



COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

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IN REPLY PLEASE
REFER TO FILE: **LD-0**

TO: Each Supervisor

FROM: James A. Noyes
Director of Public Works

PICO CANYON ROAD OAK TREE NO. 419

This is in response to statements made by members of the community during the January 14 and 21, 2003, Board meetings. The Board asked Public Works to prepare a report addressing the issues surrounding the alignment of Pico Canyon Road with respect to Oak Tree No. 419. Attached is our report.

In summary, Pico Canyon Road is included in the County General Plan Transportation Element as a Major Highway and is expected to experience high volumes of high-speed traffic as the adjacent area develops. The improvement of Pico Canyon Road to County highway standards is necessary in order to provide an acceptable traffic circulation system for this future development.

We have reviewed five road alignment alternatives that do not require relocation of Oak Tree No. 419--one submitted by the developer, three submitted on behalf of the community, and one that Public Works developed. The latest community proposal was submitted on January 22, 2003.

It is our conclusion that the alternative alignments submitted by the developer and the community are unacceptable because they use nonstandard design features, such as below minimum centerline radii, broken-back curves, compound curves, and unconventional lane striping and left-turn lane geometrics, while placing a large oak tree in the median. Although our alternative alignment meets standards, we do not recommend it as a feasible alternative because of the significant impacts that would result from the major grading of the steep adjacent hillside.

DH:dh:jmw

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Attach.

cc: Chief Administrative Office
County Counsel

**REPORT ON
PICO CANYON ROAD - OAK TREE NO. 419**

Background

Pico Canyon Road is identified in the County General Plan Transportation Element as a Major Highway. The Transportation Element is the County's planning document for promoting orderly extension and upgrading of planned highways into unincorporated County territory to support the future growth provided for in the Land Use Element. It serves as a guide for right-of-way protection and roadway improvements within proposed subdivisions and other development projects. This process enables the County to place the financial obligation of building new highways on the developers and prevents the taxpayers from picking up the cost years later for widening two-lane roads after an area builds out and traffic intensifies.

Pico Canyon Road has been on the Highway Plan since 1940. In 1990, Pico Canyon Road was upgraded from a Secondary Highway to a Major Highway in anticipation of planning efforts going on in the Santa Clarita Valley. The Interdepartmental Engineering Committee (IEC), staffed by representatives of the Departments of Regional Planning and Public Works, is the organization charged with making technical recommendations to the Regional Planning Commission and the Board of Supervisors on implementation of the Highway Plan. An IEC alignment to establish horizontal and vertical control is approved for each highway segment in conjunction with development projects. The environmental impacts of each project are analyzed in the appropriate environmental document and approved concurrently with the Tentative Tract Map.

Overview

Tract No. 43896 along Pico Canyon Road, known as the Southern Oaks Development, was originally approved by the Board on December 15, 1988, and included a Zone Change, Conditional Use Permit, Oak Tree Permit, and a Final Environmental Impact Report.

The project was revised and approved by a Hearing Officer on July 20, 1999. It was again amended and approved by a Hearing Officer on May 2, 2000. In the course of these proceedings, the developer changed his project and alternate alignments for Pico Canyon Road were explored. As a result, a revised alignment was approved for Pico Canyon Road that saved an additional 14 oak trees.

Design Standards

Design speed is the maximum safe speed that can be maintained on a particular section of highway. There is a wide range of speeds at which the public operates their vehicles. A higher design speed ensures that a larger segment of the public can operate their vehicles in a safe and efficient manner. A lower design speed should not be selected for a roadway that the public is likely to drive at higher speeds due to its appearance as a Major Highway. Horizontal and vertical alignment studies for County highways require conformance with County design standards, Title 21 of the County Code (Subdivision Ordinance), as well as Chapter 200 of the Caltrans Highway Design Manual, and the American Association of State Highway and Transportation Officials design guidelines. These design standards include:

- 65 mph highway design speed
- maximum 6 percent centerline grades
- maximum 5 percent super-elevation cross slope
- 1500-foot minimum horizontal centerline radius
- 100-foot right of way
- 84-foot wide between curbs, including a 14-foot-wide raised median
- avoidance of compound or broken-back curves

Consideration of Design Immunity When Approving a Road Design

When someone is involved in a vehicular accident related to the design of a road, the injured party sometimes sues the public entity responsible for the road under the theory of dangerous condition. In essence, the injured party alleges that the public entity knew or should have known of the dangerous condition of the road but failed to take reasonable measures to alleviate the problem. If the purported dangerous condition is associated with the design of the road, the public entity generally can shield itself from liability by asserting design immunity as afforded under California Government Code Section 830.6.

