

September 28, 2012

Ms. Dina Tasini
Contract Planner
525 Henrietta Street
Martinez, CA 94553

Re: Peer Review of the Traffic Impact Analysis Prepared for the Townhomes at Laurel Knoll (Subdivision #9263)

Dear Ms. Tasini,

This letter was prepared to summarize my review of the traffic impact analysis prepared for the Laurel Knolls project (TIA) which was dated November 16, 2010.¹ Please note that my review also included the proposed plans for the Laurel Knolls Project (the Project).

By way of background, I am a licensed professional traffic engineer and I've had my professional engineering license for over 17 years. I have provided traffic analysis for hundreds of projects and have testified as an expert in the field of transportation and safety on many projects.

Summary – Based on a thorough review of the traffic impact study and extensive field observations and measurements we concur with the findings of the initial study. As currently proposed the project would not result in any traffic capacity or safety problems beyond those identified in the initial study and the supporting traffic impact analysis. There were some very minor technical problems identified with the traffic impact study (as described below) and some additional recommendations have been provided with respect to pavement markings in the area. However, there was nothing identified in the original report that would change any of the conclusions, which were incorporated as Mitigations and Conditions of Approval for the proposed project.

Peer Review of the Traffic Impact Analysis

In summary it is our conclusion that the TIA for the project was conducted according to standard traffic engineering practice as well as all applicable traffic study guidelines and standards. Typically a more detailed study would only be required for a project that generates more than

¹ Traffic Impact Analysis for the Townhomes at Laurel Knoll, KD Anderson & Associates, Inc., Loomis, CA 95650

100 peak hour trips. In this case the trip generation is accurate and no reductions have been made for potential walking trips to the adjacent shopping center and church. While a different traffic engineer might develop slightly different trip distribution assumptions, we have concluded that the ones used in the analysis are reasonable and it was verified that adjusting them would not change any of the conclusions.

The only notable error that needs to be raised has to do with the analysis of sight distance at the project entrance. We concur with the sight distances that were reported for the driveway and the conclusion that the project driveway has adequate sight distance. However, it should be noted that the traffic impact mistakenly lists the minimum stopping sight distance as 125 feet; the latest edition of the Highway Design Manual specifies a minimum sight distance of 150 feet for a roadway with a design speed of 25 mph.² Additionally, in the absence of formal speed surveys the design speed is typically set at 5 mph above the speed limit. If a 30 mph design speed is used the minimum corner sight distance is 200 feet. This is still well within the available sight distance at the driveway and no problems are anticipated. However, as mentioned in the traffic study, this assumes the adjacent landscaping is not allowed to interfere with sight distance.

We have reviewed the internal circulation and roadway layout and find no significant problems with it. We would not recommend that stop signs be required since it should be clear who has the right of way at the intersections in question. With a 15 mph speed limit and significant curves to slow motorists down there should be no safety problems if an occasional large truck needs to encroach into the opposite travel lane.

Field Review of Muir Station Road – Informal radar speed surveys (i.e., less than 100 measurements) and extensive sight distance measurements were conducted on Muir Station Road. The radar speed surveys indicated Muir Station Road has an average speed of 28 mph in the vicinity of the proposed project. The most limited sight distance in the area was identified at the exit for the adjacent shopping center. At this driveway the corner sight distance to the west is only about 200 feet. This location meets the minimum sight distance standards but the limited sight distance probably results in some motorist frustration with speeders in the area. However, it is important to note that traffic from the proposed project would be very unlikely to contribute to this issue.

Motorists exiting the proposed project would have only 350 feet to accelerate (on an uphill grade) before they reach the shopping center driveway and would be unlikely to exceed 30 mph in this area. The motorists who were observed speeding in the area (30 mph and above) were those who were clearly gaining speed for the hill from further back on Muir Station Road. It should also be noted that the majority of westbound motorists were observed to reduce their

² *Highway Design Manual*, Table 201.1, Caltrans, Sacramento, CA, May 7, 2012.

speed by at least 5 mph as the rounded the corner on the approach to the shopping center entrance and Center Street.

Suggested Changes to Pavement Markings on Muir Station Road – Although not required to address any impacts of the proposed project, our review indicates that with the addition of project traffic some changes to the pavement markings on Muir Station Road may be considered, although these are not necessary.

The attached Figure 1 presents the existing conditions and our suggested changes to the pavement markings on Muir Station Road. Please note that we have reviewed the potential queuing for the left turn pockets presented in Figure 1 and the minimum left turn pocket storage of 50 feet (as specified by Caltrans standards) is all that would be required for these two turn pockets. For example, the existing left turn pocket for the left turn from westbound Muir Station Road into the adjacent shopping center has 50 feet of storage and a 40 foot transition.

Section 405.2 of Caltrans' Highway Design Manual specifies that the storage length at an unsignalized intersection "*may be based on the average number of turning vehicles likely to arrive in a 2 minute period.*" Based on the maximum hourly volumes forecast to use the two turn pockets (as presented in Figure 1) the proposed storage for two cars (50 feet) is the most that will ever be needed. Again, it is important to note that the existing two-way left turn lane should continue to operate safely and no changes are required to accommodate project traffic. However, we would suggest the City consider making the changes to the pavement markings shown in Figure 1 if the proposed project is approved.

Please contact me if you have any questions about these comments.

