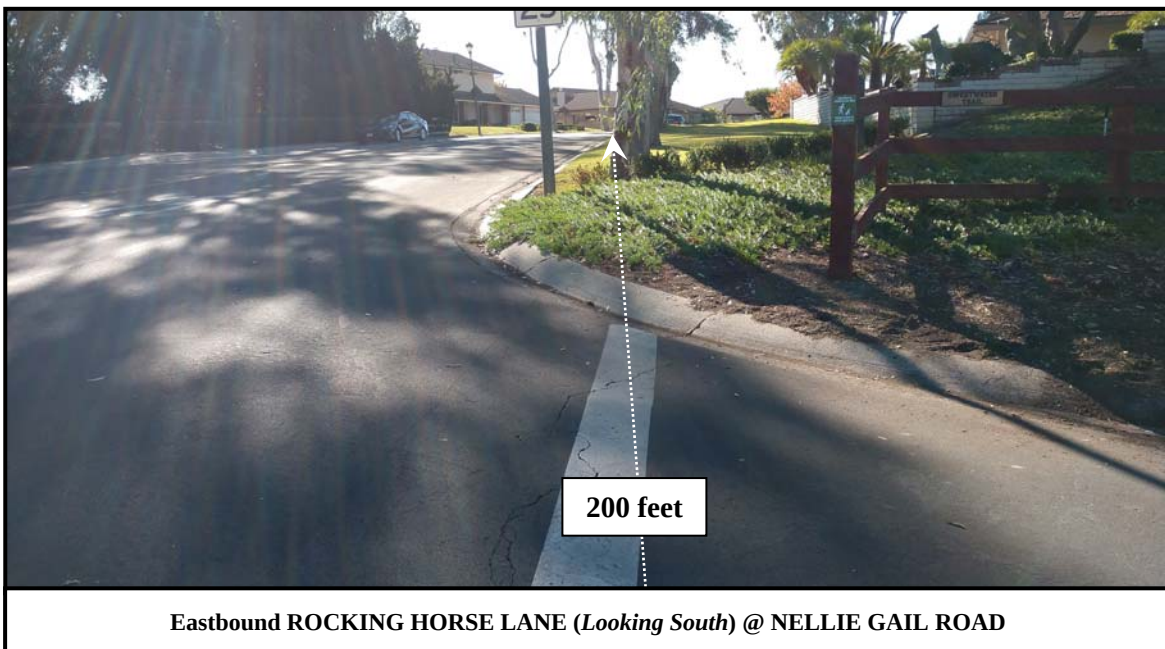
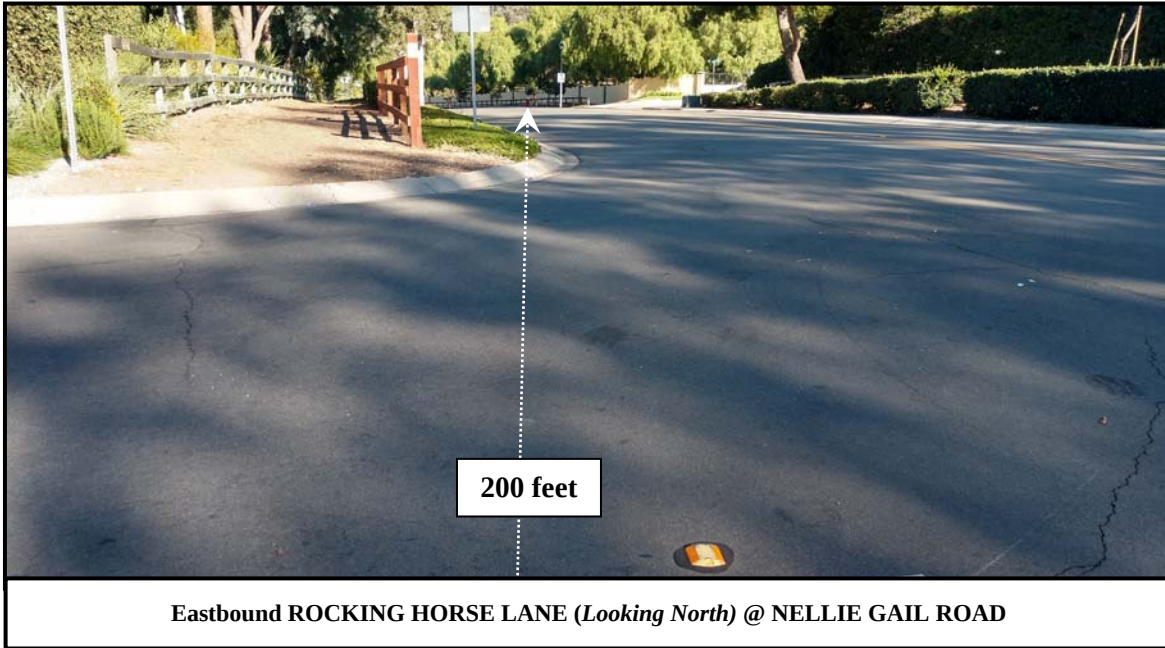
Driver sight distance was measured from the side-street approach to the intersection, as eastbound traffic on Rocking Horse Lane is required to stop, before proceeding to make a left or right-turn onto Nellie Gail Road. The measured distance was derived from the stopping sight distance guidelines found in the California MUTCD (*see Appendix D*). In this reference, a 25 MPH roadway speed recommends a minimum Stopping Sight Distance of 155 feet. However, the 85th percentile speeds typically exceed the 25 MPH posted speed limit. Therefore, a 30 MPH speed limit was used as a more conservative measure, which has a minimum sight distance of 200 feet. This distance was used when looking towards approaching, uncontrolled traffic along Nellie Gail Road. More specifically, this stopping sight distance was field-measured from a typical ‘stopped’ vehicle location on Rocking Horse Lane at the intersection looking towards the oncoming lanes of cross-traffic on Nellie Gail Road. An orange cone was placed at this distance and a photograph was taken from a stopped driver’s perspective (i.e, approx. 4.5 feet).

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

As Exhibit 3 shows, when looking from Rocking Horse Lane, a driver does have a clear line of sight to the minimum sight distance of 200 feet when looking both ways on Nellie Gail Road. It is important to note, since there are equestrian crossing warning signs posted at the intersection, it is expected that equestrians having a higher field of view than a vehicle (i.e., approximately 8.5 feet above ground) also have a clear line of sight to the minimum sight distance of 200 feet along Nellie Gail Road.

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Rocking Horse Lane, in Laguna Hills, CA

EXHIBIT 3



Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Rocking Horse Lane, in 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 (Nellie Gail 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 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 is one street light located on the southwest corner of the intersection. In regards to pedestrian, bicycle, and equestrian activity, field observations confirmed a low activity. It was also determined that eastbound drivers and equestrians do have a clear line of sight when looking both ways at Nellie Gail Road from Rocking Horse Lane.

Multiway Stop Sign Warrants Analysis – Nellie Gail Road at Rocking Horse Lane, in Laguna Hills, CA**MULTIWAY STOP ANALYSIS SUMMARY (continued)**

Therefore, based upon engineering judgment, it is determined that stopping traffic on Nellie Gail Road at Rocking Horse Lane is not required to enhance the traffic safety at this intersection.

RECOMMENDATION

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 Nellie Gail Road and Rocking Horse Lane. Since there are Equestrian Crossing warning signs posted at this intersection, it is recommended to install yield line markings in both directions along Nellie Gail Road where vehicles should stop when an equestrian is crossing Nellie Gail Road.

APPENDIX A

**MULTIWAY STOP APPLICATIONS
GUIDELINES:**

CALIFORNIA MUTCD

Standard:

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

Option:

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

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

Standard:

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

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

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

Guidance:

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

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

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

Guidance:

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

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

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

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

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

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

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

Support:

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

Guidance:

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

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

Support:

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

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

Standard:

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

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

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

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

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

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

Option:

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

Support:

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

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

Standard:

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

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

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

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

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

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

Support:

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

Guidance:

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

Option:

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

Support:

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

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

Through Highways

Option:

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

Support:

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

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

Option:

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

Standard:

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

Support:

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

Section 2B.06 STOP Sign Applications

Guidance:

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

Support:

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

Section 2B.07 Multi-Way Stop Applications

Support:

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

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

Guidance:

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

Option:

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

APPENDIX B

SWITRS COLLISION HISTORY

CITY OF LAGUNA HILLS
5-YEAR SWITRS COLLISION DATABASE
INTERSECTION OF NELLIE GAIL RD AT ROCKING HORSE LN
JAN. 1, 2015 - SEPTEMBER 30, 2020

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
---------	------------	------------	--------------	----------------	-------	------	---------	----------	----------------	-------------------	----------------	-----------	-------------	---------------	-----------------------------	-----------

None 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 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

Rocking Horse Ln & Nellie Gail Rd

Day: Thursday
Date: 10/29/2020

Highest 8 hours.

