



CITY OF LAGUNA HILLS TRAFFIC COMMISSION

REGULAR MEETING AGENDA Wednesday, January 17, 2018 – 7:00 PM

Mark Jones - Chair

Larry Woodruff - Vice Chair

Greg Staar - Commissioner

Len Herman - Commissioner

David Wheeler - Commissioner

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

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

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

CALL TO ORDER

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

PLEDGE OF ALLEGIANCE

ROLL CALL OF COMMISSION MEMBERS

1. PUBLIC COMMENTS

This is the time to address the Traffic Commission on any matter not listed on this Agenda that is within the subject matter jurisdiction of the Traffic 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 November 15, 2017.

3. PRESENTATIONS**4. ADMINISTRATIVE REPORTS****4.1 Parking Control Survey (Permit Parking) in the Stockport Park Neighborhood**

Recommendation: That the Traffic Commission Recommend to the City Council Implementation of a "No Stopping Anytime" Zone on Wilkes Place from 140 Feet South of Derby Circle to York Circle for the Enhancement of Vehicular Sight Distance.

4.2 Parking Control Survey (Permit Parking) in the Linda Flora Neighborhood

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

4.3 Multi-Way Stop Sign Evaluation - De Salle Street at Grissom Road

Recommendation: That the Traffic Commission Recommend to the City Council the Installation of a One-Way Stop Sign on De Salle Street at Grissom Road.

5. INFORMATIONAL ITEMS**5.1 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 March 21, 2018, at 7:00 PM in the City Council Chamber, located at 24035 El Toro Road, Laguna Hills California.

CERTIFICATION

I, KENNETH H. ROSENFELD, Director of Public Services/City Engineer of the City of Laguna Hills, do hereby certify that a copy of the foregoing Agenda was posted at Laguna Hills City Hall, Laguna Hills Community Center, and the Courtyard at La Paz Center by January 12, 2018, at 5:00 pm.



Director of Public Services/City Engineer

January 12, 2018

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: January 17, 2018
TO: Traffic Commissioners
FROM: Kenneth H. Rosenfield P.E.
Director of Public Services/City Engineer
ISSUE: Minutes

RECOMMENDATION: That the Traffic Commission Approve the Minutes of November 15, 2017.

ATTACHMENTS:

- Minutes

**CITY OF LAGUNA HILLS
TRAFFIC COMMISSION MEETING
REGULAR MEETING MINUTES
NOVEMBER 15, 2017**

CALL TO ORDER

The Regular Meeting of the Traffic Commission of the City of Laguna Hills, California, was called to order by Chair Jones 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 Chair Jones.

ROLL CALL OF COMMISSION MEMBERS

Present: Chair Mark Jones, Vice Chair Larry Woodruff, Commissioner Len Herman, Commissioner Greg Staar and Commissioner David Wheeler.

1. PUBLIC COMMENTS

Don Loomis, resident of Southport Street, spoke in favor of restricted parking for non-residents, but did not want residents that live in his neighborhood to have parking restrictions.

Philip Oziotis, resident of Southport Street, spoke in favor of permit parking.

Ramzi Saaty, resident of Woolwich Street, spoke in favor of overnight permit parking.

Dana Swango, resident of Southport Street, spoke in favor of permit parking, and no parking during the days and hours of street sweeping.

Meg Gorham, resident of Linda Flora Street, requested the City survey her neighborhood regarding permit parking. Ms. Gorman spoke in favor of permit parking in her neighborhood. Ms. Gorham requested the City install lane assignment signage for the intersection of Community Center Drive and Alicia Parkway.

Sean Ardestani, resident of York Circle, commented the management of the surrounding apartment complexes should be contacted by the City and be involved in the Traffic Commission meeting.

Greg Zabka, resident of York Circle, spoke in favor of restricted overnight parking.

Shirley Connelly, resident of Southport Street, spoke in favor of permit parking.

**CITY OF LAGUNA HILLS
TRAFFIC COMMISSION MEETING
REGULAR MEETING MINUTES
NOVEMBER 15, 2017**

Veronica Salmon, resident of York Circle, commented the additional parked cars in her neighborhood caused sight distance issues, additional trash and noise.

2. MINUTES

**THE TRAFFIC COMMISSION APPROVED THE MINUTES OF THE SEPTEMBER 20, 2017, REGULAR MEETING, BY M/COMMISSIONER HERMAN, S/COMMISSIONER STAAR.
APPROVED BY A VOTE OF 5-0**

3. PRESENTATIONS

There were no Presentations.

4. ADMINISTRATIVE REPORTS

4.1 REVIEW OF RAISED PAVEMENT MARKERS ON PASEO DE VALENCIA AT CABOT ROAD

Associate Civil Engineer Amber Shah, indicated Staff was requested by Commissioner Wheeler to review the field conditions of the right turn pocket merge lane from easterly bound Paseo de Valencia to southerly bound Cabot Road.

Staff performed a traffic accident analysis and field review of the subject location, to see if any physical conditions of the roadway may be contributing factors to traffic collision history. Commissioner Wheeler specifically asked if the raised pavement markers (rpms), Type A white ceramic markers, used as rumble strips in the right turn pocket merge lane from easterly bound Paseo de Valencia to southerly bound Cabot Road could be contributing to traffic collision history. The rpms for this location have been in place for more than 17 years without any known issues. The combination of rumble strips, pavement markings and signage alert motorists to the impending right turn lane, the curve and speed limit to allow for safe passage and merging from Paseo de Valencia to Cabot Road.

A review of three years of traffic collision history did not identify any physical conditions of the roadway as contributing factors to traffic collisions. A field review of the location found all traffic controls to be appropriately placed.

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

Attachment: Minutes (1460 : Minutes)

**CITY OF LAGUNA HILLS
TRAFFIC COMMISSION MEETING
REGULAR MEETING MINUTES
NOVEMBER 15, 2017**

4.2 REVIEW OF TRAFFIC SPEED CONDITIONS AND RADAR TRAILER EFFECTIVENESS ON MUSTANG DRIVE AT APPALOOSA PLACE

Associate Civil Engineer Amber Shah, indicated based upon a request by the Traffic Commission to review the effectiveness of the City's speed radar trailer, Staff pulled the trailer data and compared it to spot radar speed surveys on Mustang Drive, a street that was under Traffic Commission review.

Following a spot radar speed survey and staff report presented at the July 19, 2017, Commission meeting regarding concerns of speeding on Mustang Drive near Appaloosa Place, Staff posted the speed radar trailer on Mustang Drive once each in the months of August, September and October 2017. Staff initiated a second spot radar speed survey of the travel speeds on Mustang Drive following the last posting of the speed radar trailer to determine any changes between the two spot radar speed surveys. Although the 85th percentile speed and 10 mph pace slightly increased between the two spot radar speed surveys, the percentage of vehicles exceeding the 10 mph pace decreased from 19.8% in the June 2017, to 10.3% in the morning and 9.2% in the afternoon during the October 2017, spot radar speed survey. The decrease in the percentage of drivers exceeding the upper limit of the 10 mph pace between the two speed surveys may (or may not) be attributable to the use of the speed radar trailer which increases driver awareness and education as to the appropriate speed, in this case, on Mustang Drive. The 85th percentile speeds on Mustang Drive suggest that speed enforcement should continue.

