

NCSL ROAD USAGE CHARGING SUMMIT

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**CDM
Smith**

*“The future is already here.
It’s just not evenly distributed.”*

William Gibson
The Economist, 2003



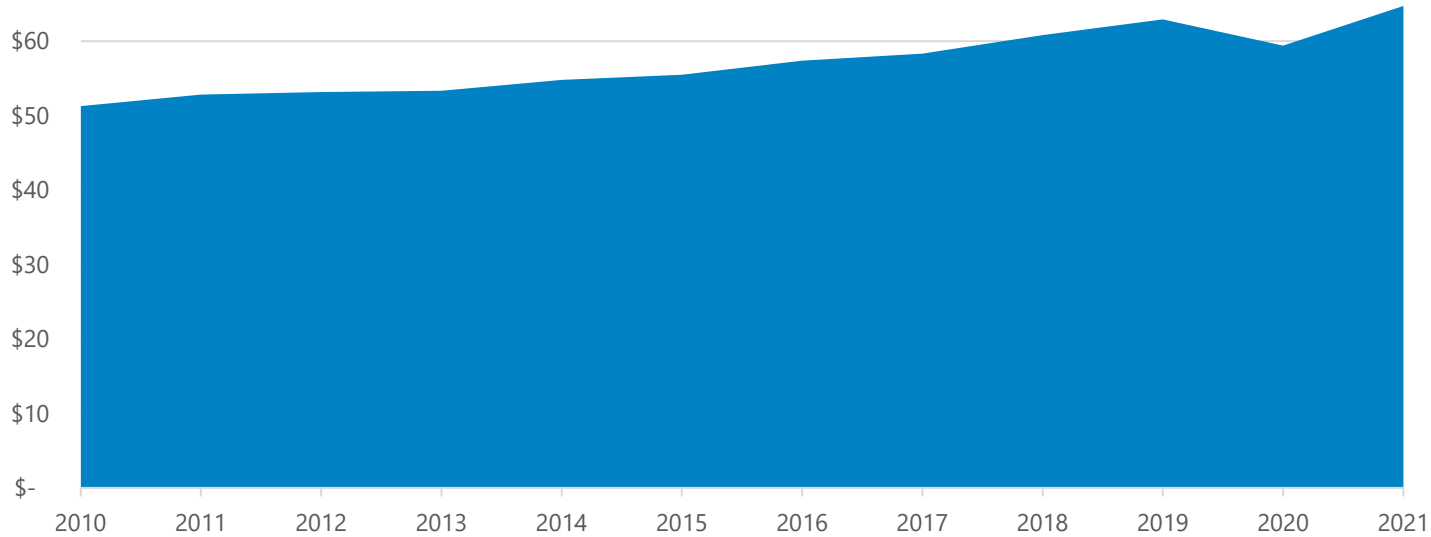
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Why RUC?

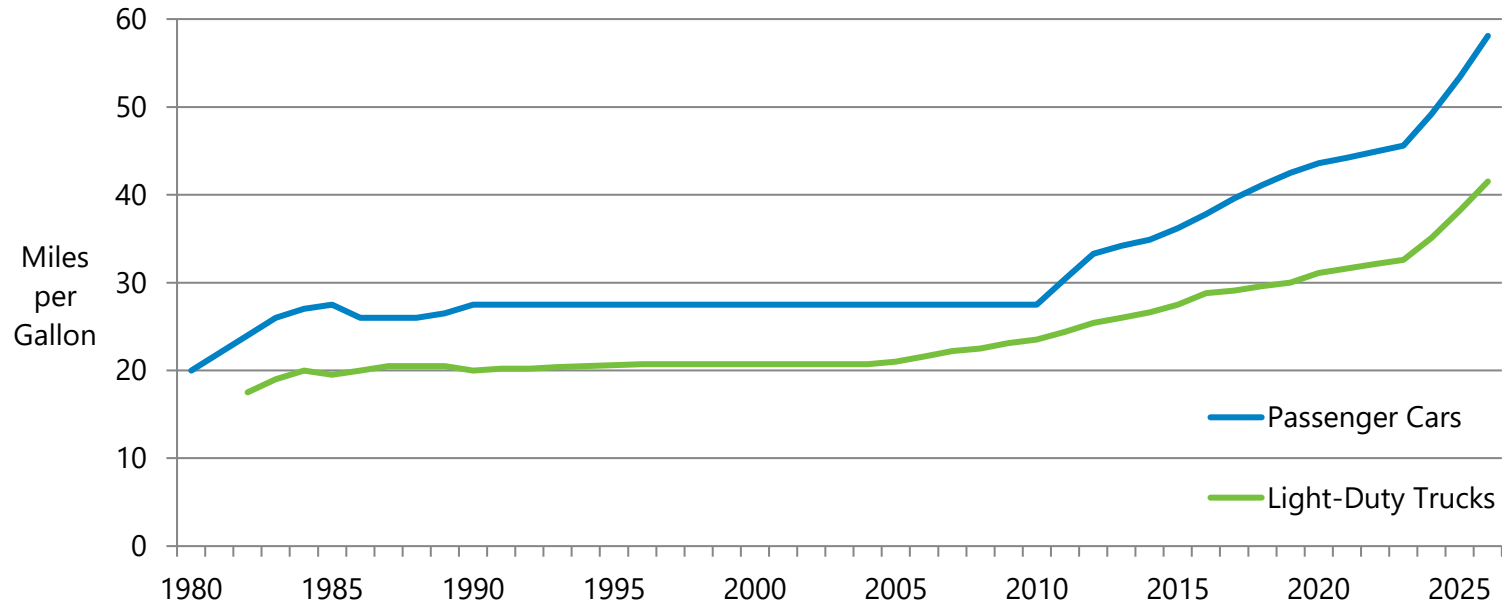
An overview of the nation's transportation funding problem.

