

Nevada Sustainable Transportation Funding Strategies Project

Advisory Working Group Meeting

November 9, 2021

Meeting locations (with live video connection):

Nevada Department of Transportation
Headquarters Building
3rd Floor Conference Room
1263 S. Stewart St
Carson City, Nevada

Nevada Department of Transportation District I
Headquarters
Conference Room
123 East Washington Ave
Las Vegas, Nevada

Welcome and Roll Call

Public comment period

Approval of the minutes from September 14, 2021 meeting

Preview of the day and future meeting topics

Preview of today's meeting

Theme: *developing principles to guide the evaluation and selection of transportation revenue mechanisms*

- Proposed revenue principles
- Demonstration: application of proposed revenue principles to Nevada's current transportation funding mechanisms
- Scan of recent statewide transportation funding measures enacted in other states
- Description of two usage-based transportation funding models: Utah's road usage charge program, and an energy efficiency-based alternative
- Finalize list of potential Nevada transportation funding options to be further analyzed

Looking ahead, each AWG meeting has an overall theme, with specific agenda items and outcomes to support that theme.



Part I: Draft revenue principles, explained

Distinguishing a tax *principle* from a position or policy

Principles, positions, and policies are all ways in which a specific outcome can be achieved.

Principles: aspirational capabilities that are used to measure the degree to which the revenue mechanism can achieve desired outcomes.

For now, we are trying to avoid:

Positions: stances typically conveyed as constraints or “pass/fail” tests. If a revenue option does not conform to the position, it is deemed invalid.

Policies: These are specific means of achieving the desired outcome.

Revenue Principles



- Financial sustainability
- Flexibility
- User equity
- Greenhouse gas emissions
- Social equity
- Sufficiency
- Transparency/ Efficiency and ease of compliance

Draft revenue principles (and sources for version updates)

Initial draft (version 1.0):

- AB 413
- Public tax policy literature
- Similar transportation task forces in other states

Revised (v 2.0):

- September 9 AWG meeting: member review and discussion

Revised (v 3.0):

- Received further AWG edits after emailing for review

November 9 AWG meeting:

- Proposed for final fine-tuning

Review: transportation revenue principles for Nevada

Nevada’s sustainable transportation funding mechanism(s) should be capable of:

Draft Revenue Principle	AWG Guidance
<p>Financial Sustainability: Yielding revenue that correlates with maintenance needs for a robust transportation network; demand for transportation, regardless of changes in population, vehicle technologies, ownership, and travel patterns; fuel sources; or decreases in consumer spending.</p>	<p>Incorporates “sustainability” concept from AB 413. Supported by AWG comments on importance of revenue resilience through economic changes/ crises, population shifts, volatile transportation costs, and changing travel patterns and preferences. Also incorporates AWG support for “revenue diversification,” as well as importance of raising revenues to maintain the existing network.</p>
<p>Flexibility: Funding a wide range of transportation-related projects, programs, or priorities across various agencies to meet the needs of system users across all modes.</p>	<p>Incorporates “multimodal transportation needs of all users” concept from AB 413. “Projects, programs, and priorities” text reflects range of investment opportunities highlighted by the AWG discussion (i.e., infrastructure needed to support electrification). Flexibility concept also alludes to current constitutional restrictions on use of funds by mode; varying transportation investment needs by transportation agency.</p>

Review: transportation revenue principles for Nevada

Nevada’s sustainable transportation funding mechanism(s) should be capable of:

Draft Revenue Principle	AWG Guidance
<p>User Equity: Recovering a proportionate share of the costs from those who use the roadway network.</p>	<p>Incorporates “user equity” concept from AB 413. Supported by AWG discussion valuing both concepts and recognizing alignment between “user equity” and “user pays” as principles for those using the roadway network.</p>
<p>GHG Emissions: Aligning with state transportation GHG reduction goals.</p>	<p>Incorporates “greenhouse gas emission” reductions concept from AB 413, though avoids specifics beyond goals for the purposes of keeping this at the “principle” rather than “position” or “policy” level.</p>
<p>Social Equity: Improving the distributional impact on historically underserved groups, while considering the affordability to those contributing.</p>	<p>Incorporates “social equity” concept from AB 413. Reflects AWG discussion around evaluating the transportation cost burden across users.</p>

Review: transportation revenue principles for Nevada

Nevada’s sustainable transportation funding mechanism(s) should be capable of:

Draft Revenue Principle	AWG Guidance
<p>Sufficiency: Generating sufficient revenue over targeted investment timeframes for existing and future transportation infrastructure needs.</p>	<p>Reflects AWG discussion regarding the importance of both near- and long-term sufficiency of revenues raised. Discussion highlighted how different revenue mechanisms may be needed to accommodate both immediate, prescient near-term needs with long-term sufficiency, especially given anticipated changes in transportation technology (i.e., growth in electric vehicle fleet, introduction of connected and automated vehicles with different travel patterns).</p>
<p>Transparency/ Efficiency and Ease of Compliance: Simple to explain, with awareness of how funds are used, cost-effective, and readily administered at statewide and local levels.</p>	<p>Reflects AWG discussion on the importance of both concepts, while also highlighting overlap between the two (allowing for their integration). Transparency should account for how funds are being administered and their effectiveness.</p>

Part II, Demonstration: Applying Nevada's funding sources to proposed revenue principles

Category	Type of tax	Used in Nevada?
Fuel taxes	Flat per-gallon excise fuel tax	Statewide
	Excise tax with inflation index on per-gallon rate	Yes (Washoe & Clark only)
	Local-option (county) fuel taxes	All counties
Vehicle fees	Basic license fees	Title & registration
	Value	GST (statewide & counties)
	Weight	Statewide (heavy only)
General fund transfers	General fund transfers	Yes

Principles as measuring sticks for revenue mechanisms

0	1	2	3	4
Cannot address principle	Poor ability to address principle	Moderate ability to address principle	Good ability to address principle	Excellent ability to address principle

Flat per-gallon excise fuel tax



Governmental services tax (GST)



Recent transportation funding initiatives from other states

Transportation funding trends

In the last 15 years, states have recognized the pending decline in motor fuel tax revenue collections that will come with emerging vehicle technologies and new transportation fuel sources.

29 

States have enacted legislation to increase state gas tax

20 

States currently index their motor fuel tax

28 

States had special fees on plug-in EVs*

14 

States assess fee on plug-in hybrids*

* *Heading into 2021*

Spotlight: recent transportation funding measures enacted in four states: Colorado, Illinois, Ohio, and Utah

Each of these states have recently (since 2015) enacted new transportation tax or fee legislation into law.



Colorado (2021): several new revenue sources provide \$5.3 billion over a ten-year investment horizon.

