A stylized graphic of a road with a dashed yellow center line and solid blue outer lines, curving upwards and to the right against a green background.

# Washington State Road Usage Charge Assessment

# What Is the Problem?

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Taxing fuel is no longer a reliable, equitable source of funding

# Two Cars and Two *Very* Different Fuel Taxes

2009 TOYOTA CAMRY



**25 MPG**

**\$198 State fuel tax paid**

2023 TOYOTA CAMRY HYBRID



**52 MPG**

**\$95 State fuel tax paid**

# Electric Vehicle Adoption Is Accelerating Nationally and in Washington



Washington ranks **2<sup>nd</sup>** **nationally** (behind California) in EV market share



**11%** of new vehicles registered in 2022 in Washington were electric or plug-in hybrid electric vehicles (PHEVs)

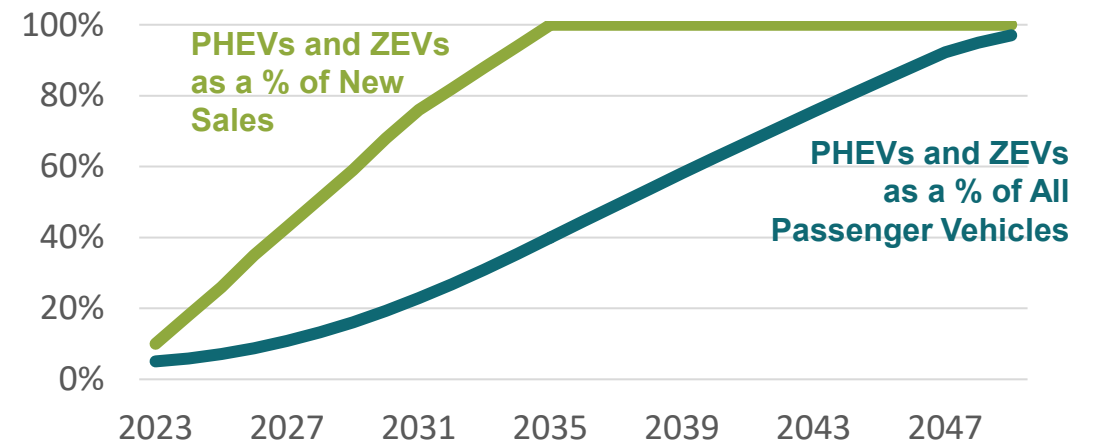


In 2023, **1 in 5 new cars** sold is an EV or PHEV

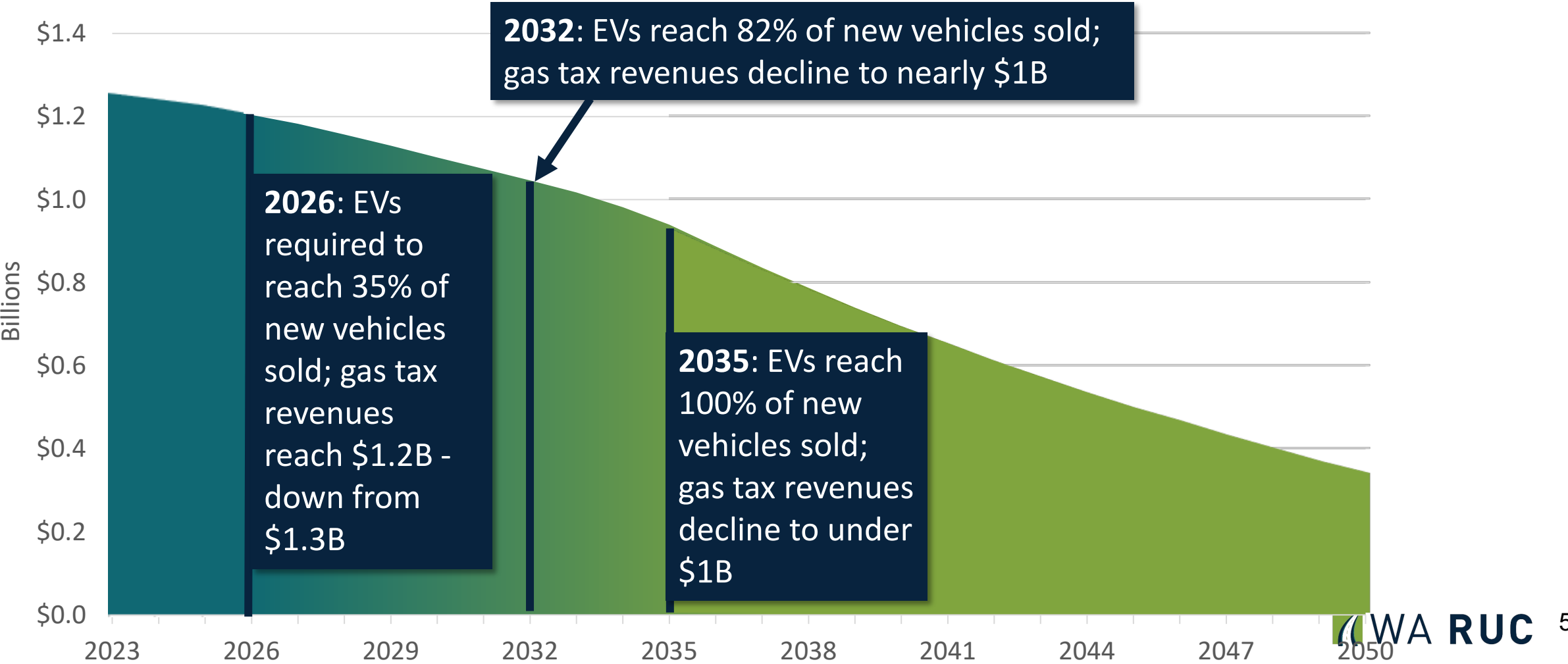


In 2030, target for ban on sale of **new** internal combustion vehicles

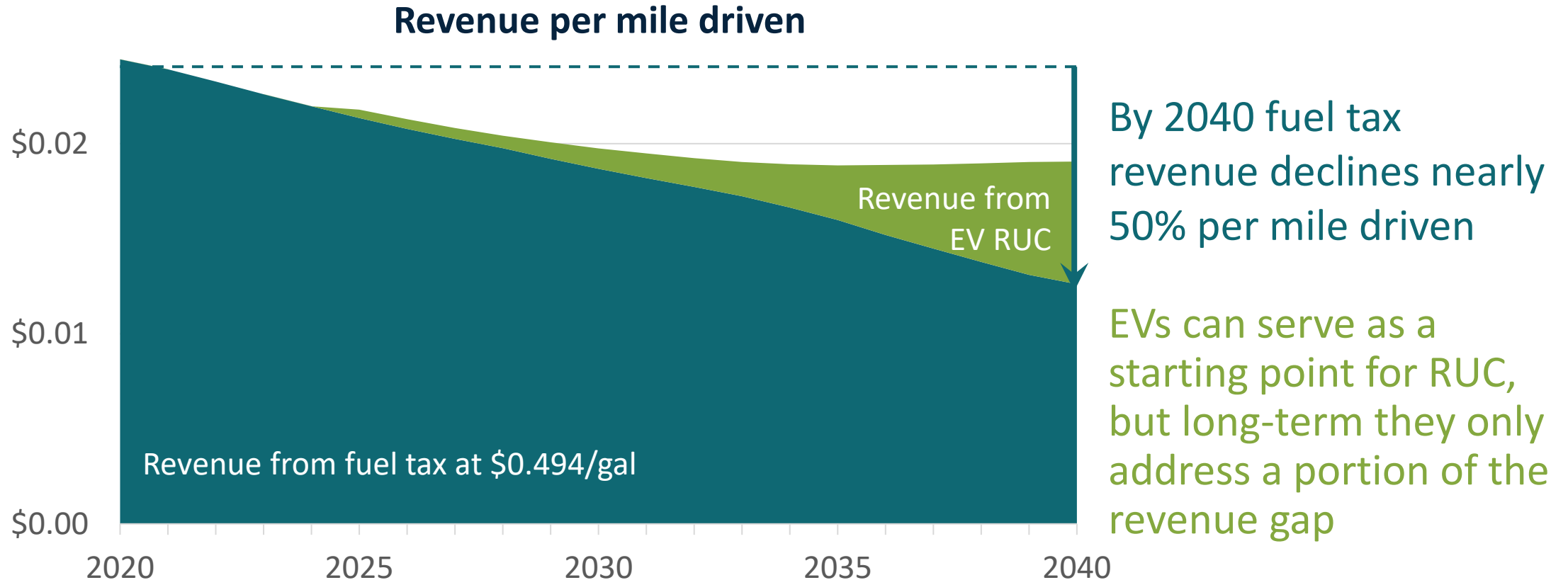
*Washington adheres to California's requirement that 100% of new vehicle sales by 2035 be EVs or PHEVs. It will take another 20+ years for the entire on-road fleet to reach 100% EV or PHEV*



