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Community-Supported Elements for a New Niles Canyon Safety Project

Our coalition of twelve organizations has reviewed and assessed the recent reports by the Federal Highway Administration regarding road safety on Niles Canyon Road. These reports are the May 2012 *Road Safety Assessment SR 84 – Niles Canyon Corridor* and the August 2012 *Final Quantitative Road Safety Analysis Study Report SR 84 – Niles Canyon Road Corridor*.

Our organizations are interested in working with Caltrans to develop reasonable safety solutions for Niles Canyon Road that do not involve needless destruction of the environmental and scenic values of Alameda Creek or Niles Canyon. We would like to identify those project elements that will have the support of the communities of Niles and Sunol, and local conservation groups, as well as concepts which deserve further evaluation and analysis.

Caltrans has promised the community a “clean slate” on the Niles Canyon highway safety projects, with incorporation of the FHA recommendations and meetings with the public and stakeholders before proposing new revised highway safety projects for Niles Canyon. The FHA reports offer Caltrans the opportunity to overcome and avoid the past problems of lack of transparency of data, inadequate environmental review, exclusion of the public from the approval process and failure to incorporate community input.

Our organizations are proposing project elements that we believe are appropriate safety solutions for Niles Canyon road, are flagging unneeded project elements that have unacceptable environmental, historic, economic or aesthetic impacts, and are suggesting further evaluation or alternative solutions for some of the problem areas and safety concepts identified in the FHA report.

Background

A FHA team of safety experts, independent of Caltrans, evaluated accident data in Niles Canyon since 2007, when a center-line rumble strip was installed that dramatically reduced collisions. The FHA also looked at traffic patterns and motorist behaviors to determine whether and where safety improvements are needed in the canyon. The team identified six focal problem areas and developed possible safety-solution concepts.

It is important to note that the FHA reports concluded that Caltrans' proposed uniform highway widening approach for Niles Canyon is not warranted by the state's safety data. The FHA also concluded that the 2007 installation of the center-line rumble strip dramatically reduced collisions in the canyon. The FHA proposed several dozen short-term measures within the existing roadway that can be quickly and inexpensively

implemented to reduce vehicle collisions, and suggested site-specific intermediate-term projects for six priority locations in Niles Canyon to reduce accidents.

The locations the FHA recommended Caltrans focus on are: the narrow Rosewarnes Underpass near the bottom of the canyon, Palomares Road/Farwell Underpass, Alameda Creek Bridge, a low-speed curve near "The Spot," Alameda Creek BOH, and the Pleasanton-Sunol Road/SR 84 Intersection. In developing potential safety treatments for these locations, the FHA attempted to minimize environmental, visual and cultural impacts. The FHA proposed less extensive treatments for other areas of the canyon, such as improving gravel shoulders to pavement, adding additional turnouts, extending some existing roadway shoulders and selected vegetation removal.

The FHA also proposed a monitoring program to see how the immediate measures and site-specific projects improve safety and reduce collisions, before any consideration is given to evaluating whether there is a rationale for additional measures.

Short-term Measures

The Value Analysis FHA report offers 15 potential short-term improvement measures that can be developed relatively quickly to improve safety with little environmental impact. They include improved positive guidance, removing/protecting roadside hazards, better identification of roadside hazards, minor intersection improvements, and upgrading roadway appurtenances.

Our organizations support the immediate implementation of a combination of any of the FHA's proposed short-term measures in Niles Canyon, without the need for environmental review, with the exceptions of proposed measures R-5 and R-15.

Measure R-5 is a suggestion to install steel mesh netting on slopes in rockfall areas. Such a measure would add unneeded visual blight to this scenic corridor and would be incompatible with the status of the Niles Canyon Road corridor as a scenic highway. Problematic rockfall areas in the canyon can be identified and addressed by other methods, such as with site-specific cement or rock retaining walls to prevent rockfall from reaching the roadway. Such an approach would require environmental review under CEQA.

Measure R-15 is a suggestion to relocate select fixed objects immediately adjacent to the roadway. Our organizations support relocation of any human-made objects adjacent to the roadway (such as utility poles) that are identified as obscuring sight lines. However, trees are not "fixed objects," they are an integral part of the ecosystem. Trees on the Alameda Creek side of the highway are needed for stream bank stabilization, shade, food production, cover and habitat for fish and other aquatic life. We strongly oppose any further removal of native trees or heritage trees (trees with historic or cultural significance) from Niles Canyon, unless a case can be made for a demonstrable safety benefit and minimal environmental impact from removal of individual trees, on a case by case basis. Removal of any more native trees would have significant environmental impacts that would require environmental review under CEQA.

