

Washington Road Usage Charge Assessment

2022 Annual Report

Submitted to:
Governor Inslee and the Washington State Legislature



January 11, 2023



Executive Summary



In 2012, the Washington Legislature recognized the impact of evolving vehicle market and regulatory trends on transportation funding. Lawmakers understood that achieving the goal of reducing fossil fuel consumption and greenhouse gas emissions would challenge the state's ability to generate sufficient revenue in an equitable manner from taxation of motor fuels. In the ensuing decade, to address this revenue challenge, Washington increased the rate of motor fuel taxes twice, imposed an annual registration surcharge on hybrid vehicles, and added three registration surcharges on electric vehicles totaling \$225 per year—the nation's highest.

In 2022, the Federal government implemented more stringent Corporate Average Fuel Economy (CAFE) standards calling for higher fuel economy of new vehicles through 2026. Several months later, California's Air Resource Board adopted a zero-emission vehicle (ZEV) mandate known as Advanced Clean Cars II, which bans the sale of new internal combustion engine light-duty vehicles in 2035. With a goal to ban gas cars by 2030 already in place, Washington intends to join as many as a dozen other states in adhering to California's rule. Meanwhile, gas prices spiked, automakers announced historic investments in technology to reduce fuel consumption and emissions, and federal laws extended benefits for purchase of ZEVs while investing in charging infrastructure. Collectively, these actions accelerate the decline of motor fuel consumption, putting more pressure on higher fuel tax rates and higher vehicle registration fees to provide vital transportation funding.

EXECUTIVE SUMMARY

Pursuant to a series of legislative directives, the Washington State Transportation Commission (WSTC or the Commission) began research, pilot testing, and outreach and engagement with the public and stakeholders on the topic of road usage charging (RUC) in 2012. As an alternative to higher motor fuel taxes and vehicle fees, RUC offers the potential to fund Washington's transportation needs while preserving the user-pay principle previously embodied by fuel taxes. RUC also holds the potential to provide some tax relief for rural and low-income households, who otherwise stand to bear a disproportionate share of motor fuel taxes and registration fees as the vehicle fleet becomes more fuel efficient.

With a paradigm shift comes many policy decisions points, including how to measure and report distance traveled in a manner that protects privacy, offers user convenience, and is reasonably cost-effective to collect. RUC also presents new questions for the Legislature to consider, such as how to set rates, how to address out-of-state driving, and how to use revenues. The Commission's body of work provides guidance and answers to these questions and illuminates choices, guided by the input, ideas, and perspectives of a 30-member stakeholder Steering Committee.

In consideration of the full body of the Commission's work, this report provides an update on the Commission's research efforts over the last year and offers updated recommendations to the 2023 Legislature on how to proceed with a RUC program in Washington State. The detailed recommendations can be found on pages 13 – 14 of this report. A summary of the Commission's recommendations to the Legislature is provided below.

Summary Recommendations to the 2023 Legislature

- Enact a per-mile RUC on a voluntary basis for vehicles with a fuel efficiency of 25 miles per gallon or higher, and ZEVs, while crediting fuel taxes paid toward RUC and eliminating flat registration surcharges on hybrid and electric vehicles who choose to pay RUC.
- Work toward expansion of RUC to all new vehicles regardless of technology by Model Year 2028.
- To protect privacy and contain costs, offer odometer reporting as the default method for determining miles driven as the basis for RUC.
- Allow the Department of Licensing (DOL) to certify more advanced methods of reporting for motorists who prefer such methods.
- Enact strong privacy protection provisions to protect personal privacy with respect to odometer data collected by the state and any other data collected by certified third parties in conjunction with a RUC program.
- Dedicate RUC revenue to preservation and maintenance of highways and ensure current distributions of gas tax revenue are maintained to cities, counties, state transportation granting agencies, and off-road recipients.
- Sustain the collaboration between DOL and the Commission on public outreach while adding research on compliance and work with other jurisdictions and automakers to explore long-term improvements to mileage reporting.

Introduction



In 2012, the Legislature directed Washington State Transportation Commission (WSTC or the Commission) to research road usage charging (RUC) as a possible replacement for state fuel taxes. Since then, the Commission has convened a legislative and stakeholder Steering Committee of 30 members, determined the feasibility of RUC, conducted a business case analysis, developed operational concepts, and tested those concepts in a 2,000-vehicle, statewide, year-long pilot from 2018-2019. At the conclusion of 2019, a report was issued on the analysis and findings of the assessment and pilot test, and 16 recommendations were provided to the Legislature on how to advance RUC in Washington.