# Gas Tax Revenues Will Decline Rapidly as Zero Emissions Mandates Are Implemented

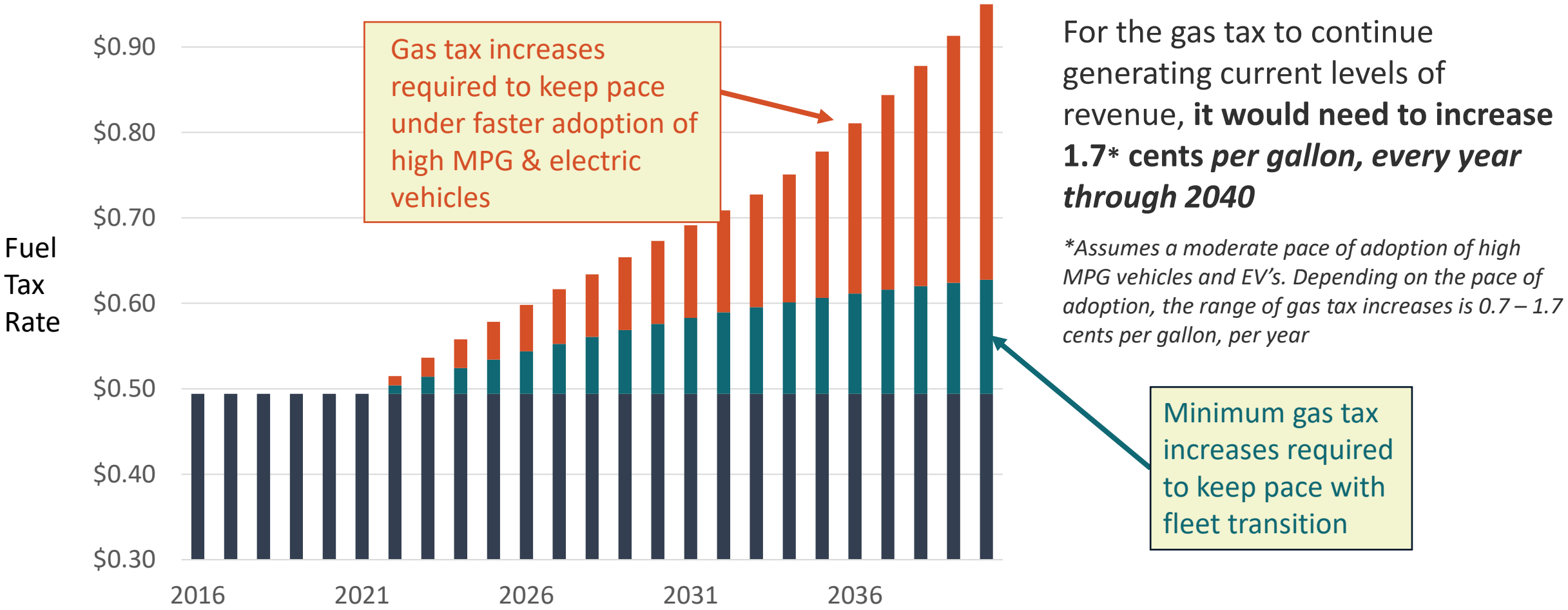


# Vehicle Fuel Economy Trends Undermine Transportation Revenue



*NOTE: Chart assumes 27% of vehicles are electric by 2040, and the remaining 73% of gasoline and hybrid vehicles average 28.7 miles per gallon.*

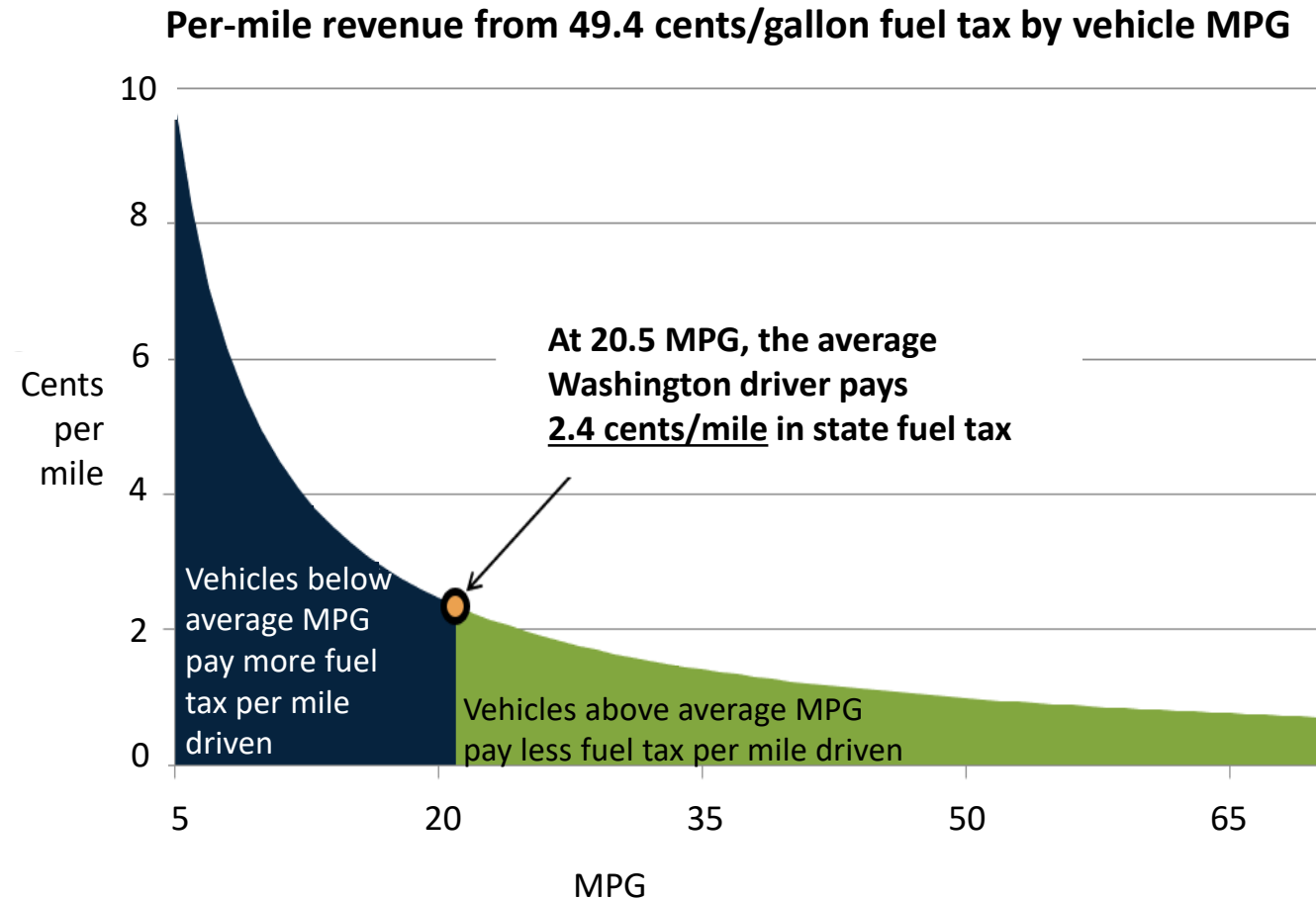
# Preserving Current Gas Tax Revenue Levels Require Frequent Rate Increases



