



WESTERN DISTRICT

INSTITUTE OF TRANSPORTATION ENGINEERS

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February 29, 2016

Christopher Calfee, Senior Counsel  
Governor's Office of Planning and Research  
1400 Tenth Street  
Sacramento, CA 95814

Re: Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA – Implementing Senate Bill 743 (Steinberg 2013)

Dear Mr. Calfee:

Thank you for the opportunity to provide comments and suggestions regarding your efforts to amend CEQA (California Environmental Quality Act) Guidelines, as required by Senate Bill 743 (SB 743). This letter specifically responds to the report titled “Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA – Implementing Senate Bill 743 (Steinberg 2013)” written by the Office of Planning and Research (OPR) dated January 20, 2016 (hereafter called the “Revised Proposal”).

We represent over 2,000 California members of the Institute of Transportation Engineers (ITE), an international society of transportation engineers and planners. These members prepare transportation analysis for environmental documents under CEQA, and in some cases the National Environmental Policy Act (NEPA), and we understand the purpose of these analyses to identify potential environmental impacts.

This is our third comment letter to OPR since the SB 743 process started in the fall of 2013. In addition to seeking written comments, we appreciate OPR's spirit of openness and cooperation throughout this process. OPR staff have spoken at numerous ITE events and OPR has conducted numerous individual conversations with ITE members.

We believe that the implementation of SB 743 will involve significant challenges and we look forward to OPR's continued cooperation during the implementation process.

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Our purpose in writing this letter is to provide recommendations for revisions to the Revised SB 743 Guidelines in order to achieve a more successful implementation of SB 743. Included are overall comments as well as detailed comments relating to specific aspects of the Revised Proposal.

## **OVERALL COMMENTS**

The revised proposal represents a step forward since it addresses many (but not all) of the concerns raised after preparation of the draft guidelines in August 2014. The Revised Proposal provides for a two-year opt in period which will be helpful in reducing the disruption that is expected to be caused by the transition to a very different way of evaluating the transportation impacts of projects under CEQA. Many aspects of the Revised Proposal reflect consideration of important details not considered in previous draft guidelines. Our comments, as described below, are designed to assist OPR in continuing to make improvements while working toward a final set of SB 743 guidelines.

## **DETAILED COMMENTS**

Our additional comments are as follows:

1. General, Goods Movement: The Revised Draft does not include information on how to handle VMT analysis with respect to goods movement. We would like to take this as an indication that goods movement operations would not need to be analyzed with respect to VMT analysis and would not cause a significant VMT impact. However, a statement to this effect in the guidelines would be helpful. Our assumption would be that employee trips and other passenger vehicle trips related to goods movement would be analyzed for VMT considerations.
2. Page 1, Second Paragraph: The comment that the guidelines can be updated as needed is welcome as experience in conducting CEQA transportation analyses after the incorporation of SB 743 may lead to a need for adjustments.
3. Page 1, Third Paragraph: The statement that traffic studies “will now typically take days rather than weeks to prepare” is questionable, given the uncertainty in how lead agencies will respond to the implementation of SB 743. We would recommend saying that this is OPR’s expectation.
4. Page 2, Second Paragraph: This paragraph provides the first of many references to the Caltrans Statewide Travel Demand Model. The first two case studies shown at the end of the Revised Proposal also rely heavily on data from this model. ITE agrees that the Statewide Travel Demand Model can be a useful tool in VMT analyses, particularly in cases where local models are not may not be available or appropriate for use on a particular project. However, this

model is not easily available to most transportation analysts and it is not practical to run the model for most projects. Therefore, what is needed are tables, figures, and or a database that allow analysts to determine average vehicle trip lengths for residential and office land uses by travel analysis zone and by region for the entire state. In the case of residential land uses, this information is also needed by City and for the unincorporated areas of each County. We would request OPR's assistance in making sure that this information can be made available to analysts who conduct CEQA transportation analyses for land development projects.

5. Page 3, Item 3 and Page 23, Third Paragraph: For residential developments in unincorporated areas, VMT impacts should be determined using a threshold that is 15% below the average of all the unincorporated areas in the county (in addition to the regional average), not the incorporated cities. It is not fair or reasonable for unincorporated/rural areas to be compared to more densely developed incorporated areas.