City: Laguna Hills
Project #: CA20_010022_001

DAILY TOTALS					NB	SB						EB	WB	Total			
					0	152						547	597	1,296			
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL						
00:00		0	0	2	2	12:00		3	10	13	26						
00:15		1	0	1	2	12:15		5	6	15	26						
00:30		2	0	0	2	12:30		2	11	16	29						
00:45		0	3	1	1	2	5	3	9	12	36	60	27	108			
01:00		0	0	0	0	13:00		3	7	8	18						
01:15		0	0	0	0	13:15		4	10	14	28						
01:30		0	0	1	1	13:30		3	14	10	27						
01:45		0	1	1	0	1	1	1	2	6	16	15	46	6	38	27	100
02:00		0	0	0	0	14:00		3	12	8	23						
02:15		1	1	0	2	14:15		4	12	8	24						
02:30		0	0	0	0	14:30		3	10	12	25						
02:45		0	1	0	1	0	0	2	2	12	7	41	8	36	17	89	
03:00		0	0	0	0	15:00		4	8	13	25						
03:15		0	0	0	0	15:15		2	8	20	30						
03:30		0	0	0	0	15:30		2	12	12	26						
03:45		0	0	1	1	1	1	3	11	14	42	12	57	29	110		
04:00		1	0	0	1	16:00		1	17	14	32						
04:15		0	0	0	0	16:15		0	14	10	24						
04:30		0	1	0	1	16:30		4	15	20	39						
04:45		0	1	0	1	1	1	4	9	11	57	7	51	22	117		
05:00		0	2	0	2	17:00		2	10	9	21						
05:15		1	2	0	3	17:15		0	12	15	27						
05:30		1	0	0	1	17:30		1	8	13	22						
05:45		0	2	2	6	1	1	3	6	8	38	11	48	22	92		
06:00		1	0	1	2	18:00		0	7	14	21						
06:15		1	1	1	3	18:15		2	7	10	19						
06:30		0	1	2	3	18:30		2	12	11	25						
06:45		0	2	4	6	1	5	5	13	2	6	11	37	7	42	20	85
07:00		2	4	11	17	19:00		2	3	13	18						
07:15		1	7	9	17	19:15		0	6	5	11						
07:30		3	10	5	18	19:30		2	6	3	11						
07:45		1	7	12	33	7	32	20	72	0	4	2	17	6	27	8	48
08:00		3	5	6	14	20:00		1	5	5	11						
08:15		5	13	7	25	20:15		0	2	4	6						
08:30		2	7	11	20	20:30		1	4	5	10						
08:45		2	12	37	14	38	28	87	2	4	4	15	3	17	9	36	
09:00		4	13	6	23	21:00		2	3	2	7						
09:15		2	7	9	18	21:15		0	2	9	11						
09:30		3	4	8	15	21:30		2	3	3	8						
09:45		3	12	9	33	11	34	23	79	1	5	2	10	1	15	4	30
10:00		3	9	4	16	22:00		0	1	0	1						
10:15		5	13	8	26	22:15		1	1	2	4						
10:30		1	8	14	23	22:30		0	1	1	2						
10:45		4	13	4	34	10	36	18	83	2	3	2	5	2	5	6	13
11:00		2	12	11	25	23:00		0	2	0	2						
11:15		5	8	9	22	23:15		0	0	0	0						
11:30		2	11	10	23	23:30		0	2	2	4						
11:45		1	10	14	45	15	45	30	100	1	1	1	5	0	2	2	8
TOTALS		63			198	199	460	TOTALS	89			349	398	836			
SPLIT %		13.7%			43.0%	43.3%	35.5%	SPLIT %	10.6%			41.7%	47.6%	64.5			

DAILY TOTALS					NB	SB	EB	WB	Total
					0	152	547	597	1,296
AM Peak Hour	09:30	08:15	11:45	11:45	PM Peak Hour	13:00	15:45	12:00	15:4
AM Pk Volume	14	45	59	111	PM Pk Volume	16	60	60	124
Pk Hr Factor	0.700	0.865	0.922	0.925	Pk Hr Factor	0.667	0.882	0.938	0.79
7 - 9 Volume	19	70	70	159	4 - 6 Volume	15	95	99	209
7 - 9 Peak Hour	07:30	07:30	08:00	08:00	4 - 6 Peak Hour	16:15	16:00	16:00	16:0
7 - 9 Pk Volume	12	40	38	87	4 - 6 Pk Volume	10	57	51	117
Pk Hr Factor	0.000	0.600	0.769	0.679	Pk Hr Factor	0.000	0.625	0.838	0.638

Attachment: Traffic Commission Agenda Item 4.1 01-20-2021 (2368 : Nellie Gail Ranch Equestrian Crossing Review Update)

APPENDIX D

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

CALIFORNIA MUTCD

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

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

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

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

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

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

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

Can also be used as Stopping Sight Distance as suggested buffer space length or location for flagger station.

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

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

Note: Use Table 6C-4 to calculate L

Julie Comella

From: Leslie Walker <lswner@gmail.com>
Sent: Wednesday, January 20, 2021 11:39 AM
To: Julie Comella
Subject: Nellie Gail Ranch Crossing review recommendation comments

Follow Up Flag: Follow up
Flag Status: Flagged

Hi

I'm an equestrian and I board my horse at Nellie Gail Equestrian Center. When I ride, and most other people ride, we cross the road where the existing crossing is at the entrance to the stable. Although there's a crossing with a small light there with yield line triangles in the road, there's frequently a safety problem with traffic. On many occasions, I've been in the middle of the street and either a driver will go around me too close for comfort or I've seen distracted driving with near misses. Sometimes the driver appears to not even notice. It seems a lot of drivers aren't familiar with triangles in the road. I think a solid white crossing line would help. Also, a traffic light is really needed here. I don't know what you mean by:

"(1) An equestrian trail connection from Nellie Gail Ranch Owners Association Equestrian Center to the Nellie Gail Road Trail Tunnel southerly of Oso Parkway be developed;" because there's a way to get to the tunnel now but it involves going down a steep hill by the cell phone tower which is difficult for some horses, and it's out of the way. What is needed is a traffic light at the stable entrance.

(2) There be an installation of yield line markings at the intersection of Rocking Horse Lane and Nellie Gail Road to facilitate the existing equestrian crossing at this location. I recommend solid lines for this crossing too.

Sincerely,
 Leslie S Walker

[External E-mail]

Attachment: Public Comments (2368 : Nellie Gail Ranch Equestrian Crossing Review Update)

Julie Comella

From: Liz Abdo <lizabdo@cox.net>
Sent: Wednesday, January 20, 2021 1:05 PM
To: Julie Comella
Cc: Pamela Fraser. Cecil
Subject: Nellie Gail Ranch street crossing

Follow Up Flag: Follow up
Flag Status: Flagged

To Whom it May Concern,

As a horse boarder at the Equestrian Center, as well as a member of the Equestrian Committee and Trails/Safety Committee, I am concerned about the danger of crossing Nellie Gail Road between Pacific Park and Hidden Trail Roads. Drivers seem oblivious to pedestrians and horses as they zoom up and down this section of the road.

I'm writing to ask you to consider the recommendations submitted tonight by Pamela Fraser, our committee representative.

Sincerely,
Elizabeth Abdo

Sent from my iPhone

[External E-mail]

Attachment: Public Comments (2368 : Nellie Gail Ranch Equestrian Crossing Review Update)

Julie Comella

From: Allison Smith <aritchie.smith@gmail.com>
Sent: Wednesday, January 20, 2021 2:32 PM
To: Julie Comella
Cc: Smith, Ryan
Subject: Allison Smith- Today's Meeting: Agenda Item 4.1 (Nellie Gail Ranch Equestrian Crossing Review)
Attachments: Crosswalk Incidents_Diary.xlsx; Car Accident.11.14.20JPG.JPG

I am a homeowner and equestrian in Nellie Gail, and I have reviewed the Traffic Commission report in detail. Unfortunately, the Traffic Commission report has several critical and fatal flaws that render its finding unreliable. For context, my house backs to Nellie Gail Road, and I look down at the Empty Saddle/ Nellie Gail Road intersection. I use the horse trail running along that section of Nellie Gail road on a daily basis (with my horse or with my children), and I watch the cars speeding down the road each and every day. Based on my decade living in that location and using the neighboring horse trail, I note the following defects in the Traffic Commission report.

