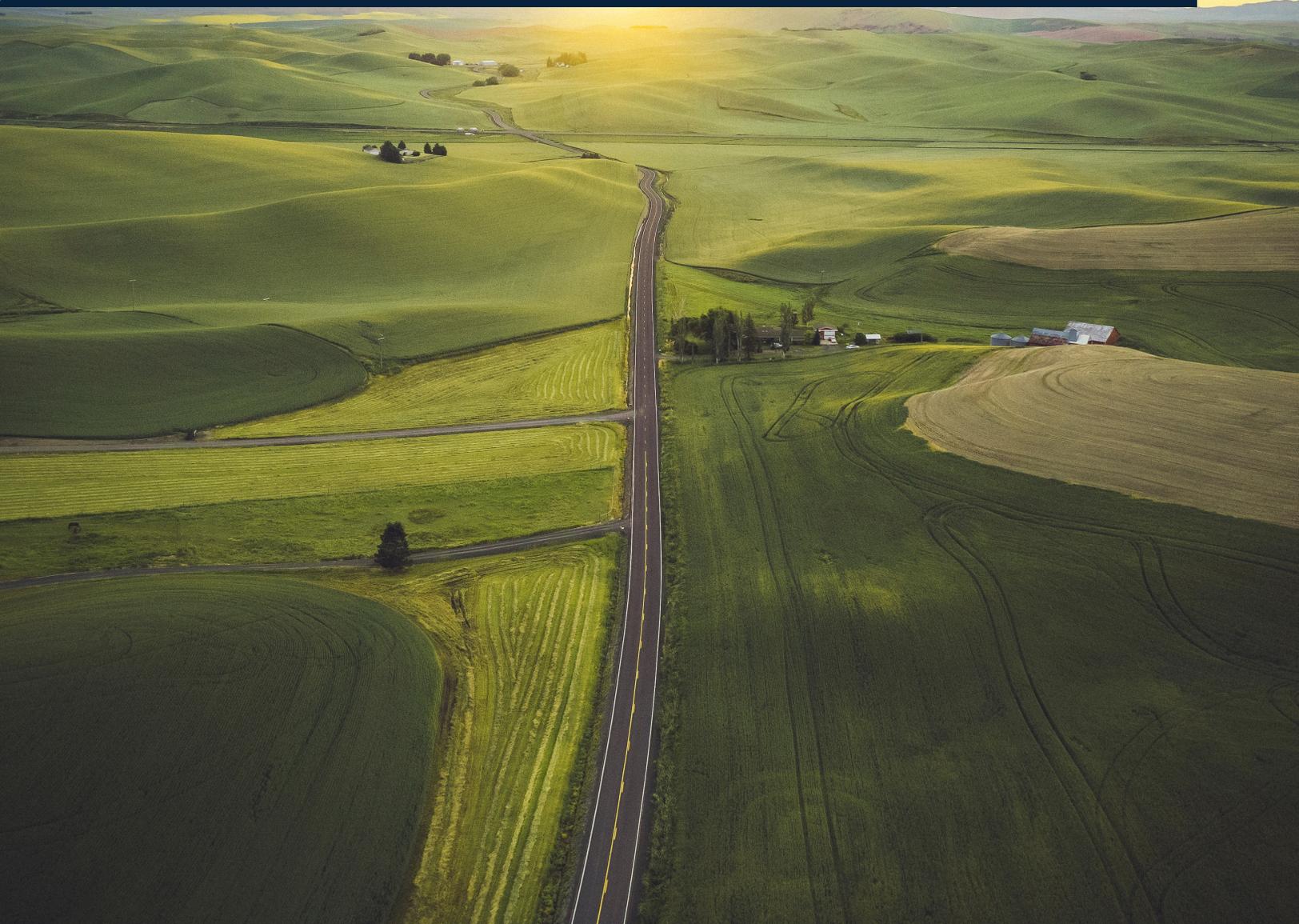




Forward Drive

Sustaining Washington State's
Transportation System Into the Future



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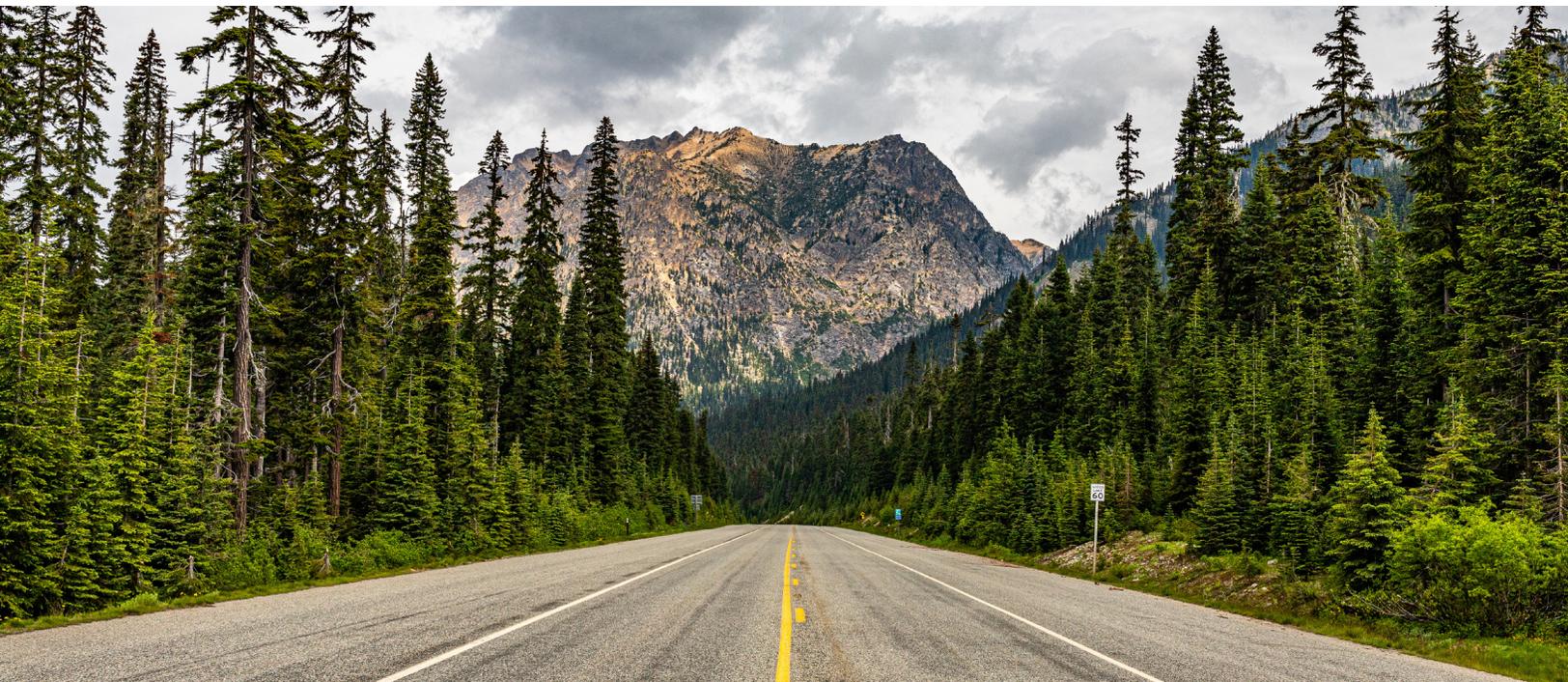


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EXECUTIVE SUMMARY

Washington faces a long-term transportation funding challenge. Fuel taxes, the primary source of transportation funding, recently began a long-predicted decline as Washingtonians increasingly adopt fuel-efficient and zero-emission vehicles (ZEVs). Other than a post-COVID rebound in 2022, aggregate gasoline consumption has dropped every year since FY 2018 in Washington, most recently declining 2 percent between 2022 and 2023.

Since 2012, at the direction of the Legislature and guided by a 30-member stakeholder steering committee, the Washington State Transportation Commission (Commission) has led exploration of gas tax alternatives for the state, with a focus on the concept of road usage charging (RUC). Prior research has demonstrated that RUC offers a viable approach to sustainably fund Washington's roads and bridges.

Funded by a federal grant, the Commission's most recent research project, Forward Drive, took place from 2020 to 2023 and aimed to address several outstanding issues through research, analysis, public engagement, and a large-scale pilot. Specifically, Forward Drive focused on near-term policy and system implementation issues including addressing transportation tax equity, improving the user experience in a RUC program, and lowering the cost of administration for RUC. The findings from this research point to near-term approaches for implementation of an equitable, publicly-acceptable, cost-efficient RUC program.

Low-income and rural households stand to benefit in a switch from fuel taxation to direct charging for road usage.

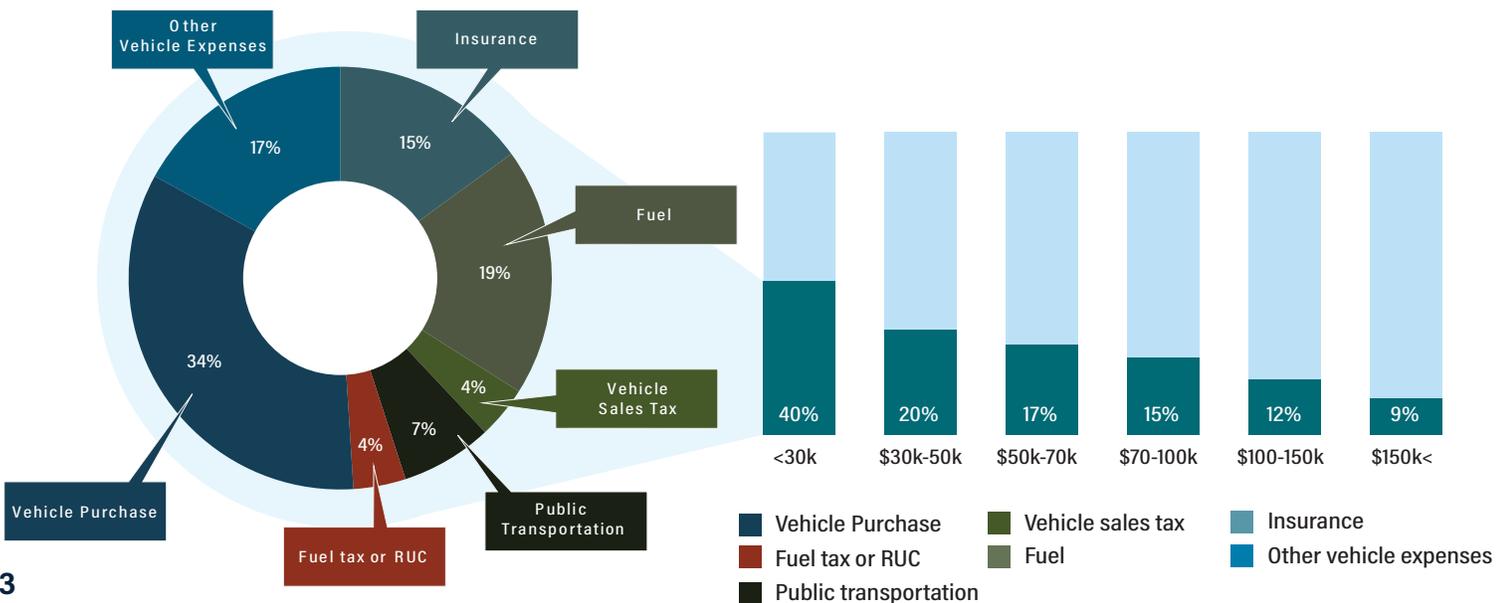
Transportation Tax Equity. Equity is an important issue to address in the design of any new transportation funding structure that will carry us into the future. Using a novel methodological approach, Forward Drive research quantified the relative impacts of RUC on households by income and geography relative to the fuel tax. The results reveal that low-income and rural households stand to benefit in a switch from fuel taxation to direct charging for road usage, assuming a flat statewide per-mile RUC rate. Urban and higher-income households are more likely to own EVs and newer vehicles with better fuel economy than average, meaning they pay less per mile in fuel taxes relative to rural and low-income households. Increasing the fuel tax rate to pay for transportation needs results in households in rural and low-income areas bearing a disproportionate share of the costs and impacts of those increases, whereas the introduction of RUC would align costs with usage.

User Experience in a RUC Program. RUC implementation must be simple and cost-effective. Through Forward Drive research, extensive human-centered design was conducted with Washingtonians, leading to the successful demonstration of a novel approach to RUC based on self-reported odometer readings. If implemented as part of the annual vehicle registration renewal process, odometer reporting is the only new action required for drivers, outside of what they already undertake today.

Through Forward Drive research, extensive human-centered design was conducted with Washingtonians, leading to the successful demonstration of a novel approach to RUC based on self-reported odometer readings

This testing also resulted in the discovery of a new approach to conducting a “RUC pilot.” Instead of an on-road test of RUC operations, lasting months and requiring numerous touchpoints and interactions for participants, Forward Drive created and deployed an interactive, web-based simulation of RUC enrollment, reporting, and payment, along with a survey, that participants could complete in a single interaction taking minutes to complete. As a result, the project successfully interacted with over 1,100 Washingtonians in a short time frame, generating extensive feedback on the operational and policy features of a prospective RUC.

EXHIBIT 1.1 Transportation Costs by Household Income



Cost of RUC Administration. By leveraging existing processes and reducing RUC to its essentials – collecting an odometer reading periodically from subject vehicles – Forward Drive revealed a pathway toward a RUC program that can be administered for a fraction of the revenue collected, likely less than 10 percent in the near term, putting RUC on par with the cost of collecting current vehicle-related taxes and fees. The research results also identified longer-term policy and design enhancements that could be made to a more mature RUC program, that improve functionality while preserving the low cost of administration. Examples include incorporation of vehicle telematics for road usage reporting and development of RUC standards in collaboration with other jurisdictions.

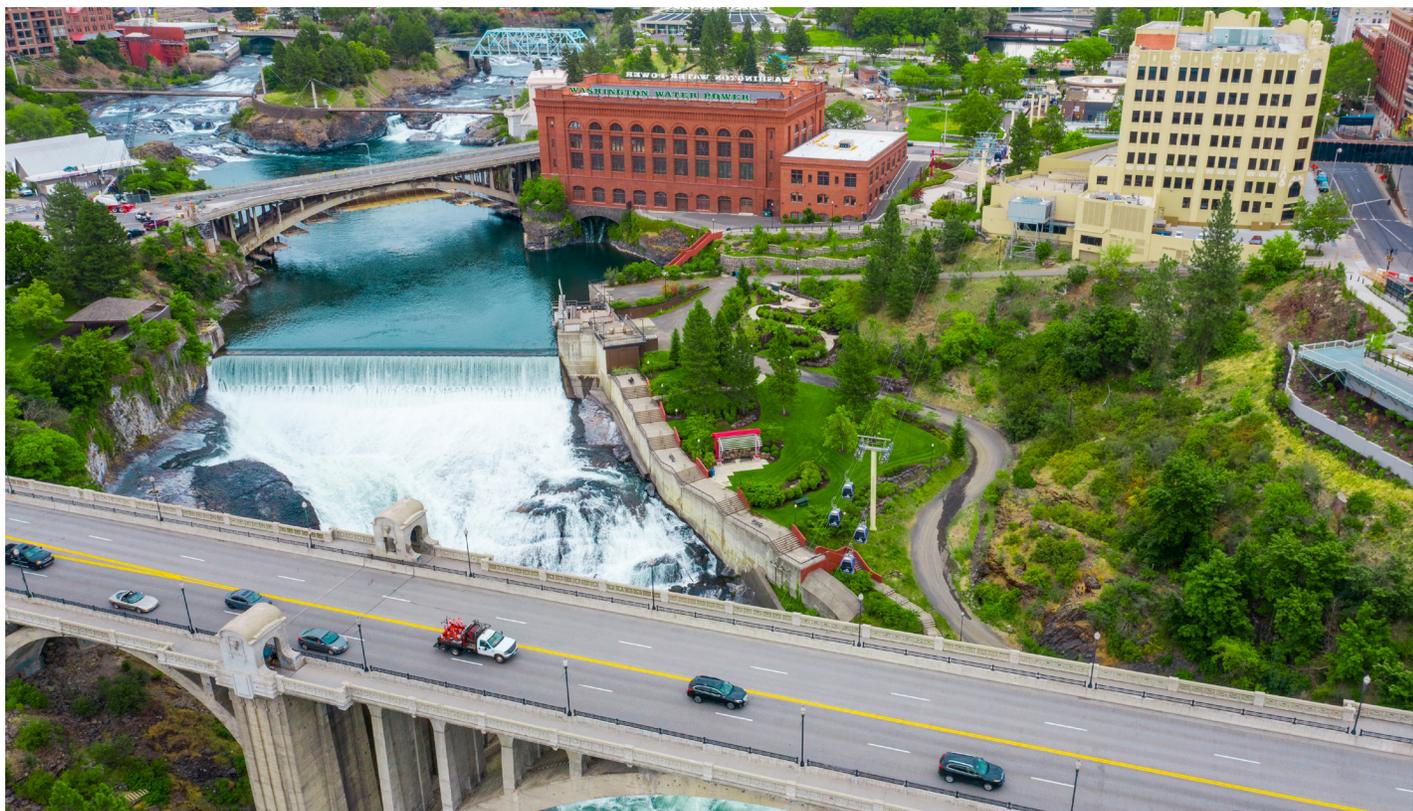
Forward Drive revealed a pathway toward a RUC program that can be administered for a fraction of the revenue collected

EXHIBIT 1.2 The Forward Drive pilot performed well with participants

 **70%**
were satisfied or very satisfied with the payment and reporting process

 **85%**
said no steps were difficult to complete

 **56%**
reported taking ≤5 mins to complete



The findings of the Forward Drive research and testing demonstrate that policymakers can address multiple priorities simultaneously including deploying a RUC system that is low cost to administer, provides an easy and positive user experience, protects privacy, improves equity, and accommodates out-of-state driving. The findings support six key conclusions:

1. STEEPER GAS TAX REVENUE LOSSES EXACERBATE TRANSPORTATION FUNDING CHALLENGES AND EQUITY CONCERNS

Prior research showed that fuel tax contributions are higher per mile driven in rural areas than urban areas. Equity research conducted for Forward Drive confirmed a similar phenomenon with respect to income: vehicles registered in the lowest-income areas are older and less fuel-efficient, on average, than vehicles registered in higher-income areas. With the price of new vehicles at an all-time high, more fuel-efficient vehicles and ZEVs are predominantly being purchased by higher-income households. As a result, the burden of fuel costs and fuel taxes is likely to further concentrate on rural and low-income households driving older, less fuel efficient vehicles in the coming decade.

2. AMONG TRANSPORTATION REVENUE CHOICES, RUC PERFORMS STRONGEST FOR USER EQUITY AND SOCIAL EQUITY

“User pay, user benefits” is a long-standing principle of road funding policy which the gas tax embodied for decades, during a time when most vehicles had similar fuel economies. By contrast, as vehicle fuel economy increases and fuel consumption diminishes, so do the amount and parity of fuel taxes being paid by those drivers. As a result, the burden of fuel taxes is falling on a shrinking tax base of largely older, less fuel-efficient vehicles. Meanwhile, flat vehicle fees require vehicle owners to pay either too much or too little relative to their road usage. Those who use the roads the least effectively subsidize those who drive the most. RUC performs strongly for user equity by aligning the cost of road usage with what drivers pay.

RUC also improves social equity relative to other strategic options. Available data show a clear correlation between income and miles driven: the more income a household makes, the more miles they drive. In addition, there is a clear correlation between income and vehicle fuel economy: the more income a household makes, the less fuel they consume per mile driven. Likewise, under a flat fee, how much one uses the road is irrelevant, making the flat fee approach relatively more regressive and misaligned with the user-pay principle. These findings point to RUC as a more progressive funding option compared to either the gas tax or flat vehicle fees.



3. PUBLIC ACCEPTANCE OF RUC IN WASHINGTON HAS GROWN WITH EXPOSURE TO THE CONCEPT

Forward Drive added to the evidence from other states and Washington's earlier research that exposure to RUC reduces opposition and increases support for the concept. Direct experience can address perception-based concerns the public has around issues such as household financial impact and privacy.

- › In 2017, a household telephone survey of a statistically representative sample of 602 Washingtonians found 31 percent support for and 58 percent opposition to RUC.
- › Washington's first pilot project in 2018-2019 had over 2,000 participants. Among those participants uncertain of their preference between RUC and the gas tax before the pilot started, 42 percent preferred RUC by the end of the pilot, with 17 percent preferring RUC and the gas tax equally and 18 percent preferring the gas tax.
- › The 2022-2023 pilot includes results from among a statistically representative sample of Washingtonians showing support for RUC by a margin of 56 percent to 44 percent.

4. ENROLLMENT AND ODOMETER DECLARATION IS VIABLE TODAY: A SIMPLE, LOW-COST, POPULAR APPROACH FOR IMPLEMENTING RUC IN WASHINGTON

The popularity of the RUC approach tested in the Forward Drive pilot stems in part from the attractiveness of self-reporting miles driven based on odometer readings. Customers perceived this as a simple, low-cost way to report road usage in a short time frame, and one which could be easily integrated with vehicle registration renewal. This approach also offers a low-cost approach for the state to administer RUC. The pilot offered approaches for addressing two of the shortcomings of a simple odometer declaration approach to RUC: honest reporting and exemptions for miles driven out of state.

- › Although nearly 90 percent of participants declared they would report miles driven honestly, most thought fewer than half of others would report honestly. Trust and confidence in the system increased when participants were asked to provide a digital picture of their odometer to substantiate their reported miles driven, which is a relatively low cost and simple method of confirmation.
- › Although 80 percent of Washingtonians reported driving fewer than 200 miles out of state or off public roads in the previous year, the majority still believed it important to provide a method of exempting such miles from RUC. Offering a "standard exemption" (equal to 200 miles in the pilot) provided a low-cost method for exempting those miles that requires no technology or reporting and satisfied the large majority of participants.



5. TELEMATICS IS CURRENTLY FEASIBLE ON AN OPT-IN BASIS FOR SOME VEHICLES, BUT WORK REMAINS TO EXPAND ELIGIBILITY AND IMPROVE THE USER EXPERIENCE

In the Forward Drive pilot, telematics was offered as a mileage reporting choice for some participants. While it proved effective and popular, there are limitations for the near-term use of this reporting method. Only a limited number of vehicle makes and models on the road today are equipped with the technology to report miles automatically, and some cooperation from automakers, who control access to the data, is required to maintain this method going forward.

That said, the pilot showed that odometer reporting using telematics is feasible today at moderate cost for small-scale programs and at a low cost for large-scale programs. Costs range between \$20-40 (approximately 10-15 percent of revenue, on average) per vehicle per year for programs with tens of thousands of vehicles, but the cost could scale to as low as \$12 (less than 5 percent) per vehicle per year at a scale of several hundred thousand or more vehicles. Over time, the technology for wireless odometer transmittal using in-vehicle telematics is becoming more widespread and available through both direct and indirect access channels.

Future pathways for integrating vehicle data for RUC purposes will continue to advance through research in Washington and elsewhere. Larger volumes of RUC programs with enrolled vehicles, even those using manual reporting methods, will accelerate the availability and reduce the cost of more advanced methods.

