



Task 5 Summary Report

August 2022



Contents

1.	Introduction and Background	1
1.1.	Issues Emerging from Community Meetings	1
1.2.	Approach for Addressing Issues	2
2.	Top Priority Issues.....	5
2.1.	Impact on Drivers by Geography.....	5
2.2.	Impact on Low-Income Drivers.....	6
2.3.	Addressing Tourism Impacts	8
2.4.	Vehicle Weight.....	9
2.5.	Impact on Clean Vehicle Adoption	9
2.6.	Efficient Administration	11
2.7.	Enforcement.....	13
2.8.	Gas Tax Removal	14
2.9.	Road Tax Differentiation by Jurisdiction (Counties).....	15

Tables

Table 1:	Categories and Priorities of Key Issues	1
----------	---	---

Figures

Figure 1:	Process for Developing and Using Policy Research	3
Figure 2:	Process for Organizing Research in Final Report	4

1. Introduction and Background

Essential to program development, analysis of road usage charge (RUC) policy issues of importance to the state’s residents requires special focus. Work toward identification of the key issues for a prospective RUC program began with a 2016 Feasibility Study. Featuring limited engagement with stakeholders, the media, and the public, this study revealed 30 policy issues of note. The study identified many of these issues from research in other states, but local agencies independently raised most of them as issues for Hawaii to confront, along with new issues.

Feedback from the 14 RUC community meetings held across six islands in March, April and May 2019 threw into sharp relief the issues of greatest concern to the state’s residents. Through this direct communication process during community meetings, nine policy issues emerged as critically important to the residents of Hawaii.

This work plan outlines the approach and timeline for addressing the nine policy issues. This document intends for the written analyses of these policy issues to inform the recommendations made by HDOT’s administration to the state legislature.

1.1. Issues Emerging from Community Meetings

A document entitled Feedback from RUC Community Meetings (Appendix A-4) contains a full record of comments and questions received at the RUC Community Meetings across the state held in March, April, and May 2019. The document bundles similar comments and questions into topic areas that reveal the nine issues of greatest concern to residents of Hawaii.

While the community meetings clearly identified the key issues, the project team expects to continually refine them as new information surfaces. Further refinements will become necessary as new inputs come from the project steering group, the stakeholder advisory group, and additional contacts with the general public and its representatives.

Table 1 categorizes the key issues and prioritizes them based on a combination of feedback from the technical and communication work streams. The table gives higher priority to those issues most pressing for resolution to continue advancing and iterating RUC as an emerging revenue generation concept.

Table 1: Categories and Priorities of Key Issues

PRIORITY LEVEL	POLICY ISSUE
1	Geographic impacts of road usage charges
	Impacts of road usages charges on low-income households
	Impacts of road usages charges on visitors and tourists
2	Treatment of heavy vehicles under a RUC system
	Treatment of clean vehicles under a RUC system
	How a RUC system could be administered efficiently
3	Optimal enforcement of a RUC system
	Transition from a gas tax to a RUC
	Differentiation of governmental jurisdictions for a RUC program

1.2. Approach for Addressing Issues

The project team approached each issue on an individual basis depending upon on the requirements to fully address it. Some issues required extensive data analysis to reveal the precise context in Hawaii, while others required policy analysis based on existing polices and law in the state, and some issues required both data and policy analysis.

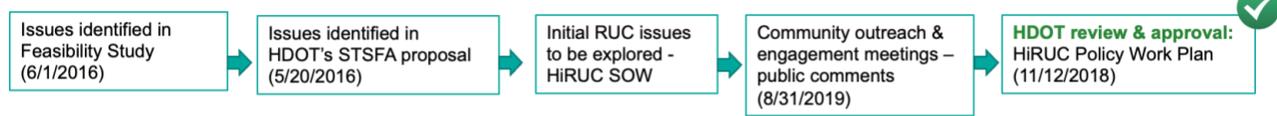
This document generally follows the steps below to determine the unique approach to analysis for each issue.

- ▶ **Define the issue.** Defining the issue begins with an explanation of the concern, why and how it is relevant to RUC in Hawaii, and what is at stake if the issue goes unaddressed.
- ▶ **Analysis approach.** Analytical approaches may be qualitative or quantitative, or both, depending upon the issue. Qualitative analysis may include legal research, case studies, and comparisons. Quantitative analysis include economic, geo-spatial, and financial. The project team may need to gather data from available public sources, the pilot project itself, or from proprietary sources. The project team will then deploy the analysis method an issue merits.
- ▶ **Develop alternatives.** Aligned with the analysis, the project team will propose a list of the policy alternatives for addressing each issue. For most policy issues, the analysis will compare alternatives against a default scenario of “do nothing.”
- ▶ **Engage with stakeholders.** To maximize the impact of the policy analysis, the project team will engage with HDOT and, as appropriate, the stakeholder advisory group for feedback on the analysis and alternatives. For any given issue, researchers will work with HDOT to determine whether the issue merits making a recommendation.