First, and perhaps most importantly, the Commission's report relies heavily on the fact that it is a "zero incident" crosswalk. But the Commission did not study or record how many drivers run the flashing lights at the crosswalk, which is a major component of the safety issues at the crosswalk. I have personally experienced and witnessed dozens, if not hundreds, of "near misses" from people running the flashing lights. I noted some of these in the incident diary I submitted. It is only a matter of time until someone experiences a catastrophic collision at the crosswalk, and unfortunately, the Commission's position appears to be that that must happen before addressing the safety issues. I strongly urge the Commission to look beyond the consultant's finding in the report, and review in detail the resident's incident submittals. The City is simply negligent, or even worse, reckless, if it chooses to ignore the residents' pleas for a safer crosswalk. The issue is simple: The Residents want a speed hump to force cars to slow as they approach the crosswalk. Even a single hump downhill would improve the situation and resolve this discussion. And surely no one would argue that a speed hump could pose a danger to speeding drivers, especially if the Commission's report is accurate regarding the average speed of cars approaching the crosswalk (disputed below).

Second, the speed monitor machines used for the Commission' study were misplaced and inherently unreliable. Specifically, they were positioned halfway down the hill on Nellie Gail road directly in front of the parking area for the clubhouse. They should have been placed further down the hill at the crosswalk where the speed has been a primary concern and created major safety incidents. I viewed the placement of the monitors directly from my backyard. It is possible to hit the machines at 25mph, take your foot off the gas that instant (which I can assure you no one does), and hit 40 mph by the crosswalk. I've tested this myself, and I would encourage you to do the same. So while I appreciate the Commission's efforts to place the speed monitors, the results are skewed because they do not give an accurate portrayal of the speed. Just as importantly, on my call with the City, they admitted that these speed monitors are inaccurate because they also act as a speed deterrent, i.e., drivers instinctively slowdown when they see them. As a result, the speed monitor results must be disregarded, and at a bare minimum, should not be given greater weight than the numerous firsthand accounts regarding speeding and near misses.

Third, the Commission's suggestion for equestrians to use the alternate route through the tunnel is simply not realistic. Indeed, if there is the slightest rain the trail and tunnel become a mud slick for several days after, and horses will no doubt slip and fall (each access point involves a hill). This proposal poses an even greater risk to the horse and rider than crossing the street, and again, is not an option if there is the slightest rain. To make matters worse, there is zero lighting down by the tunnel, and a fallen rider would be in great peril.

Fourth, the suggestion for hatch marks at Rocking Horse Lane baffles me, as it was never a focus of the previous discussions with the City. It does not address any of the comments or concerns posed by the committee and concerned residents. Plus, that is at the top of the hill. While all additional safety precautions are appreciated, this location does not appear to be at the top of anyone's list. In my experience, residents would much prefer the "near miss" cross walk addressed.

Finally, the Commission's report fails to note several serious safety incidents in the surrounding area. For example, there was a hit and run (caught on my security cameras) in December 2016. A landscaper was hit and thrown over a hedge, breaking his leg (case # 16-287768). The driver was never caught. This past summer, I was targeted by a teenager street racing down Nellie Gail road and Empty Saddle (same area) while on my horse. I tracked him down, got his license, and reported him. More recently, this past November 14th, about 150 yards from my backyard, another car barreled straight through hedges and all the way onto the trail barely

missing a tree and nearly going through a fence (case # 20-038229). And yet the dangerous situation persists, and now the risk is going to greatly escalate with the addition of alcohol consumption of drivers traveling this road. Nellie Gail Clubhouse has conditional approval to open a bar and serve alcohol. This will greatly exacerbate an already dangerous situation.

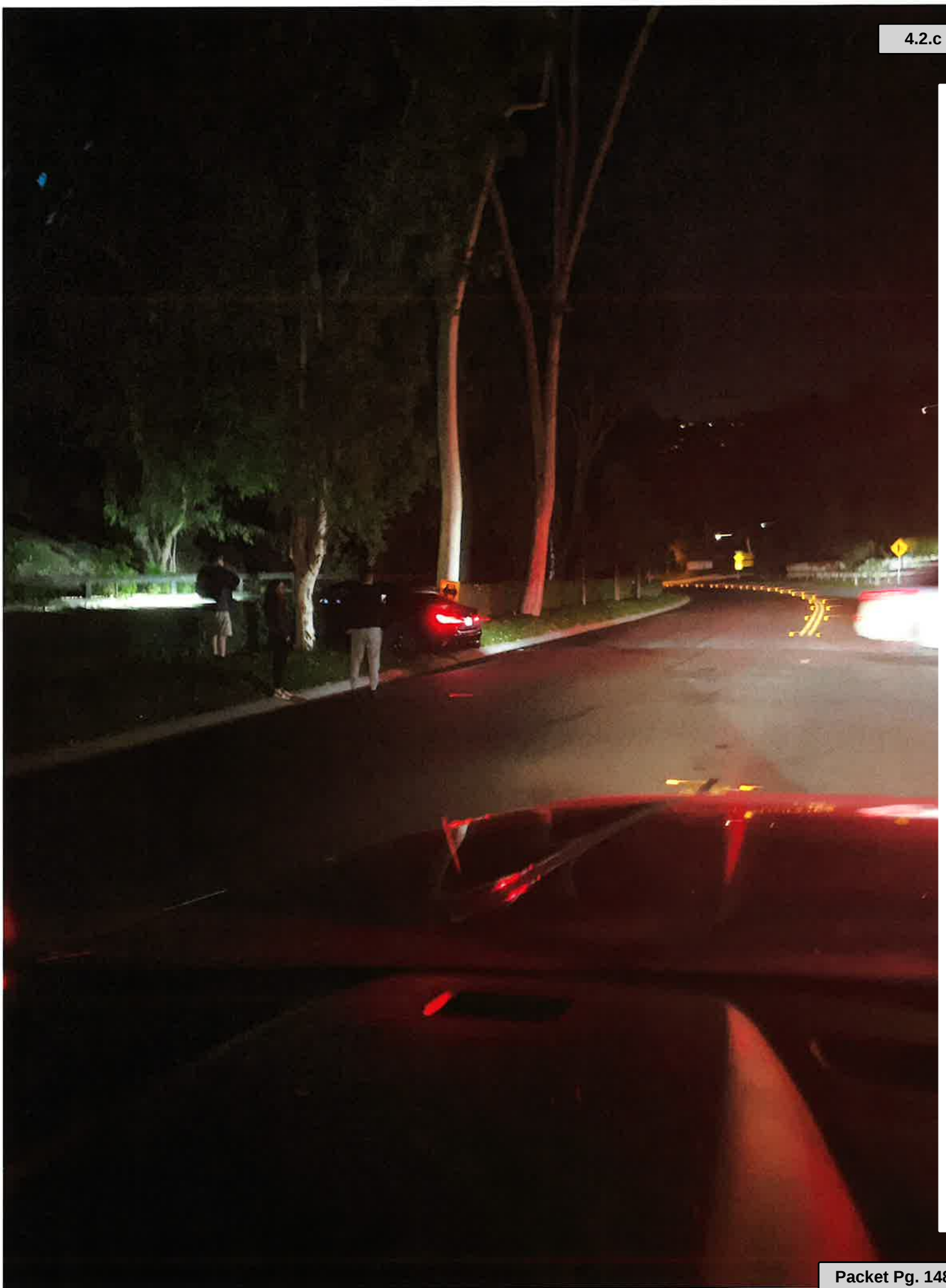
As a result of the foregoing, I humbly request that the City reconsider the Commission's recommendation and take the measured approach of installing a simple speed hump on the downhill approach to the crosswalk. Common sense dictates that will help focus drivers and slow their rate of speed, and also have the positive secondary effect of reducing thorough fair traffic (nearly 2,000 cars travel this street each day). It is hard to understand the logic of finding the speed hump is not necessary when you have a list of incidents and residents pleading for increased safety measures. And this particular area has already been acknowledged to be an area of concern with the City's previous addition (years ago) of the flashing lights. As my neighbors can attest, each year the traffic on this section of Nellie Gail road has become more and more dangerous. The City has now been made aware of this problem, and my hope is that the city does not choose to be negligent and ignore it.

My children are counting on me to get this issue addressed, and I will not let up until I do, including through constant contact with the City, video footage or security cameras. So please save everyone the hassle/injury/possible death and install a speed hump at the Equestrian Center Crosswalk. My family and I are appreciative of your consideration and hopeful that you will be proactive (as to the needs of your constituents) instead of reactive (from a very flawed report).