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

4.3 REVIEW OF SPEED SURVEY PROCEDURES

Associate Civil Engineer Amber Shah, indicated based upon a request by the Traffic Commission, Staff performed a review of speed survey practices and procedures currently used in the evaluation of traffic speed conditions. The City's evaluation and data collection efforts were found to be in accordance with the guidelines established in the California Department of Transportation (Caltrans) 2014 California Manual for Setting Speed Limits. As the guidelines and traffic engineering best practices reveal, the use of radar to measure traffic speeds must be done during off-peak hours for validity of the data collection to measure speeds of the "reasonable driver" for the road conditions encountered not influenced by traffic conditions and other known factors.

Attachment: Minutes (1460 : Minutes)

**CITY OF LAGUNA HILLS
TRAFFIC COMMISSION MEETING
REGULAR MEETING MINUTES
NOVEMBER 15, 2017**

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

5. INFORMATIONAL ITEMS

5.1 SHERIFF'S DEPARTMENT VERBAL REPORT

Sergeant Prince had a prior commitment and was unable to attend the meeting.

5.2 RADAR SPEED TRAILER

Staff submitted the schedule for the radar trailer.

6. COMMISSIONER COMMENTS

There were no Commissioner Comments.

7. ADJOURNMENT

There being no further business before the Traffic Commission at this session, Chair Jones declared the meeting adjourned at 8:26 p.m.

Prepared By:

Amber Shah, P.E.
Associate Civil Engineer

Approved By:

Chair Mark Jones

Attachment: Minutes (1460 : Minutes)



City of Laguna Hills

Traffic Commission

Staff Report

DATE: January 17, 2018
TO: Traffic Commissioners
FROM: Kenneth H. Rosenfield P.E.
Director of Public Services/City Engineer
ISSUE: Parking Control Survey (Permit Parking) in the Stockport Park Neighborhood

RECOMMENDATION: That the Traffic Commission Recommend to the City Council Implementation of a "No Stopping Anytime" Zone on Wilkes Place from 140 Feet South of Derby Circle to York Circle for the Enhancement of Vehicular Sight Distance.

SUMMARY:

Staff was contacted by a resident requesting implementation of parking controls in the "Stockport Park Neighborhood" affecting the streets of Derby Circle, York Circle, Woolwich Street, Southport Street and Salford Street. The resident was concerned with overflow parking from other areas of the community impacting parking supply in their residential neighborhood. Based upon the resident's concerns, and in accordance with the Municipal Code, Staff sent a parking control survey to the residents of the Stockport Park Neighborhood on September 11, 2017. The initial survey resulted in a 65% response rate with 114 surveys returned out of the 175 surveys mailed but no clear consensus on desired parking controls was received. A second parking control survey was mailed to the residents on November 27, 2017, in an effort to gain neighborhood consensus. That survey received a 61% response rate from the neighborhood. Based upon the response rate, a 2/3rds majority of the neighborhood did not support the implementation of a parking control, a requirement of the Municipal Code.

The Traffic Commission was also contacted at the meeting of November 15, 2017, with additional concerns from residents of the neighborhood regarding sight distance issues at the intersection of York Circle and Wilkes Place and vehicular speeds on Alicia

Parking Control Survey (Permit Parking) in the Stockport Park Neighborhood

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Parkway. Based upon review of the current site conditions, staff is recommending restricting vehicle parking from 140 feet south of Derby Circle to York Circle by the installation of a “No Stopping Anytime” zone. A speed profile on Alicia Parkway revealed higher vehicular speeds than desirable and additional traffic enforcement will be implemented to address this issue as resources permit.

BACKGROUND:

A resident of the “Stockport Park Neighborhood” (specifically the streets of Derby Circle, York Circle, Woolwich Street, Southport Street and Salford Street) contacted staff regarding concerns about observed “out of neighborhood” parking impacting the area parking supply. They expressed their views that residents outside the community are parking within their neighborhood; limiting the number of available parking spaces for the single-family homes, disturbing the quiet enjoyment of the neighborhood and leaving litter in the area.

Derby Circle, York Circle, Woolwich Street, Southport Street and Salford Street are all public residential streets within the Stockport Park Neighborhood northerly of Alicia Parkway. There are 175 single family residences within this affected area that do not have parking controls on their streets. Please see attached Vicinity Map.

In response to the resident’s concerns, Staff sent a parking control survey. In accordance with the Municipal Code related to Permit Parking, the first survey was sent on September 11, 2017, to the neighborhood with a number of parking control survey options. The survey resulted in a 65% response rate but no clear consensus on parking controls. The results of that survey are below:

<i>PARKING CONTROL</i>	<i>SUPPORT VOTES</i>	<i>PERCENTAGE</i>
Limited “Two-Hour Only” Parking	27	15%
No Overnight Parking	41	23%
Overnight Permit Parking	65	37%
24-hr Permit Parking	42	24%

At the November 15, 2017 meeting of the Traffic Commission, multiple residents addressed the Commission expressing concern there was some confusion amongst some of the residents regarding the survey questions. Based upon the resident’s concerns, staff sent a second parking control survey to the residents of the Stockport Park Neighborhood on November 27, 2017. The survey resulted in a 61% response rate

Parking Control Survey (Permit Parking) in the Stockport Park Neighborhood

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but lacked support for implementing parking controls. The results of the survey are below:

<i>PARKING CONTROL</i>	<i>SUPPORT VOTES</i>	<i>PERCENTAGE</i>
Overnight Permit Parking	63	36%
24-hr Permit Parking	39	22%

According to Laguna Hills Municipal Code (LHMC) Chapter 11-24, Residential Permit Parking Program, permit parking can be established only if 67% or more of the affected residents support it. As shown above, there is not enough support for a permit parking control.

The Traffic Commission also received a complaint from a resident on York Circle, regarding sight distance limitations due to vehicles parking immediately adjacent to York Circle on the westerly side of Wilkes Place. The resident stated that the parking on Wilkes Place adjacent to York Circle is creating conflicts for vehicles turning on Wilkes Place as the driver cannot see all oncoming traffic due to limited visibility (sight distance). Staff reviewed the complaint, and upon performing a site evaluation, determined that restricting parking on Wilkes Place will improve sight distance for vehicles turning onto Wilkes Place from York Circle. It is recommended that a no stopping anytime zone be established on the westerly side of Wilkes Place from 140 feet south of Derby Circle to York Circle. This parking control zone will resolve the sight distance issue and tie into other parking control sign zones along the balance of Wilkes Place.

A speed profile on Alicia Parkway was also initiated by staff based upon observations of a resident as stated at the November 15, 2017, Traffic Commission meeting. The speed profile, performed by Hartzog & Crabill, Inc., determined the 85% percentile speed on Alicia Parkway easterly of Wilkes Place to be 57 mph. Staff will work with the Sheriff's Department on enforcement activity in this area.

FISCAL IMPACT:

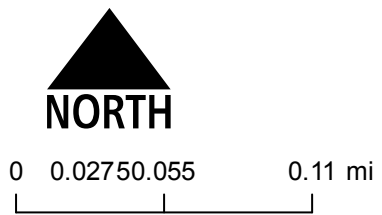
The installation of one "No Stopping Anytime, Here to Corner" sign has an anticipated cost of \$150. Funds are available for this work in the 2017-18 Fiscal Year Public Works Maintenance Budget.

ATTACHMENTS:

- Vicinity Map - Stockport Park Neighborhood
- Survey dated September 11 2017

Parking Control Survey (Permit Parking) in the Stockport Park Neighborhood
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- Survey dated November 27 2017



VICINITY MAP - STOCKPORT PARK NEIGHBORHOOD





CITY OF LAGUNA HILLS

September 11, 2017

Dear Resident:

SUBJECT: SURVEY OF RESIDENTS TO CONSIDER THE NEED FOR PARKING REGULATIONS ON DERBY CIRCLE, YORK CIRCLE, WOOLWICH STREET, SOUTHPORT STREET AND SALFORD STREET.