6. FORWARD DRIVE REDEFINED WHAT IT MEANS TO CONDUCT A RUC “PILOT”

In contrast to “traditional” RUC pilots which feature hundreds or thousands of participants simulating mileage reporting for months at a time, Forward Drive reimaged the RUC pilot by putting the customer at the center. The result was a short, simple web-based RUC enrollment, reporting, and payment simulation lasting minutes rather than months with several benefits:

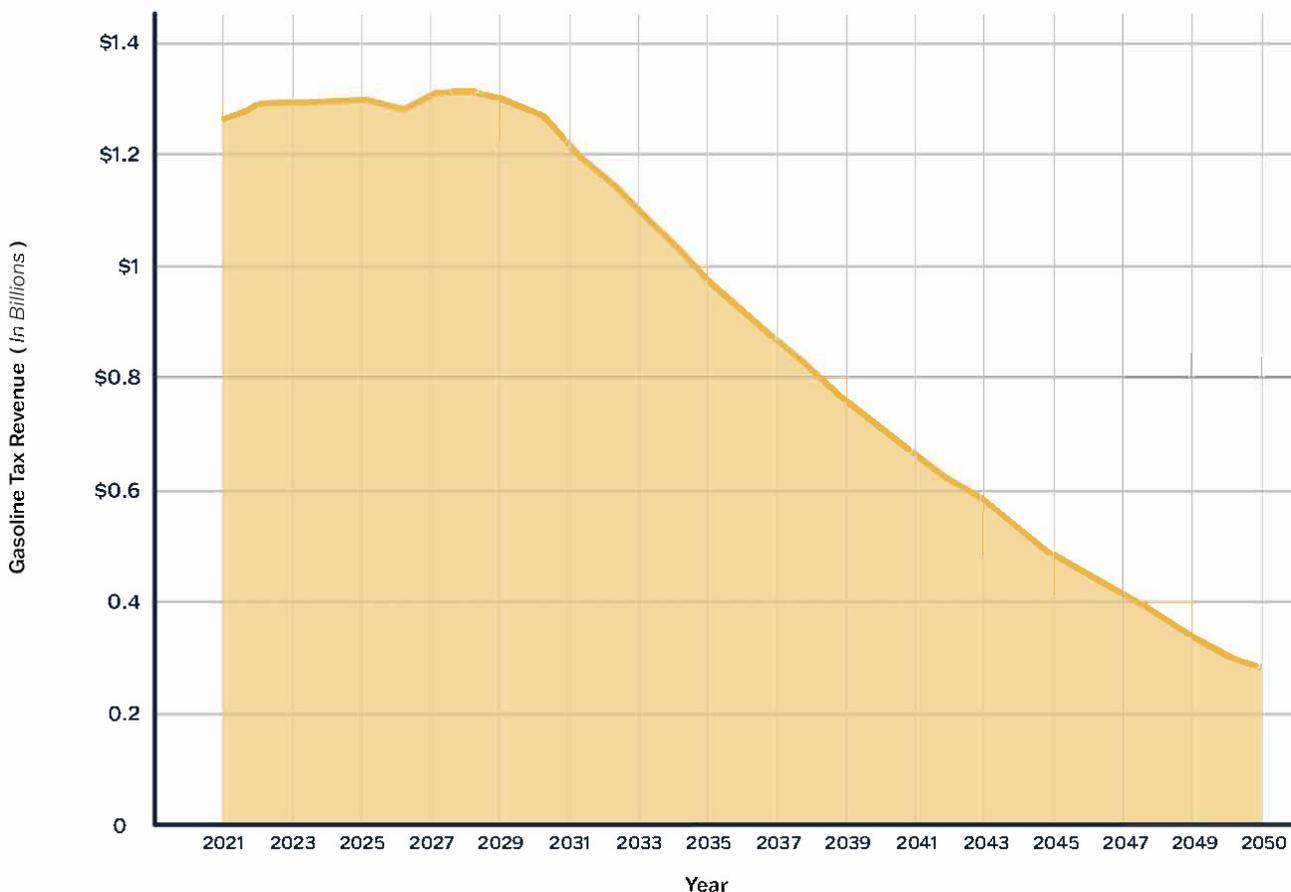
- › Customers benefited from a single, simple entry point to RUC, shifting the focus from how to report miles driven to who is the customer and what do they need to do?
- › Research benefited from a focus on other aspects of the RUC experience besides mileage reporting, such as system trust, the value of exemptions, the level of need for installment payments, the benefit of income-based discounts, and payment mechanics.
- › Project sponsors benefited from a lower cost of operations than a traditional pilot. Once the research questions were prioritized and the approach was designed, the simulation could be easily deployed across a large number of participants with negligible marginal costs.



RUC IS READY TO MOVE FORWARD NOW

Based on recent EV adoption rates in Washington and the outlook for improved vehicle fuel economy and EV adoption, the trend of declining fuel tax receipts is likely to worsen. Through the first half of 2023, Washington is now second behind California in ZEV adoption, at over 17 percent of new vehicles sold. Washington also joins California and several other states representing over 25 percent of the nation’s automotive market in requiring 100 percent of new cars sold by 2035 to be ZEVs. Should Washington meet the ZEV requirement, aggregate revenue from gasoline taxes will fall under \$300 million in 2050, a decline of about 80 percent from today’s levels.

EXHIBIT 1.3 Net Gasoline Tax Revenue (2021-2050)



Forward Drive offers a combination of policy and operational findings and conclusions that support the Commission's 2022 recommendations to enact a small-scale, initial RUC program. Salient features of a RUC program that enjoy strong acceptance for initial enactment include:

- › **A simple, low-cost method of reporting miles driven (self-reporting of odometer) and the ability to claim exemptions for miles driven off public roads in Washington (standard exemptions and manual mileage claims processes).** This approach offers a pathway for introduction of RUC to Washington drivers. Participants in the pilot overwhelmingly preferred to self-report miles driven. They also largely opted for a standard exemption of non-chargeable miles, with the number claiming it dependent on the number of exempt miles offered.
- › **Clear communication of how RUC is calculated, including application of credits for gas taxes paid.** Since the beginning of the investigation of RUC in Washington, the Commission has tested it as a replacement for the gas tax, and drivers continue to see that as a sticking point. Although not explicitly tested, anecdotal evidence from EV user groups suggests that removal of EV, PHEV, and hybrid registration surcharges would likewise garner higher levels of acceptance for RUC.
- › **Consideration for historically underserved communities, including low-income households.** Washingtonians appreciated the notion of a discount as a way to signal support for low-income households. This likely results from a perception, noted in earlier focus groups, that low-income households will be adversely impacted by RUC. However, analysis shows that, on average, RUC would benefit low-income households compared to the gas tax or flat vehicle fees. Other approaches such as communicating these results, offering installment payments, and making gas tax credits available beyond the amount of RUC owed as a credit, could support acceptance along similar lines as the discounts achieved in the simulation.



EXHIBIT 1.4 Policy Choices for RUC Enactment and Transition

The RUC Steering Committee reviewed and validated the range of policy decisions that must be made for initial enactment of a small-scale RUC program and transition to a large-scale program.

- What vehicles are subject to RUC?
- How is road usage reported?
- What is the RUC rate?
- How is participant privacy protected?
- What road usage is exempt from RUC and how?
- How are gas taxes handled?
- How are RUC revenues used?
- How is the program enforced?
- Multi-state cooperation

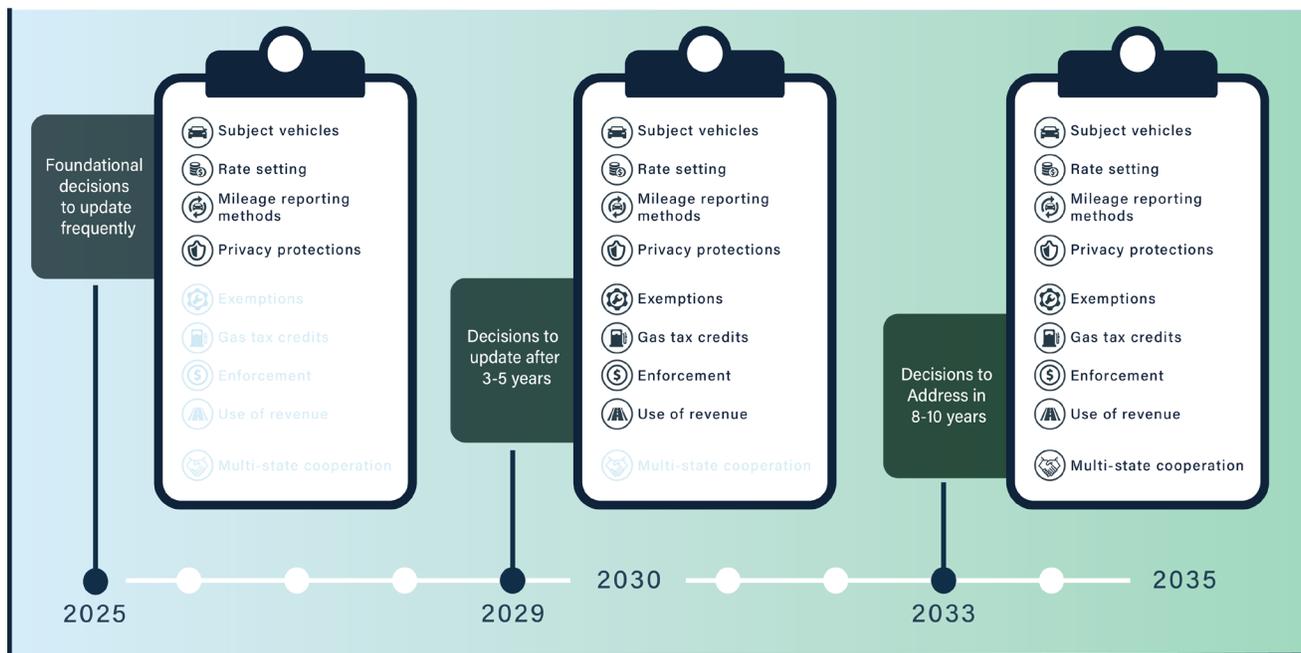
OVER THE NEXT DECADE, SMALL-SCALE PROGRAM LEARNINGS AND PARALLEL RESEARCH INFORM POLICY CHOICES

After enacting a small-scale RUC program in the near-term, the Legislature will need to revisit its policy choices regularly to ensure a smooth transition from a small-scale program to a large-scale program that meets the objectives of sustainable, equitable funding to replace the gas tax and flat vehicle fees. Learnings from the initial, small-scale RUC program alongside continued research can guide updates to policy choices for the program. This maturation process will take approximately ten years.

The fundamental choices for establishing a RUC program are subject vehicles, rates, mileage reporting methods, and privacy protection. It is critical that the Legislature revisit these decisions early and often to ensure program success. Other program choices to establish include exemptions, gas tax credits, use of revenue, and enforcement. These choices grow in importance to revisit and refine over the transition decade as the size of the RUC program grows to include more vehicles and generate more revenue. Finally, toward the end of the transition decade, it will be critical to revisit how Washington's RUC program interfaces with programs and policies of other states.

The findings from the Forward Drive research program offer a clear pathway to begin RUC in Washington. The results offer elements of a simple, low-cost program that the Legislature can follow to enact a small-scale program building on the Commission's 2022 recommendations. This approach prioritizes transportation tax equity and public acceptance, while establishing a strong foundation for a smooth transition to a mature RUC program that provides sustainable, equitable funding for the state.

EXHIBIT 1.5 Issue Prioritization During the Decade of Transition to RUC





Chapter 1

INTRODUCTION

Washington faces a transportation funding challenge. Fuel taxes, the primary source of transportation funding, recently began a long-predicted decline as Washingtonians increasingly adopt fuel-efficient and zero-emission vehicles (ZEVs). Potential policy responses to address declines in funding include increasing the fuel tax rate, increasing vehicle registration taxes and fees, securing general fund transfers to support transportation, and transitioning to a pay-per-mile road usage charge (RUC). Based upon extensive research, findings clearly indicate RUC is the only solution that preserves the “user pay, user benefit” principle the gas tax once embodied, while enabling alignment with other policy priorities including equity and environmental protection.

Since 2012, at the direction of the Legislature and guided by a 30-member stakeholder steering committee, the Washington State Transportation Commission (Commission) has led exploration of gas tax alternatives for the state, with a focus on the concept of RUC. Funded by a federal grant, the Commission’s most recent research project, Forward Drive, took place from 2020 to 2023. Forward Drive focused on near-term policy and system implementation issues including addressing transportation tax equity, lowering the cost of administering RUC, and improving the user experience in a RUC program. This report highlights the findings from this research program and provides options for Washington to consider for near-term implementation of a cost-efficient, publicly-acceptable RUC program.



The Legislature

reviews, considers options, and decides.

Final report to decision-makers



The WSTC

guides, oversees, and makes recommendations

The Steering Committee reports to the WSTC



The Steering Committee

designs, tests, measures, and reports to WSTC



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WASHINGTON'S 21ST CENTURY TRANSPORTATION FUNDING HISTORY

Washington provides funding for transportation infrastructure primarily through user fees including a fuel tax of 49.4 cents on each gallon of gasoline and diesel sold. Federal funding provided the state with about \$1.3 billion in Fiscal Year (FY) 2023. State fuel taxes generated another \$1.5 billion in net revenues, about \$1.2 billion of it from gasoline taxes. The state keeps about 80 percent of state fuel tax receipts, with the remainder distributed by formula to cities and counties. The state's portion of the fuel tax represents about 56 percent of state funding for highways, which supports maintenance, preservation, operations, and improvements to the state's roads, bridges, tunnels, and marine highway system (ferries). Vehicle registration fees provide an additional 25 percent of state highway funds, with another 16 percent from tolls and ferry fares and 2 percent from miscellaneous sources.

Since its enactment in the early 20th century, the fuel tax has served Washington and the nation as the primary source of transportation funding. As road usage historically increased, fuel consumption likewise rose, generating revenue to address increasing roadway investment needs. However, improvements in vehicle fuel economy and adoption of electric vehicles (EVs) over the past decade have eroded the link between road usage and revenue, exacerbated by inflationary pressures on highway costs.

Lawmakers in Washington have long recognized the challenge of sustaining a user-funded transportation system primarily with flat per-gallon fuel taxes. To address the gap between available revenue and needs, the state enacted gas tax rate increases in 2003, 2005, 2009, 2015, and 2016. In 2011, Governor Christine Gregoire convened the Connecting Washington Task Force to explore future transportation needs and funding options. In response, the Legislature enacted the nation's first registration surcharge on EVs and plug-in hybrid electric vehicles (PHEVs) at \$100 per year in 2012, later raising the fee to \$225 and extending it to include hybrid vehicles at \$75 per year in 2019. At the same time, the Legislature directed the Commission to study RUC as a long-term replacement for both the registration surcharges and fuel taxes.

EXHIBIT 1.6 State Funding by Revenue Source

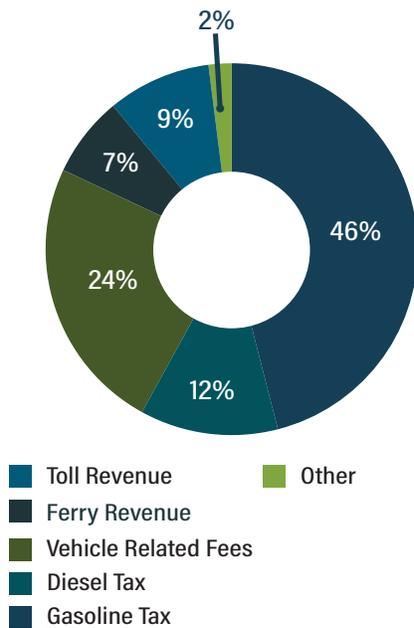
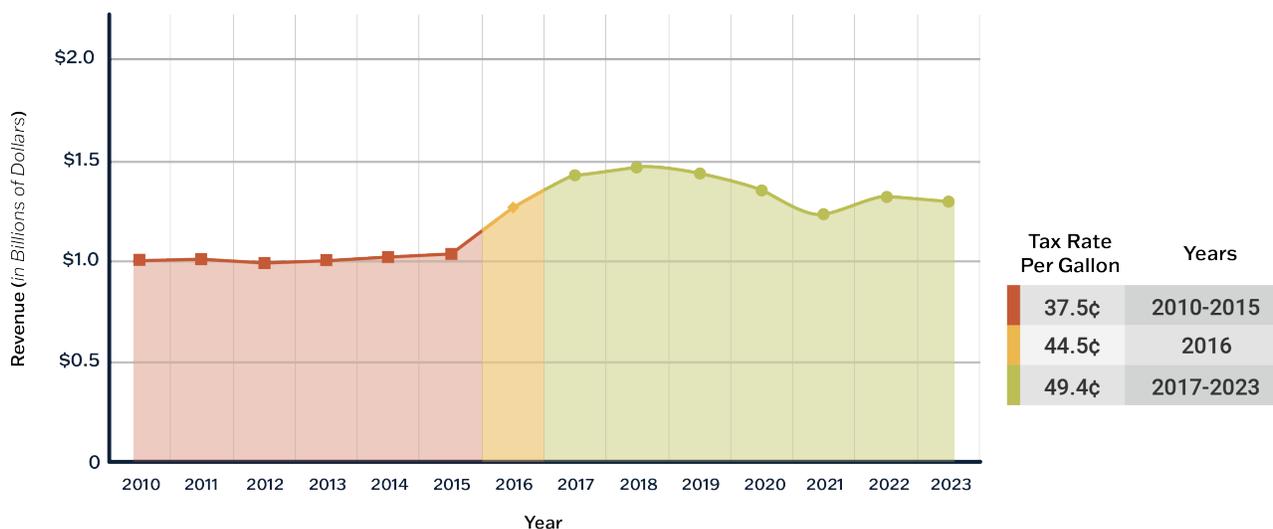


EXHIBIT 1.7 Washington State Gasoline Tax Net Revenue, 2010-2023



Beginning in 2012, the Commission, guided by a 30-member stakeholder steering committee, studied the concept of RUC, completing a feasibility assessment, business case evaluation, operational concept development, and analysis of a dozen policy issues leading up to a statewide pilot test in 2018-2019. In 2020, the Commission recommended a framework for advancing RUC as a funding mechanism for Washington, including additional topics for research and analysis to explore alongside launching a small-scale program. The Legislature responded by directing the Commission to conduct additional research focused on equity, cost reduction, and user experience.

In the meantime, the Legislature enacted a cap-and-invest system for CO2 emissions, with a portion of the proceeds dedicated to multi-modal transportation investments, including public transportation. In 2022, the legislature also enacted its first comprehensive transportation investment package since 2015, dubbed Move Ahead Washington, primarily funded by cap-and-invest proceeds and increases in licensing fees.

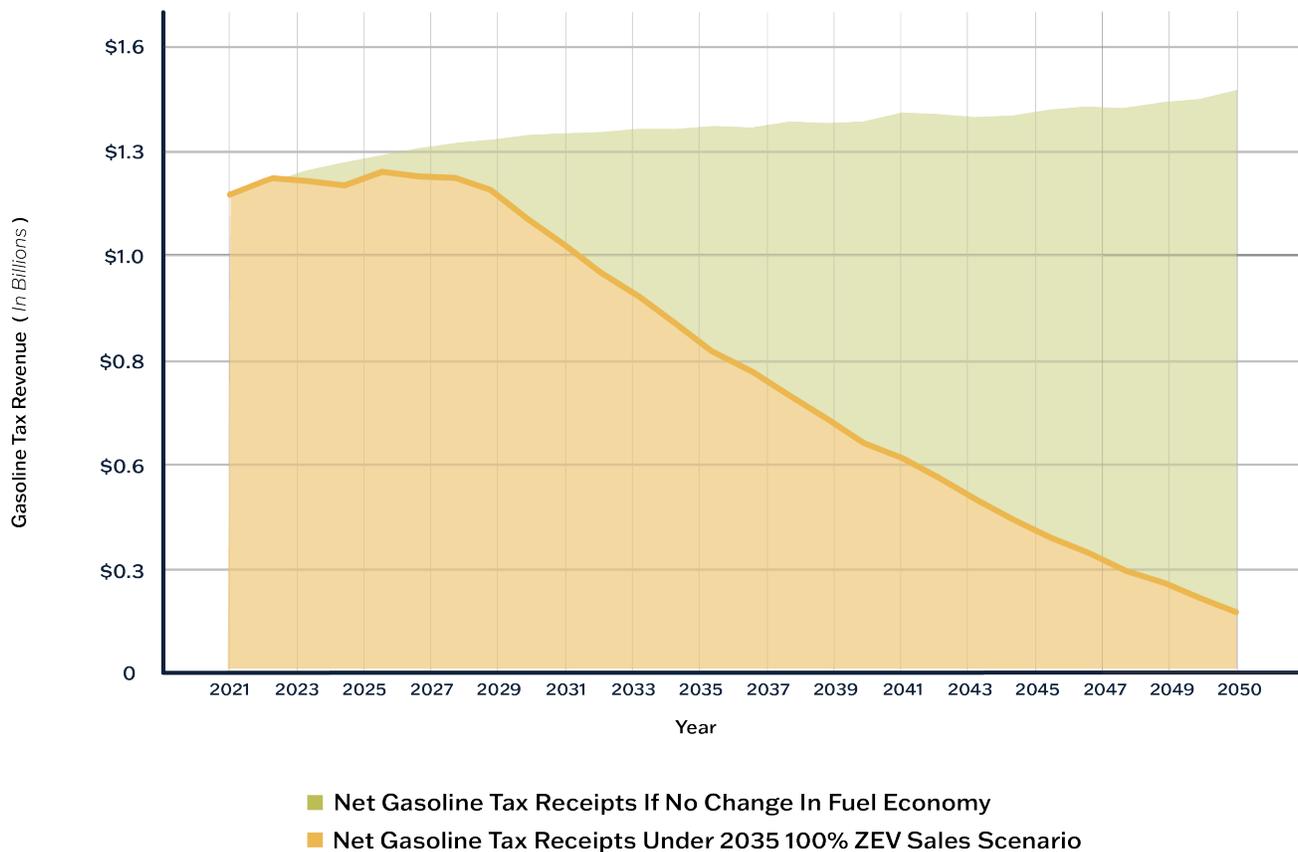
Despite increases in gas taxes and vehicle fees over the past two decades, as well as introduction of new fees on alternative fuel vehicles and cap-and-invest on CO2 emissions, motor fuel excise taxes remain the primary source of funding for investing in Washington's highways. Other than a post-COVID rebound in 2022, aggregate fuel consumption has dropped every year since FY 2018 in Washington, most recently declining 2 percent between 2022 and 2023. Based on recent EV adoption rates in Washington and the outlook for improved vehicle fuel economy and EV adoption, this trend is likely to continue and worsen.

WASHINGTON'S TRANSPORTATION FUNDING FUTURE

In 2022, the Washington Legislature adopted a goal for all new vehicle sales in the year 2030 to be ZEVs. Later that year, the California Air Resources Board (CARB) adopted Advanced Clean Cars II (ACC II), a requirement for ZEVs to constitute 100 percent of new light-duty vehicles sales by 2035. Pursuant to state law, Washington's Department of Ecology adopted ACC II in December 2022. Through the first half of 2023, Washington is now second behind California in ZEV adoption, at over 17 percent of new vehicles sold.

Should Washington meet the requirements of ACC II, aggregate revenue from gasoline taxes will fall to under \$1 billion in 2035 assuming existing state gas tax rates, a decline of about 27 percent from 2023 levels. At that point, only older-model vehicles will contribute fuel taxes as new ZEVs gradually replace the fleet of internal combustion engine vehicles. By 2050, the state will collect less than \$300 million in gasoline taxes assuming existing state rates, a decline of about 80 percent from today's levels.

