Statement of Daniel T. Smith Jr., P.E. to the El Dorado County Board of Supervisors in Regards to Public Hearing for Design Review DR00-0011, November 4, 2008

Members of the Board:

My name is Dan Smith. I am a registered Civil and Traffic Engineer in California. I am retained by the friends of Shingle Springs. I've submitted a detailed formal statement on the project FEIR for the record. I will highlight here just the critical issues.

The project involves a driveway to Mother Lode Drive that is less than 50 feet downstream of the intersection with South Shingle and the eastbound freeway off-ramp. Depending on how you interpret the relationship of the street nomenclature in the new General Plan to that in the County Standards, the driveway would need to be located at least 150 feet and more likely 250 feet from the intersection to conform. Caltrans standards in the *Highway Design Manual* require that even a right-in/right-out driveway be located at least 200 feet from the intersection. Thus, the project involves considerable compromise to the standards of both agencies. These standards that would be compromised are based on scientific research of traffic operations and safety considerations and are representative of accepted operations and safety based standards in the industry.

County staff have discretion to waive the County standard. But that discretion must be exercised reasonably. If the project were a low traffic intensity use, a waiver for the driveway might be reasonable because the traffic conflicts that compromise safety would be infrequent. However, this project, a gas station and mini-mart is as high a traffic intensity use as could be imagined for the site, a circumstance that creates a high potential for traffic safety conflicts. The proposed use is the traffic equivalent of building a 15 to 25–story office building on the footprint of the mini-mart plus fueling canopy, depending on whether daily or peak hour traffic is considered. Nobody reasonable would suggest approving a 15 to 25 story office tower on this site or waiving a driveway standard to do so. But, from a traffic perspective, this is exactly what the County is being asked to do.

The FEIR says waiving County driveway standards on Mother Lode is necessary because enforcing the driveway standards would completely deny access to the site. This is nonsense. The project also proposes a driveway to South Shingle.

Waiving standards for that driveway is less consequential and more reasonable because that driveway is upstream of the critical intersection. If development on the site can't survive without access from both streets, then the wrong kind of development is being proposed for the size and constraints of the site. A reasonable use for the site might be, for example, a one or two story office building accessed solely via a driveway from South Shingle.

Now consider Caltrans standards (a copy of the relevant Highway Design Manual section is attached). They require a minimum of 200 feet from the intersection to the Mother Lode Driveway. The County is doing a Caltrans Project Study Report for improvement of the interchange in the next few months. That PSR will have to identify this project's Mother Lode driveway, if approved here, as a Design Exception. The FEIR says, if Caltrans doesn't approve the Design Exception, *Caltrans* will have to pay to reacquire the access rights. That is wrong. The interchange improvement is a County-sponsored project. It is the County that will have to pay. And Caltrans is unlikely to grant design exception since it realizes the County has knowingly created need for that exception just months before filing the PSR. So the County would be shooting itself in the foot by granting an exception to its design standards that it is not obligated to grant and that it reasonably should not grant.

Finally, consider the mitigation the FEIR proposes to overcome the operational and safety defects the Mother Lode driveway would cause. It proposes construction of a deceleration/right turning lane between the intersection and the driveway. But that lane itself won't conform to Highway Design Manual standards. The manual indicates that transitions to turning lanes should be accomplished in a distance of 120 feet. But there is less than 50 feet from where traffic can begin transitioning to where the driveway begins. Ergo, vehicles won't have fully transitioned into the right turn lane before beginning their turn into the driveway. Hence, the proposed mitigation won't solve the operational/safety problem it purports to mitigate. Because there will be a large speed differential between vehicles coming off the freeway off ramp and going straight on Mother Lode when the light at the intersection is green and those trying to turn into the gas station/mini-mart, the project will cause an increased potential for high-speed collisions that cause significant injuries and property damage, not just minor rear-enders.

In sum, we trust you will realize this is the wrong project for this site and will deny the application and reject certification of the FEIR.

found from the panels on the right of the chart. The weaving chart should not be extrapolated.

Pages 234-238 of the 1965 Highway Capacity Manual (HCM) provide a method for determining the adequacy of weaving sections near single lane ramps. It is often referred to as the LOS D method. This method is also documented in Traffic Bulletin 4 which is available from the District Division of Traffic Operations. The LOS D method can be used to project volumes along a weaving section. These volumes can be compared to the capacities along the same weaving section.

Volumes in passenger car equivalents per hour (PCEPH) should be adjusted for freeway grade and truck volumes. Table 504.7C and Figures 504.7D and E are reprinted from the 1965 HCM and provide information regarding vehicle distribution by lane.

The results obtained from Figure 504.7A (the Leisch Method) for single-lane ramps with an auxiliary lane and weaving rates exceeding 2500 PCEPH should be checked using the LOS D method.

Weaving capacity analyses other than those described above should not be used on California highways. Other methods, such as the one contained in the 1994 HCM, may not always produce accurate results.

Weaving sections in urban areas should be designed for LOS C or D. Weaving sections in rural areas should be designed for LOS B or C. Design rates for lane balanced weaving sections where at least one ramp or connector will be two lanes should not result in a LOS lower than the middle of LOS D using Figure 504.7A. In determining acceptable hourly operating volumes, peak hour factors should be used.

On main freeway lanes the weaving length measured as shown in Figure 504.2A should not be less than 1,600 feet except where excessive cost or severe environmental constraints would require consideration of a shorter length. One thousand feet of length should be added for each additional lane to be crossed by weaving vehicles. The volumes used shall be volumes unconstrained by metering regardless of whether metering will be used. It should be noted that a weaving analysis must be considered over an entire freeway segment as weaving can be affected by other nearby ramps.

The District Traffic Operations Branch should be consulted for difficult weaving analysis problems.

504.8 Access Control

Access rights shall be acquired along interchange ramps to their junction with the nearest public road. At such junctions, for new construction, access control should extend 100 feet beyond the end of the curb return or ramp radius in urban areas and 300 feet in rural areas, or as far as necessary to ensure that entry onto the facility does not impair operational characteristics. **Access control shall extend at least 50 feet beyond the end of the curb return, ramp radius, or taper.**

Typical examples of access control at interchanges are shown in Figure 504.8. These illustrations do not presume to cover all situations or to indicate the most desirable designs for all cases. When there is state-owned access control on both sides of a local road, a maintenance agreement may be needed.

For new construction or major reconstruction, access rights should be acquired on the opposite side of the local road from ramp terminals to preclude the construction of future driveways or local roads within the ramp intersection. This access control would limit the volume of traffic and the number of phases at the intersection of the ramp and local facility, thereby optimizing capacity and operation of the ramp. Through a combination of access control and the use of raised median islands along the local facility, intersections should be located at least 400 feet from the ramp intersection. Right in - right out access may be permitted beyond 200 feet from the ramp intersection. The length of access control on both sides of the local facility should match.

In Case 2 consider private ownership within the loop only if access to the property is an adequate distance from the ramp junction to preserve operational integrity.

In Case 3 if the crossroads is near the ramp junction at the local road, full access control should be acquired on the local road from the junction to the intersection with the crossroad.