The City of Laguna Hills requests your cooperation in completing and returning the enclosed survey regarding potential new parking regulations in your neighborhood. Some residents have approached the City with concerns about undesired long-term and overnight parking of vehicles on their streets. The City is surveying residents prior to implementing any parking restrictions. Should any new parking regulations be implemented, the City will also implement "No Parking on Days and Hours of Street Sweeping" on your street to assist the street sweeper and improve water quality practices. We request that you complete the attached questionnaire indicating your opinion on this matter and return it to the City in the enclosed postage paid envelope by **September 25, 2017**.

This matter will be discussed at the November 15, 2017, Traffic Commission meeting which begins at 7:00 pm, and is held at the City of Laguna Hills Council Chambers. You are invited to attend this meeting.

If you have any questions, please call me at (949) 707-2657. Thank you for your assistance.

Very truly yours,

Amber Shah, P.E.
Associate Civil Engineer

Enclosure

PARKING RESTRICTION SURVEY

Please indicate your preference regarding the proposed establishment of new parking regulations in your neighborhood by checking the appropriate boxes below.

Please check a box in each line.

1. I do NOT want any new parking regulations on my street.

☐ Yes

☐ No

2. I would support a no overnight parking restriction (no parking on the street during designated hours), such as "No Parking from 2:00 a.m. to 6:00 a.m." daily.

☐ Yes

☐ No

3. I would support time limited parking such as "Two Hour Parking."

☐ Yes

☐ No

4. I would support a limited permit parking only restriction on my street such as, "Permit Parking Only from 12:00 a.m. to 6:00 a.m."

☐ Yes

☐ No

5. I would support a 24 HOUR permit parking only restriction on my street such as, "Permit Parking Only."

☐ Yes

☐ No

Name _____

Address _____

Comments:

Please return no later than September 25, 2017, in the enclosed postage paid envelope.



CITY OF LAGUNA HILLS

November 27, 2017

Dear Resident:

**SUBJECT: SECOND SURVEY OF RESIDENTS REGARDING PARKING
CONTROLS ON YOUR STREET**

On September 11, 2017, the City issued a survey to residents of Derby Circle, Salford Street, Southport Street, Woolwich Street and York Circle to determine your concern with undesired long-term and/or overnight parking. Of 175 surveys issued to all properties on these streets, 114 responses were received, a response rate of 65%. The majority of responding residents supported the concept of a "limited permit parking program" for which permits would be required for any vehicles parked overnight. However, the City's requirement of 67% support of all properties impacted by a parking regulation was not met for any of the surveyed parking control options.

To clear up any confusion on the previous survey and to clarify the desired parking controls in your neighborhood, you are again requested to respond to the attached survey and return it in the postage paid envelope not later than December 15, 2017. The results of the survey will be tallied and presented to the Traffic Commission at the meeting scheduled for Wednesday, January 17, 2018, beginning at 7:00 pm, at City Hall. You are invited to attend this meeting and express your views on this matter.

As described in the previous letter, if a parking control is implemented in your neighborhood, a "no parking during days and hours of street sweeping" regulation will also be implemented as a City standard practice.

Please contact me should you have any questions at (949) 707-2657.

Sincerely,

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

Enclosure

November 27, 2017

Second Parking Control Survey

(Derby Circle, Salford Street, Southport Street, Woolwich Street and York Circle)

Please complete and return the below survey in the enclosed postage paid envelope by December 15, 2017.

1. I would support a limited Permit Parking Program* on my street which restricts parking to vehicles associated with the single-family homes, between the hours of midnight and 6:00 am (or similar times).

☐

Yes

☐

No

2. I would support a full time Permit Parking Program on my street which restricts parking to vehicles associated with the single-family homes, 24 hours per day.

☐

Yes

☐

No

Only surveys with the respondent's Name and Address will be counted:

Name: _____

Address: _____

Comments:

* Permit Parking Program standard regulations:

One annual parking decal is issued to every vehicle registered to the local street address with an annual permit fee of \$15.

Four Guest Placards are issued at no additional fee to each home with at least one paid parking decal.

As many "one-day parking passes" as desired will be issued at no additional fee upon request for special events.

All decals and guest placards are numbered and registered with the OC Sheriff's Department for parking enforcement purposes.



City of Laguna Hills

Traffic Commission

Staff Report

DATE: January 17, 2018
TO: Traffic Commissioners
FROM: Kenneth H. Rosenfield P.E.
Director of Public Services/City Engineer
ISSUE: Parking Control Survey (Permit Parking) in the Linda Flora Neighborhood

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

SUMMARY:

At the November 15, 2017, meeting of the Traffic Commission, a resident requested implementation of parking controls in the “Linda Flora Neighborhood” along the streets of Linda Flora Street, Toluca Court, Ernestine Court and El Segundo Street. The resident was concerned with overflow parking from other areas of the community. Based upon the resident’s concerns, and in accordance with the Municipal Code, Staff sent a parking control survey to the residents of the Linda Flora Neighborhood on November 28, 2017, and received a 65% response rate from the neighborhood. Out of sixty-two (62) surveys mailed out, forty (40) were returned. Based on the responses received, a 2/3rds majority of the neighborhood, the threshold of support required by the Code, does not support implementation of a permit parking program. It is recommended that the Traffic Commission receive and file this report.

BACKGROUND:

A resident of the “Linda Flora Neighborhood” (specifically the streets of Linda Flora Street, Toluca Court, Ernestine Court and El Segundo Street) contacted the Traffic Commission regarding concerns about observed “out of neighborhood” parking impacting the area parking supply. They expressed their views that residents of the Via Lomas community are parking within their neighborhood; limiting the number of available parking spaces for the single family homes.

Parking Control Survey (Permit Parking) in the Linda Flora Neighborhood
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Linda Flora Street, Toluca Court, Ernestine Court and El Segundo Street are all public residential streets within the Ridgefield Community north of Aliso Hills Drive. There are 62 single family residences within the affected area. Please see attached Vicinity Map.

In response to the resident's concerns, Staff sent a parking control survey. In accordance with the Municipal Code related to Permit Parking, the survey was sent on November 28, 2017, to the neighborhood with a number of parking control survey options. The survey resulted in a 65% response rate but lacked support for implementing parking controls. The results of the survey are below:

<i>PARKING CONTROL</i>	<i>SUPPORT VOTES</i>	<i>PERCENTAGE</i>
Limited "Two-Hour Only" Parking	8	13%
No Overnight Parking	14	23%
Overnight Permit Parking	21	34%
24-hr Permit Parking	14	23%

According to Laguna Hills Municipal Code (LHMC) Chapter 11-24, Residential Permit Parking Program, permit parking can be established only if 67% or more of the affected residents support it. As shown above, there is not enough support for a permit parking control.

ATTACHMENTS:

- Survey Linda Flora Neighborhood
- Vicinity Map - Linda Flora Neighborhood



CITY OF LAGUNA HILLS

November 28, 2017

Dear Resident:

SUBJECT: SURVEY OF RESIDENTS OF LINDA FLORA STREET, TOLUCA COURT, ERNESTINE COURT, AND EL SEGUNDO STREET TO GAUGE INTEREST IN ON-STREET PARKING CONTROLS

A community member recently contacted the City with an expressed concern that undesired long term, overnight or out of neighborhood parking was occurring on the subject residential streets. The City seeks your assistance in evaluating this concern to allow us to consider various options to address the issue.

You are requested to complete and return, in the enclosed postage pre-paid envelope, the attached survey. Please return this survey by December 22, 2017.