EXHIBIT 1.8 Impact of Fuel Economy on Gasoline Tax Receipts

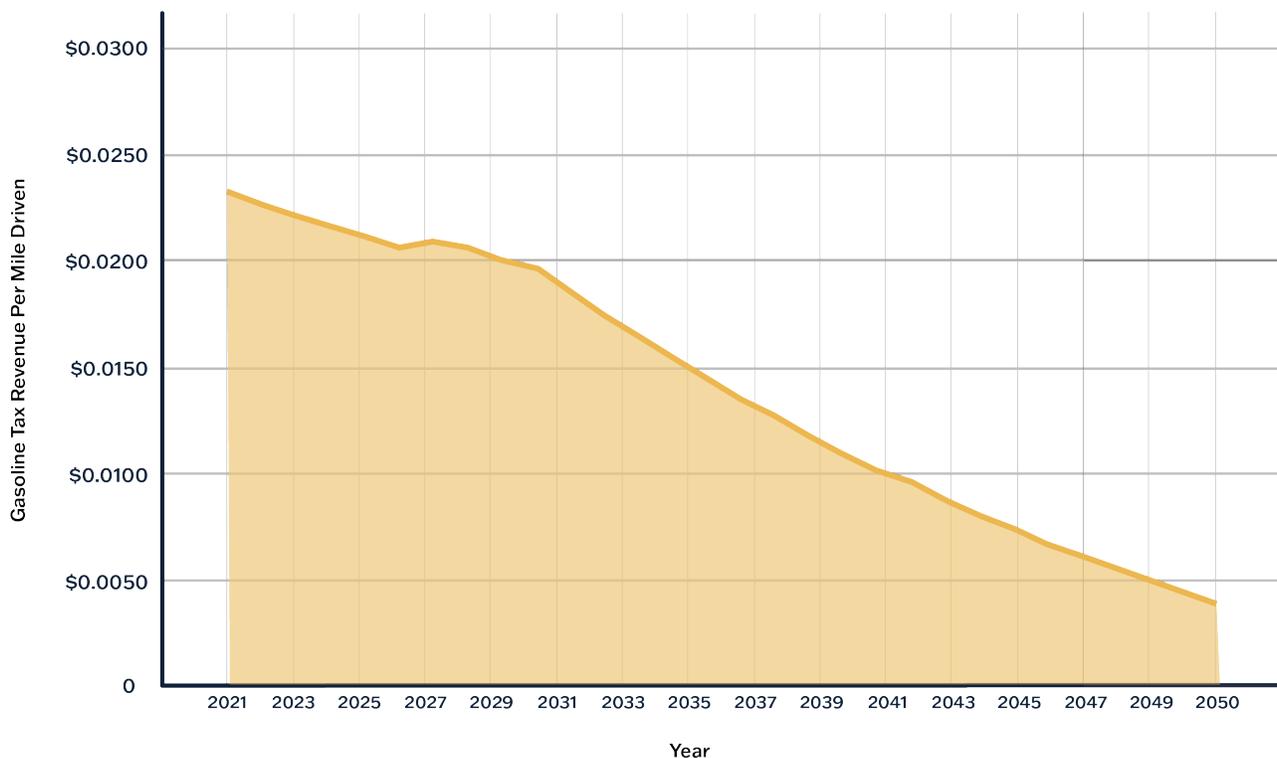


Absent any changes in policy, the EV and hybrid registration surcharges (\$225 and \$75, respectively) will fill only a portion of the gap created by declining fuel tax revenues. Should the average number of miles driven by light-duty vehicles in Washington hold steady at approximately 10,000 miles per year, the EV fee will generate about 2.3 cents per mile driven on average, while hybrid vehicles will contribute 0.8 cents per mile driven in fees plus approximately 1 additional cent per mile in fuel taxes (for a vehicle rated 50 MPG). Registration surcharges serve as a partial backstop against declining gasoline tax revenues, but they do not address the expected need for maintenance, preservation, and improvement of the transportation system, nor do they keep pace with current levels of per-mile funding adjusted for inflation. RUC, by contrast, implemented at a flat rate on all new light-duty vehicles in place of gas taxes or registration surcharges, steadily generates close to 2.5 cents per mile driven.

In addition to falling short of current funding needs, vehicle registration surcharges fall short of the user-pay principle.

Those who drive less than average over the course of a year subsidize those who drive more than average. This user inequity also creates a social inequity, since lower-income households tend to drive fewer miles than higher-income households, on average.

EXHIBIT 1.9 Gasoline Tax Per Mile Driven Under 100% ZEV Sales By 2035



FORWARD DRIVE PROVIDES WASHINGTON WITH A TRANSPORTATION FUNDING STRATEGY

The Forward Drive project aimed to address several key outstanding issues with RUC through research, analysis, public engagement, and a large-scale demonstration of the RUC concept for the public to experience firsthand and weigh in.

A financial analysis of transportation revenue was carried out in 2013 that showed RUC outperforming the fuel tax despite higher costs of administration. By switching from an indirect tax on transportation energy to a direct tax on transportation usage, the state could create a more reliable stream of long-term revenue to address transportation needs. At the time, the analysis suggested a slow-unfolding fiscal problem due primarily to improving vehicle fuel economy, with fuel tax receipts gradually declining over time, likened to a frog in a pot of water set to boil.

A decade later, consumer market availability and adoption of ZEVs, alongside improving fuel economy of internal combustion engine vehicles, serves as an accelerant to the decline of fuel tax revenues. Meanwhile, road usage continues to increase, creating a widening mismatch between investment needs and resources available.

Low-income and rural households stand to benefit in a switch from fuel taxation to direct charging for road usage.

Analysis conducted as part of Forward Drive revealed the scale of revenue risk, with fuel taxes already in decline and likely set to decline precipitously later this decade.

Meanwhile, concerns about equity have emerged as a top consideration for transportation funding policy. Using a novel methodological approach, Forward Drive research quantified the relative impacts of RUC on households by income and geography relative to the fuel tax. The results reveal that low-income and rural households stand to benefit in a switch from fuel taxation to direct charging for road usage, assuming a flat statewide per-mile RUC rate. Urban and higher-income households are more likely to own EVs and newer vehicles with better fuel economy than average, meaning they pay less per mile in fuel taxes relative to rural and low-income households. Increasing the fuel tax rate to pay for transportation needs results in households in rural and low-income areas bearing a disproportionate share of costs, whereas the introduction of RUC would align costs with usage, meaning high-income areas would pay more.

Forward Drive crafted a unique approach to deploying a RUC system with self-reported odometer readings as the centerpiece.

Earlier research demonstrated approaches for implementation of RUC but pointed to the long-term need for a simplified, low-cost approach. Through new research, including extensive human-centered design with Washingtonians, Forward Drive crafted a unique approach to deploying a RUC system with self-reported odometer readings as the centerpiece. The result was a fresh approach to conducting a "RUC pilot." Instead of conducting an on-road test of RUC operations, lasting months and requiring numerous touchpoints and interactions, Forward Drive included the creation and deployment of an interactive, web-based simulation of RUC enrollment, reporting, and payment, along with a survey, that participants could complete in a single interaction taking minutes to complete. As a result, the project successfully interacted with over 1,100 Washingtonians in a short time frame, generating extensive feedback on the operational and policy features of a prospective RUC.

Follow-on experiences allowed participants to explore specific features of interest to policymakers and the public, including making installment payments, reporting miles automatically using existing in-vehicle technology, and claiming exemptions manually.

In addition, simulation participants were invited to more in-depth follow-on experiences more reminiscent of traditional pilots. These follow-on experiences allowed participants to explore specific features of interest to policymakers and the public, including making installment payments, reporting miles automatically using existing in-vehicle technology, and claiming exemptions manually (without any technology).



Based on the findings of the simulation and follow-on experiences, Forward Drive illuminates specific, near-term, low-cost implementation pathways for a RUC system. Through a combination of policy and system design choices, the state can address multiple issues at once by deploying a system with low cost of administration and a positive user experience that protects privacy, improves equity, and accommodates out-of-state driving.

Forward Drive illuminates specific, near-term, low-cost implementation pathways for a RUC system.

NEXT STEPS: LEGISLATIVE ACTION AND CONTINUED RESEARCH

In 2022, the Commission updated its original RUC recommendations from 2020, offering more specific suggestions to the Legislature on how and when to launch RUC in Washington. The final findings of Forward Drive reaffirm the Commission's 2022 recommendations. Specifically, the Commission recommends enacting a small-scale RUC program into law as soon as possible. This report also includes an updated "roadmap" to RUC laying out the options for transitioning from a small-scale starter program to a larger-scale statewide program in the decade leading up to 2035. By launching a live revenue-collecting program before the transportation funding problem becomes a crisis, the Legislature and state agencies can manage a gradual transition from the fuel tax to RUC that addresses more complex operational questions in a comfortable time frame.

Simultaneously with the transition from a small-scale, starter RUC program to a larger-scale statewide program, the Legislature can continue to optimize program features and continually revisit its initial policy choices, informed by public engagement and research conducted in parallel. Issues for continued research include implementation of cost reduction measures, identification of options for seamless interoperability with other states, deployment of appropriate mileage reporting and payment technologies for an enhanced user experience, and exploration of rate-setting approaches that balance revenue generation needs with impacts on historically underserved communities. As other states continue to enact RUC programs, collaboration on multi-state solutions becomes more critical with each passing year.







Chapter 2

RESEARCH APPROACH & FINDINGS

This chapter summarizes the approach and explores the key findings from the research phase of the Forward Drive initiative. Building on prior experience from the first Washington RUC pilot, the research focused on financial analysis, equity outreach, technology and user experience, and cost reduction strategies. Aimed to inform the policy, design, and implementation choices for a future RUC program, the findings illuminate factors necessary for equity, user acceptance, and efficiency.



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GUIDING PRINCIPLES

Building on the extensive research and pilot testing undertaken during the first Washington RUC pilot from 2017 to 2019, Forward Drive focused its research in four areas:

- › Financial analysis.
- › Equity outreach and analysis.
- › Technology, innovation, and user experience research.
- › Cost reduction workshops.

By conducting research on these four topics first, the findings were able to fully inform the design and implementation of pilot testing that came later in this project and reported on later in this report.

- › The financial analysis created a spreadsheet model for assessing revenue potential of RUC relative to fuel taxes under a range of possible future scenarios, including evolving mobility trends such as ride-sharing, autonomous vehicles (AVs), telecommuting, and electrification.
- › Equity outreach featured direct outreach to over 100 individuals to identify concerns about transportation funding including RUC, while analysis quantified the prospective impact of RUC relative to fuel taxes on low-income households.
- › Technology, innovation, and user experience research identified new methods of mileage reporting and developed a new pilot concept based on vehicle registration.
- › Cost reduction workshops with participants from other states identified practices for streamlining administrative costs associated with customer service, procurement, and enforcement.

Equity: All road users should pay a fair share with a road usage charge.

Simplicity: A road usage charge system should be simple, convenient, transparent to the user, and compliance should not create an undue burden.

Cost-effectiveness: The administration of a road usage charge system should be cost effective and cost efficient.

EXHIBIT 2.1 Forward Drive Research and Pilot Tasks



The RUC steering committee played a critical role prior to and during Forward Drive. The committee first adopted 13 guiding principles for a RUC program in 2013 and reaffirmed them in 2016. In 2020, at the start of Forward Drive, several of these guiding principles took on elevated importance: equity, simplicity (recast more broadly as user experience), and cost-effectiveness. This section presents the overall approach and key findings from each research task. More details on each of the four research tasks can be found in Appendix A.

FINANCIAL ANALYSIS

In 2015, the Commission determined that RUC could provide a sustainable and reliable source of long-term funding as a replacement to the gas tax. As Forward Drive launched, the country and state plunged into the COVID-19 pandemic, which caused record low road usage. At the same time, AV technology and shared mobility services continued to proliferate, potentially impacting the future trajectory of vehicle miles traveled (VMT) growth. In addition, automakers and governments accelerated their commitments to ZEV production and adoption. The question arose whether RUC could still serve as a robust, resilient revenue source given these evolving, uncertain trends.

The purpose of the financial analysis was to create a model for estimating the revenue potential of RUC across a range of scenarios that incorporate significant emerging transportation trends. Specifically, the analysis focused on understanding the prospective impacts of the following five trends on road usage and fuel consumption:

- › **COVID-19**, assumed to depress VMT, including possibly persistent shifts in telecommuting patterns toward greater levels of work-from-home.
- › Increased reliance on **e-commerce**, assumed to reduce VMT among light-duty vehicles.
- › **Electrification** of the vehicle fleet, known to reduce taxable fuel consumption.
- › Emergence of **AVs**, assumed to increase total VMT.
- › Growth in **shared mobility services**, assumed to increase total VMT.

Given the number of factors that influence revenue forecasts, a scenario-based approach was taken to understand trends across numerous possible futures. Drawing on several possible trajectories for each of the above five trends, seven scenarios were developed. Each scenario tells a distinct story for the five trends and how they impact revenue. Collectively, these seven scenarios are sufficiently broad to cover a wide range of reasonable possibilities for future transportation revenue:

- › **Neutral** represents a continuation of past VMT growth along with relatively modest rates of technology adoption including EVs and AVs.
- › **Cruise Control** features moderate VMT growth and slightly faster AV technology adoption compared to Neutral.
- › **Overdrive** calls for aggressive VMT growth along with high adoption rates for EVs and AVs.
- › **Shared Drive** is a variation of Overdrive with increased adoption of shared mobility.
- › **Low Gear** reflects slow future growth rates in EV and AV adoption.
- › **100 percent ZEV 2030** assumes successful achievement of Washington's goal to achieve 100 percent ZEVs among new vehicle sales by 2030.
- › **100 percent ZEV 2035** assumes successful achievement of ACC II, which requires 100 percent ZEVs among new vehicle sales by 2035.

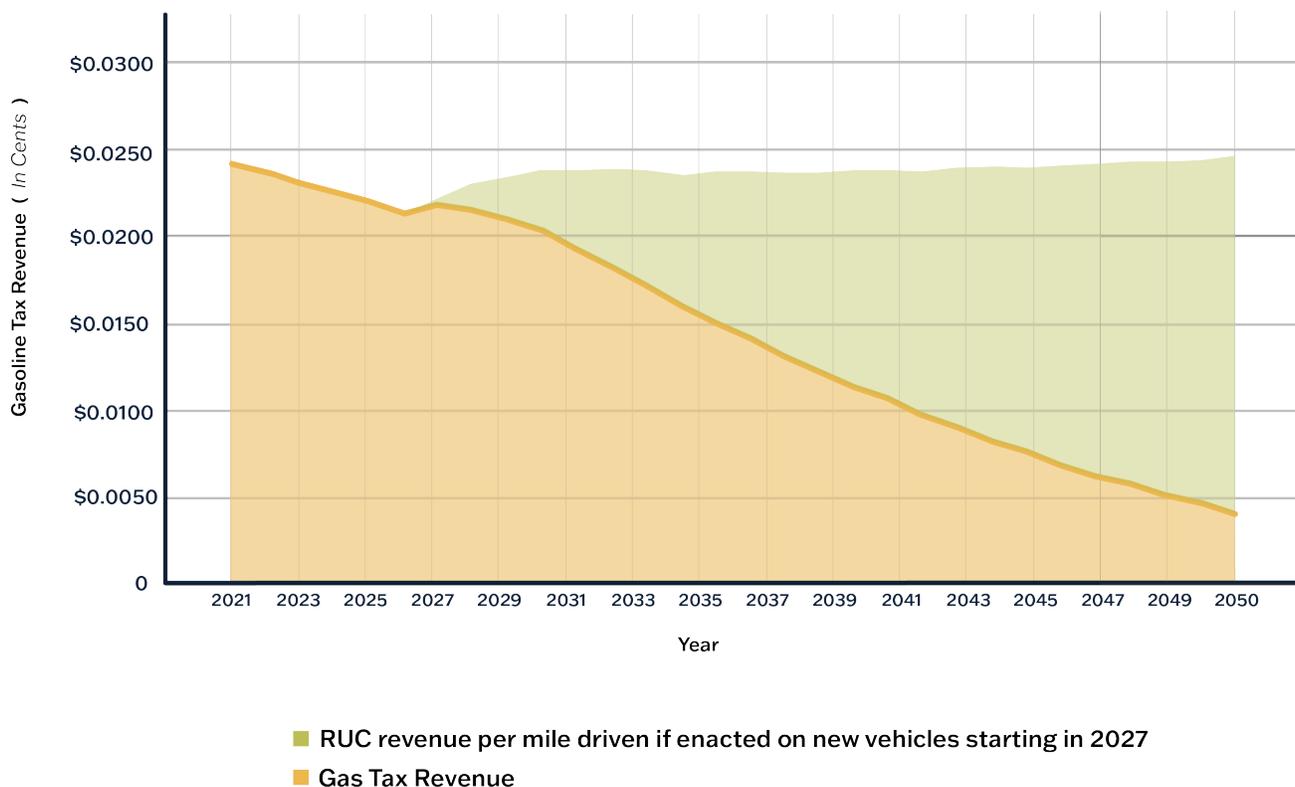
The financial model generates estimates of future vehicle population, broken down into passenger cars and light-duty trucks, with the average annual miles driven and fuel consumption of these vehicles driven by the scenario selected. For any given scenario, the model allows the user to customize a policy that includes application of RUC to a subset of vehicles at specified per-mile rates and points in time. The model provides outputs through 2050 for RUC as a fuel tax replacement for light-duty vehicles. Appendix A-1 provides more details about the analysis including assumptions, data sources, methodology, and results.

Although it can be customized to accommodate dozens of scenarios regarding future VMT growth and fuel consumption, the financial model was used to analyze the seven scenarios created for this research. Under all

scenarios examined, fuel tax receipts decline from 2.5 cents per mile driven in 2021 to as low as 0.4 cents per mile driven in 2050 under the scenario of 100 percent ZEV new sales by 2035. In all cases, the revenue per mile driven drops in future years, creating a funding gap that grows steadily over time.

The financial model illustrates how RUC performs in addressing revenue gaps under a range of possible policies, including introduction of RUC on new vehicles and/or vehicles above a certain fuel economy rating in a specified future year. For example, introducing RUC at 2.5 cents per mile driven in 2027 on all new vehicles results in per-mile revenue in 2050 of 2.5 cents per mile, outpacing the revenue generated by existing revenue mechanisms.

EXHIBIT 2.2 Revenue Per Mile Driven Assuming RUC on All New Vehicles Starting in 2027



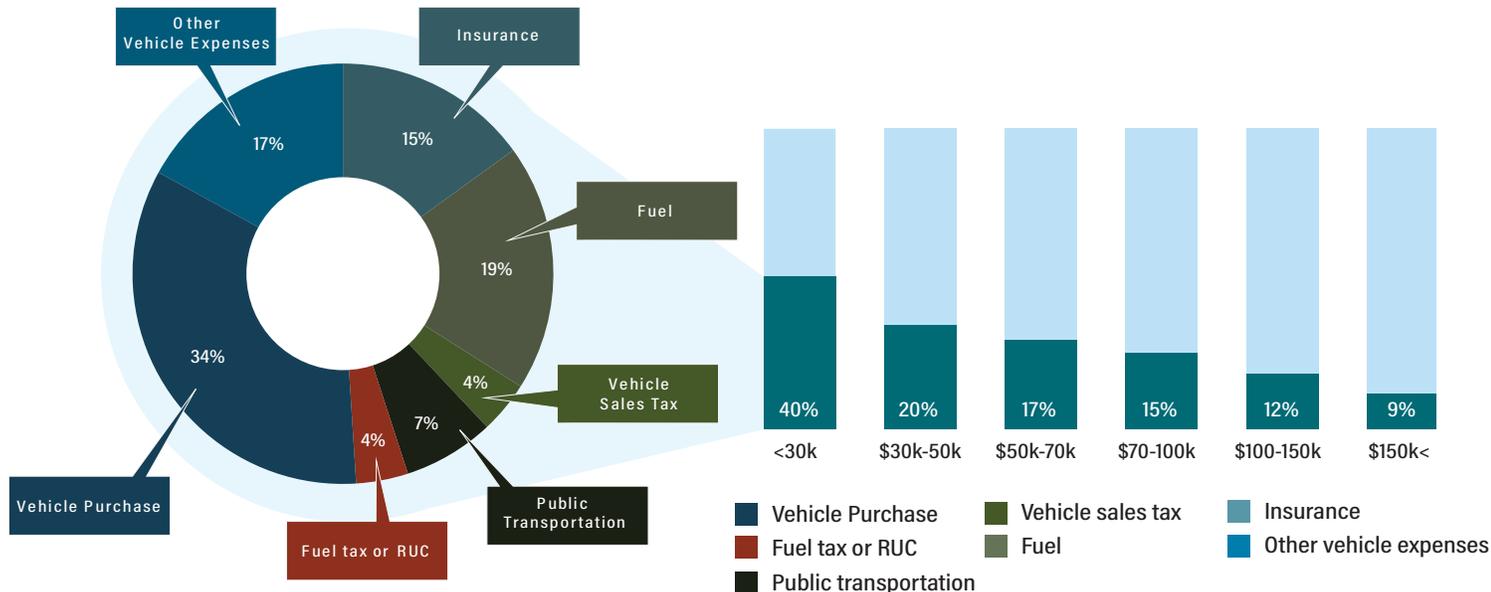
EQUITY OUTREACH AND ANALYSIS

In 2020, the Legislature adopted a proviso charging the Commission to “identify and measure potential disparate impacts of RUC on... communities of color, low-income households, vulnerable populations, and displaced communities.” Forward Drive implemented this proviso as one of its four research tasks. The work included three distinct efforts as follows:

- › Quantitative analysis: financial impacts of RUC compared to the gas tax.
- › Qualitative focus groups: perspectives on RUC and potential solutions from communities of color, low-income households, and vulnerable and displaced populations.
- › Potential solutions: ideas to improve the way RUC would impact communities of color, low-income households, and vulnerable and displaced populations.

Income-based equity analysis of RUC fits within a larger discussion around transportation equity and funding, which includes questions around who pays for transportation, where those revenues are invested, and how investments align with where and from whom revenues are collected. The scope of the quantitative analysis focused on examining the costs to drivers under a RUC system compared to the gas tax, across various income levels. The scope of the qualitative outreach was to explore opinions and preferences about transportation funding and RUC. Full results are explored in Appendix A-2.

EXHIBIT 2.3 Transportation Costs by Household Income



QUANTITATIVE ANALYSIS OF EQUITY IMPACTS

Quantitative analysis focused on the question: Would households in various income brackets pay more or less under a potential RUC compared to the gas tax?

Examination of Washington vehicle data from the Department of Licensing (DOL) revealed a statistically significant correlation between average fuel economy and average income among Washington Census tracts: the higher the income, the higher the fuel economy. This evidence supports the assertion that low-income households, on average, pay more in gas taxes per mile driven, while higher-income households pay less. The differences across income brackets are, however, small. Areas with the lowest-income households would save less than \$10 per year per household under a RUC compared to the gas tax, while areas with the highest-income households would spend about \$20 more per year per household, on average.

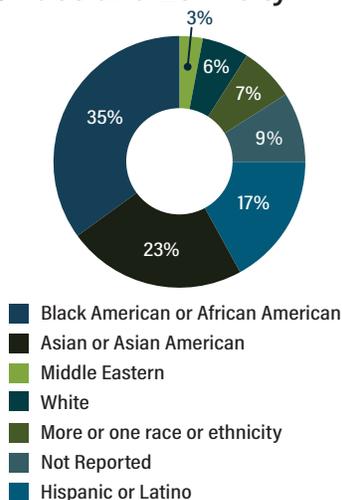
Transportation costs were also examined at the household level. Lower-income households spend a larger share of income on transportation costs compared to higher-income households, as much as 40 percent for households earning under \$30,000 per year. When examining the components of these transportation costs, the majority is beyond the direct control of policymakers: 85 percent are private costs related to vehicle ownership (vehicle purchase/lease, fuel, maintenance, and insurance), with only 4 percent attributed to fuel tax (or RUC), 4 percent to sales taxes on vehicle ownership, and 7 percent to public transportation.