In order to receive the benefit of the design immunity statute, the public entity generally must show two things. First, that the design was approved in advance as a discretionary act by either the legislative body of the public entity, by a public employee exercising authority to give such approval, or where the design is prepared in conformity with standards previously so approved. Second, the court must find that there was substantial evidence upon the basis of which a reasonable legislative body or reasonable public employee could have adopted the design or standards. Where courts have found no reasonable basis for the approval of the design, the public entity has not been allowed to use the design immunity statute.

Current Approved Alignment

The physical constraints of the site provided quite a challenge for the original alignment studies. An adequate flood control system, a riparian stream, and an oak tree habitat restoration area on the north side of the flood control channel needed to be provided.

Additional oak tree habitat restoration areas, an oak tree grove, and the residential home sites on the south side of Pico Canyon Road further limited the alignment alternatives. The approved alignment features a single 2100-foot centerline radius curve through the area of the oak tree.

In the end, the approved alignment was unable to save Oak Tree No. 419. The developer, John Laing Homes, intends to relocate the oak tree. The developer has obtained approved road construction plans, posted bonds, and entered into an agreement with the County to construct those specific street improvements along Pico Canyon Road and recorded the final tract maps. The developer has built and sold many of the homes in the development, including those adjacent to Pico Canyon Road.

3-Year Construction Delay (11/1999 to 11/2002)

Prior to constructing the road, the developer worked with the community and entered into an agreement with the Santa Clarita Organization for Planning the Environment to allow Oak Tree No. 419 to remain for a 3-year period while the developer revised his Tentative Tract Map to realign Pico Canyon Road, redesign the flood control channel, and provide a meandering riparian stream. The agreement provided that the developer would realign Pico Canyon Road and then build only the southerly portion of the road during the 3-year period. This would provide temporary access to the project and forestall the need to remove the tree until the developer constructed the northerly portion of the road. Consistent with the agreement, the developer built only the southerly portion of Pico Canyon Road and deferred building the northerly half of the road through the end of the agreement, November 1, 2002.

The 3-year agreement also provided time for other area developers, Newhall Land and Farming (Newhall Ranch project) and Lennar Homes (Stevenson Ranch Phase V project), to pursue the downsizing of Pico Canyon Road from a Major Highway to a local street, thereby eliminating the need for constructing the north half of the road.

During this 3-year period, Newhall Land and Farming and Lennar Homes discussed with Public Works the issue of downsizing the road. Public Works could not support downsizing the road because, in part, the Santa Clarita Valley Traffic Model indicated that eliminating Pico Canyon Road from the Highway Plan would result in significant negative traffic impacts to other highways and intersections in the area.

The improvement of Pico Canyon Road to County highway standards is necessary in order to provide an acceptable traffic circulation system for future development. Eliminating Pico Canyon Road from the Highway Plan would cause future traffic to have fewer traffic routes. This would increase traffic along other highways within Stevenson Ranch, such as Poe Parkway, McBean Parkway, and Valencia Boulevard.

Alternatives Suggested After November 1, 2002

Since November 1, 2002, four alternative alignments have been presented to Public Works, one from the developer and three from J. Brent Hoerner and Associates on behalf of the community. As discussed below, Public Works reviewed the four proposals and determined that none of them provide for an acceptable alignment of the road. We also note that all of the alternatives left Oak Tree No. 419 sitting in an 8-foot-deep hole with drainage problems that would expose the tree to root rot from excess moisture. Root rot is one of the common causes for oak trees dying.

Developer's Alternative Alignment

The alternate alignment proposed by the developer routed the westbound lanes north of the tree. This alignment maintained the oak tree in a variable width median that is approximately 65 feet wide at the oak tree. This proposal did not meet our standards because it relied on a 1200-foot centerline radius, a design speed of 50 mph, a compound curve, a broken-back curve, unconventional lane striping and left-turn lane geometrics, and the placement of the tree in the median of the highway.

A 1200-foot centerline radius is less than the minimum 1500-foot radius required for a Major Highway in Title 21 of the County Code. A 50 mph design speed is less than the 65 mph County design speed standard required for a Major Highway. Broken-back and compound curves should be avoided because drivers do not expect succeeding curves to be in the same direction, which causes a conflict in over or under steering to stay in their traffic lane. Drivers have a natural tendency to expect succeeding curves to be in opposite directions (reverse curve). Turning movement conflicts and driver confusion also contribute to reduced traffic safety. A large oak tree with a 70-foot canopy in the middle of a raised median on a high volume, high-speed highway is a visual obstacle that will impact traffic safety.

Community's Alternative Alignments

The first proposal submitted on behalf of the community also routed the westbound lanes north of the tree and maintained the oak tree in a variable width median. Although this alignment provided the minimum 1500-foot centerline radius, it relied on a broken-back curve. This proposal also included unconventional left-turn lane movements, striping, and geometrics that would create conflicts and driver confusion. Because the proposed roadway infringed significantly on the oak tree, this alternative includes a roadway bridge over the root system at an estimated cost of over \$2 million.