6. Page 4, Item 7: Is there a way to re-word this without use of a double negative?

7. Page 7, Item (b) (1): Given that some development projects will fall partly within and partly outside the specified distances to transit, guidance for projects in this situation may be helpful. One suggestion would be to use language similar to Public Resources Code 21555(b), e.g., something similar to "A project shall be considered to be within one-half mile of a major transit stop or high-quality transit corridor if all parcels within the project have no more than 25 percent of their area farther than one-half mile from the stop or corridor and if not more than 10 percent of the residential units or 100 units, whichever is less, in the project are farther than one-half mile from the stop or corridor."

8. Page 8, (c) Applicability: The two-year period from adoption to implementation statewide is appropriate and should be retained. In order to achieve as smooth an implementation process as possible, lead agencies will need time to review their current laws and policies, conduct relevant studies, and implement new laws and policies that are consistent with the implementation of SB 743.

9. Page 8, XVI (a): The Appendix G checklist item (a) is proposed to read "Would the project conflict with a plan, ordinance or policy addressing safety or performance of the circulation system, including transit, roadways, bicycle lanes and pedestrian paths (except for automobile level of service.);" We believe this checklist item is not needed. Safety is adequately addressed under current item (d) that reads "Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?" Performance of the circulation system, which had typically been measured with level of service, no longer needs to be mentioned. Furthermore, a mere conflict with unspecified documents should not be considered an environmental impact. With so many design documents

available, there are certain to be conflicts, so defining a conflict as an impact would trigger many EIR's.

10. Page 8, XVI (c): Checklist item (c) should make clear that induced demand would be significant only if a transportation project is of a scale large enough to affect California's attainment of long term greenhouse gas emissions goals.

11. Page 18, Recommendations Regarding Significance Thresholds: Clarification should be given as to whether the baseline/existing conditions should be the average VMT at a fixed point in time. If the goal is to reduce VMT by 15% from today's existing conditions, then the baseline should not need to be re-established at the beginning of project analysis as practice currently dictates for evaluation of LOS impacts.

12. Page 18, Recommendations Regarding Significance Thresholds: It would seem to make sense that long-term or phased projects would analyze VMT impacts at the time the proposed development is expected to be implemented. This raises the question of whether a project could calculate its VMT impacts using the transportation network that would be expected to be present on its opening day and whether any proposed improvements in the transportation network would need to be funded or only planned without an identified funding source.

13. Page 21, First Paragraph: While it is useful to provide a minimum threshold for the consideration of VMT impacts in the SB 743 guidelines, we believe that a higher threshold would be more appropriate. In our experience, the most commonly-used thresholds for current traffic impact studies are 50 peak hour trips/500 daily trips or 100 peak hour trips/1,000 daily trips. We believe these thresholds would also be appropriate for VMT analysis. Consideration could also be given to using a higher threshold for projects that are consistent with an agency's General Plan or the regional RTP/SCS. For comparison, there are many agencies that use higher thresholds for screening projects. For example, the Orange County CMP uses a threshold of 1,600-2,400 daily trips, San Bernardino County uses 250 peak hour trips, and the San Diego Regional Traffic Impact Study Guidelines use 2,400 daily trips or 200 peak hour trips. It should be noted that the threshold of 100 daily trips could require a project as small as ten dwelling units to conduct a full Environmental Impact Report if a significant VMT impact is determined.

14. Page 23, Office Projects: In some cases, it may be appropriate to compare office VMT generation per employee to City or unincorporated County averages rather than regional averages. Individual lead agencies may want to consider this and it would be helpful if the draft guidelines would acknowledge this possibility.

15. Page 23, Office Projects: Office projects that improve jobs/housing ratio balance may act to reduce VMT if they provide jobs for local residents who would otherwise commute long distances. This effect should be taken into account when evaluating the VMT impacts of office projects.

16. Page 24, First Paragraph: For retail developments, assessing the total change in VMT would require use of a model to determine the existing VMT for the project area. This may place a significant burden on projects just above the recommended screening threshold of 50,000 square feet.