QUALITATIVE ANALYSIS OF EQUITY IMPACTS

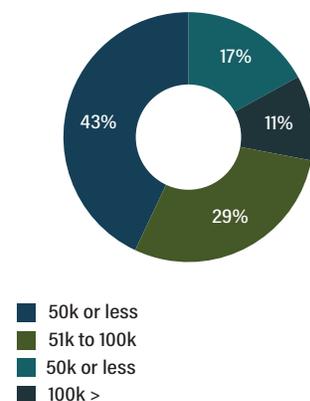
In addition to quantitative analysis, Forward Drive undertook 17 in-person and virtual focus groups with 129 participants over the course of eight months from June 2021 to January 2022. The focus groups were designed to gauge the sentiment of underrepresented and/or underserved communities. Each participant was asked 14 questions focused on knowledge of the state gas tax and the RUC concept and their opinions of both. In addition, participants were asked what advantages they see in a RUC and to suggest any approaches the state could employ to mitigate any disadvantages. Lastly, multiple-choice questions were used to ask about preferences for reporting odometer mileage and ways to pay for miles traveled under a potential RUC system.

EXHIBIT 2.4 Forward Drive Virtual Focus Group Demographics

Race and Ethnicity



Income



Focus groups included people of color and of various income levels from all parts of the state. Participants came from different backgrounds, including some for whom English is a second language. **Demographics are summarized in Exhibit 2.4.**

As with focus groups conducted in 2017 prior to the first Washington RUC pilot, most participants who participated in the 2021-22 focus groups knew little or nothing about either transportation funding or the RUC concept. Some opposition reflected general aversion to taxes, transportation-related and otherwise. Most participants believed RUC would have a disproportionate impact on lower-income households, a widely held assumption that the quantitative research findings contradict. This assumption is based on the notion that lower-income workers travel longer distances for daily commutes; however, data examined for the quantitative analysis show higher-income households drive longer distances on average in the aggregate, when looking at the combination of work trips and discretionary trips.

As participants gained more information about RUC, including its purpose, they became more supportive. Most said that more information would allow them to make better recommendations, and, except for one individual, everyone was willing to engage as a participant in future pilot testing.

POTENTIAL SOLUTIONS FOR ADDRESSING EQUITY IMPACTS OF RUC

Much of the time in the focus groups was spent identifying ways to provide lower-income individuals some relief. Several potential solutions were identified to address both perceived and known challenges with RUC for low-income vehicle owners. Potential solutions include offering discounts for qualified low-income vehicle owners, creating a simple tab renewal-based method for reporting and paying RUC, and affording the option of making installment payments for RUC rather than annual lump sum payments. Each of these potential solutions addresses a challenge with RUC identified by participants in the focus groups. These findings overlap with findings from user experience research and cost reduction workshops and were incorporated into the design of the pilot.

TECHNOLOGY, INNOVATION, AND USER EXPERIENCE RESEARCH

Forward Drive research into technology, innovation, and user experience began with three objectives: (1) improve the user experience, (2) optimize RUC service from the state’s perspective, and (3) open the market to new solutions.

State pilot tests of RUC, including the 2018-2019 Washington RUC pilot, have traditionally been centered around “on-road” testing, featuring a range of mileage reporting methods including plug-in devices, odometer image capture, verified third-party odometer capture (e.g., by a safety inspector or vehicle licensing agent), standalone smartphone applications, in-vehicle telematics with data accessed by third-party aggregators, and pay-at-the-pump applications. These methods represent a broad range of customer experiences.

To frame the range of existing and future possible solutions for RUC reporting, a framework was created that plots the range of existing mileage reporting approaches relative to their impacts on customers. The framework features two dimensions - connectivity and level of assistance:

- › Connectivity signifies the degree to which the vehicle is connected to the RUC-administering agency, with three levels: no connectivity (i.e., requiring the customer or a third party agent to actively communicate data to the agency), connectivity via a third party such as a smartphone app or plug-in device, and native connectivity such as in-vehicle telematics.
- › Level of assistance signifies the degree of automation the customer experiences: assisted means the customer receives aid in providing information, self-reporting means the customer takes the actions themselves, and fully automated means no action is required by the customer after initial setup.

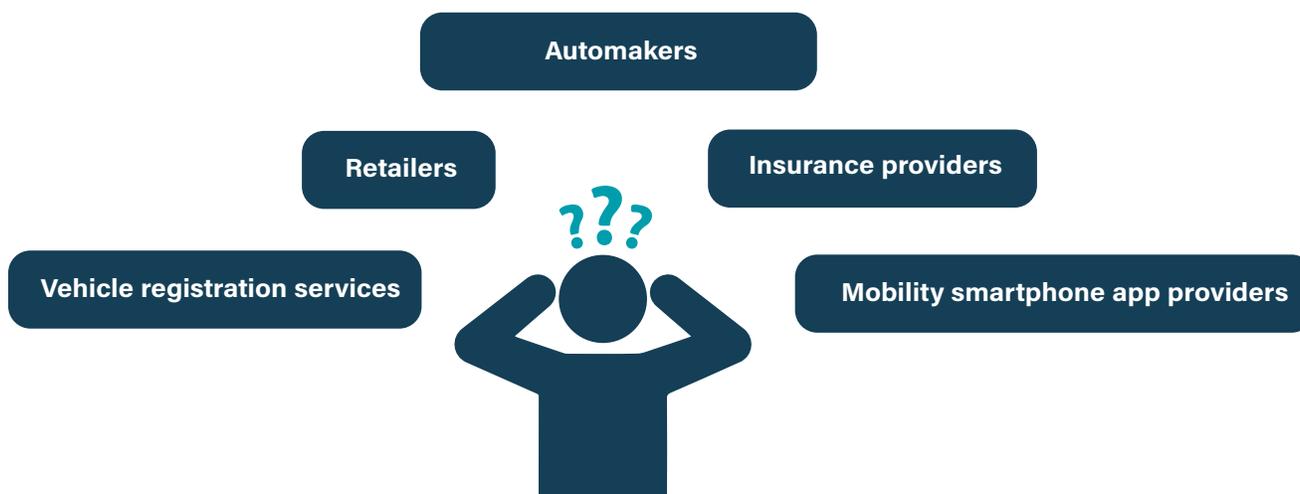
The methods tested in the 2018-2019 on-road Washington RUC pilot correspond with three of the nine possible combinations as shown in Exhibit 2.5: assisted with no connectivity, self-reported with third-party connectivity, and fully automated with third-party connectivity.

EXHIBIT 2.5 Methods Tested and Methods Still Unexplored After Prior Washington RUC Pilot



		Connectivity		
		No connectivity	Third-party connectivity	Native connectivity
Level of assistance	Assisted (in-person assistance)	Vehicle licensing offices (using odometer image capture app)	<ul style="list-style-type: none"> • Assisted installation (technology provider or retail partner) 	<ul style="list-style-type: none"> • Automaker support
	Self-reporting (manual action required)	<ul style="list-style-type: none"> • Camera phone (text) • Website portal 	Smartphone app <ul style="list-style-type: none"> • odometer image capture • optional GPS toggle Third-party telematics interface	<ul style="list-style-type: none"> • In-vehicle telematics (infotainment systems)
	Fully automated (no action required)	<ul style="list-style-type: none"> • VIN look-up services 	Plug-in device <ul style="list-style-type: none"> • with GPS • without GPS Third-party telematics interface	<ul style="list-style-type: none"> • In-vehicle telematics (infotainment systems) • Data aggregator platform

EXHIBIT 2.6 Emerging Business Models for RUC



This framework revealed numerous unexplored methods of mileage reporting that comprehensively address user needs while also allowing the state to reduce costs of administration. Through interviews with industry partners, new business models were identified for supporting RUC, including vehicle registry-based systems, retail partnerships, data aggregators, mobility-as-a-service (MaaS) providers, and automaker collaborations. However, designing a RUC program or pilot with so many possible configurations and partners as choices risks confusing end customers as to their responsibilities and options. With the customer at the center of the RUC experience, it became clear that a program could benefit from adopting a single starting point for RUC services.

Broadly speaking, two conceptual starting points exist for customers enrolling in a RUC program for the first time: account establishment or vehicle registration. These two starting points correspond with two distinct approaches to RUC systems: account-based or vehicle registry-based.

› **Account-based system:** Prior RUC pilots have exclusively tested account-based systems, with customers asked to begin by enrolling and setting up a RUC account before anything else. After establishing an account, customers would report miles driven using a range of methods and receive billing statements or invoices.

› **Vehicle registry-based system:** By contrast, a vehicle registry-based system asks customers to enter through a normal channel such as vehicle registration renewal. Customers then navigate other choices but may not be required to establish a separate RUC account. This insight, of giving customers a single point of entry based on an existing vehicle registry with which they have already transacted, rather than an external account system that the customer does not recognize, formed the foundation of subsequent research into possible RUC service delivery to be tested in a pilot.

In a vehicle registry-based system, customers could experience one of several pathways depending on their preferences, but in all cases would enter RUC through the vehicle registration process. **As shown in Exhibit 2.7**, they could simply report miles driven, pay their RUC as part of the vehicle registration (either online or at a vehicle licensing office), then repeat the process in future years.

Alternatively, following initial mileage reporting as part of the vehicle registration process, the motor vehicle agency could transfer the customer to a third-party partner to administer RUC, as illustrated below. In both this case and the previous case, the customer experiences the same entry point for a consistent experience.

This concept of a vehicle registry-based system was identified as a platform for a large-scale pilot test. Ultimately, this concept would form the centerpiece of the Forward Drive pilot. However, in order to inform the detailed pilot design, the vehicle registry-based concept was first mocked up using wireframes (clickable screens that resemble a real website but are not connected to the internet) and tested in more detail with 48 Washingtonians in intensive user testing sessions. Participants were recruited for this testing in four cohorts as follows:

- › Low-income (12): A mix of vehicle owners with an annual income below \$60,000.
- › Electric and hybrid (8): A mix of hybrid and EV owners.
- › Border-crossing (12): A mix of vehicle owners who regularly drive across national or state borders, or drive on private roads.
- › Average/typical (18): A mix of common types of vehicle owners.

EXHIBIT 2.7 Basic System for Paying RUC as Part of Vehicle Registration

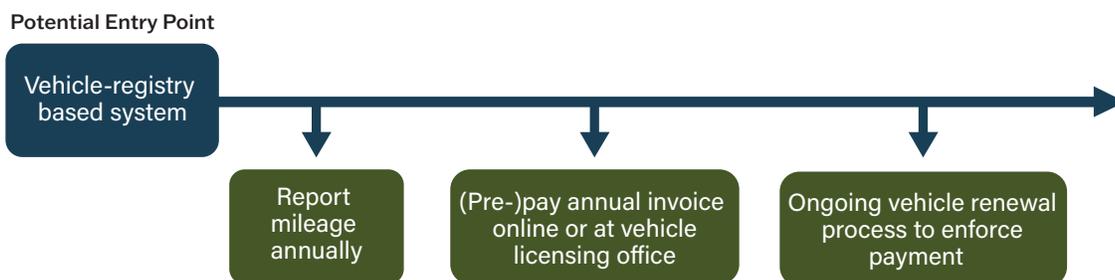
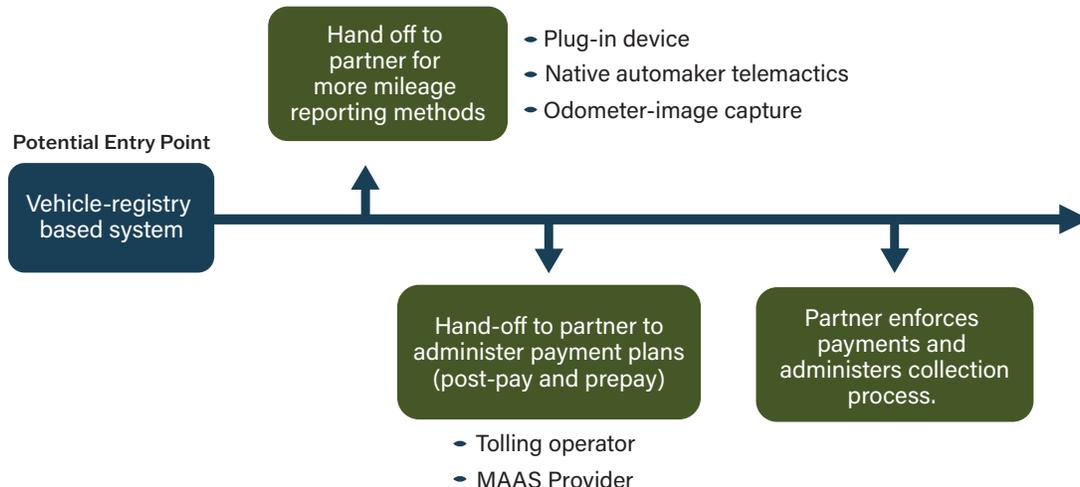


EXHIBIT 2.8 System for Handoff to Third-Party Administration of RUC



Testing was conducted through a combination of in-person and virtual sessions. During sessions, participants appeared one at a time with two researchers. They engaged with the clickable wireframes, which took them through the first and second year of tab renewal, RUC reporting, and payment. Participants were asked to speak aloud their thoughts and feelings during each step of the process and were asked questions about their behaviors, choices, and preferences. Steps included tab renewal, RUC "plan selection," mileage reporting, odometer verification (via uploading an image), exemption reporting, estimating future mileage, reporting options, income-based discount configuration, and payment. The research produced over 70 hours of interviews and over 2,400 distinct observations.

The research yielded dozens of insights for incorporation into the more detailed, large-scale pilot test. Detailed results are included in Appendix A-3. Key among the insights were the following:

- › **DOL integration was intuitive.** Participants trusted and had confidence in a DOL-integrated tab renewal and RUC payment. Despite this research finding, it was decided the Forward Drive pilot design would be branded independently from DOL in order to leave the question of how best to integrate RUC open for further analysis.
- › **Basic reporting as a default was fine.** Participants found self reporting to be sufficient and did not seem to mind the effort of odometer image uploading for verification. In the final design, the self-reporting approach was left as the default.
- › **Perceptions of evasion harmed confidence.** Participants were quick to think odometer photos could be easily spoofed, giving them a feeling of some doubt in the program.
- › **Prepay and estimation is not intuitive.** In the user sessions, participants were asked to estimate miles driven and prepay for future miles. They found this approach confusing, unnecessary, and upsetting. In the final pilot design, this approach was reworked toward a post-pay solution.
- › **Discounts have a halo effect.** Participants expected and appreciated discounts for those in need, regardless of their own level of need.
- › **"Pay Now" was preferred (to a point).** Participants preferred to pay in full when they could, and they would only choose to pay in installments when necessary.
- › **Everyone was able to get through the user sessions.** Regardless of their sentiments, all participants completed all steps of the clickable wireframes without assistance, including two simulated years of tab renewal, mileage reporting, customization, and RUC payment.

EXHIBIT 2.9 Four RUC Customer Archetypes

<p>Knowledge Seekers <i>Make it make sense.</i> Are interested in understanding how it works, both out of curiosity and to make informed decisions. "I get excited when I get to learn something new and I didn't know about any of this."</p>	<p>Penny Pinchers <i>Make it cost less</i> Aren't always on a budget but are looking for opportunities to save. "I want to take my time to read so I don't miss something and waste my money."</p>	<p>Set-it-and-forget it <i>Make it easy</i> Want to set up automated means to remove effort to their benefit. "Honestly, these all just sound like more work. I want the options which are more automatic.*"</p>	<p>Speed Racers <i>Make it fast.</i> Want to do what's required and move on as fast as possible. "This is not an enjoyable task I want to spend a lot of time on. I would go through this quickly."</p>
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With time and comprehension, people began to care less about the details of the RUC transaction process.

COST REDUCTION WORKSHOPS

A final component of Forward Drive research involved a series of workshops with partner agencies and peer state agencies to explore areas of persistently high cost in RUC administration and identify possible ways of reducing those costs through innovation and collaboration. Partner agencies in this endeavor included DOL, the presumptive administrator of a RUC program in Washington, and two agencies that administer RUC programs in their respective states: Oregon Department of Transportation (ODOT) and Utah Department of Transportation (UDOT). The workshops provided a forum for participants to exchange ideas and perspectives and ask questions about each other's operations. This increased mutual understanding laid a foundation for further collaboration and partnership.

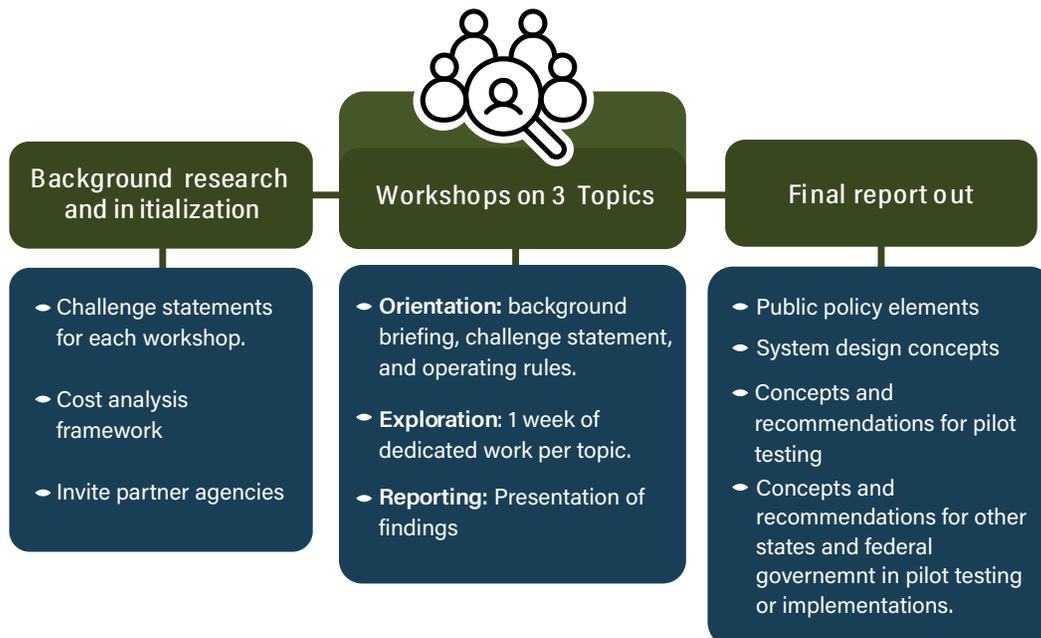
Although numerous factors drive costs in a RUC system, preliminary research identified three main areas that could benefit most from multi-state workshops and partnerships: customer service, enforcement, and open market procurement.

Each topic followed a similar process including a series of four workshops consisting of a mix of group sessions and breakout sessions.

- › **Workshop 1: Orientation.** The first workshop for each topic included an introduction to the subject matter (e.g., customer service), a review of work done to date and existing processes in the various states participating in the workshops, presentation of a framework for exploring the topic (e.g., the customer journey), and discussion of a framing question to guide the remaining workshops.
- › **Workshops 2-3: Exploration.** In the second and third workshops, breakout groups of 3-5 participants discussed sub-areas within each topic, designed to fully explore the original framing question.
- › **Workshop 4: Reporting.** In the final workshop, breakout groups presented their answers to the framing question.

The results and key findings from the workshops across all three topics are detailed in Appendix A-4 and summarized in this section.

EXHIBIT 2.10 Series of Cost Reduction Workshops



CUSTOMER SERVICE

The framing questions for the customer service workshop series was: **Design a RUC customer service center at low cost of operations.** Guidelines provided to workshop participants included the following:

- › Broaden perspectives by eliciting input from experienced agencies.
- › Assess the effectiveness of service design at maintaining customer satisfaction and compliance.
- › Improve design functions at reasonable cost.
- › Assess functionality of multi-state cooperation.

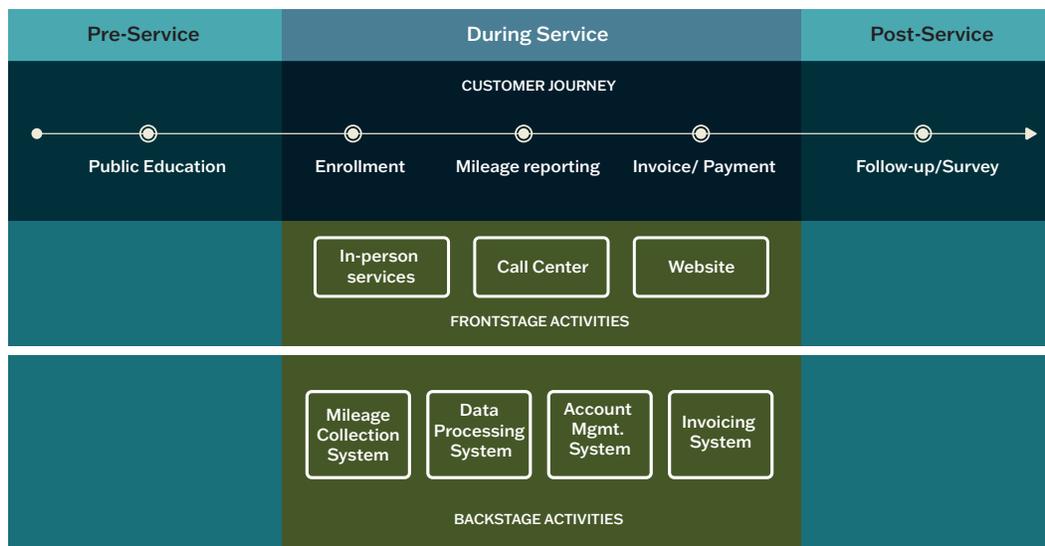
The customer journey illustrated below was provided as a framework for exploring customer service in a RUC system. This framework breaks down the customer journey into three periods: pre-service, during service, and post-service. Across these three periods are five activities that require customer interactions: public education, enrollment, mileage reporting, invoicing and payment, and follow-up/surveys. For the “during service” period, a series of activities occur “frontstage” (i.e., visible to the customer); these include in-person services such as vehicle licensing offices, a call center, and a website. Other activities occur “backstage” (i.e., out of the customer’s view); these include the mileage collection, data processing, account management, and invoicing systems, all of which must work harmoniously to deliver a coherent, positive customer experience on the front-end.

From the breakout groups and workshop exercises, several key policy recommendations emerged:

- › Allow sufficient lead times for deployment, not just for configuring systems and staffing the program, but also for building customer understanding prior to launch.
- › Authorize and fund a public communication plan to increase understanding, especially among vehicle owners subject to RUC in early stages of program deployment.
- › Provide legislative guidance on the overall mileage reporting model but leave latitude for the implementing agency to choose precise reporting methods and prescribe customer service provision.
- › Provide legal definition of allowable basis (or bases) for mileage reporting to address potential systematic differences in a hybrid reporting systems.
- › Enact privacy protections on RUC-related data that include equal ability of customers to access the data being reported to the agency.
- › Allow, either expressly or implicitly, a pre-payment model for RUC.

EXHIBIT 2.11 Activities Supporting the Customer Journey:

■ Customer Service: Customer Experience in a RUC System.



PROCUREMENT

The framing questions for the procurement workshop series was: **Design a regional procurement and certification process for RUC vendors with a market contract accessible by multiple states through service level agreements.**

- › Regional procurement: Process for multiple states to collaborate and share information on design of RUC elements that can be outsourced.
- › Certification process: The process of qualifying vendors for specific functions and granting them certification to do business in one or more states.
- › Market contract: Standard commercial terms under which any qualified vendor operates, the details of which could vary from state to state.
- › Service level agreements (SLAs): Performance standards that vendors meet in order to maintain their qualification.