Sincerely,
Allison Smith
(949) 697-5013

[External E-mail]

Attachment: Public Comments (2368 : Nellie Gail Ranch Equestrian Crossing Review Update)



Date	Location	Incident description	Name of Pedestrian/Equestrian
Dec 2016 Over the past 10 years	Nellie Gail Road & Empty Saddle (1/2 OC Sherriff with video footage from our security camera. Clubhouse parking lot	Hit and run; landscaper was hit by a white sedan, thrown over hedge and onto trail. Broke his leg. Supplied	Laguna Hills Resident
		Repeatedly called police to report cars doing donuts and spinning out in the clubhouse parking lot	Allison Smith, Ryan Smith
		Approx 6pm Black dodge charger; purposefully revving engine and exhaust at the equestrian center; spooking horses in both the arena and along the trail (Nellie Gail Rd); went back and forth at least 6 times, turning on Empty Saddle, circling and speeding at high rate back down/up Nellie Gail Rd. Reported the incident, and license plate to the HOA and also tracked down the security detail on patrol and gave them a photo and license plate.	Allison Smith; several witnesses riding in the middle arena
	8/10/2020 Equestrian Center Crosswalk		
	9/19/2020 Equestrian Center Crosswalk	Car (small grey SUV) ran flashing lights, did not stop- near miss of horse and rider Car did not respond to flashing lights - barely stopped in time after pedestrian (with horse) started screaming (drivers window was down). If his window wasn't down, I don't think he would've heard me screaming and noticed us.	Allison Smith yes
	10/3/2020 Equestrian Center Crosswalk	Approx 4pm car ran flashing lights- driver was starring at me as she drove through the crosswalk, did not even slow down. Near miss. My horse spooked and I had to jump off to get us both across the street safely.	Allison Smith yes
	10/19/2020 Equestrian Center Crosswalk		Allison Smith yes
	10/23/2020 Equestrian Center Crosswalk	Approx 4:30pm- Car ran flashing lights as I crossed from the trail over to the equestrian center. Got stuck at the median as the cars came flying towards me and my horse- did not stop. Horse spooked.	Allison Smith
	11/3/2020 Nellie Gail Rd & Empty Saddle	Approx 8am White SUV car rolled through stop sign exiting the clubhouse parking lot; nearly hit me as I was in the crosswalk area.	Allison Smith
	11/6/2020 Equestrian Center Crosswalk	Approx 4:00pm Lights flashing; near miss. Burgundy sedan flying down Nellie Gail Road- did not slow or stop. Horse spooked in the middle of the crosswalk.	Allison Smith
	11/11/2020 Equestrian Center Crosswalk	8:30am; With lights flashing, 2 cars boxed me in at the middle divider-minivan did not even slow despite my screaming and waving. Driver looked at me as she held her cell phone in one hand and swerved around my horse with the other. NEVER slowing-missing him by inches!! Instructor at the equestrian center witnessed the incident.	Allison Smith Allison Smith, Reagan Smith, Sherry
			Ritchie , Colton Smith
	11/12/2020 Equestrian Center Crosswalk	4:40pm; with lights flashing white dodge ram truck flew down the hill and nearly hit my mom, my children, and myself. 8:53pm Car accident; Heard a loud crash from inside my house. Car slammed into our trash can that was placed out for pickup on Nellie Gail Rd. Captured the incident on our security camera. Saved footage. Car pulled over for a moment and then took off. Trash can was full and consquently broke- had to have	
	11/13/2020 Nellie Gail Road/Empty Saddle (Up	damaged car (white suv). Car accident on trail behind my house on Nellie Gail Road just up from the clubhouse entrance- car hopped the curb and went straight into the bushes and on to the trail. May have been drunk driver- not sure how else it could happen. (see photo attached)	Allison Smith, Ryan Smith
	11/14/2020 Nellie Gail Road (Accident)		

12/19/2020 Equestrian Center Crosswalk	Flashing lights; crossing the pedestrian/equestrian crosswalk with my family. Black BMW (new car- paper plates) came racing down the hill, revved his engine twice as he approached us in the crosswalk. Near miss- we had to grab my kids and run to the other side. I've seen this same car do this on another occassion as well- just not to me personally. Approx 3:40pm; Lights flashing- 2 cars ran the crosswalk nearly hitting myself and my horse. Dangerous entering the road- it is clear when I enter the crosswalk, but by the time you reach the middle, there is a car at the top of the hill coming down and you can't get across fast enough. We need a speed hump on the downhill portion approaching this crosswalk. Not addressing this safety issue is negligence and will get someone killed.	Allison Smith, Ryan Smith, Reagan Smith, Colton Smith
1/11/2020 Equestrian Center Crosswalk		Allison Smith

Julie Comella

From: Pamela Fraser <frapamela10@gmail.com>
Sent: Wednesday, January 20, 2021 4:14 PM
To: Julie Comella
Cc: NG Barn, Liz Abdo Cash's Mom; Dolores & Paul Caringella; Linda & RJ Mudd; donna macgillivray; Viviana & Scot Mamolo; joyce.taylor joyce.taylor; Allison Smith; Portnoff, Jennifer
Subject: Tonight's Laguna Hills Traffic Commission meeting
Attachments: Traffic Commission Comment Exhibit (3).pdf; Crosswalk Concern Input from Members (1).pdf; LH.Traffic.Commission.Nellie.Gail.TSC.2021.01.20.docx

Hi Julie,

Attached are materials for this evening's Traffic Commission meeting, including a revised diagram of page 22 of the Staff Report.

Thank you for all your efforts to compile and distribute these attachments.

I do plan to attend this evening. So, I look forward to meeting you at 7PM in the city Council Chambers.

If you have any questions, please feel free to contact me.

Sincerely,

Pamela Fraser
 Nellie Gail Trails and Safety Committee, Member
 949-212-8063

—
Pamela Fraser, RN

[External E-mail]

Attachment: Public Comments (2368 : Nellie Gail Ranch Equestrian Crossing Review Update)

To: Honorable Traffic Commission Members,
 From: Nellie Gail Trails and Safety Committee

Thank you for your report and review of our Equestrian Crossing concerns at the Equestrian Center crossing on Nellie Gail Road and the intersections of Empty Saddle at Nellie Gail Road and Rocking Horse Lane at Nellie Gail Road.

We have reviewed the report and wish your consideration to implement all or some of the following Equestrian Center, Empty Saddle and Rocking Horse Lane crossing improvements identified on the attached exhibit as follows:

1. Request Speed Humps at appropriate intervals
2. Request flashing speed limit sign
3. Request R.R.F.B. in advance of the Equestrian Center crossing
4. Request R.R.F.B. on median at the Equestrian Center crossing
5. Request R.R.F.B. at the Empty Saddle crossing
6. Request R.R.F.B at Rocking Horse Lane crossing in addition to the already proposed Chevrons (Not pictured on this exhibit)

The report on *page 19* reflects 85th percentile speed count taken via machine counters and road tubes in excess of 35 mph. The stopping sight distance chart on *page 46* reflects a stopping distance of 250 feet at 35 MPH and 305 feet at 40 mph. The photo on *page 25* reflects the 200-foot stopping distance is at the limit of a vehicle's visibility. With approximately 60% of the vehicles travelling Northbound on Nellie Gail Road at or above 30 mph a physical warning and compliance process such as speed humps per request 1 is warranted. Additionally, we would like considered a more advanced warning process per our requests 2-4. Requests 5 and 6 address our concerns on the two additional crossings studied at Empty Saddle and at Rocking Horse Lane.

Please further consider these changes for approval and implementation.