Caltrans stated, at the December 10, 2012 public meeting, that it will move forward quickly in early 2013 with 5 of the short-term measures that it considers routine

maintenance, that do not require environmental review or permitting. Four of the measures are non-controversial. One of the measures is “trimming” trees and vegetation within 8 feet of the white line road edges. We request that before Caltrans takes any action, the agency: define “trimming”; identify whether any trees will be cut down or extensively limbed; identify any heritage or larger diameter trees that will be trimmed; and provide mapping that shows where trees and vegetation will be removed and to what extent.

Medium-term Counter Measures

The FHA suggests 12 medium-term counter measures to improve safety at six priority locations; Rosewarnes Underpass, Palomares Road/Farwell Underpass, Alameda Creek Bridge, the low-speed curve near “The Spot,” Alameda Creek BOH, and the Pleasanton-Sunol Road/SR 84 Intersection.

Rosewarnes Underpass

Measure R-4 would relocate the west abutment at the Rosewarnes Underpass. The FHA has identified technical challenges that may make this option technically and economically infeasible.

Our organizations want more information. We do not at this point support this option due to potential impacts to water quality and riparian habitat to accommodate a proposed retaining wall between the existing roadway and Alameda Creek. We also have concerns about any potential impacts to the historic railroad bridge.

Measure R-9 would bifurcate the roadway at Rosewarnes Underpass with a new viaduct constructed to the south. This is an element of Caltrans’ original phase one highway widening project in lower Niles Canyon. The FHA notes that this option would degrade rather than improve highway geometry and not achieve distance and design speed at Rosewarnes Underpass, would increase roadside related collisions, and impact Alameda Creek.

Our organizations oppose this option due to the proposal to place fill and extend retaining walls into Alameda Creek, with unacceptable impacts on water quality and riparian habitat, with minimal or counterproductive safety benefits.

Measure RO-1 would realign Niles Canyon Road and construct a tunnel under the railroad tracks into the upland slope at the Rosewarnes Underpass, essentially moving the roadway further away from Alameda Creek into the upslope hillside to the west of the existing roadway. The FHA notes that this option would significantly improve the roadway alignment, increase sight distance, and reduce potential for collisions with the abutment at this dangerous location, without impacts to Alameda Creek or modifications to the existing Rosewarnes Underpass. The costs of a tunnel may be high and require significant earthmoving and upslope retaining walls, and there would be impacts to the hillside as well as removal of some smaller live oak trees.

Our organizations strongly support this concept and would like to see it analyzed as the preferred alternative for this location, with a further

evaluation of potential impacts on the environment and the historic railroad. We do have concerns that cutting into the toe of the slope could exacerbate existing slope instability; this issue should be fully evaluated.

Any safety measure that could result in impacts to the historic railroad infrastructure or require maintenance to avoid impacts to the historic railroad should require a service agreement between Caltrans and the Pacific Locomotive Association.

Palomares Road

Measure IO-2 would realign the lower portion of Palomares Road through the current church driveway so that it would intersect Niles Canyon Road further to the west. This option would require a willing seller or right-of-way take from the church parcel and require construction of a bridge to cross Stonybrook Creek. The current church road is very narrow, bordered by an unstable slope, and is extremely close to Stonybrook Creek. Converting this driveway to Palomares Road would require removing several large mature oak trees, cutting into the hillside and constructing large retaining walls. The impacts to lower Stonybrook Creek would be potentially significant. The FHA calculated the potential safety benefit as only 0.05 collisions/year, or reducing one collision every 20 years.

Measure IO-5 would relocate the railroad abutment at Farwell Underpass to the north to improve sight distance at the lower end of Palomares Road. This measure would require that an extension be added to the railroad bridge.