Motor fuel taxation funds transportation

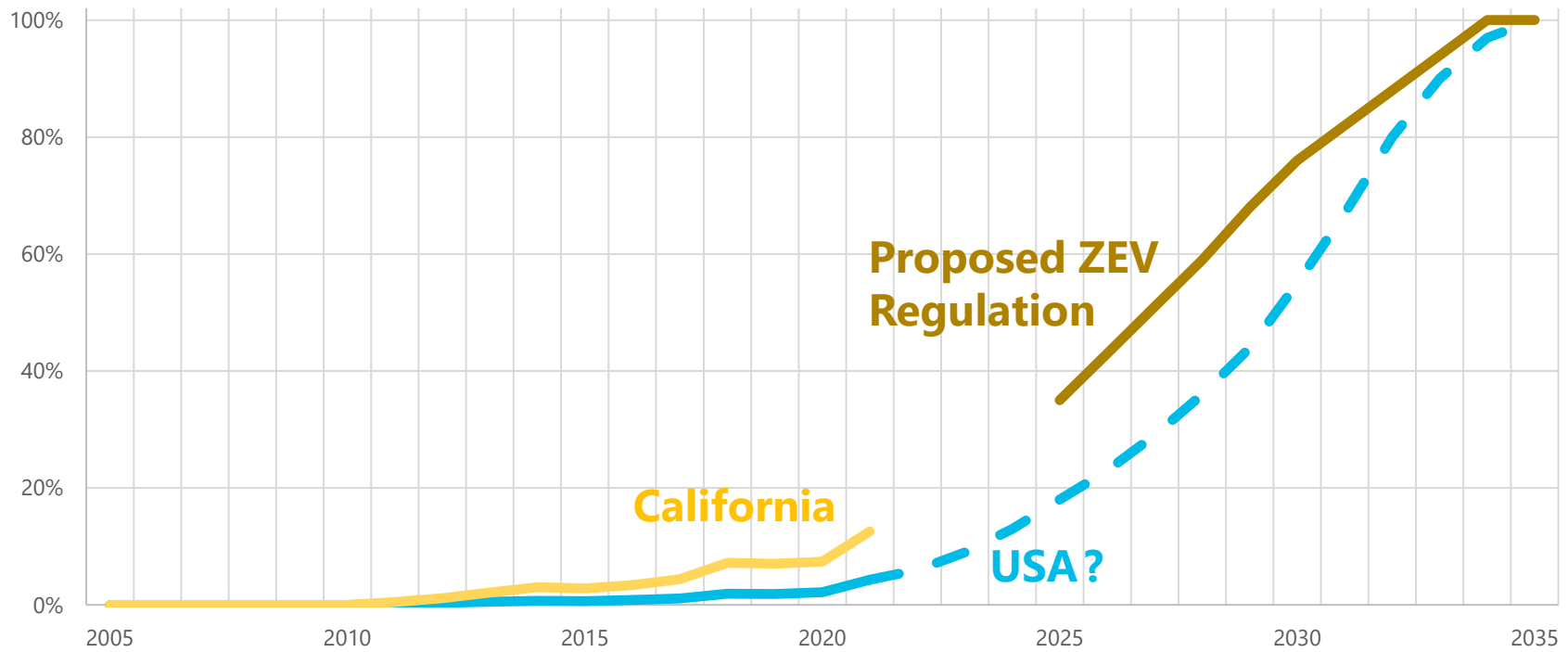
Billions of Annual Gasoline Tax Receipts
State & Federal



CAFE standards are improving fuel efficiency of conventional vehicles



America's fleet of passenger vehicles is turning electric



Private sector is taking the lead

G.M. will spend \$7 billion on Michigan plants to further its electric-vehicle aims.

The automaker will build a battery plant and overhaul another factory to produce electric pickup trucks, creating 4,000 jobs.

The New York Times

Toyota will spend \$1.3 billion on a N.C. electric car battery plant.

The plant, which will employ 1,750 people, will be located outside of Greensboro.