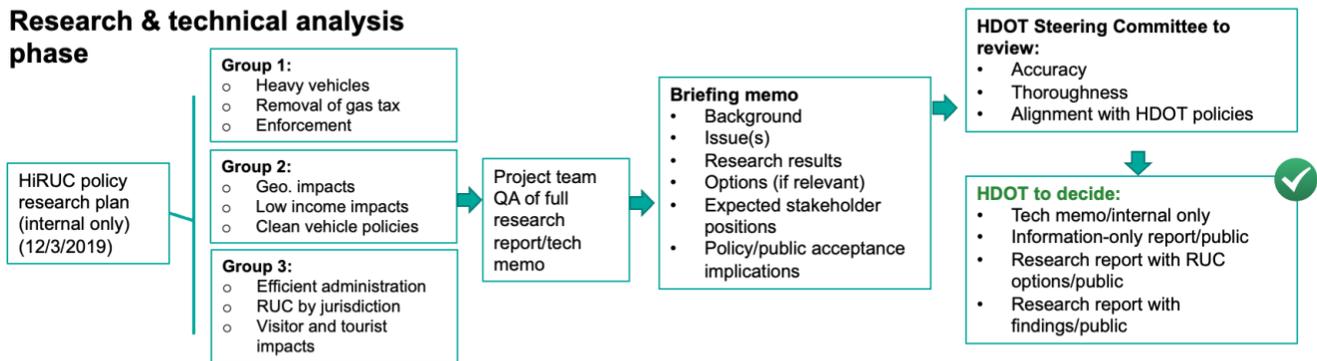
As illustrated in Figure 1, HDOT and the HiRUC project team followed a careful process to select topics, develop research and findings, vet the findings with HDOT administration, internal stakeholders including HDOT’s RUC Steering Committee, and external stakeholders including the RUC Advisory Group, before incorporating the most accurate, thorough, relevant findings into the final report (Volume 1).

Figure 1: Process for Developing and Using Policy Research

Issue identification phase



Research & technical analysis phase

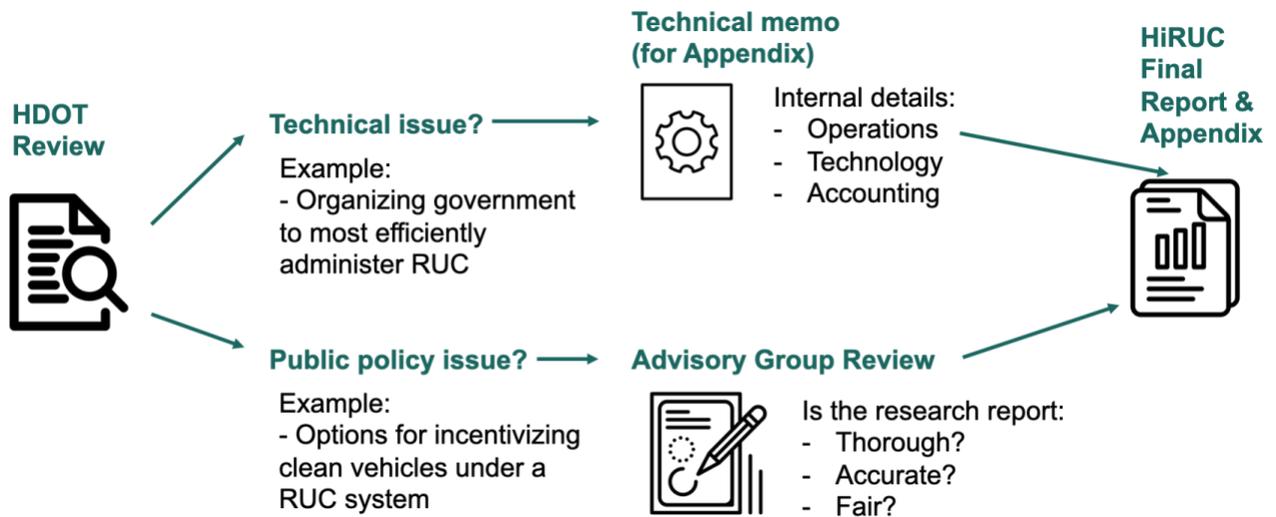


Stakeholder feedback, calibration and finalization phase



At the conclusion of the research, HDOT made decisions, with input and guidance from the Steering Committee, about how to present the analysis and findings of the extensive policy, organizational, administrative research undertaken. Figure 2 summarizes the process followed for filtering and categorizing issues. First, issues were identified as either “technical” (administrative) or “public policy” (policy) issues. Those issues related to public policy were vetted with the Advisory Group and relevant stakeholders, often on a one-on-one basis. Those policy issues that were fully vetted are included as Appendix D, with key findings incorporated into the final report (Volume 1). Those issues related to internal functions such as RUC operations, accounting, and organizational design, were vetted internally with relevant HDOT staff and partner agencies. The assessment of administrative issues can be found in Appendix E, with key findings incorporated into the final report (Volume 1).

Figure 2: Process for Organizing Research in Final Report



The remainder of this report outlines the detailed process and methodology developed and followed for the policy issues, the results of which can be found in Appendix D.