There are several models for RUC vendor procurement as shown in the exhibit below. At the time the workshops were being conducted, states with RUC programs all contracted out the account management function with the main difference between how many vendors they contracted out to, ranging from one to as many as that were qualified. Other possible procurement options for RUC in the future could have the government developing and operating more of the system.

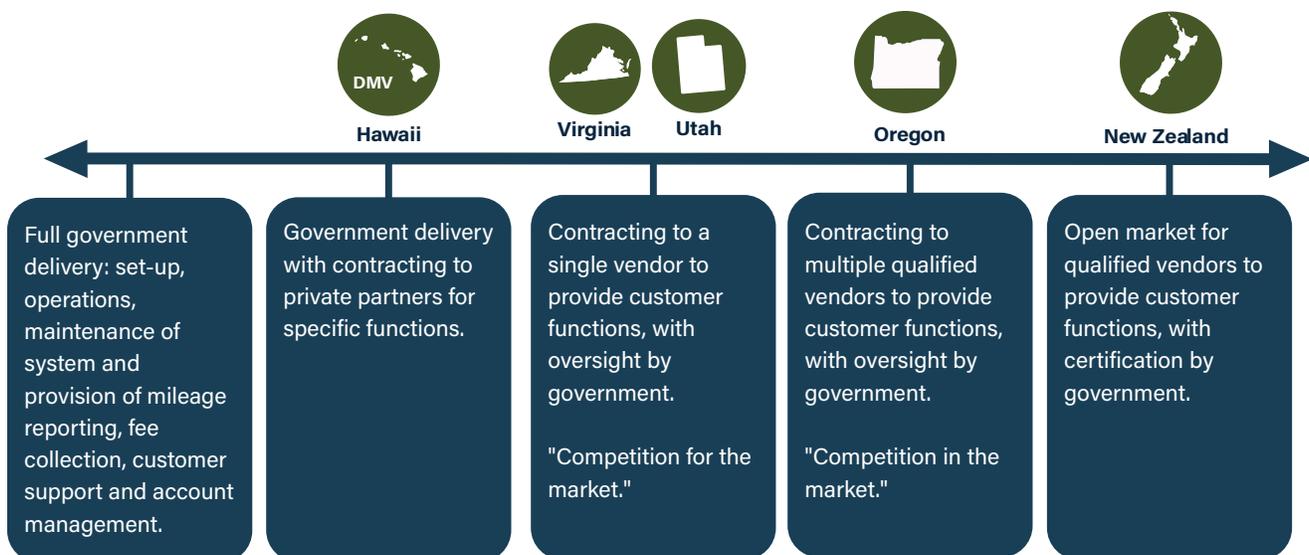
The participants of the workshop were asked to discuss the following in the breakouts:

- › Core elements of a market contract and SLAs.
- › A framework for multi-state certification and standardizations.

Workshop participants concluded that Washington legislative authority would likely be required to use a market contract set up by another entity (e.g., Oregon, RUC America). Procurement will need to be done individually by states or via a licensing model. Many best practices shared by Oregon were captured in the workshop. Harmonization of regional procurements, standardization and vendor certification would achieve many of the same benefits a joint procurement would offer. Next steps for achieving harmonization are to:

- › Create and vet a model market contract.
- › Test an approach to creating and maintaining essential RUC standards.

EXHIBIT 2.12 Models for RUC Vendor Procurement and Where They Are Being Implemented



ENFORCEMENT

The framing question for the enforcement workshop series was: **Design a low-cost enforcement regime that captures a relatively high percentage of violation events.**

- › Assess effectiveness of your design at capturing every dollar.
- › Improve design functions at reasonable cost.
- › Assess efficiency and effectiveness of multi-state enforcement systems.
- › Identify the changes required in enabling law.

The exhibit below illustrates notional frequency of compliance among vehicle owners for an established RUC program. A simple, cost-effective, and customer-friendly measure to take, especially for a new RUC program, is to make compliance as easy to achieve as possible. By understanding the volume and reasons for non-compliance using this typology, enforcement can focus on encouraging customers into voluntary compliance through lower-cost, positive-framed approaches wherever possible.

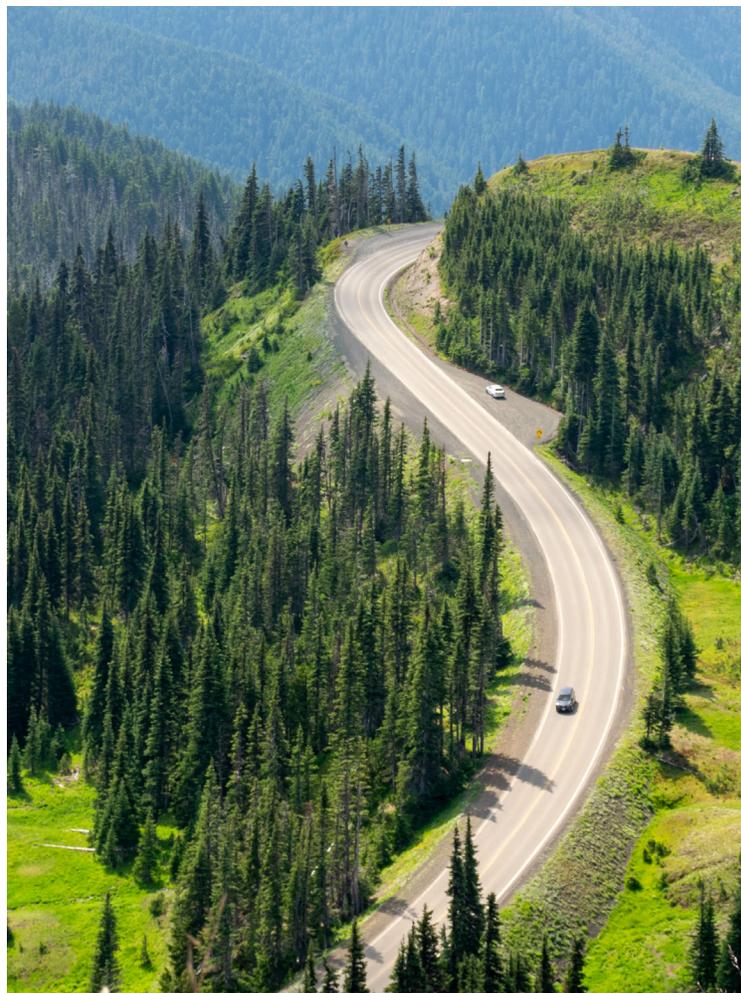
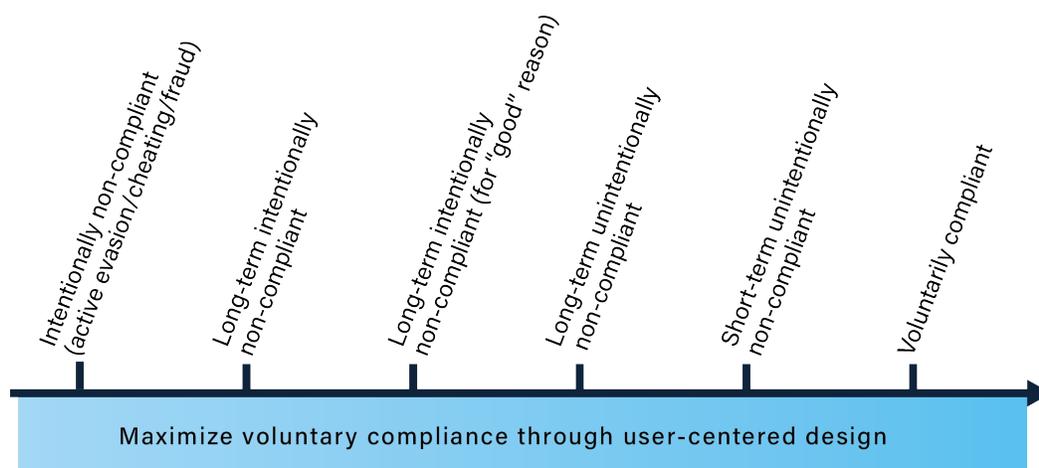


EXHIBIT 2.13 Understanding the Volume and Reasons for Non-Compliance



The breakouts on enforcement focused on multi-state systems for RUC enforcement, policies to support RUC enforcement, and strategies for maximizing voluntary compliance. The latter, strategies for maximizing voluntary compliance, emerged as the most fruitful topic, with **key findings shown below.**

EXHIBIT 2.14 Strategies for Increasing Voluntary Compliance

Voluntary Compliance Tenet	How to Apply Tenet
Simplicity is the magic bullet	<ul style="list-style-type: none"> › Users should not need to hunt around for information › Prioritize "automation", e.g., utility payments through smartphone apps › Link information across different divisions › Clunky systems for paying fines can be a deterrent
Implement upfront, clear, and timely communications	<ul style="list-style-type: none"> › Renewal notice reminders are important and significant dips in revenue are immediately seen in the absence of reminders › Users are less frustrated when they know what they have to pay, when, and how › Use different communications for compliant users as opposed to those who have fines › Develop eye catching communications that cannot be ignored › Coordinate messages across state agency and vendors
A kinder approach is often more effective	<ul style="list-style-type: none"> › Avoid use of the word "delinquent" › Soft collection letter, which was more of an outreach effort than a punitive one, in Oregon resulted in 90 percent compliance after collection letter
Consider offering payment plans and grace periods	<ul style="list-style-type: none"> › There is always a population that, without assistance, risks relapsing › Establish criteria for who can benefit from payment plans and grace periods › Extra internal coordination is necessary to offer payment plans effectively › Thus, payment plans do not necessarily need to be advertised
Establish a threshold for triggering collections process	<ul style="list-style-type: none"> › In Oregon, it was found to not be worth going for anything less than \$125 › Establish clear enforcement and collections responsibilities for commercial account managers
Leverage Commercial Account Manager (CAM) and vendor relationships and capabilities	<ul style="list-style-type: none"> › CAMs and vendors are better positioned to provide customer support when they own the relationship with customers › Contractors have more leeway than state entities › Keep contracts tight › If there are additional fees for a subset of mileage reporting methods, ensure there are incentives for people to sign up with the CAMs › Provide a one-stop-shop app where people could manage everything transportation related



Chapter 3

PILOT APPROACH & FINDINGS

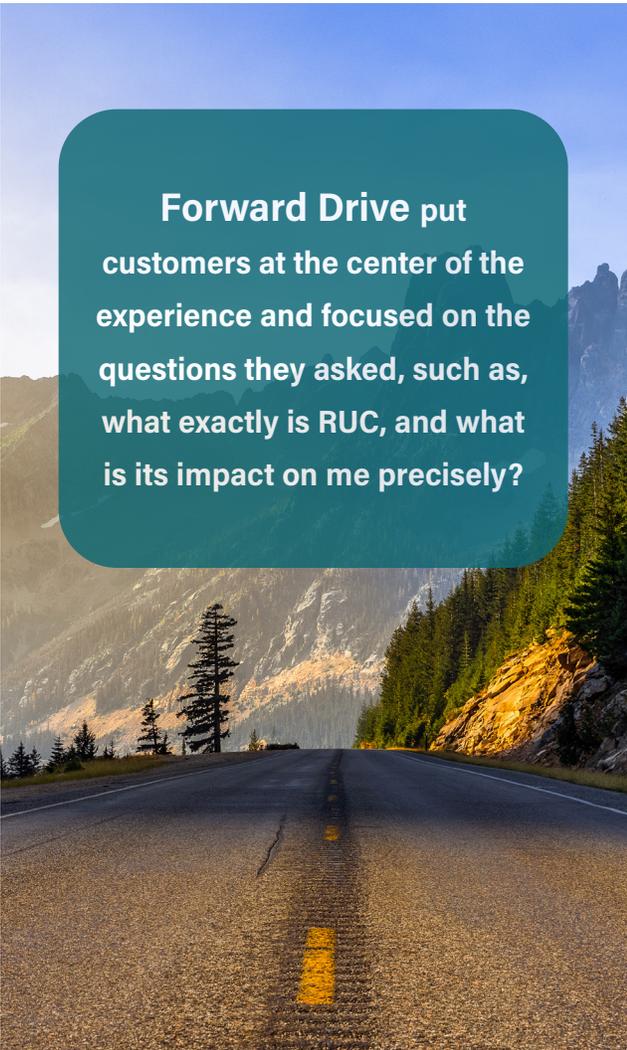
Forward Drive research findings suggested a novel pathway for pilot testing RUC that had not been previously attempted in Washington or elsewhere in the country. The previous statewide pilot in Washington (2018-2019) aimed for a complete customer experience spanning 12 months of participation with over 2,000 vehicles. By contrast, the Forward Drive pilot focused on key aspects of the RUC experience relevant to the most important objectives of this phase of research: cost reduction, user experience improvement, and equity.



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As the research unveiled, the more complex and numerous the choices available to RUC customers, the more important a single, simple point of entry (or enrollment) becomes. In addition, the research pointed to questions about several features of a RUC program, some of them optional, such as discounts, exemptions, and installment payments. Whereas previous pilots put the focus on methods of reporting miles driven, Forward Drive put customers at the center of the experience and focused on the questions they asked, such as, what exactly is RUC, and what is its impact on me precisely? This reorientation of thinking, driven in large part by the user experience research, shaped the design, deployment, and ultimately the findings of the Forward Drive RUC pilot.



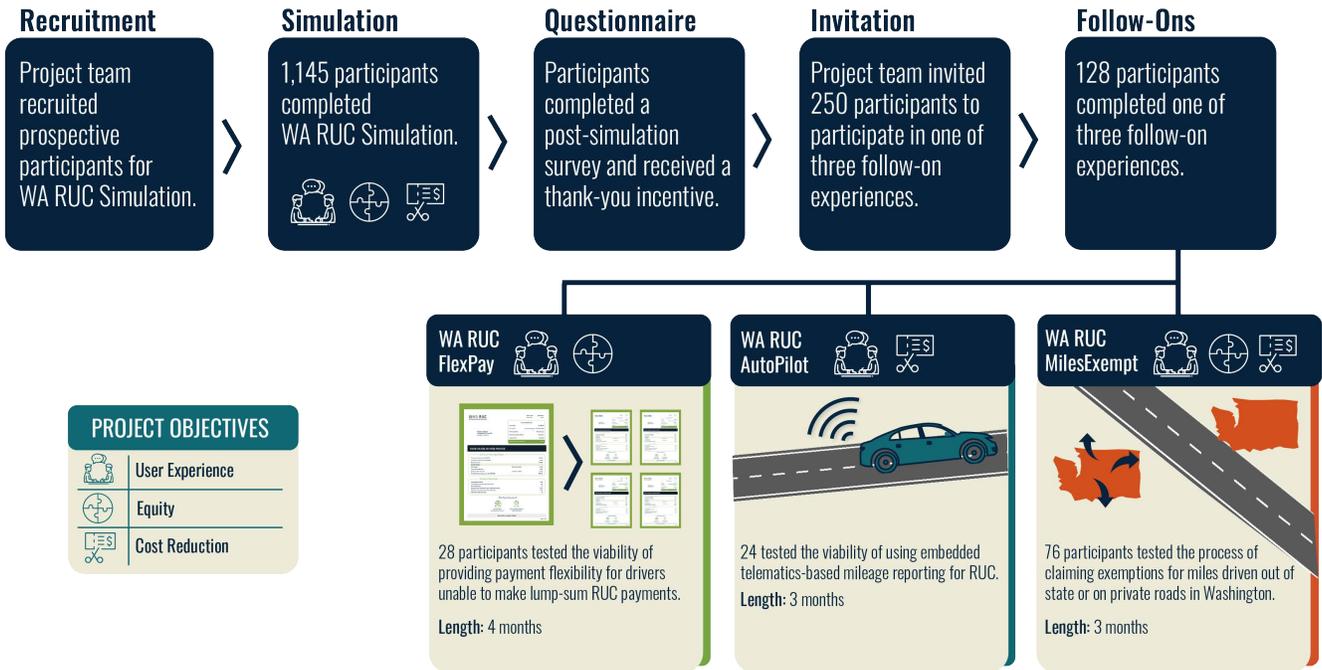
Forward Drive put customers at the center of the experience and focused on the questions they asked, such as, what exactly is RUC, and what is its impact on me precisely?

The pilot consisted of three parts.

- › **First, participants were recruited to the pilot.** There were two pools of recruits: those recruited to form a statistically-representative sample of Washington's population as a whole, and those recruited to undertake in-depth, qualitative follow-on experiences.
- › **Second, participants were invited to experience the RUC simulation, an interactive web-based platform in which participants simulated enrolling, reporting miles driven, making a variety of customized choices for their RUC experience, reviewing charges, and paying.** At the conclusion of the simulation, all participants were asked to complete a survey sharing their experiences and opinions.
- › **Third, within the simulation, participants could opt into one of three follow-on experiences, each designed to further test a specific feature of RUC of interest to Washington stakeholders and policymakers.** Throughout the course of each of the three follow-on experiences, participants were asked to complete surveys sharing their impressions and opinions. The three follow-on experiences offered were:
 - **FlexPay** tested RUC installment payments, allowing participants to pay their RUC over four payments instead of all at once.
 - **AutoPilot** tested using in-vehicle, native automaker telematics to report road usage as an alternative to self-reporting or other technology-based approaches to reporting.
 - **MilesExempt** tested a self-reporting approach for claiming miles likely to be exempt from charges in an actual RUC program, such as off-road, private road, and out-of-state driving.

All participants received modest cash-equivalent rewards in appreciation for the time and effort they devoted to the pilot.

EXHIBIT 3.1 Forward Drive Pilot from Recruitment Through Follow-on-Experiences



Throughout this section and the remainder of this report and appendices, “pilot” refers to the collective combination of the RUC simulation and the three follow-on experiences. The simulation and each of the three follow-on experiences compose a portion of the pilot, but to avoid confusion they are not individually referred to as a “pilot”, but rather as the simulation and three follow-on experiences.

The research also pointed to several activities that state agencies could undertake to reduce costs of administering RUC, one of which was to develop standards in collaboration with other state agencies and industry partners. At the conclusion of the pilot

with Washington participants, a mock RUC standards committee comprising agency staff from Washington, RUC implementing experts from other jurisdictions, industry experts, and national standards organizations convened to simulate the process of developing standards for RUC.

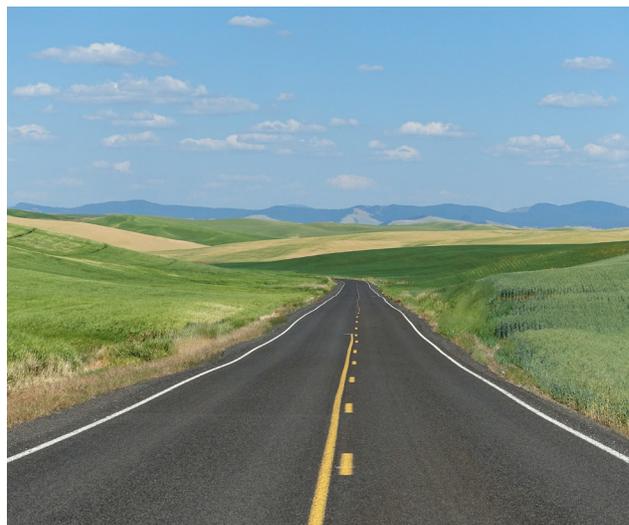
The remainder of this section is devoted to sharing the approach and findings of the pilot and mock RUC standards committee.

PILOT RECRUITMENT AND SAMPLING

A total of 1,145 participants were recruited and completed the online RUC simulation, which included reporting and payment of RUC as well as a subsequent survey. The recruitment was conducted as two distinct efforts with two resulting groups of participants. The distinction between the two groups is described below.

653 users constituted a statistically-valid statewide panel. Panel members were recruited through Ipsos, a global market research and public opinion research company. The recruitment relied on an Ipsos-maintained KnowledgePanel® of survey takers designed to match statewide demographics including age, gender, race, income, and residence location (reflecting both urban/rural and eastern/western balance). This approach was taken to achieve a statistically-valid representation of the statewide population with participants who had an extremely small likelihood of prior exposure to WA RUC research. Although these participants formed a sample sufficiently large and diverse to serve as a statistically-valid representation of the statewide population, they were not eligible for any of the three follow-on experiences due to limitations in how Ipsos can deploy its KnowledgePanel®.

492 users constituted an organically recruited statewide panel aimed at follow-on experiences. The focus of “organic” recruitment effort was to identify participants for the three follow-on experiences: FlexPay, AutoPilot, and MilesExempt. Given the qualitative nature of the follow-on experiences—testing processes and user experiences rather than policy preferences and overall opinions—a statewide representative sample was not necessary. The RUC simulation was advertised directly to participants in the equity-focused research as well as through social media posts and by leveraging past WA RUC mailing lists. All participants experienced the simulation, during which the option of enrolling in the follow-on experiences was presented to those naturally interested in each topic. The pilot originally sought up to 250 follow-on participants, but only those who selected the follow-on options were eligible to participate. Out of 492 who experienced the simulation, 128 (26 percent) enrolled in and completed a follow-on experience.



Participants in both groups received modest rewards to complete the simulation and survey. All participants across both groups provided input through three platforms:

- › **Recruitment screening survey.** Prior to receiving an invitation to participate in the simulation, participants provided information about their demographics, driving habits, household income, and vehicle attributes.
- › **Simulation.** Screened participants were invited via email to experience the online RUC simulation, and their selections and behaviors were recorded anonymously.
- › **Post-simulation survey.** Following completion of the simulation, and regardless of whether they opted into a follow-on experience, participants provided feedback on their experiences with the simulation and their opinions about a potential RUC in Washington through a survey. Participants also provided some additional demographics such as housing, educational attainment, and employment status.

Participants who opted into the follow-on experiences underwent different processes and provided distinct inputs depending on which experience they completed. For all three follow-on experiences, participants completed surveys at the end. A few participants in the MilesExempt follow-on also experienced an interview at the conclusion.

INTERACTIVE ONLINE RUC SIMULATION

The RUC simulation began as a simple concept for paying RUC based on self-reporting odometer readings. Utilizing the input and findings of the user testing as described in Appendix A-3, the final design of the interactive RUC simulation emerged. Although 1,145 participants completed the simulation and survey, the results reported in this section correspond with only the statistically-valid portion (653 of the 1,145). Appendix B-1 provides detailed survey results, while Appendix B-2 provides more detail about the simulation itself, including the detailed steps and summary statistics about participant interactions.

The simulation began with an email invitation to participate, containing a unique code for accessing the simulation. On the welcome screen, the participant was prompted to enter information about the vehicle they most often use in their household.

Next, the participant was asked to provide their current odometer mileage as a numerical entry. In the background, the simulation calculated the annual miles driven by dividing the odometer entry by the age of the vehicle in years. The participant could also choose to customize the number of miles driven over the past year by over-writing the estimate. At the same time, the participant could see a running total of their RUC charges in the upper right corner of the screen.

After entering the odometer reading and clicking “Next,” the participant was asked to provide a photo of their odometer for verification of the number they entered on the previous screen. Although an odometer image was not actually required, this information was not shared with the participant until after they made their selection. The majority of participants selected that they declined to submit an odometer image. Among those that made a selection, over 70 percent selected the “upload now” option.