In 2019, the Legislature directed the Commission to assess the potential impacts of RUC on underserved communities, including communities of color, low-income households, vulnerable populations, and displaced communities. The Legislature further directed the Commission to seek further federal funds to conduct additional research on financial impacts of new mobility trends, update RUC operational concepts, and consider the equity impacts of RUC. The Commission submitted its application to the U.S. Department of Transportation in Fall 2019.

In January 2020, while awaiting results of the grant application, the Commission issued RUC recommendations to the Legislature. The Commission recommended, among other things, that the Legislature begin a gradual transition away from the gas tax, by authorizing a RUC program initially for electric, hybrid, and state-owned vehicles. In addition, the Commission identified a range of areas for additional research, many of which were included in the Commission's application for additional federal funding.

In July 2020, the U.S. Department of Transportation awarded the full grant amount sought by the Commission for additional research. The remainder of this report summarizes the findings of the research conducted under the grant in 2022 along with recommendations from the Commission to the Legislature deriving from research to date.

Forward Drive Project Update



The Commission applied for funding from the U.S. Federal Highway Administration in 2019 under the Surface Transportation System Funding Alternatives program, the same program that funded the 2017-2019 Washington Road Usage Charge (WA RUC) pilot and subsequent analysis. The Commission was successful in securing the requested funding, and the new *Forward Drive* research program was implemented in October 2020.

The *Forward Drive* research program comprises several tasks, each designed to probe and further explore potential implementation considerations as informed by the research and testing to date. The work to date culminated in November 2022 with the launch of a publicly accessible simulation of a RUC system. The simulation builds on findings from the *Forward Drive* research and will extend into early 2023, with a final report of findings due later next year.

Modeling the Revenue Impacts of Mobility Trends

In the first stage of the *Forward Drive* project, the Commission developed an updated financial model with the ability to project future revenue across a broad range of policy choices under a variety of economic and future mobility scenarios. A key focus of the model is the ability to incorporate a range of possible trajectories for adoption of more fuel-efficient vehicles, the primary driver of reduced fuel consumption and, in turn, reduced motor fuel tax revenue. The model also incorporates impacts of the COVID-19 pandemic and potential permanent shifts in driving patterns, and the prospective impacts of increased vehicle automation on vehicle miles of travel.

In 2022, the Federal government promulgated more stringent Corporate Average Fuel Economy (CAFE) standards (see Table 1), and the California Air Resources Board adopted a ban on the sale of new internal combustion engine vehicles by 2035, to which Washington will adhere, while Washington adopted a goal of banning gas-powered vehicles by 2030. With these additional forces at play, the Commission updated the financial model to consider trends in fuel consumption.

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Table 1: Estimated new vehicle fuel economy/ miles per gallon (MPG) under new CAFE standards

	LIGHT-DUTY TRUCKS	PASSENGER CARS	OVERALL
2024	36.8	54.7	43.5
2025	38.0	57.9	45.4
2026	40.7	60.9	48.4
2027	41.4	61.8	49.1
2028	41.8	62.5	49.7
2029	42.1	62.6	50.0

These factors will combine to reduce revenue over time under the current gas tax rate of 49.4 cents per gallon, as illustrated in Figure 1. Receipts decline gradually for the remainder of this decade, then accelerate after 2035, reaching under \$600 million by 2050, a 50% decline relative to today's receipts.

