



# STAFF REPORT

## CITY OF ROLLING HILLS ESTATES

February 9, 2016

### MEMORANDUM

**TO: MAYOR AND CITY COUNCIL**

**FROM: GREG GRAMMER, ASSISTANT CITY MANAGER**

**SUBJECT: TRAFFIC AND SAFETY COMMITTEE ACTION ITEM  
FROM MEETING OF JANUARY 27, 2016 – ROLLING HILLS  
ROAD SOUTH OF LARIAT LANE IN-PAVEMENT WARNING  
LIGHTS FOR TRAIL CROSSING**

The following action item was recommended to the City Council at the Traffic and Safety Committee meeting on January 27, 2016:

**TO RECOMMEND TO THE CITY COUNCIL THAT IN-ROADWAY WARNING LIGHTS  
BE INSTALLED AT THE EQUESTRIAN TRAIL CROSSING ON ROLLING HILLS  
ROAD SOUTH OF LARIAT LANE**

### Fiscal Impact:

The cost to install the in-roadway warning lights, equestrian/pedestrian push buttons and ADA ramps is approximately \$40,000.

This project is an eligible use of Quimby funds.



# **MEMORANDUM**

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**JANUARY 27, 2016**

## **MEMORANDUM**

**TO: TRAFFIC AND SAFETY COMMITTEE**

**FROM: GREG GRAMMER, ASSISTANT CITY MANAGER  
JOANNE ITAGAKI, TRAFFIC ENGINEERING DEPUTY**

**SUBJECT: ROLLING HILLS ROAD SOUTH OF LARIAT LANE – IN-ROADWAY WARNING LIGHTS FOR TRAIL CROSSING**

## **OVERVIEW**

At its meeting on November 23, 2015, the Equestrian Committee recommended the Traffic and Safety Committee recommend to the City Council that the equestrian trail crossing on Rolling Hills Road south of Lariat Lane be considered for installation of in-roadway warning lights.

On January 11, 2012, the Traffic and Safety Committee considered various crosswalk enhancements at this trail crossing. (**Exhibit A**). At that time, the Commission approved the installation of “HORSE XING” pavement markings and a two-sided in-roadway pedestrian warning sign at the crossing.

## **DISCUSSION**

At the January 11, 2012 Traffic and Safety Committee meeting, one crosswalk treatment discussed was the installation of in-roadway warning lights (IRWLs) at the trail crossing on Rolling Hills Road south of Lariat Lane. At that time, the Committee determined the recommended improvements would help the visibility of the crossing without the IRWLs. However, the Committee expressed a desire to consider the IRWLs at a future date.

Since the installation of the pavement markings and the in-roadway pedestrian warning sign, staff is not aware of any reported collisions involving equestrians or pedestrians at the crosswalk, but has heard anecdotal reports of near misses.

## **In-Roadway Warning Lights**

In-roadway warning lights (IRWLs) are special traffic lights installed in the roadway surface to warn motorists they are approaching a condition on or adjacent to the roadway

that might require the motorist to slow down and/or stop. They are normally used with marked school crosswalks, marked midblock crosswalks and other situations involving pedestrian crossings. The City has installed IRWLs at two locations along Palos Verdes Drive North (near Academy Drive/City Hall and at Moccasin Lane/Silver Saddle Lane).

The California Manual on Uniform Traffic Control Devices (MUTCD) does provide guidelines on when IRWLs are to be considered. Section 4N.02 states:

<sup>14</sup> *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.*

The CA MUTCD guidelines indicate several items should be considered when evaluating the use of IRWLs.

- *Crossing controlled or uncontrolled – This crossing is uncontrolled.*
- *Compatible with safety and operation of nearby intersections – This location would be compatible and comparable to the signalized intersection at Rolling Hills Road and Palos Verdes Drive North.*
- *Standard signs/markings – The trail crossing is marked with white crosswalk lines, horse crossing signs and pavement markings.*
- *40 pedestrians during 2 hours during a 24-hour period – Estimated number of pedestrians/equestrians currently crossing at this location is more than 40 in a 24-hour period.*
- *Vehicular volume exceeds 200 vehicles per hour (vph) for urban/140 vph for rural during peak-hour pedestrian usage – Based on the ADT on Rolling Hills Road of ~9,000 vehicles per day, this location would exceed these measures.*
- *85<sup>th</sup> percentile speed is 45 mph or less – The posted speed limit on Rolling Hills Road is 35 mph.*
- *IRWLs visible to drivers – The IRWLs would be visible to drivers.*
- *Public education – The City has already implemented IRWLs which has made the public aware of this traffic control device.*

The installation of IRWLs on Rolling Hills Road south of Lariat Lane could be implemented at the existing marked trail crossing. The trail crossing will also need ADA accessible ramps installed. The construction cost to install the IRWLs, equestrian/pedestrian push buttons and ADA ramps is approximately \$40,000.