Current State Fuel Tax: 49.4 cents / gallon

# Taxing Gallons Has Fairness and Equity Challenges

- The gas tax is fair because it is based on a simple principle: user pays, user benefits
- As vehicles become more fuel efficient and alternative fuels emerge, this principle is shifting to a “some users pay/all users benefit”
- RUC returns us to the user pay, user benefits principle





# Why Road Usage Charging Makes Sense

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RUC builds the road to sustainable funding for  
transportation

# Why Road Usage Charging?



**RUC is the only viable usage-based alternative funding source to the gas tax.**

By connecting contributions to consumption, RUC preserves the user-pay paradigm that the gas tax embodied and that underpinned transportation funding in Washington and nationally



**RUC provides sufficient revenue to sustain the state's long-term funding needs.**

The state can generate revenue equivalent to today's gasoline tax at a rate of 2.4 cents per mile, which is less than 5% of the cost of owning and operating most vehicles



**RUC implementation can be simple, enforceable, and secure.**

By offering drivers choice for how they report their miles, RUC mileage collection methods are convenient, accessible, and low cost to administer for the state, while safeguarding sensitive private data



**RUC harmonizes climate, equity and transportation funding.**

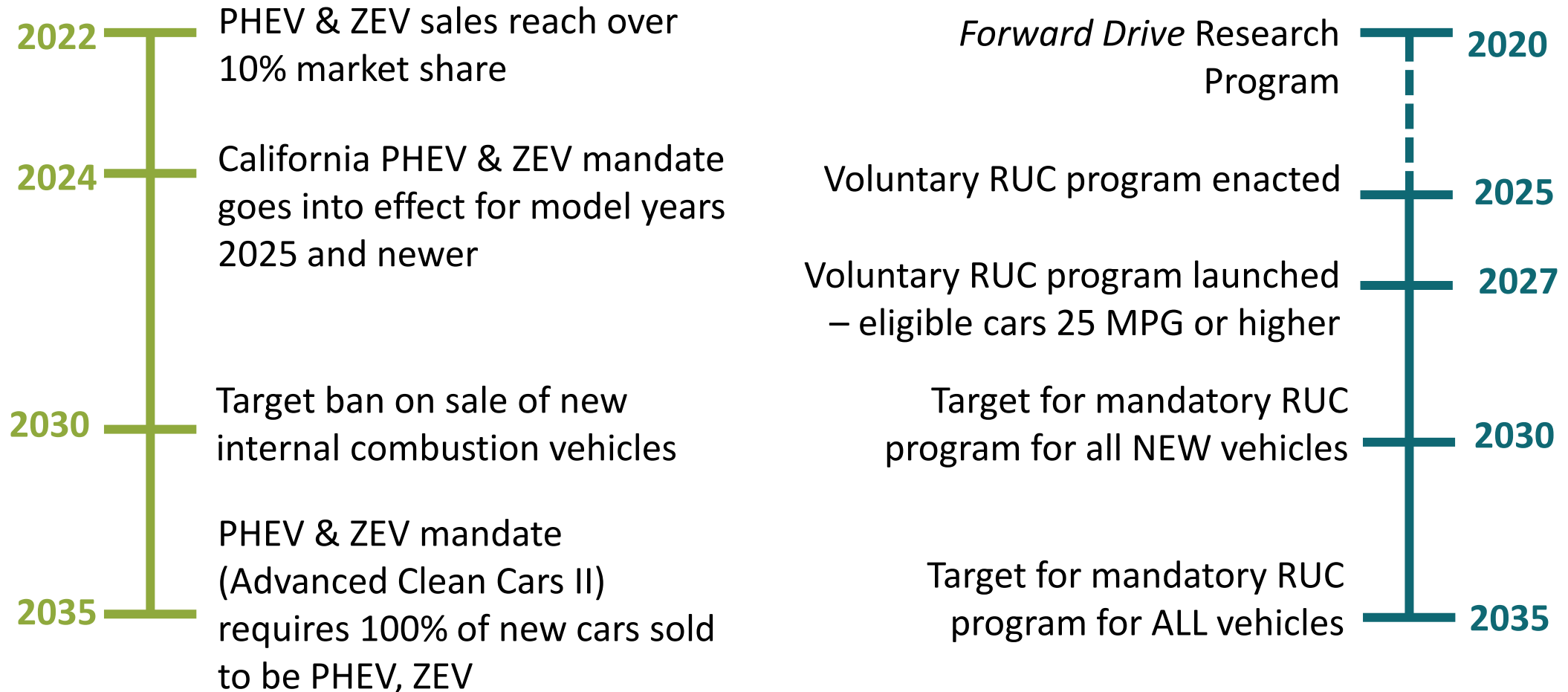
By replacing the gas tax, transportation funding needs no longer need to rely on fossil fuel consumption



**Task forces, commissions, and study committees in Washington and nationally have repeatedly pointed to road usage charging as a top choice for future transportation funding**

- National Surface Transportation Policy & Revenue Study Commission, 2007
- Connecting Washington Task Force, 2011
- Washington Joint Transportation Committee Statewide Transportation Needs Assessment, 2020
- Transportation Commission Alternative Transportation Funding Sources, 2022

# Current Fleet Electrification Mandates & Proposed RUC Transition Plan



# What Washington State & Other States Doing to Advance RUC?

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Alternatives exploration, research, outreach, pilot testing, and policy development

# Legislative Direction to WSTC

## **2012 Legislative Mandate**

*Assess RUC's suitability as a sustainable, long-term revenue source that could replace the current state gas tax*

### High-level parameters:

- During a transition period of moving from the gas tax to a road usage charge, drivers would owe one or the other, but not both
- To compare the gas tax against a road usage charge, analyze and test a per-mile rate that is equivalent to the state's 49.4 cent/gallon gas tax
  - State Gas Tax 49.4 ÷ 20 mpg (state average) = **2.4 cents / mile**
- Provide drivers' a choice for how their vehicle mileage is collected, reported and paid



# Washington State's RUC Assessment and Research Path

2012 –  
2015

## INITIAL ASSESSMENT & CONCEPT DEVELOPMENT

- 2012 Legislature directs Commission to conduct RUC Assessment
- Convened Steering Committee
- Crafted Guiding Principles
- Determined feasibility
- Developed operational concepts
- Conducted business case analysis
- Designed pilot alternatives

2016 –  
2020

## PILOT TESTING & POLICY ANALYSIS

- Conducted statewide pilot test with 2,000+ drivers
- Tested multiple mileage reporting methods
- Demonstrated interoperability with OR, ID, BC
- Conducted widespread public outreach
- Addressed 10+ policy issues through analysis and alternatives
- Issued recommendations

2021 –  
Today

## SYSTEM READINESS & CONTINUED RESEARCH

- Legislative proposals emerge
- Updating financial analysis
- Assessing equity impacts and conducting statewide outreach
- Exploring service options and operational innovation
- Developing cost reduction strategies
- Designing mini-pilot tests for emerging concepts

*State-funded*

*Federally-funded*



# How Could a RUC System Work for Washington?

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Research and testing provide answers