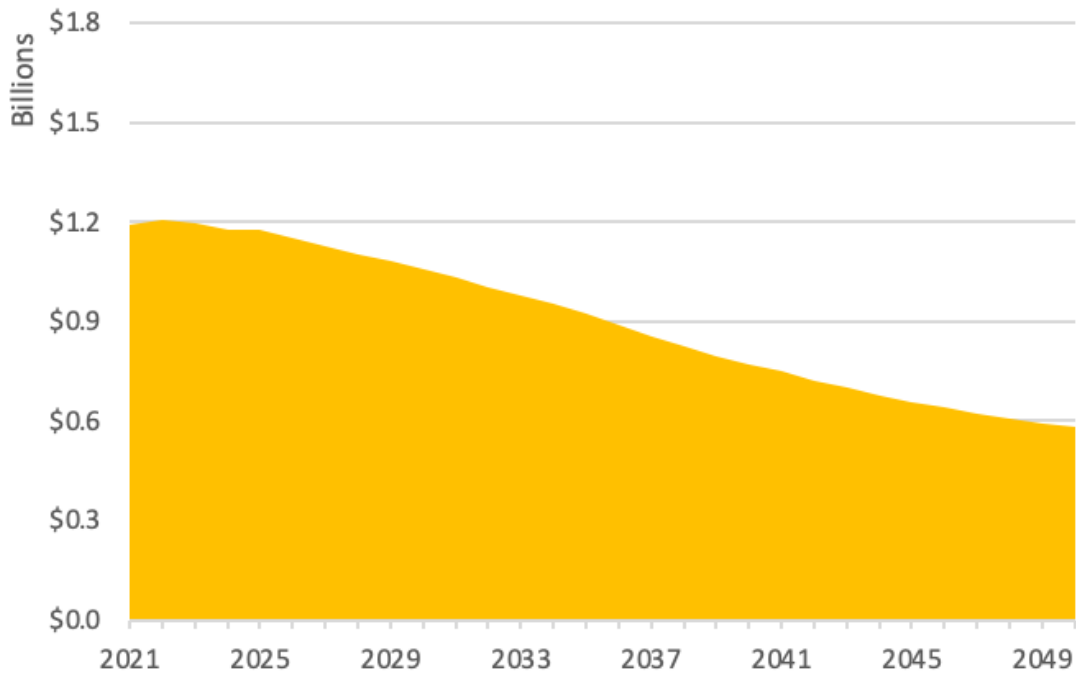


Figure 1: Fuel Tax Revenue Under Status Quo Policy

The Commission modeled several scenarios of potential revenue generation from a RUC to address the growing shortfall under the existing fuel tax mechanism. Figure 2 illustrates total revenue from motor fuel taxes and RUC under a policy of assessing RUC on all new vehicles beginning with Model Year 2028, at rates of either 2.5 cents or 3.0 cents per mile driven.

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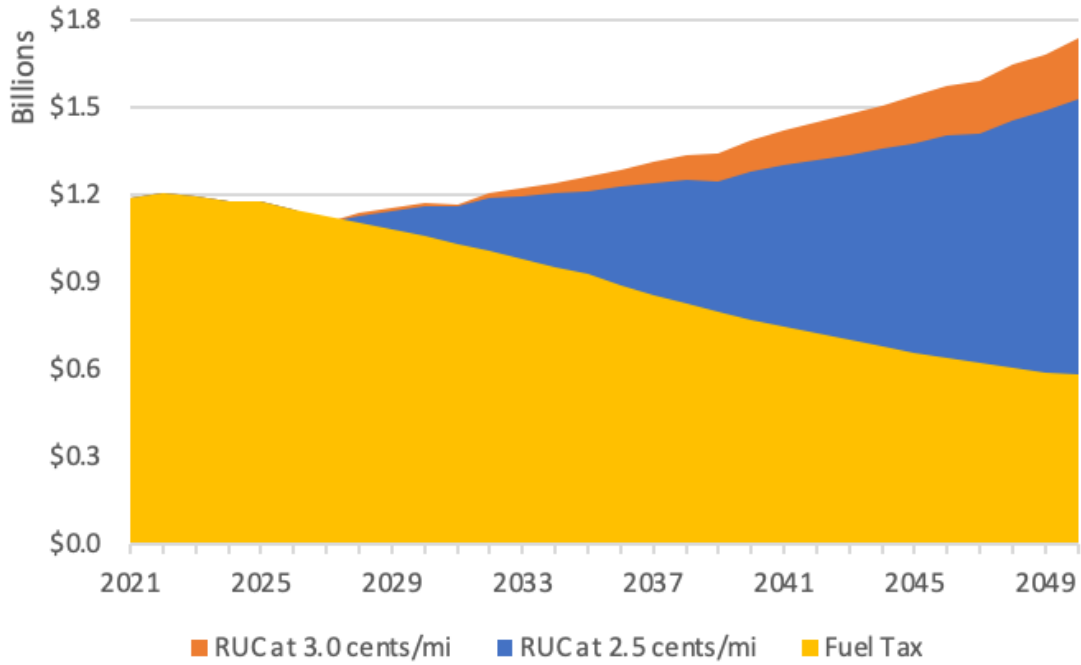


Figure 2: Revenue Under a Transition to RUC Starting with Model Year 2028 Vehicles

Figure 3 illustrates total revenue from motor fuel taxes and RUC with a transition beginning with Model Year 2032, at rates of either 2.5 cents or 3.0 cents per mile driven.