2. Top Priority Issues

2.1. Impact on Drivers by Geography

2.1.1. Definition of the Issue

Upon considering the potential effect of a road usage charge on personal driving routines, a significant number of rural drivers without transit options, or those drivers who drive long distances for personal or business reasons, view their personal situation as disadvantaged by a charge based on distance traveled. Comments from the community meetings indicate they regard their driving as necessary and regard payment of a RUC as a penalty. It is not apparent that drivers in this situation compare the amount they would pay for RUC against the amount they already pay in gas tax for the same amount of driving. The overall effect of RUC on rural or other long-distance driving in Hawaii is unknown.

2.1.2. Relevance to RUC

Analysis conducted in other states¹ indicates that on average, rural residents drive only slightly more than their urban counterparts. Even though the average trip distance tends to be farther, rural drivers make fewer trips than those living in urbanized areas. Recent analysis of registered vehicles in Hawaii conducted for the HDOT feasibility study in 2016 showed that fuel economy for rural drivers tends to be lower, resulting in rural drivers paying more for every mile driven in gas taxes (see Section 8, beginning on page 104 for more detail).

If a RUC is implemented, drivers would no longer have to pay the state gas tax, so their travel costs would be lessened by that amount. A RUC that replaces the state gas tax may be slightly less, about the same, or slightly more than the state gas tax, depending on the fuel efficiency of the vehicle, and how the RUC rate is set. No driver would pay both the RUC and the gas tax.

The overall effect of RUC on the economics of road funding depends upon the rate structure established for RUC. If the legislature chooses a revenue-neutral rate, the advantage of RUC at first will be negligible but RUC will prove better for the state than the gas tax over time as the fleet's average fuel efficiency improves with the expected greater use of all-electric vehicles.

The personal financial effect of RUC replacing the gas tax will vary based upon the vehicle type an individual motorist currently uses and the rate structure for RUC. If a motorist drives a fuel-efficient vehicle, the motorist may pay more than the motorist now pays in gas tax for the same driving but the effect may not be large. On the other hand, if a motorist drives a fuel-inefficient vehicle, the motorist may pay less than the motorist now pays in gas tax for the same driving. Under a RUC rate comparable to the state gas tax, if a driver owns a vehicle that gets less than 22 miles per gallon, that driver would pay less under a RUC scenario. If a driver owns a vehicle that gets more than 22 miles per gallon, that driver would pay more in RUC as compared to the state fuel tax.

2.1.3. Analytical Approach

The approach should analyze two outcomes: one, the overall effect of RUC on long-distance driving, and, two, the effect of RUC on individual drivers based on vehicle choice. Since no one can predict the

¹ See: "Road Usage Charge Assessment: Financial Implications for Urban and Rural Drivers," Washington State Transportation Commission, January 2015.

exact RUC rate that would be used if RUC is adopted in Hawaii, both analyses should apply a revenue neutral rate that is comparable to the existing gas tax rate. This will align with the HiRUC pilot project simulation of a replacement of the current 16 cents per gallon state fuel tax with a per-mile RUC. Revenue-neutral means the average person currently pays 16 cents per gallon for driving on the state's road system and drives a car that gets about 22 miles per gallon. A driver paying RUC will not pay the gas tax, so this average driver would not pay the \$72 in state fuel tax, but would pay \$72 in RUC, and would not see any change in the overall cost if the vehicle's fuel efficiency is at the state's average of 22 miles per gallon.

The overall effect of RUC on long-distance driving has been studied extensively by other states and RUC West. Rather than repeat these analyses, the analysis should update the most relevant of these analyses specifically applied to example in Hawaii. This analysis should compare miles driven and MPG by ZIP code, including estimates of gas taxes versus RUC for all vehicles, producing averages and distributions of the comparison, by ZIP code.

To illustrate the effect of RUC on individual drivers based on vehicle choice, the analysis should compare different individualized impacts of RUC based on an assortment of vehicles commonly used by rural and other long-distance drivers. This analysis should compare an assortment of individuals driving from specific rural areas to urban areas and individuals driving along several specific travel routes (town/city to city) with longer than average distance or travel time.

2.1.4. Alternatives

The analysis should present options for addressing the effects of long-distance driving by policy choices. Such alternatives include capping the number of miles for which RUC can be charged annually, providing discounted rates or tiered rates for mileage above certain levels, or providing discounts or exemptions based on residence location. The analysis shall also offer methods for communication of the findings to help ameliorate the described concerns and rectify any misconceptions.

2.1.5. Stakeholders Relevant to Issue

In doing this analysis, gathering information from stakeholder groups related to rural and suburban communities such as Rotary Clubs, Maui County, Hawaii County, Oahu MPO and Maui MPO and certain neighborhood boards may yield appropriate relevant information as well as open potential communication portals. The viability of the various communication portals, such as media outlets, should be presented in the analysis. The writer of this paper should have actual, direct contact, in-person, if feasible, with organizations associated with residents who have expressed concern about geographic impacts of RUC, such as Maui County, Hawaii County and City and County of Honolulu.