# Washington's RUC Pilot Project



**Year-long**, statewide test of Washington-designed RUC system for **2,000** test-drivers



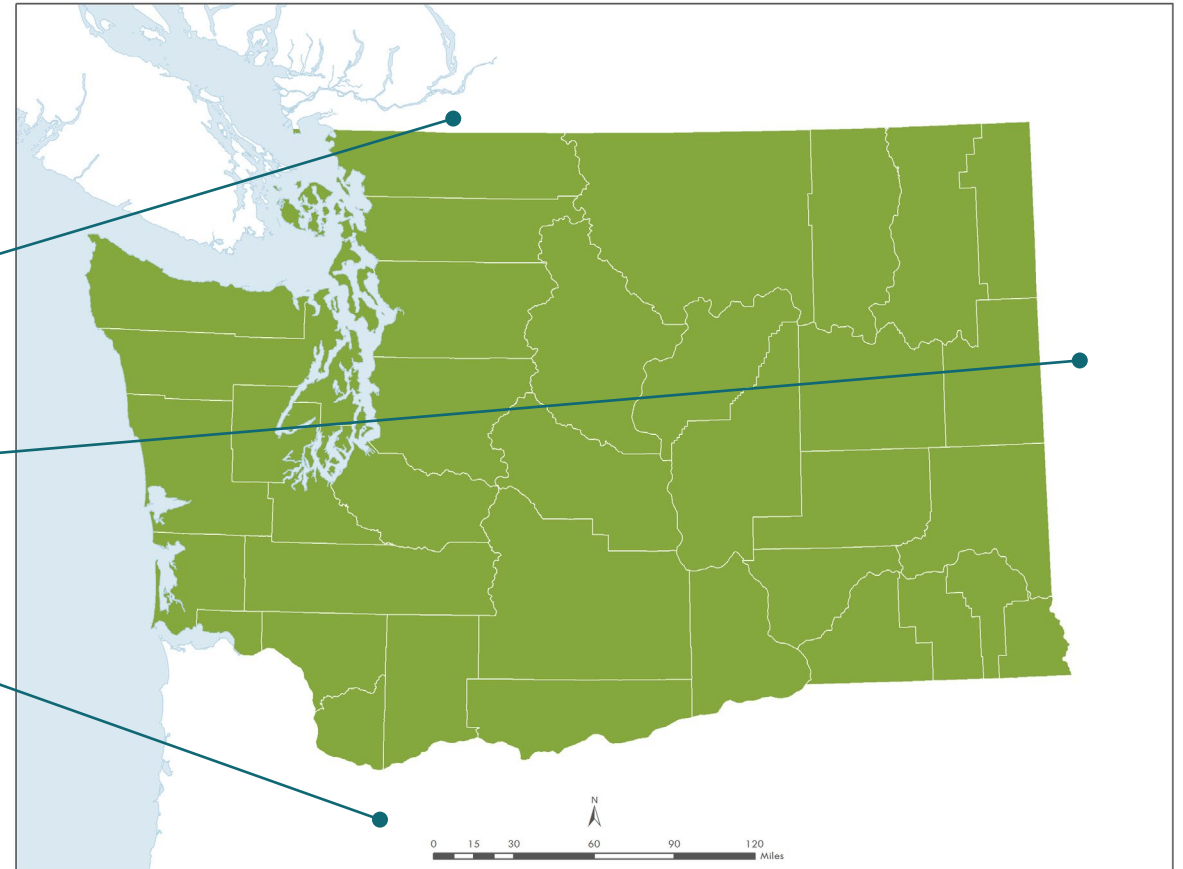
## Cross-border testing:

- City of Surrey, BC
- Idaho Transportation Department
- Oregon Department of Transportation



## Key partners:

Seattle Electric Vehicle Association  
and Plug-in America



# Mileage Reporting Methods: Drivers Get To Choose



## Odometer Reading

- Post-pay for miles reported quarterly
- Report miles either electronically or in person



## MileMapper Smartphone App

- Records miles using a smartphone
- Works with all vehicles
- Navigational GPS can be turned on/off
- Available only on iPhone iOS



## Mileage Permit

- Pre-select a block of miles (1,000, 5,000, 10,000)
- Report odometer either electronically or in person every three months
- Obtain additional miles as needed to keep mileage permit valid



## Plug-in Devices (With Or Without GPS)

- Automated mileage meter with GPS and non-GPS options
- Plugs into OBD-II ports in vehicles 1996 or newer
- GPS-enabled devices automatically deduct out-of-state miles



# How Can Privacy Be Protected?

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Through system design, including user choice,  
and legal protections

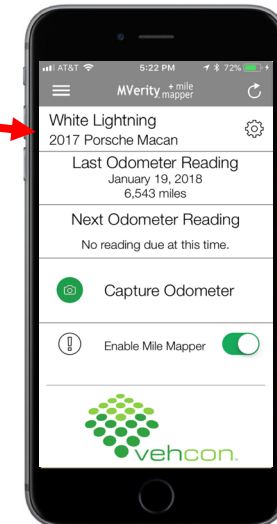
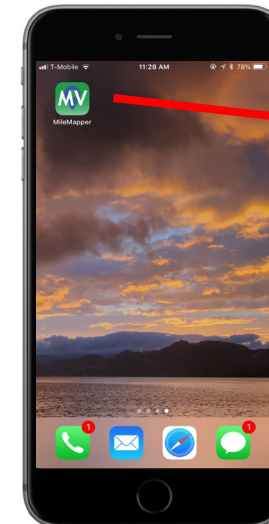
# RUC Does Not Require GPS Technology, and Privacy Protection Measures Are Available

- The only new piece of information needed for RUC that the state Department of Licensing does not already collect is total miles driven
- Drivers would decide how to report their miles, including whether to use location services
- Any mileage reporting method that uses location services is strictly for the convenience of the driver (e.g., to automatically deduct out-of-state and off-road miles)
- RUC enabling law can include provisions to protect privacy, drawing on the Commission's model policy

4 mileage reporting options require no location information



1 2 3 4 5



# How Will RUC Impact Rural and Low-Income Drivers?



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What you drive, not how far you drive determines the impact of RUC relative to gas taxes

# Lower-income Households Pay More to Use the Roads Under the Gas Tax

**\$0.025** in fuel taxes per mile



Household  
Income  
**<\$50K**



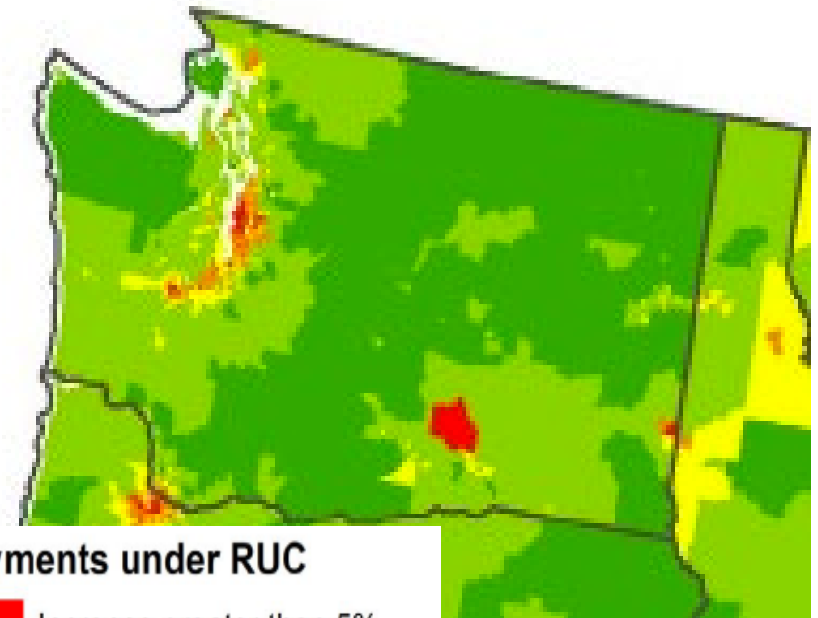
**\$0.022** in fuel taxes per mile

Household  
Income  
**≥\$150K**



# On Average, Rural and Low-Income Drivers Will Pay Less Under RUC Than the Gas Tax

- Rural & lower income households tend to drive lower MPG vehicles
- Low MPG = High costs in fuel and gas tax
- Rather than paying as much as 4 - 6 cents per mile today under the state gas tax, drivers of low MPG vehicles would pay less under a flat RUC rate of 2.5 cents per mile