Please note the following:

- Only surveys that include the name and address of the respondent will be tallied.
- The support of 67% or more of the residents in the affected area is required in order to recommend the implementation of the highest support solution.
- If a parking control option is recommended for implementation, the City will also implement a "no parking during hours and days of street sweeping" regulation.
- This matter will be presented to, and discussed at, a future Traffic Commission meeting and you will be advised of, and invited to attend, the meeting, once scheduled in early 2018.

Please contact the undersigned if you have any questions at (949) 707-2655.

Sincerely,

Kenneth H. Rosenfield, P.E.
Director of Public Services

November 28, 2018

Parking Control Survey – Linda Flora Street, Toluca Court, Ernestine Court and El Segundo Street

Please complete and return the below survey in the enclosed postage paid envelope by December 22, 2017.

1. There is a problem with parking supply in my neighborhood:
☐ Yes ☐ No
2. I would support time limited parking in my neighborhood such as "two-hour only" parking:
☐ Yes ☐ No
3. I would support no overnight parking in my neighborhood such as "no parking from 2:00 am to 6:00 am" daily:
☐ Yes ☐ No
4. I would support a limited "Permit Parking Program"* on my street to restrict overnight parking to vehicles associated with the single-family homes.
☐ Yes ☐ No
5. I would support a full time Permit Parking Program on my street which restricts parking to vehicles associated with the single-family homes, 24 hours per day.
☐ Yes ☐ No

Only surveys with the respondent's Name and Address will be tallied:

Name: _____

Address: _____

Comments:

* Permit Parking Program standard regulations:

- One annual parking decal can be issued to every vehicle registered to the local street address with an annual permit fee of \$15 per each decal.
- Four Guest Placards are issued to each home with at least one paid parking decal.
- As many "one-day parking passes" as desired will be issued at no additional fee upon request for special events.
- All decals and guest placards are numbered and registered with the OC Sheriff's Department for parking enforcement purposes.



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VICINITY MAP - LINDA FLORA NEIGHBORHOOD





City of Laguna Hills

Traffic Commission

Staff Report

DATE: January 17, 2018
TO: Traffic Commissioners
FROM: Kenneth H. Rosenfield P.E.
Director of Public Services/City Engineer
ISSUE: Multi-Way Stop Sign Evaluation - De Salle Street at Grissom Road

RECOMMENDATION: That the Traffic Commission Recommend to the City Council the Installation of a One-Way Stop Sign on De Salle Street at Grissom Road.

SUMMARY:

Staff was contacted by a resident on De Salle Street regarding concerns associated with the T-intersection at Grissom Road and, generally, vehicular speeding. Based upon the resident's concerns and in accordance with the Residential Streets Management Policy, staff initiated a multi-way stop sign evaluation of the intersection of De Salle Street at Grissom Road. The analysis of this intersection did not identify traffic volumes, traffic collision history or site conditions that would support a need for a multi-way stop sign control. However, a side street stop sign on De Salle is recommended to affirmatively assign the right of way at the intersection. Vehicular speeds were found to be consistent with typical speeds found on residential streets and occasional traffic speed enforcement, as resources permit, is recommended.

BACKGROUND:

Staff was contacted by a resident on De Salle Street regarding concerns associated with the T-intersection at Grissom Road and, generally, vehicular speeding. Based upon the resident's concerns and in accordance with the Residential Streets Management Policy, staff initiated a multi-way stop sign evaluation of the intersection of De Salle Street at Grissom Road. The multi-way stop sign analysis, performed by Hartzog & Crabill, Inc., attached, determined a 3-way stop sign installation is not warranted at this intersection

Multi-Way Stop Sign Evaluation - De Salle Street at Grissom Road

January 17, 2018

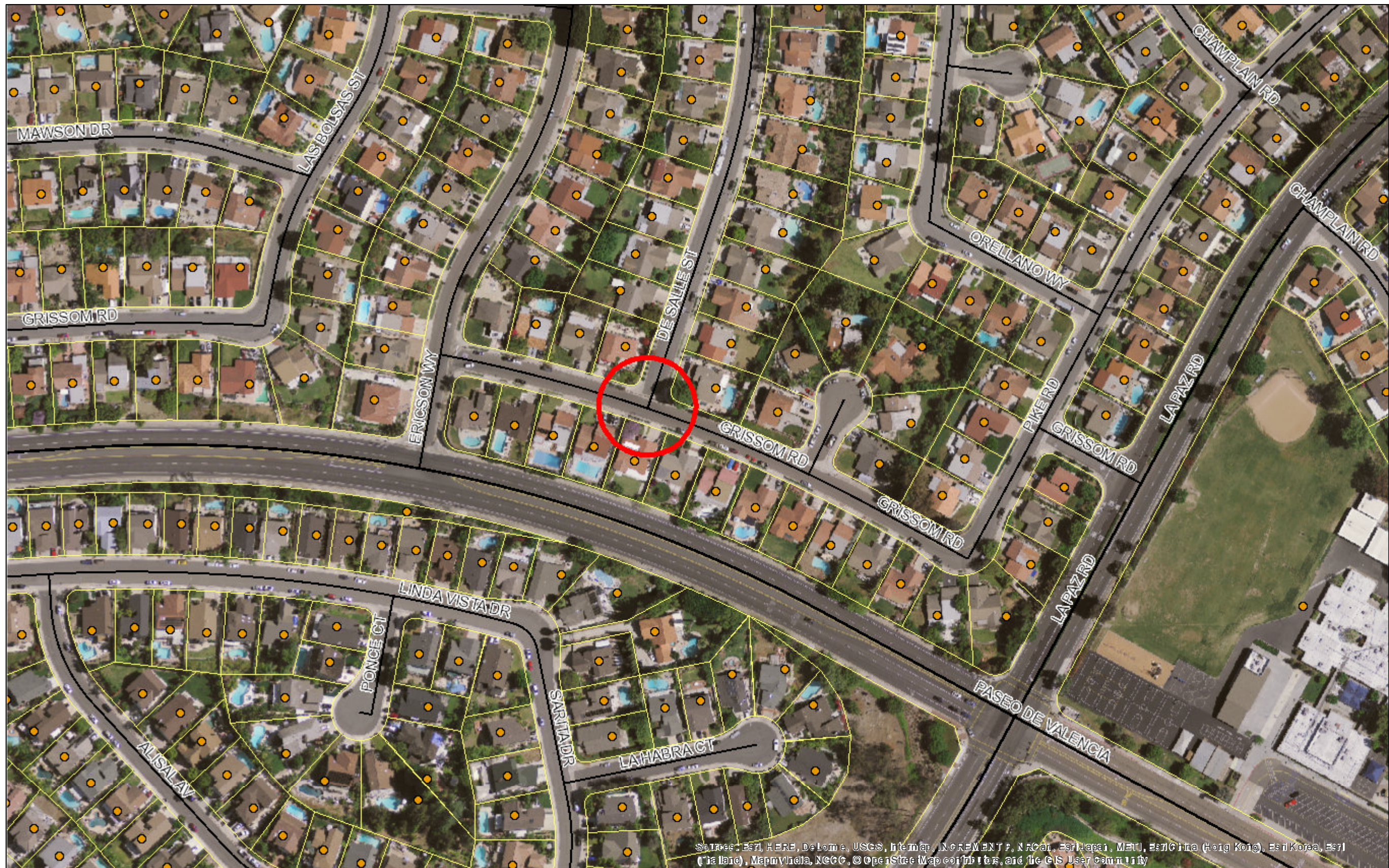
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based upon the minimum guidelines established by the California Manual on Uniform Traffic Control Devices (MUTCD). However, a one-way stop sign installation is recommended as a “side street” stop control for the southbound approach of De Salle Street at Grissom Road to improve right-of-way assignment. Based upon the findings in the report, staff concurs with the recommendation to install a side street stop sign on De Salle Street at Grissom Road.