The second community proposal put the entire roadway on the south side of the tree and relied on reducing the right-of-way width from 100 to 80 feet and downgrading Pico Canyon Road to a Secondary Highway. Although it provided a 1500-foot centerline radius, it required acquisition of property that has already been sold and occupied by new homeowners, as well as property no longer controlled by the developer. It also required the construction of a bridge structure spanning the protected zone of the oak tree as well as a 17-foot-high retaining wall. It also eliminated a portion of the equestrian trail on the south side of the road and routed it to the north side and back across Pico Canyon Road in crosswalks at unsignalized intersections. This in and of itself would create a significant traffic safety issue. It is estimated that the second proposal would cost the developer an additional \$3 million.

The developer declined to consider these first two community alternatives due, in part, to the additional cost.

The third community proposal was presented to Public Works on January 22, 2003, and routed the westbound lanes north of the oak tree. The alignment of the westbound lanes was composed of a complex arrangement of curves and Euler spirals that are more widely known for their use in railroad track design. Euler spirals are useful in providing natural, easy to follow paths for drivers and minimizes encroachment into adjoining traffic lanes through the curve. The center curve had a radius of 10,000 feet which, for all practical purposes, serves as a tangent. In addition, the Euler spirals on each end included a curve with a 950-foot radius. This arrangement provides only a 49 mph design speed through these sections of the highway. It also provided unconventional left-turn movements, striping, and geometrics. In addition, the transition lanes for left-turn movements are only 8 feet wide, which is unacceptable. The alternative does not account for the flood control access road and the riparian stream on the north side of the road, and the equestrian trail on the south side is reduced in width from 12 to 5 feet.

This proposal eliminated the proposed bridge but still encroached within the drip-line of the oak tree with compacted fill and roadway pavement. The report accompanying the proposal recommends that hand excavation be done within the protected zone to protect the root system. It is not practical to construct the road without the use of mechanical equipment under the drip-line of the oak tree.

Public Works Alternative Alignment

Public Works has also considered its own alternative alignment for Pico Canyon Road that would not require the removal of Oak Tree No. 419. Unfortunately, as discussed below, the alternative was determined to be unfeasible.

In order to provide an alignment that would meet County highway design standards, the Public Work's alternative alignment required major grading of the adjacent steep hillside on the north side of Pico Canyon Road. Such grading would have caused significant environmental impacts. These impacts were not addressed in the Conditional Use Permit, Oak Tree Permit, Final Environmental Impact Report, or the Tentative Tract Map conditions. To consider such an alignment, the developer would have to be willing to submit a revised development application, and the County would need to prepare a revised Final Environmental Impact Report to address these additional impacts. In addition, the developer would be forced to spend an additional several million dollars for this changed project.

Specific Questions Raised at the January 14, 2003, Board Meeting

- Q1 If you had a radius of 1250 feet and posted the speed limit at 35 mph, would that bring it into conformity with safety standards?
- A1 Studies have shown that arbitrarily setting lower speed limits on certain roadways may result in wholesale speed violations, lack of public support, and would not necessarily bring about the desired changes in driver behavior.

- Q2 How slow would you have to post the speed limit for it to be consistent?
- A2 The American Association of State Highway and Transportation Officials guidelines indicate a lower speed should not be selected for a roadway that the public is likely to drive at higher speeds due to its appearance as a Major Highway.
- Q3 What point does the radius and the design speed become substandard?
- A3 Centerline radii less than 1500 feet and design speeds less than 65 mph are considered substandard for a Major Highway.
- Q4 What speed limit did you use when you declared the 1250-foot radius substandard?
- A4 We used 65 mph as our standard for determining the 1250-foot radius was substandard.
- Q5 Can you allow the speed limit to vary so you can allow a smaller radius?
- A5 Yes. However, the American Association of State Highway and Transportation Officials guidelines recommend against selecting a lower speed limit for a roadway that the public is likely to drive at higher speeds due to its appearance as a Major Highway.
- Q6 Does the alternative design that meets standards require taking down a cliff or condemning property?
- A6 Yes. The alternative Public Works alignment that meets design standards would require major grading of the adjacent steep hillside.

Conclusion

Pico Canyon Road is included in the County General Plan Transportation Element as a Major Highway and is expected to experience high volumes of high-speed traffic as the area develops. The improvement of Pico Canyon Road to County highway standards is necessary in order to provide an acceptable traffic circulation system for this future development. The alternatives proposed by the developer and some members of the community include the use of nonstandard design features, such as below minimum centerline radii, broken-back curves, compound curves, and unconventional lane striping and left-turn lane geometrics, while placing the large oak tree in the median.

DH:dh:jmw