2.2. Impact on Low-Income Drivers

2.2.1. Definition of the Issue

The impact of RUC on low-income households recurs frequently as an issue in states that have studied RUC. Similar to analysis of rural drivers, studies suggest that on average, low-income drivers may actually pay less under a per-mile system, depending on the age of their vehicle. If this presumption holds, the real issue involves communicating an impactful message to this community of drivers.

2.2.2. Relevance to RUC

If a RUC is implemented, low-income drivers would no longer pay the state gas tax, so their travel costs would be lessened by that amount. A RUC that replaces the state gas tax may be slightly less, about the same, or slightly more than the state gas tax, depending on the fuel efficiency of the vehicle, and how the RUC rate is set. No driver would pay both the RUC and the gas tax.

The personal financial effect of RUC replacing the gas tax will vary based upon the vehicle type an individual motorist currently uses and the rate structure for RUC. If a motorist drives a fuel-efficient vehicle, the motorist may pay more than the motorist now pays in gas tax for the same driving but the effect may not be large. On the other hand, if a motorist drives a fuel-inefficient vehicle, the motorist may pay less than the motorist now pays in gas tax for the same driving. Under a RUC rate comparable to the state gas tax, if a driver owns a vehicle that gets less than 22 miles per gallon, that driver would pay less under a RUC scenario. If a driver owns a vehicle that gets more than 22 miles per gallon, that driver would pay more in RUC as compared to the state fuel tax.

Since low-income drivers tend to drive older, less fuel-efficient vehicles, more low-income drivers would tend to benefit from paying RUC instead of the gas tax. The analysis will entail illustrating and communicating this tendency to low-income drivers and their advocates in an effective way.

2.2.3. Analytical Approach

The analytical approach should include assessment of the magnitude and nature of the impact of RUC on low-income drivers, and assessment of various policy interventions to address any concerns, whether packaged as part of the RUC policy itself or addressed elsewhere in state policy, such as periodic payments for RUC and other vehicle fees. More detailed analysis should be conducted of driving distances and patterns of Hawaii residents, using an updated VIN analysis by ZIP code and information from pilot surveys, and the potential effects (positive and negative) of transitioning away from the gas tax in favor of a per-mile charge. Such data and opinions should be gathered and analyzed from the HiRUC pilot project.

2.2.4. Alternatives

Examination of policy alternatives may include the systemic effects and relative benefits of tax credits for drivers below a designated level of income. It will also be necessary to explore alternatives for communicating the outcomes from the analysis to low-income drivers, including community meetings and meetings with organizations representing low-income people.

2.2.5. Stakeholders Relevant to Issue

In doing this analysis, gathering information from stakeholder groups such as Appleseed, a low-income advocacy group, members of the stakeholder advisory group, and certain neighborhood boards may yield appropriate relevant information as well as open potential communications portals. The viability of the various communications portals, such as media outlets, should be presented in the analysis. The writer of this paper should have actual, direct contact, in-person, if feasible, with organizations focused on the tax impacts on persons with low-income, such as Appleseed, and certain members of the stakeholder advisory group,

2.3. Addressing Tourism Impacts

2.3.1. Definition of the Issue

Residents of Hawaii demonstrate concern about the applicability of RUC to tourists and visitors. Some have suggested that tourists should perhaps even pay a higher rate per mile for their discretionary travel. It would be simple for the legislature to apply RUC to tourists and visitors. Rental cars and taxis have owners who can pay a RUC. Technically, to remain consistent with the Commerce Clause, such charges must apply regardless of whether the vehicles are used by locals or visitors. Whether these owners pass the RUC cost on to their customers is a business decision for them to make. Should the legislature so desire, a higher RUC rate could be applied to rental cars and/or taxis, just as a daily \$5 surcharge is already applied to rental and tour vehicles in the state to support highway funding.

2.3.2. Relevance to RUC

Hawaii likely has a higher proportion of miles driven by out-of-state visitors (as measured by rental car use) than most other states. Presently, out-of-state visitors pay gas tax when they fuel their rental vehicles. The most effective way to ensure they continue to pay their share for the upkeep of Hawaii's roads under a RUC system is to ensure that rental car agencies accurately report and pay RUC. Under a RUC, the collection of the per-mile charge would most likely fall on the rental car agencies to pay RUC periodically to the state at the time of vehicle registration or inspection, just like all other vehicles. Rental car agencies could then either pass the cost of the mileage charge on to their customers directly, or indirectly by incorporating this new cost into their prices. In either case, in order for this aspect of RUC to be resolved, it is essential to work with rental car agencies to ensure that this important and sizeable component of statewide VMT is appropriately captured by a RUC system.

2.3.3. Analytical Approach

Addressing how tourists will pay RUC requires identification of policies to ensure that visitors pay their fair share. The approach should analyze rental fleet contributions to tourism, combining study of the magnitude of the impact of RUC on visitors and tourism, the current mechanisms for visitors to contribute to road funding, and analyzing the challenges and relative performance of the various alternatives financially and administratively.