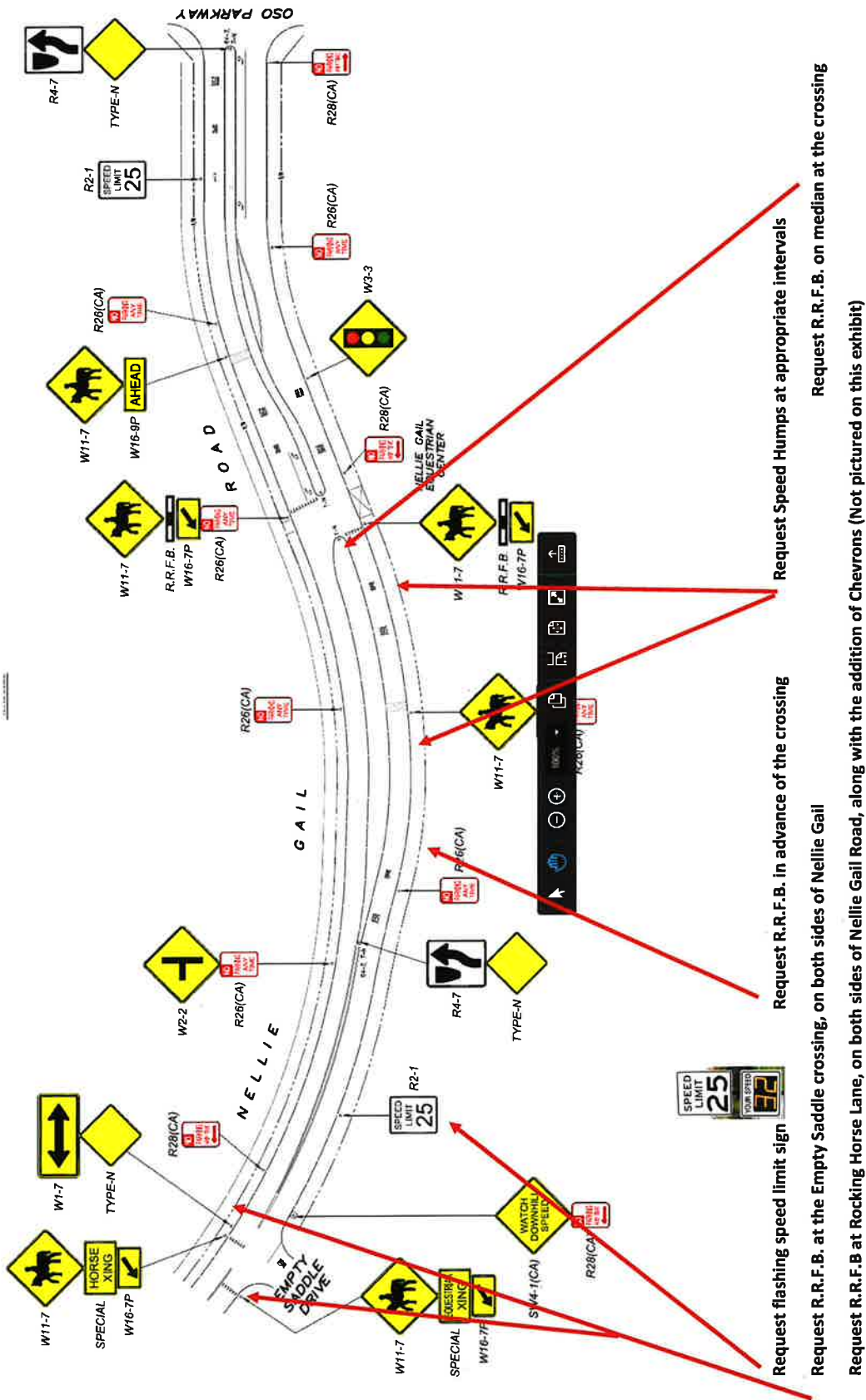
Please also send us any applicable standards for speed humps with respect to the approval process. What are the minimum number and spacing standards, and which homeowners on which streets would be solicited to vote to meet the 67% threshold?

Thank you again for your study and response to our concerns. Thank you in advance for your consideration of action to resolve the issues to improve crossing safety.

Respectfully,

Pamela Fraser

Nellie Gail Trails & Safety Committee, member



Name	Email	Date of Incident	Brief Description of the Incident	
Jennifer Portnoff	Jennifer.Portnoff@PacifidLife.com	10/20/2020	Walking across Nellie Gail Road at 525 pm today and pressed the flashing lights. Was with Christine on her horse Siri. We got half way across and a car was speeding down NG and came to an abrupt stop only because I started waving my hands and screaming stop. At 635 leaving the arena today with my daughter on get horse and Danny on her horse another incident. This time the flashing lights were on and we started crossing and a car traveling up nellie gail from oso blew through the flashing lights.	Homeowner
Pat Barry	26981@att.net	10/23/2020	I have not seen an incident between traffic and equestrian use in the area. The residents of Nellie Gail are knowledgeable and respectful , and further education is unnecessary. However, transients, especially those who cut through Nellie Gail so as to avoid the last toll on the toll road are in a hurry and are likely to speed.	Homeowner Committee Member
Debi Lee	debileerealestate@gmail.com	10/14/2020	We are residents on the corner of Bridlewood and Glen Canyon Drive. There's a horse crossing near the intersection and we have a dog and a small child. Cars speed down Bridlewood daily and screech around the corner turning right onto Glen Canyon. We have almost been hit numerous times running as fast as we can crossing the street. It's very dangerous. Many of our neighbors complain too. As I'm writing this, 3 cars have flown by at high speed. There needs to be a speed bump. blinking lights, slow down signs or something to slow down cars. It's very dangerous and a big concern.	Homeowner
Tina Frey	tinafrey@sbcglobal.net	10/8/2020	I frequently walk and ride the trails of Nellie Gail and cross over streets, specifically Nellie Gail Rd between Oso Parkway and Moulton rd. Due to the lack of any signage at the house 24911 Nellie Gail Rd and the fact that the trail ends abruptly here, I find this a huge safety issue. It is also a safety issue at the top of Nellie Gail Rd as cars come around a bend and are surprised to see us. I have been almost hit by cars numerous times and I have spoken up to Nellie Gail's, Jeff Hinkle, without any support or action. I support increased signage, or other means to slow traffic down and bring awareness to the drivers on this equestrian community.	Homeowner

Mark Burkhardt	burkhardt65@gmail.com	10/5/2020	A driver traveling northbound on hidden Trail Road at a high rate of speed failed to stop at the stop sign in front of my house. I was almost struck as I walk to get into my car parked on the street. I live on the corner of hidden Trail Road and Pinestrap. I believe the issue is important for equestrians, however equally important for pedestrian residents as well	Homeowner
Breeanna Kenney	marie.kenney@sbcglobal.net	6/12/2020	A driver coming up Nellie Gail Ranch Road failed to stop at the horse crossing.	Equestrian Boarder
Mark Burkhardt	burkhardt65@gmail.com	10/5/2020	A driver traveling northbound on hidden Trail Road at a high rate of speed failed to stop at the stop sign in front of my house. I was almost struck as I walk to get into my car parked on the street. I live on the corner of hidden Trail Road and Pinestrap. I believe the issue is important for equestrians, however equally important for pedestrian residents as well	Homeowner
Breeanna Kenney	marie.kenney@sbcglobal.net	9/7/2020	I was crossing to the Equestrian Center - was 1/2 way across when someone flew down the road in front of me. The crossing lights were flashing and they made no effort to stop.	Equestrian Boarder
Jennifer Portnoff	Jennifer.Portnoff@PacifiLife.com	10/21/2020	Around 6 pm we were crossing Nellie Gail Road at Equestrian Center with Olive and a Mustang zoomed up behind us and we barely made it out of the way. Grey Mustang traveling up Nellie Gail from Oso.	Homeowner
Marie Kenney	marie.pkenney@gmail.com	10/23/2020	Hi, I submitted two reports for Bree that were not so long ago. She has at least a couple of close calls per year. Speed Bumps on both sides of Nellie Gail Ranch Road, where you enter the Equestrian Center, would be EXTREMELY helpful. Thanks	Homeowner Equestrian Boarder

Ed Leard	edleard3@gmail.com	10/23/2020	I have input that I've given previously but was told no. Folks on OSO traveling through may not know it's an equestrian community. I think the city has an obligation to inform those driving through the city of those items they might not ordinarily encounter, like horses. It's everything from "cool, there's a horse!" to the not-so-educated honking as if to get the horse's attention, or an iPhone snap, to those wanting to "race the horse". I think the key here is signage at all entrances and maybe exits as well. Love to see it on all large street crossings up next to stop light and on the island, because folks always look at that, right? Let's take for instance someone traveling east on OSO and they turn left at Nellie Gail road. I had previously suggested "HORSE CROSSING" on all left turn lane poles (in middle post of major street) going into the neighborhood. That particular one is especially dangerous as once you turn left the horse crossing is right there (100-200 feet) and you haven't processed the caution until you are on it with maybe a novice rider or startled horse, or maybe just come into it at an inappropriate speed. Another thought is lowering (and posting) SPEED LIMIT 20 MPH - HORSE CROSSINGS sign in entering the community (like Disney posts 14MPH to get your attention that they mean it) and having some police enforcement first 30 days. We live in a special place. An enclave of wonderful animals that enhance the community and values. We're different, in a good way.
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Homeowner
Equestrian Boarder