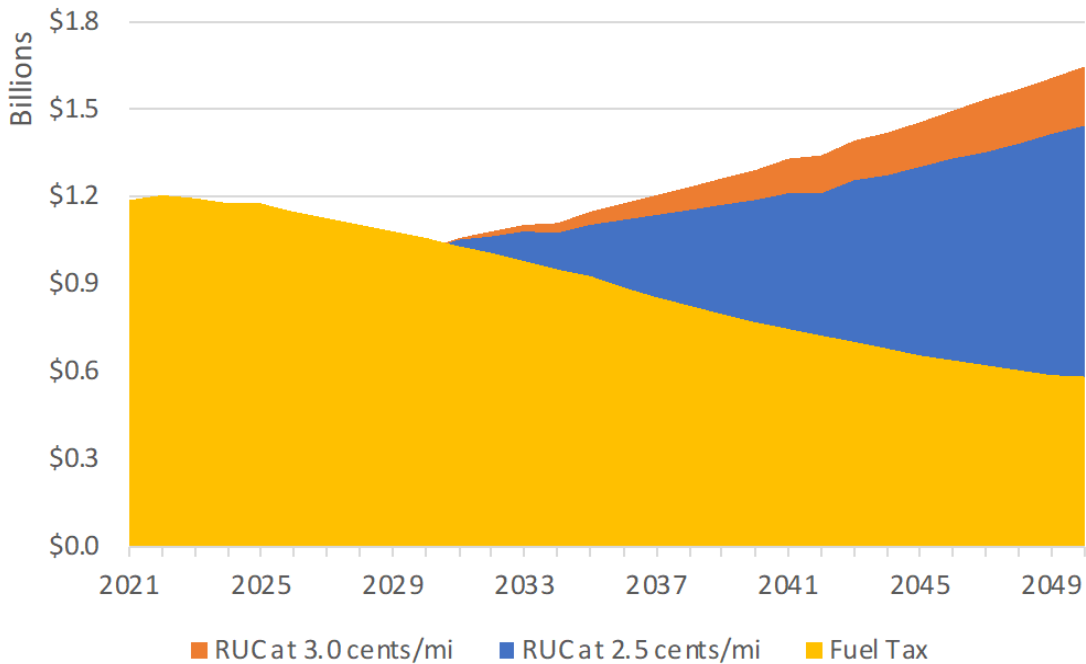


Figure 3: Revenue Under a Transition to RUC Starting with Model Year 2032 Vehicles

Impacts of RUC on Underserved Communities

The Commission conducted extensive outreach to historically underserved communities in 2021 to assess baseline knowledge of transportation funding policy; share basic information about a possible RUC; and collect questions, concerns, and preferences about RUC. The outreach included communities of color, low-income households, and vulnerable and displaced populations across Washington. In addition to this outreach and engagement process, the Commission conducted a detailed assessment of the financial impacts of a potential RUC on low-income households.

Consistent with surveys and focus groups conducted across Washington in earlier phases of the Commission's RUC research, engagement with underserved communities revealed little understanding of how transportation is funded. There was a widespread belief that low-income households drive more miles than other households due to the need to access affordable housing far from places of work. This belief, combined with the assumption that RUC would be levied in addition to the gas tax, led most participants to have negative attitudes toward RUC initially. As participants gained more information, they became more supportive of the concept, although most reserved final judgment in the absence of a specific proposal. Participants identified challenges with ability to pay a RUC, particularly annual lump sum payments, and concerns about privacy protection. Potential solutions identified by the groups included offering discounts for qualified low-income vehicle owners, creating a simple tab renewal-based method for reporting and paying RUC to protect privacy, and affording the option of making installment payments for RUC rather than annual lump sum payments.

Analysis of financial impacts contravened conventional wisdom. A key finding is that household miles driven is positively correlated with income: those who make more, drive more. At the same time, fuel economy is correlated with income: those who make more money drive newer and more fuel-efficient vehicles. The result is that low-income households, on average, contribute the most on a per-mile-driven basis in motor fuel taxes, while the highest-income households contribute the least.

The analysis found that a RUC applied broadly could result in savings for low-income households, on average, compared to fuel taxes. However, the savings are modest, averaging \$7 per vehicle per year. Moreover, the proportion of spending devoted to road usage taxes (whether a fuel tax or RUC) is likewise modest, about 4% of transportation spending on average for the lowest-income households as shown in Figure 4.