2.3.4. Alternatives

Identify operational alternatives for addressing visitor contributions under a RUC, including testing of some options as part of the demonstration. Due to the COVID-19 pandemic, testing RUC with rental vehicle fleets proved infeasible. However, the Technology Test Drive did include testing with several fleets to learn more about the business needs of commercial fleets.

2.3.5. Stakeholders Relevant to Issue

In doing this analysis, gathering information from stakeholder groups related to tourism such as Hawaii Tourism Authority, the Department of Business, Economic Development and Tourism, the Chamber of Commerce of Hawaii, as well as Maui County and Kauai County (from which specific comments during community meetings were offered), Rotary Clubs and certain neighborhood boards may yield appropriate relevant information as well as open potential communications portals. Ideally at least one rental car agency can also provide input. The viability of the various communications portals, such as media outlets, should be presented in the analysis. The writer of this paper should have actual direct contact, in-person, if feasible, with organizations with a strong interest in tourism and its impacts, such as Hawaii Tourism Authority, the Department of Business, Economic Development and Tourism and the Chamber of Commerce of Hawaii.

2.4. Vehicle Weight

2.4.1. Definition of the Issue

Residents of Hawaii have suggested that RUC should have a weight component so that heavier vehicles would pay more than lighter vehicles, inferring that heavier vehicles do more damage to the roads and bridges than lighter vehicles. Some proposed raising the weight tax instead of a RUC while others opposed such an idea.

2.4.2. Relevance to RUC

Whether the state should replace the gas tax with a RUC or an increase in the existing weight tax is a policy decision for the state legislature. The weight tax, however, is not a usage fee and therefore is unlike the gas tax. RUC is a usage-based fee like the gas tax. The weight tax and RUC could be merged into a weight-based RUC.

As for the distinction between heavy, commercial vehicles and light passenger vehicles, it is likely they would be treated differently by the legislature. Most states have applied RUC only to passenger vehicles weighing less than 10,000 lbs. For example, Oregon, the only state with both a passenger vehicle and heavy vehicle distance-charge program, applies a weight factor only for vehicles greater than 26,000 lbs. and applies only a diesel tax for heavier vehicles between 10,000 lbs. and 26,000 lbs. Passenger vehicles less than 10,000 lbs. have negligible pavement impacts, so other states have decided it is not worth the effort to create weight-based RUC rates. Hawaii can follow Oregon's lead on the weight factor or can plot its own course on the idea of merging the weight tax with RUC.

2.4.3. Analytical Approach

The approach should consider how different RUC systems for heavy, commercial vehicles and light passenger vehicles could be structured and the impact of the effect of separate RUC systems, including the burdens heavy and light vehicles have on the state's highway system.

2.4.4. Stakeholders Relevant to Issue

In doing this analysis, gathering information from stakeholder groups related to trucking such as Hawaii Transportation Authority (the trucking industry), the Chamber of Commerce of Hawaii and those with a strong interest in the policies related to all types of vehicular travel such as AAA may yield appropriate relevant information as well as open potential communications portals. The viability of the various communications portals, such as media outlets, and these groups should be presented in the analysis. The writer of this paper should have actual, direct contact, in-person, if feasible, with organizations with a strong interest in the fairness of the road tax system, such as Hawaii Transportation Association (trucking industry), the Chamber of Commerce of Hawaii and AAA.

2.5. Impact on Clean Vehicle Adoption

2.5.1. Definition of the Issue

Transitioning Hawaii's ground transportation fleet from low MPG internal combustion engine vehicles to high MPG vehicles running on alternative fuels is an important strategy for supporting Hawaii's statewide energy policy goals. Gasoline powered vehicles with highly fuel-efficient engines, hybrid gas-electric vehicles (HEVs), plug-in electric vehicles (PEVs), and potentially hydrogen fuel cell vehicles (FCVs) are all expected to help reduce fuel consumption.

Accordingly, a common question among Hawaii's residents is whether RUC will be a barrier (or disincentive) for people to buy plug-in electric vehicles (EVs). Under RUC, EV owners would be required to pay something "new," a cost that they do not have to pay today. If RUC dampens consumer adoption of EVs to a significant extent, this could jeopardize Hawaii's 2045 energy independence goal.

2.5.2. Relevance to RUC

While advanced vehicle technologies are vital to achieving Hawaii's clean energy goals, the expected reduction in gasoline and diesel consumption exposes a flaw in the current method of funding roadways, which depends on liquid fuel being sold and taxed. As fuel economy improves, per-mile consumption of gasoline is expected to drop by 50% or more by 2045. The preferred solution is to change the architecture of transportation funding, so that advancements in transportation energy policy do not have an unintended detrimental impact on surface transportation system maintenance.

In the U.S., there is a perception that the gas tax is an important tool for reducing petroleum use, because the tax increases the total per-gallon price paid by consumers at the pump, thereby discouraging driving. However, the U.S. Energy Information Administration (EIA) calculates a price elasticity of gasoline consumption at -0.02, meaning the price of gasoline would have to change by 50% in order to effect travel demand (how much people drive) by 1%.² In Hawaii, the effective gas tax rate averages 32 cents per gallon (state plus county), which equates to 12% of the current price paid by consumers at the pump.³ Thus, current price signals attributable to Hawaii's gas tax (32 cents) are likely too weak (low) to significantly impact the number of miles driven. The EIA has drawn a similar conclusion.