Polly BOCCHINO	indian_poni@yahoo.com	10/1/2020	The 3-way stop at Gallup Park should be looked at. Many people no longer stop at the stop signs and literally drive right through on Nellie Gail Rd. There has also been speeding on Gallup Circle through the stop signs onto Nellie Gail Rd doing so fast that it looked like they would fly through the fencing on the other side, but instead skidded out into onto the left side almost hitting a gardener truck head on. If you look at the street you will see all those skid marks at the entrance of Gallup Park close to the stop sign. People are going so fast through that area. When riding our horses we are seeing all of this. Usually in the late morning and afternoon. Also, people are speeding down Nellie Gail Rd toward Cabot - it's very dangerous for us riding our horses on the street when people really don't care that we are in the street - Too many close calls and people also being nude. Scary for us riding downhill on the street to get to the trail and be safe. People just need to SLOW DOWN on our streets and be courteous to those that need to share the street with drivers. PS - A date was added but things have gotten much worse for the past 6 mos now.	Resident
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Alexis Fiore	alexis_avazian@yahoo.com	10/23/2020	There isn't one date I can site as it has happened countless times in the three and a half years I've been living in Nellie Gail. I've contacted the city of Laguna Hills but with no action taken by the city. I live on Nellie Gail Road just below Sheriff. There is an equestrian/pedestrian crossing at that intersection with no stop sign. Cars come driving down that steep hill so fast and there's a blind curve just after it, where my house is. So, when I pull out of my driveway or walk my dog and try to cross the street, these cars come very quickly without being forced to stop or slow down. We need a stop sign at that intersection for sure or at least speed bumps in that stretch of the road. I've seen a car crashed in the front yard of my neighbor's home twice...two different neighbors due to cars losing control down this stretch of the hill down Nellie Gail Road. And, I've almost been hit pulling out of my driveway and crossing the street with my dogs several times. I have young twin children, age 12, that I am always worried about when they play in the front yard.	Homeowner
Leslie Shatner Walker	Lswner@gmail.com	10/25/2020	I was riding my horse, stopping to cross at the Nellie Gail Equestrian Center driveway on Nellie Gail Rd. near Oso. I encountered a car turning left into the stable driveway. This car stopped in the left turn lane and was waiting for me to cross. I started to cross the road in the crosswalk, then all of a sudden 2 other cars going past the speed limit, one after the other, came around the back of the stopped car, while I was now in the cross walk, and both these cars went past me by approximately 10'. The driver in the stopped car was cringing, as this was too close for comfort. One of the speeding drivers never saw me because he was busy looking at his phone, the other was just unaware. I'd say at least 50% of the time I cross in that spot, I have a problem because people are coming either too fast, too distracted, or don't realize the triangles in the street are a cross walk. I'm always wishing there could be a stop light there. The flashing light there now isn't big or bright enough. It's an accident waiting to happen. I'm glad this was brought up for discussion. We need a traffic light for safety. Please !	Homeowner Horse Owner

Kendall Childs	kendallchilds@cox.net	11/12/2019	Oso & cross streets Moulton AND Nellie Gail corner, had vehicles almost run over my toe and horses foot as I was crossing with the "walk" light. I guess they thought we would take too long so they wanted to go first. I also think crossing to the stables across Nellie Gail is difficult because ca	Resident
Patric Barry	26981@att.net	11/3/2020	I use NG Rd frequently. Whenever I see a horse, rider or pedestrian at that point I stop, and other traffic that I observe does similar. I have never seen or heard of an incident at that point on NG Rd. There is NO BASIS for seeking to frustrate traffic at that point, although better signage would be helpful. It is already posted for equestrian use, and that is adequate, however why not have a traffic signal that can be activated by a rider which will slow, pause, notify traffic. I notice that when horses wait to cross from north to south that they are hard to see, so electronic signage, a notifier that a horse is waiting to cross, would be helpful. Let me emphasize - any attempt to moderate vehicle behavior is unacceptable. I suspect that unaware transient traffic from outside NG is part of the problem, if indeed a problem is present.	Homeowner
Suzu Banks	suzubanks@aol.com	11/6/2020	Recommend rumble strips on the roads	
Leilan Keith Pince	leilankeith@gmail.com	11/7/2020	The horse crossing on empty saddle to the equestrian center has a lot of trees and shrubs around it. These camouflage the horses as they cross. Perhaps removing them will make the horses more visible to drivers	
Jennifer Portnoff	Jennifer.Portnoff@PacifiClife.com	11/7/2020	At approximately 530 on Tuesday November 3rd, I was crossing the street from the trail to go to the equestrian center. My daughter was with me on her horse. My daughter was wearing a light up vest. The horse had on a light up chest plate. We pressed the button for the blinking horse crossing lights. Although the lights were blinking an oncoming car did not stop. Once it was safe to start to cross we started crossing. On the other side of the road a car came barreling down and did not stop at the flashing lights. The car behind it only stopped because I started yelling and waving my arms. At approximately 635 we left to return home. We pressed the button for the flashing lights and again a car coming up the street refused to stop.	

Carol Chen	sweetshih@yahoo.com	9/19/2019	White BMW SUV raced up Hidden Trail coming from Nellie Gail Road. This day (Sept 2019), I was particularly fed up & posted on Next Door, but I see this daily out my kitchen window as cars accelerate up the hill (and often speed down too). I fear for my 3 young kids if they play outside, and would support a speed bump in front of my house. In front of the Equestrian Center, I would suggest flashing lights that can be activated by push button by riders, to alert drivers of their crossing. It would make the crosswalk path more visible and hopefully drivers can better respect the equestrians' space.	Homeowner
Laurel Hacche	LHacche@gmail.com	11/13/2020	I was crossing Nellie Gail Road by the Equestrian Center with my family and we were using the cross walk. We were half way across the street and an approaching car initially started to slow down so we could keep crossing, but decided to hit the gas and speed by, leaving us to wait at the divider in the middle of the road. I also routinely have difficulty crossing the street near the tennis club, as many members do not slow down for pedestrians that are getting ready to cross which leaves me waiting on the corner for a break in the traffic. It appears that these individuals are late for a tennis match or some alternate engagement. I do receive a wave of acknowledgement that I have allowed them to go by, although I always thought that pedestrians had the right of way in California.	Homeowner
Robert Lee	robertleespc@gmail.com	11/13/2020	I've had cars turn the corner so fast coming up (and down!) bridewood and taking corners at 40++! Onto glen canyon ! This is not a few times a day but 50 x day! Someone is going to get hurt possibly killed if we don't figure out a way to put in a 4 way stop- speed bump or Gate! it's. Dangerous ! We've had our mailbox almost taken out a few times and the curb / brick / grass has been driven over frequently! Please advise on what I need to do to get a proposal in front of the HOA! We have a dog and a 4 year old and if anything happens due to lack of oversight here we are all going to wish we had been thoughtful in addressing it - please advise !	Homeowner

Richard Fiore	richard_fiore9@yahoo.com	10/30/2020	Good afternoon and thank you for reaching out to the residents of Nellie Gail Ranch for feedback on dangerous crossings. I have been a Nellie Gail resident since 2017 and live at 25882 Nellie Gail Road on the corner of Nellie Gail and Desert Trail. Over the past three years, we have witnessed multiple near-miss incidents of equestrian and pedestrian accidents from cars speeding up and down Nellie Gail road. They occur at 2 locations: 1) the intersection of Nellie Gail Road and Desert Trail and 2) the intersection of Nellie Gail Road and Sheriff (which includes an equestrian crossing). Beyond the obvious concerns about the levels of speed in the neighborhood, we are also concerned about a blind corner just above the Nellie Gail/Desert Trail and Nellie Gail/Sheriff intersections. We have witnessed several cars speeding downhill, not see a car pulling out of the intersection and/or driveway and nearly collide. I am also concerned about children being able to play in the front yard at the risk of a car speeding and having the blind corner. We previously reached out the HOA and the City of Laguna Hills about the safety concerns but were turned away. We believe that a stop sign coming downhill at the Nellie Gail/Sheriff intersection and uphill at the Nellie Gail / Desert Trail would greatly reduce the risk of a fatal incident. Thank you again for reaching out to the residents and happy to answer any questions you might have. My contact is 310-614-4021 Homeowner	NGROA General Manager
Brian Mitchell	bmitchell@nelliegailranch.org	12/3/2020	At the Nellie Gail Road Equestrian Center crosswalk there is no indicator confirming for the pedestrian crossing the crosswalk that the flashing lights are on after pushing the crosswalk button. It creates an opportunity for the person crossing to be unsure if the lights are operating properly.	