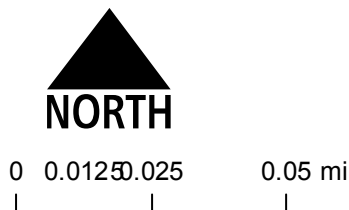
The speed surveys, performed by Hartzog & Crabill, Inc., in conjunction with this report determined the 85th percentile speeds on Grissom Road as 30 mph and 34 mph, east of and west of De Salle Street, respectively. While the regulatory speed limit on a residential street is 25 mph, Staff’s experience has found the typical prevailing speed range on residential streets in the City as being between 32 and 34 mph, without adverse traffic collision history. The 85th percentile speeds determined in this speed survey are consistent with our experience. No change to traffic controls based upon vehicular speeding is proposed. However, as available, police enforcement of driver behavior is the best and appropriate remedy for this location and issue of concern. Staff will work with the Sheriff’s Department on enforcement activity in this area and we will also post the radar trailer in this area to increase driver education as to the appropriate speed on Grissom Road.

ATTACHMENTS:

- Vicinity Map - Grissom Road at De Salle Street
- Hartzog & Crabill, Inc. Multi-Way Stop Sign Analysis



VICINITY MAP - GRISSOM ROAD & DE SALLE STREET





Trammell Hartzog, President
 Gerald J. Stock, P.E., T.E.,
 Executive Vice-President

17852 E. 17th Street
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January 9, 2018

Mr. Kenneth H. Rosenfield, P.E.
 Director of Public Services/City Engineer
City of Laguna Hills
 24035 El Toro Road
 Laguna Hills, CA 92653

Subject: Multi-way Stop Sign Analysis: Grissom Road at De Salle Street

Dear Mr. Rosenfield:

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

The analysis was completed in response to the City's request to verify if a multi-way stop sign installation is warranted, and recommended based on meeting standard guidelines. The California Manual of Uniform Traffic Control Devices (California MUTCD) was used for defining the requirements for a multi-way stop sign installation. At the present time, the intersection is un-controlled on all approaches. In overall consideration of existing conditions, and no multi-way stop warrants found satisfied, a multi-way stop sign installation is not recommended at this time. However, a one-way stop sign installation is recommended for the southbound approach of De Salle Street to improve right-of-way assignment. This recommendation includes the installation of a STOP sign and pavement marking, as well as a white limit line. If approved, the cost for this recommendation is estimated at \$750.00.

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

Very truly yours,
HARTZOG & CRABILL, INC.

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

Gerald J. Stock, P.E.
 Vice President
 City & Traffic Engineering Services

Attach: Multi-way Stop Control Warrants Analysis Report

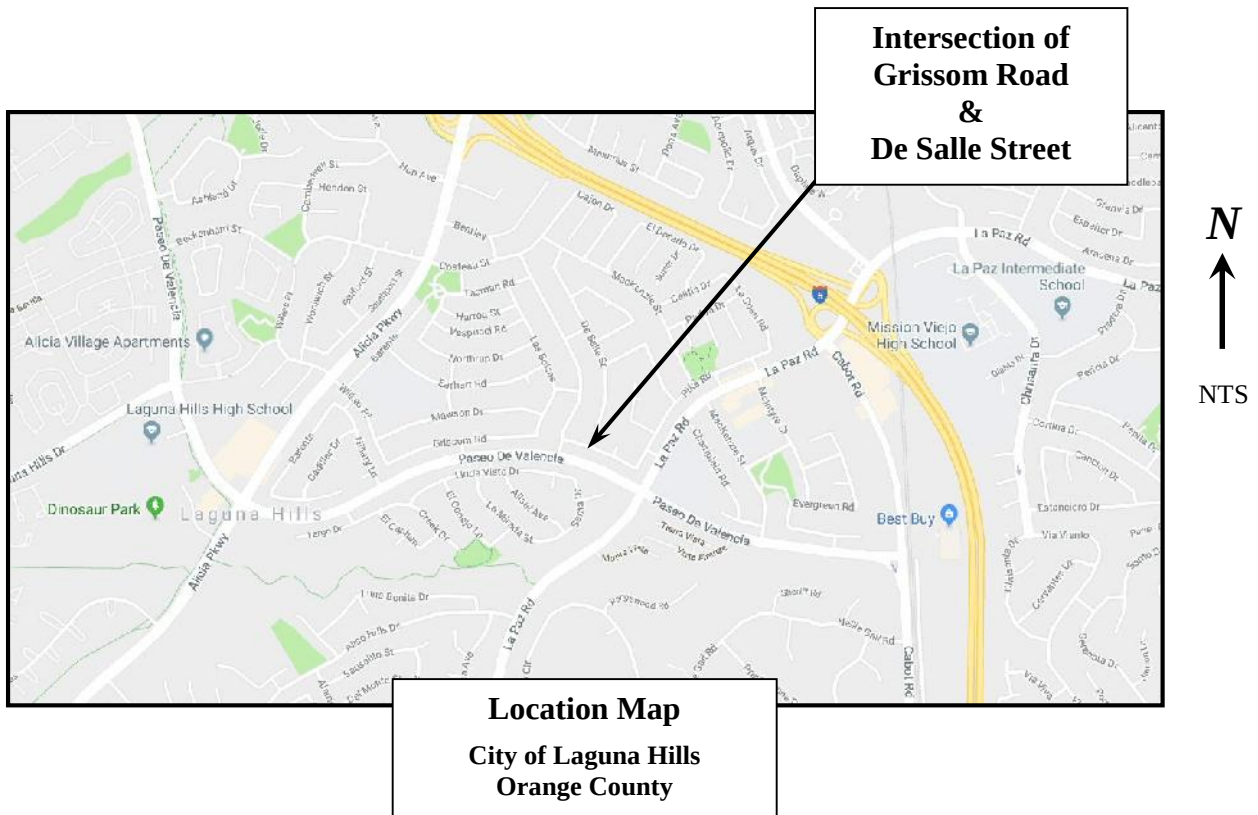
Attachment: Hartzog & Crabill, Inc. Multi-Way Stop Sign Analysis (1464 : Multi-Way Stop Sign Evaluation - De Salle Street at Grissom Road)

MULTIWAY STOP CONTROL WARRANTS ANALYSIS GRISSOM ROAD AT DE SALLE STREET IN THE CITY OF LAGUNA HILLS, CA

INTRODUCTION

The City of Laguna Hills requested Hartzog & Crabill, Inc. (HCI) to complete a Multiway Stop Warrants Analysis at the intersection of Grissom Road and De Salle Street. 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 Grissom Road running diagonally in the east-west directions and De Salle Street running diagonally in the north-south directions. The intersection is located southwest of the Interstate 5 Freeway, west of La Paz Road and just north of Paseo de Valencia (see *Location Map below*). The intersection is entirely within the City of Laguna Hills jurisdiction. At the present time, there is no intersection traffic control installed on either street (i.e., uncontrolled approaches).