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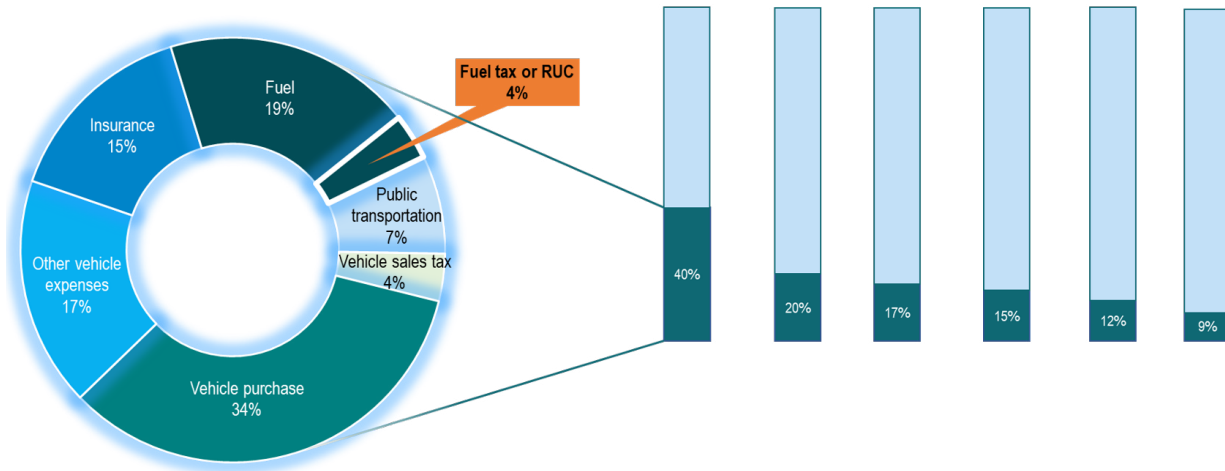


Figure 4: Breakdown of Transportation Costs for Low-Income Households

These findings echo earlier findings from research focused on rural households. That research found that the average fuel economy of vehicles in urban areas is higher than in rural areas, meaning that rural households currently pay more per mile driven in fuel taxes than urban households. Rural households would save, on average, \$25 under a RUC in lieu of gas taxes.

Although a flat per-mile RUC offers opportunities to slightly reduce costs for low-income motorists, outreach and research highlighted other areas of opportunity for meaningful assistance to low-income households. Chief among them, RUC reduces the pressure to increase fuel taxes and vehicle fees, both of which are more regressive fiscal measures. In addition, RUC has the possibility of being paid in installments, making it easier to pay, along with choices in how to report miles driven.

RUC Innovation

The Commission's previous statewide pilot in 2018-2019 explored five methods of mileage reporting, including pre-paid mileage permits, odometer photo reporting via smartphone, a smartphone app with the ability to turn Global Positioning System (GPS) on and off and measure out-of-state miles as a deduction, and plug-in devices with and without GPS technology. As part of the current *Forward Drive* research program, in 2021 the Commission conducted extensive industry research to identify opportunities for innovation in RUC operations focused on the objectives of preserving or enhancing equitable outcomes, improving the user experience, and reducing the cost of collection.

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The research covered a wide array of possible enhancements to how customers report vehicle usage and how the state can more efficiently interact with customers. Examples include leveraging connected and autonomous vehicle technologies and existing billing relationships between customers and vehicle-related service providers to make reporting mileage seamless and less costly. Two specific areas emerged for additional research: self-reporting of odometer readings and harnessing in-vehicle telematics to report miles driven. Although they represent opposite ends of the technology and automation spectrum, these two methods are the least studied in pilots to date in Washington and other states.

Research continues to identify emerging opportunities for increased innovation via collaborations, such as through a pay-at-the-pump partnership with gas stations or electric vehicle charging points. The research also seeks to map the array of possible future directions for telematics-based reporting. Specifically, the research team will engage directly with automakers and data aggregators that work with automakers. Given the range of possible business models yet to emerge, the research will plot possible roles for automakers, data aggregators, account managers, and state agencies.

Reducing Cost of Collection

In late 2021, the Commission conducted workshops with the Department of Licensing (DOL) and partner agencies from Oregon and Utah who have live RUC programs. The overall theme was to identify ways to reduce the cost of collecting RUC, and the workshops covered three specific topics: customer service, enforcement, and procurement.

