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**From:** Al Grover  
**Sent:** Wednesday, February 12, 2014 9:19 PM  
**To:** CEQA Guidelines  
**Subject:** LOS Alternatives

Dear Mr. Calfee, ([CEQA.guidelines@ceres.ca.gov](mailto:CEQA.guidelines@ceres.ca.gov))

I am President of Albert Grover & Associates, a Transportation Engineering consulting firm located in Southern California. I have owned my own consulting firm for over 30 years, served as Traffic Engineer for several cities, and started my career with the then called California Division of Highways in 1966. I obtained my Master's Degree in Transportation from Cornell University.

After reviewing SB743 and OPR's evaluation, along with various other published articles on the subject matter, the following suggestions are being presented based on my decades of Traffic Engineering experience in Southern California.

I understand and agree with these objectives: (1) to encourage multimodal travel, (2) to reduce greenhouse gas emissions (GHG), and (3) to support Infill development, especially within Transportation Priority Areas (TPAs). It is further understood that any change now allowed by SB 743 is not mandatory, and can only become local policy within a TPA if the local agency establishes an Infill Opportunity Zone (IOZ) by local resolution. At the same time I, as a Professional Traffic Engineer, cannot ignore the fact that any significant modal shift will take many years to occur.

It is well understood that the automobile, being the most desired mode of travel by the majority of people, may not be the most efficient way to meet the above objectives; however, the engineering profession of City/Civil/Traffic Engineers has an obligation to society to provide Safe and Efficient roadways for the users of those roadways. To do so, these engineers will continue to use the most appropriate engineering tools available.

One of the most flexible and useable tools for these engineers to use to satisfy the above obligation (to provide Safe and Efficient roadways) is Level of Service (LOS) and the associated

Delay Methodology to properly identify and mitigate problems. Therefore, it is vital to NOT “throw out the baby with the bathwater”; that is, LOS may be the bathwater, but Delay Methodology is the baby.

Delay Methodology not only provides LOS grades but more importantly provides the engineering means to determine vehicular emissions for differing traffic volumes, determine traffic signal phasing and timing to correct safety issues, determine how to synchronize/coordinate arterial signals to minimize stops (i.e., improve safety and reduce emissions), determine how to best operate signals at/near railroad grade crossings, etc. Separately from EIR/CEQA concerns, Delay Methodology serves as an everyday tool for engineers to respond to citizen complaints about traffic operational issues.

So, rather than replacing the LOS metric, simply allow and/or specify each agency to modify its application relative to the objectives of SB743, which primarily relate to CEQA evaluation of “infill” development. For example, since engineers already use the Delay Methodology tool (wherein LOS is just one of the outputs), its application can immediately be modified as follows:

1. For Infill development, utilize a reduced car trip generation rate to be developed/negotiated based on the type of land use proposed. This adjustment could vary over time, as modal shifts materialize.
2. Within the IOZ, allow for LOS E to be acceptable so that existing roadway capacity is more fully utilized while other modes are developing. At least use the Delay Methodology to avoid gridlock and unacceptable queuing within the IOZ. This can be achieved without specifying LOS grades, if desired.
3. Require that traffic signal coordination be part of CEQA/EIR evaluation. Signal coordination significantly reduces delay and queuing values, thereby allowing for less costly mitigations within the IOZ (such as avoiding widening). As importantly, the signal coordination reduces emissions, as can be shown via the Delay Methodology tool. It should be noted that even though coordination reduces travel time by increasing average speeds, it does NOT increase maximum mid-block speed (which would be detrimental relative to GHG). The average speed is mathematically higher because of less stop/idling time at traffic signals as a result of coordination.
4. Also, allow for use of narrower lanes in the IOZ such as 11 foot through lanes and 10 foot left turn lanes to avoid costly widening which is also anti-pedestrian friendly. Such compromises can help avoid gridlock issues during modal shift transition times.

5. Allow use of pedestrian refuge islands (such as separating right-turn-only lanes). This reduces pedestrian time requirements and thus also reduces signal cycle time, resulting in less delay, improved traffic flow, and less emissions.
6. For Greenfield developments outside of IOZs, maintain LOS D (or as agency specified), and extend the limits of evaluation along routes until trips drop below 50 vehicles per hour to/from the development site.
7. Also, for Greenfield development require arterial coordination analysis to avoid disruption of crossing arterial coordination timings and to help balance evaluation requirements between Infill and Greenfield developments.

Professional Traffic Engineers already know how to use Delay Methodology, which has been a significant Traffic Engineering tool since its official inception in the 1985 Highway Capacity Manual. Although once complex to use, that is no longer the case as there are now numerous computer programs available to simplify its application.

By implementing some key changes to the LOS applications in EIRs, we can avoid the process of learning all new methods that quite possibly will never be as effective as the Delay Methodology tool that has been refined over the last several decades.

In conclusion, engineers will continue using LOS/Delay Methodology for non-CEQA issues in order to be responsive to public needs and because the method can be easily modified to meet the new objectives of SB743, there is absolutely no need to not use the Delay Methodology (with or without LOS grades). Hence, “do not throw out the baby with the bath water”.

Further, if OPR does recommend new metric alternatives, then also allow LOS/Delay Methodology to optionally still be the required metric, as is allowed by SB 743.

Sincerely,

Albert L. Grover