Multiway Stop Sign Warrants Analysis - Grissom Road at De Salle St, in the City of Laguna Hills, CA

BACKGROUND

Grissom Road is a curvilinear, east-west local roadway with primarily single-family residential properties on both sides of the street. At the intersection with De Salle Street, the roadway is approximately 36 feet wide, and the 2-lane roadway provides for one lane of traffic in each direction (which are not separated by centerline striping). There are no marked crosswalks across Grissom Road at/near the intersection. The roadway does have curb, gutter, parkway and sidewalk improvements on both sides. Grissom Road has a posted speed limit of 25 MPH. On-street parking is allowed on both sides of the street. Currently, there are no STOP signs or other types of traffic control on Grissom Road (uncontrolled) at its intersection with De Salle Street.

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

De Salle Street is a curvilinear, north-south local roadway with primarily single-family residential properties on both sides of the street. At the T-intersection with Grissom Road, which is the southerly terminus of De Salle Street, the roadway is approximately 36 feet wide. The 2-lane roadway provides for one lane of traffic in each direction, which are not separated any centerline striping. There are no marked crosswalks across De Salle Street. The roadway does have curb, gutter, parkway and sidewalk improvements on both sides. De Salle Street 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 is no STOP sign or other types of traffic control on De Salle Street (uncontrolled) at its intersection with Grissom Road.

See Exhibit 2 (following page) for a photo image of De Salle Street.

Multiway Stop Sign Warrants Analysis - Grissom Road at De Salle St, in the City of Laguna Hills, CA

EXHIBIT 1



GRISSOM ROAD (LOOKING WESTBOUND) @ DE SALLE STREET



GRISSOM ROAD (LOOKING EASTBOUND) @ DE SALLE STREET

Multiway Stop Sign Warrants Analysis - Grissom Road at De Salle St, in the City of Laguna Hills, CA

EXHIBIT 2



*Multiway Stop Sign Warrants Analysis - Grissom Road at De Salle St, in the City of Laguna Hills, CA***WARRANT GUIDELINES**

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

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

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

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

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

MULTIWAY STOP 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 - Grissom Road at De Salle St, in the City of Laguna Hills, CA

Collision History (continued)

TABLE 1
SWITRS COLLISION SUMMARY

Intersection	2012-14		2015		2016		2017	
	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?	Date	Type of Coll. / Correctible?
Grissom Road at De Salle Street		<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, there have been no (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. ***All SWITRS traffic collision data is included in Appendix B.***

Traffic Volumes

HCI collected Average Daily Traffic (ADT) vehicular approach counts on Tuesday, November 28, 2017 in order to account for vehicles that typically use this T-intersection. The ADT approach count for Grissom Road is 849 vehicles per day with the highest AM peak-hour approach volume having 68 vehicles, and 84 vehicles in the PM peak-hour. The ADT approach count for De Salle Street is 142 vehicles with the highest AM peak-hour approach volume having 16 vehicles, and 17 vehicles in the PM peak-hour. Table 2 (next page) provides a breakdown of the approach volumes. ***All traffic volume data collected for this intersection is included in Appendix C.***

Multiway Stop Sign Warrants Analysis - Grissom Road at De Salle St, in the City of Laguna Hills, CA

Traffic Volumes (continued)

TABLE 2
HIGHEST 24-HOUR INTERSECTION APPROACH VEHICLE COUNTS
GRISSOM ROAD AT DE SALLE STREET

Street	Direction	ADT Volume	Directional Split	Highest Hourly Volume
Grissom Road	Eastbound	465	55%	50 (3 - 4PM)
	Westbound	384	45%	34 (3 - 4PM)
De Salle Street				
	Southbound	142	100%	17 (3 - 4PM)

Grissom Road is considered the ‘through’ or ‘major’ street at this residential T-intersection since it carries higher volumes, and is not required to slow down, or stop, before proceeding left. In comparison, De Salle Street is considered the ‘minor’ street as traffic on De Salle Street is required to first stop at Grissom Road and looking before making a left or right turn. It is typically expected that the traffic volumes on the minor street are considerably less than those on the major street. As can be seen from the table above, this is the case, as De Salle Street carries approximately 14% of the entire traffic entering the intersection (Grissom Road carries 86% of entering traffic).

A part of the California MUTCD guideline criteria also calls for a reduction in the required minimum volumes when the critical approach speed (*or 85th-percentile speed*) on the major street exceeds 40 MPH. If this is the case, the minimum vehicular volumes to be met for a multiway stop sign installation are reduced to 70%.

As mentioned, the posted speed limits on both streets are 25 MPH. Field observations during our site visit confirmed vehicles were not regularly speeding over the speed limit near the intersection, but were considered typical and what may be expected for two-lane local-type roadways. As the speed limits are less than the 40 MPH limit required to reduce traffic volumes, the 70% minimum volumes for a multi-way stop sign analysis are not applicable, and the 100% minimum volumes were analyzed on the next page.

Multiway Stop Sign Warrants Analysis - Grissom Road at De Salle St, in the City of Laguna Hills, CA

Traffic Volumes (continued)

It is important to note that the hourly vehicle traffic counts shown in Tables 2 and 3 above are given for the highest hour of traffic for each direction, and serve as a good indicator to compare with the required minimum hourly traffic volumes in the California MUTCD multi-way stop guidelines. It must also be mentioned that the average hourly minimum volumes for a multi-way stop application are to be satisfied for any eight (8) hours of an average day (not just for one hour).

Table 3 below shows the California MUTCD minimum traffic volume guidelines for a Multi-way Stop Application in comparison with the highest 8-hour traffic count data collected at this intersection. Both Parts 1 and 2 of the minimum volume warrants below must be satisfied in order to fulfill the traffic volume warrant.

TABLE 3
MULTIWAY STOP SIGN WARRANT FOR MINIMUM TRAFFIC VOLUMES
GRISSOM ROAD AT DE SALLE STREET

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 (57) vehicles per hour Meets 19% of 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 (14) vehicles per hour Meets 7% of 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 (19% *major street* / 7% *minor street*). Therefore, the minimum traffic volume warrant is not satisfied.

Multiway Stop Sign Warrants Analysis - Grissom Road at De Salle St, in the City of Laguna Hills, CA**Visibility**

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

Driver sight distance was measured from the side-street approach to the intersection, as southbound traffic on De Salle Street is required to stop, before proceeding to make a left or right-turn. The measured distance was derived from the stopping sight distance guidelines found in the California MUTCD (*see Appendix D*). In this reference, a 30 MPH roadway design speed (posted or *prima facie* speed + 5 MPH) recommends a minimum Stopping Sight Distance of 200 feet. This distance was used when looking towards approaching, uncontrolled traffic along Grissom Road. More specifically, this stopping sight distance was field-measured from a typical ‘stopped’ vehicle location on De Salle Street at the intersection looking towards the oncoming lanes of cross-traffic on Grissom Road. A photograph was taken from a stopped driver’s perspective.

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

As Exhibit 3 on the next page shows, when looking from De Salle Street, a driver does have a clear line of sight to the minimum sight distance at 200 feet when looking westerly. However, it is noted, when looking easterly, on-street parked vehicles, especially larger trucks/vans, may block the minimum sight distance of a southbound stopped driver. Since on-street parking was observed on Grissom Road at/near the intersection, the City may want to consider installing approximately 50’ of red curb or posted parking restrictions on the north side of the street, east of De Salle Street, in the future (if applicable), to ensure visibility for both vehicles traveling on Grissom Road as well as stopped vehicles on De Salle Street.