## **RECOMMENDATION**

Staff recommends the Traffic and Safety Committee recommend to the City Council that in-roadway warning lights be installed at the equestrian trail crossing on Rolling Hills Road south of Lariat Lane.

Attachment – Exhibit A

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## **MEMORANDUM**

To: Traffic and Safety Committee

From: Greg Grammer, Assistant City Manager

By: Erik Zandvliet, Traffic Engineer

Date: January 11, 2012

Subject: REVIEW OF TRAIL CROSSING ON ROLLING HILLS ROAD SOUTH OF LARIAT LANE

### **BACKGROUND:**

At its October 24, 2011, meeting, the Equestrian Committee reviewed several suggestions from the community to improve horse crossing safety at the mid-block crosswalk on Rolling Hills Road near Lariat Lane. The crossing is located near St. Luke's Presbyterian Church. After discussion, the Equestrian Committee requested the following:

1. Paint "HORSE XING AHEAD" in advance of the crosswalk in each direction.
2. Post "HORSE XING AHEAD" signs 50 feet before the same crosswalk.
3. Study the possibility of installing flashing lights in the pavement at the crosswalk.

This request has been forwarded to the Traffic and Safety Committee for your consideration and recommendation. (See attached Equestrian Committee Item.)

On September 20, 2007, the Traffic and Safety Committee (Committee) reviewed a prior request from the Equestrian Committee to add florescent yellow-green horse crossing signs at the same intersection. After approval by the City Council, the signs were installed in November 2007.

In March 2010, a local equestrian reported a collision that occurred at the same crossing in the evening in which a driver stopped for the equestrian, but another vehicle collided with the stopped vehicle. The equestrian had not begun crossing, and was not hurt. After a review of the location by the City Traffic Engineer, the City decided to enhance the crosswalk markings further by widening the crosswalk lines to 2 feet wide and adding a row of white reflective markers in each direction.

### **DISCUSSION:**

Rolling Hills Road is a two-lane undivided minor arterial street that carries approximately 9,800 vehicles per day. Rolling Hills Road has a speed limit of 35mph and has downslope in the northbound direction. Rolling Hills Road is signalized at Palos Verdes Drive North to

the south and Crenshaw Boulevard to the north, outside the City limits. Curb parking is prohibited on both sides of the street. Rolling Hills Road is not improved with curb or gutters, but has wide public parkways and an equestrian trail with three-rail fences along the west side and an unpaved trail along the east side. St. Luke's Presbyterian Church is located on the west side of the street south of Lariat Lane.

There is a marked trail crossing on Rolling Hills Road between Palomino Lane and Lariat Lane (at Palomino Ranchos Trail). The crosswalk is painted with two-foot wide lines, and is supplemented with a row of white reflective markers in both directions. Florescent yellow-green horse crossing signs are posted at the crosswalk in both directions with arrows. There is no street lighting in the area.

Field observations were made at the subject location. The horse crossing signs and markings are easily visible in advance of the crossing. However, the crossing is in shadow during much of the day due to the tree canopy, and equestrians waiting to cross may not be readily apparent to some drivers. The crossing is primarily used by equestrians during the week, with higher usage in early evening and weekends. Pedestrians occasionally use the same crossing in connection with church services on Sundays.

Pursuant to the California Vehicle Code, horse riders are considered drivers, and must abide by all laws that apply to vehicles. In addition, at uncontrolled crosswalks, equestrians must cross in a manner similar to pedestrians. This means that an equestrian must yield to all cross-traffic and wait for a sufficient gap before entering the crosswalk. After entering the crosswalk, drivers must yield to an equestrian already in the crosswalk.

21050. Every person riding or driving an animal upon a highway has all of the rights and is subject to all of the duties applicable to the driver of a vehicle by this division and Division 10 (commencing with Section 20000), except those provisions which by their very nature can have no application.

21759. The driver of any vehicle approaching any horse drawn vehicle, any ridden animal, or any livestock shall exercise proper control of his vehicle and shall reduce speed or stop as may appear necessary or as may be signalled or otherwise requested by any person driving, riding or in charge of the animal or livestock in order to avoid frightening and to safeguard the animal or livestock and to insure the safety of any person driving or riding the animal or in charge of the livestock.