Our organizations propose a modified hybrid of measures IO-2 and IO-5; realign the lower end of Palomares Road so that it intersects with Niles Canyon Road further to the east of the current intersection, and relocate the railroad abutment at Farwell Underpass considerably to the north to allow an extension of the railroad bridge. The new lower end of Palomares Road could pass under the new railroad overpass and have a straight alignment, away from Stonybrook Creek, where it meets Niles Canyon Road. The existing hillside to the north and east of the current intersection at Niles Canyon would need to be significantly excavated. Any potential for contributing to slope instability should be fully evaluated. Removal of portions of this hillside would allow the realignment of lower Palomares Road, dramatically improving the intersection geometry and sight distance. It would also allow room for a pocket turn lane for eastbound traffic from Niles Canyon Road onto Palomares Road and a standard shoulder along the westbound lane. This option would require significant earth moving and removal of numerous small live oaks, but no fill or impacts to Alameda Creek or Stonybrook Creek. Any measure at this location should include the removal of the undersized box culvert under Niles Canyon Road and replacement with a free-span bridge, as discussed further below.

We also request that Caltrans evaluate the effectiveness of adding a traffic light at the Palomares Road intersection with Niles Canyon Road, regardless of the final location of the intersection.

Alameda Creek Bridge

Measure ACB-2 would replace the Alameda Creek Bridge and upgrade the approach curves. This measure would increase the design speed and potentially require impacts to Alameda Creek and the riparian area.

Our organizations request more information about the alignment of the bridge approaches. We do not, at this point, support increasing the design speed of the bridge; instead approach traffic should be slowed using lights, rumble strips and feedback signs. We suggest the western approach can be realigned by moving the straightaway portion of Niles Canyon Road that lies to the east of our proposed new Palomares Road intersection to the north, to soften the curve approach to the bridge. This new alignment would have room for standard shoulders, impact few trees and stay away from Alameda Creek. If it is determined that a bridge replacement is needed, the new bridge design should maintain the historic character of the bridge.

Low-speed Curve

Measure C-2 would increase the superelevation of the low-speed curve within the existing roadway, by adding fill to the eastbound lane. The FHA calculated the potential safety benefit as only 0.07 collisions/year, or reducing one collision every 14 years.

Measure C-3 would widen the roadway by at least a foot along 280 feet of this curve and widen the shoulders to 8 feet. This would require filling a roadside swale and adding retaining walls along the upslope eastbound lane.

Our organizations do not support increasing the superelevation or widening the roadway or shoulders, which will lead to increased vehicle speeds. Instead, traffic should be slowed at this curve using lights, rumble strips and feedback signs. The posted approach speed of 45 mph should be changed to 30 mph on both sides of the curve.

Alameda Creek BOH

Measure ALCRBO-1 would remove the curb and steel, non-safety barriers from the sides of the Alameda Creek BOH, and replace them with concrete tubular “see-through” barriers that are rated for crashes by heavy vehicles.

Our organizations support this measure, as long as the design of the new barriers maintains the historic character of the bridge and roadway.

Pleasanton-Sunol Road/SR 84 Intersection

Measure IO-1 would replace the existing four-way stop control intersection at SR 84 and Pleasanton-Sunol Road with a roundabout to reduce commute hour queue length on the eastbound approach to the intersection, thereby reducing potential for rear-end collisions at the back of the queue. The roundabout may also manage speeds and reduce commute traffic cutting through downtown Sunol. It may require adding a second, circulating lane or bypass lane at the roundabout to effectively move south to west and

east to north traffic. There is a potential loss of heritage oak trees near the intersection and impacts to the existing market and entry gates for the Water Temple. Pedestrian crossing may also be an issue.

Measure IO-15 would add a traffic signal to the intersection of SR 84 and Pleasanton-Sunol Road with split phasing and dedicated turn arrows for eastbound and westbound traffic. One alternative would widen about 400 feet the eastbound approach to provide a left turn pocket. The FHA states this measure would increase collisions and increase overall traffic delay at the intersection.

We need more information from Caltrans on the effectiveness and the impacts of these potential solutions.

We propose that Caltrans also analyze leaving the existing conditions in this area, but adding a 3-way stop sign at Main Street to allow local traffic to exit.

We propose that Caltrans also investigate temporal closure of eastbound Highway 84 exit into Sunol, during commute hours, to prevent commute traffic from cutting through the town of Sunol.

Facilitate Corridor Enforcement

Measures SPMA-4/SW-3 would provide widened shoulder locations at strategic spacing throughout the canyon to accommodate speed enforcement and pullovers. The FHA has identified two eastbound and three westbound locations where shoulders could be widened and/or paved without removal of trees or additional grading.