Multiway Stop Sign Warrants Analysis - Grissom Road at De Salle St, in the City of Laguna Hills, CA

EXHIBIT 3



Southbound DE SALLE STREET (Looking West) @ GRISSOM ROAD



Southbound DE SALLE STREET (Looking East) @ GRISSOM ROAD

Multiway Stop Sign Warrants Analysis - Grissom Road at De Salle St, in the City of Laguna Hills, CA**MULTIWAY STOP ANALYSIS SUMMARY**

The analysis of the four (4) main criteria provided in the California MUTCD regarding **Multi-way Stop** Applications showed that this intersection did not meet the minimum guidelines to justify stopping the major roadway. 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 close to being satisfied. Excessive delay to any approach was not observed in terms of vehicles stopping and waiting for a gap on the major roadway. 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. As mentioned, it was determined that a driver does have a clear line of sight to the minimum sight distance of 200 feet when looking westerly. However, when looking easterly, parked vehicles may block this minimum sight distance. Since on-street parking was observed at/near the intersection, the City may want to consider approximately 50' of red curb or posted parking restrictions to ensure visibility for both vehicles traveling on Grissom Road as well as stopped vehicles on De Salle Street.

Multiway Stop Sign Warrants Analysis - Grissom Road at De Salle St, in the City of Laguna Hills, CA

MULTIWAY STOP ANALYSIS SUMMARY (continued)

Intersection lighting was also verified and found to be adequate as there were two 100W luminaire on a street light pole located on the south side of Grissom Road at the intersection. In regards to pedestrian and bicycle activity, field observations confirmed a low activity of both.

Therefore, based upon our engineering judgment, it is determined that stopping traffic on Grissom Road at De Salle Street is not required at this time to enhance the traffic safety at this intersection.

It is important to note, the hourly speed data collected for this intersection resulted in an 85th percentile *westbound* speed of 34 MPH. This data confirms that vehicular speeding is occurring above the posted 25 mph speed limit along this segment of Grissom Road. An incremental approach is suggested to slow travel speeds along this segment of Grissom Road. Initial steps include increased law enforcement, use of a portable radar speed feedback trailer, and installing '25' pavement markings. Should these initial recommendations be implemented, a follow-up speed data survey should be conducted to quantify the benefits of these speed reduction measures.

RECOMMENDATIONS

In overall consideration of the analysis criteria in this report, a multi-way (3-way) stop sign installation is not recommended at this time for the intersection of Grissom Road and De Salle Street.

However, a one-way stop sign installation is recommended for the southbound approach of De Salle Street to improve right-of-way assignment. This recommendation includes the installation of a STOP sign and pavement marking, as well as a white limit line. If approved, the cost for this recommendation is estimated at \$750.00.

APPENDIX A

**MULTIWAY STOP APPLICATIONS
GUIDELINES:**

CALIFORNIA MUTCD

Standard:

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

Option:

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

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

Standard:

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

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

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

Guidance:

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

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

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

Guidance:

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

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

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

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

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

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

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

Support:

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

Guidance:

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

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

Support:

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

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

Standard:

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

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

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

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

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

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

Option:

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

Support:

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

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

Standard:

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

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

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

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

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

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

Support:

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

Guidance:

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

Option:

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

Support:

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

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

Through Highways

Option:

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

Support:

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

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

Option:

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

Standard:

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

Support:

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

Section 2B.06 STOP Sign Applications

Guidance:

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

Support:

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

Section 2B.07 Multi-Way Stop Applications

Support:

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

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

Guidance:

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

Option:

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

APPENDIX B

SWITRS COLLISION HISTORY

CITY OF LAGUNA HILLS
5-YEAR SWITRS COLLISION DATABASE
INTERSECTION OF GRISSOM ROAD AND DE SALLE STREET
JAN. 1, 2012 - SEP. 30, 2017

CASE ID	COLL. DATE	COLL. TIME	PRIMARY ROAD	SECONDARY ROAD	DIST.	DIR.	INTERS.	WEATH. 1	COLL. SEVERITY	PRIM. COLL. FACT.	PCF VIOL. CAT.	PCF VIOL.	HIT AND RUN	TYPE OF COLL.	MOTOR VEHICLE INVOLVED WITH	ROAD SURF.
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No Collisions Reported.

NOTES:

Weather 1	Collision Severity	Primary Collision Factor	PCF Violation Category	Hit and Run	Type of Collision
A - Clear	1 - Fatal	A - (Vehicle) Code Violation	01 - Driving or Bicycling Under Influence	F - Felony	A - Head-On
B - Cloudy	2 - Injury (Severe)	B - Other Improper Driving	02 - Impeding Traffic	M - Misdemeanor	B - Sideswipe
C - Raining	3 - Injury (Other Visible)	C - Other Than Driver	03 - Unsafe Speed	N - Not Hit & Run	C - Rear-End
D - Snowing	4 - Injury (Complaint of Pain)	D - Unknown	04 - Following Too Closely		D - Broadside
E - Fog	0 - PDO (Property Damage Only)	E - Fell Asleep	05 - Wrong Side of Road		E - Hit Object
F - Other		- - Not Stated	06 - Improper Passing		F - Overturned
G - Wind			07 - Unsafe Lane Change		G - Vehicle/Pedestrian
- - Not Stated			08 - Improper Turning		H - Other
			09 - Automobile ROW		- - Not Stated
			10 - Pedestrian ROW		
			11 - Pedestrian Violation		
			12 - Traffic Signals and Signs	Road Surface	
			13 - Hazardous Parking	A - Dry	
			14 - Lights	B - Wet	
			15 - Brakes	C - Snowy or Icy	
			16 - Other Equipment	D - Slippery	
			17 - Other Hazardous Violation	- - Not Stated	
			18 - Other Than Driver (or Ped)		
			19 -		
			20 -		
			21 - Unsafe Starting or Backing		
			22 - Other Improper Driving		
			23 - Pedestrian or "Other" Under the Influence		
			24 - Fell Asleep		
			00 - Unknown		
			- - Not Stated		

Motor Vehicle Involved With:

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

APPENDIX C

AVERAGE DAILY TRAFFIC (ADT)

COUNT DATA

Prepared by NDS/ATD

VOLUME

Grissom Rd & De Salle St

Day: Tuesday
Date: 11/28/2017City: Laguna Hills
Project #: CA17_1240_001

DAILY TOTALS				NB	SB	EB				WB	Total	
				0	0	465				0	465	
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL	
0:00			0		0	12:00			3		3	
0:15			0		0	12:15			4		4	
0:30			0		0	12:30			11		11	
0:45			1	1	1	12:45			10	28	10	28
1:00			0		0	13:00			3		3	
1:15			0		0	13:15			10		10	
1:30			0		0	13:30			5		5	
1:45			1	1	1	13:45			4	22	4	22
2:00			0		0	14:00			9		9	
2:15			0		0	14:15			5		5	
2:30			1		1	14:30			9		9	
2:45			0	1	0	14:45			19	42	19	42
3:00			0		0	15:00			11		11	
3:15			0		0	15:15			16		16	
3:30			0		0	15:30			13		13	
3:45			1	1	1	15:45			10	50	10	50
4:00			0		0	16:00			7		7	
4:15			0		0	16:15			14		14	
4:30			0		0	16:30			9		9	
4:45			0		0	16:45			10	40	10	40
5:00			0		0	17:00			8		8	
5:15			2		2	17:15			10		10	
5:30			1		1	17:30			13		13	
5:45			0	3	0	17:45			3	34	3	34
6:00			2		2	18:00			7		7	
6:15			1		1	18:15			11		11	
6:30			5		5	18:30			5		5	
6:45			8	16	8	18:45			12	35	12	35
7:00			0		0	19:00			9		9	
7:15			5		5	19:15			6		6	
7:30			8		8	19:30			6		6	
7:45			12	25	12	19:45			2	23	2	23
8:00			10		10	20:00			6		6	
8:15			12		12	20:15			4		4	
8:30			8		8	20:30			8		8	
8:45			5	35	5	20:45			2	20	2	20
9:00			1		1	21:00			3		3	
9:15			3		3	21:15			3		3	
9:30			3		3	21:30			3		3	
9:45			8	15	8	21:45			5	14	5	14
10:00			8		8	22:00			3		3	
10:15			3		3	22:15			2		2	
10:30			6		6	22:30			2		2	
10:45			3	20	3	22:45			4	11	4	11
11:00			4		4	23:00			2		2	
11:15			9		9	23:15			2		2	
11:30			4		4	23:30			1		1	
11:45			5	22	5	23:45			1	6	1	6
TOTALS	140				140	TOTALS	325				325	
SPLIT %	100.0%				30.1%	SPLIT %	100.0%				69.9	