21805. (a) The Department of Transportation, and local authorities with respect to highways under their jurisdiction, may designate any intersection of a highway as a bridle path or equestrian crossing by erecting appropriate signs. The signs shall be erected on the highway at or near the approach to the intersection, and shall be of a type approved by the Department of Transportation. The signs shall indicate the crossing and any crossmarks, safety devices, or signals the authorities deem necessary to safeguard vehicular and equestrian traffic at the intersection.

(b) The driver of any vehicle shall yield the right-of-way to any horseback rider who is crossing the highway at any designated equestrian crossing which is marked by signs as prescribed in subdivision (a).

(c) Subdivision (b) does not relieve any horseback rider from the duty of using due care for his or her own safety. No horseback rider shall leave a curb or other place of safety and proceed suddenly into the path of a vehicle which is close enough to constitute an immediate hazard.

### **Possible Crosswalk Treatments**

The City Traffic Engineer has researched several possible crosswalk enhancements for this crossing location. A summary of the analysis is provided below:

### Post Advance Horse Crossing Signs

Existing equestrian crossing signs are posted at the mid-block crosswalk itself and can be seen from several hundred feet in advance. Additional advance warning signs could supplement these signs, but may also confuse a driver as to the actual crossing point. If advance warning signs are used, they should be located approximately 200 feet before the crossing, and not be in conflict with other signs or road features. The proper advance warning sign would be a standard horse warning sign with an “AHEAD” plate mounted below it. Alternately, a “TRAIL XING AHEAD” plate could be used in lieu of the “AHEAD” plate. Because of the proximity of other intersections and added sign clutter, the City Traffic Engineer does not recommend advance warning signs, so that drivers concentrate their attention on the actual crossing location instead.



### “Yield to Pedestrians” In-Roadway Paddle Signs

In-roadway paddle style pedestrian warning signs are sometimes mounted at the centerline of a pedestrian crosswalk to enhance driver awareness of key crossing locations. The signs state “State Law – Yield to Pedestrians Within Crosswalk” and have flexible bases glued to the pavement. They should not be placed too close to a travel lane or in the way of a left turn movement so that drivers do not hit the sign or scrape the sides of their vehicles. Over-use of these signs can build complacency, so they should be used very selectively where the need is evident. An in-roadway sign could be posted at the equestrian crossing if a small median island is painted at the crosswalk. The City Traffic Engineer believes this type of sign would be appropriate due to the shaded location and mid-block location. It would raise driver awareness of the crossing without the high costs associated with flashing beacons.



### Paint “TRAIL XING” Pavement Markings

Advance crosswalk warning markings are common at uncontrolled crossings. However, an excessive amount of markings can detract from a driver’s concentration of the actual crossing. At the equestrian crossing, “TRAIL XING” markings could be painted before the crosswalk to increase driver awareness. Since there are no other pavement markings in the immediate vicinity, such markings would not detract from other road striping, and would clearly stand out.



### “Ladder” Style Crosswalk Markings

Through prior research with equestrian communities, the City Traffic Engineer has found that “Ladder” style crosswalks are not advised for horse crossings, because horses can be spooked by the appearance of gaps between the lines, similar to cattle grates. For this reason, transverse markings are not recommended.

### Advance Triangle Pavement Markings

While not an official traffic control device or pavement marking, some communities have painted a series of 12-inch wide stripes in travel lanes with increasing widths that form a triangular shape. This shape acts as an advance warning to indicate the approach of a particular road feature, such as a crosswalk or speed hump. Such markings have been used effectively to raise driver awareness and aid in preparing for possible stops. However, this type of pavement marking should not be used in conjunction with “Trail Xing” markings. The City Traffic Engineer believes that “Trail Xing” markings would serve the same purpose and better define the reason for the markings rather than



triangular stripes.

### Decorative Crosswalk Treatment

Stamped concrete, textured asphalt or concrete pavers are some decorative crosswalk treatments that can be used to enhance visibility of a crosswalk and give drivers tactile reminders of a pedestrian or equestrian crossing point. To be effective, the paving material should have high contrast to the surrounding pavement, and have some texture to identify by sound and feel that there is a crossing. Decorative crosswalks can help beautify the streetscape, but may also raise noise levels which can be undesirable to surrounding land uses. Additional maintenance is also required to keep decorative crossings in good condition. The construction cost for a decorative crosswalk at the equestrian crossing would be approximately \$20,000.

