Utah’s Road Usage Charge Program

Cameron Kergaye, PhD, PE
Director of Research & Innovation

March 22, 2022
Welcome to Utah’s Road Usage Charge Program

The Future of Utah Transportation
Operated by emovis®
<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003/2004</td>
<td>Legislative Transportation Planning Task Force discussed mileage-based funding</td>
</tr>
<tr>
<td>2015</td>
<td>HB 362 directed UDOT to continue studying mileage-based revenue system</td>
</tr>
<tr>
<td>2017</td>
<td>Task Force on Transportation Governance &amp; Funding (created by SB 174)</td>
</tr>
<tr>
<td>2018</td>
<td>SB 136 created RUC program parameters &amp; established an Advisory Comm.</td>
</tr>
<tr>
<td>2019</td>
<td>SB 72 created framework to start an on-going RUC program in January 2020</td>
</tr>
<tr>
<td>2020</td>
<td>SB 150 set a 2031 target date &amp; required a plan for enrolling all vehicles in RUC</td>
</tr>
<tr>
<td>2022</td>
<td>HB 186 adjusted RUC eligibility and fees</td>
</tr>
</tbody>
</table>
Road Usage Charge Systems

State Agencies
- Eligible Vehicles
- Operational Structures
- Data Security
- Enforcement & Disputes
- Public Outreach

Legislature
- Key Champions
- Revenue Alternatives
- Legislation & Governance
- Privacy Protections

Public
- Stakeholders
- Tech Choices
- Privacy
- Outreach
- Education

Welcome to Utah’s Road Usage Charge Program
Road Usage Charge System - Design Elements

Technology
- Telematics
- OBD-II/Phone App

Privacy
- Flat Fee or RUC
- Data Retention
- Data Distribution
- User Agreement

Vehicle Types
- Electric (EV)
- Plug-in (PHEV)
- Gas Hybrid

Enrollment
- Online
- VIN
- Odometer Capture
- DMV Interface
- Registration Holds

Comm Acct Mgr
- Prepaid Wallet & Cap
- Credit/Debit Card
- Monthly Statement
- User Options
- App Interface
Road Usage Charge Program Enrollment Growth

Cumulative Vehicle Enrollment

Key
- EV
- PHEV
- Gas Hybrid

BY JULY 2021, THERE WERE A TOTAL OF 3,895 Vehicles Enrolled

- EV: 1,973
- PHEV: 540
- GAS HYBRID: 1,382

* 77% of 2021 growth is attributable to EVs.
Alternative Fuel Vehicles Eligible for Utah’s Program

Option A
Owners of alternative fuel vehicles pay annual flat fee, intended to offset lost fuel tax revenue. (Starting Jan 2019)

<table>
<thead>
<tr>
<th>Year</th>
<th>EV</th>
<th>PHEV</th>
<th>Gas Hybrid</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>$60</td>
<td>$26</td>
<td>$10</td>
</tr>
<tr>
<td>2020</td>
<td>$90</td>
<td>$39</td>
<td>$15</td>
</tr>
<tr>
<td>2021+</td>
<td>$120</td>
<td>$52</td>
<td>$20</td>
</tr>
</tbody>
</table>

Option B
Owners of alternative fuel vehicles enroll in RUC program and pay 1.5 cents per-mile fee (not to exceed annual flat fee) based on actual miles driven. (Starting Jan 2020)
<table>
<thead>
<tr>
<th>Metric -</th>
<th>2021*</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUC Revenue</td>
<td>$130,000</td>
<td>$355,120</td>
<td>$527,931</td>
<td>$739,934</td>
</tr>
<tr>
<td>Operational Cost</td>
<td>$394,250</td>
<td>$413,603</td>
<td>$496,132</td>
<td>$508,651</td>
</tr>
<tr>
<td>Operational Cost per EV**(Tech Choice)</td>
<td>$3.21- $5.15</td>
<td>$3.21- $5.15</td>
<td>$3.21- $5.15</td>
<td>$3.21- $5.15</td>
</tr>
<tr>
<td>Vehicle Enrollment per Year (Estimated)</td>
<td>5344</td>
<td>6655</td>
<td>7997</td>
<td></td>
</tr>
</tbody>
</table>

* FY21 metrics are actual; FY22-FY24 metrics are projected
** Tech Choice is either Telematics or OBD II Devices
Vehicle Registration Amendments