The customer service workshop yielded insights around the cost elements of customer service. One key lesson learned is that the best way to avoid the potentially high costs of customer service is to make the experience of signing up or enrolling in a RUC program as simple and easy as possible for customers, to minimize the need for additional support. Achieving this requires understanding customer needs, including their behaviors and preferences, and designing online, interactive features for mileage reporting and payment that are familiar and integrated where possible with existing services and transactions such as vehicle service, insurance, registration renewal, and fueling.

The second workshop on enforcement yielded possible approaches for sharing administrative functions across state boundaries such as sharing in access to data sources for vehicle miles driven and vehicle registration. That said, workshop participants agreed that actual enforcement mechanisms are largely known; the best way to reduce the cost of enforcement is to reduce the amount of enforcement needed, by maximizing voluntary compliance. The workshop generated several strategies for maximizing voluntary compliance. First, creating a customer-friendly program design can make voluntary compliance easy and seamless. This is accomplished through the use of clear, simple language to explain requirements and through user experience testing to optimize customer interaction points. Another strategy is to approach initially non-compliant customers in a constructive, even friendly manner, to encourage active participation rather than messaging with punishment or threats. By working with customers to help them become compliant, more costly enforcement measures can be avoided. Third, agencies can consider deploying incentives to encourage compliance, such as discounts for early

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payment and grace periods. Incentives should be designed and deployed in a fair manner while controlling costs that would otherwise be devoted to more costly enforcement techniques.

The third workshop on procurement generated several insights. Given the likely need for participation of the private sector in carrying out some aspects of RUC, and the large number of states potentially seeking their services, procurement represents an opportunity for states to work together to design common elements of a RUC system that reduce the cost to states to procure needed services. This could take the form of a multi-state boilerplate market contract for RUC system elements, a multi-state framework for certification of vendors, and applying existing standards to prospective RUC vendors from sectors such as banking, payment processing, insurance, and data security, rather than creating duplicative standards from scratch. To facilitate common elements across jurisdictions and private industry to lower costs, standards are often developed by a committee of jurisdictional and industry representatives. The Commission has developed a framework for such a committee, including draft objectives and a scope of work. The Commission will demonstrate how such a committee can work on a limited, mock basis with partners from other jurisdictions in 2023.

Development and Launch of Interactive RUC Simulation

The Commission worked in 2022 to translate research findings into viable RUC concepts for testing with the public. Those efforts culminated in the establishment of an online RUC “simulation” as the central feature of an interactive, experience-based participation opportunity for volunteers.

The RUC simulation enables drivers from across the state to experience what it would be like to enroll in a RUC program for the first time. The design of the simulation builds on research findings and extensive testing with volunteers to optimize the user experience. The foundation of the simulation is a simple, odometer-based self-reporting—an approach that underserved communities expressed interest in, allows for protection of privacy, and can be administered cost effectively. From that foundation, participants choose from a range of options for how to confirm their self-reported odometer reading, a way of encouraging voluntary compliance. They also may choose a more advanced method of reporting miles driven for a future year, identify their eligibility for an income-based discount, and elect whether to pay RUC in installments or as a single lump-sum payment.

Once a participant completes the simulation, they are given a survey to share thoughts on what worked and what didn't, as well as share any concerns or issues they had. A sub-set of drivers who complete the simulation and survey will be offered the chance to participate in limited, follow-on pilot testing. The follow-on testing opportunities are as follows:

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- **WA RUC FlexPay** simulates installment payments for RUC as an alternative to annual lump sum transactions. Participants who opt in will be asked to pay the RUC they owed from the simulation in four monthly installments. Participants will be asked to answer questions about the ease of use of an installment plan, the effectiveness of reminders, and the value-add that an installment plan adds to their experience. The project will reimburse participants for the cost of the payments.
- **WA RUC AutoPilot** allows motorists to report road usage directly from their vehicles using on-board telematics. Eligible participants who opt in for this experience will be asked to activate their in-vehicle telematics program, which will then allow the project team to access data describing the number of miles driven in Washington provided by project partner Via. Drivers will receive a mock monthly statement and be asked to answer questions about the attractiveness of this approach and the accuracy of their statements.
- **WA RUC MilesExempt** offers participants an opportunity to self-declare exemptions for out-of-state and off-road miles and provide documentation to back up these claims. Participants who opt into this experience will be asked to provide evidence of out-of-state travel such as receipts, trip records, and employment verification, to substantiate claims for out-of-state mileage deductions beyond the standard deduction offered in the RUC simulation.