17. Page 24, Other Project Types, Second Paragraph: We would recommend deletion of this paragraph. The paragraph currently says "Strategies that decrease local VMT but increase total VMT, for example strategies that forego development in one location and lead to it being built in a less travel efficient location, should be avoided." This is implying that a project may push other development to a location such that future overall VMT is increased. However, it may be likely that no such diversion will ever occur. The logical approach would be to analyze the impacts of the diverted project when that project is proposed.

18. Page 25, Rural Areas Outside MPOs: This heading should be changed to "Rural Areas". The important consideration is an area's status with regard to reducing VMT, not whether it happens to fall within an MPO or not. Similarly, the first sentence should be changed to read "In rural areas (i.e. areas not near developed cities or towns)". The definition of rural in relevant transportation engineering publications may be helpful. For example, the 2010 Highway Capacity Manual defines rural as "an area with widely scattered development and a low density of housing and employment".

19. Pages 28 to 34, Induced Demand: Many ITE members disagree with the concept of incorporating induced demand into the analysis of transportation impacts of roadway projects. While it is recognized that new roadways or capacity-increasing projects can increase the desirability of development in areas served by the roadway in question, many of us would prefer to attribute any increases in VMT with the development rather than the roadway. To the extent that induced demand is included in the guidelines, we have comments that follow below on how this issue should be analyzed.

20. Pages 28 to 34, Induced Demand: The technical Advisory should make clear that the suggested induced demand elasticity rate of 1.0 is used only as an example. We recommend that OPR give EIR preparers discretion to select the appropriate elasticity.

21. Pages 28 to 34, Induced Demand: For most roadway projects, simple sketch planning tools will be the appropriate method to estimate induced demand. For example, page 29 of the Revised Proposal, first paragraph, refers to a range of elasticities for VMT from 0.6 to 1.0 (i.e. a 0.6 to 1.0 percent increase in VMT for every 1.0 percent increase in lane miles). The Roadway Capacity Expansion Project case study uses the midpoint of this range (0.8) and that would be a reasonable choice for most roadway projects. In addition, we would recommend that OPR include the checklist described below to allow analysts to screen out projects that would not be appropriate for induced demand analysis.

22. Pages 28 to 30, Induced Demand: Induced demand is only relevant if traffic congestion is a factor and if the geographic area served by the new or expanded roadway is appropriate for development. ITE recommends adding a checklist to the Revised Proposal that lead agencies would review prior to conducting an induced demand analysis. The check list items include:

- (1) Are there alternative competing modes in the project corridor, and are travel times competitive with the existing/proposed auto travel times?
- (2) Is the economy of the area expected to grow significantly in the next 20 years?
- (3) Does the present zoning near the project allow for additional development?
- (4) Is there significant congestion on the roadway network now?
- (5) Are parcels suitably sized to provide for new development along the project corridor (i.e., no extensive assembly of parcels required for increased development)?
- (6) Are topography, land ownership, governmental services, absence of ground contamination, and other factors conducive to new development?
- (7) Is there community support and market demand for new development?
- (8) Is the project on the fringe, or just beyond, the existing urban area?
- (9) Is the project likely to generate significant travel time reductions (greater than 5 minutes during peak hours)?
- (10) Is the project likely to result in newly generated trips due to increased access to employment sites or shopping destinations beyond what would be expected through reassignment of traffic?

If most of the answers to these questions are "no," there is probably not a significant amount of induced demand likely in the long term.

23. Page 27, Fifth Bullet: Change the last part of this bullet to read "provided that the project includes appropriate facilities for pedestrians, cyclists, and, if applicable, transit". A small roadway project would generally generate an insignificant amount of VMT because it is small, regardless of whether it can or cannot substantially improve conditions for pedestrians, cyclists, and transit. Such projects should include appropriate facilities for all modes of travel without the burden of requiring to demonstrate a substantial improvement.

24. Page 28, Evidence of Induced VMT, First Sentence: At the end of the sentence add “in congested areas”. A statement should also be included saying that the addition of lanes for safety or other reasons in uncongested areas will generally not lead to induced VMT.