The New York Times

UPDATE: Rivian confirms EV plant in Georgia, creating thousands of jobs for Georgia

The Atlanta

PHOTOS: Nissan Canton Plant center for its electric vehicle production in the U.S.

CHRYSLER

Stellantis, Samsung to invest in battery plant, create 1,400 jobs at Indiana

CL

BUSINESS > AUTOS

Toyota is going big on EVs, with plans to spend \$35 billion and roll out 30 models by end of decade

The Japanese automaker intends to accelerate its shift into electric cars.

Detroit Free Press

The Dallas Morning News

Hyundai electric vehicle factory to be built near Savannah

BUSINESS

Ford Fortifies EV Bet With Four New Factories in Tennessee and Kentucky

Combined \$11.4 billion investment with SK Innovation aims to accelerate electric push, create 11,000 new jobs

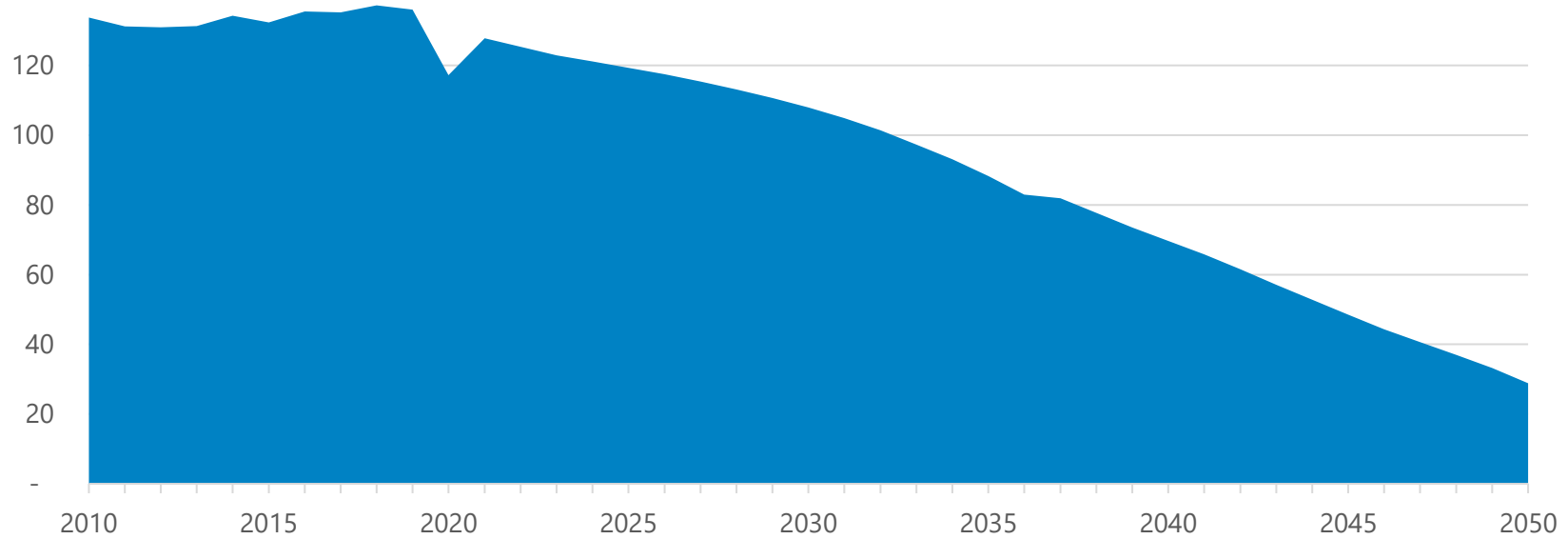
The Atlanta
Journal-Constitution

THE WALL STREET JOURNAL.