Nationally, some electric vehicle (EV) advocates have argued that a per-mile charge that applies the same per-mile rate to all vehicles, regardless of engine or fuel type, could discourage purchases of EVs. The same logic could be applied to other highly-efficient vehicles. The premise of this argument is that RUC negates an important consumer incentive to purchase alternative fuel and other high MPG vehicles: avoidance of gas taxes. However, as described above, current gas taxes are unlikely to be a strong determinant in driving behavior. To the extent potential EV buyers make purchase decisions based on operating cost savings, the majority of operating cost savings between conventional vehicles and EVs is due to reduced routine maintenance costs, followed by the commodity price advantage of electricity over gasoline. If an EV driven 72,000 miles over the course of six years paid a per-mile fee equivalent to the average state and county gas taxes in Hawaii, this would add about \$1,000 to total operating costs over six years, representing an increase of 9% to the EV driver. The EV would still maintain a 30% operating cost advantage over the gas vehicle.

The current reliance on fuel taxes to pay for the largest share of roadway maintenance costs puts transportation funding needs at odds with broader energy and environmental policy goals. Under the current tax system, policies to promote petroleum reduction and use of alternative fuels undermine stable gas tax revenue to fund the transportation system. A per-mile fee can bring transportation funding into better alignment with energy and environmental policies in Hawaii.

² "Gas prices tend to have little effect on demand for car travel", Today in Energy, Energy Information Administration, U.S. Department of Energy, December 15, 2014. Accessed at: <https://www.eia.gov/todayinenergy/detail.cfm?id=19191>.

³ According to the American Automobile Association, the average retail price of gasoline in Hawaii was \$2.63 cents as of February 4, 2016. See: www.fuelgaugereport.aaa.com.

Some models⁴ have shown that per-mile charges may help drivers conserve trips, even if the total tax paid remains at the same level as the gas tax, since consumers have more direct information about their actual cost of driving. A public demonstration project could test this hypothesis.

2.5.3. Analytical Approach

The approach will research potential impacts of RUC on people who already own EVs and other fuel efficient cars and on the future purchases of such cars. To explore how RUC might impact future car buyers – specifically, whether car buyers would avoid purchasing an electric vehicle because it, too, would be subject to paying RUC, this analysis will review consumer adoption rates for EVs, obtain feedback from EV owners in Hawaii, and gather information from car buyers in Hawaii to understand factors related to EV purchasing decisions. A field test of RUC combined with stated-preference surveys of vehicle owners in Hawaii could help to determine the extent to which per-mile fees are a factor in vehicle purchasing decisions.

2.5.4. Alternatives

Determine the range of options the state could consider in designing a “user pays” road funding policy that provides sufficient, sustainable revenue, while supporting continued consumer adoption of cleaner cars. The intent is to present a range of policy options for elected officials to consider. These options could include EV purchase incentives to lower the initial acquisition cost of EVs for consumers, offering a discount on vehicle registration fees or per-mile fees, or, alternatively, higher fees for gas-powered, low fuel economy vehicles.

2.5.5. Stakeholders Relevant to Issue

The analysis should include specifically engaging stakeholders on this issue to identify specific concerns as well as opportunities to align RUC and energy policy in the state. Gathering information from stakeholder groups with strong interests in environmental policies such as Blue Planet, Sierra Club, Hawaii Green Growth and Uluono (an environmental nonprofit) and other groups interested in passenger vehicle travel generally such as the AAA and the auto dealers may yield appropriate relevant information as well as open potential communications portals.. Residents of the counties of Maui, Kauai and Hawaii have also expressed personal strong interest in this issue. The viability of the various communications portals, such as media outlets, and these groups should be presented in the analysis. The writer of this paper should have actual, direct contact, in-person, if feasible, with organizations a strong interest in clean vehicle adoption, such as Blue Planet, Uluono, Hawaii Green Growth and AAA.

2.6. Efficient Administration

2.6.1. Definition of the Issue

Of concern to residents of Hawaii is whether a road usage charge can be administered in a cost-effective way. They note that collecting a fee based on distance traveled would be more labor intensive, with more government contacts, than collecting the fuel tax.

⁴ C.f., “An Evaluation of National Road User Charging in England,” Stephen Glaister, Transportation Research Part A: Policy and Practice, Vol. 39, Issues 7-9, November 2005.

2.6.2. Relevance to RUC

In order to calculate the proper RUC owed for each vehicle, the agency that manages vehicle data is a critical part of the administration. The presumption is that an agency within Hawaii state government would conduct most administrative duties for collecting RUC, including management of vehicle data, but that private firms with special expertise might also have a role to play. In a proposal for RUC to replace the gas tax, HDOT will include recommendations in the final report that RUC revenue collected would be treated in the same manner as the gas tax is today: placed into the State Highway Special Fund where the money can only be spent on State roadways; program costs would be examined and money appropriated by the legislature; and all revenues and expenditures would be audited by the state auditor. The relative administrative costs of collecting RUC will determine the net revenue available for the road system.

