LOUISIANA TRANSPORTATION RESEARCH CENTER

# Technical Summary

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# Alternatives to Motor Fuel Taxes for State DOT Funding

## Introduction

Over the past century, motor fuel taxes have served as the largest single source of surface transportation infrastructure funding in the United States. However, this model is increasingly unsustainable due to several trends: the adoption of electric and alternative fuel vehicles, improvements in the fuel economy of internal combustion engine vehicles, and per-gallon fuel tax rates that have not kept pace with construction cost inflation. These factors have led to a recent decline in fuel consumption per mile driven. Motor fuel tax revenues have fallen from 31% of state highway revenues in 2000 to 19% in 2023. The decline in the purchasing power of fuel taxes has created a widening gap between available transportation funding and infrastructure needs.

In response to this trend, states are exploring alternative mechanisms to supplement or replace motor fuel taxes. This report reviews the current state of practice, legislative initiatives, and emerging trends in transportation funding alternatives to the gas tax.

## Objective

This study aimed to provide a comprehensive understanding of the evolving landscape of transportation funding. Objectives included:

1. Examining the range of alternative revenue mechanisms under consideration or recently implemented across U.S. states;
2. Evaluating legislative actions and pilot programs addressing declining fuel tax revenues; and
3. Identifying patterns and trends in transportation funding policy that can inform future strategies.

The goal of the study was to synthesize existing knowledge into a resource that supports alternatives analysis and policy decision-making for sustainable transportation funding.

## Scope & Methodology

The scope of the research was limited to practices within the United States over the past 15 years, focusing exclusively on surface transportation funding. The effort centered on synthesizing publicly available information from academic literature, industry reports, and state-level studies.

**Principal Investigator**
Travis P. Dunn, Ph.D.
512-576-4996

**LTRC Contact**
Tyson Rupnow, Ph.D., P.E.
225-767-9124

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The methodology involved a three-step national scan. First, peer-reviewed academic literature was reviewed to capture theoretical and empirical insights into the fuel tax decline and alternative funding models. Second, 12 state-level reports from nine states were analyzed, each examining revenue alternatives and policy implications. Third, enacted legislation from eight states was reviewed to identify mechanisms that have moved into implementation. Findings were organized into six broad revenue categories: fuel taxes, vehicle-related fees, direct usage fees, indirect usage fees, externality taxes, and other mechanisms such as property taxes and value capture.

## Findings & Conclusions

States have responded to the shortcomings of motor fuel taxation by adopting a mix of strategies. Common strategies for deciding an appropriate and effective policy path include forming task forces, conducting technical assessments, engaging stakeholders, and implementing pilot programs to test feasibility and build public trust. Within these inquiries, states frequently develop evaluation criteria to assess alternatives. Common criteria include revenue stability, user equity, social equity, administrative feasibility, public acceptance, and environmental sustainability.

Short-term measures to address revenue include indexing fuel tax rates to inflation and imposing annual registration surcharges on electric vehicles, which are now in place in 41 states. While these approaches provide temporary relief, they do not fully offset revenue losses and only partially address the most common evaluation criteria.

Among the alternatives examined, road usage charges (RUC) commonly emerge as a promising long-term alternative to the gas tax. RUC programs, which charge vehicles based on miles traveled rather than fuel consumed, have been enacted in four states on electric and highly fuel efficient vehicles (Hawaii, Oregon, Utah, and Virginia), with Hawaii planning a full transition to RUC for all vehicles by 2033. Pilot programs in 16 other states underscore growing interest in this mechanism, though challenges remain to address administrative complexity, the cost of collection, and public acceptance. Other mechanisms, such as retail delivery fees, show strong revenue potential and have been implemented in Colorado and Minnesota. The dedication of auto sales tax revenues is another common alternative approach to funding transportation. Conversely, kilowatt-hour taxes on electric vehicle charging have limited effectiveness because most charging occurs at home, beyond the reach of current retail-focused taxation.

The study also highlights the importance of layered strategies. No single mechanism can fully replace fuel tax revenues; instead, states are combining multiple approaches to build resilient funding systems. Public acceptance remains a critical barrier across most mechanisms, emphasizing the need for transparent communication and clear linkages between taxes and fees paid and benefits received.

The decline in fuel tax revenues is a structural challenge that requires a diversified response. While incremental measures such as EV fees and indexed fuel taxes can stabilize revenues in the near term, broader adoption of usage-based charges and complementary funding sources appear to provide the desired long-term funding while addressing other important criteria for revenue mechanisms. States proactively investing today in the exploration and implementation of alternatives are positioning their transportation systems for long-term financial stability.