### Post-Mounted Flashing Beacons

Flashing beacons are typically installed at high-pedestrian volume locations with either high vehicle conflicts or special conditions where pedestrians have difficulty finding sufficient gaps in traffic in which to cross. Flashing beacons warn drivers of the potential for persons in a crosswalk, but do not require them to stop. At the equestrian crossing, pedestrian/horse crossing volumes are quite low, and would not meet recommended guidelines, but could be installed at the City's discretion. If post-mounted beacons are installed, they should be activated only when a crossing is made, so that drivers maintain sensitivity to the flashing beacon operation. A flashing beacon system would cost approximately \$30,000-\$50,000, and could be solar-powered or served by an electric meter.

### In-Roadway Warning Lights

In-roadway flashing warning lights could be installed at the equestrian crossing in lieu of or in combination with flashing beacons. In-roadway warning lights are best used on multi-lane roads and in locations with high nighttime pedestrians. The in-roadway lights are generally less effective in bright sunlight and on two-lane roads. They also require more maintenance than flashing beacons. An in-roadway warning light system would cost approximately \$40,000, and could be solar-powered or served by an electric meter. The City Traffic Engineer believes that in-roadway lights at the equestrian crossing would be effective in raising driver awareness because the location is somewhat shadowed and it is used at dawn/dusk/night. However, it would not be any more effective than flashing beacons and would require greater ongoing maintenance.

## **RECOMMENDATION:**

Based on the above analysis, the following additional measures are recommended for the equestrian crossing on Rolling Hills Road between Palomino Lane and Lariat Lane:

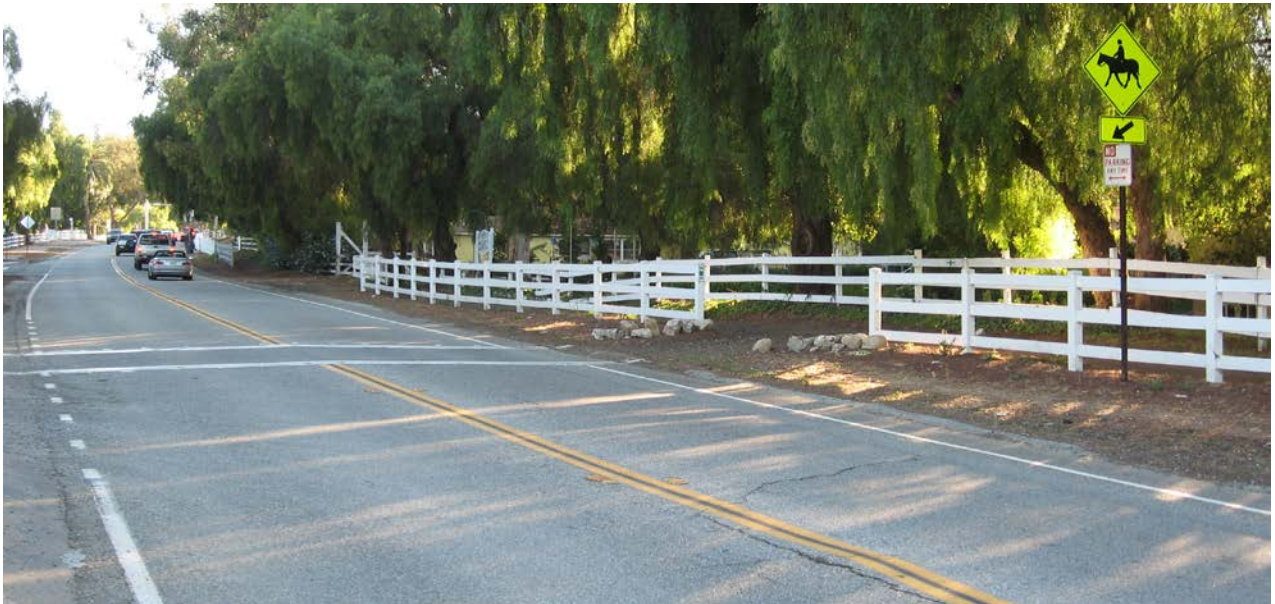
1. Paint "TRAIL XING" pavement markings on Rolling Hills Road in advance of the crosswalk to improve driver recognition of the mid-block crossing.
2. Post a two-sided in-roadway pedestrian warning sign and paint a center median at the crosswalk.

Exhibits:      Site Photos  
                  Proposed Sign and Marking Sketch  
                  Equestrian Committee Memo and Minutes (10/24/2011)





Rolling Hills Road at Trail Crossing Looking North



Rolling Hills Road at Trail Crossing Looking South





City of Rolling Hills Estates  
Traffic Engineering

**ROLLING HILLS ROAD**  
**North of**  
**Palomino Lane**  
**Install Enhanced Crosswalk Signs and Markings**