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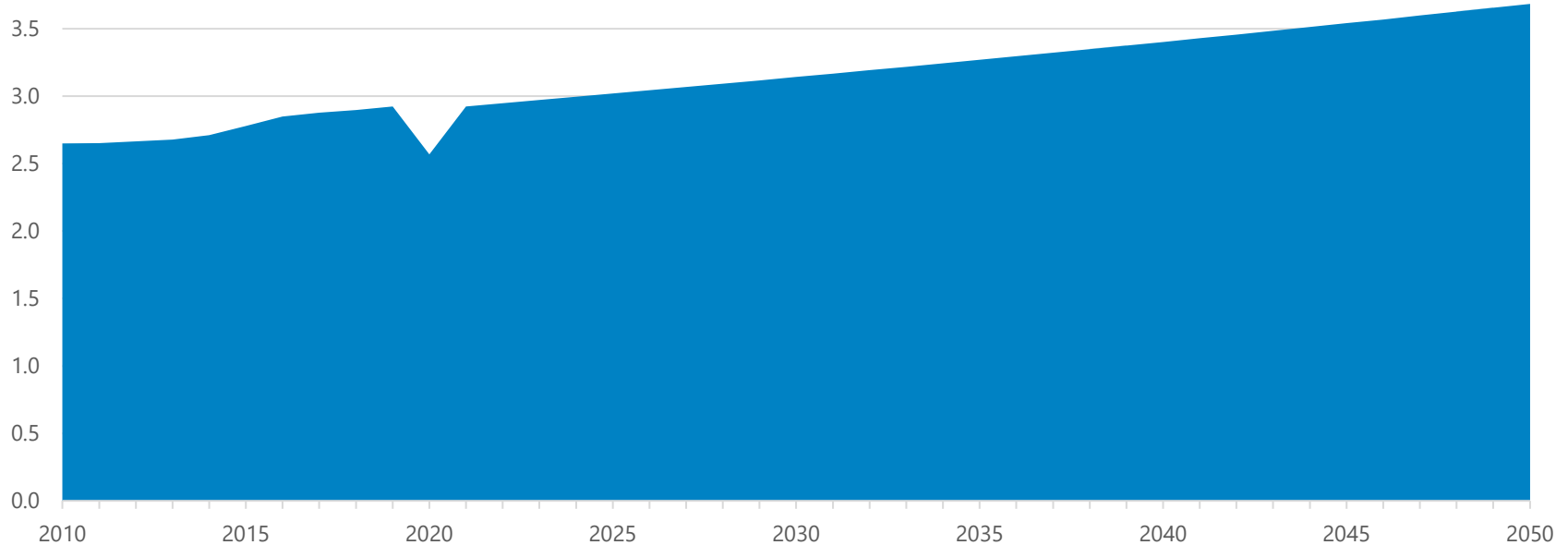
Achieving ZEV and efficiency goals will lead to declining fuel consumption

