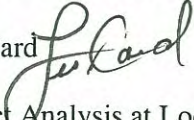


APPENDIX D
MEMORANDUM FROM LSA ASSOCIATES ON CITY OF ROCKLIN
LOS IMPACT THRESHOLD

MEMORANDUM

DATE: November 2, 2009
 TO: David Mohlenbrok
 FROM: Les Card 
 SUBJECT: Impact Analysis at Locations Exceeding Level of Service Criteria

This paper addresses the technical aspects of applying the City of Rocklin’s significance threshold for locations exceeding the basic level of service (LOS) criteria. The City’s impact threshold for these conditions is:

“Based on the City’s significance threshold, if an intersection or roadway segment is already operating at an unsatisfactory level of service, an increase of 5 percent (addition of 0.05) to the volume/capacity (v/c) ratio would be considered a measurable worsening of the roadway or intersection operations and therefore would constitute a significant project impact.”

The question has been raised whether the same 5% (addition of 0.05 to the v/c ratio) criteria is appropriate for the full range of conditions exceeding the basic level of service criteria, which is LOS “C.” To address this question, the following matrix has been assembled to illustrate the application of the City’s threshold policy across a full range of LOS conditions.

LOS Conditions Exceeding City Policy

	LOS “D”	LOS “E”	LOS “F”	>LOS “F”
volume/capacity ratio	0.81	0.91	1.01	1.21
v/c increase of 0.05	0.86	0.96	1.06	1.26
% increase in traffic	6.2%	5.5%	5.0%	4.1%
# of project vehicles necessary to trigger impact	5	5	5	5

As demonstrated in this matrix, application of the 0.05 increase to the v/c ratio actually results in an increasing sensitivity to increased traffic volumes as the LOS degrades (i.e., as the LOS conditions worsen, the 0.05 v/c threshold is triggered by smaller percentage increases in traffic volume).

To further illustrate this point, assume that the capacity at an intersection is 100 vehicles. If the project adds 5 vehicles, the v/c ratio would increase 0.05 and meet the threshold. As the congestion

level increases (i.e., as the number of vehicles through the intersection approaches or exceeds the intersection capacity), however, the same 5 vehicles equate to descending percentages (6.2% to 4.1%) of allowable increases in traffic volume before an impact is triggered.

In conclusion, the same 5% (addition of 0.05 to the v/c ratio) criterion is appropriate for the full range of conditions exceeding the basic level of service criteria, because the 0.05 threshold does not equate to a fixed percentage increase in traffic triggering an impact at each LOS condition. Rather, when the 0.05 increase in v/c ratio is applied to the v/c ratio at any LOS condition, the percentage of additional traffic necessary to trigger an impact decreases as congestion levels increase and LOS conditions degrade.