**Payments under RUC**



Source: RUC America

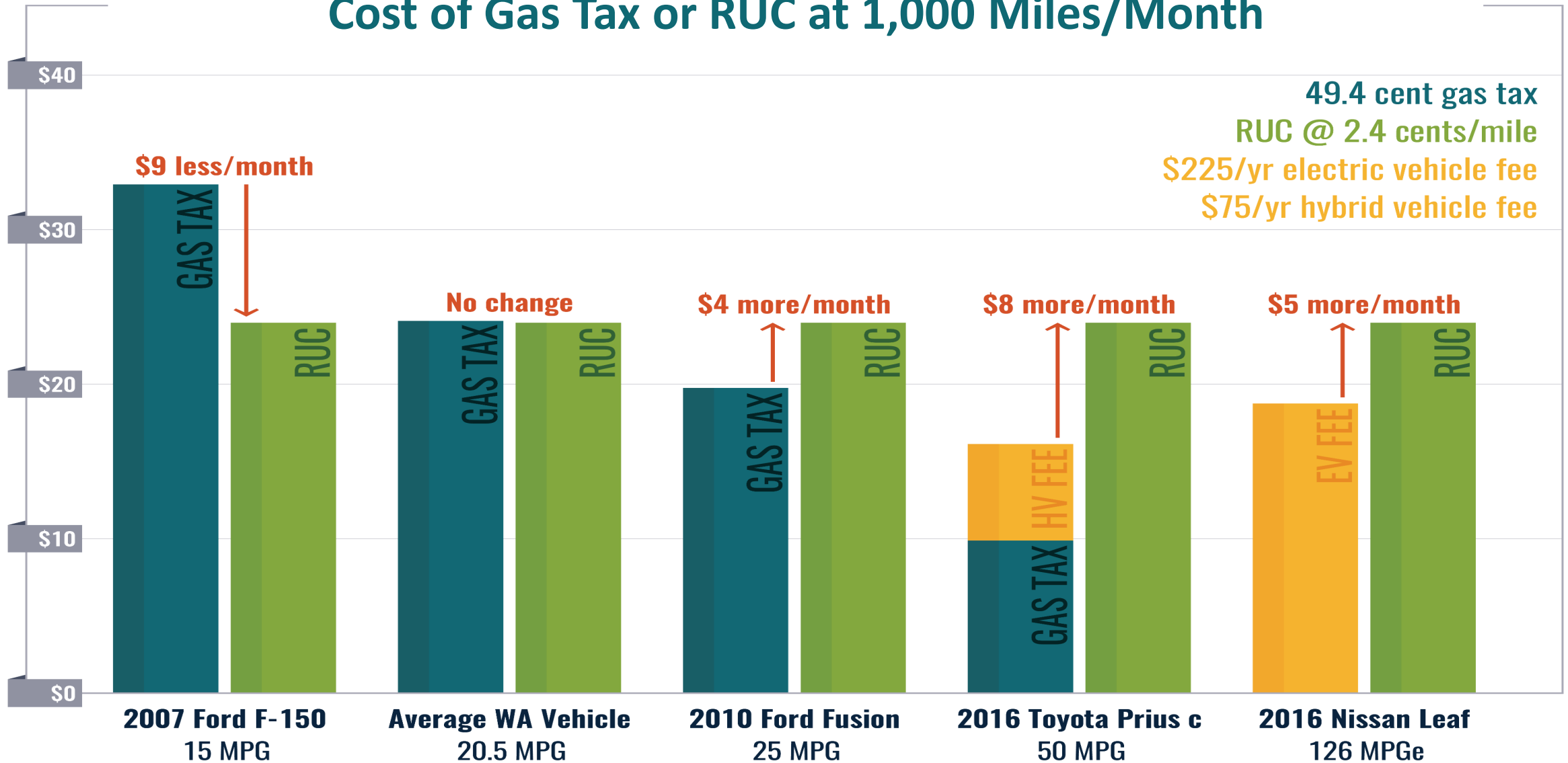
# Lower Income Households Pay More in Fuel Taxes Today and Will See Reductions Under RUC

Census tract average household income	Census tract average MPG	Fuel tax per 10,000 miles driven	RUC per 10,000 miles driven	Change under RUC
Less than \$50k	20.0	\$247	\$240	↓ \$7
\$50-75k	20.1	\$246	\$240	↓ \$6
\$75-100k	20.5	\$241	\$240	↓ \$1
\$100-150k	21.4	\$231	\$240	↑ \$9
Over \$150k	22.6	\$219	\$240	↑ \$21





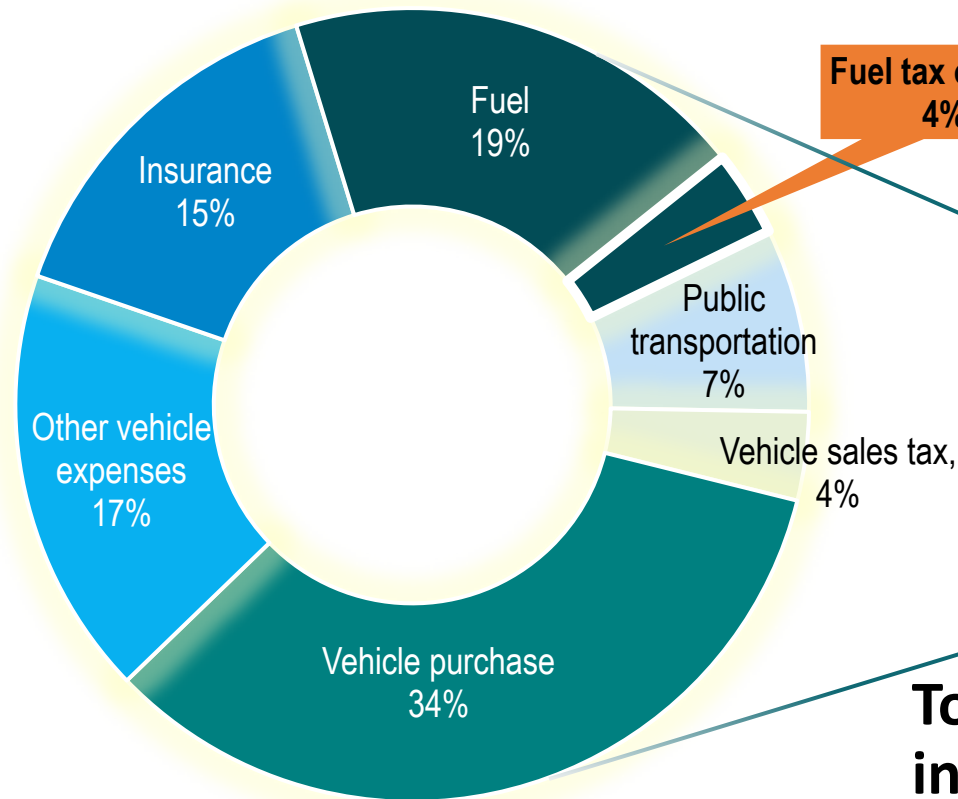
# Cost of Gas Tax or RUC at 1,000 Miles/Month



What you drive will determine the cost impact of RUC:

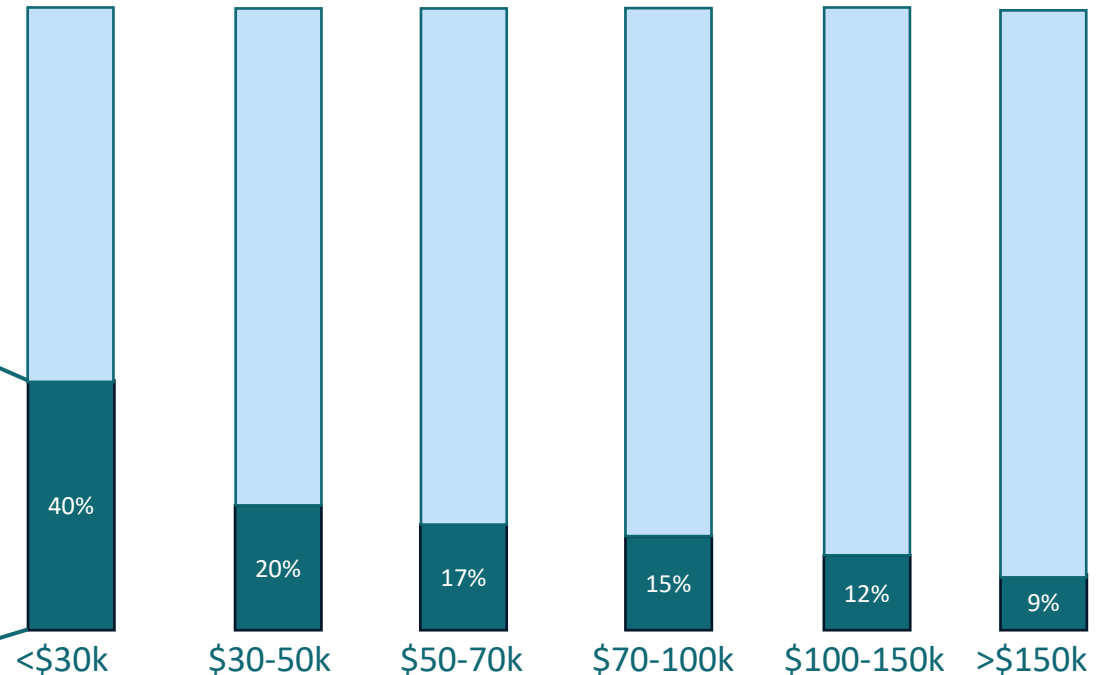
- Less fuel efficient vehicles will see a decrease in the amount of taxes paid
- More fuel efficient vehicles will see an increase in the amount of taxes paid
- The total effect is that all drivers pay the same rate to use the roads—regardless of their vehicle’s MPG