Billions of gallons of gasoline consumed annually



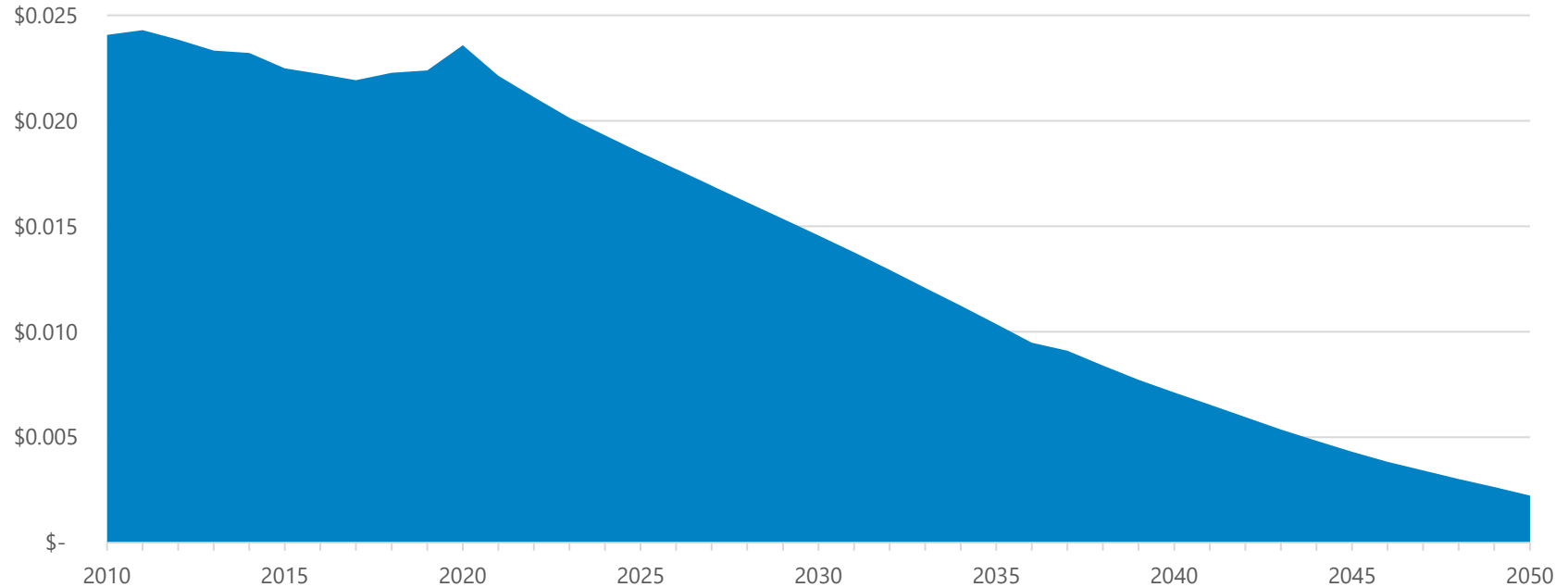
Road usage will continue to grow

Trillions of light-duty vehicle miles traveled

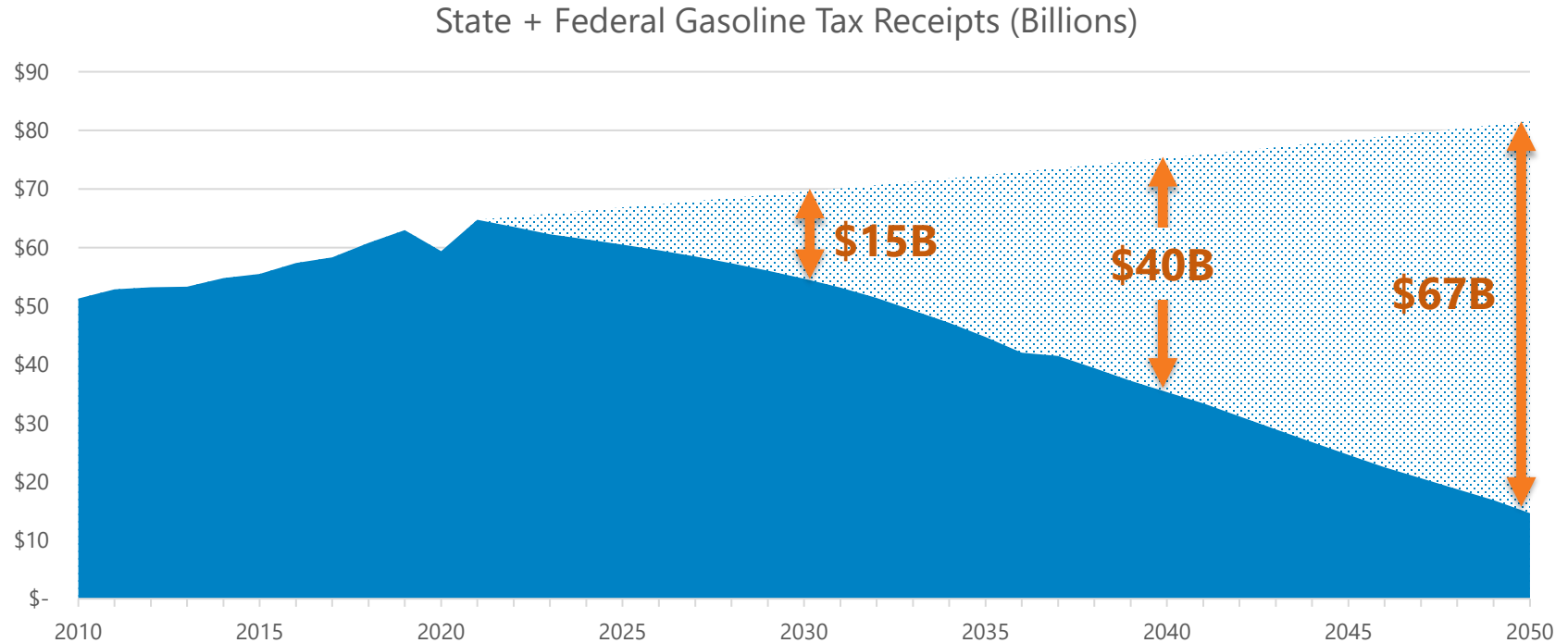


Unit revenue for road funding will decline

Gasoline Tax Revenue Per Mile Driven (inflation-adjusted)