Stair-stepped gas tax increase, followed by indexing:

- An additional **2 cents per gallon fee on gasoline and diesel** beginning in 2022 that increases each year by 1 cent, up to 8 cents total by 2032. This fee will then be **indexed to construction cost inflation** and adjusted annually after 2032.

New Delivery and Per-Ride fees (with indexing and discounts):

- A new **27-cent fee on deliveries** made by services like Amazon, FedEx, and Grubhub.
- **A 30-cent fee on Uber and Lyft rides**, with annual increases based on the Consumer Price Index. The fee would be discounted 50% for people carpooling or riding in an electric vehicle.

Special registration surcharges on EVs – but paired with substantial public investment in accelerating adoption:

- An increase in **special registration fees for electric and hybrid vehicles** to reach tax parity between what average gas vehicles pay in fuel taxes.
- A total of \$724 million (14%) will be dedicated to several programs to accelerate the transition to electric vehicles.

General fund transfers:

- Federal stimulus funds and **transfers from the state general fund** are included (28% of the \$5.3 billion, 10-year package).
- About 10% of the total package (\$568 million) is earmarked for public transit and pedestrian improvements.



Illinois (2019): comprehensive, 6-year Rebuild Illinois funding package generates \$33.2 billion in transportation revenue from diverse sources.

Making up for lost time (and spending power): Gas and diesel tax increases, with indexing:

- A **19-cent-per-gallon tax increase on gasoline** and a **24-cent-per-gallon increase on diesel** and special fuels, then **indexed** to inflation (CPI). Illinois had not increased its gasoline tax since 1990.

Wide assortment of vehicle fees increased:

- Annual **vehicle registration fees** were increased by \$50. Other assorted vehicle-related fees were also increased.
- **Truck registration fees** were also increased by \$50 for trucks 8,000 lbs. or less and by \$100 for trucks that weigh more than 8,000 lbs.
- A **new \$100 registration surcharge on electric vehicles** is imposed, in lieu of motor fuel taxes.

General fund transfers:

- Gradual shift in **sales tax on motor fuels** shifted from the general fund to the Road Fund. The sales tax on motor fuels is 6.25%. For five consecutive years, 1% of the 6.25% total will be shifted, so that by 2025, the Road Fund will receive 5% of the total.
- A new Transportation Renewal Fund was created as the depository account for the increased fuel tax revenue, with 80% earmarked for road and bridge projects and 20% for rail and transit capital projects.



Ohio (2019): gas and diesel tax increases, general fund transfers for transit, new fees on EVs– and a select committee to explore future funding options.

Significant gas and diesel tax increases:

- A 10.5-cent-per-gallon tax increase on gasoline and a 19-cent-per-gallon increase on diesel fuel.

New registration surcharge for EVs and hybrids:

- A new annual registration fee of \$200 for electric vehicles and a \$100 fee for plug-in hybrid vehicles.

General fund transfer for transit funding:

- A general revenue fund transfer of \$70 million for public transportation.
- Of the \$70 million in transit funding, \$16.6 million is directly distributed among the 27 transit agencies, with the remaining \$53.4 million earmarked for multiple grant programs aimed at assisting transit capital needs (i.e., vehicle purchases and preventive maintenance projects) and programs to enhance mobility for seniors and individuals with disabilities.

Holding off on indexing to more closely examine funding options for the future:

- A provision that would have indexed the fuel tax was removed in the final negotiations. Instead, the legislation created the Ohio Road to the Future study committee to examine long-term needs and alternative funding mechanisms for the future, including a vehicle miles traveled approach and possible pilot project.



Utah (2015 – 2019): successive measures focus on fuel tax indexing, local option sales taxes, and road usage charges for EVs

2015: local option taxes for highways and transit, indexing, and planning a road usage charge

- **local option sales tax for highways and/or transit**, at the discretion of local governments
- replace the state's cents-per-gallon fuel tax and instead impose a **percentage tax per gallon** on the average wholesale price of fuel;
- **indexes the new fuel tax** to inflation (CPI);
- requires Utah DOT to develop an implementation plan for a **road usage charge**

2017: fixes to the indexing formula

- adjusts the indexing provisions established in the 2015 legislation to ensure fuel tax revenue collections are more responsive to inflationary factors.

2019: Road usage charge for EVs is implemented as alternative registration surcharge

- Legislature directs Utah DOT to **implement a road usage charge for alternative fuel vehicles** (e.g., electric vehicles), offered to drivers as an alternative to the state's electric and hybrid vehicle registration surcharge.

Observations from recent state transportation funding measures

- ✓ **Provisions to address both near-term *and* longer-term needs.** Several measures increased existing taxes or fees while also enacting provisions to provide longer-term funding sustainability.
- ✓ **More states are indexing to inflation.** Indexing was prominent for existing taxes (like the gas tax), but also applied to newly-created taxes and fees.
- ✓ **Multiple revenue sources.** While a few states narrowly increased existing gas taxes, those states that enacted comprehensive revenue packages included multiple revenue sources – not just an increase in a single source.
- ✓ **“Flexible” revenue sources.** Many states included revenue sources capable of funding non-highway projects, like public transportation, bicycle, and pedestrian facilities.
- ✓ **Addressing the evolution of the vehicle fleet.** While specifics varied, several measures contained provisions to collect revenue from high-MPG and/or alternative fuel vehicles. Registration surcharges were common, but in some cases, were paired with major investments supporting electrification (e.g., Colorado). Some states directed development of usage-based charges as an alternative to special EV fees.

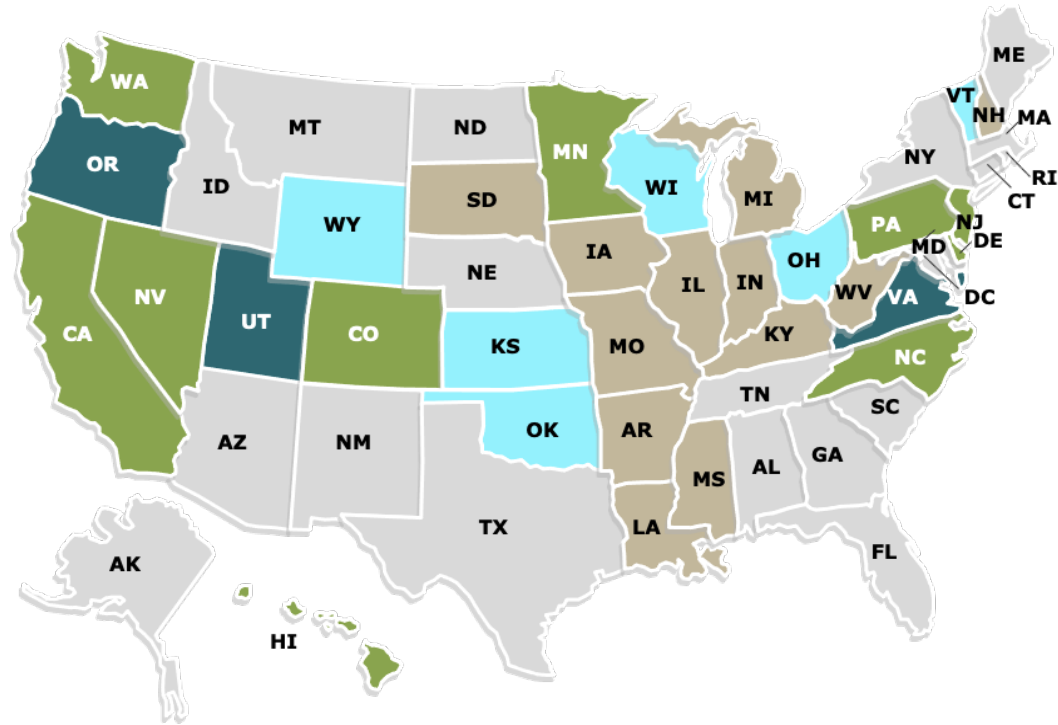
Considerations for Nevada's future transportation revenue sources:

- ▶ **Identify the specific investment horizon to be solved for, then match sources that are best fits.**
- ▶ **Consider techniques for keeping pace with inflation.**
- ▶ **Propose a combination of revenue sources rather than trying to create a “perfect” new mechanism.**
- ▶ **“Flexible” revenue can be achieved in several ways – including redirection of general revenues.**
- ▶ **Sustainable funding requires future-proofing against the evolving vehicle fleet.**

Road usage charging and rate-setting concepts

Status of road usage charging efforts nationally

Three states have enacted small-scale programs for electric, plug-in hybrid, hybrid, and or high-MPG vehicles. Ten more have conducted public pilots, with several others involved in research.



- 3** Enacted programs
- 10** Public pilots/demonstrations
- 6** Research
- 19** Participation in research only via RUC West or Eastern Transportation Coalition

Light-vehicle direct usage charging

Start-up programs to-date are small and focused on high MPG and electric cars

Oregon (enacted 2013, implemented 2015): Vehicles over 20 MPG choose registration surcharges or per-mile road usage charge of 1.8 cents.

Utah (enacted 2018, implemented 2020): EVs, plug-in hybrids, and hybrids choose registration surcharge or per-mile road usage charge of 1.5 cents, capped at the surcharge amount.

Annual Registration Flat Fee Schedule		
Alternative Fuel Vehicle Type	2020	2021
Electric	\$90.00	\$120.00
Plug-in Hybrid	\$39.00	\$52.00
Gas Hybrid	\$15.00	\$20.00

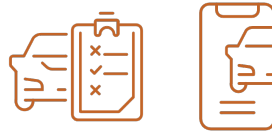
Virginia (enacted 2020): Vehicles over 25 MPG choose registration surcharge or per-mile charge, both of which increase with MPG, capping around \$90 per year.

Light-vehicle direct usage charging

Collecting user fees from passenger cars based on distance driven. State have tested many ways to collect distance driven data.



Self-reported odometer mileage
Washington



Verified odometer mileage via app or third party
Washington, Hawaii, California



Wireless mileage reporting from onboard vehicle computer
Utah, California



Wireless mileage reporting from devices that plug into the vehicle data port
Oregon, Utah, Hawaii, Washington, California, Colorado

Road usage charge policy issues

States have confronted a wide range of policy issues, many of which simply require choices to be made. Others require policy or system design adjustments to be resolved.

Subject vehicles: who pays?

Rate setting: how much?

Exemptions and refunds: who doesn't pay?

Local-option charging: how can counties charge too?

Transition: how can the program grow over time?

Authorized agency: who collects the revenue?

Privacy: how is sensitive information protected?

Distributional impacts: how are specific populations affected?

Interstate interoperability: how can states work together?

Charging visitors: how do visitors pay for road usage?

Rate setting is among the last issues states have decided

The mechanism of reporting miles and collecting revenue has been the most difficult issue to overcome. With solutions in place, rate setting becomes an issue for policy makers to negotiate.

Potential rate bases:

- Cost recovery
- Revenue replacement
- Revenue target

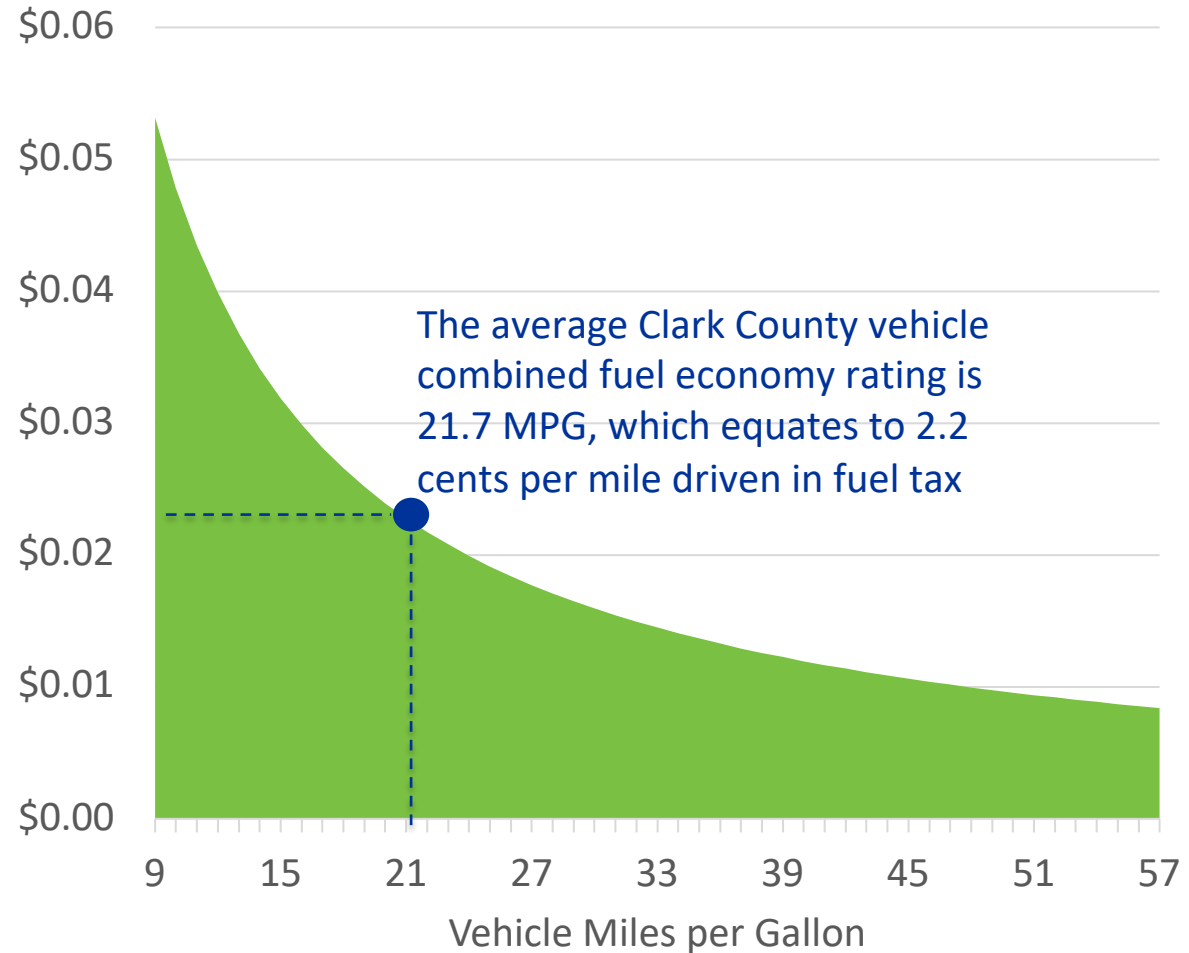
Potential rate factors other than distance traveled:

- Weight
- Size
- Propulsion type
- Energy efficiency
- Income of vehicle owner
- Residence location of vehicle owner

Vehicle efficiency is of interest as a rate factor because it mimics the gas tax

As with the gas tax, efficiency improvements can undermine efficiency-based charging if not carefully designed.

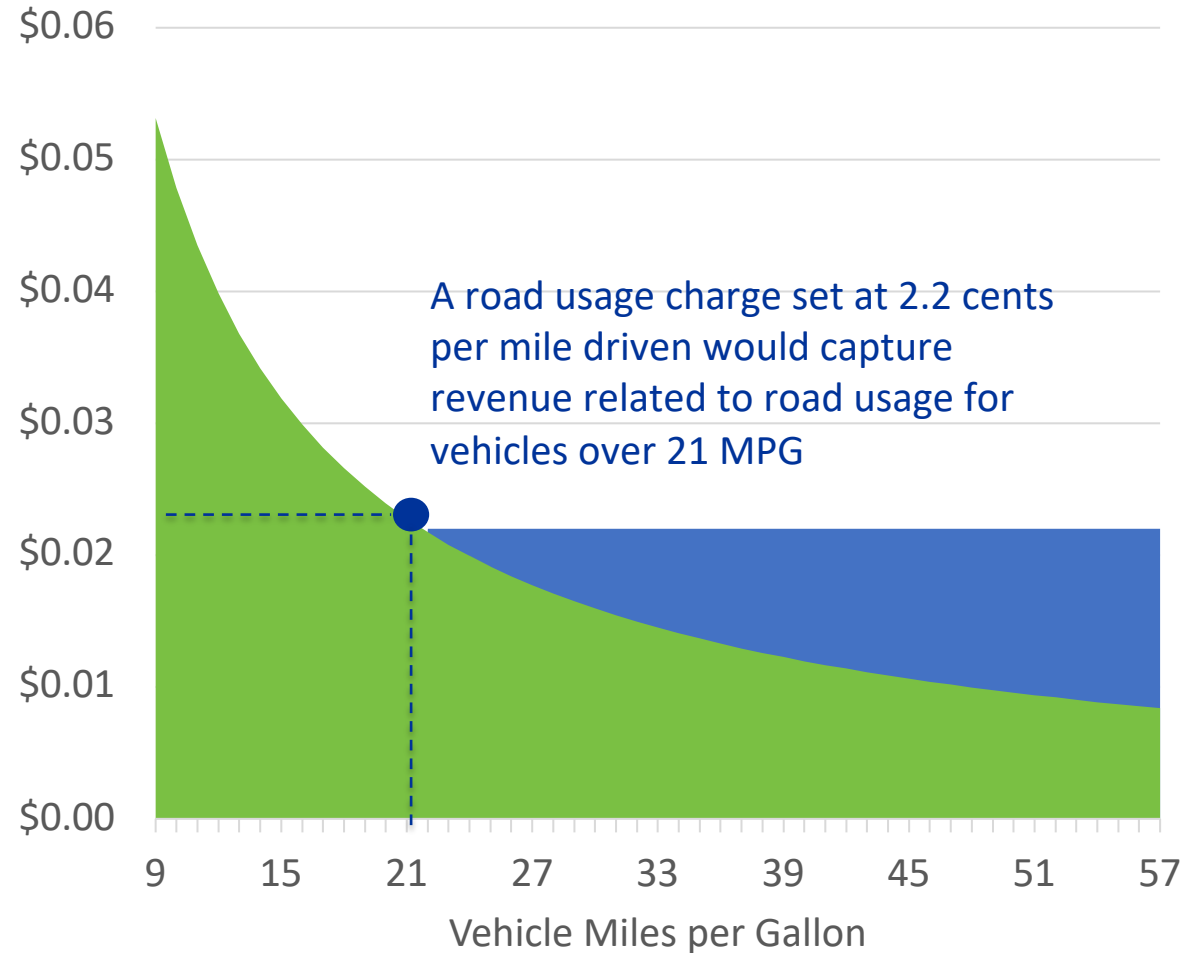
Fuel Tax Paid per Mile Driven in Clark County (excl. federal tax)



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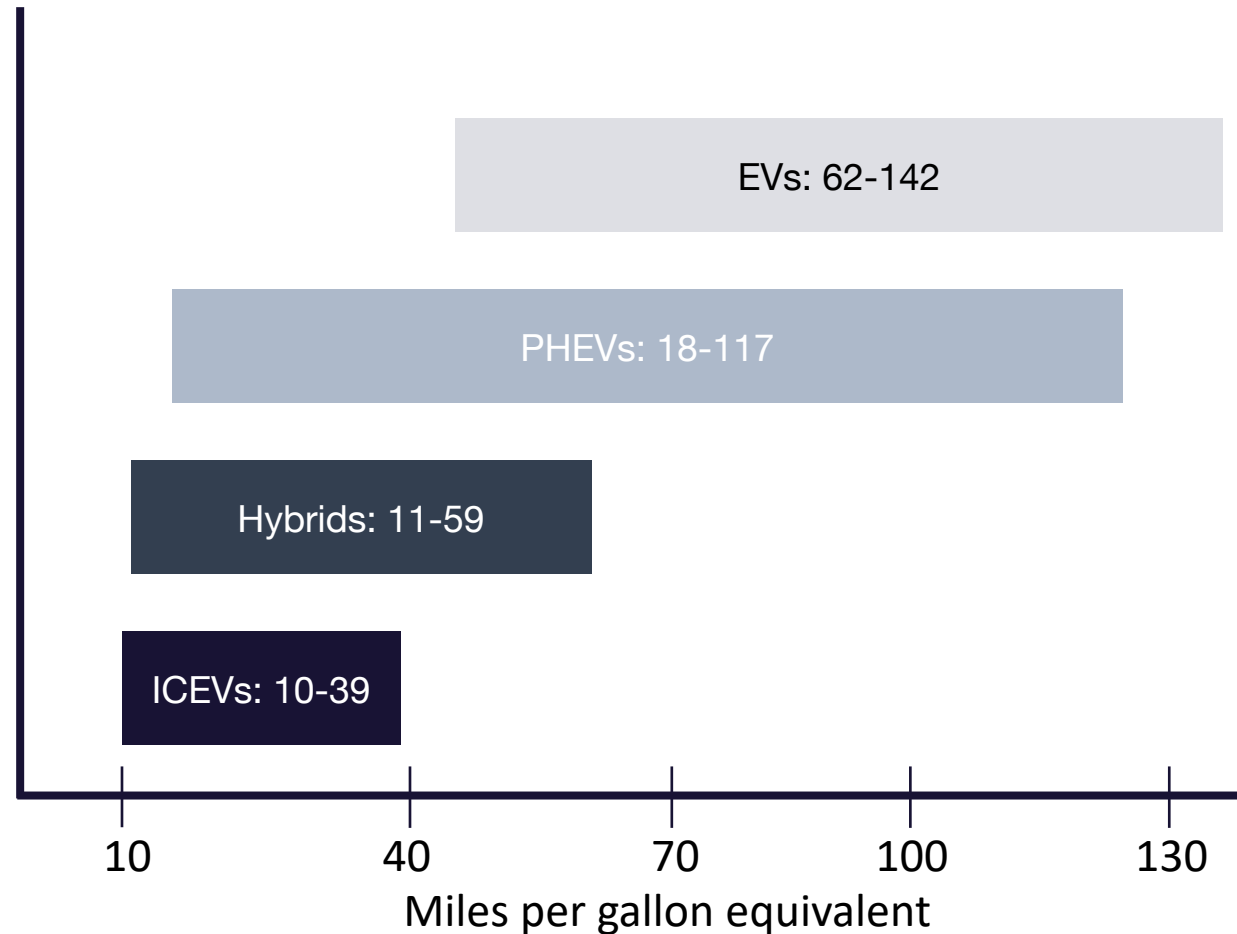
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Fuel Tax Paid per Mile Driven in Clark County (excl. federal tax)



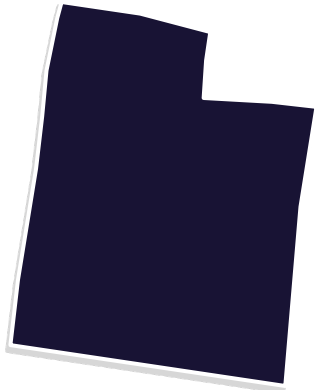
Vehicle technology and efficiency

Regardless of fuel source (gasoline, diesel, hydrogen fuel cell, electricity, hybrid), the EPA provides a single measure of “equivalent” miles per gallon” to help guide consumers when evaluating across technology types.



Utah

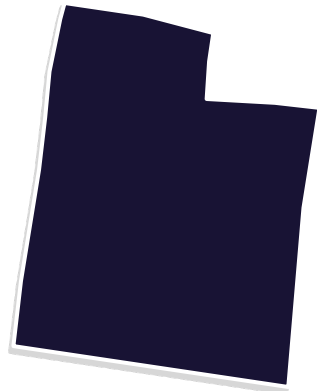
Utah Senate Bill 136 (2018) enacted a range of transportation reforms including several related to revenue



- Created a state transit capital account, funded by state appropriations with a 40% local match
- Added land use to highway and transit project prioritization criteria
- Created a transportation tax review task force
- Increased alternative fuel vehicle registration surcharges
- Established a per-mile charge option for alternative fuel vehicles in lieu of annual surcharges
- Indexed all vehicle registration fees, including the alternative fuel vehicle surcharges, to inflation (consumer price index)
- Note: Utah fuel taxes are already adjusted for inflation using a “modified sales tax” approach, implemented in 2015

Utah

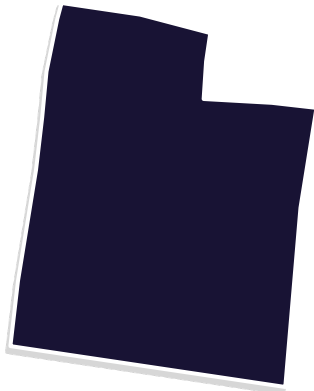
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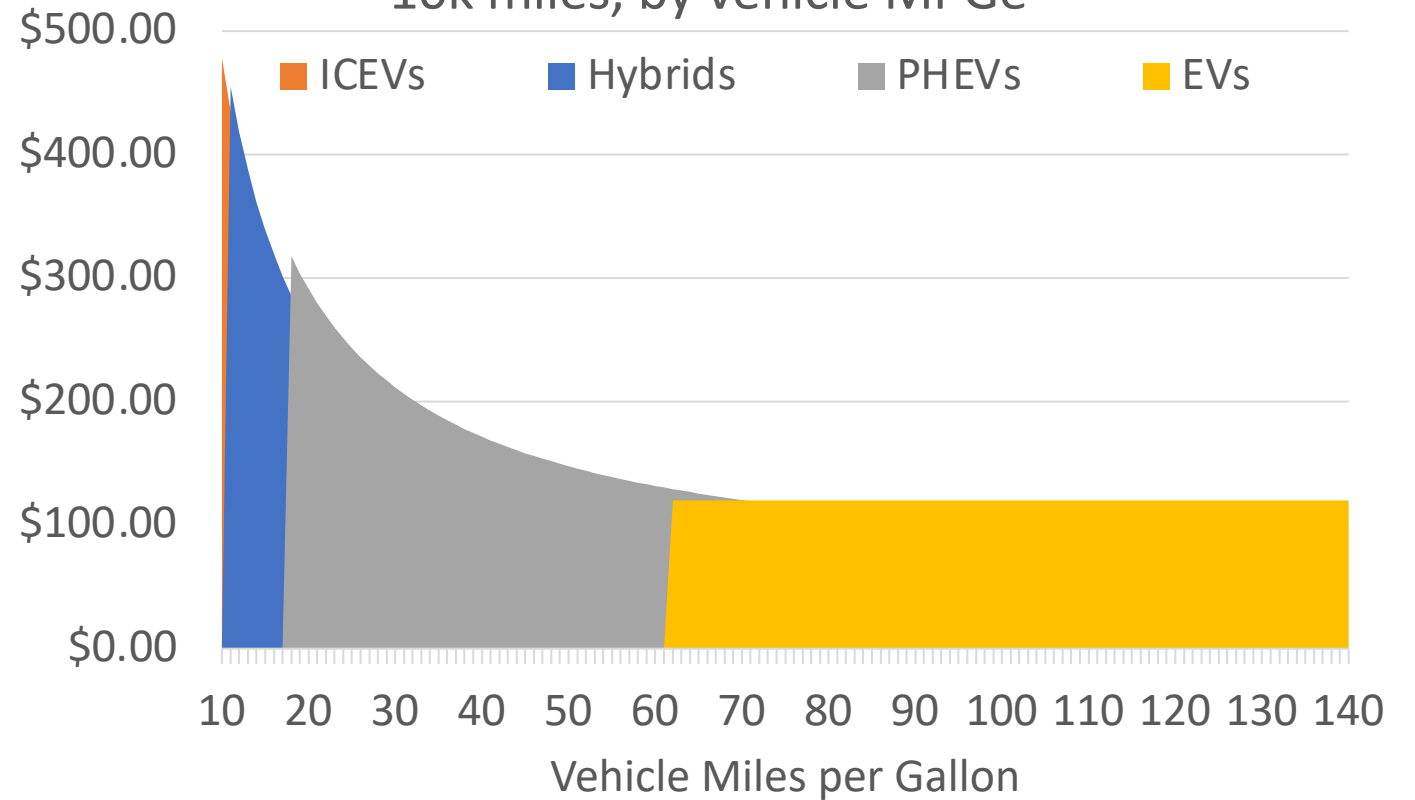
Vehicle type	2021 annual surcharge rates	2021 RUC rate
All-electric	\$120	- or - 1.5 cents/mile
Plug-in hybrid electric	\$52	
Hybrid	\$20	

Utah

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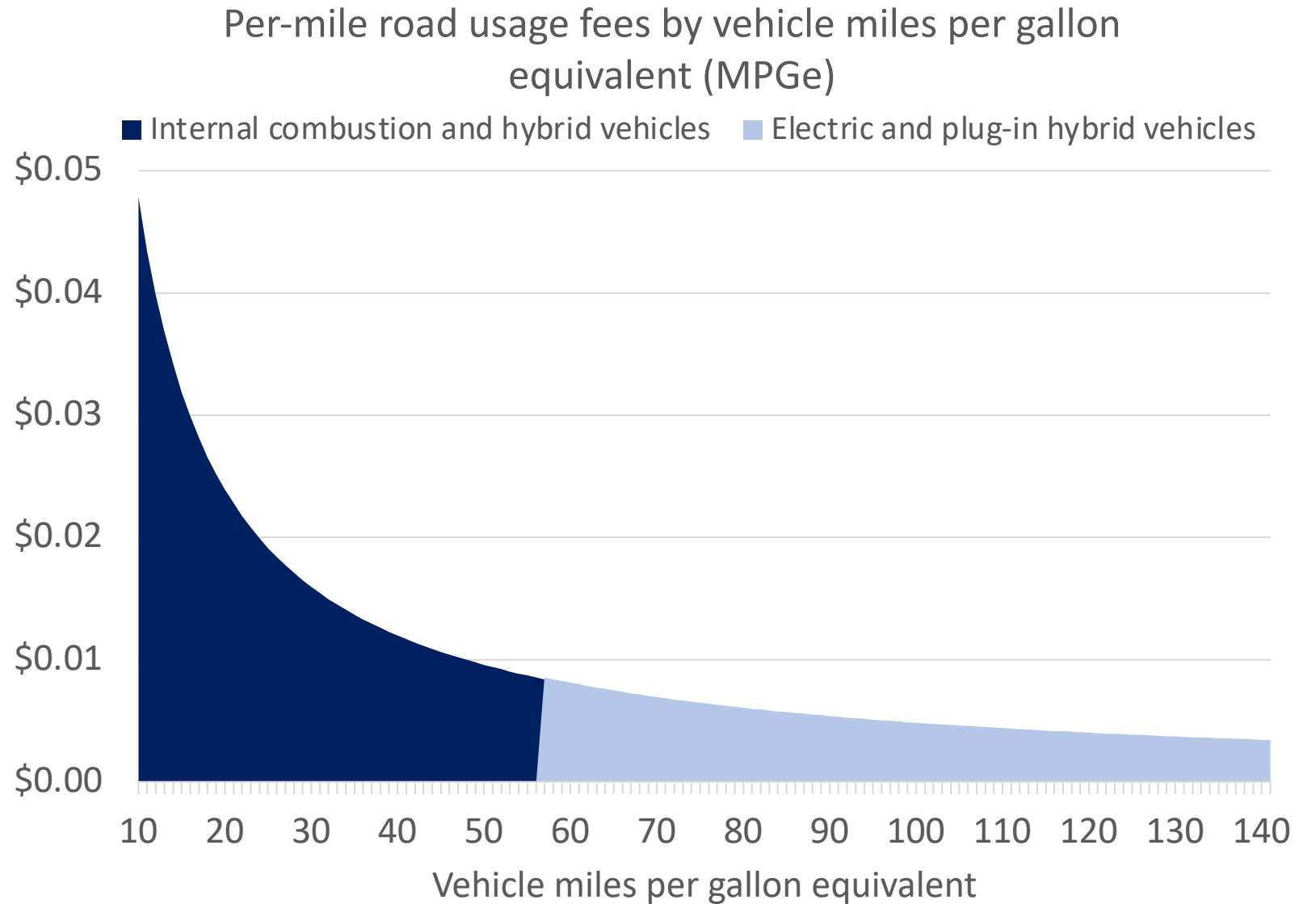


Utah fuel tax plus road usage charge per for 10k miles, by vehicle MPGe



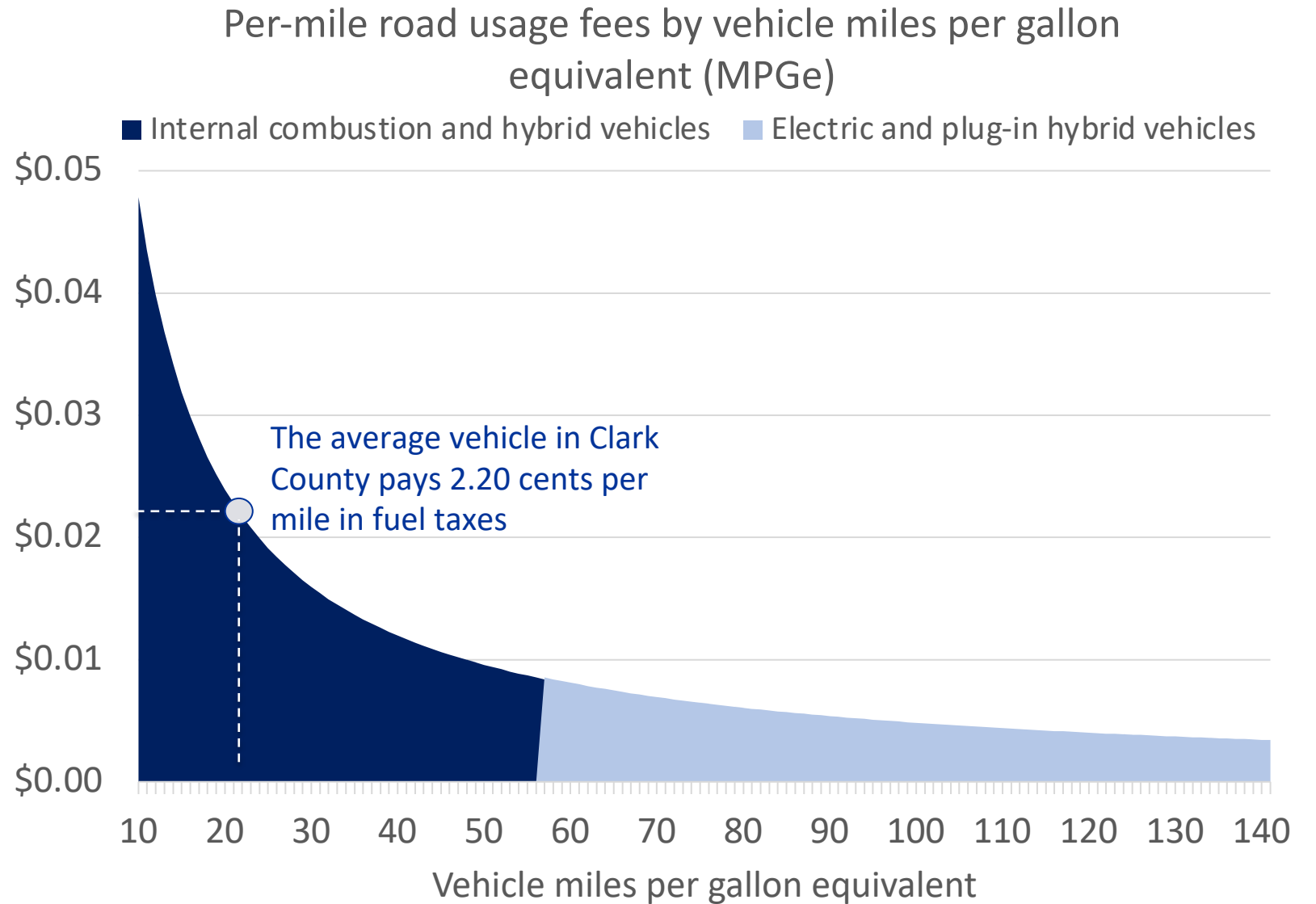
NRDC

Building off the IRoUTE concept, NRDC proposes an MPGe-adjusted per-mile charge for vehicles that do not consume gasoline. Internal combustion and hybrids would continue to pay the fuel tax, and electric and plug-in hybrids would pay *as if* they consumed gasoline, based on EPA lab-tested energy efficiency.



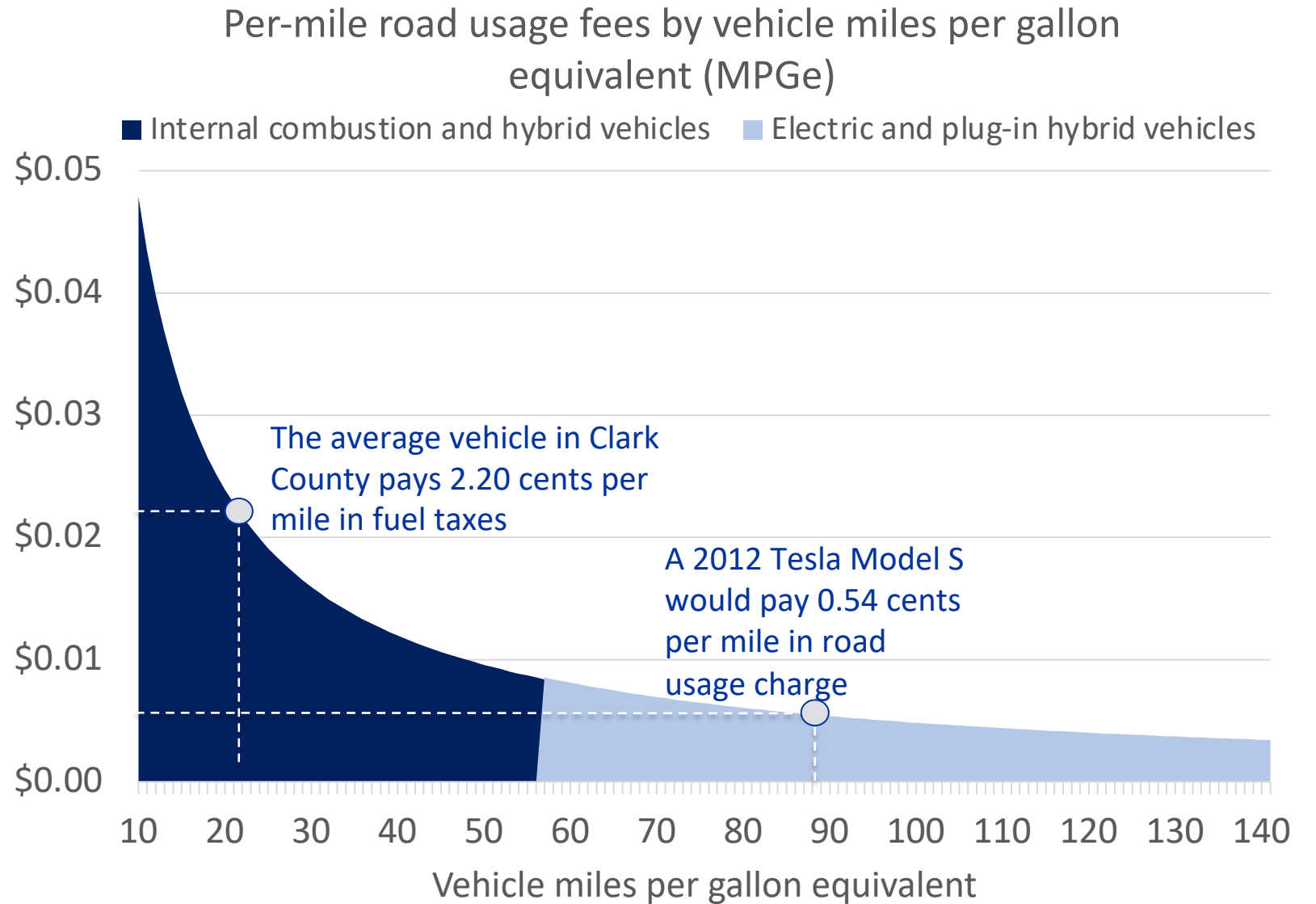
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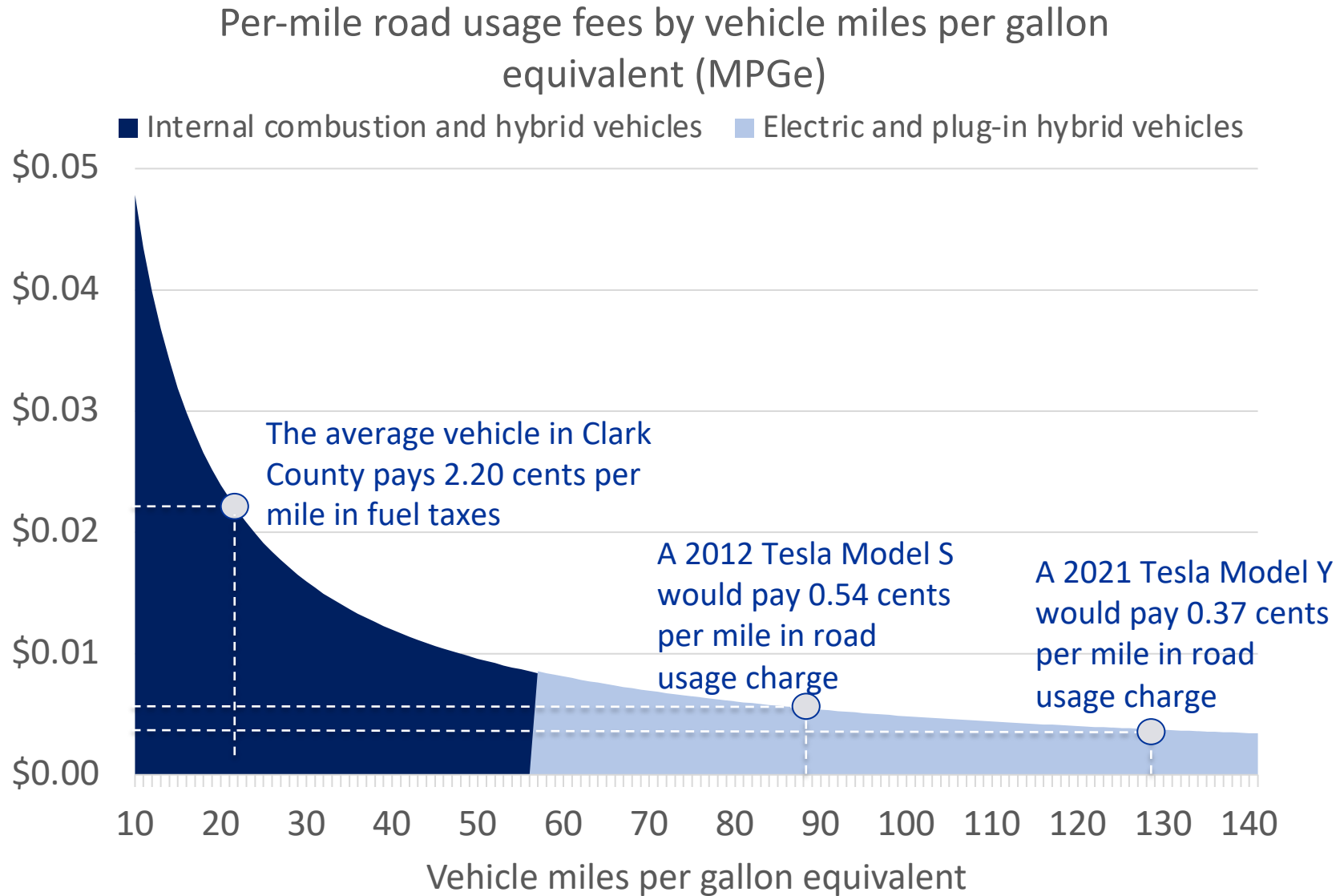
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NRDC

Sample vehicle charges based on today's gas tax rate and 10,000 miles driven

Vehicle	MPGe	Per-mile rate	Road usage fees paid per 10k miles
2011 F-150	17	2.81	\$281
Average Clark County vehicle	21.7	2.20	\$220
2015 Toyota Prius	48	1.00	\$100
2012 Model S	89	0.54	\$54
2021 Model Y	129	0.37	\$37

NRDC

The NRDC concept calls for indexing the fuel tax rate to inflation and to a negative measure of total fuel consumption. As total fuel consumption declines, the tax rate increases, and vice versa. In the near term, this will lead to a reduction in the fuel tax rate. In the long term, it will lead to increases in the fuel tax rate. Imagine the Clark County fuel tax doubles to 96 cents/gallon.

Vehicle	MPGe	Per-mile rate	Road usage fees paid per 10k miles
2011 F-150	17	5.63	\$563
Average Clark County vehicle	21.7	4.41	\$441
2015 Toyota Prius	48	1.99	\$199
2012 Model S	89	1.07	\$107
2021 Model Y	129	0.74	\$74
Solar Car	250	0.11	\$11

The plug-in hybrid electric (PHEV) complication

Individual circumstances will vary, especially for PHEV owners.

- PHEVs can run on pure electricity or on gasoline (as a hybrid)
- Currently available PHEV models can travel in all-electric mode anywhere from 9 to 126 miles
- When in hybrid mode (consuming gasoline), PHEVs range from 17 to 54 miles per gallon
- Combined EPA MPGe ratings (a composite measure of all-electric plus hybrid modes) range from 18 to 117
- Should a vehicle be taxed differently in electric mode vs. hybrid mode?

Short break

**Menu of funding options
to carry forward for
further analysis**

Category	Type of tax	Used in Nevada?	States used in
Fuel taxes	Flat per-gallon excise fuel tax	Yes	50
	Excise tax with inflation index on per-gallon rate	Yes (Washoe & Clark Counties only)	7
	Variable-rate tax based on the price of fuel	No	13
	Sales tax on fuel	No	4
	Local-option (county) fuel taxes	Yes	5
	Excise tax with fuel efficiency index	No	1
Vehicle fees	Basic license fees	Title & registration	50
	Value	Yes (GST)	27
	Weight	Heavy vehicles only	14
	Fuel economy	No	2
	Engine type	No	28
	Age	No	4
Direct usage-based fees	Tolls	No	35
	Road usage charge (light vehicles)	No	3
	Weight-distance tax	Repealed in 1989	5
Other freight sector fees	Container fees , Value-added tax on freight traffic	No	2
	Delivery fees on Amazon, FedEx, etc.	No	1
Indirect usage fees	Batteries, tires, electricity	No	2 (kWh)
	Per-ride excise tax on ride-share services	No	1
General fund transfers	General fund transfers	Yes	38
Pigouvian taxes	Congestion charges	No	1
	Carbon taxes	No	0

Public comment period

Adjourned.

See you January 11, 2022!