2.6.3. Analytical Approach

This analysis should specifically focus upon collection costs of a road usage charge. These costs are likely to be higher than cost associated with collecting fuel taxes in Hawaii, which is among the lowest of taxes and fees. The analysis should include data from the demonstration and the pilot and conduct of an organizational assessment.

Several variables influence the cost of collecting road usage charges, such as how vehicle owners report mileage (e.g., through safety check versus in-vehicle technology, smartphone apps, or other methods), how often it is collected (e.g., annually vs. quarterly), and how many vehicles are subject to the charge. This analysis should be conducted in parallel with the demonstration phase of the pilot project in 2020 and 2021, and will feed into the research report containing recommendations to the legislature.

2.6.4. Alternatives

The RUC collection cost research should examine which governmental agency would be involved, and whether reorganization, establishment of a new office, or procurement of additional services may be required as well as additional oversight and/or verification of funds and expenditures to capture public confidence in the RUC system. Potentially affected agencies outside of HDOT will be involved in these discussions as part of this study.

2.6.5. Stakeholders Relevant to Issue

In doing this analysis, gathering information from stakeholder groups with an interest in the administrative efficiency of RUC collection such as the Department of Taxation, City & County of Honolulu, Tax Foundation, and the counties of Maui, Kauai and Hawaii (residents of which specifically raised this issue in community meetings), may yield appropriate relevant information as well as open potential communications portals. The viability of the various communications portals, such as media outlets, and these groups should be presented in the analysis. The writer of this paper should have actual, direct contact, in-person, if feasible, with organizations with a strong interest in the efficiency of gas tax systems, such as those listed above.

2.7. Enforcement

2.7.1. Definition of the Issue

One of the central points of HDOT's research of RUC for Hawaii is how to ensure the correct reporting of an odometer reading, including detection of odometer fraud. Once assessed, the vehicle owner would have an obligation to pay RUC whether or not they sell or abandon the vehicle during the next year.

Getting a vehicle safety check is a matter of individual responsibility that each vehicle owner has under their control. If someone is late getting a vehicle safety check, this could result in a slightly higher RUC payment than if the driver had it done on time, and the next year's RUC would be that much less as a result.

2.7.2. Relevance to RUC

RUC operations include three basic elements: reporting of distance traveled by motorists, fee collection, and enforcement. The State of Hawaii already has systems in place that do all three of the following things in one form or another:

- ▶ Mileage reporting occurs as part of the annual vehicle inspection process, when safety inspectors record vehicle odometer readings.
- ▶ Fee collection from motorists occurs in at least two instances annually: between customers and safety inspectors, and between customers and county DMVs for vehicle registration.
- ▶ Enforcement by county police of driving and vehicle safety laws, including requiring proof of valid inspection and registration.

Demonstrating the operational feasibility of RUC, then, may seem simple, given the existence of these three elements. Even so, a functional RUC system must integrate these three activities into a single program while still respecting policy preferences that may emerge from the design of the program.

2.7.3. Analytical Approach and Alternatives

Maximizing enforcement starts with making compliance as simple and easy as possible for the greatest number of vehicle owners. The research should explore opportunities for maximizing voluntary compliance. For those who are not voluntarily compliant, the research should also explore options for enforcing RUC in an odometer-based or technology-based system and scenarios specific to the state of Hawaii. Some specific situations expressed in community meetings, such as junked cars, change in ownership, etc., will need to be examined to determine appropriate policies for new or modified enforcement legislation and policies for each way that RUC could be implemented in Hawaii.

2.7.4. Stakeholders Relevant to Issue

In doing this analysis, gathering information from stakeholder groups with an interest in the enforcement of RUC collection such as Tax Foundation and City & County of Honolulu may yield appropriate relevant information as well as open potential communications portals. The viability of the various communications portals, such as media outlets, and these groups should be presented in the analysis. The writer of this paper should have actual, direct contact, in-person, if feasible, with the Tax Foundation and City & County of Honolulu.

2.8. Gas Tax Removal

2.8.1. Definition of the Issue

Hawaii will likely encounter skepticism around the notion of RUC as a replacement for the gas tax, along the lines of, “elected officials never do away with a tax.” There is also concern about the burden of transitioning from incremental gas tax payments to periodic lump-sum RUC payments. A related concern is that even if RUC replaces the gas tax, retail gas stations will not necessarily lower their prices in any amount equal to the gas tax – they may be tempted to keep their prices at the previous level to increase their profits.

2.8.2. Relevance to RUC

Gas tax revenue is one of the largest contributors to the State Highway Fund (30%), but gas tax revenues are flattening, and are expected to decline into the future.

Because the gas tax is levied as a fixed amount per gallon, it:

- ▶ Does not rise and fall with the price of fuel
- ▶ Does not keep pace with inflation
- ▶ Declines on a per-mile basis as vehicles become more fuel-efficient. Even if VMT increases, it is expected gas tax revenues will decrease.