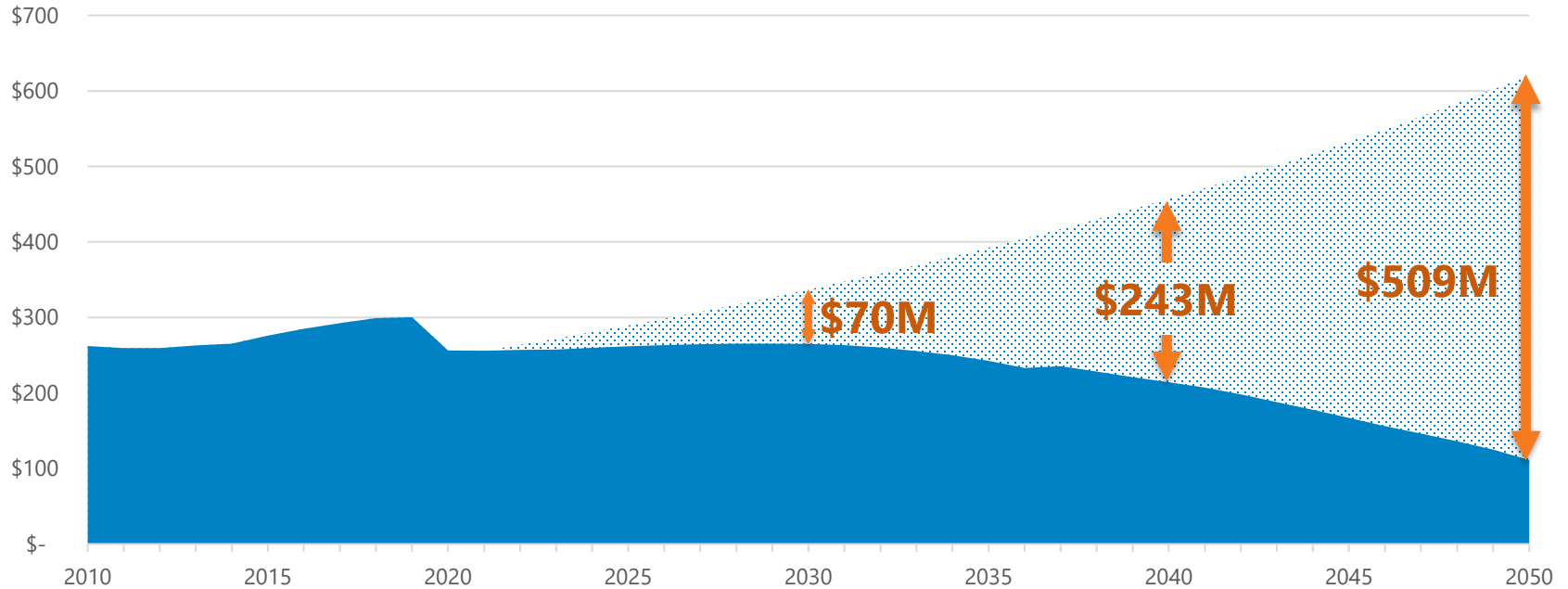


Revenue lost to fuel efficiency will grow



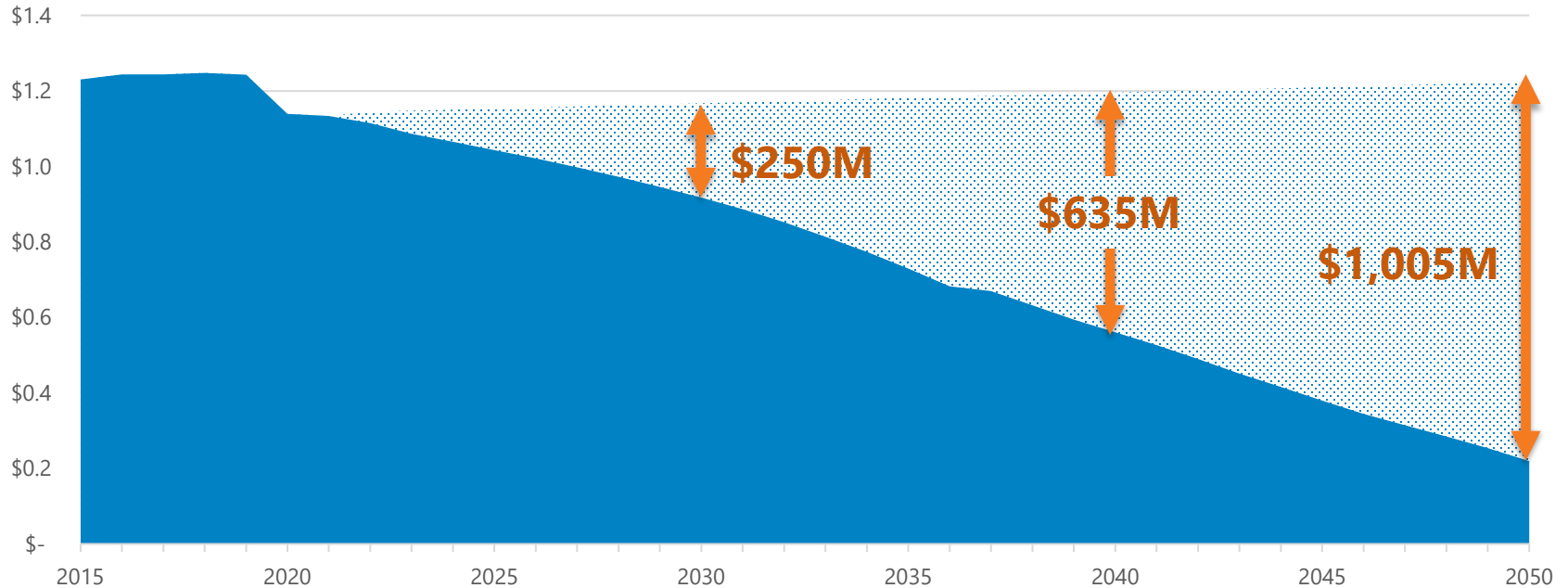
View from the states: Nevada

Nevada State Gasoline Tax Receipts (Millions)



View from the states: Ohio

Ohio State Gasoline Tax Receipts (Billions)



Ways to manage lost revenues

1. Do nothing
2. Frequently raise the gas tax
3. Frequently raise other vehicle fees for registration, licensing etc.
4. Road Usage Charging

Years Since Last Gasoline Tax Increase



Remaining states have increased the gas tax within last 5 years, as of March 1, 2021



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Getting on the same page

What is RUC?