Pamela Fraser	frapamela10@gmail.com	6/6/2020	The incident happened at approximately 11:30am, on an overcast day in early June, while riding my horse. I was crossing Nellie Gail Road, from the trail (side) to the equestrian center. After pushing the "road crossing" button on Nellie Gail Road, I looked both ways and began to cross. There were no vehicles coming in either direction when we started to cross. As I did so, a black pickup truck, turned the corner on Nellie Gail from Oso start up the road. Even though the lights were flashing, the truck driver proceeded to pick up speed, appearing to be totally oblivious to our presence. We were almost halfway across the road when the truck proceeded to drive behind us (traveling at about ~20 mph). The horse immediately spooked and began to rear up. Because he had shoes (on all 4s), placed me in an even more precarious position. I was afraid the horse would slip and fall, taking me with him. I managed to get him across the road without further incident. But what disturbs me most, it that the truck NEVER even slowed down. Both horse and rider could have been seriously injured.	Homeowner
Scott Mamolo	scottmamolo@gmail.com	8/12/2020	Lights were flashing but the car didn't even slow down or stop and I was already in the intersection with the horse.	Resident
Viviana Mamolo	vivimamolo@gmail.com	11/14/2020	I included only the most recent incident, but we have experienced multiple incidents like this one. While crossing the intersection at Empty Saddle and Nellie Gail Rd. (as well as at the Equestrian Ctr on other occasions), I was on horseback and my husband was walking in front of me, and he had to stand in the middle of the road waving his hands to get cars to see us and stop. it is frightening and unsafe.	Homeowner
casey buller	caseybuller@hotmail.com	12/14/2020	The instances of near misses and dangerous encounters with speeding cars and cars that fail to stop are too numerous to count. It never ends. I've been at the EC for almost fifteen years and if anything, it's worse. Nothing the city has tried works. Speed bumps are the only alternative left before someone dies.	Equestrian Boarder

Deborah Weinstein	dweinstein0@gmail.com	11/14/2020	As I was crossing Nellie Gail Road by Gallup Park (at the designated cross walk), someone sped up when approaching the crosswalk, barely stopping in time to avoid hitting me on my horse. Also, throughout the year, I have had multiple experiences with people not stopping at the limit line at crosswalks, causing me to ride my horse in the middle of the intersection. Also, many people park in front of the trail entrances, causing me to maneuver around cars to get back on the trail.	Equestrian Boarder
Lisa Ortega	lebyortega@gmail.com	10/10/2020	The date of my incident is not 100% accurate - I board my horse on Nellie Gail Road and Empty Saddle - on multiple occasions while crossing Nellie Gail Road I encountered drivers from both directions speeding up or down the hill and barely stopping - sometimes they come right up to us before they are forced to stop or squeeze by us at a very unsafe distance. On one occasion, a mother with her children in her car pulled out of the tennis club, did not stop at the stop sign and sped towards me while I was in the middle of the street and swore at me to get out of HER way! This is an issue which requires attention for the safety of our everyone!	Equestrian Boarder
Tressa Coburn	tressacoburn@sbcglobal.net	3/12/2020	At Nellie Gail Road and Hidden Trail We were two horses crossing when a car Went between the two horses which were in the street at the time at over 50 mph Nearly hitting both horses Witness by security who asked if we where all right	Equestrian
Tressa Coburn	tressacoburn@sbcglobal.net	10/1/2020	Location Nellie Gail and Dapple Grey Single car going about 60 miles an hour playing on phone slammed on brakes went sideways and missed us by 3 feet. Even after one of us ran back to the grass and the other ran to the opposite side of the street traffic. It was that close because they went sideways Very young driver	Equestrian

Leslie Walker	Lswner@gmail.com	12/9/2020	I pressed the crossing street light at the Nellie Gail Equestrian Center trying to cross Nellie Gail Rd from the stable. I carefully entered the street watching for traffic. I saw one car approaching at the corner. Not only did he not slow down, he went out of his way to go around me and my horse. It was very close. I feel like it's often Russian Roulette when crossing this street. Another car also approached and this person was texting. He didn't even see us. Luckily I saw that he wasn't paying attention and I stopped and he went around me. If there's one area to put a traffic light, this would be an important one. Near misses all the time.	Equestrian Boarder
Paul BULLER	paul_buller@hotmail.com	7/13/2020	Too many occurrences to count. I have nearly been run over at the Cross Walk at the Equestrian Center several times even though the flashing lights are operating.	Equestrian boarder.
Sonja Hammad	sonjahammad@gmail.com	8/12/2020	I was a driving down Nellie Gail toward Oso, and I completely didn't see the flashing lights and it really startled me to see a rider and her horse crossing. I'm a resident, and I'm always pretty vigilant in that area (and especially when there are horses) so the fact that I missed the flashing lights worries me that others might too — especially if they aren't aware they are there. I'm so one who is aware of them, and I didn't even notice them flashing until it was almost too late. I slammed on my brakes and everyone was fine. I don't even know if the rider was aware I hadn't seen them or that I had to brake harder than normal, but I'm happy something is possibly being done so an accident doesn't happen in that spot.	Homeowner
Jill Sousa	jill@ardenreading.com	1/4/2020	I was riding with my two daughters and we were about to cross Nellie Gail at the crosswalk with the flashing lights when a car came barreling down the road. I turned to my girls and said, "I don't think he's going to stop." Sure enough, he didn't. The cars don't seem to mind the crosswalk and it poses a danger to riders.	Equestrian boarder

Dolores Caringella	jogrinding@cox.net	12/15/2020	I was coming up Nellie Gail Road from Oso and a horse was crossing at the flashing lights. At specific times - this was 9:15 AM, the sun is coming through the trees so bright that you are absolutely unable to see the flashing lights. I saw the horse on the other side of the street & stopped abruptly but the flashing lights were not visible in the direct sunlight. We, as Equestrians, need to realize we cannot depend on vehicles stopping for the flashing lights - as I only saw them after I came to a complete stop and looked for them.	Homeowner Equestrian Center Boarder
Christine Stephenson	cesdressage@yahoo.com	12/1/2020	We have had many near misses over the years. Most recently, a woman in a white suv turning left from Nellie Gail road onto Oso Pkwy did not notice me and my horse in the cross walk. Thankfully she was able to stop just in time. She rolled down the window and apologized that she didn't see us. Most of the issues on Oso Pkwy have been when it's getting dark/visibility is bad. A potential solution could be to install some bright lights to illuminate the "waiting areas" where horses stand before heading into the crosswalk. We also have the issue of drivers going way too fast on Nellie Gail road at all times of the day. It makes it pretty impossible for them to stop when they finally notice the horses. It is a daily occurrence that horses will be waiting to cross Nellie Gail road and cars do not stop.	Equestrian Instructor
Laura Sullivan	akasully@cox.net	12/1/2020	My backyard is adjacent to empty saddle and Nellie Gail. Cars are constantly in excessive speed coming down the hill from Moulton towards empty saddle. I have lived here 2 years and have never seen police monitor area for speed. It is dangerous and potential income generating spot for our police to write speeding tickets.	Resident
Pat Barry	26981@att.net	1/8/2021	I have not observed any incidents - in fact, when a horse and rider appears at the crosswalk on Nellie Gail Road the traffic has always immediately come to a halt and let the horse and rider pass. I recommend no change from the existing structure	Owner

Lulu Hallenbeck	luluh@cox.net	12/16/2020	I put the date as 12/16/20 but there are multiple dates when the below incidents have happened. I was on the traffic and Safety Committee which worked to have the crossing light installed at NG/Equestrian Center. And crossing lights aren't enough. Cars come speeding down NG Road towards Oso. Brakes are slammed on when after Empty Saddle because drivers don't see the light until they're too close. If they weren't speeding they'd be able to stop. I saw at least 5 close calls in the last six months. Maybe speed bumps would be good combined with the crossing light. Maybe one of the other lights could be relocated and installed day Empty Saddle and NG Road. Please feel free to contact me for any more information about the process the committee went through to get the lights.	Homeowner
Allison Smith	A Smith <aritchie.smith@gmail.com>	Dec-16	Nellie Gail Road & Empty Saddle: Hit and run; landscaper was hit by a white sedan, thrown over hedge and onto trail. Broke his leg. Supplied OC Sheriff with video footage from our security camera.	Homeowner
Allison Smith	A Smith <aritchie.smith@gmail.com>	Over the past 10 years	Association Clubhouse Parking Lot: Repeatedly called police to report cars doing donuts and spinning out in the clubhouse parking lot	Homeowner
Allison Smith	A Smith <aritchie.smith@gmail.com>	8/10/2020	Equestrian Center Crosswalk - Approx 6pm Black dodge charger; purposefully revving engine and exhaust at the equestrian center; spooking horses in both the arena and along the trail (Nellie Gail Rd); went back and forth at least 6 times, turning on Empty Saddle, circling and speeding at high rate back down/up Nellie Gail Rd. Reported the incident, and license plate to the HOA and also tracked down the security detail on patrol and gave them a photo and license plate.	Homeowner
Allison Smith	A Smith <aritchie.smith@gmail.com>	9/19/2020	Equestrian Center Crosswalk - Car (small grey SUV) ran flashing lights, did not stop- near miss of horse and rider	Homeowner
Allison Smith	A Smith <aritchie.smith@gmail.com>	10/3/2020	Equestrian Center Crosswalk - Car did not respond to flashing lights - barely stopped in time after pedestrian (with horse) started screaming (drivers window was down). If his window wasn't down, I don't think he would've heard me screaming and noticed us.	Homeowner