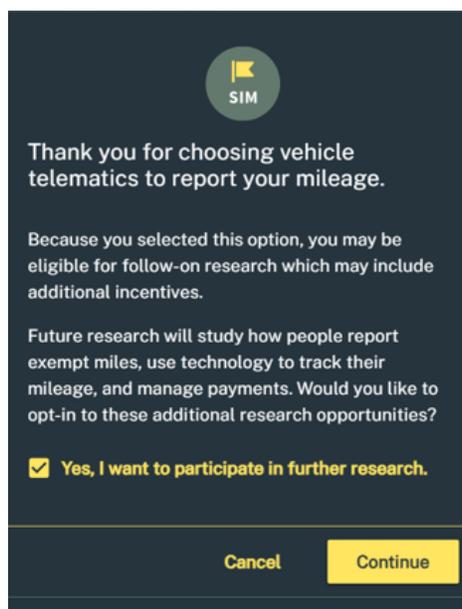
Next, the participant was prompted to choose a method of exempting non-chargeable miles from their total RUC bill. They had three choices:

- › Claim no exemptions. 36 percent selected this option.
- › Claim a standard exemption of 200 miles. 44 percent opted for the standard exemption, which required no evidence or documentation.
- › Claim an exemption of greater than 200 miles. 20 percent opted for a custom exemption, which stated it would require additional documentation or evidence. The average claim amounted to 2,540 exempt miles. These participants were invited to take part in the MilesExempt follow-on experience.

Next, the participant was prompted to declare whether they are eligible for an income-qualified discount based on their existing enrollment with any of three state programs that require income qualifications. Among participants in the simulation, 12 percent claimed some form of income-qualified discount, which entitled them to a discount equal to 20 percent discount of their gross RUC owed.

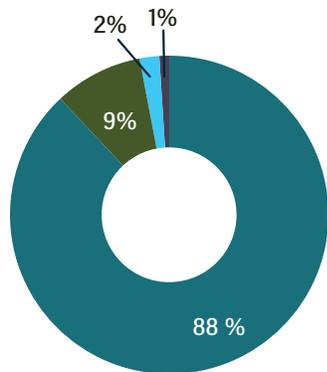
Next, the participant was presented with four choices for how to report miles driven next year: self-reporting (similar to what they just did), vehicle telematics, installed device, or mobile application. High-level information and indicative pricing for each option was presented to the participant, and a link with more information was available should they want to learn more about mileage reporting methods prior to making a selection. The participant who selected “vehicle telematics” was invited to participate in the AutoPilot follow-on experience.

EXHIBIT 3.2 Invitation to the AutoPilot Follow-On Experience



The vast majority (88 percent) of participants selected self-reporting in the simulation.

EXHIBIT 3.3 Self-Reporting is the Preferred Mileage Reporting Method



- Installed Device
- Self-Reporting
- Vehicle Telematics
- Mobile App

Next, with the total amount their net RUC due calculated, the participant was asked to choose between making one payment or four equal payments. Among participants, 85 percent selected the “pay today” option, while 15 percent opted for paying in four equal installments over time. The participant who selected “four equal payments” was invited to participate in the FlexPay follow-on experience.

Finally, the participant was asked how they wished to pay: via credit/debit card, bank account, or payment app. Additional fees of 3 percent were added for the credit/debit option. The most popular choice, with 54 percent of participants, was the debit/credit card option. 22 percent chose bank transfer, while 13 percent chose payment app (such as Venmo), and 11 percent chose cash or check.

After making their selection, for avoidance of doubt, a popup window appeared reminding the participant that no payment was due for purposes of the RUC simulation. Next, the participant was presented a summary of all charges in a single screen and given one final opportunity to go back and revise any choices they made.

Once they confirmed their selections, the participant received a confirmation of “payment” and a link to download a PDF version of their statement of charges. Finally, the participant was invited to complete a survey about their experience.

EXHIBIT 3.4 Simulated Summary of RUC Charges


Print

Payment confirmed!

Payment Details	Road Use Charge											
Confirmation	11019260624	Road Usage Charge \$395.21										
Payment Date	12/12/2023	Income-based Discounts \$0.00										
Payment Type	Credit/Debit	Estimated Gas Taxes Paid \$406.73										
Card Details	VISA *1234	Transaction Fee (3%) \$0.00										
		Total \$0.00										
		Today's Charge \$0.00										
<table border="0" style="width: 100%;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Your Vehicle</th> <th style="text-align: left; border-bottom: 1px solid black;"></th> </tr> </thead> <tbody> <tr> <td>Make</td> <td>Ford</td> </tr> <tr> <td>Model</td> <td>Flex FWD</td> </tr> <tr> <td>Year</td> <td>2015</td> </tr> <tr> <td>License</td> <td>WADRIVER</td> </tr> </tbody> </table>			Your Vehicle		Make	Ford	Model	Flex FWD	Year	2015	License	WADRIVER
Your Vehicle												
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Year	2015											
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SIMULATION SURVEY RESULTS

A total of 1,145 participants completed the simulation and survey, of which 653 came from the statistically-valid sample and 492 from the organically-recruited sample. Although all 1,145 participants completed the survey, the results reported in this section are based only on the statistically-valid sample. The organically-recruited sample was used for the purpose of recruiting participants in the qualitative follow-on experiences.

Among the 653 statistically-valid sample, participants finished the simulation in a median time to complete of 5 minutes, 20 seconds.

- › According to survey responses, 70 percent were satisfied with the reporting and payment process they experienced.
- › Among respondents, 85 percent said no steps were difficult to complete.

A majority of participants (56 percent) support transitioning to RUC. Respondents who oppose RUC expressed concern that RUC would add another tax, concerns about logistics, and concerns about the fairness of RUC.

- › Greater proportions of respondents with higher incomes support RUC, ranging from 65 percent supportive for people with incomes of \$150,000 or more to 49 percent supportive for people with household incomes below \$50,000.
- › Western Washington respondents, urban respondents, and liberal and moderate respondents are more supportive of transitioning to RUC than eastern Washington respondents, rural respondents, and conservative respondents.
- › A majority (54 percent) of respondents reported that they would have data security concerns with a RUC program. Respondents with data security concerns expressed concerns about privacy, hacking, and data breaches. Respondents also expressed concern about the security of their banking and location information.

The average annual amount that respondents owed in RUC was \$29.64. The median amount was \$12 and almost two-thirds (65 percent) of respondents owed less than \$25 in RUC.

- › Participants entered an average of 86,363 for their odometer mileage and an average of 7,594 miles driven in the preceding year. The average vehicle age was 11 years with an MPG of 24.9 among internal combustion engine vehicles. Five percent of vehicles entered for the simulation were ZEVs. Based on these entries, the average participant owed \$176.04 in RUC but had paid an estimated \$146.40 in state gas taxes.
- › Forty-six percent of respondents with income below \$50,000 owed less than \$1 in RUC. In contrast, 29% of respondents with higher income levels owed less than \$1 in RUC.
- › Higher rates of respondents living in rural counties owed less than \$1 in RUC than respondents living in urban counties (48 percent versus 31 percent).
- › The average amount that respondents had paid in gas taxes in the previous 12 months was \$146.40 and the median amount was \$131. Approximately 7 percent of respondents had paid less than \$1 in gas taxes in the previous 12 months.

The average miles driven and gas tax paid were smaller than the statewide average of about 10,000 and \$250, respectively. This difference is likely attributable to the small number of high-mileage vehicles and high consumption fuel users (HCFUs) captured in the sample.

- According to a Washington Joint Transportation Committee (JTC) study published in 2023, approximately 8 percent of Washington vehicles are driven more than 20,000 miles per year, and 0.7 percent consume more than 1,500 gallons of fuel per year.
- By contrast, only 1 percent of simulation participants reported driving more than 20,000 miles in the past year, and 0.1 percent consumed more than 1,500 gallons of fuel.



Most respondents (88 percent) opted to self-report their mileage for the next year. Regardless of the mileage reporting they selected, most respondents (63 percent) reported that they selected their mileage reporting method because no device or app was needed. About one-third (36 percent) of respondents reported that they would need additional information to select a mileage reporting option.

- › A smaller proportion of respondents who owed higher amounts in RUC selected self-reporting than respondents who owed lower amounts in RUC.
- › Forty-nine percent of respondents are not willing to pay any money for technology-based mileage reporting options, and 45 percent are willing to pay between one and five dollars. Only 6 percent of respondents are willing to pay over \$5.
- › Two-thirds of respondents (66 percent) reported that they have privacy or data security concerns with one or more of the technology-based reporting options.
- › Most respondents (86 percent) say that they would accurately report their miles driven. However, most respondents have a low level of trust that others would accurately report their miles driven (only 27 percent think that at least 60 percent of people would report their miles accurately), although this trust increases if the RUC program were to require submission of an odometer photo (with this requirement, 62 percent of respondents think that at least 60 percent of people would report their miles accurately).
- › More than half of respondents (55 percent) declined submission of an odometer photo at the time they participated in the simulation.

Most respondents (72 percent) believe that exemptions for miles driven on out-of-state and private roads are important. There is a positive correlation between a respondent's household income and their support for miles exemption – that is, a higher proportion of respondents with higher incomes support exemptions.

- › Nearly half of respondents (44 percent) reported that they drove less than 200 miles on out-of-state or private roads in the past 12 months. About one-third (36 percent) of respondents reported that they drove no miles on out-of-state or private roads in the past 12 months, with greater proportions of respondents with the lowest incomes, living in interior counties, or owing more RUC responding with this answer. One in five (20 percent) respondents reported that they drove more than 200 miles on out-of-state or private roads in the past 12 months. Of these respondents, the largest proportion (40 percent) reported that they would like to claim less than 1,000 exempt miles for the past 12 months.
- › Almost half of respondents (46 percent) reported that they would claim the standard exemption of 200 miles and about one-third (34 percent) reported that they would claim more than 200 miles through providing evidence to the state, and 20 percent reported that they would use advanced technology to claim more than 200 exempt miles driven. Respondents in border counties selected the standard exemption at a lower rate than respondents in interior counties (39 percent versus 48 percent). Higher proportions of respondents who owed \$125 or more in RUC opted for advanced technology reporting to claim more than 200 exempt miles driven than respondents who owed less than \$125 in RUC (48 percent versus 19 percent).

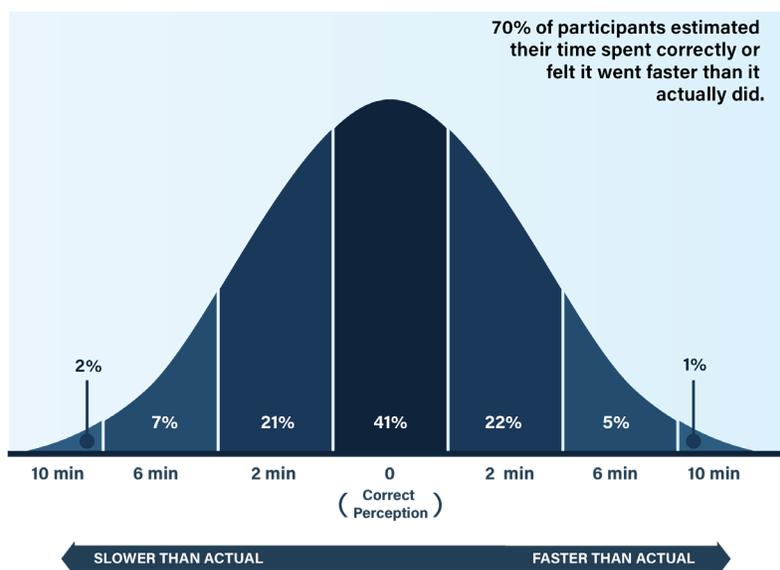
Half of respondents (50 percent) rate income-based discounts as important for themselves, while most respondents (86 percent) reported that income-based discounts would be important for others.

- › Most respondents (88 percent) are not currently enrolled in state assistance service.
- › Thirty-seven percent of respondents with household incomes below \$50,000 are enrolled in a state assistance service.
- › Twenty-eight percent of respondents who owed less than \$1 in RUC are enrolled in a state assistance service, compared to 4 percent of respondents who owed RUC of \$1 or more. The most common program that respondents reported being enrolled in was Washington Apple Health (Medicaid) (13 percent).

Nearly all respondents reported that options to pay in installments are important for others (91 percent) and more than half (56 percent) reported that options are important for themselves. However, most respondents (76 percent) were willing to pay little or nothing for flexible payment options, with 42 percent unwilling to pay anything.

- › Most respondents (85 percent) opted to pay their RUC bill immediately. Thirty-two percent of respondents with incomes of less than \$50,000 opted to make four equal payments.
- › Of the respondents who opted to pay in four equal installments, slightly more than half (55 percent) reported that they could not afford to pay their entire payment, while slightly less than half (45 percent) reported that they preferred to spread out their payments. Respondents with incomes below \$50,000 and rural respondents reported an inability to afford the entire RUC payment at once at higher rates than respondents with higher incomes or urban respondents.



EXHIBIT 3.5 Perceptions of Simulation Length Compared to Actual Time Spent on Simulation

Over half (54 percent) of respondents opted to pay for their RUC using a credit or debit card, and the remainder opted to pay via bank account (22 percent), payment apps (13 percent), and cash or check (12 percent).

- › Almost all respondents (99 percent) did not print a receipt.
- › Most respondents (88 percent) reported that invoices had the right amount of information. Those who wanted more information suggested the invoice could explain the calculation method for estimated gas taxes paid, how to correct information like vehicle MPG, an explanation of the purpose of the transaction fee, and the total miles reported in prior years.

Most respondents (71 percent) reported that they were satisfied with the payment and reporting process presented in the simulation.

- › Most respondents (85 percent) reported that none of the simulation steps were difficult to complete. For each component of the simulation, most respondents reported that they had enough information. The simulation component with the highest proportion of respondents (35 percent) who reported that they did not have enough information was "Mileage Exemptions."
- › The resource that was helpful to the highest proportion of respondents (44 percent) was the Intro and General FAQ.

Perceptions of how long the simulation took generally aligned with reality, with 40 percent of respondents estimating their time spent correctly and another 30 percent estimating that the simulation went faster than it actually did.

- › The median time to complete the simulation was 5 minutes, 20 seconds, meaning half of participants finished in less than that amount of time.
- › Over 40 percent of participants estimated that the simulation took them +/2 minutes from the amount of time that they were measured to have taken. Another 40 percent estimated between 2 and 6 minutes of the actual time taken (with equal amounts estimating over and under).
- › 91 percent of participants took 12 minutes or fewer to complete the simulation, and 96 percent took 15 minutes or fewer. Among the 4 percent who took longer than 15 minutes, it is likely that the participants paused the simulation and returned to it at a later time.

FOLLOW-ON EXPERIENCES

None of the 653 statistically-valid sample participants in the simulation was eligible to participate in the follow-on experiences due to limitations in how Ipsos allows its KnowledgePanel® survey takers to engage. Specifically, the three follow-on experiences required divulging personally identifiable information such as name and contact information, which was not allowable for Ipsos participants. As a result, an additional effort was undertaken to recruit participants to take part in the follow-on experiences. Since the follow-on experiences tested process elements associated with RUC, it was not a necessary to achieve statistically-valid statewide representation. Instead, emphasis was placed on sufficient participation to assess the qualitative features tested in the follow-on experiences.

Organic recruiting efforts included direct outreach through presentations to stakeholder audiences, direct outreach to historically disadvantaged communities (including organizations and individuals who participated in the equity-focused research), social media advertisements, earned media, and outreach to an email list compiled during the 2018-2019 RUC pilot of interested individuals who did not take part in the previous pilot.

In addition, organically-recruited participants received a reward of \$35 for completing the simulation and survey, with the opportunity to earn additional modest rewards for participating in a follow-on experience. In all, 492 organically-recruited participants filled out a demographic screening questionnaire, completed the simulation, and responded to the simulation survey. Across these participants, there were 287 expressions of interest for the three follow-on experiences, broken down as follows:

- › FlexPay: 86 expressed interest, while 28 signed the participation agreement and completed the follow-on experience.
- › AutoPilot: 51 expressed interest, while 24 signed the participation agreement and completed the follow-on experience.
- › MilesExempt: 161 expressed interest, while 76 signed the participation agreement and completed the follow-on experience.

EXHIBIT 3.6 FlexPay Account Portal



FLEXPAY

The FlexPay follow-on experience ran from March 2023 through June 2023. FlexPay tested the viability of providing payment flexibility for drivers unable to make lump-sum RUC payments and the behavior of drivers in a flexible payment plan when real money is exchanged. Given the possibility that RUC could increase the amount owed in a single instance during vehicle registration, the notion of installment payments can ameliorate some of the hardship this introduces, especially for low-income vehicle owners. The main questions FlexPay was designed to investigate included:

- › Does the flexible payment option ease the burden of lump-sum RUC payments in a meaningful way?
- › Do participants find the flexible payment plan easy and transparent to use?
- › Do participants remember to make on-time payments?
- › Do email reminders increase the percentage of on-time payments?
- › What was the administrative effort required to run the FlexPay program?
- › How many inquiries did the help desk receive, and what was the nature of the inquiries?

APPROACH

RUC simulation participants who selected “four equal payments” instead of the lump sum option were invited to participate in the FlexPay follow-on experience for an additional reward of up to \$120. They were given credit for their first payment (25 percent of their net RUC owed within the simulation) and Visa gift cards in the exact amount of each remaining installment payment, so they had to spend no personal money out of pocket while still simulating paying a RUC bill with real currency. Participants who chose this option were more likely to be low income (<\$50,000 household annual income) and more likely to be Black, compared to simulation participants overall.

After signing a participant agreement, FlexPay participants were sent an email with a link to an online portal where they could view and pay invoices on their three remaining installment payments. The remaining three invoices were sent to participants every four weeks over a period of three months.

FlexPay largely replicated the features of a typical installment plan would resemble, whether offered by a public agency or a commercial business. Key differences included the distribution of a cash-equivalent electronic gift card one week prior to the due date of each RUC installment payment and the need for an extra click to open a payment portal operated by a provider (Square) separate from the display of the online invoice (Alchemer).

A help desk was set up so that participants could contact live support staff via phone or email should any questions arise about their invoices, their digital gift card, or the payment process.

At the conclusion of the FlexPay follow-on experience, participants received a survey to answer questions and share more about their experience in the program and their opinions about flexible payments.

EXHIBIT 3.7 Mobile screenshot of Simulation Experience Survey

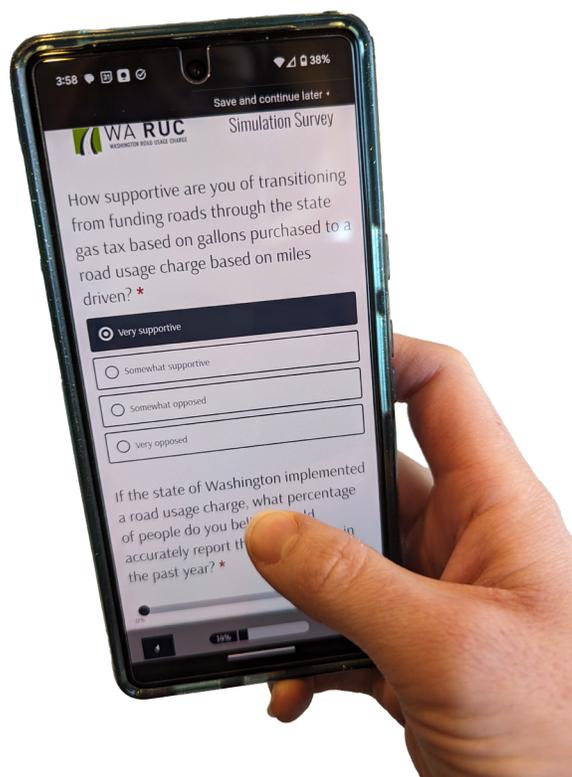


EXHIBIT 3.8 Screenshot: User Payment Portal for FlexPay Follow-On Experience

FINDINGS

Among the 28 participants who completed FlexPay, the mean net RUC due (RUC less gas taxes paid and out-of-state miles exempted) was \$68.00, which was more than double that of the general pool of participants in the RUC simulation (\$29.64).

During the initial FlexPay billing cycle, the majority of participants (93 percent) paid their RUC invoice. Among those that made a payment, all but one participant paid on time. Participant engagement waned slightly during subsequent billing cycles, with 71 percent of participants

paying their RUC bills in the second billing cycle (90 percent on time). Two participants dropped out, and on the third and final billing cycle, 81 percent of the 26 remaining participants made a payment on their RUC bill, all but one of them on time.

The help desk fielded a total of 22 inquiries (approximately three inquiries for every four participants). However, most of the questions related to accessing the seed funding provided by the project. A few asked for help navigating the payment process or for payment confirmation because they had trouble accessing the RUC payment cards or reading the online invoice viewer and payment interfaces.

Given the additional steps, it is likely that the volume of per-capita help desk inquiries received during the follow-on experience is greater than what would be experienced during a live RUC flexible payment program. Nevertheless, there is little doubt that installment payments would add costs to a RUC program, including additional customer service costs (staff time and associated overhead), transaction processing costs, and lost revenue due to late and missed payments. Process design can reduce these costs - for example, automated reminders, automated payments (not tested in FlexPay), and collecting installment payments as pre-payment rather than post-payment (not tested in FlexPay).

EXHIBIT 3.9 Screenshot: Successful Payment Pop-Up

SUMMARY	
[Redacted]	\$2.91
Subtotal	\$2.91
Order Total	\$2.91

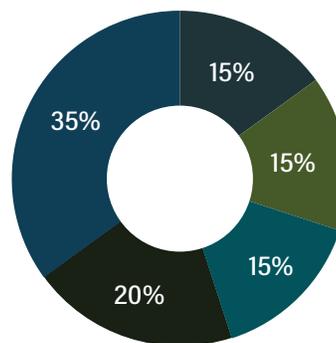
Email reminders helped increase the percentage of participants that paid their RUC bill. During all three invoice cycles, there was an increase in payments processed immediately following the distribution of reminder emails and late notices. Anywhere from 29 percent to 68 percent of participants paid without any reminder. Reminders helped generate payments from an additional 21 percent of participants in cycle 2, 36 percent in cycle 2, and 27 percent in cycle 3. Automated reminders of upcoming due dates and late notices appear to be a cost-effective means of increasing compliance with RUC payments.

According to surveys, most participants found FlexPay easy and straightforward to use. Participation in FlexPay appeared to be driven not by cost, but rather by curiosity. Perhaps driven by the relatively modest typical RUC amount owed in a year, a large majority of participants (75 percent) indicated that two, three, or four installment payments would be sufficient for a RUC program over the course of a year. In addition, most participants were willing to pay a small service fee for the benefit of an installment payment option. This willingness increased following participation in FlexPay. Four out of five participants were willing to pay something between \$1 and \$5 per transaction, with over half preferring \$1 or \$2. Despite the perceived benefits of an installment payment plan for some customers and the relative ease with which it could be offered, FlexPay participants expressed a strong desire, from experience with real-world installment plans, that any service fees be transparent.

Participants were asked how low their RUC bill would need to be before they considered paying in one lump sum rather than spreading their payment across several installments. Among respondents with household incomes below \$75,000 per year, the average threshold was \$104. The average threshold for respondents with household incomes above \$150,000 per year was slightly higher at \$121. Overall, 65 percent of respondents indicated that the bill would need to be over \$100 to justify opting into an installment payment option.

EXHIBIT 3.10 Survey Summary: Threshold for Considering Lump Sum RUC Payment

How low would your total annual RUC bill need to be before you considered paying in one lump sum once per year rather than spreading across several installment payments?



