



Caltrans Division of Research,  
Innovation and System Information

# Research

# Notes

Planning, Policy,  
&  
Programming

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Project Title:  
Assessment of VMT mitigation  
actions

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## Assessment of VMT mitigation actions

This project will develop an accessibility tool for California and will explore the possibility of extending this tool to estimate the impacts on vehicle miles traveled (VMT) of mitigation actions based on their impacts on accessibility.

### WHAT IS THE NEED?

Under the Transportation Analysis Framework (TAF), developed in response to SB 743, Caltrans must analyze the impacts of projects on the State Highway System (SHS) on vehicle-miles-traveled (VMT) as a part of the environmental review process under the California Environmental Quality Act (CEQA). Identification of viable actions for mitigating VMT impacts is a required part of the CEQA process, and thus guidance on potential mitigation actions is needed. Many policies are known to reduce VMT according to empirical studies but not all are appropriate or effective in every context, and many of them are implemented at the local level rather than by the state. Methods for estimating the likely VMT reductions resulting from proposed mitigation actions are also needed. Several tools for estimating the effects of mitigation actions are available or under development, but their strengths and weaknesses have not been adequately assessed.

An accessibility-based tool for estimating the effects of VMT mitigation actions could be helpful. Accessibility, defined as the ease of reaching destinations, is an essential quality of the transportation system. Standardized accessibility metrics are not yet available, but as spatial data become more widely available, the opportunities have expanded for developing an array of metrics tailored to different planning purposes, including, for example, to assess the impacts of proposed VMT mitigation actions. This project will develop an accessibility tool for California and will explore the possibility of extending this tool to estimate the impacts on VMT of mitigation actions based on their impacts on accessibility.



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knowledge that improves  
California's transportation system

## WHAT ARE WE DOING?

The work will comprise three main efforts: 1) development of a menu of potential mitigation actions, 2) assessment of available methods for estimating the effectiveness of the actions in the menu, and 3) exploration of the possibility of developing an accessibility-based tool for mitigation assessment. The methods used in each of these efforts are as follows.

Development of a menu of potential mitigation actions. The starting point for the identification of potential mitigation actions will be a number of existing sources. Stakeholders, including Caltrans staff and others, will provide feedback on an initial menu of mitigation actions. For each of the actions in the final menu, the research team will review the empirical literature to determine the general effectiveness of the action, the context in which it is most appropriate and effective, and the role that Caltrans could play in its implementation.

Assessment of available methods for estimating the effectiveness of the actions in the menu. The research team will develop an inventory of available methods for quantifying the effects of mitigation actions in consultation with Caltrans and with other experts. For each of the mitigation actions, the research team will assess which estimation methods are most appropriate based on a variety of criteria. For each mitigation action, the team will recommend one or more methods and summarize the strengths and weaknesses of each.

Exploration of the possibility of developing an accessibility-based tool for mitigation assessment. For a selected region, the research team will prepare data needed to conduct regional accessibility analysis using the Conveyal platform. Depending on the capabilities of the accessibility tool and the use cases provided by Caltrans, the research team will develop a set of accessibility metrics, drawing on previous research on accessibility metrics. The research team will explore methods for converting changes in accessibility

metrics into associated changes in VMT.

## WHAT IS OUR GOAL?

This project will develop guidance and methods for assessing VMT reduction for various potential mitigation actions for projects on the State Highway System. The project will also explore the possibility of developing an accessibility-based tool for estimating the effects of VMT mitigation actions. The products will be a guidance report and accessibility analysis tool for use by Caltrans staff and others.

## WHAT IS THE BENEFIT?

The project will help Caltrans staff in identifying and evaluating possible actions for mitigating increases in vehicle-miles-traveled resulting from projects on the State Highway System. The guidance provided by this project will help to ensure that the most appropriate and effective mitigation actions are implemented. In doing so, the project contributes to the achievement of the State's goals for reducing greenhouse gas emissions from transportation.

## WHAT IS THE PROGRESS TO DATE?

Waiting to start the project.