Allison Smith	A Smith <aritchie.smith@gmail.com>	10/19/2020	Equestrian Center Crosswalk - Approx 4pm car ran flashing lights- driver was staring at me as she drove through the crosswalk, did not even slow down. Near miss. My horse spooked and I had to jump off to get us both across the street safely.	Homeowner
Allison Smith	A Smith <aritchie.smith@gmail.com>	10/23/2020	Equestrian Center Crosswalk - Approx 4:30pm- Car ran flashing lights as I crossed from the trail over to the equestrian center. Got stuck at the median as the cars came flying towards me and my horse- did not stop. Horse spooked.	Homeowner
Allison Smith	A Smith <aritchie.smith@gmail.com>	11/3/2020	Nellie Gail Road & Empty Saddle - Approx 8am White SUV car rolled through stop sign exiting the clubhouse parking lot; nearly hit me as I was in the crosswalk area.	Homeowner
Allison Smith	A Smith <aritchie.smith@gmail.com>	11/6/2020	Equestrian Center Crosswalk - Approx 4:00pm Lights flashing; near miss. Burgundy sedan flying down Nellie Gail Road- did not slow or stop. Horse spooked in the middle of the crosswalk.	Homeowner
Allison Smith	A Smith <aritchie.smith@gmail.com>	11/11/2020	Equestrian Center Crosswalk - 8:30am; With lights flashing, 2 cars boxed me in at the middle divider-minivan did not even slow despite my screaming and waving. Driver looked at me as she held her cell phone in one hand and swerved around my horse with the other. NEVER slowing-missing him by inches!! Instructor at the equestrian center witnessed the incident. Allison Smith, Reagan Smith, Sherry Ritchie, Colton Smith	Homeowner
Allison Smith	A Smith <aritchie.smith@gmail.com>	11/12/2020	Equestrian Center Crosswalk - 4:40pm; with lights flashing white dodge ram truck flew down the hill and nearly hit my mom, my children, and myself.	Homeowner
Allison Smith	A Smith <aritchie.smith@gmail.com>	11/13/2020	Equestrian Center Crosswalk - 8:53pm Car accident; Heard a loud crash from inside my house. Car slammed into our trash can that was placed out for pickup on Nellie Gail Rd. Captured the incident on our security camera. Saved footage. Car pulled over for a moment and then took off. Trash can was full and consequently broke- had to have damaged car (white suv).	Homeowner
Allison Smith	A Smith <aritchie.smith@gmail.com>	11/14/2020	Nellie Gail Road - Car accident on trail behind my house on Nellie Gail Road just up from the clubhouse entrance- car hopped the curb and went straight into the bushes and on to the trail. May have been drunk driver- not sure how else it could happen. (see photo attached)	Homeowner

Allison Smith	A Smith <aritchie.smith@gmail.com>	12/19/2020	Equestrian Center Crosswalk - Flashing lights; crossing the pedestrian/equestrian crosswalk with my family. Black BMW (new car- paper plates) came racing down the hill, revved his engine twice as he approached us in the crosswalk. Near miss- we had to grab my kids and run to the other side. I've seen this same car do this on another occasion as well- just not to me personally.	Homeowner
Allison Smith	A Smith <aritchie.smith@gmail.com>	1/11/2020	Equestrian Center Crosswalk - Approx 3:40pm; Lights flashing- 2 cars ran the crosswalk nearly hitting myself and my horse. Dangerous entering the road- it is clear when I enter the crosswalk, but by the time you reach the middle, there is a car at the top of the hill coming down and you can't get across fast enough. We need a speed hump on the downhill portion approaching this crosswalk. Not addressing this safety issue is negligence and will get someone killed.	Homeowner

Julie Comella

From: Portnoff, Jennifer <Jennifer.Portnoff@PacificLife.com>
Sent: Wednesday, January 20, 2021 5:00 PM
To: Julie Comella
Subject: equestrian crossings in nellie gail

To whom it may concern,

I am a resident of Nellie Gail and own a horse that my daughter rides from our home on Mustang Dr to Nellie Gail Equestrian Center. On trail, the only way to get to the equestrian center from our home is to cross Nellie Gail Road. We can cross at Nellie Gail Road between Dapple Grey and Oso and then take the tunnel across or we can cross at the cross walk at Oso and then cross Nellie Gail Road by the equestrian center parking lot. Both ways are risky as the cars do not yield to persons/horses in the crosswalks. I understand that the crossing of Nellie Gail between Dapple Grey and Oso was not the subject of the study currently at hand. So I will only speak to my experiences crossing Nellie Gail by the equestrian center.

I usually walk with my daughter who is 15 because the crossing is so dangerous. We always press the button for the flashing lights but the majority of times cars do not stop and instead whiz through. This happens even if I am in the middle of the crosswalk with my daughter and her horse. I have to wave my arms hysterically and shout "stop" at the top of my lungs and this only helps occasionally. I was very excited to see our community raise this issue with the City of Laguna Hills.

I am very disappointed to see the conclusion in the traffic commission report that the "traffic control installations at the equestrian crossing are satisfactory and supported by a zero-collision history". In my opinion, we are lucky there has not been a huge accident at this crossing location to date. But the fact that there has been a zero collision history should not render the crossing situation satisfactory. The whole point is to get ahead of, and prevent, an accident, which would likely prove fatal to one or more of the pedestrian, the horse, the horse rider, and/or the vehicle occupants. If such an accident were to occur I think the City would be liable for not taking any further actions to promote a safer crossing when so many near misses have been raised with the City.

Thank you for your time,
 Jennifer Portnoff Tullis
 25122 Mustang Dr
 Laguna Hills, CA 92653

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Julie Comella

From: Casey Buller <caseybuller@hotmail.com>
Sent: Wednesday, January 20, 2021 5:02 PM
To: Julie Comella
Subject: Crossings

Regarding the crossings, the proposed plan does not address the riders that use the crossing at the equestrian center. There are times when we don't have access to the rear exit by the cell tower. The tunnel is perfectly fine, if we can get to it. Speed bumps are the only viable option at this point. Nothing else has worked at a significant cost to the city. It is becoming increasingly more dangerous and sometimes terrifying to cross. Please put in speed bumps!

Catherine Buller

[External E-mail]

Attachment: Public Comments (2368 : Nellie Gail Ranch Equestrian Crossing Review Update)

Julie Comella

From: Brian Mitchell <bmittchell@nelliegailranch.org>
Sent: Wednesday, January 20, 2021 5:03 PM
To: Julie Comella
Subject: Nellie Gail Ranch Owners Association - Agenda Item 4.1

Honorable Traffic Commissioners,

The Nellie Gail Ranch Board of Directors supports the recommendations of the Nellie Gail Ranch Trails & Safety Committee with respect to agenda item 4.1 as delivered to you earlier by Pamela Fraser. We thank you in advance for considering measures to improve safe crossings at our Equestrian Crossings.

Regards,

Brian Mitchell
General Manager
Nellie Gail Ranch Owners Association
949-425-1477

[External E-mail]

Attachment: Public Comments (2368 : Nellie Gail Ranch Equestrian Crossing Review Update)



City of Laguna Hills

Traffic Commission

Staff Report

DATE: March 17, 2021
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 Trailer Calendar March April May 2021

CITY OF LAGUNA HILLS

MARCH 2021

RADAR TRAILER SCHEDULE (RAINY DAYS EXCLUDED)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9 Mustang W/O Appaloosa 25 MPH	10 Bridlewood S/O Laurel Crest 25 MPH	11 Lost Colt E/O Beargrass 25 MPH	12	13
14	15	16	17	18	19	20
21	22	23 Mustang W/O Farrier 25 MPH	24 Rapid Falls W/O Sundowner 25 MPH	25 Nellie Gail E/O Desert Trail 25 MPH	26	27
28	29	30	31			

Attachment: Radar Trailer Calendar March April May 2021 (2367 : Radar Speed Trailer)

CITY OF LAGUNA HILLS

APRIL 2021

RADAR TRAILER SCHEDULE (RAINY DAYS EXCLUDED)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6 Hidden Trail Across from 27783 25 MPH	7 Rapid Falls W/O Sundowner 25 MPH	8 Lost Colt E/O Beargrass 25 MPH	9	10
11	12	13	14	15	16	17
18	19	20 Nellie Gail E/O Empty Saddle 25 MPH	21 Lost Colt E/O Beargrass 25 MPH	22 Glen Canyon S/B Mid-block 25 MPH	23	24
25	26	27	28	29	30	

Attachment: Radar Trailer Calendar March April May 2021 (2367 : Radar Speed Trailer)

CITY OF LAGUNA HILLS

MAY 2021

RADAR TRAILER SCHEDULE (RAINY DAYS EXCLUDED)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4 Hidden Trail Across from 27783 25 MPH	5 Woodbluff W/O Middleridge 25 MPH	6 Bridlewood S/O Laurel Crest 25 MPH	7	8
9	10	11	12	13	14	15
16	17	18 Mustang W/O Appaloosa 25 MPH	19 Rapid Falls W/O Sundowner 25 MPH	20 Nellie Gail E/O Desert Trail 25 MPH	21	22
23	24	25	26	27	28	29
30	31 HOLIDAY					

Attachment: Radar Trailer Calendar March April May 2021 (2367 : Radar Speed Trailer)