The RUC simulation launched at the November 17, 2022, meeting of the RUC Steering Committee, with members of the Committee as the first to experience the simulation, complete the survey, and express interest in follow-on experiences. Shortly thereafter, the first batches of public volunteers were invited to complete the simulation. Figure 5 illustrates the end-to-end process that participants in the RUC simulation will experience.

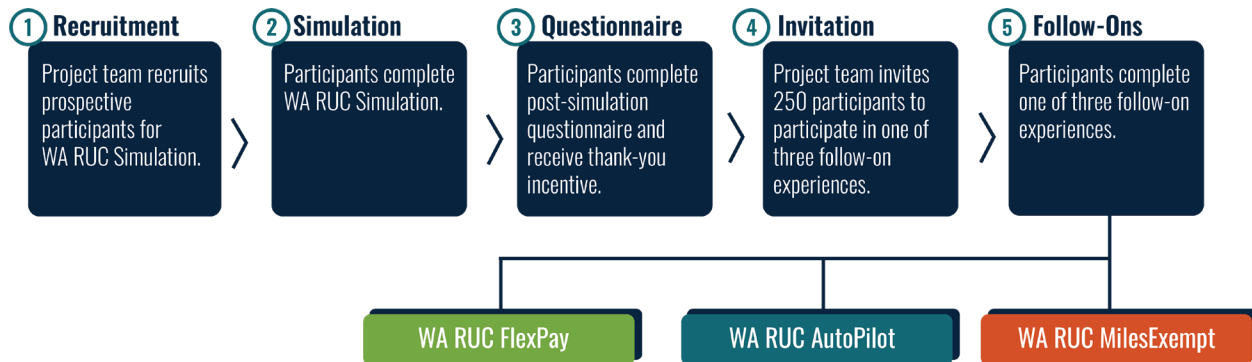


Figure 5: Participation Process for 2022-2023 RUC Simulation and Follow-on Experiences

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As of late December, over 500 Washingtonians have completed the RUC simulation, with up to a total of 1,000 expected to complete the simulation by the end of January. Among the participants, the project team anticipates up to 748 who will serve as a statistically representative sample of Washington's population as a whole, recruited by market research partner Ipsos. The project team has set additional goals to recruit 100 participants in the WA RUC FlexPay follow-on experience described above, recruited by project partners Yates Consulting Group and EnviroIssues (EI), as well as 50 participants in WA RUC AutoPilot and 100 in WA RUC MilesExempt recruited by EnviroIssues.

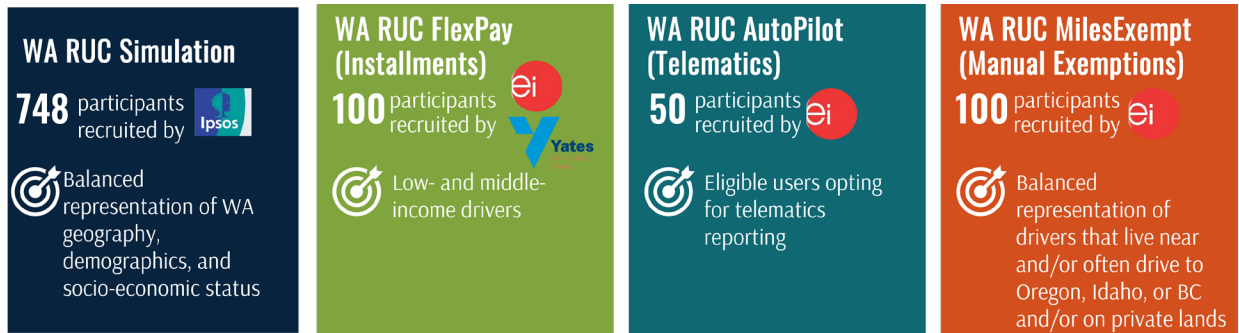


Figure 6: Recruitment Targets for the RUC Simulation

The RUC simulation will close in February 2023, and the follow-on experiences will conclude in May 2023.

