

MEMORANDUM

To:	Mr. Scott Molloy Newland Communities	Date:	June 8, 2018
From:	John Boarman, P.E Charlene Sadiarin, P.E LLG, Engineers		3-16-2664
Subject:	Sierra – Accident Analysis and Pedestrian/Bicycle Activity		

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Linscott, Law & Greenspan, Engineers (LLG) was asked to evaluate the accident history on Twin Oaks Valley Road between Deer Springs Road and Camino Mayor and Buena Creek Road between S. Santa Fe Avenue and Twin Oaks Valley Road in response to a comment regarding the Sierra Project. This memorandum was prepared to summarize the results of our evaluation of the accident history and to discuss the pedestrian / bicycle activity in the project vicinity.

Accident Analysis

Methodology

Traffic accidents are a function of various factors, including driver behavior (experience, carelessness), speed, weather conditions, time of day, visibility, and roadway conditions. A given roadway segment is categorized under a particular rate group based on the type of terrain (for example: rural, urban or suburban), representing an expected accident distribution. This expected accident rate is compared to the actual calculated accident rate of the given roadway segment. The following formula is used to calculate a roadway segment accident rate.

$$\text{Accident Rate} = \frac{\text{Number of Accidents} \times 1,000,000}{\text{ADT} \times \text{Roadway Length (miles)} \times 365 \text{ days} \times \text{Number of Years}}$$

Accident data for the Twin Oaks Valley Road segment between Deer Springs Road and Camino Mayor and the Buena Creek Road segment between S. Santa Fe Avenue and Twin Oaks Valley Road was collected from 2013 through 2017. This five year period is the most recent period for which a full calendar year of data is available. The data was obtained from the County of San Diego.

Analysis

The actual accident rate is calculated for both of the Twin Oaks Valley Road segment and the Buena Creek Road segment and compared with the expected accident rate for each segment. The expected accident rate is based on statewide averages that were derived from accident data collected from previous years, which is summarized in the Basic Average Accident Rate Table for Highways found in the “2014 Collision Data on California State Highways (Road Miles, Travel, Collisions, Collision Rates) report published by the California Department of Transportation, Division of Research, Innovation, and System Information.

Twin Oaks Valley Road between Camino Mayo and Deer Springs Road

Data from 2013 through 2017 was analyzed and accidents occurring along the Twin Oaks Valley Road segment were selected from the data set. A total of ten (10) accidents were found to have occurred during this time period. The persons involved in these accidents reported some injuries. There were no fatalities. Recent traffic counts indicate 3,000 ADT travel along this segment on a typical day. Using the formula above, the calculated actual accident rate is 0.68. The expected accident rate for this segment based on statewide average is 1.14. **Table A** shows a summary of the segment accident analysis.

Buena Creek Road between S. Santa Fe Avenue and Twin Oaks Valley Road

Data from 2013 through 2017 was analyzed and accidents occurring along the Buena Creek Road segment were selected from the data set. A total of ninety-seven (97) accidents were found to have occurred during this time period. The persons involved in these accidents reported some injuries. There was one (1) fatality. Recent traffic counts indicate 10,400 ADT travel along this segment on a typical day. Using the formula above, the calculated actual accident rate is 1.31. The expected accident rate for this segment based on statewide average is 1.32. **Table A** shows a summary of the segment accident analysis.

TABLE A
ACCIDENT RATE CALCULATION (2013–2017)

Segment Limits	Length (miles) ^a	Total Accidents ^b	Actual			Expected ^f		
			ADT ^c	Time ^d (days)	Accident Rate ^e	Rate Group ^g	Area	Total
Twin Oaks Valley Road Deer Springs Road to Camino Mayor	2.7	10	3,000	1825	0.68	H03	Rural (Rolling)	1.14
Buena Creek Road S. Santa Fe Avenue to Twin Oaks Valley Road	3.9	97	10,400	1825	1.31	H08	Suburban	1.32

Footnotes:

- a. Length of study segment.
- b. Total number of accidents that occurred from January 1, 2013 to December 31, 2017 from the County database.
- c. ADT – Average daily traffic (A).
- d. Analysis time period (T) = 5 years * (365 days / year).
- e. Accident rate calculated as $N * 1,000,000 / (A * T * L)$
- f. Information obtained from the Basic Average Accident Rate Table for Highways found in the “2014 Collision Data on California State Highways (road miles, travel, collisions, collision rates) report published by *California Department of Transportation, Division of Research, Innovation, and System Information*.
- g. Rate group selected based on area, speed limit, and terrain.

Conclusion

Based on the analysis, the calculated accident rates are less than the expected rates for the subject roadway segments based on statewide averages.

Pedestrian / Bicycle Activity

Field observations that were conducted as part of the EIR traffic study revealed very little pedestrian and bicycle activity in the Project vicinity, including along Deer Springs Road, Buena Creek Road, and Twin Oaks Valley Road. To supplement these observations AM and PM peak hour bicycle and pedestrian counts were conducted at the following three intersections along these three corridors:

- Deer Springs Road / Mesa Rock Road
- Deer Springs Road / Twin Oaks Valley Road
- Buena Creek Road / Monte Vista Drive

Table B shows the results and shows that there is very little pedestrian / bicycle activity at these locations, which makes sense as there are no destinations in the nearby area that pedestrians and bicycles would utilize on a regular basis. Based on these very low volumes, pedestrian and bicycle analyses are not warranted.

TABLE B
PEDESTRIAN / BICYCLE ACTIVITY – APRIL 2018

Intersection	Peak Hour	Number of Pedestrians	Number of Bicycles
1. Deer Springs Road / Mesa Rock Road	AM	0	0
	PM	0	1
2. Deer Springs Road / Twin Oaks Valley Road	AM	0	3
	PM	0	3
3. Buena Creek Road / Monte Vista Drive	AM	0	3
	PM	0	3

General Notes:

- Data collected Thursday, April 26, 2018.

cc: File