DAILY TOTALS					NB	SB	EB	WB	Total
					0	0	465	0	465
AM Peak Hour			7:30	7:30	PM Peak Hour			14:45	14:4
AM Pk Volume			42	42	PM Pk Volume			59	59
Pk Hr Factor			0.875	0.875	Pk Hr Factor			0.776	0.77
7 - 9 Volume	0	0	60	60	4 - 6 Volume	0	0	74	74
7 - 9 Peak Hour			7:30	7:30	4 - 6 Peak Hour			16:15	16:1
7 - 9 Pk Volume	0	0	42	42	4 - 6 Pk Volume	0	0	41	41
Pk Hr Factor	0.000	0.000	0.875	0.000	Pk Hr Factor	0.000	0.000	0.732	0.000

Attachment: Hartzog & Crabill, Inc. Multi-Way Stop Sign Analysis (1464 : Multi-Way Stop Sign Evaluation - De Salle Street at Grissom Road)

SPEED

Grissom Rd E/O De Salle St

4.3.b

Day: Tuesday
Date: 11/28/2017

City: Laguna Hills
Project #: CA17_1240_003w

West Bound

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
0:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
3:00	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	1	0	2	1	1	0	0	0	0	0	0	0	0	5
6:00	0	0	4	3	3	4	0	0	0	0	0	0	0	14
7:00	3	3	5	7	5	1	0	0	0	0	0	0	0	24
8:00	3	4	4	11	7	4	0	0	0	0	0	0	0	33
9:00	4	3	1	7	4	1	0	0	0	0	0	0	0	20
10:00	1	3	3	6	2	2	0	0	0	0	0	0	0	17
11:00	5	1	0	5	6	5	0	0	0	0	0	0	0	22
12:00 PM	4	4	2	8	7	2	0	0	0	0	0	0	0	27
13:00	5	3	0	7	6	5	0	0	0	0	0	0	0	26
14:00	4	5	4	12	4	2	0	0	0	0	0	0	0	31
15:00	4	2	8	11	6	3	0	0	0	0	0	0	0	34
16:00	4	1	8	9	4	0	0	0	0	0	0	0	0	26
17:00	0	7	3	8	5	2	0	0	0	0	0	0	0	25
18:00	4	3	1	9	5	3	0	0	0	0	0	0	0	25
19:00	7	2	3	4	7	0	0	0	0	0	0	0	0	23
20:00	5	1	2	1	2	0	0	0	0	0	0	0	0	11
21:00	2	1	6	3	3	0	0	0	0	0	0	0	0	15
22:00	0	0	1	0	0	1	0	0	0	0	0	0	0	2
23:00	1	0	0	1	0	0	0	0	0	0	0	0	0	2
Totals	58	43	57	114	77	35								384
% of Totals	15%	11%	15%	30%	20%	9%								100%

AM Volumes	18	14	19	41	28	17	0	0	0	0	0	0	0	137
% AM	5%	4%	5%	11%	7%	4%								36%
AM Peak Hour	11:00	8:00	7:00	8:00	8:00	11:00								8:00
Volume	5	4	5	11	7	5								33
PM Volumes	40	29	38	73	49	18	0	0	0	0	0	0	0	247
% PM	10%	8%	10%	19%	13%	5%								64%
PM Peak Hour	19:00	17:00	15:00	14:00	12:00	13:00								15:00
Volume	7	7	8	12	7	5								34
Directional Peak Periods All Speeds			AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
			Volume		%	Volume		%	Volume		%	Volume		%
			57	↔	15%	53	↔	14%	51	↔	13%	223	↔	58%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Grissom Rd	East Bound	15	23	23	30	34	3
Grissom Rd	West Bound	15	26	25	34	37	364

SPEED

De Salle St N/O Grissom Rd

4.3.b

Day: Tuesday
Date: 11/28/2017

City: Laguna Hills
Project #: CA17_1240_002s

South Bound

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
0:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7:00	5	0	0	0	0	0	0	0	0	0	0	0	0	5
8:00	9	0	0	0	0	0	0	0	0	0	0	0	0	9
9:00	11	1	0	0	0	0	0	0	0	0	0	0	0	12
10:00	12	0	0	0	0	0	0	0	0	0	0	0	0	12
11:00	16	0	0	0	0	0	0	0	0	0	0	0	0	16
12:00 PM	12	0	0	0	0	0	0	0	0	0	0	0	0	12
13:00	6	1	0	0	0	0	0	0	0	0	0	0	0	7
14:00	15	0	0	0	0	0	0	0	0	0	0	0	0	15
15:00	17	0	0	0	0	0	0	0	0	0	0	0	0	17
16:00	9	0	0	0	0	0	0	0	0	0	0	0	0	9
17:00	13	0	0	0	0	0	0	0	0	0	0	0	0	13
18:00	4	0	0	0	0	0	0	0	0	0	0	0	0	4
19:00	5	0	0	0	0	0	0	0	0	0	0	0	0	5
20:00	4	0	0	0	0	0	0	0	0	0	0	0	0	4
21:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	1	0	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	140	2												142
% of Totals	99%	1%												100%

AM Volumes	54	1	0	0	0	0	0	0	0	0	0	0	0	55
% AM	38%	1%												39%
AM Peak Hour	11:00	9:00												11:00
Volume	16	1												16
PM Volumes	86	1	0	0	0	0	0	0	0	0	0	0	0	87
% PM	61%	1%												61%
PM Peak Hour	15:00	13:00												15:00
Volume	17	1												17
Directional Peak Periods			AM 7-9		NOON 12-2		PM 4-6		Off Peak Volumes					
All Speeds			Volume	%	Volume	%	Volume	%	Volume	%				
			14	↔ 10%	19	↔ 13%	22	↔ 15%	87	↔ 61%				

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ACT
De Salle St	North Bound	7	10	11	14	17	2
De Salle St	South Bound	7	10	10	14	15	142

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



City of Laguna Hills

Traffic Commission

Staff Report

DATE: January 17, 2018
TO: Traffic Commissioners
FROM: Kenneth H. Rosenfield P.E.
Director of Public Services/City Engineer
ISSUE: Radar Speed Trailer

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

ATTACHMENTS:

- Radar Trailer Calendar

CITY OF LAGUNA HILLS

JANUARY 2018

RADAR TRAILER SCHEDULE (RAINY DAYS EXCLUDED)

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

Attachment: Radar Trailer Calendar (1461 : Radar Speed Trailer)

CITY OF LAGUNA HILLS

FEBRUARY 2018

RADAR TRAILER SCHEDULE (RAINY DAYS EXCLUDED)

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

Attachment: Radar Trailer Calendar (1461 : Radar Speed Trailer)

CITY OF LAGUNA HILLS

MARCH 2018

RADAR TRAILER SCHEDULE (RAINY DAYS EXCLUDED)

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

Attachment: Radar Trailer Calendar (1461 : Radar Speed Trailer)