- \$101 - \$140
- \$61 - \$100
- \$181 - \$200
- \$141 - \$180
- \$20 - \$60

EXHIBIT 3.11 Summary of Stated Thresholds for Considering Lump Sum RUC Payments

Threshold	Dollar Amount (\$)
Minimum	\$24
Maximum	\$200
Range	\$176
Mean	\$109.20
Median	\$101



AUTOPILOT

The AutoPilot follow-on experience ran from June to August 2023. AutoPilot tested how to use existing telematics technology built in vehicles by original equipment manufacturers (OEMs) to automatically report vehicle mileage and calculate monthly RUC. The prospects of telematics for RUC are promising since it offers flexibility and convenience to comply with a RUC program. While encouraging, many questions remain about technical feasibility, accuracy, data consistency, privacy protection, and cost. The AutoPilot follow-on experience assessed the viability of using embedded telematics to reduce the RUC reporting burden that comes with other less advanced methods, including how mileage data would be collected, processed, and integrated as well as the challenges of collecting telematics data from various automakers. The main questions that AutoPilot was designed to investigate included:

- › Is it technically feasible to comply with a RUC program by gathering accurate mileage data from in-vehicle telematics?
- › What encourages drivers to opt for in-vehicle telematics over other mileage reporting choices?
- › What technological, system, and business issues must a scalable telematics program overcome?

APPROACH

RUC simulation participants could only select telematics as their preferred mileage reporting method if their vehicle type (make, model, and year) corresponded with the list of eligible vehicles as determined by telematics technology partner Via Mobility (Via). Due to technological limitations, not all vehicles have telematics capabilities, and among those with capabilities, not all were compatible for the AutoPilot experience. For example, vehicles whose automakers do not support data sharing with third parties or whose data communications hardware are obsolete (e.g., 3G cellular modems) could not participate. These limitations constrained the pool of eligible makes and models to a small range which included some recent model Stellantis vehicles (e.g., 2020 and newer Jeeps and Chryslers) and Teslas. Participants who chose this option were more likely to be higher income (>\$100,000 household annual income) and more likely to be male, compared to simulation participants overall.

After signing a participant agreement and providing their vehicle identification number (VIN) to verify their vehicle eligibility with compatible OEMs, participants received a prompt to allow Via access to their vehicle telematics. Participating vehicles included 30 Teslas, one Dodge, and one Chrysler. Due to some technical limitations encountered during the course of AutoPilot, the follow-on experience concluded with 26 participating vehicles (24 Teslas, one Ram, and one Chrysler).

Mock invoices were used to illustrate the net amount of RUC incurred for participants. No real money was exchanged, but participants had an opportunity to evaluate the costs associated with net RUC owed. Invoices also provided participants an opportunity to check the accuracy of the reported charges.

EXHIBIT 3.12 Screenshot: Mock RUC Invoice for AutoPilot Follow-On Experience

WA RUC
WASHINGTON ROAD USAGE CHARGE

AutoPilot
FOLLOW-ON EXPERIENCE

Back Next

DO NOT PAY
Simulated Invoice

John Doe
Washington 98501

Account Summary

Account No.:	23456
Invoice No.:	3
Invoice Date:	September 19, 2023
RUC Period:	Aug-23
Make and Model:	xxxx
VIN:	xxxx
PAYMENT DUE BY 9/26/2023	DO NOT PAY \$16.18

ROAD USAGE CHARGE INVOICE

Mileage and Fuel Consumption

Vehicle Miles Traveled	1,037
Vehicle Miles Traveled in Washington State	1,036
Out-of-State Miles	1
Estimated Fuel Consumption in Washington State (gal.)	17.6
Vehicle Fuel Efficiency (mpg)	59.0

Summary of Current Road Usage Charges

Current Monthly Charges	
Road Usage Charges (1,036 miles x \$0.024/mile)	\$24.86
Income-based Discount	\$0.00
Estimated Gas Tax Paid (17.6 gal. x \$0.49/gal.)	(\$8.68)
Total Road Usage Charges due by 9/26/2023	DO NOT PAY \$16.18

FINDINGS

Data collected during the AutoPilot follow-on experience are summarized in the table below

EXHIBIT 3.13 Monthly Metrics from AutoPilot Participants

Monthly metric	Low	High	Average
Number of miles driven	78	3,222	815
Number of miles driven out of state	0	2,543	131
% of drivers with out of state miles recorded	32%	44%	40%
Gas tax credit	\$0	\$8.68	\$8.09
Net RUC due	\$1.86	\$38.92	\$15.85

In a survey at the end of AutoPilot, a majority of participants (79 percent) rated the process of enrolling their vehicle as "very easy." Most also said they chose to enroll in AutoPilot for the convenience factor, along with curiosity about the technology. Most participants did not experience any technical issues with telematics mileage reporting during the AutoPilot follow-on experience, but three respondents said they were not sure.

Most participants found the invoices relevant, easy to understand, and useful to enhancing their understanding of RUC. A majority also trusted the miles driven and RUC indicated on the mock invoices.

Several lessons emerged from the operations of AutoPilot. Foremost, **vehicle compatibility to report data for RUC purposes using telematics remains a challenge**, particularly when it comes to vehicles manufactured prior to 2022. Older vehicles are often not equipped with the necessary hardware or software to meet the connectivity requirements to transmit vehicle data. Moreover, as technologies advance and support for outdated equipment is discontinued, vehicle eligibility may change. For instance, older vehicles equipped with 3G telematic modems were unable to participate since 3G networks were discontinued to support vehicle connectivity. In addition, some software updates must be made to telematics systems to ensure continuous accessibility. So, vehicles that are eligible at one point in time, may become ineligible with changes in technology or equipment hampering continual RUC data collection efforts.

Despite challenges with compatibility, **telematics data obtained directly from the OEM yielded a more seamless and data-rich experience** and a less costly process, free from the connectivity issues encountered when relying on indirect access through an intermediary. OEM data was also able to provide location data every five seconds providing more accurate and robust data for purposes of RUC calculations. This level of detail is particularly important when determining exemptions for miles driven out of state.



The AutoPilot experience revealed the challenges and opportunities for embedded telematics as part of a future RUC program. Today, several configurations exist for accessing embedded telematics to support a RUC program as explained below. All of these configurations depend on an opt-in framework, that is, customers must have the choice whether to opt in to use OEM platforms as the basis for reporting and/or paying RUC.

- › **Indirect access to OEM data (such as via a plug-in device) from the vehicle by a third-party data aggregator and collection by a third-party account manager.** This approach has been tested by several states. This approach is costly at small volumes but offers opportunities for lower costs of collection at scale. Perhaps more importantly, this approach requires a greater degree of data transmission, which increases cost and introduces some challenges for performance, such as the inability to reliably measure miles driven by location for customers who prefer that degree of precision.
- › **Direct access to OEM data from the vehicle by a third-party data aggregator and collection by a third-party account manager.** AutoPilot was the first pilot to test this approach in the U.S. It represents a less costly arrangement in that the necessary vehicle data to compute RUC including location-based exemptions are accessible directly from the OEM, reducing the amount of data transmission and direct vehicle interaction required. This represents an improvement over the indirect access approach tested to date in terms of both cost and performance, and it shows promise for cost-effective telematics-based RUC at scale.
- › **Direct computation of RUC and collection of charges by a third-party application developer acting as an account manager.** Not yet tested, this approach involves “edge computing,” which means using software installed in vehicles to calculate RUC charges due. Under this scenario, location data would never leave the vehicle: only the amount of RUC owed by time frame (and potentially by jurisdiction) and other essential data such as VIN, would be transmitted to an account manager. This approach represents an opportunity for even lower costs for using telematics as the basis for computing RUC.
- › **Direct computation and collection of RUC by an OEM acting as an account manager.** In 2020, Ford illustrated a concept for how its vehicles could measure and compute RUC and collect the fee in vehicle, with the OEM acting as a full-service account manager. This approach remains conceptual and has not been tested. For interested customers, this approach could represent a lower-cost and high-performance possibility for using telematics to not only report, but also to pay RUC charges

The two approaches tested in AutoPilot represent an advance for telematics-based RUC in that they show a progression from indirect to direct access. Further research and engagement with automotive partners will reveal the opportunities to scale these approaches, improve their performance while controlling costs, and consider how the industry can move toward more direct, efficient approaches to RUC computation.



MILESEXEMPT

The MilesExempt follow-on experience ran from January to April 2023. It explored options and customer experiences for claiming exemptions for miles driven outside Washington and off public roads in Washington using a manual process. A manual mileage exemption process such as the one tested does not rely on GPS devices that report location information, nor does it require customers to accept a standard exemption. Instead, the process allows participants to track and self-report their exempt miles, along with evidence to substantiate their claims. The main questions that the experience was designed to investigate include:

- › Is it feasible to offer exemptions without relying on either standard deductions or advanced technology?
- › Are participants willing and able to manually compile and submit data for claiming exemptions?
- › How can a RUC administrating agency balance user needs such as ease of use, convenience, and privacy with state needs that include ensuring fairness, verification of claims, and managing operating costs?

APPROACH

Participation in the MilesExempt follow-on experience required participants to complete the following steps:

- › Enroll and sign a participant agreement.
- › Provide detailed monthly trip records of out-of-state and private road travel.
- › Submit documentary evidence to demonstrate out-of-state or private road driving.
- › Complete an online survey questionnaire at the end of the experience.
- › Participate in a phone interview about their experience (only applicable for a subset of participants).

Of the 151 who expressed interest in MilesExempt, 76 enrolled and completed the follow-on experience. There was a focus during recruitment on residents who live near state borders. The final set of MilesExempt participants represent a mix of Washingtonians, with many residing near state borders.

Participants were requested to make exemption claims on a “per trip” basis, with the participant offering details of the start and end locations, route taken, number of exempt miles, and documentation for each individual trip. For frequent or repeated claims, participants could define the trip once and indicate the number of times it was taken per reporting period. Custom tools were developed to help participants fulfill the study requirements. These tools included a mileage log template (in spreadsheet format) and an online uploading tool for submitting evidence to support their claims. These tools were made available to the participants during the enrollment process and again when prompting them for claim submittals. A help desk was also available to answer any questions from the participants.

Even if a participant did not drive on out-of-state or private roads during a reporting period, they were encouraged to respond by email indicating that they had no exempt miles to claim for that month. Similarly, if no evidence was available for certain trips with exempt mileage claims, participants were asked to state so in their response and indicate why.

Materials submitted by the participants were reviewed using a two-step process: verification of all responses submitted, followed in some cases by checking.

- › Verification involved a cursory review of the claim and evidence provided. Typically, trip entries were checked for completeness and that each trip had a piece of evidence associated.
- › Checking involved a detailed, thorough examination of a subset of participants' claims to ensure the mileage exemption information was reported correctly and to confirm that the reported amount of mileage exemption was accurate.

Participants were offered suggestions as to the types of evidence that could reliably document out-of-state mileage exemptions, but they were also encouraged to submit other types of evidence for consideration based on their judgment. An online uploading tool was developed for participants to use to submit documentation in support of their exemption claims.

FINDINGS

Based on the three months of operations and data collection, a participant survey, and participant interviews, several key findings emerged. First, **most users want to be able to claim exemptions**. Most participants regard having the option of claiming exemptions for out-of-state or private road travel as a necessary element of a RUC program. That said, the amount of exemptions the average customer will claim are modest, and participants do not expect a single method of offering and administering exemption claims. Most simulation participants were happy to accept a modest standard exemption, and many MilesExempt participants would have preferred a standard exemption if it were set higher than 200 miles.

Among MilesExempt participants, **most like the self-reporting, manual option to claim exemptions**. They found it easy to use and understand, especially with the supporting tools for compliance. That said, **many would like to have other options as well**, including standard exemptions (with no evidence required, similar to what the simulation offered) or automated claims using technology.

EXHIBIT 3.14 Screenshot: MilesExempt Participant Monthly Documentation Uploading Tool

You may combine all documentary evidence into a single file and upload it all at once, or you may upload each document separately using the various **Upload Documents** buttons below.

Upload Documents 1
Browse...

Upload Documents 2
Browse...

Upload Documents 3
Browse...

Upload Documents 4
Browse...

Do you need to upload additional documentation?

Yes

No

Back Submit

In the simulation survey, respondents offered suggestions for an annual standard exemption ranging from 200 miles to 3,000 miles, with an average around 700 miles. A system based on standard exemptions without any evidence might work well for some users and would certainly make the process easier both from the users' and from the state's perspectives. However, questions regarding the level of standard exemption and whether or not it should vary depending on certain parameters (such as place of residence) need further investigation.

Participants appreciated the flexibility offered in the type of evidence that would be accepted. Some participants were creative in the documentation they provided to substantiate their exempt mileage claims. Examples of documentation received included redacted homeowner association covenants (to show private road ownership), invoices for the participant's share of private road maintenance, annotated Google Maps timelines, and pictures taken during out-of-state road trips. **Most felt that some level of enforcement by the state is required in a self-reporting program.**

Throughout the MilesExempt follow-on, the need to control administrative costs for checking claims was top of mind. A cursory review (verification) of all claims and a more detailed, thorough examination (checking) was conducted for a sample of claims. The level of effort involved was assessed to help inform the cost implications. Verification time varies depending on what a participant submitted.

EXHIBIT 3.15 Types of Evidence for Out-of-State Mileage Exemptions

Occasional Trips	Regular Trips
<ul style="list-style-type: none"> > Gas receipts > Electric vehicle charging receipts > Toll receipts > Parking fees > Oil, lube, car wash receipts > Repairs, parts receipts > Tires, supplies receipts > Lodging receipts 	<ul style="list-style-type: none"> > Employment verification showing an out-of-state workplace location > Education verification showing an out-of-state study location > Medical verification showing an out-of-state health care location > Other verification documents for regular out-of-state travel

For example, it only takes a few seconds to record someone that has no exemptions, but it takes 1-3 minutes per participant if they are claiming exempted mileage to perform the cursory check. The more detailed verification procedure (comparing the claimed mileage with the distance measured in Google Maps) took between 10 to 20 minutes to verify per participant.

The cost of a manual exemption program depends on the design features and the scale with which Washingtonians use it. Supposing on the high end that 10 percent of Washington's 7 million vehicles opted into a quarterly manual exemption claim system, with 50 percent submitting claims in any given quarter in a full-scale system, and with 90 percent of claims checked and 10 percent verified, this would require approximately 35 full-time equivalent (FTE) staff. By contrast, if only 2 percent of Washington drivers submitted claims and if claims were only permitted annually, the number of FTEs required would reduce to around 4. By making standard exemptions more attractive (thereby the number of participants claiming manual exemptions), standardizing and further automating the claims process, and considering the frequency with which claims will be accepted, costs can be managed while still offering participants a range of choices to benefit from exemptions.



MOCK STANDARDS COMMITTEE

After the simulation and follow-on experiences, the Commission convened a mock RUC standards committee. The idea for a standards committee emerged from research conducted in 2021 (as summarized in Chapter 2) focused on approaches for reducing costs of RUC collection. That research identified standards as one way to reduce costs both for vendors servicing multiple jurisdictions in the RUC market and for agencies responsible for implementing and operating RUC systems. The committee's purpose was to examine the opportunity for developing standards for RUC programs and systems, identify possible areas for standardization, simulate the process of creating a standard for RUC, and create structures and processes for a future RUC standards committee.

The mock RUC standards committee convened three times in hybrid meetings. Committee members included four representatives of jurisdictions engaging in RUC programs or research (Hawaii, Oregon, Utah, Washington), two members with RUC vendor expertise, one representative of the Federal Highway Administration (FHWA), one member from the American Association of Motor Vehicle Administrators (AAMVA), and one member from The Eastern Transportation Coalition. These members provided relevant expertise from diverse perspectives and participated actively in the work of the Committee.

The Committee identified and determined the functions of RUC programs suitable for standardization and others that should be left to jurisdictional or vendor discretion. Jurisdictional and industry standards can lead to more efficient operations but must be considered carefully to ensure they do not unduly stifle innovation or impinge upon legal prerogatives and policy choices that should remain within the powers of each jurisdiction to decide. The Committee weighed these issues when composing an initial list of possible items for standardization. The initial list contained 72 possible areas for standardization, later reduced through combining some areas and recategorizing others as best practices rather than standards.

The Committee completed the process of developing two standards: one for standardizing jurisdictional identification ("JurisID") that heavily leveraged Oregon's efforts, and one for standardizing elements of vehicle classification and identification for RUC purposes. The committee demonstrated the typical process for creating



a standard, including identifying the need and utility of a specific standard, researching existing rudiments of the standard that could inform the standard's development, developing detailed features for the standard, and reducing the proposed standard to writing.

The results of this Committee's efforts offer guidance to a future RUC standards committee and associated subcommittees. The Committee adopted two standards, but because of the "mock" nature of the process it fell short of official or widespread adoption. Instead, the process offers a useful model for future RUC standards committees to follow. In addition, the list of proposed standards and the two specific standards adopted offer a roadmap. Finally, the Committee suggested committee and sub-committee structures aligned with potential standards for future development.

The development of RUC standards can support implementation of RUC systems that are cost-efficient to administer, easy for vendors to support, interoperable across jurisdictions, and simple for participants to interact with. The process demonstrated and guidance offered by this Committee can be built upon in future efforts to realize these benefits.

Vehicle identification standards are illustrated in **Exhibit 3.16 on the next page.**

EXHIBIT 3.16 Vehicle Classification and Identification Standard

Element Name	Definition	Valid Values	Sources/Existing Standards	Additional Information	Need for Standardization (for purposes of Mock Standards Committee)
Vehicle Model Year	A four-digit year, which is assigned to a vehicle by the manufacturer, to designate a vehicle model irrespective of the production year	Four-digit whole number Format: #### Example: 2023	Existing Standard: AAMVA D20 Traffic Records Systems Data Dictionary (JSON) (aamva.org) Source: Manufacturer	May be required to determine compatibility with mileage reporting options (e.g., on-board diagnostic ports available primarily from 1996 onward)	For vehicle classification and program eligibility purposes
Fuel Type	Source(s) of energy used to propel/move motor vehicle	Primary and secondary values from EPA	Source: US EPA	Combination of primary and secondary fuel types may be required (e.g., Plug-In Hybrid Electric – gasoline and battery electric)	For vehicle classification and program eligibility purposes, possibly in combination with fuel economy (not all vehicles have a single rating, and fuel type impacts determination of mpg rating); for fuel tax credit applicability and calculation
Gross Vehicle Weight Rating (GVWR)	Maximum loaded weight vehicle is designed to carry, including trailer weight	Four or more-digit whole number, represents pounds (lbs) Format: ##,### Example: 8,400 (lbs)	Source: Federal Motor Vehicle Safety Standards (FMVSS) (49 CFR 571)	Recommendation to use registered weight	For vehicle classification and program eligibility purposes (not for determining RUC rate in this standard)
Combined Fuel Economy Rating	Combined city/highway fuel economy (miles per gallon [MPG]) or equivalent (MPGe)	One or more-digit whole number Format: ## Example: 97 (MPGe)	Source: EPA or best available source	MPG vs. MPGe determined by Fuel Type Vehicles between 8,500 – 10,000 lbs GVWR are not required to have an EPA rating	For vehicle classification, program eligibility, and fuel tax credit applicability and calculation purposes
Number of Wheels (optional)	Count of wheels affixed to vehicle for the purpose of propelling vehicle	One or more-digit whole number Format: ## Example: 2	NHTSA/Manufacturer Data (not always available) or as reported by owner		To be populated when available, as some states may use for program eligibility
Top Speed (optional)	The maximum rate at which the vehicle is designed to move longitudinally, as defined by manufacturer, indicating miles per hour (MPH)	0 (zero) to N speed, in whole number increments Format: ## Example: 35 (MPH)	Source: Manufacturer		To be populated when available, as some states may use for program eligibility
Axle County (optional)	Count of axles, the mechanism affixed to wheels to turn vehicle and support vehicle weight	One Two Three Four Five Six Seven or more	Existing Standard / Source: FHWA Vehicle Types		To be populated when available, as some states may use for program eligibility and for determining RUC rate
Jurisdiction(s) of Registration (optional)	Geographical jurisdiction vehicle is registered in to legally operate	Recommend leveraging JurisID standard for values; in the cases of the U.S., Canada, and Mexico, value must be a state, province, territory, or federal district.	Source: Jurisdiction	Some vehicles may be dual-registered in two jurisdictions	At minimum, base jurisdiction of registration should be denoted





Chapter 4

CONCLUSIONS & NEXT STEPS

The findings of Forward Drive strengthen the business case for RUC, while illuminating specific, near-term, low-cost implementation pathways for a RUC system. Through a combination of policy and system design choices, the state can address multiple issues at once. The research findings demonstrate that it is possible to deploy a RUC system with low administrative costs and a positive user experience that protects privacy, improves equity, and accommodates out-of-state driving. This section presents the conclusions drawn from the findings of Forward Drive as well as next steps for the state to consider.



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CONCLUSIONS

STEEPER GAS TAX REVENUE LOSSES EXACERBATE TRANSPORTATION FUNDING CHALLENGES AND EQUITY CONCERNS

Washington currently ranks second in the nation in ZEV adoption rates and aims for 100 percent of new sales to be ZEVs by 2035. Meanwhile, improved fuel economy of conventional vehicles is expected to contribute equally to the decline of gasoline tax receipts as ZEV adoption. Findings from the financial analysis indicate that these dual trends are already leading to declines in motor fuel tax receipts, declines that will accelerate in the coming decade. Meanwhile, registration surcharges such as the flat \$225 annual fee on EVs, only address a portion of the funding that will be lost to growing ZEV adoption and improved fuel economy.

Prior research showed that fuel tax contributions are higher per mile driven in rural areas than urban areas. Equity research conducted for Forward Drive confirmed a similar phenomenon with respect to income: vehicles registered in the lowest-income areas are older and less fuel-efficient, on average, than vehicles registered in higher-income areas. With the price of new vehicles at an all-time high, more fuel-efficient vehicles and ZEVs are predominantly being purchased by higher-income households who can afford them. As a result, the burden of fuel costs and fuel taxes is likely to further concentrate on rural and low-income households driving older, less fuel efficient vehicles in the coming decade.

These trends highlight the dual concern with the current funding policy architecture in Washington. On the one hand, falling fuel taxes put sustainable funding for critical infrastructure at risk. On the other hand, increasing fuel taxes or vehicle registration fees to address the funding gap will exacerbate the existing inequities of current policy.



AMONG TRANSPORTATION REVENUE CHOICES, RUC PERFORMS STRONGEST FOR USER EQUITY AND SOCIAL EQUITY

RUC fully restores the “user pay, user benefit” principle, long a desirable feature of road funding policy and the gas tax at the federal and state levels across the country. By contrast, as fuel consumption diminishes, the burden of fuel taxes falls on a shrinking tax base of largely older, less fuel-efficient vehicles, with newer, more fuel-efficient vehicles and ZEVs paying nothing. Flat vehicle fees, meanwhile, ask vehicle owners to pay either too much or too little relative to their road use. Those who use the roads the least effectively subsidize those who drive the most. RUC performs strongly for user equity by aligning usage and cost impacts with contributions.

RUC also improves social equity relative to other strategic options. Available data show a clear correlation between income and miles driven: the more income a household makes, the more miles they drive. In addition, there is a clear correlation between income and vehicle fuel economy: the more income a household makes, the less fuel they consume per mile driven. Likewise, under a flat fee, how much one uses the road is irrelevant, making the flat fee regressive and unresponsive of a user pay funding system. These findings point to RUC as a more progressive funding option compared to either the gas tax or flat vehicle fees.