25. Page 29, First Paragraph: It should be made clear that the elasticity values noted in this paragraph are just examples and elasticity should be evaluated on a case-by-case basis. This paragraph includes a statement that “(An elasticity greater than 1.0 can occur because new lanes leverage travel behavior beyond just the project location.)” This statement should be deleted or should be accompanied by a more thorough explanation. What precisely does “leverage” mean? One way to solve this problem would be to simply delete the wording in quotes and let individual analysts look into the relevant research to determine how it could be applied to individual projects.

26. Page 29, First paragraph: We would like OPR as well as other readers of this letter to be aware of some of the characteristics of the Duranton and Turner research cited in this paragraph:

- (1) The authors (Duranton & Turner) focus mostly on interstate highways. Users of this report should consider the transferability of results to other types of streets (adding a lane to an arterial might have different impacts than adding a lane to an interstate). In California in particular, there is a fairly large system of non-interstate freeways (in 2013, FHWA *Highway Statistics* said 54% of the urban freeway+expressway mileage in California was non-interstate).
- (2) Despite some efforts to control for it, Duranton & Turner may be confusing correlation with causation (does capacity induce VMT? or does VMT induce areas to provide capacity?).
- (3) Duranton & Turner state unequivocally that, "...we find no evidence that the provision of public transportation affects VKT [VMT]." (page 2618). Doesn't that negate some of the suggested mitigations OPR lists later?
- (4) In their conclusion, Duranton and Turner note with 'surprise' that National Personal Travel Survey (NPTS) data show a decline in driving distances per person, per household, and per vehicle between 1995 and 2001 (page 2647). This despite the fact that lane-miles of interstate supplied increased in this period, which would seem to negate the other conclusions of the paper.

The full citation of this paper should be included in the SB 743 guidelines. It is shown here for reference: Duranton, Gilles and Matthew A. Turner. "The Fundamental Law of Road Congestion: Evidence from US Cities." *American Economic Review* 101 (October 2011), pages 2616-2652. [www.aeaweb.org/articles.php?doi=10.1257/aer.101.6.2616](http://www.aeaweb.org/articles.php?doi=10.1257/aer.101.6.2616)

27. Page 30, Recommended Significance Threshold for Transportation Projects: This section provides a much-needed VMT significance threshold for transportation projects. It should be noted that while 2,075,220 is a comparatively large number compared to most numbers used in day-to-day discussions, it is really quite small when translated into its relation to roadway facilities. Assuming 365 days in a year and an equal distribution of VMT over the days, this is only 5,685 VMT per day. A roadway that is one mile in length that carries over 5,685 vehicles per day would exceed this threshold. Using this threshold, even moderately small roadway improvement projects would exceed the threshold requiring the identification of a significant VMT and a need to consider mitigation. Any efforts to reduce or eliminate this threshold should be resisted.

28. Page 34, Mitigation and alternatives, Fourth Bullet: Change this bullet to read “Implementing Intelligent Transportation System (ITS) strategies”. ITS strategies can achieve objectives other than increasing throughput and increases in automobile throughput would seem to be contrary to the objectives of the other bullets.

29. Page 34 to 45, Analyzing Safety Impacts Related to Transportation: The Technical Advisory on safety impacts starts off providing a little bit of guidance on thresholds, but beginning at the top of page 35 transforms into ten pages on how roadway and traffic ought to be designed. Within our industry, we would say OPR is overreaching. The fact that these opinions on traffic safety are placed in the Technical Advisory, rather than regulation, does not lessen the fact that they are still part of the CEQA Guidelines. The implication is that a project has an environmental safety impact unless lanes are narrowed, traffic signal cycles are reduced to less than 90 seconds, sprawl is reduced, and other strategies that ignore context and are not applicable throughout all parts of the state. Pages 35 to 45 in the Technical Advisory would become EIR and negative declaration triggers. They should be deleted.