Recommendations



The Commission's research and testing program has resulted in our state being very well prepared and ready to advance a RUC program. The current situation can be summarized as follows:

- Recent market trends have resulted in accelerated adoption of more fuel-efficient and zero-emission vehicles.
- Research has shown that reliance on existing revenue mechanisms (fuel taxes and vehicle fees) adversely impacts low-income households given they are flat and regressive in nature.
- The Commission's research has identified non-invasive, user-friendly, low-cost methods for implementing a start-up RUC program.
- Privacy can be protected by requiring the state to offer no-tech/non-GPS approaches to reporting miles while enacting provisions in law that safeguard data collected from motorists.
- Many choices exist for addressing the questions that RUC raises around rate-setting, use of revenues, and out-of-state driving.

In December 2022, the Commission adopted further recommendations that build upon their 2020 recommendations, to serve as a starting point for consideration by the Governor and Legislature. These recommendations give implementing agencies ample time to launch and then learn from an early, small-scale RUC program, allowing for adjustments to be made over the next several years as a methodical and slow transition from the gas tax to RUC occurs.

RECOMMENDATIONS

2022 Recommendations to the Governor and State Legislature for advancing RUC in Washington:

1. **Act Now to Authorize a RUC Program:** Given it will take a couple of years for DOL to prepare for the implementation of a RUC program, authorization should happen now as follows:
 - **Beginning July 1, 2025, implement a voluntary RUC program** open to any vehicle rated 25 MPG or higher, and waive the \$225 electric vehicle (EV) fees and \$75 hybrid fees for EVs and hybrids that choose to join the RUC program.
 - **Beginning July 1, 2027, require all vehicles model year 2028 and newer** to pay a RUC in lieu of fuel taxes, EV registration surcharges, and/or hybrid registration surcharges.
2. **RUC Per-Mile Rate:** Establish an initial per-mile RUC rate of 2.5 cents per mile for all subject vehicles. This rate is the per-mile equivalent to what the average light duty vehicle in Washington state pays today in fuel taxes, on a per-mile basis.
3. **Start With Odometer Readings:** In implementing an initial RUC program, require annual odometer readings of participating vehicles as the method of mileage reporting to determine RUC charges.
4. **Preparation Starts Now:** To set the stage for a long-term transition toward RUC, begin collecting odometer readings as soon as possible from all vehicles upon initial registration and renewal of registration, whether or not they join the RUC program in the future.
5. **Revenue Dedication:** Dedicate RUC revenue to preservation and maintenance of highways.
6. **Offer Additional Options for Mileage Reporting:** Designate DOL as the operating agency for the RUC program and authorize DOL to certify third-party vendors to offer advanced mileage reporting options and account management services.
7. **Privacy Protection:** Enact personal privacy protections in law for a RUC program consistent with WSTC's model privacy policy.
8. **Funding Distributions During a Transition:** Ensure current gas tax revenue distributions are maintained to cities, counties, state transportation granting agencies, and off-road recipients.
9. **Ongoing Collaboration & Research:**
 - **Require active collaboration between DOL and WSTC** regarding public engagement and the Commission's ongoing research and exploration of RUC.
 - **Direct DOL and the WSTC to evaluate compliance** during the voluntary start-up phase of the RUC program and offer joint recommendations to the Legislature by December 2028.
 - **Direct WSTC and DOL to collaborate with other states, other nations, and automakers** to advance long-term solutions for mileage reporting and payment across borders.

Next Steps



The Commission will continue to deliver the scope of *Forward Drive* with a final project report to be delivered in late 2023.

In parallel, the Commission will support and monitor legislative activities related to RUC and incorporate relevant directives into the ongoing research. The Commission also stands ready to serve as a resource for information regarding previous RUC efforts, from financial modeling to pilot testing to policy analysis.

Outside Washington, the Commission will continue to monitor efforts in other states to incorporate findings and developments that will aid the Legislature in understanding options for addressing revenue needs in Washington. Of note, the states of Virginia, Utah, and Oregon continue to develop and enhance their operational RUC programs, while several other states are poised to enact legislation.

At the Federal level, passage of the Infrastructure Investment and Jobs Act (IIJA) will provide states with opportunities to pilot and implement RUC. Washington has benefited from the RUC grant program, reformulated and renamed under the IIJA to Strategic Innovations in Revenue Collection. Notably, the new law increases the federal cost share of grant awards, expands eligibility, and allows states to use funds for system implementation. Additionally, the IIJA provides for a multi-year, nationwide RUC pilot program. The Commission will keep the Legislature apprised of all relevant information to support *Forward Drive* and Washington's broader efforts for finding a gas tax replacement.