Our organizations support paving some of the existing gravel pullouts and lengthening some existing turnouts, if it does not involve creek fill or tree cutting, on a case-by case basis. Any paving should use permeable pavement, to reduce runoff. We propose a working group with Caltrans, CHP, County Sheriffs, and our organizations, to identify potential enforcement locations, evaluate turnout improvement options, assess potential impacts, and prioritize locations.

Long-term Measures

The FHA report discusses potential long-term measures that need further study and safety investigations, predicated on presumed future increase in traffic volumes through the canyon. The FHA notes that the short-term and medium-term measures suggested in their reports should be implemented first, and the canyon corridor monitored before any long-term measures are considered.

Caltrans should implement a community supported safety project in Niles Canyon that utilizes appropriate short-term and medium-term measures and increased enforcement identified in the FHA reports and by stakeholders. There should be credible monitoring of safety conditions along Niles Canyon Road with these measures in place for a minimum of ten years before any discussions are initiated about the potential need for long-term solutions. The short-term and medium-term measures and increased enforcement may dramatically improve safety in Niles Canyon,

eliminating the need for any long-term measures. Community efforts to decertify state route 84 through Niles Canyon may have an impact on projected future traffic volumes. Should Caltrans elect to ignore the FHA and community recommendations and pursue a highway widening project or projects in Niles Canyon before these conditions, our organizations will put all of our resources into stopping such a project.

Additional Project Elements

Bicycle-Pedestrian Safety

A community goal is to provide a bicycle and pedestrian pathway through Niles Canyon that is separate from the roadway. Alameda County Supervisor Richard Valle has initiated a multi-agency stakeholder process to investigate and plan for a separate pedestrian/bicycle trail through Niles Canyon away from the roadway. We support any Niles Canyon safety elements that improve bicycle safety for bicycle traffic along Niles Canyon Roadway within the existing roadway and shoulders, and that do not require tree cutting or creek fill.

Fish Passage

Any Niles Canyon safety project should include providing for migratory fish passage past the Caltrans-owned culvert under Highway 84 at Palomares Road. As part of phase one of the Niles Canyon highway widening project, Caltrans had proposed replacing this undersized box culvert, which is a barrier to fish migration, with a free-span bridge for fish passage into Stonybrook Creek. Our organizations support the replacement of this culvert with a free-span bridge. This project was unfortunately packaged with an unnecessary highway widening, creek fill and tree cutting project. Such fish passage was first requested of Caltrans in 2000 and is currently required by state law, and will soon be required under federal law.

Traffic Calming

Caltrans has identified potential traffic calming measures (slowing vehicle speeds down in dangerous areas) that may mitigate safety issues within the Niles Canyon Corridor, such as the use of flashing and traffic lights, rumble strips, and radar feedback signs. These safety measures may be effective in alerting drivers to road hazards or provide a means to recover, however, the Road Safety Assessment reiterated that speeding, improper turns (which may include drivers who failed to properly negotiate a turn) and impaired driving were significant factors contributing to collisions within the Niles Canyon Corridor.

An important question to ask is whether it is Caltrans' intent to enable motorists to drive safely through the corridor at *currently posted speed limits* or whether the intent is to make the road safer to travel at higher speeds. All of the proposed countermeasures suggest the latter.

MassSAFE prepared a report in August 2004 for the Massachusetts Governor's Highway Safety Bureau: [Report on Passive Speed Control Devices. Task 20: Speed and Traffic Operations Evaluation.](#) MassSAFE reports:

“Zegger et al. studied the safety effect of lane and shoulder widths merging data for about 17,000 crashes in Kentucky. They focused on run-off-road and opposite-direction crashes as being associated with narrow lanes and shoulders. *Although they found that with lane widening the rate of ran-off-road and opposite-direction crashes decreased, other types of crashes did not, perhaps due to increased speeds.*” [emphasis added]

Robert B. Noland (2002) in [Traffic Fatalities and Injuries: The Effect of Changes in Infrastructure and Other Trends](#), conducted an analysis of how “various road infrastructure improvements affect traffic-related fatalities and injuries while controlling for other factors known to affect overall safety,” and found that the results of his review

“...strongly refute the hypothesis that infrastructure improvements have been effective at reducing total fatalities and injuries. While controlling for other effects it is found that demographic changes in age cohorts, increased seat-belt use, reduced alcohol consumption and increases in medical technology have accounted for a large share of overall reductions in fatalities.”