30. Page 34 to 45, Analyzing Safety Impacts Related to Transportation: ITE has recommended deleting most or all of this information. The Technical Advisory would be much more useful with citations of case law regarding transportation impacts on safety rather than of controversial academic research. If our recommendation is not accepted, we have comments on how the current wording could be improved, as described below.

31. Page 34, Analyzing Safety Impacts Related to Transportation, Fourth Paragraph: Change “roadway users” to “travelers”. Change “guidance on how to approach” to “information that will be helpful in conducting”.



32. Page 34, Last Bullet: This bullet should be deleted. We are not aware of any transportation safety issues that affect just one individual.

33. Page 35, Second Bullet: Change “not undermine” to “avoid undermining”.

34. Page 36, Second Paragraph: Change “straightening roads does not increase safety” to “straightening roads may not increase safety”. Similar wording changes should be considered throughout the safety section to create an advisory that is factual rather than speculative.

35. Page 38, Second Paragraph: ITE recognizes the value of narrowing lane widths in certain cases to provide traffic calming and to allow roadway right-of-way to be used for non-auto uses. However, it should be recognized that safety depends on context. For example, a 10-foot curb lane raises the risk of conflict between pedestrians and transit buses with a mirror-to-mirror width exceeding 10 feet. Statements implying that wide lanes are an environmental impact are not helpful.

36. Page 38, Second Paragraph: Change “wider lanes hinder” to “wider lanes may hinder”.

37. Page 39, Protecting Vulnerable Road Users, First Paragraph, Last Sentence: Change “should not reduce active transportation” to “avoid reducing active transportation”.

38. Page 39, Last Paragraph: Delete “and the resulting ‘safety in numbers’ ”. This statement is considered to be controversial and unnecessary.

39. Pages 40 to 42, Reducing Overall VMT and Sprawl: The relationship between collisions and VMT is well accepted. In fact, collision rates are calculated using VMT or intersection volumes as the denominator. However, the relationship between collisions and sprawl is less defined. This section seems to imply that a sprawl index needs to be calculated to determine whether safety is impacted. We suggest reducing the length of this section to avoid the implication, including deletion of the sprawl index table. The VMT-related guidelines effectively address sprawl, but entangling sprawl with safety means that any project in the exurbs has a safety impact.

40. Page 41: Emergency access merits its own section in the technical advisory, given that the checklist still asks "Would the project result in inadequate emergency access?" The proposed guidelines imply that sprawl is a problem but urban congestion is not, which is untrue. Lead agencies need guidance on how to deal with this.

41. Page 41, bottom, Analyzing Safety Impacts Related to Transportation: Guidance on impacts to emergency access is weakly addressed in the Technical Advisory. The only mention of emergency access is a statement that emergency access suffers more from sprawl than from congestion. Leaving that statement as the only guidance is misleading. Emergency access still

has its own checklist bullet, so it deserves a dedicated section in the Technical Advisory. Citations of case law, such as *City of Hayward vs. Board of Trustees of California State University*, would be far more useful in the Technical Advisory than mentioning academic research.

42. Page 42, Attribution of Safety Impacts: This section should be deleted. Its main point appears to be that safety impacts should be attributed to the projects that caused them. This seems to be obvious and does not need to be re-stated. The information provided regarding modeling errors in traffic volumes is not supported and is not helpful.

43. Page 42, Attribution of Safety Impacts: If this section is retained, we would suggest a different example besides turn pocket queue overflow as a safety problem. That situation has a relatively small risk of fatality or serious injury. Inclusion of this example implies this kind of analysis is necessary for CEQA.

44. Pages 42 to 45: Addressing Tradeoffs and Finding Win-Win Safety Improvements: This section is unnecessary and should be minimized, if not deleted. Transportation engineers and roadway designers are well aware of tradeoffs needed to balance the desires of motorists, transit users, pedestrians, cyclists, urban designers, landscape architects, the fire department, the police department, businesses, residents, school districts, and the disabled, as well as the need to conform to design standards, the Americans with Disabilities Act, and the various funding requirements for grants. As an example, meeting the demands of several of the aforementioned parties is the reason a pedestrian must wait over two minutes to walk across a street, and has to push a button to get the OK. It isn't because transportation- engineers think it's safe. Having design suggestions in the CEQA Guidelines is, to say the least, not helpful. What is missing from the safety section is guidance on a threshold of significance. The guidance could be as brief as a checklist item asking "Would the project cause a substantial degradation in the safety of the circulation system, including transit, roadways, bicycle lanes and pedestrian paths?" The Technical Advisory safety section could then clarify that if safety doesn't degrade, there is no impact. As it reads now, the safety section is implying that unless speeds are lowered, lanes are narrowed, and sprawl is reduced, the project has a safety impact.

