LOS vs. VMT in California’s Environmental Review: A Los Angeles Case Study

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The National Center for Sustainable Transportation Undergraduate Fellowship Report

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National Center for Sustainable Transportation

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A National Center for Sustainable Transportation Research Report

September 2017

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Introduction

“Level of Service” and environmental review have had a deep and complicated relationship since the California Environmental Quality Act was passed in 1970. Despite the fact that research has proven that level of service is a better measure for driver comfort and ease of travel, than environmental impact, LOS continues to be the leading metric when assessing traffic and transportation impacts related to CEQA; leading to an increase in urban sprawl and disincentivizing more environmentally conscious development (1,2). Furthermore, research has shown that people who reside in dense, mixed-use areas with easy access to transit drive less than those that reside in suburban or rural areas (4,5,6,7,8,9). This reduction in driving behavior is required for California to meet its strict greenhouse gas emission reduction targets that were passed by AB 32 and SB 32. SB 743, passed in 2013, seeks to replace LOS as the primary metric for traffic impact studies with a more appropriate measure, vehicle miles travelled (VMT). This paper explores the history of LOS in environmental review in the state. We also conduct a case study for land use development projects in the City of Los Angeles over the last 11 years that provides supportive evidence that the proposed VMT metric and related screening thresholds would effectively streamline larger housing projects, but at least in LA, streamlining for some mixed-use projects would be limited.

Background

CEQA

The California Quality Act (CEQA) is an environmental law in California that seeks to “develop and maintain a high-quality environment now and in the future” (Public Resources Code). CEQA allows “full disclosure” of projects in California and provides information to the public, and decision makers, about the environmental impacts of new developments or projects. Projects that are subject to CEQA review, which includes most land use development projects and is determined by a lead agency, undergo an “Initial Study,” which includes a checklist that analyzes potentially significant environmental impacts. Included in this checklist, are questions related to the environmental impact concerning traffic or transportation from a given project. If there is evidence from the initial study that the project may have a significant and unavoidable impact, a full environmental impact report (EIR) must be prepared that analyzes these project impacts and outlines the “feasible mitigation measures” that are required in order to avoid or minimize the significant impacts. Significant impacts are determined by “significance thresholds” that are defined by the lead agency of the project. (California Natural Resources Agency). Figure 1 provides a CEQA flow chart from the California Natural Resources that outlines the CEQA process, and when a project is subject to review.
Figure 1 – California Natural Resources Agency CEQA Process Flow Chart
LOS in CEQA
In the Traffic/Transportation element, significance thresholds are generally defined using LOS, therefore making them a critical component of CEQA. The choice of these significance thresholds not only dictates whether a project can be subject to environmental review under CEQA, but also have a marked impact on land use development patterns and the “form of the built environment.” By using LOS, developers are incentivized to increase the impacts of urban sprawl, often building new greenfield developments where the road network can more aptly handle increased traffic, thus reducing the likelihood for an LOS impact. This increase in greenfield development intensifies urban sprawl, causing people to move farther away from jobs and shopping in more dense urban centers, increasing the frequency and distance of trips, and contributing greater contributions to greenhouse gas emissions related to transportation (3,10,11,12,13,14).

The LOS metric was originally pulled from the Highway Capacity Manual, where local jurisdictions sought guidance in creating their own significance thresholds related to CEQA. LOS was also solidified into CEQA with the implementation of the Congestion Management Program (15), and the Governor’s Office of Planning and Research, or OPR’s, revised CEQA Guidelines, which added checklist items related to LOS (15,3). These also contributed to LOS being used as the metric as jurisdictions create guidelines for Traffic Impact Studies, and updates to their General Plans.

SB 743
In order to better reflect environmental impacts related to transportation, SB 743 was passed in 2013 to shift the use of LOS in environmental review to another metric, like vehicle miles travelled. Vehicle miles travelled, or VMT, is “calculated by multiplying the amount of daily traffic on a roadway segment by the length of the segment, then summing all the segments’ VMT to give you a total for the geographic area of concern.” (Texas Commission on Environmental Quality). VMT provides a more direct measure of environmental impact of traffic by quantifying total greenhouse gas emissions related to driving that can be induced by a new development project. Through SB 743 implementation, OPR was tasked with creating new guidelines related to significance thresholds for traffic impacts. Although these guidelines are still being finalized, OPR recommends screening thresholds for residential, office, and retail projects, as well as numeric thresholds for projects that don’t meet the original screening criteria.
Los Angeles Case Study
For our study, we selected Los Angeles because it is the largest metropolitan area in California that spans through diverse land uses – from rural to urban. Los Angeles has also been identified as a city with the potential to intake projected population growth through the implementation of sustainable land use and transportation policies.