# Transportation Taxes Are a Relatively Small Proportion of Household Costs



Fuel tax or RUC  
4%

Transportation as a percent of household expenditures, by income level



**Today's fuel tax represents only 4% of low-income household expenditures but will increase as fuel taxes increase. With RUC, targeted discounts can be offered**

# How Will RUC Influence Plug-in Electric Vehicle (PEV) Adoption?

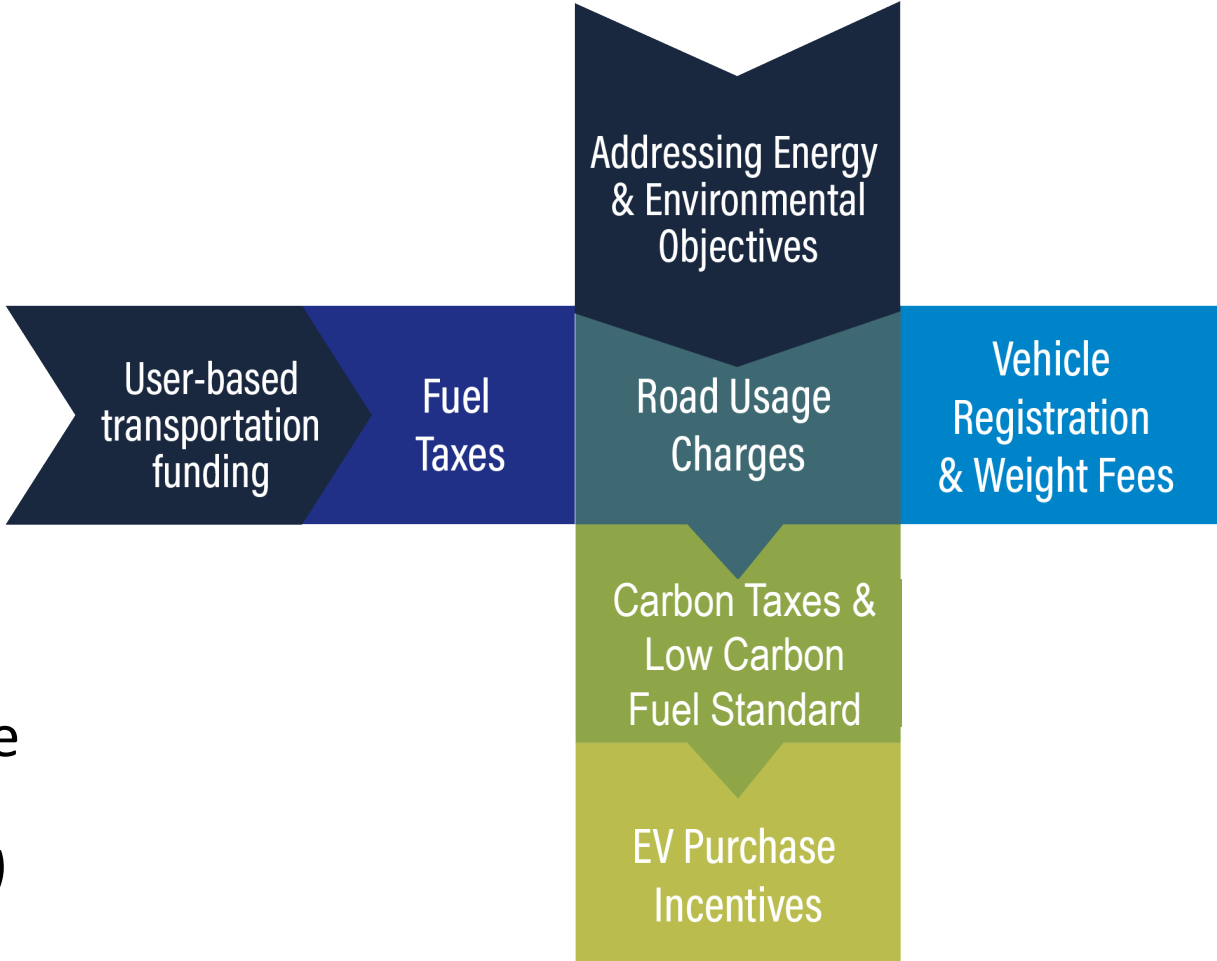
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RUC holds most PEVs harmless, but rates can be discounted to reward PEV owners

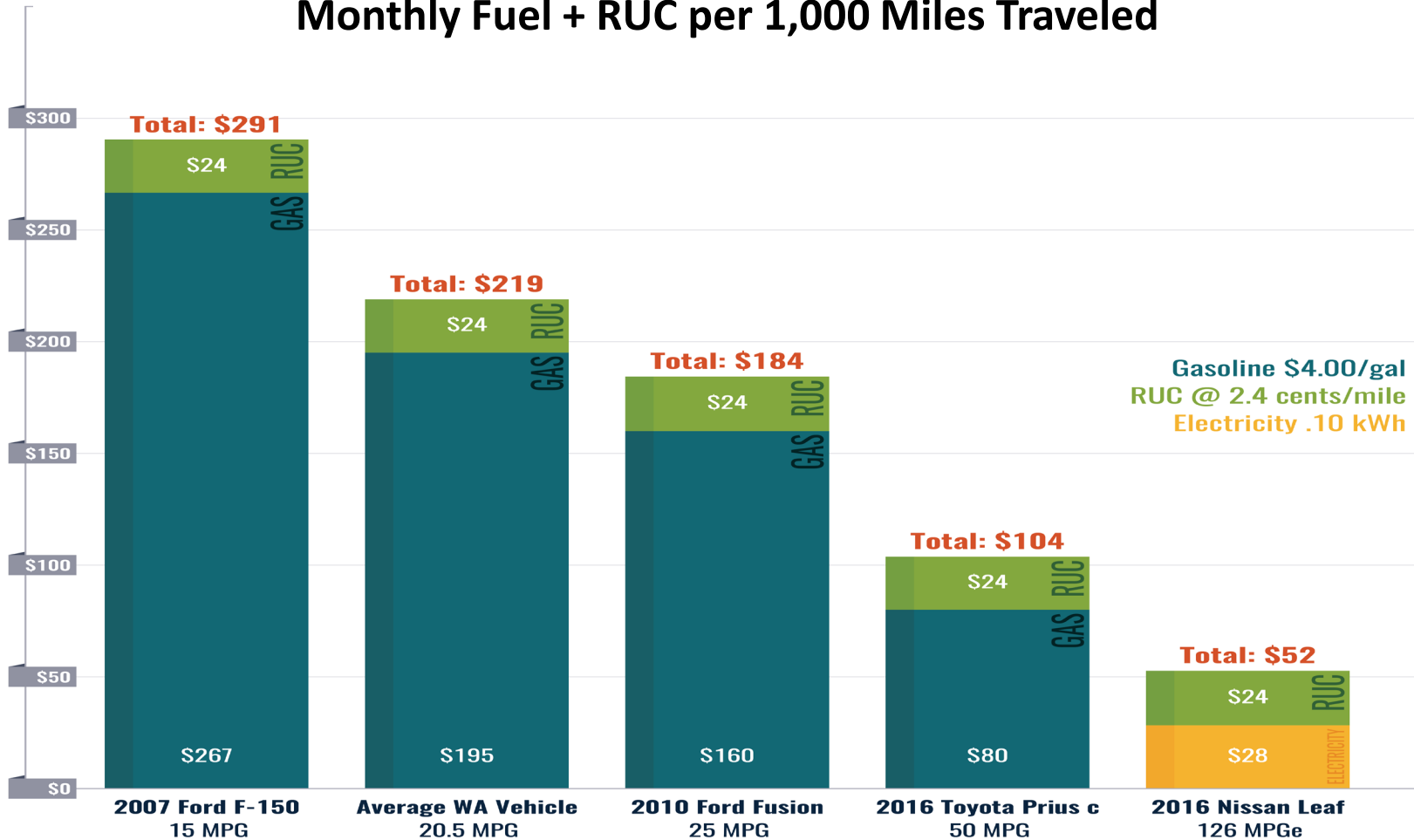
# RUC Harmonizes Funding & Climate Goals