45. Page 43, Item (2): "Surface roadway lanes can be redesigned from traditional 12.0 foot widths to with [sic] 9.2 to 10.8 foot widths..." Could OPR provide a source for this statement? "Karim (2015)" is cited at the end of the paragraph, but no further information on this reference is provided for this article. Although there have been studies indicating that narrower lanes (typically 10-11 feet) have minimal impacts on safety, it would be useful to have this citation for lane widths under 10 feet. California law currently allows vehicles to be 8.5 feet wide, exclusive

of mirrors. Mirrors may project out another foot on each side, so inclusive of mirrors, a truck or bus perfectly centered in its lane may be 10.5 feet wide including mirrors. Also, it should be noted that most experts believe that these narrower lane widths should be used only on streets with a speed limit of no more than 40 or 45 mph.

46. Page 44, Third Bullet: Change “Signal lengths of greater than 90 seconds” to “Inappropriately long signal cycle lengths”.

47. Page 44, First Paragraph, Second Sentence: Change “examples of mischaracterization” to “examples of possible mischaracterization” in order to be consistent with the text prior to the list of possible detriments to safety.

48. Page 47, Case Studies: The three case studies shown in this section are helpful. It is noted that two of the case studies recommend consideration of mitigation measures that are not considered practical given current technical, political, and economic factors. The Mission Viejo Medical Center recommends a \$6 per day parking charge, which is considered to be infeasible in an area where neighboring developments offer employee parking for free. The Kern County Roadway Expansion Project recommends consideration of tolls and other strategies. Toll roadways have been implemented in only a few highly urbanized areas of California and only on freeway-type facilities. It is highly unlikely that a toll strategy could be successful in Kern County or other similar areas of the state. We believe that these two case studies illustrate some of the difficulties in implementing SB 743. While some projects may be able to be designed to avoid VMT impacts or may be able to provide off-site mitigation, there will be large numbers of projects that will be unable to mitigate their VMT impacts and will need to seek a statement of overriding considerations if they are to move forward. This comment is not intended to argue against the implementation of SB 743, but rather to help manage expectations about the ability to fully mitigate the VMT impacts of projects.

49. Page 47, Case Studies: ITE would be interested in a case study that would respond to the example described in Additional Comment 6 from our November 21, 2014 comment letter on the August 2014 draft guidelines. That example had a project that generates a large amount of greenhouse gases being insignificant while a smaller project is significant using a per capita-based threshold.

50. Page 47, Case Studies: It would be helpful to add a case study for a special event facility such as an arena, stadium or similar use.

51. Page 48, Mixed Use Project Case Study: It is unclear how the calculations were made outside of CalEEMod. This case study would be improved if further clarification could be provided.

52. Page 53, Medical Office Case Study: This case study is helpful and it is recognized that it is only intended as a sample calculation. However, VMT analysis can involve many considerations and ITE members who have reviewed this case study have raised some additional considerations that could affect the calculations regarding VMT generation and VMT mitigation.

(1) Medical office buildings are different from typical office buildings in that they have a lot of trips made by visitors/patients. This leads to different travel behavior and more accurate calculations may result from tailoring the analysis to medical office buildings.

(2) With respect to the mitigation measures, the VMT reduction associated with a transit subsidy for employees may be dependent on the quality of transit service provided. This particular site is not served by a robust transit system and may have difficulty achieving the recommended reduction. In addition, transit may be less applicable to patients/visitors than employees.

(3) The 9/80 work week and the carpool vanpool mitigation may also be less applicable to a medical office than a typical office building.