Methodology
In order to perform our analysis of how SB 743 would have affected land use development patterns in Los Angeles, we specified the time frame for project selection from January 1, 2005 through December 31st, 2016 in order to cover a time period both before and after the Great Recession.

Using this temporal and geographical context, I created a database for all of the environmental impact review documents that met these selection criteria from the Draft Environmental Impact Report and Final Environmental Impact Report list from the Los Angeles City Planning Department website. The “Los Angeles EIR Database” was a collection of information pulled from these EIR documents including:

- Project Name;
- Lead Agency;
- Year DEIR was Published;
- Website/Link to the DEIR;
- Project Type (Residential, Retail, Mixed-Residential/Retail, etc);
- Assessor Parcel Number (either listed in EIR or inputted using project location boundaries in project description of EIR; cross-referenced to the 2015 Tax Roll Data from the Los Angeles County Assessor Map);
- Location (Street Address)
- Brief Description of the Project;
- Residential Units (if applicable);
- Square Footage of Development (split into individual uses if applicable);
- Retail Square Footage (if applicable);
- A Categorized List of Potentially Significant Environmental Impacts (Listed in Notice of Preparation);
- List of Significant and Unavoidable Environmental Impacts;
- Whether or not a Traffic Impact Study was conducted despite the project having no significant and unavoidable LOS impacts;
- A list of Significant LOS/Congestion Impacts
- A list of Significant and Unavoidable Non-LOS/Congestion Transportation Impacts
- Whether Congestion Management Program Analysis was required
- Type of VMT modeling performed (if applicable);
- Daily Trips Generated
- Whether a CalTrans comment letter was submitted, and what type of comment; and
- List of Mitigation Measures required within TIS that were related to operation traffic.

Once this information was collected, the recommended screening thresholds from OPR were used to determine which projects would have been affected, or screened-out, using this new analysis for traffic impacts in environmental review. The screening thresholds that we used included:

- **Small Projects** – those that generated less than 100 vehicle trips per day.
- **Low-VMT Areas** – a map based screening threshold for residential and office projects that are located in areas with low VMT. Residential projects that were located in a Transportation Analysis Zone (TAZ) with 85% or less of the regional (Southern California Association of Governments) home-based VMT per capita. The office projects were screened based on their respective TAZs with 85% or less of the regional home-based work VMT per capita.
- **Small Retail Screening** – projects are screened out when the project retail square footage was less than 50,000 square feet.

**Figure 2. Home Based VMT <85% of Regional Average**

**Figure 3. Home Based Work VMT <85% of Regional Average**
In order to test the threshold sensitivity, the low-VMT areas for map based screening thresholds were also tested with 95% or less and 75% or less of the regional HBVMT or HBWVMT. In addition, these thresholds were applied using different regional VMT data from the City of Los Angeles, Los Angeles County, and regional (Southern California Association of Governments), for a total of 18 potential thresholds.

Results

Table 1. All Project Screening Outcomes

<table>
<thead>
<tr>
<th>Project Type (Count)</th>
<th>Screened For Residential</th>
<th>Screened for Office</th>
<th>Screened for Retail</th>
<th>Small-Project Screened</th>
<th>Whole Project Screened</th>
<th>LOS = only significant and unavoidable impact</th>
<th>Could have avoided EIR with VMT screening</th>
<th>No Significant Impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Office</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Retail</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Residential/Office</td>
<td>1</td>
<td>0</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Residential/Retail</td>
<td>11</td>
<td>-</td>
<td>9</td>
<td>0</td>
<td>8</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Office/Retail</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Residential/Office/Retail</td>
<td>10</td>
<td>3</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total (50)</td>
<td>22</td>
<td>4</td>
<td>17</td>
<td>2</td>
<td>11</td>
<td>5</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

11 of the 50 projects analyzed would likely have been screened out. This is comprised of 8 mixed residential/retail projects, 2 residential projects, and 1 office project. 2 of the 11 projects could have avoided the entire EIR process, because the only significant and unavoidable impact was related to LOS, and 2 of the 39 non-screened project identified zero significant and unavoidable impacts. It should be noted, however, that although these two projects exceeded the low-VMT screening thresholds, they may or may not have been found to generate a significant VMT impact following a detailed VMT analysis.

Conclusion

This case study provided more context to how new VMT thresholds will affect land use development patterns in the City of Los Angeles. Although previous research has been conducted, and has confirmed, the benefits of using VMT in these kinds of analysis; it is still relatively unclear how these thresholds will promote CEQA’s additional goals of providing adequate housing supply and incentivize VMT reducing land use development. A more obvious benefit of using these new VMT thresholds is that it reduces the litigious risk because the thresholds provide a simple yes/no conclusion and are easier to apply.
References


13. California Public Resources Code § 21001


15. California Government Code § 65089