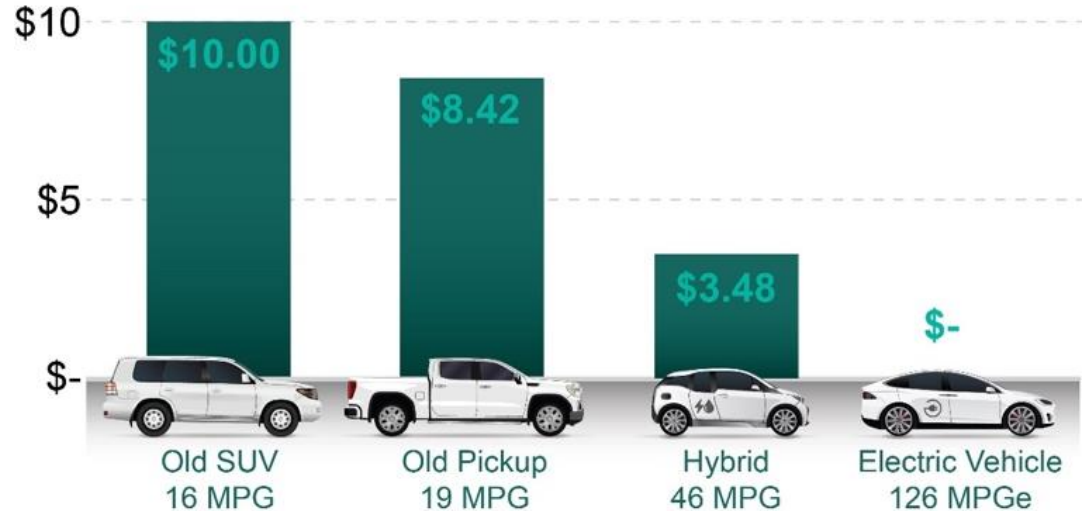
- A road usage charge, or RUC, is a tax or a fee collected from vehicle owners that is proportional to their use of the public roadway network.
- RUC is a roadway consumption tax with miles as the measure of consumption.