- Removes the need to rely on the consumption of fossil fuels to fund our transportation system
- Provides sustainable funding for infrastructure that will be used increasingly by high-fuel efficient/alternatively fueled vehicles
- Policymakers offer RUC as an alternative to current flat registration fees for EVs and hybrids (*\$225 and \$75 respectively*)



# EVs Maintain Overall Operating Cost Advantage in a RUC System

Monthly Fuel + RUC per 1,000 Miles Traveled



➤ EV drivers maintain a significant operating cost advantage under RUC, compared to gas-powered vehicles, given fuel costs remain a significant cost

➤ Under a future RUC System, participating EV's would not pay the current \$225 EV annual registration fee

# How Can The System Avoid Double Taxing Drivers?



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Fuel taxes are a pre-payment toward RUC

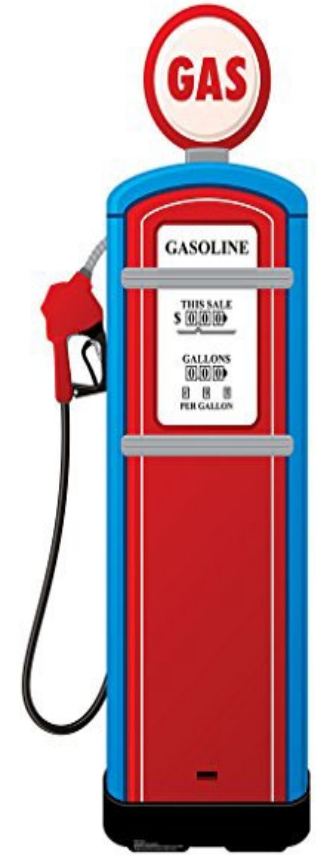
# Leaving the Fuel Tax in Place Enables a Smooth Transition to RUC, Supports Interstate Travel, and Limits Evasion

Treat the fuel tax as a pre-payment or credit towards RUC charges

- The amount of fuel tax a driver pays can be directly measured or estimated using miles driven and EPA fuel economy ratings

Other benefits of leaving the fuel tax in place:

- Supports seamless interstate travel
- Enable small, incremental payments (gas tax paid at the pump) toward RUC for gas cars
- Serves as a natural backstop against tax evasion
- Ensures Washington State can meet its legal requirements for outstanding bonds



# 2023 Simulation of RUC Enrollment

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Driver's experience signing up for RUC for the first time, experiencing the process and impacts to them personally



# Simulating RUC Enrollment and Payment

## Objectives



### User Experience

**Validate design** from user experience research and **gauge user perceptions and preferences.**



### Cost Reduction

Measure **scalability, cost, and performance** of prototype features.



### Equity

**Incorporate equity** through prototype design.

# Overview of Results

## SIMULATION

Participants engage with an online simulated RUC payment platform



## SURVEY

Simulator participants provide feedback on their experiences and opinions



1,145  
participants

 70%

were satisfied or very satisfied with the RUC payment and reporting process

 85%

said no steps were difficult to complete

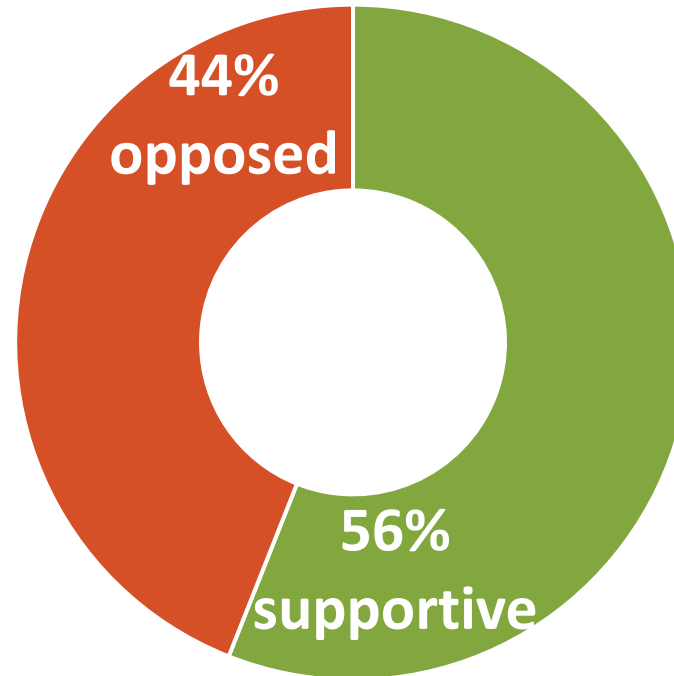
 56%

reported taking ≤5 mins to complete

# Support for RUC

After experiencing the Simulator, respondents support transitioning from a gas tax to a RUC by a margin of 56-44.

All respondents (weighted n = 649)

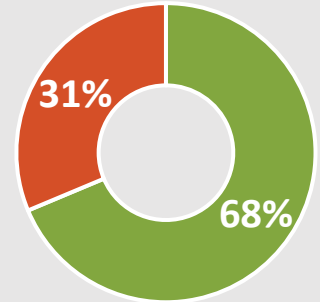


Survey question: How supportive are you of transitioning from funding roads through the state gas tax based on gallons purchased to a road usage charge based on miles driven?

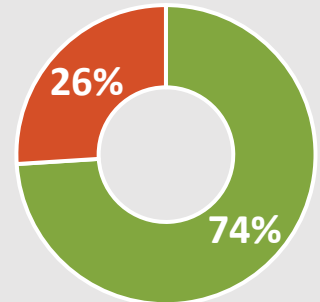
## Disaggregation by Self-Identified Political Party

Independents support RUC at the highest rate, with Democrats closely following. Republicans have the lowest support for RUC.

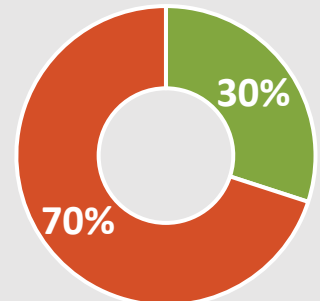
Democrats (weighted n = 367)