“Conventional traffic engineering would not question the assumption that “safer” and newer roads reduce fatalities. However, this type of approach tends to ignore behavioral reactions to safety improvements that may offset fatality reduction goals. *For example, if a two lane road is expanded to four lanes this could potentially reduce the risk of head-on collisions, but may also result in many drivers travelling at higher speeds, potentially leading to no gains in safety.*” [emphasis added]

We understand the author did not evaluate increased shoulder width in his review and that Caltrans is not proposing to increase the number of lanes, however, the above quote reiterates our concerns that increasing the width of the road (by increasing shoulder width) could have the unintentional impact of increasing the speed at which drivers travel due to their perception that the roadway has been made safer, and in the end, may exacerbate reckless behavior.

Noland notes:

“The underlying behavioral mechanism that could explain the increase in fatalities associated with infrastructure improvements was not examined. However, it seems likely that it is due to possibly two effects. Once an increase in speed levels is enabled, for example, by lane widening or increased capacity, which could increase traffic-related fatalities. The other is that drivers may not recognize risky situations as readily due to a decrease in the difficulty of the driving task, as hypothesized by Mahalel & Sztemfeld (1986).”

One observation by Noland aptly summarizes our concerns regarding the projects proposed by Caltrans in the Niles Canyon scenic highway corridor:

“Highway project decision making is critically linked to current assumptions about the beneficial aspects of “improved” design standards. Many projects are justified based upon their crash reduction benefits, for

example, as stated in environmental impact statements. This implies that some level of environmental damage is acceptable when safety benefits can be achieved. Obviously, if safety benefits cannot be achieved while allowing environmental degradation, this challenges a critical justification for many projects.”

We urge Caltrans to utilize and assess the efficacy of passive speed control measures prior to implementation of medium and long-term countermeasures. Passive control measures alter the driver's own perception of road safety, for example, the speed at which they negotiate a curve, inducing the driver to reduce the speed at which they are traveling. Such measures involve the painting of optical bars, transverse bars, chevrons, or comb markings on the roadway and have little impact on the natural environment. The markings are applied either at the edges of the roadway or directly within the traffic lanes. Road markings can also be used to alter the appearance of entrances to a roadway, so that the lane appears narrower. In some studies, this technique has led to reduced speeds and more alert driving.

The efficacy of passive speed control measures have been documented in other parts of the U.S., Britain, Europe, New Zealand and Japan. In a before and after study in Wisconsin, painting chevrons on the roadway resulted in a 14 mph reduction of the 85th percentile speed (MassSAFE, 2004).

Caltrans has only made the briefest mention of the use of passive control measures [short-term countermeasure 15], and the "Final Quantitative Road Safety Analysis Study Report" [pages 40 and 41] states the use of optical bars have been effective at reducing road speeds, but claims the use is against Caltrans policy. The goal of a safety project should be to enable motorists to drive safely at currently posted speed limits, rather than at higher than posted speeds. Passive speed control devices have been effective at achieving safer driving speeds in other parts of the country. We urge Caltrans to rethink their current policy. These measures are relatively inexpensive, effective, and have little to no impact on the natural environment.

Monitoring

Any Niles Canyon safety project by Caltrans should include a credible peer-reviewed monitoring component, that evaluates traffic volumes, traffic patterns, motorist behavior, responses to safety improvements, crashes and fatalities. Caltrans proposed, at the December 10, 2012 public meeting, that 3 years of monitoring would be adequate. We strongly disagree and propose that a minimum of 5-10 years of monitoring is needed to determine the effectiveness of safety solutions that are implemented.

Mitigation

Our organizations fully expect Caltrans to live up to its legal obligations and complete the riparian mitigation already required by the Regional Water Board and Department of Fish and Game for the cutting of native trees during phase one of the abandoned highway widening project. Caltrans stated, at the December 10, 2012 public meeting, that it is working to comply with the RWQCB mitigations for the tree cutting during the abandoned phase one project. We also expect Caltrans will agree to and implement full and appropriate mitigation for any new environmental impacts for any new Niles Canyon

safety project, and will not try to avoid or reduce mitigations for impacts to Alameda Creek, native trees or endangered species.

In conclusion, our organizations and the local community look forward to suggesting, commenting on and evaluating any specific fixes at genuine safety problem areas in Niles Canyon to make sure they are warranted, effective and done with minimal environmental impact.

If you have any questions or want to meet to discuss any of these issues, please contact Jeff Miller of the Alameda Creek Alliance at (510) 499-9185.

Sincerely,

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