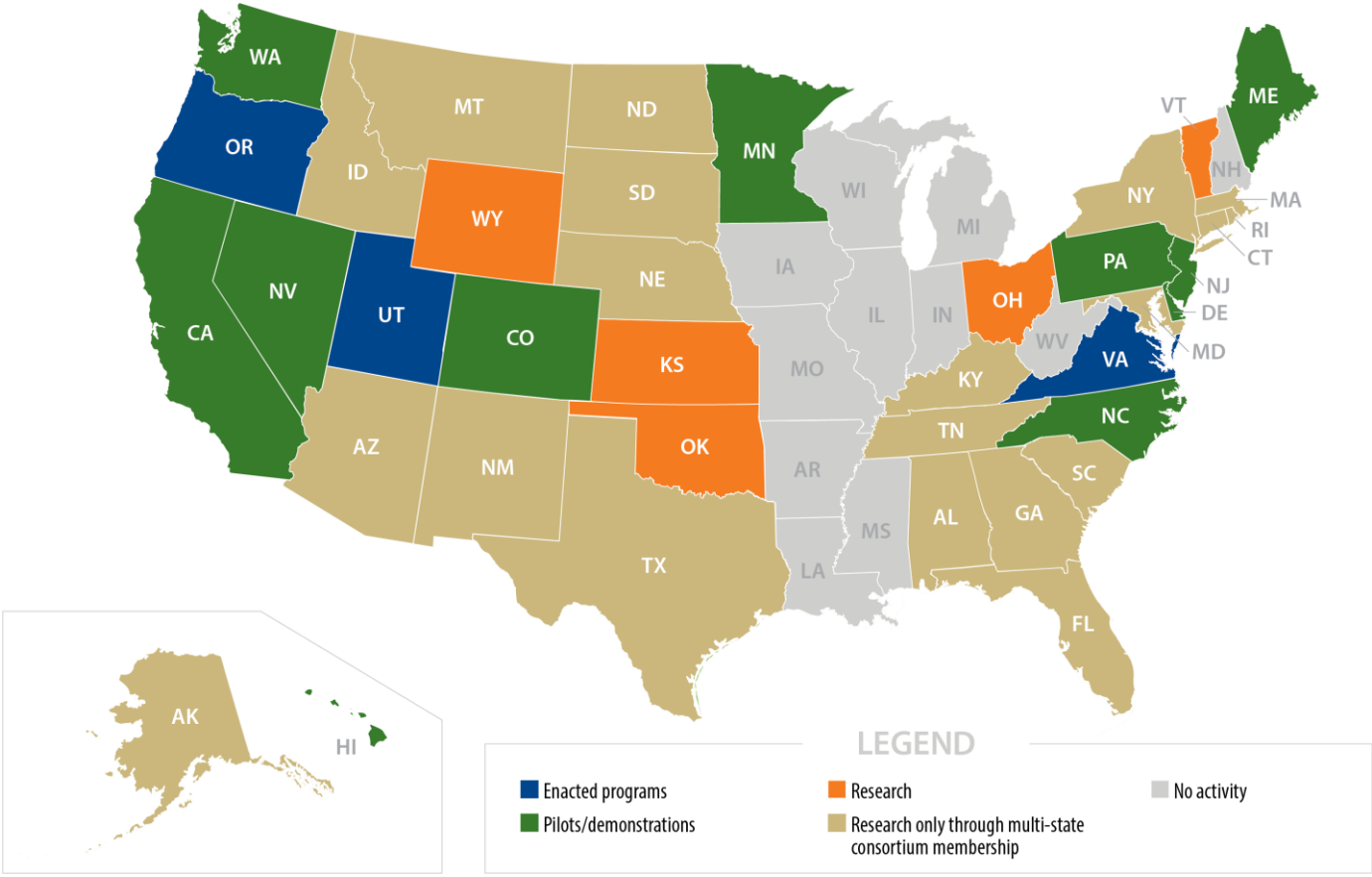
Motivations for RUC

- Bolster or replace the state gas tax as the source of user-based transportation funding.
- Make more equitable payment for public roadways.

Contributions to state and federal fuel taxes per tank of gas or full charge



Road Usage Charge Programs and Pilots in the US (2022)



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The systems of RUC



Currently viable RUC Systems in the US



High tech

- Account-based
- Data collected via automation
 - Plug-in devices
 - In-vehicle telematics
- Private sector operated



Low tech

- Builds on existing DMV systems
- Odometer readings manually reported
- Government operated

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RUC concerns to manage



Concerns Raised During Public Presentations of RUC

- Privacy protection
- Data security
- Exemptions and refunds
- Out-of-state driving
- Location-aware mileage reporting
- Interoperability with other states, counties, federal
- Compliance and enforcement
- Scalability of systems
- Flexibility for policy adaptation
- Evolution of technology and business models
- Equity by geography, vehicle type, income level
- Cost of administration
- Transition
- Rate setting (including by weight, configuration)
- Integration with tolling, congestion pricing
- Fleet management
- User experience
- Organizational design
- Constitutional issues (e.g., commerce clause)
- Third party risk management
- Impact of charging on environment, emissions

The Critical Concerns Hampering RUC Enactments



Equity by geography



Equity by vehicle type



Equity by income level



Cost of administration



Privacy protection & data security



What to do next



Privacy & Data Security

- **The Issue:** Surrendering mileage data to account managers.
- **The Context:** Drivers fear data cannot be protected.
- **The Facts:** RUC requires only an annual total mileage number.
- **Solutions:**
 1. Choice of alternatives for data reporting.
 2. Choice of account managers.
 3. Restrict government access.
 4. Designs to protect data.
 5. Legal privacy and data protections.



Model Privacy Policy for RUC Systems

- Defines “protected information” for road usage charging.
- Obliges holder of personal information to protect it and ultimately delete it.
- Identifies state agency responsible for compliance.
- Provides remedies for violations.
- Establishes RUC payer rights.



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How to ramp up RUC





What can states do next?

- Pass limited RUC program.
- Pass voluntary RUC program.
- Pass directive for RUC pilot.
- Direct your state to join a RUC research coalition.
- Begin transition planning.
- Apply for federal grant funding.
- Examine mileage data reporting at vehicle safety inspections.
- Create coalition to engage automakers.
- Adopt model RUC Privacy Protection Act.

Act with deliberate speed.

A faded, blue-tinted background image of a busy city street with cars, buses, and a train on an elevated track. A yellow crosshair is visible in the upper left quadrant.

**Questions
are
Welcomed**



Equity by geography

- **The Issue:** Unfair burden.
- **The Context:** Gas tax already an unfair burden.
- **The Facts:** RUC may advantage driving low-MPG vehicles.
- **Solution:** Keep low-MPG vehicles on gas tax.





Equity by vehicle type

- **The Issue:** RUC hampers EV sales and use.
- **The Context:** EV operators do not pay a fair share of road taxes.
- **The Facts:** RUC comprises small cost on EVs.
- **Solutions:**
 1. Waive state EV flat fee.
 2. Direct carbon tax on driving to collect with RUC.





Equity by income level

- **The Issue:** Disadvantaging low-income drivers.
- **The Context:** All drivers pay the same tax rate for gasoline.
- **The Facts:** Lowest-income drivers advantaged by RUC.
- **Solutions:**
 1. Tax rebate to low-income drivers.
 2. Rate advantage for low-income households.
 3. Periodic payments of RUC.





Cost of administration

- **The Issue:** Fear new system cost prohibitive.
- **The Context:** Gas tax operations is low. Cost of other tax systems higher. the U.S. range from 5% to 20%.
- **The Facts:** Cost of RUC should be less than 10 percent.
- **Solutions:**
 1. Cost reduction analysis of high-cost RUC collection elements.
 2. Interstate coordination on RUC systems.
 3. In-vehicle automaker telematics for data reporting.