Per equity research findings, the proportion of household income that households spend on gas tax ranges from nearly zero to several percent. For the lowest-income households, those under \$30,000 per year, transportation costs account for 40 percent of income. However, the portion of income devoted to gas taxes is small, averaging 1.4 percent, an amount that would be similar under a RUC, on average. The vast majority of transportation costs are related to car ownership such as payments, fuel, maintenance, and insurance. Likewise, for most low-income households, the amount devoted to gas taxes is less than half the amount spent on state sales taxes and about one-fifth the amount spent on property taxes.

Consideration for historically underserved communities including low-income households.

Washingtonians appreciated the notion of a discount as a way to signal support for low-income households. This likely results from a perception, noted in earlier focus groups, that low-income households will be adversely impacted by RUC. However, analysis shows that, on average, RUC would benefit low-income households. Other approaches such as communicating these results, offering installment payments, and making gas tax credits available beyond the amount of RUC owed as a credit, could support acceptance along similar lines as the discounts achieved in the simulation.



PUBLIC ACCEPTANCE OF RUC IN WASHINGTON HAS GROWN WITH EXPOSURE TO THE CONCEPT

Forward Drive added to the evidence from other states and Washington's earlier research that exposure to RUC reduces opposition and increases support for the concept. Direct experience can address perception-based concerns the public has around issues such as household financial impact and privacy.

In 2017, a household telephone survey of a statistically representative sample of 602 Washingtonians found 31 percent support for RUC and 58 percent opposition. This measurement was made after reading a one-paragraph description of the RUC concept verbally to each survey respondent. In focus groups conducted around the same time, although participants could identify the gas tax as a source of transportation funding, few could identify the amount of the state gas tax or estimate how much they pay each year.

Washington's first pilot project in 2018-2019 had over 2,000 participants. Since the sample was not recruited to be statistically representative of the state, participants skewed toward more supportive of RUC than the general population at the outset of the pilot. However, among those participants uncertain of their preference between RUC and the gas tax before the pilot started, 42 percent preferred RUC by the end of the pilot, with another 17 percent preferring RUC and the gas tax equally and only 18 percent preferring the gas tax.

The results from the 2022-2023 pilot offer the first glimpse at opinions among a statistically representative sample of Washingtonians toward RUC who have had the opportunity to experience the concept for themselves through the RUC simulation, including a live estimate of how RUC would impact them personally. Based on this novel approach, Washingtonians who experienced the RUC simulation support RUC by a margin of 56 percent to 44 percent.

Clear communication of how RUC is calculated, including application of credits for gas taxes paid.

Since the beginning of the investigation of RUC in Washington, the Commission has tested it as a replacement for the gas tax, and drivers continue to see that as a sticking point. Although not explicitly tested, anecdotal evidence from EV user groups suggests that removal of EV, PHEV, and hybrid registration surcharges would likewise garner higher levels of acceptance for RUC.





ENROLLMENT AND ODOMETER DECLARATION IS VIABLE TODAY: A SIMPLE, LOW-COST, POPULAR APPROACH FOR IMPLEMENTING RUC IN WASHINGTON

The success of the online RUC enrollment and payment simulation stems in part from the popularity of self-reporting of miles driven based on odometers. Customers perceived this as a simple, low-cost way to report road usage in a short time frame, and which could be integrated with vehicle registration renewal. This approach also offers a low-cost approach for the state to administer RUC.

A concern around RUC self-reporting is the possibility for evasion or under-reporting of miles driven. Participants overwhelmingly (close to 90 percent) declared they would report miles driven honestly, but that honesty does not translate to trust in their neighbors: the average person thinks that fewer than half of others would report honestly. The perception of a system that can be easily cheated can result in a loss of confidence, undermining the system even when most constituents intended to be honest.

Fortunately, low-cost methods exist to shore up system trust. Requiring drivers to electronically submit a picture of their odometer to substantiate the mileage report significantly improves confidence in others reporting honestly.

A challenge with an odometer-based RUC is the inability to assess charges accurately and cost-efficiently for miles driven outside Washington or off public roads inside Washington. Manual claims for mileage exemptions could be accepted but run into the same trust issues as unchecked odometer reporting. Meanwhile, location-based mileage reporting using automated technology requires much more effort on the part of the customer

and cost for the state. In the pilot, offering a “standard exemption” of 200 miles per year satisfied most customers, with approximately 80 percent accepting the standard exemption and/or reporting they did not have more than 200 miles to claim. While the precise level for a standard exemption was not fine-tuned in testing, the mere offering of one addressed most customer concerns about non-chargeable miles in an odometer-based RUC system.

Odometer-based RUC is low cost and could be implemented now to support a small-scale start-up RUC program while the state continues to research and improve other features such as lower-cost automated reporting, spot-checking via odometer image capture, and finer-tuned exemptions.

A simple, low-cost method of reporting miles driven (self-reporting of odometer) and claiming exemptions for miles driven off public roads in Washington (standard exemptions and manual mileage claims processes) offers a pathway for introduction of RUC to Washington drivers.

Participants in the pilot overwhelmingly preferred to self report miles driven. They also largely opted for a standard exemption of non-chargeable miles, with the number claiming it dependent on the number of exempt miles offered.

TELEMATICS IS CURRENTLY FEASIBLE ON AN OPT-IN BASIS FOR SOME VEHICLES, BUT WORK REMAINS TO EXPAND ELIGIBILITY AND IMPROVE THE USER EXPERIENCE

In the pilot, embedded OEM telematics was offered as a choice for customers. Likewise, for any future RUC program in the foreseeable future, given the limitations of this method, telematics would have to be offered as a choice for customers who prefer it for convenience, automated exemptions, or other reasons.

That said, the pilot showed that odometer reporting using telematics is feasible today at moderate cost for small-scale programs and at low cost for large-scale programs. Costs range between \$20-40 (approximately 10-15 percent of revenue, on average) per vehicle per year for small-scale programs but could scale to as low as \$12 (less than 5 percent) per vehicle per year at a scale of several hundred thousand to millions of vehicles. The technology for wireless odometer transmittal using in-vehicle telematics is widespread and available through both direct and indirect access channels.

Location-based reporting using telematics will require more collaboration and partnership with OEMs. Participation from more OEMs is needed to determine the operating model, cost structure, and user experience. This will help to create pathways and approaches for using vehicle telematics to charge miles by state. Although the user experience in the pilot was positive, uncertainty around the ultimate telematics business model requires additional work. The pilot revealed four general scenarios for future development of telematics reporting for RUC purposes.

› **Indirect access to OEM data off the vehicle by a third-party data aggregator and collection by a third-party account manager.** This approach is costly at small volumes but offers opportunities for lower costs of collection at scale. Perhaps more importantly, this approach requires a greater degree of data transmission, which increases cost and introduces some challenges for performance, such as the inability to reliably measure miles driven by location for customers who prefer that degree of precision.

- › **Direct access to OEM data off the vehicle by a third-party data aggregator and collection by a third-party account manager.** AutoPilot was the first pilot to test this approach in the U.S. It represents a less costly arrangement in that the necessary vehicle data to compute RUC including location-based exemptions are accessible directly from the OEM, reducing the amount of data transmission and direct vehicle interaction required. This represents an improvement over the indirect access approach tested to date in terms of both cost and performance, and it shows promise for cost-effective telematics-based RUC at scale.
- › **Direct computation of RUC on the vehicle and collection of charges by a third-party application developer acting as an account manager.** Not yet tested, this approach involves “edge computing,” which means using software installed in vehicles to calculate RUC due. Under this scenario, location data would never leave the vehicle: only the amount of RUC owed by time frame (and potentially by jurisdiction) and other essential data such as VIN, could be transmitted to an account manager. This approach represents an opportunity for even lower costs for using telematics as the basis for computing RUC.
- › **Direct computation and collection of RUC from customers by an OEM acting as an account manager.** In 2020, Ford demonstrated a concept for how its vehicles could measure and compute RUC and collect the fee in vehicle, with the OEM acting as a full-service account manager. This approach remains conceptual and has not been tested. For interested customers, this approach could represent a lower-cost and high-performance possibility for using telematics not just to report but also to pay RUC.

These future possible pathways for integrating vehicle data for RUC purposes will continue to advance through state research in Washington and elsewhere. Larger volumes of RUC programs with enrolled vehicles, even those using manual reporting methods, will likely accelerate the availability of more advanced methods as technology providers and OEMs realize the customer demand for easier methods of reporting by leveraging data and systems already in place.

FORWARD DRIVE REDEFINED WHAT IT MEANS TO CONDUCT A RUC “PILOT”

Oregon launched the first RUC “pilot” in 2006. It featured 275 participating vehicles equipped with custom-built devices hardwired into the vehicle, including a GPS antenna attached to the roof and a display screen mounted on the dashboard. Participants drove for several months accruing charges and paying them with specially equipped point-of-sale transaction readers at several participating gas stations in the Portland area.

Since 2006, the technology for RUC has advanced considerably, from custom-built devices of the early days to small plug-in devices to smartphone apps to in-vehicle telematics. However, the overall structure of a pilot has changed little: recruit several hundred or thousands of participants, ask them to enroll in the pilot by providing contact information and vehicle details, prompt them to select how they would like to report and pay for their road usage, and provide them the necessary hardware and software for participation. Once set up, pilots ask participants to simply drive for a period of anywhere from three to 12 months, report miles driven periodically according to their chosen method, receive invoices (mock or real), pay the invoices (unless they are mock), and complete a series of surveys about their experience.

In exploring options for how to test low-cost methods of mileage reporting and how to optimize the user experience, Forward Drive revealed a few key insights that led to reimagining how we think about a RUC pilot. First, users benefit from a single, simple entry point to RUC, such as through annual vehicle registration renewal. Whereas previous pilots put the focus of the user choice on how to report miles driven, which often led to suboptimized customer entry, Forward Drive de-emphasized the how and put greater focus on the who—specifically asking from the customer’s point of view, what exactly is RUC, how will I participate in RUC, and what is its impact on me? Second, moving away from a focus on how to report miles driven allowed Forward Drive to focus on interactive, information-rich, customized experiences. As an alternative to the types of long-term engagements seen in traditional, on-road pilot testing, this approach opened up the possibility of focusing on other aspects of the RUC experience such as system trust, the value of exemptions, the level of need for installment payments and payment mechanics.

Third, the efficiency around deployment of the simulation across a large population of participants was relatively high and cost-effective, as compared to on-road testing. Once the specific research questions were prioritized, the simulation was designed to address those questions with more focus and depth, and across a larger number of users and at lower operational costs than a traditional pilot.



NEXT STEPS

Forward Drive offers a combination of policy and operational findings and conclusions that can guide future decisions about the enactment of an initial RUC program and the transition from an initial program to a large-scale program. Drawing on the Commission's recommendations to the Legislature in 2022 as a starting point, this section offers next steps for near-term enactment and implementation of a RUC program and longer-term steps for the transition from a small-scale, starter program to a large-scale statewide program. Transitioning from launch of a small-scale RUC program to maturity requires approximately one decade, which coincides with the time frame for the transition to 100 percent ZEV sales.

In the long-term, a RUC program requires answers for the policy questions **illustrated in Exhibit 4.1**. The first four questions are key to the establishment of an initial, small-scale program impacting up to several tens of thousands of vehicles. These four questions may be revisited frequently during the early years of program operations as the volume of subject vehicles gradually grows.

The remaining five questions can be addressed at the outset, but they must be revisited to guide how the program will transition to a large-scale revenue mechanism covering hundreds of thousands up to, ultimately, several millions of vehicles across the state.

EXHIBIT 4.1 Policy Choices for RUC Enactment and Transition

The RUC Steering Committee reviewed and validated the range of policy decisions that must be made for initial enactment of a small-scale RUC program and transition to a large-scale program.

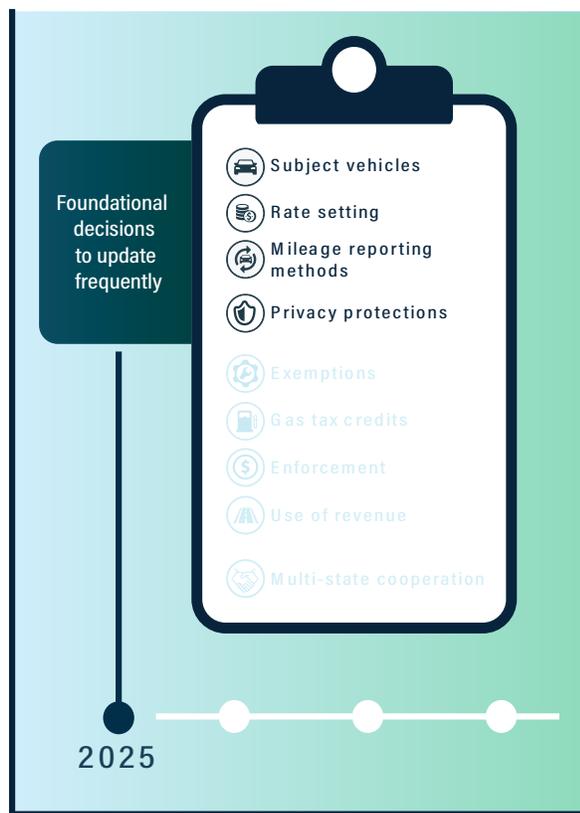
-  What vehicles are subject to RUC?
-  How is road usage reported?
-  What is the RUC rate?
-  How is participant privacy protected?
-  What road usage is exempt from RUC and how?
-  How are gas taxes handled?
-  How are RUC revenues used?
-  How is the program enforced?
-  Multi-state cooperation

IMPLEMENTATION OF A RUC PROGRAM IS VIABLE TODAY

Through the simulation and follow-on experiences, Forward Drive identified public acceptance factors for RUC that can inform decisions around initial enactment of a RUC program. The findings reinforce the Commission's 2022 recommendations to the Legislature regarding enactment of a small-scale RUC program. Salient features of a RUC program that drive acceptance are summarized on the next page.

Four questions underpin the enactment of an initial, small-scale program:

- > What vehicles are subject to RUC?
- > How is road usage reported?
- > What is the RUC rate?
- > How is participant privacy protected?



Subject vehicles. The most important framing decision for establishment of a RUC program is which vehicles will be subject to RUC, including whether it is voluntary or mandatory. Choices for subject vehicles include:

- > Vehicles above a certain MPG threshold
- > Vehicles beginning with specific model year
- > Electric vehicles and plug-in hybrids
- > Hybrids
- > Combinations of the above

Regardless of the initial decision, enrollment must be of sufficient size for the state to establish a meaningful, robust program while small enough to mitigate risks associated with program launch, including financial risks. The initial decision also dictates the range of choices for future changes in eligibility. For example, the Legislature could choose to stop after the initial decision, allowing the vehicle fleet to gradually turn over. Eventually, after several decades, all vehicles would fall into one or more of the categories listed above.



Mileage reporting methods. The Legislature must authorize initial methods of reporting road usage. Choices include:

- > Periodic (e.g., annual) self-declaration of odometer reading
- > Odometer photo reporting
- > Automated reporting via certified plug-in device, smartphone apps, or in-vehicle telematics
- > Combinations of the above

Odometer declaration provides a viable, efficient, simple starting point for implementing RUC in the near term. The Legislature could enact RUC initially with only odometer reporting offered, while allowing the DOL the discretion to introduce additional methods over time. For example, the findings from the Forward Drive research and pilot show that trust in a RUC system improves with the introduction of system checks such as odometer photo reporting.



Rate setting. The initial RUC program must feature a base per-mile rate. With only several thousand or even tens of thousands of vehicles, the relative magnitude of revenues at stake in a small-scale program is modest. The consequences of rate setting grow over time as the program and its revenue generating capacity grow. That said, the initial RUC program involves questions of principle for how to set the initial rate. Choices include:

- › A revenue neutral rate based on what the average internal combustion engine vehicle pays in gas taxes
- › A rate based on meeting a specified revenue target

If the program is voluntary, the Legislature can provide incentives to enroll, such as waiving certain vehicle fees for those who enroll, offering introductory rate discounts, and/or offering an introductory cap on annual charges.



Privacy protection. Customer interest in privacy protection continues as a top concern for a RUC program. Even though an odometer-based program would not require any driver location reporting, it is helpful for program enactment to establish privacy protection provisions both for the initial program as well as for any contemplated future evolutions of the program. The Commission's prior RUC research includes a model privacy policy and statutory language for enactment of an initial RUC program, including a menu of choices for each key privacy protection provision.



A TRANSITION OVER THE NEXT DECADE REQUIRES POLICY CHOICES INFORMED BY SMALL-SCALE PROGRAM LEARNINGS AND PARALLEL RESEARCH

After enacting a RUC program, the Legislature will need to revisit its initial policy choices regularly to ensure a smooth transition to a large-scale program that meets the objectives of sustainable, equitable funding to replace the gas tax and flat vehicle fees. Learnings from the small-scale RUC program and continued research can guide updates to policy choices for the program. This maturation process will take approximately ten years. Appendix C-1 explores transition scenarios in more detail.



Subject vehicles. The initial decision for vehicles subject to RUC may well be the last, as the Legislature relies on fleet turnover for the program to grow naturally. Monitoring of enrollment, revenues, and administrative costs can inform the decision on whether and how to extend RUC to additional vehicles regularly during the decade following initial enactment.



Mileage reporting methods. As newer vehicles with advanced technology enroll in the program, the possibility for vehicle-based reporting utilizing on-board telematics becomes more likely,

offering an opportunity for customers to opt in to lower-cost methods of reporting. Ongoing research will inform policy and program decisions around mileage reporting, including research around partnerships to expand the range of mileage reporting choices while reducing costs and improving the customer experience. In addition, research around fleets will inform how to best administer RUC on light- and medium-duty fleets.

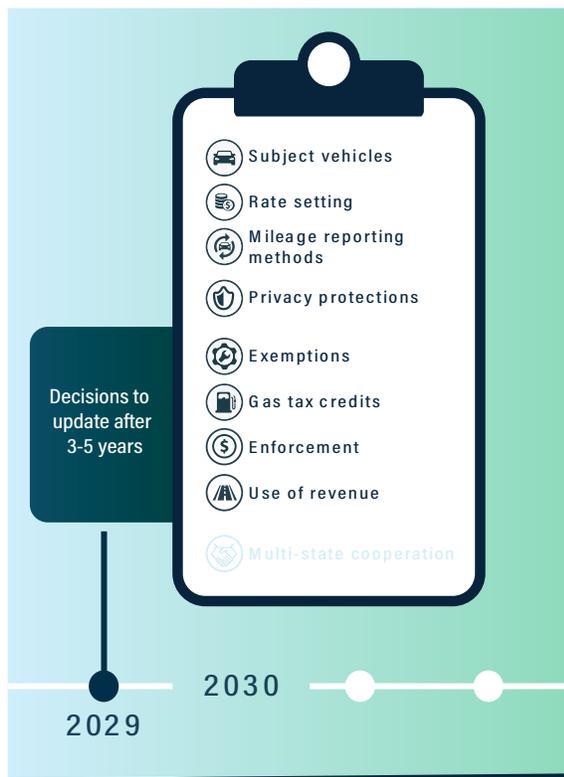


Privacy protection. As the program evolves, the privacy protections may likewise need to evolve. For example, enforcement of data protection provisions may need to be more consequential in a large-scale program that offers customers the option of automated vehicle data reporting, compared to an initial small-scale program relying on self-reported odometer readings. The Legislature can consult the Commission's body of research on this topic as it contemplates program revisions over the transition decade.



Rate setting. As with any fee, the RUC rate requires continual refinements as the program grows. This is especially critical in the transition decade as the revenue potential for the program grows. Examples of refinements include:

- > If the program starts with an annual cap, gradually increase the cap as EV adoption and program enrollment grow.
- > As caps are phased out, introduce rate discounts for high-mileage drivers above a certain threshold.
- > As enrollment extends to older vehicles more likely to have low-income owners, introduce an income-based rate discount or mileage exemption.
- > As Washington nears 100% ZEV sales, reduce or remove introductory ZEV discounts.



The Legislature will also need to determine whether it wants to assign authority for rate refinements to an independent agency such as the Commission. Regardless, ongoing analysis will inform these choices. To understand fiscal impacts of rate updates, the Legislature can leverage tools developed as part of the Commission's RUC research.

Over the course of the transition decade, as the size of the RUC program grows to include more vehicles and generate more revenue, other decisions will likewise grow in importance. These include exemptions, gas tax credits, enforcement, and use of revenue.



Gas tax credits. Research has highlighted the practicality of maintaining the gas tax for at least as long as outstanding motor vehicle fuel tax bonds. In addition to servicing debt, the gas tax serves as pre-payment toward RUC, which reduces the amount owners of internal combustion engine vehicles owe in RUC, reduces the cost of collecting RUC, and limits the motivation and impact of any customer attempts at evading RUC. However, once RUC extends to vehicles who pay more in gas taxes than they pay in RUC, the question arises of whether and how to address potential “over payment” of gas taxes relative to RUC owed. This question should be revisited toward the end of the transition decade should the Legislature decide to include vehicles with below average fuel economy in the RUC program.



Exemptions. Findings from Forward Drive have demonstrated the popularity and utility of offering a standard exemption for miles driven off road or out of state as a means of improving customer perceptions of fairness and reducing cost of administration. The Legislature could enact a standard exemption at the start but revisit it over time based on its performance. For example, if set low initially, the level of the standard exemption may need to increase over time if data reveal greater benefits to higher exemption levels. Alternatively, as lower-cost technology options become available to measure exempt driving more accurately with appropriate privacy protections in place, motorists may increasingly opt for automated reporting in lieu of standard exemptions. This trend may support reducing or eventually phasing out standard exemptions.



Enforcement. In the early years of a transition to RUC, the top strategy for enforcement is to encourage voluntary compliance through strong user experience design and customer communications. Other strategies include preserving flat vehicle fees (for EVs, PHEVs, and hybrids) and gas taxes (for internal combustion engine vehicles) as backstops against non-payment or under-reporting. In addition, if RUC is tied to tab renewals, failure to pay can lead to a lapsed vehicle license. In the early years, with little revenue at stake, compliance can be measured, and the effectiveness of the various techniques monitored. As enrollment and revenues grow toward the middle and end of the transition decade, the Legislature can revisit whether the program merits new or more stringent tools for encouraging and maintaining compliance.

Ongoing research informs policy and program decisions around administration and enforcement. Further work remains on establishing RUC standards in collaboration with other states which will enable the lowering of overall administrative costs and bring greater efficiency. Standards can improve enforcement across borders as well as the seamlessness of interstate travel under multi-state or a national RUC program.



Use of revenue. As the state RUC program grows through the transition period, monitoring RUC revenue collection levels and determining the distribution of those revenues will need to be addressed with each budget cycle, including consideration of such factors as city and county formula distributions, tribal distributions, and off-road account recipients.

Finally, toward the end of the transition decade, it will be critical to revisit how Washington's RUC program interfaces with programs and policies of other states.



Multi-state cooperation. Five states have enacted RUC programs as of 2023. By the end of the first decade of a RUC program in Washington, it is expected that many more states will have live programs, with some of them expected to be approaching maturity with several hundred thousand if not millions of vehicles. As these RUC programs grow across the country, the need for multi-state cooperation likewise grows. Collaborative research presents opportunities to reduce deployment costs, improve the user experience, and harmonize operational concepts across state lines. Completing this multi-state research within the first decade can position Washington for harmonization of its RUC policy and program with those of neighboring states.

The findings from the Forward Drive research program offer a clear pathway to begin RUC in Washington. The results offer a framework for launching a simple, low-cost program that builds on the Commission's 2022 recommendations, improves transportation tax equity, prioritizes public acceptance, and establishes a starting point for a decade-long transition toward a long-term transportation revenue solution.

EXHIBIT 4.2 Issue Prioritization During the Decade of Transition to RUC