53. Page 55, Roadway Capacity Expansion Project Case Study: ITE has some comments and questions regarding this case study.

“Lane mile and VMT data are available from the Caltrans Performance Measurement System (PeMS):” We searched the PeMS website on 2/5/16 and were unable to locate either the lane miles or VMT noted for the Kern COG. It would be helpful if the guidelines could provide a link to the applicable website.

The calculation of the percentage change in lane miles (0.328%) is not, strictly speaking, correct. Nearly every economics text recommends the use of an arc elasticity that considers the average value of the independent variable (in this case, lane miles), not the starting value. Otherwise, a 2.2 lane mile increase and a 2.2 lane-miles decrease give you different answer. This problem increases as the magnitude of the change increases. A simple example may illustrate this point: going from 50 to 75 is a 50% increase, but a change from 75 to 50 is a 33.3% decrease, even though both involve a change of 25).

The correct arc calculation should be (using LM to stand for lane-miles):

Project added lane-miles  
(“Before project” LM + “After project” LM) / 2

While the difference is minimal for such the example small change in lane miles (a third of a percent), it is more important with larger changes in lane miles. We recommend that OPR use the formula use in virtually all economic texts. This would require the example to document the number of project lanes-miles before and after the proposed roadway expansion.

Several transportation publications explain this difference and the correct calculation of an elasticity. For example, see Donald R. Rothblatt and Steven B. Colman, "Impacts on Ridership of Bus Fare Changes in Small to Medium Urban Transit Systems," San Jose State University Institute for Metropolitan Studies, September 1997, especially pages 2 thru 8. Also, Richard H. Pratt, "Traveler Response to Transportation System Changes," available online at [http://onlinepubs.trb.org/Onlinepubs/tcrp/tcrp\\_webdoc\\_12.pdf](http://onlinepubs.trb.org/Onlinepubs/tcrp/tcrp_webdoc_12.pdf), especially "Appendix A-Elasticity Discussion and Formulae" and pages 1-13 thru pages 1-16 (first chapter of document).

54. The following additional case study provided by ITE indicates that the recommendations provided in the Revised Draft may result in some projects with small VMT increases showing a significant VMT impact while some projects with large VMT increases may show an insignificant impact. This is shown in the VMT calculations for Project A and Project B below:

#### PROJECT A

Urban in-fill/transit priority area project on a 10-acre site  
500 du of very high density apartments  
Daily Trips = 2,100 trip-ends per day  
VMT/person = 8 VMT/person  
Persons/du = 2 persons/du  
TOTAL DAILY VMT = 8 VMT/person x 2 persons/du x 500 du = 8,000 VMT/day

#### PROJECT B

Suburban/rural single family residential project on a 10-acre site  
12 du of very low density residential (one acre lots)  
Daily Trips = 114 trip-ends per day  
VMT/person = 20 VMT/person  
Persons/du = 4 persons/du  
TOTAL DAILY VMT = 20 VMT/person x 4 persons/du x 12 du = 960 VMT/day

Regional/City wide Average VMT/person = 16 VMT/person

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Both projects would propose to develop 10-acre site. Project A would add 8,000 VMT per day, but may be considered to have an insignificant impact. Project B would add 960 VMT per day, but may be considered to have a significant VMT impact. It is recommended that agencies working with VMT thresholds consider this example, since working with averages can lead to misleading results, depending on how the averages are used.

This letter was prepared by the California SB 743 Task Force, a task force appointed by the Western District of the Institute of Transportation Engineers. The Western District oversees the thirteen Western states, including California. Within California, the Institute of Transportation Engineers is represented by seven sections throughout the state. The Officers representing the seven California ITE Sections have supported the task force in preparing this letter and their names and contact information are shown below. In addition to the officers listed below, ITE would like to recognize the following members who contributed to the information provided in this letter:

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Future correspondence should be directed to Erik Ruehr, Chair of the California SB 743 Task Force, who can represent the California ITE Section Presidents for correspondence purposes. Contact information is shown below:

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Thank you again for the opportunity to be involved in this discussion. We look forward to working with you in the months ahead.

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Respectfully yours,

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