

Rural Induced Demand Study



Topics

- Background & Purpose
- The Study
- Draft Findings
- Preliminary Take-Aways

Background & Purpose

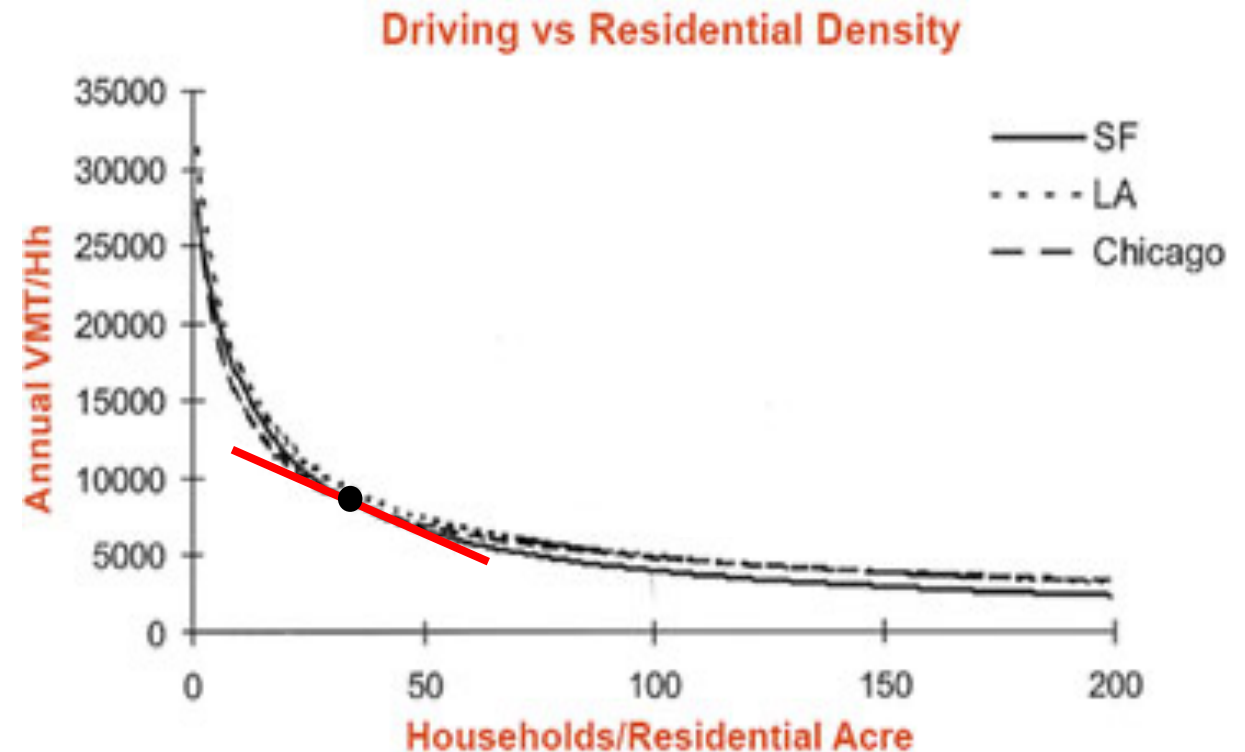
- Recent State guidance such as the Transportation Analysis Framework (Caltrans, 2020) and Climate Action Plan for Transportation Infrastructure (CalSTA, 2021) established policies for pursuing VMT reduction with induced demand as a centerpiece
- Rural agencies are concerned that a one-size-fits-all approach to induced demand does not take into account the absence of significant congestion in rural corridors. This could have several serious, unintended consequences:
 - It could hinder projects that are important for other policy goals, such as emergency evacuation and accident reduction
 - It could unfairly disadvantage rural agencies in funding allocation, since VMT mitigation is far more difficult in rural areas than in metro areas
 - It distorts the project mix and diverts attention away from solutions with a greater chance successfully reducing VMT

The Study

- The Rural Counties Task Force (RCTF) has pooled their resources to fund a study to produce the data and analysis needed to support a more nuanced approach to induced demand (rural context treated differently from metro context)
- Nevada County Transportation Commission (NCTC) is the lead and contracting agency for this effort
- Components Included and **Status**
 - Review Induced Demand Research – **(Nearly finished)**
 - Review Existing State Guidance – **(Underway)**
 - Rural Case Studies of Induced Demand Resulting from Roadway Capacity Expansion – **(Currently in case selection)**
 - Travel Demand Modeling Approaches to Induced VMT – **(Underway)**
 - Develop Recommendations – **(Starting)**

Draft Findings: Elasticities

- Most of the current guidance is based on elasticities
- An elasticity is the percentage change in one variable in response to a change in a different variable
- For induced demand, the most commonly-used elasticity estimates the change in vehicle-miles travelled (VMT) in response to a change in road capacity