A mileage-based charge stabilizes revenue by tying transportation revenue to road use, not gallons of gas consumed.

- ▶ Revenue for road maintenance stabilizes even as the fleet becomes greener, harmonizing transportation and energy policy
- ▶ The per-mile rate need not be increased to account for declining fuel consumption
- ▶ Like electricity and water utilities, drivers would pay based on their use of Hawaii’s road system

2.8.3. Analytical Approach

This research should begin with assumptions about what a future system might look like, and how it could potentially be implemented. The first assumption is that the state (and counties, if they choose to participate), would fully not apply a road usage charge and a gas tax to any vehicle at the same time. Switching from the old system (gas tax) to a new system (road usage charge) would thus help stabilize road funding at current levels. Failure to switch to something new will eventually lead to a significant loss of road funding, estimated in the 2016 HDOT feasibility study at approximately 35% less revenue per mile than what the gas tax generates today. Therefore, changing the way Hawaii drivers pay for roadways, while not increasing revenue, will avoid a shortfall of revenue in the future.

In the future, if RUC replaces the gas tax, there would be no economic justification for retail fuel stations to keep prices of gasoline artificially high in order to maximize their profits. Academic research has found that fuel tax increases and decreases are passed on as either additional costs or as savings “on average fully and immediately” to consumers. See, for example, “Fuel Tax Incidence and Supply Conditions” by Justin Marion and Erich Muehlegger, National Bureau of Economic Research Working Paper 16863 (<https://www.nber.org/papers/w16863.pdf>). At least one state that brought legal action against companies that tried to keep prices artificially high in order to gouge consumers (the state received a large settlement for consumers). This research should explore further the legal consequences of artificial price supports following a removal of the gas tax. This research should also

explore the unique fuel distribution supply chain in Hawaii and whether accepted notions of fuel tax pass-through phenomena apply in places like Molokai and Lanai which feature little if any retail fuel price competition.

2.8.4. Alternatives

This issue merits analysis of alternative approaches to whether or how to use RUC as replacement to gas taxes. An alternative, for example, may be that RUC replaces the fuel tax only for vehicles with fuel-efficiency ratings above the mid-point where the RUC payment and the fuel tax payments are the same and maintain the fuel tax for vehicles below the mid-point. This would avoid the state losing revenue by imposing RUC on vehicles for which RUC payments would be less than fuel tax payments over the same period. Rather, than drop the price of the fuel for lack of a fuel tax (because there would still be a fuel tax for many years until the low fuel-efficiency vehicles increase MPG to above the former mid-point) under this scenario, a gas tax credit or offset would have to be maintained. As an aside, the research may investigate comparisons of support for RUC over the fuel tax based on ownership of vehicle type.

2.8.5. Stakeholders Relevant to Issue

In doing this analysis, gathering information from stakeholder groups with an interest in road funding issues such as the Department of Taxation and Chamber of Commerce of Hawaii may yield appropriate relevant information as well as open potential communications portals. The viability of the various communications portals, such as media outlets, and these groups should be presented in the analysis. The writer of this paper should have actual, direct contact, in-person, if feasible, with organizations which should have concern about the individual taxpayer burden of an annual gas tax payment, such as AAA and Appleseed.

2.9. Road Tax Differentiation by Jurisdiction (Counties)

2.9.1. Definition of the Issue

Some residents of Hawaii, and the counties themselves, have expressed interest in the implications of RUC for Hawaii's counties.

2.9.2. Relevance to RUC

State statute defines the process for collecting county-level taxes, but refers to county-level ordinance as the mechanism to define the rate per gallon. If one or more counties wished to switch from gas tax to RUC, three issues would need to be addressed:

- ▶ State statute would need to be updated to provide the flexibility for counties to opt in to RUC.
- ▶ Counties would need to set their own per-mile rate by ordinance.
- ▶ Counties and the state would need to agree on whether to apply county-level RUC rates to vehicles regardless of the county in which they are located at the time of mileage reporting and payment, or whether to apply their "home county" per-mile rate. This is not currently an issue with fuel tax, since the tax is imposed on distributors based on where fuel is to be sold.

2.9.3. Analytical Approach and Alternatives

This research should analyze driving in the automated pilot for usage in the counties to determine how switching to RUC from a gas tax may impact counties and whether the counties may want to consider opting for RUC instead of the county gas tax.

2.9.4. Alternatives

This research should examine the various options for how a county could opt into RUC instead of the county gas tax.

2.9.5. Stakeholders Relevant to Issue

In doing this analysis, gathering information from stakeholder groups with an interest in funding of county roads such as AAA, Department of Taxation, and all the counties with county gas taxes may yield appropriate relevant information as well as open potential communications portals. The viability of the various communications portals, such as media outlets, and these groups should be presented in the analysis. The writer of this paper should have actual, direct contact, in-person, if feasible, with organizations with strong interest in county gas taxes, such as AAA, the counties of Maui, Kauai and Hawaii, and the City and County of Honolulu.