

# Pay-As-You-Go Driving: Possible Road-User Charge Rate Structures for California

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This report lays out principles to help California policymakers identify an optimal rate structure for a road-user charge (RUC), a fee that vehicle owners would pay for each mile driven on public roads. The rate *structure* differs from the rate itself. The rate is the price a driver pays, while the structure is the set of principles that govern how that price is set. For example, do all drivers pay the same flat rate? Or is the price higher for vehicles that are larger, pollute more, or drive at congested times?

## Study Methods

We drew on existing research on rate setting in transportation and public utilities, as well as the behavioral economics literature, to develop a set of conceptual principles that can be used to evaluate rate structures, and then applied these principles to a set of RUC rate structure options.

*Rate structures can be designed to advance important state policy goals.*

## Findings

**Transportation system users already pay for driving using a wide array of rate structures.**

Some of the charges drivers face are undifferentiated among users (e.g., annual vehicle registration fees in some states that are the same for all light-duty vehicles). Alternatively, other charges adopt a rate structure based on vehicle characteristics (e.g., bridge tolls that vary by vehicle weight), user characteristics (e.g., carpool discounts for toll lanes), or time or location of use (e.g., parking lot rates that vary by weekend vs. weekday).

**The principal advantage of RUCs is *not* their ability to raise revenue, but rather their ability to variably allocate charges among various types of users and travel.** There are much simpler and more efficient ways to raise money than road user charges, such as via property and sales taxes. However, like its predecessor, the motor fuels tax, a RUC can fairly and reasonably charge travelers according to how much they use roads and the variable costs imposed by their travel.

**Any RUC rate structure (even a flat one) will influence travel behavior and, in turn, California's ability to attain its economic, environmental, equity, and safety goals.** The economics literature has shown that variations in the cost of driving influence where, when, and how far people and businesses drive, and whether they choose to travel by other means. Thus, no matter how RUC rates are structured, they will influence driver behavior in ways supportive of or counter to state goals. Over the longer term, RUC rates will also influence vehicle purchase choices, as well as residential and employment location decisions.

**Rate structures can be proactively designed to advance important state policy goals and/or improve administrative and political feasibility.** For example, the state could provide all drivers with some relatively low-cost travel allotment by using a block-rate RUC. This structure charges all vehicles the same modest flat rate per mile up to a threshold (e.g., 5,000 miles/year), after which the per-mile fee increases for additional miles. This option would provide basic road access for low-income drivers without the need to vary rates by owner characteristic. Also, the state could reduce the cost to build and maintain the transportation system by varying rates according to vehicle

weight and number of axles to minimize road damage. Finally, offering a lower rate to qualifying low-income drivers or to drivers of low-polluting vehicles may increase both equity and the acceptability of the RUC.

## Policy Recommendations

**Consider multiple criteria when choosing a rate structure:** Decision-makers must identify both the desired program outcomes and secondary impacts that they wish to either promote or avoid. Raising revenue is typically a primary motivation for any RUC rate structure, but it is also essential to clearly identify and prioritize the economic, environmental, equity, and other outcomes to be advanced through the RUC.

**Avoid a flat-rate rate structure, which would be a step backward for many of California's most important policy goals.** While a flat-rate structure could raise adequate revenue, it would likely stimulate driving choices that run directly counter to state priorities such as reducing road maintenance costs and vehicle emissions. A flat-rate RUC will perform worse on these dimensions than the current motor fuel taxes.

**Look for RUC rate structures that account for the multiple costs imposed by travel.** Benefits of these multi-part rate structures include:

- *Proactively advancing California's economic, environmental, and equity goals:* The economic signals sent to drivers would incentivize behaviors that support these goals.
- *Simplifying transportation taxes and fees:* A multi-component RUC rate structure could effectively replace not only fuel taxes but also other fees, such as annual registration fees on heavy vehicles.
- *Increasing political acceptability:* Polling evidence suggests that some multi-criteria rate structures may be as acceptable to the public as flat rates, or possibly even preferred.

**Conduct a new Highway-Cost Allocation (HCA) Study for California.** HCA studies are technical assessments of whether various classes of road users are paying more or less in road-user taxes and fees than the costs imposed by their road use. These studies can consider road system wear and tear, air pollution, climate change, noise, safety, congestion, and so on. A comprehensive HCA study will provide decision-makers with important information on how various potential RUC rate structures might reasonably and fairly charge various road users in proportion to their costs imposed.

## About the Authors

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## To Learn More

For more details about the study, download the full report at [transweb.sjsu.edu/research/2149](https://transweb.sjsu.edu/research/2149)



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