

Executive

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Project Title:

Review of Induced Travel Elasticities

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Updated Estimates of Induced Travel Demand from Roadway Expansions

Developing geographically granular adjustments for expectations of induced vehicular travel from capacity expansions, considering recently awarded project types and the context of California urbanized areas.

WHAT IS THE NEED?

Senate Bill 743 (SB 743) mandates that the California Department of Transportation's (Caltrans) environmental reviews of highway capacity expansions include assessments of potential expansion-induced increases of vehicle miles traveled (VMT). Current assessments rely on the National Centers for Sustainable Transportation (NCST) calculator that uses literature-derived elasticities of VMT to highway-lane-miles of 1.0 on Interstate highways and 0.75 on other major highways. While there is acknowledgement that the actual induced travel in a particular region will vary from the observed average, more research is needed on the actual effect, given parameters of real locations and project types. The project will focus on three specific areas for updating the measures used: estimating induced demand from expansions of bottleneck-type facilities (e.g. bridges, tunnels, etc.); updating elasticities to exclude truck VMT; and analyzing whether the lower non-Interstate highway elasticity applies in California.

WHAT ARE WE DOING?

The project will begin by assessing and summarizing the current state of the literature on VMT response (Task 1). In particular the research team will focus on any new research published since 2020, as the current methods were assessed shortly prior to that date, and on literature specifically related to the focus areas (trucks and bridges/tunnels). The project will integrate literature on induced VMT for trucks with county or highway-specific fractions of truck travel in California to suggest more geographically granular adjustments for

elasticities that exclude truck VMT (Task 2). The research team will analyze the applicability of lower non-Interstate highway elasticities to California state highways by comparing the attributes of Interstate and non-Interstate highways in major metropolitan areas in California (Task 3). The research team will estimate the effect of bottleneck facility expansions on new VMT for several high-profile California bridge and tunnel projects using PeMS data (Task 4). Using estimates from Task 4, the research team will consider whether the elasticity of VMT with respect to lane-miles is the appropriate parameter for bottleneck facilities and, if not, suggest an alternative (Task 5).

WHAT IS OUR GOAL?

Researchers will combine the results of analysis into a report that can directly inform guidance produced by Caltrans on the assessment of induced travel in roadway expansions. It is anticipated that the three areas of inquiry will produce some variance from the best available guidance. The goal is to produce academically-supported information about standards in dealing with these common circumstances.

WHAT IS THE BENEFIT?

While many questions exist about standards for analysis and adjustments for specific regional characteristics, guidance is often limited by the best available information. This study will add to the body of academic literature that can inform guidance on how to comply with California state law regarding travel analysis, targeting three common issues.

WHAT IS THE PROGRESS TO DATE?

The project is underway and the literature review has been completed. The research team is moving on to complete Task 2: Interim report on truck VMT adjustments and Task 3: Interim report on applicability of 0.75 non-Interstate highway elasticity, to be completed this Fall.

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