Sincerely,



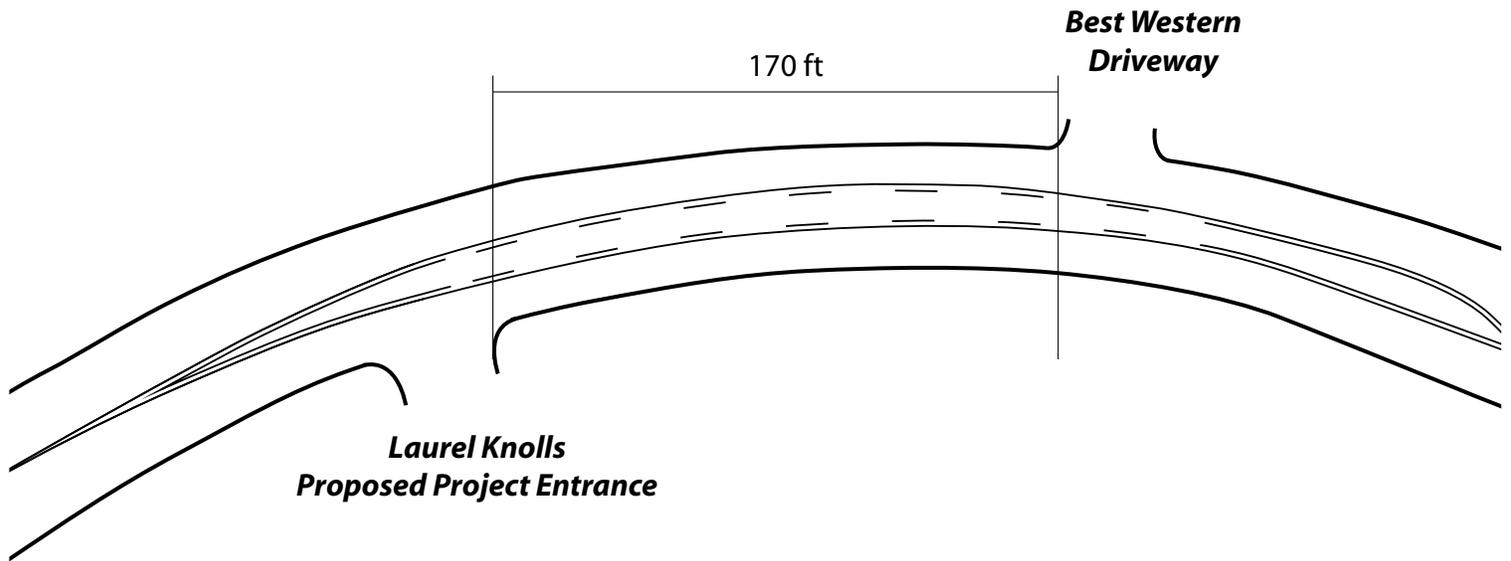
Stephen C. Abrams

President

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Existing Roadway Layout



Proposed Changes to Pavement Markings

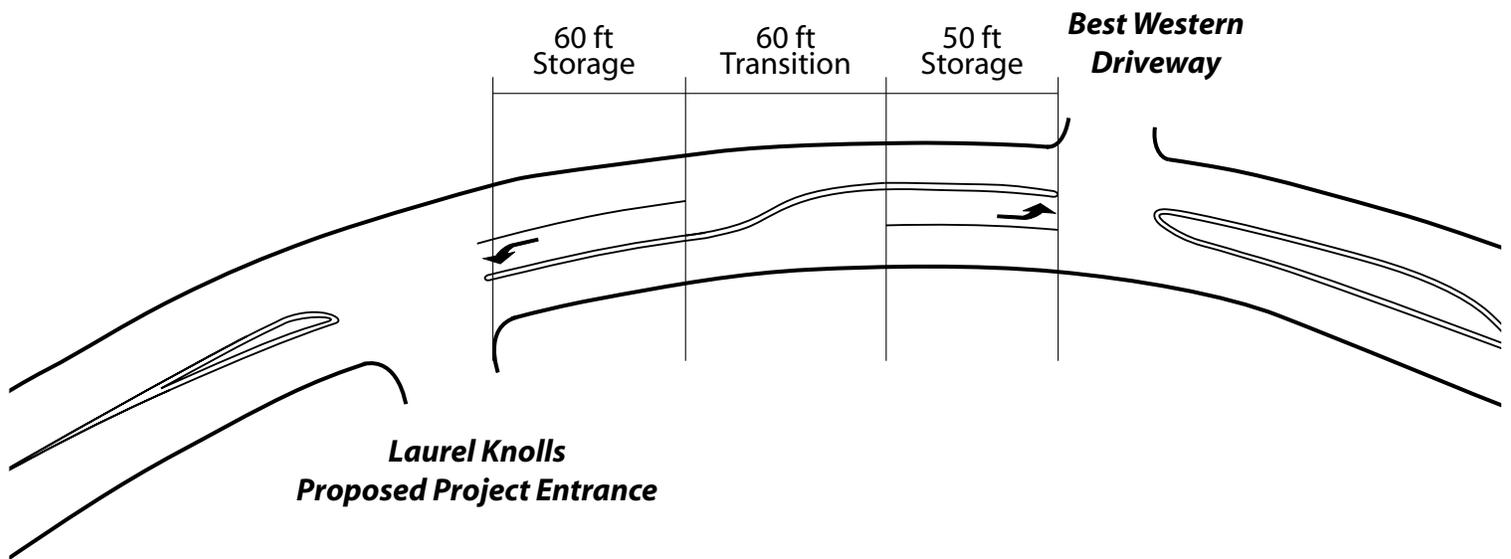


FIGURE 1 | PROPOSED CHANGES TO PAVEMENT MARKINGS

PEER REVIEW

Laurel Knolls TIA

City of Martinez