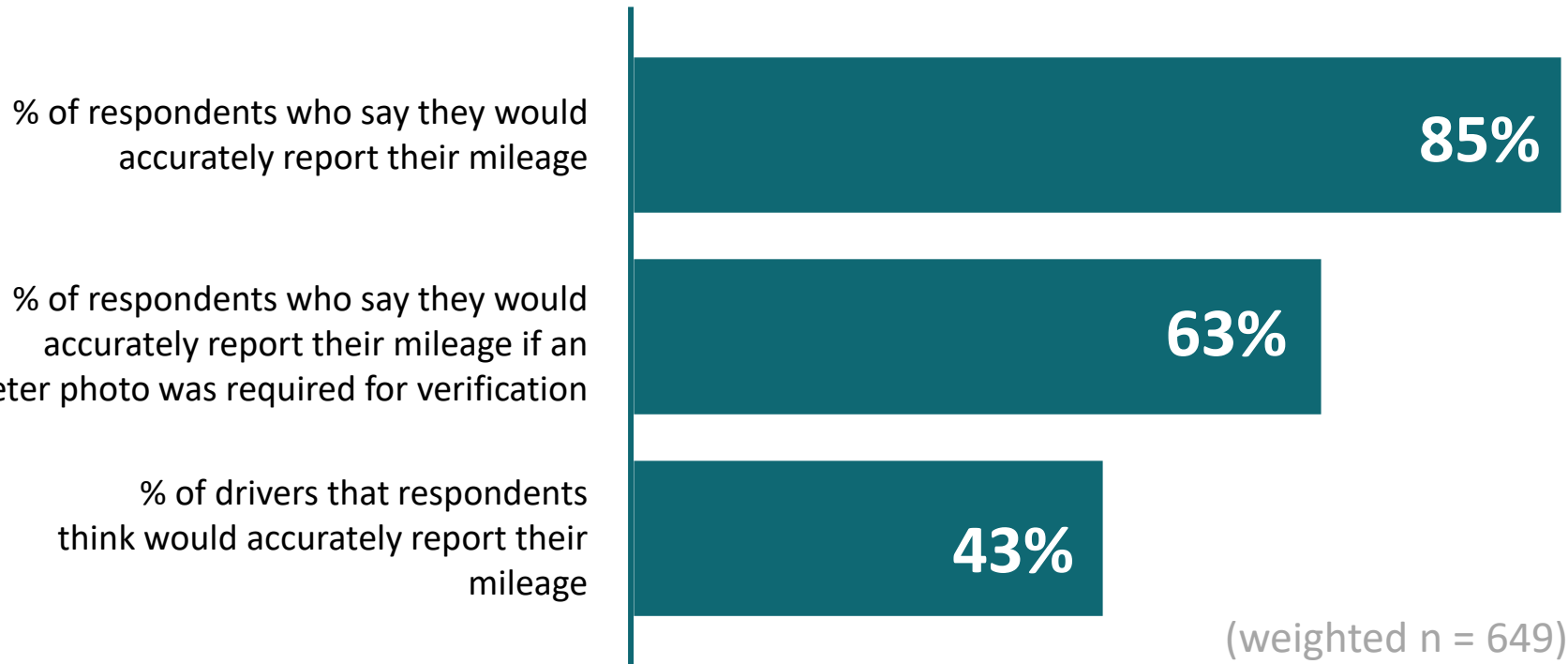
Independents & Undecideds (weighted n = 66)



Republicans (weighted n = 216)



# Mileage Reporting Preferences



## Key Findings:

- **85% chose self-reporting as their preferred mileage reporting method (weighted n = 649).**
- **Respondents underestimate others' honesty in reporting miles driven.**

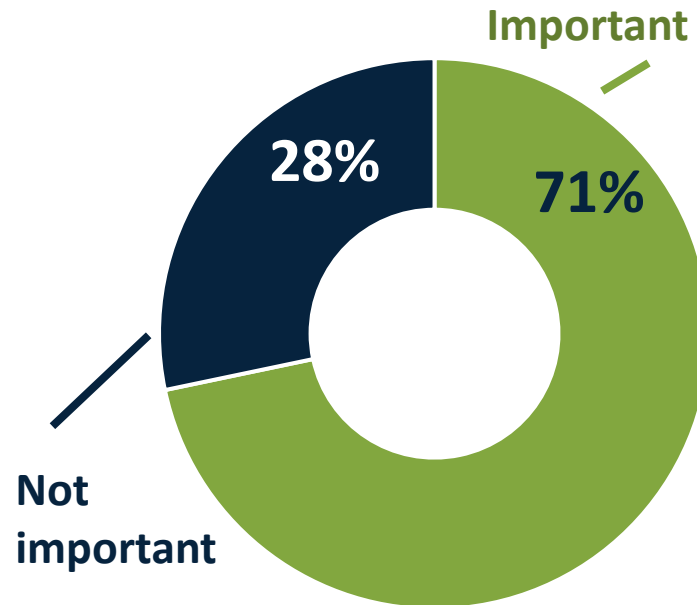
### Survey questions:

- *Would you accurately report how many miles you drove for a real road usage charge?*
- *If the state of Washington implemented a road usage, what percentage of people do you believe would accurately report their miles driven in the past year?*
- *If the state of Washington implemented a road usage charge and required drivers to share an odometer photo to verify mileage, what percentage of people do you believe would accurately report their miles driven in the past year?*

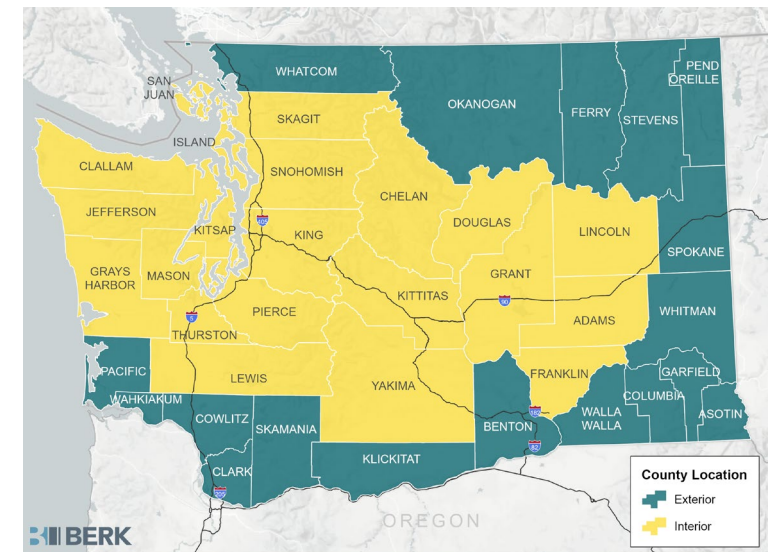
# Accounting for Out-of-State Miles

Most say it is important to be able to claim exemptions for out-of-state and private miles driven (regardless of resident's location in an interior versus border county)

**85%**  
chose self-reporting



Border and Interior Counties



# Payment Options

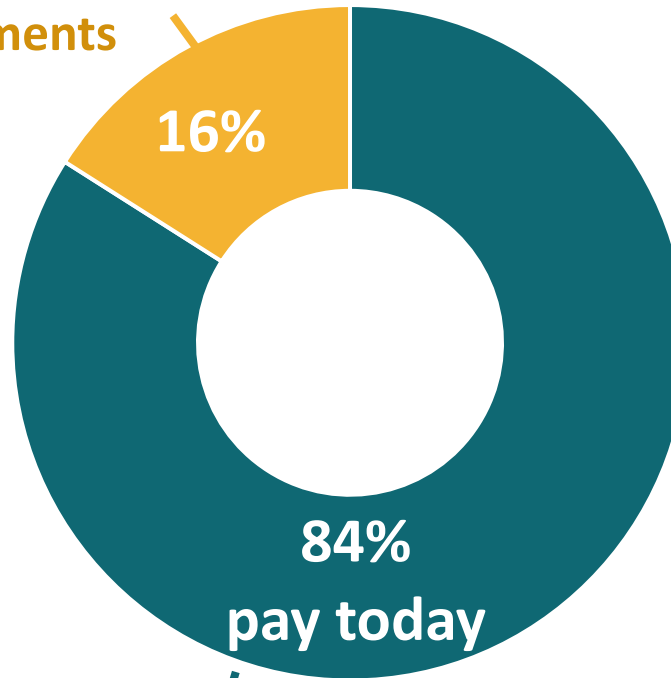
The average RUC due among participants, net of gas tax credits, was relatively small.



Average net RUC  
per year

**\$ 29.64**

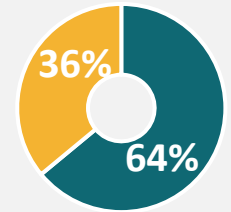
Four equal  
payments



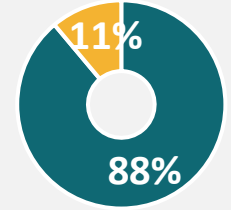
Most participants opted to  
pay RUC in a single  
installment

A higher rate of respondents with the  
lowest incomes preferred installments

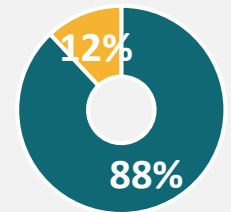
<\$50,000  
(weighted  
n = 118)



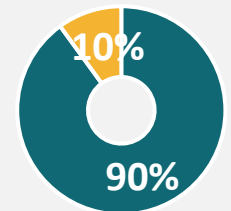
\$50,000-  
\$99,999  
(weighted  
n = 193)



\$100,000-  
\$149,999  
(weighted  
n = 132)



≥\$150,000  
(weighted  
n = 187)





**For more information on  
Washington State's RUC  
Assessment, visit:**

**[www.waroadusagecharge.org](http://www.waroadusagecharge.org)**



# Contact Information

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Consultant support provided by:

