

# ODOT Funding Package Resource Library

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## Road Usage Charge (RUC)

### Policy and Implementation Issues

Oregon is pioneering the development and implementation of road usage charging (RUC), in which drivers pay by the mile for their use of the state's public roads and highway system. As an integral component of an overall set of road taxes, a RUC would be designed to ensure that all people pay their fair share for use of the roads in order to ensure sufficient and reliable transportation funding and make up for reduced revenue as vehicles become increasingly fuel efficient and pay less in fuels tax.

Since its launch in 2015, OReGO has proven it is a feasible method for charging people to use Oregon's roads. As ODOT is faced with a challenging financial and budgetary landscape in the immediate years to come, the agency finds itself with the opportunity to further develop and expand its road usage charge program, but there are important questions as to how an expanded program should be designed and implemented.

### *Major Policy Decisions*

A pair of policy decisions need to be determined for any option.

- *Which vehicles will be subject to RUC.* In the past, the Road User Fee Task Force (RUFTF) and ODOT have focused on enrolling high-efficiency vehicles that currently pay much less than other vehicles, either based on fuel efficiency ratings (30 MPG and above) or motive power (hybrid, plug-in hybrid, and battery electric), in order to maximize net revenue gains; other states have also focused RUC on efficient vehicles. However, perceptions of fairness may dictate that all vehicles should be enrolled in RUC, perhaps over time. Enrolling more vehicles will increase operational costs, likely reduce revenue because low-efficiency vehicles would pay less under a RUC than they pay in fuels tax (unless the RUC is an additional charge), and could give a break to gas guzzlers, which runs counter to climate policies.
- *Whether RUC is a replacement for or in addition to fuel tax.* Direction in legislation and from RUFTF has been that RUC should be a replacement for fuel tax. With people paying either RUC or fuel tax but not both, RUC would be a replacement rather than an additional tax. However, this limits potential revenue; a RUC that is applied to all vehicles in addition to existing taxes and fees would lead to greater gross revenue increases (though would also have high collection costs). But creating an additional tax on all vehicles could face significant challenges in gaining public acceptance.

## Major Issues in Implementing RUC

Beyond any questions about public acceptance or political viability, several major issues need to be addressed to implement RUC effectively.

- *Technology for mileage data collection.* Currently, the most common option for reporting mileage in RUC programs is a mileage reporting device (MRD) that plugs directly into the on-board diagnostic port of a participant's vehicle. However, MRDs can be easily removed from the port, and they are comparatively expensive because they require a special configuration and data transmission costs. A large-scale mandatory program likely requires a different technology—either lower-tech, such as manual reporting of odometer readings, or higher-tech, like direct access to vehicle telematics data. While telematics systems are installed in most new cars, they are not included in older models. What's more, automobile manufacturers have not been willing to provide telematics data to government agencies; legislative direction will likely be necessary to access this data.
- *Internal capacity & systems.* ODOT anticipates needing to acquire a commercial back-office system (CBOS) to manage enrollments and process data. ODOT would likely need a customer service center (CSC), as well. Developing this capacity and these systems would take several years.
- *Collection cost and net revenue.* The fuels tax is extremely inexpensive to collect due to the small number of entities that pay it; RUC will be more expensive, because it is similar to the collection of vehicle fees through DMV or weight-mile tax through CCD today. Because no one has implemented a large-scale RUC program and the technology is not yet well-developed, the cost is not known. However, analysis of various scenarios for cost of RUC operations has indicated that RUC is not likely to raise substantial net revenue for a decade or more as it scales up, and its revenue potential is limited due to higher administrative costs. ODOT will make diligent efforts to minimize costs by developing new low-cost options and scaling up the program to spread costs over more vehicles. ODOT is rebuilding its RUC cost model with the latest data and assumptions to be able to better estimate costs.
- *Compliance and enforcement.* Compliance generally has three components: education, assistance, and enforcement. If the first two are done well, enforcement activities are generally minimal. However, the penalties for non-compliance must be sufficient to drive compliance, and they must be enforced consistently. Tax programs achieve public support and compliance through fairness, simplicity, and administrative ease. Ensuring compliance with paying fuel tax is relatively simple given the limited number of people who directly pay the tax; it will be more challenging with RUC. RUC will need to have enforcement mechanisms put in place for those who do not comply with reporting their mileage. For example, any vehicle required to pay RUC that failed to report miles or pay their required charges could be defaulted into a flat annual fee that would be set at a relatively high level to incentivize compliance. Other enforcement mechanisms, such as refusing to register

vehicles that fail to pay and civil penalties, could also be considered. An appeal process that ensures due process would also need to be implemented.

- *Local option RUC.* If RUC replaces the fuels tax as the largest source of transportation funding, local governments may want to have an opportunity to levy a local option RUC. However, this would require that most or all RUC customers provide location data so they could be charged for use of a local jurisdiction’s roads.

### RUC Net Revenue Potential

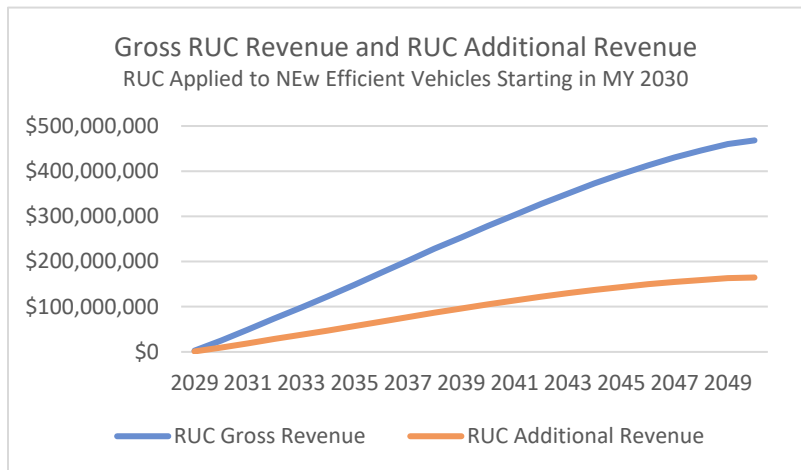
As vehicles become increasingly fuel efficient and more electric vehicles hit the road, the fuels tax—the largest single source of revenue for ODOT—will fade away. This will happen slowly, but inevitably. To address this challenge, states across the nation have been exploring transitioning to a road usage charge where people pay per mile they drive rather than the number of gallons of fossil fuel burned. This could help ensure sustainable transportation funding even as we make the transportation system more sustainable.

A key consideration in the decision on whether and how to shift to a road usage charge is its revenue potential. A RUC that replaces Oregon’s fuels tax and the supplemental registration fees on efficient vehicles has the potential to generate substantial gross revenue. However, the cost of collecting the tax will be higher than the fuel tax it replaces, and additional revenue from a RUC will be offset by foregone revenue from fuel tax and supplemental registration fees that would no longer be collected from those paying a RUC.

#### *RUC Gross and Additional Revenue*

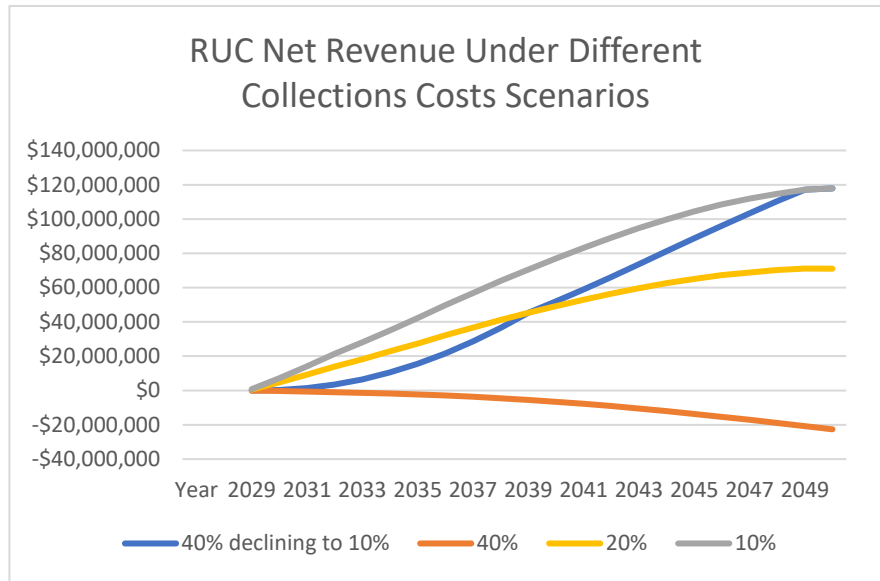
To undertake this analysis, ODOT first developed estimates of RUC enrollment and gross revenue as well as foregone revenue from the fuels tax and supplemental registration fees. ODOT used a scenario in which all new high-efficiency vehicles (30 mpg and higher) start paying a RUC in 2029 with model year 2030 vehicles;

this is based on the 2023 RUC bill (HB 3297). In this scenario, RUC will bring in a growing amount of gross revenue each year as more and more vehicles become part of the program. However, the gross RUC revenue will be offset by the loss of fuel taxes and supplemental registration fees that vehicles subject to a RUC will no longer pay. By 2050, additional revenue from RUC would be about \$160 million per year.



#### *RUC Net Revenue*

While administrative costs are not yet known as no state or national government has implemented RUC at large scale, ODOT undertook a scenario analysis to determine approximate RUC net revenue based on different potential levels of administrative costs. ODOT assumed a minimum administrative cost of 10% and a high end of 40%. ODOT expects that administrative costs will



likely start high but drop over time as the program scales up as more vehicles join the program and costs can be spread across more participants and as technology improves. However, reaching a 10% administrative cost may be extremely challenging, as this would equate to only about \$20 per year per customer for a system that could require multiple customer touchpoints. ODOT will be undertaking efforts to drive down RUC collection costs, including scaling up the program, migrating to new technology, and simplifying the program.

ODOT's analysis shows that if costs remain at 40% of gross revenue, ODOT would lose increasing amounts of money under a RUC program. However, a program with lower operating costs would raise growing amounts of net revenue, though such amounts would still be relatively modest compared to the scale of needed investments.

It's important to note that the scenario analyzed is only one of the options for implementing a RUC. For example, a RUC could be implemented more rapidly on all high-efficient vehicles, including vehicles already on the road rather than just new vehicles. This would scale the program up faster and likely drive costs down more rapidly, though the implementation challenges could be significant. Alternatively, rather than being a replacement for the fuel tax and supplemental registration fees for highly efficient vehicles, a RUC could be an additional tax paid by everyone for each mile they drive. This latter option would not have offsetting revenue losses, but it would have substantial costs of collections as well.

### Takeaways

This analysis shows that foregone revenue from fuel tax and supplemental registration fees as well as the cost of collection will limit the net revenue potential of a RUC that replaces fuel taxes and supplemental registration fees on efficient vehicles. As a result, simply transitioning to a RUC without raising tax and fee rates would not provide a solution. In the short term, increasing

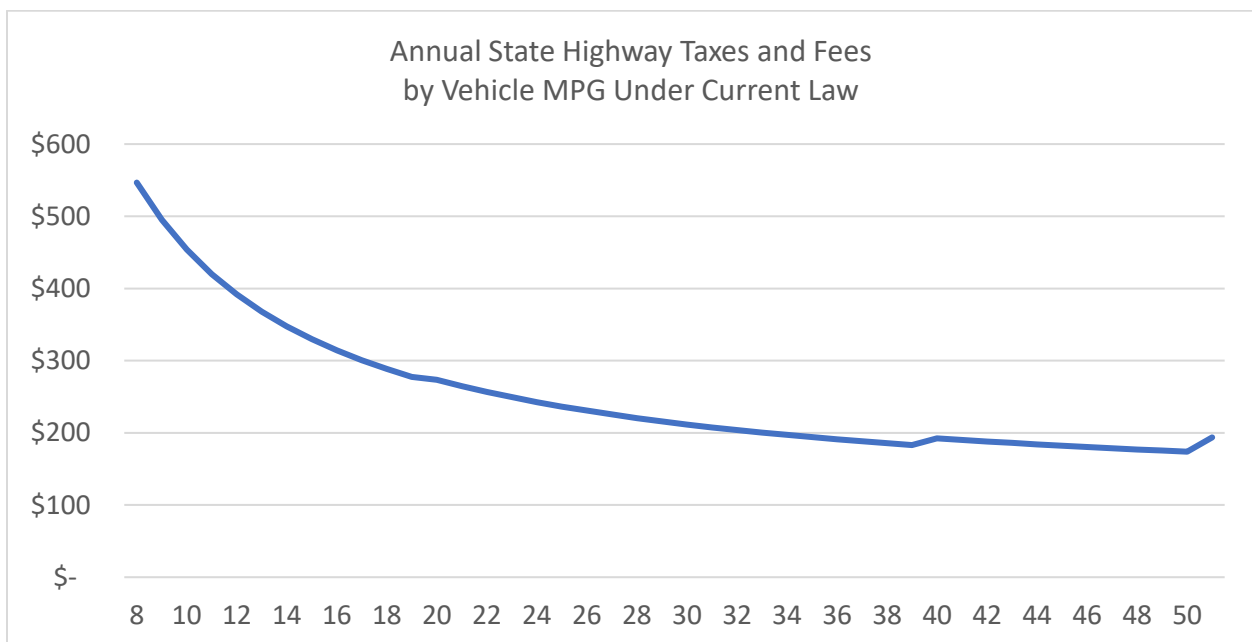
supplemental registration fees on efficient vehicles would be more effective at raising significant net revenue, as this fee is already in place and would have no additional cost of collection. However, the impact of higher supplemental registration fees to some vehicle owners would be substantial, and everyone would pay the same regardless of how much they drive. In the long term, once administrative costs can be brought down, RUC could be an important component in a diversified portfolio of taxes and fees that helps produce sufficient and reliable transportation funding, and shifting to a RUC would be a fairer way to charge people for their use of the roads.

### RUC's Impact on Efficient Vehicles

As part of an overall set of road taxes, a road usage charge should be designed to ensure that all people pay their fair share for use of the roads to ensure sufficient and reliable transportation funding and make up for reduced revenue as vehicles become increasingly fuel efficient and pay less—or no—fuels tax. At the same time, Oregon wants to encourage the transition to zero-emission vehicles to achieve its climate goals.

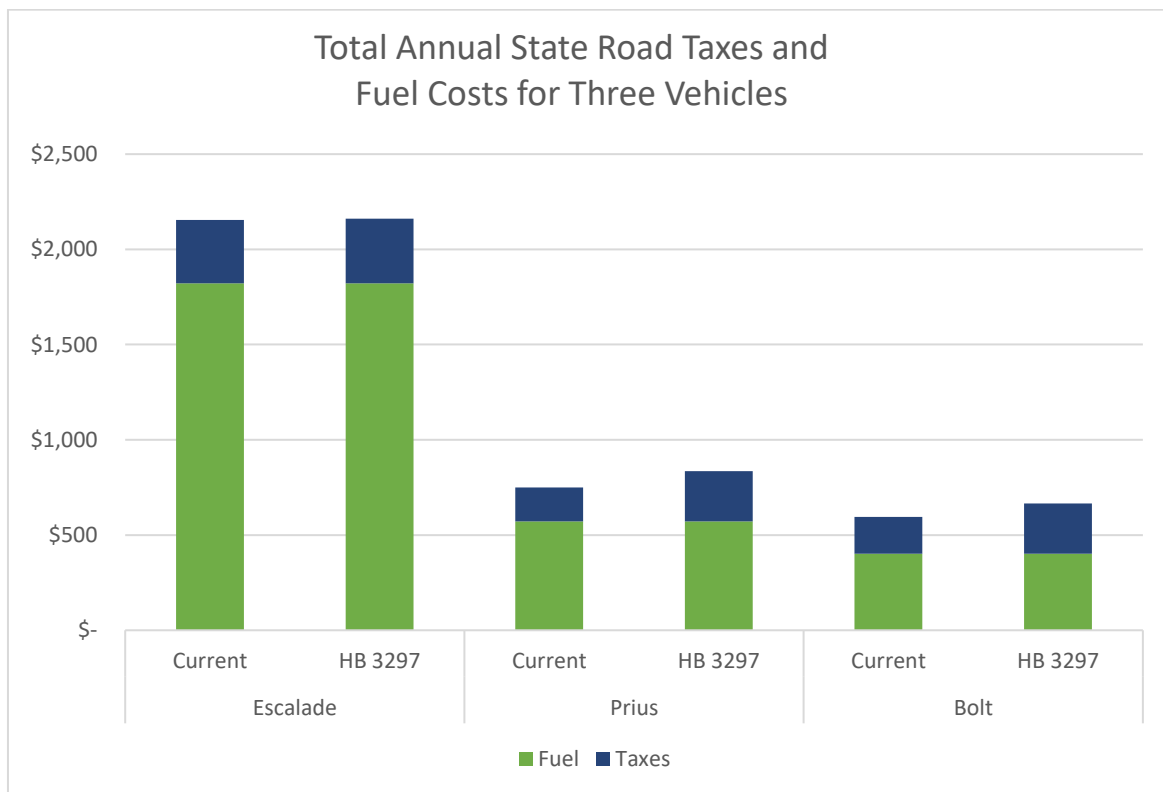
The most effective policies to encourage adoption of highly efficient vehicles reduce the upfront cost of buying an electric vehicle (EV). Conversely, slight increases in annual road taxes paid are unlikely to dampen consumer demand for EVs because consumers do not know what they actually pay in road taxes or effectively factor tax costs into a vehicle purchase decision.

Under current law, hybrid and electric vehicles pay very little or nothing in fuels tax but pay higher registration and title fees, regardless of how much they drive. Even with these fees, highly efficient vehicles pay significantly less overall than their internal combustion engine counterparts.



Previously proposed RUC legislation (such as HB 3297 in 2023) would require new vehicles rated at 30 miles per gallon or above to pay a road usage charge beginning on a specified date. However, vehicles subject to a RUC would not have to pay the registration surcharge, and the higher title fee on hybrids and EVs would be eliminated. These changes would provide EVs a \$115 annual cost savings on the registration fee and a reduction of \$82 on the title fee. The road taxes levied at the time of a purchase of a new EV—the title fee and four years of registration—would be reduced by \$542.

Under the proposed RUC legislation, low-efficiency vehicles would remain subject to the fuels tax and thus pay higher overall taxes and fees than highly efficient vehicles subject to RUC. The total taxes and fees on an average EV that drives about 10,000 miles per year would increase by approximately \$70 a year. EVs that drive fewer miles—less than roughly 6,500 miles—would actually pay less in total state taxes and fees under a RUC due to the elimination of registration and title surcharges. Highly efficient vehicles would still experience lower overall operating costs compared to less-efficient vehicles due to fuel cost savings.



Additional annual road taxes of about \$70 per year for an EV required to pay a RUC would be unlikely to impact the decision to purchase an EV, particularly because AAA estimates that the cost to own and operate a new electric sedan or SUV is about \$12,500 per year. At that cost, requiring an EV to pay a RUC would add less than 1% to the annual ownership and operations costs.

Due to these factors, it is unlikely that shifting new, highly efficient vehicles to a RUC would have a significant negative impact on their adoption, particularly when coupled by reductions in upfront registration and title fees.

### RUC and Rural Drivers

A topic of particular interest when exploring and analyzing the implementation of a road usage charge (RUC) is how a RUC would impact rural drivers. While urban drivers tend to make more trips of short distances, rural drivers tend to drive greater distances for the purposes of commuting or going about day-to-day activities. As such, it's important to understand the impacts of a RUC on rural drivers.<sup>1</sup>

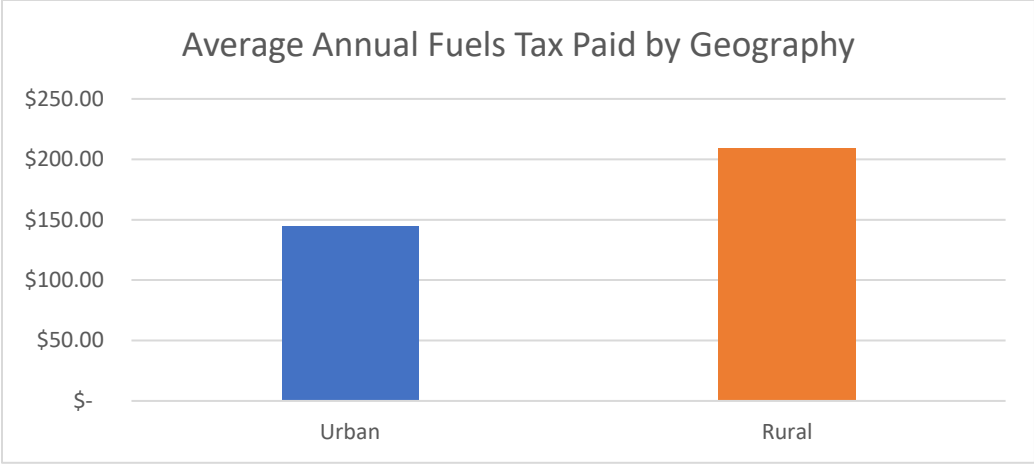
Under the existing fuel tax system, rural drivers tend to pay more in fuels tax because they drive more miles in less fuel-efficient vehicles. The table below shows average vehicle miles per gallon and average vehicle miles traveled for primarily urban areas (blue) compared to heavily rural areas (green).

Table 1: Average MPG, VMT, and Gas Tax by Region

<b>Region</b>	<b>Average MPG</b>	<b>Average VMT</b>	<b>Annual Gas Tax</b>
Statewide	23.8	8,928	\$ 150.05
Portland Metro	25.6	8,360	\$ 130.63
Willamette Valley	23.2	10,850	\$ 187.07
Deschutes County	22	10,211	\$ 185.65
Southern Oregon	22.2	8,960	\$ 161.44
Coastal	22	10,528	\$ 191.42
Eastside	20.7	11,570	\$ 223.57

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<sup>1</sup> The data cited in this document was sourced from ODOT DMV and analyzed by the Budget, Economics, and Debt Services Division.



As Oregon has explored the transition to a road usage charge, the concepts that have been proposed would apply to new, highly efficient vehicles at the outset to ensure those drivers contribute to the cost of operating and maintaining the transportation system. Given that rural residents tend to own older (15.7 years on average) and less efficient (21.4 combined MPG on average) vehicles, this approach would mean that rural residents are less likely to be subject to a RUC in its initial years.

Even if all vehicles—not just new, highly efficient ones—were to shift to a road usage charge, the increase in fees experienced by rural drivers would be less significant than that experienced by urban drivers.

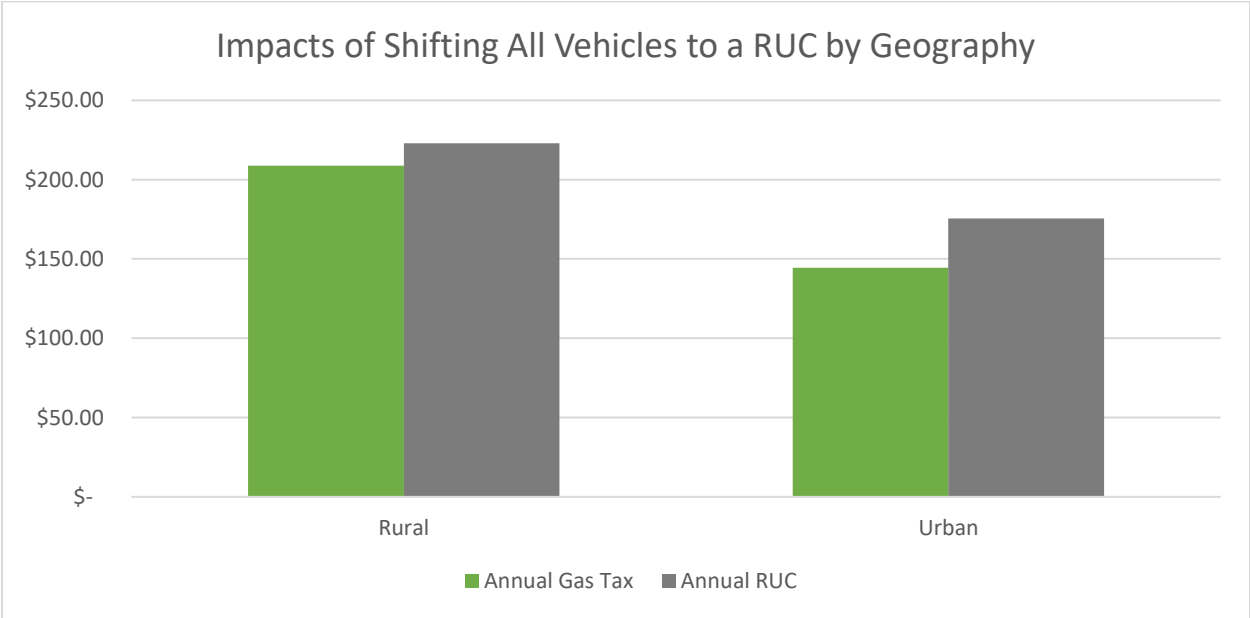




Table 2: Impacts of Shifting all Vehicles to a RUC Based on Geography

<b>Geography</b>	<b>Total Vehicles</b>	<b>Average Age</b>	<b>Average Combined MPG</b>	<b>Average Monthly VMT (2018-2022)</b>	<b>Annual Gas Tax Paid</b>	<b>Annual Road Usage Charges</b>	<b>Increased Annual Amount Paid Under RUC</b>
Rural	668,523	15.7	21.4	929	\$208.81	\$222.91	\$14.10
Urban	2,782,813	13.1	24.3	731	\$144.44	\$175.48	\$31.04
Total for Oregon	3,451,336	13.6	23.8	744	\$150.28	\$178.55	\$28.28

Socioeconomic Impacts of a Road Usage Charge

*Equity Considerations*

As ODOT lays the foundation for a new means of collecting transportation revenue, the agency is examining the effects that this change would have on households of different income levels. There are several categories of equity to consider, including tax equity and socioeconomic equity.

Tax equity includes the components of horizontal equity and vertical equity. Horizontal equity entails the idea of similarly situated taxpayers paying similar amounts. In the context of roads, this concept can be applied by ensuring that people who use the roads similarly pay similar amounts in transportation taxes and fees. Vertical equity entails the idea of taxpayers with greater ability to pay contributing more (graduated income tax rates are an example).

A road usage charge performs well in regard to horizontal equity. For example, for three different vehicles—an EV, a hybrid, and an internal combustion engine—that drive 10,000 miles at \$0.02 per mile, each would owe the same amount in RUC: \$200.

Vertical equity within the context of transportation taxes and fees tends to be more complex. Under a fuels tax system, those who drive efficient vehicles—number of miles driven being equal or similar—pay less in fuels tax than those with less efficient vehicles. Data indicate that higher-income households are more able and likely to purchase newer, highly efficient vehicles, particularly EVs: only about 17% of total rebates under the DEQ EV rebate program were for the Charge Ahead Program that offers an additional \$5,000 incentive to households with income below 400% of the federal poverty guideline (\$124,800 for a household of 4) for purchasing a new or used EV with an original base MSRP under \$50,000, so most EV purchasers are from high-income

households. This indicates that the existing fuels tax system effectively provides a tax break to higher-income households that purchase EVs relative to lower-income households who can't afford an EV.

*Road Taxes and Fees by Income Level*

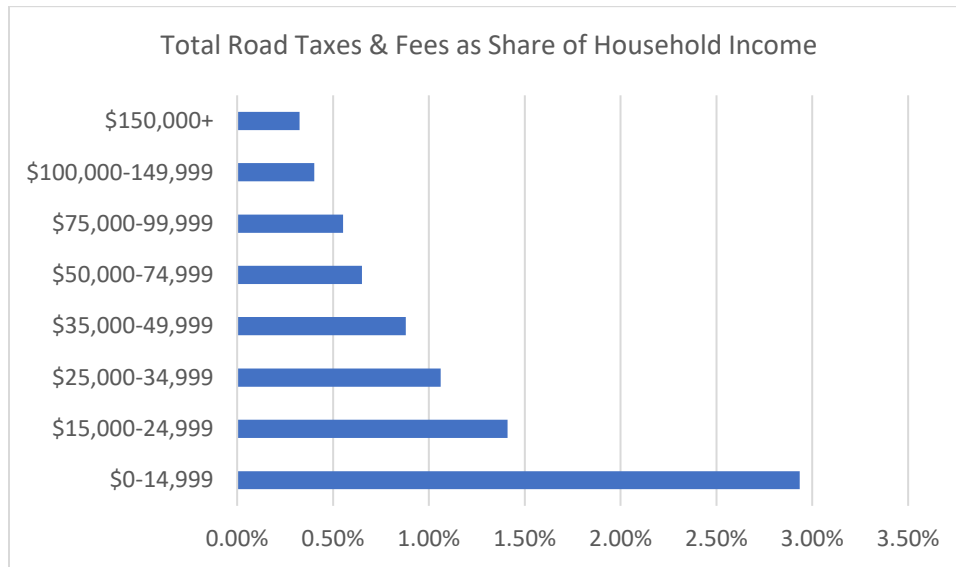
Oregon data show that, while higher-income households on average pay more in total road taxes and fees than lower-income households, the percent as a total share of income is much less. There are several reasons why total transportation taxes and fees are greater on average for higher-income households, such as owning more vehicles (resulting in additional registration fees) and driving more miles on average (resulting in greater total fuels tax paid). For example, [data](#) show households making \$14,999 or less per year drive 25.44 miles per day on average whereas households making over \$150,000 a year drive 2.5 times as much—62.84 miles per day on average. Similarly, the highest-income households own nearly 3 times as many vehicles (2.6) as the lowest-income households (0.9). See Table 1 for additional information and Figure 1 for a visual representation of selected data.

Table 3: Average Gas Taxes & Registration Fees Based on Household Income

<b>Total Income<sup>2</sup></b>	<b>\$0 – \$14,999</b>	<b>\$15,000 – \$24,999</b>	<b>\$25,000 – \$34,999</b>	<b>\$100,000 - \$149,999</b>	<b>\$150,000+</b>
<b>Miles Driven per Day</b>	25.44	31.03	34.68	54.26	62.84
<b>Vehicles per Household</b>	0.9	1.3	1.5	2.4	2.6
<b>State Gas Tax Paid per Year</b>	\$158.93	\$193.85	\$216.66	\$338.98	\$392.58
<b>Registration Fees Paid per Year</b>	\$61.20	\$88.40	\$102.00	\$163.20	\$176.80
<b>Total Road Taxes &amp; Fees per Year</b>	\$220.13	\$282.25	\$318.66	\$502.18	\$569.38
<b>Total as Share of Household Income</b>	2.94%	1.41%	1.06%	0.40%	0.33%

<sup>2</sup> Households that do not own a vehicle and do not drive were excluded from the study. These households tend to fall within lower-income brackets. If they were included, the data would skew toward even lower road tax payments among lower-income households.

Figure 1: Total Road Taxes & Fees as a Share of Household Income

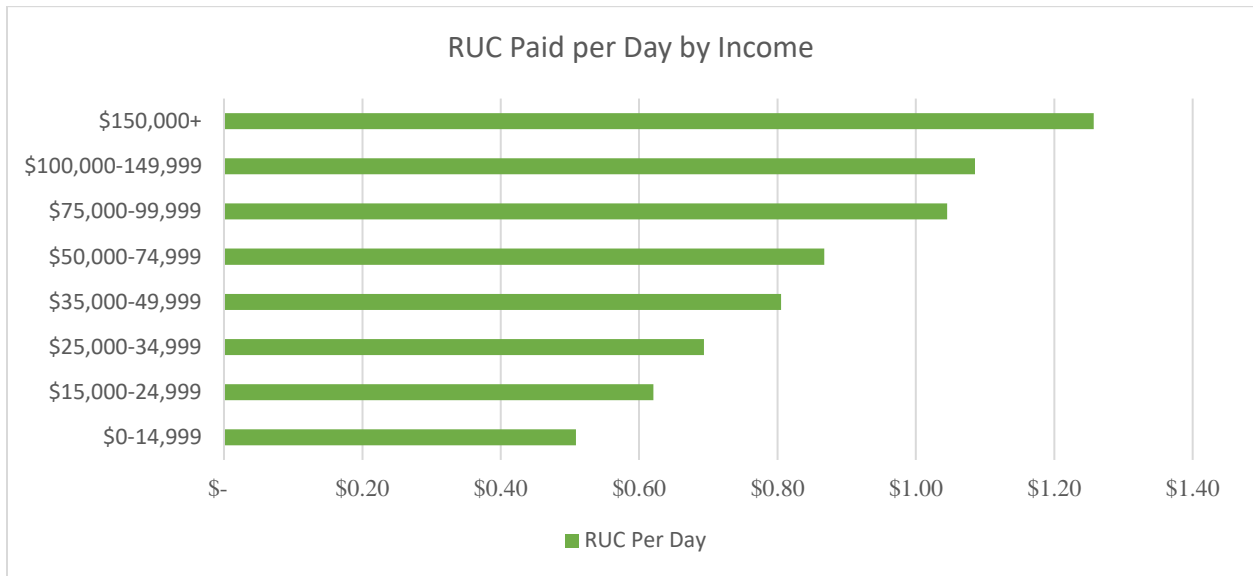


*RUC Payments by Income Level*

National and Oregon-specific data have found that very few low-income households purchase new vehicles—particularly electric vehicles—and thus few would be subject to a RUC that is applied initially to new, highly efficient vehicles (as proposed in HB 3297 (2023)). However, some low-income households would initially be subject to the road usage charge, and an increasing number of households would begin paying by the mile as highly efficient vehicles become available on the secondary market. As such, it is important to understand how much those at different income levels would pay.

Based on the mileage data contained in Table 1, households in the lowest income bracket would pay relatively limited amounts under a RUC—about \$0.51 per day or \$186 per year—while high-income households would pay significantly more—approximately \$1.26 per day or \$459 per year—based on a \$0.02 per mile fee. Nonetheless, lower-income households would pay a significantly larger share of their household income than higher-income households under a RUC, just as they do under the existing fuels tax system.

Figure 2: RUC Paid per Day by Income



### Takeaways

- While transportation costs are a large cost for households, particularly low-income households, road taxes and fees are relatively modest—about \$220 per year for a low-income household.
- Lower-income households currently pay a greater share of their income in fuels tax than higher-income households. However, higher-income households on average pay much more today because they own more vehicles and drive more miles than low-income households.

With low-income households purchasing few new, highly efficient vehicles, it is unlikely that many low-income households would be subject to a RUC applied to new high-efficiency vehicles as proposed by RUFTE; most would continue to pay fuels tax for the time being. Low-income households that are subject to a RUC in the future would not pay a significant amount in per-mile fees—an average of about \$0.50 per day based on data about

### RUC and Privacy

Legislators recognized that privacy and data security are topics of particular importance for a road usage charge (RUC) program and built strong protections into the legislation that created OReGO. SB 810 (2013) includes provisions that protect privacy, provide participants with choice in account managers and options in how their mileage is reported, and limit access to personally identifiable information. For example, the law provides for the right to be forgotten by requiring that travel pattern data, a type of personally identifiable information, be destroyed within 30 days after account settlement.

While OReGO participants have the option to select a GPS-enabled mileage reporting option (MRO), doing so is voluntary and likely will not be required in any mandatory program in the future. For participants that opt for a GPS-enabled MRO, account managers are able to differentiate miles that are driven outside of Oregon so that those miles are not charged to the participant; ODOT does not receive any personal location information of those drivers.

A large-scale mandatory program would include low-tech options for reporting mileage, such as manual reporting of odometer readings. Legislation proposed in 2023 (HB 3297) included a provision that would allow owners and lessees of vehicles subject to the road usage charge mandate to opt out of all mileage reporting by paying an annual fee; such a provision is expected to be included in any future legislation that contemplates a RUC mandate.

#### *Privacy Protections in the OReGO Statute*

In the context of the OReGO program, “personally identifiable information” means any information that identifies or describes a person, including, but not limited to, the person’s travel pattern data, per-mile road usage charge account number, address, telephone number, electronic mail address, driver license or identification card number, registration plate number, photograph, recorded images, bank account information and credit card number. See ORS 319.915.

Entities with which personally identifiable information can be shared are limited to:

- The registered vehicle owner/lessee and others expressly approved by the registered owner/lessee
- Financial institution(s) for the purposes of collecting the charges owed
- Employees of ODOT
- Commercial account managers
- A police officer, pursuant to a valid court order

Entities that are granted access to any personally identifiable information are limited to the information required to perform their respective functions and duties. Data, including location and metered use, are destroyed 30 days after account settlement (which means either payment processing or dispute resolution). Aggregated information in which personally identifiable information has been removed may be retained by ODOT and account managers for the purposes of traffic management and research. If account managers do not comply with the privacy and data security requirements, they are subject to penalties.

For the full statutory language related to how the OReGO program protects participants’ privacy, see Section 9 of [SB 810 \(2013\)](#).