SOURCE: HOLTZCLAW, GOLDSTEIN, CLEAR, HAAS & DITTMAR, 2010

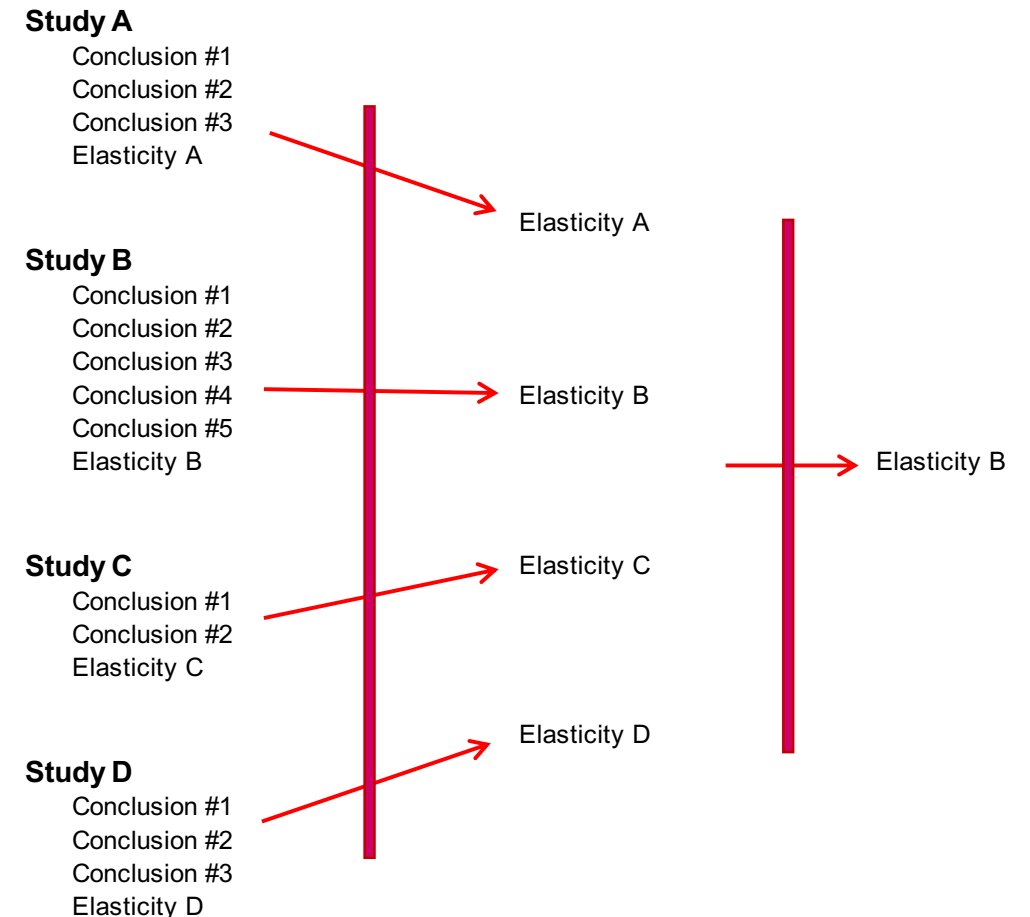
Draft Findings: Meta-Studies Filter Out Important Information

- Current guidance and policies are based on meta-studies
- Meta-studies, or studies-of-studies, summarize the findings of original research studies for an audience that may not have the time, training, or inclination to read through the originals
- While these serve an important function in making findings digestible for the intended audience, it comes at the cost of filtering out other information found in the original study

Draft Findings: Example of Filtering

- The distorting effect of meta-studies can be significant for induced demand. **Every** original research paper we reviewed that computed an elasticity had other findings
- Quoting the elasticity while leaving out the caveats, qualifications, and context that appear in the original work can and is leading people to reach incorrect conclusions about induced demand
- In our draft report, we will be describing a lot of interesting and relevant findings that have not made it into current guidance and should be factored into the policies regarding rural counties

Filtering



Draft Findings: So, What Was Filtered Out?

- **Very little research has focused on induced demand in rural areas** - When it gets mentioned at all, it is usually with an unstated assumption that whatever is true in large metro areas probably holds true in rural areas as well
- **Lane miles versus travel time savings** – The thing that drives induced travel is a reduction in travel times, not additional capacity per se. So in the absence of congestion, additional capacity does not induce demand. The only reason lane-miles have been used in induced demand studies is because the data was much easier to get than historical data on congestion levels
- **Only *significant* reductions in travel times change travel behavior** – Interview surveys found that travel times would have to be reduced by at least 15 minutes to have any appreciable effect on origin-destination choice

Draft Findings: What Was Filtered Out? (continued)

- **Induced demand effects appear to be shrinking over time** – Induced demand was estimated to have been responsible for 44% of VMT growth in California in the 1970's, shrinking to less than 10% by the late 1980's
- **Causality runs in both directions** – There is strong evidence that in many cases land development was spurring road construction rather than vice-versa. For California in particular, the fact that the growth in VMT/capita outstrips the growth in lane-miles/capita indicates that supply is chasing demand, not the reverse
- **Applicability of elasticity-based analysis tools** - Many studies warned against analyzing individual road projects using simplified tools based on aggregate elasticities

Preliminary Take-Aways

- Over-reliance on meta-studies seems to have resulted in guidance that is contradicted by evidence; including evidence found in the studies cited in purported support of this guidance
- Although it appears that induced demand may occur under certain circumstances, such situations are unlikely to be found in rural areas
- That said, there is so little evidence one way or the other that we are conducting new, independent research to find out
- A strong case could be made that, in the absence of clear evidence that induced demand is a genuine phenomenon in rural areas, concern over induced demand should not be allowed to block projects that are being proposed pursuant to other State goals. This is especially true for emergency evacuation and safety projects where lives are at stake

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