HB 186 (2022)

- Hybrid and PHEV will only pay an annual flat fee
  - $56.50 for Hybrids
  - $21.75 for PHEVs
- EVs will either pay an annual flat fee or per-mile fee
  - Beginning 2023: $130.25 or 1.0 cents/mile
  - Beginning 2026: $180 or 1.25 cents/mile
  - Beginning 2032: $240 or 1.5 cents/mile
Paving the Future of Mobility with Oregon’s Road Usage Charge Program

Maureen Bock, Chief Innovation Officer, ODOT
New technology presents new challenges and opportunities.
Our transportation funding system is old. Really old.

Oregon Introduces 1st State Fuel Tax in U.S.

U.S. Institutes 1st Federal Fuel Tax

Oregon Levies 1st Weight-Mile Tax

Congress Approves Last Federal Fuel Tax Increase

Oregon Begins Nation’s 1st RUC Program

13 States Introduce RUC Legislation
Highway Cost Allocation Study

Purpose

- Determine the share each class of road users should pay based on their respective share of costs
- Recommend adjustments to existing tax rates and fees

See Oregon Constitution, Article IX, Section 3a (3). Oregon voters ratified the principle of cost responsibility in the November 1999 special election.
Fuel taxes are unsustainable
Why is the current funding model unsustainable?

1. Declining purchasing power.
2. Increased fuel efficiency.
3. More people. More VMT.
How it works now:

1. **Vehicle Mileage/Other Data**
   - Mileage reporting device collects and transmits mileage and fuel consumption data to Account Manager.

2. **Invoice**
   - Account Manager performs transaction processing and sends invoice to vehicle owner.

3. **Payment**
   - Vehicle owner makes RUC payment.

4. **RUC Transfer**
   - Account Manager transfers RUC to State with associated reports (e.g., aggregated data).

5. **Oversight Functions**
   - State provides certification, auditing, and oversight of Account Manager.
Open Architecture is essential
The world is changing.

Transportation funding should too.

Contact:
Maureen Bock
Chief Innovation Officer
OR Department of Transportation
Maureen.bock@odot.Oregon.gov
503-884-7761
Transportation Revenue Alternatives

**FUEL TAXES**
Tax gasoline and diesel fuel used to propel vehicles on roads

**DIRECT USAGE FEES**
Charge based on measured usage of the system

**VENUE RELATED FEES**
Assess taxes and fees based on vehicle characteristics

**FREIGHT RELATED FEES**
Tax freight characteristics like tires, commodity value

**EXTERNALKY TAXES**
Charging or taxes to discourage congestion and emissions

**INDIRECT USAGE FEES**
Taxing products incidental to road usage
30 States Have Imposed Flat Fees on EVs
Others Are Exploring Distance-Based Charges

- Enacted programs: 3
- Pilots/demonstrations: 10
- Research: 14
Issues Raised During Public Presentations of RUC

- Privacy protection
- Data security
- Exemptions and refunds
- Out-of-state driving
- Location-aware mileage reporting
- Interoperability with other states, counties, federal
- Compliance and enforcement
- Scalability of systems
- Flexibility for policy adaptation
- Evolution of technology and business models

- Equity by geography, vehicle type, income level
- Cost of administration
- Transition
- Rate setting (including by weight, configuration)
- Integration with tolling, congestion pricing
- Fleet management
- User experience
- Organizational design
- Constitutional issues (e.g., commerce clause)
- Third party risk management
- Impact of charging on environment, emissions
Alternative Fuel Vehicle Transportation Funding

- In 2019, the Texas Legislature passed SB 604, the DMV Sunset bill, which included a provision for a study on the impacts of Alternative Fuel Vehicles (AFVs) in Texas and the options available to collect fees on AFVs to make up for lost revenue from motor fuels taxes.

- This study, which was conducted by 5 state agencies, including TxDOT, estimated that conventional fuel vehicles generated $103 in state motor fuel tax and $94.76 in federal motor fuel tax.

- Additionally, the study estimated that the average high fuel-efficient hybrid generated only 34 percent of the same total, while fully electric vehicles generated zero.
In 2021, the Texas Legislature introduced several bills aimed at collecting fees from AFV’s. The one that had the most momentum was SB 1728. In the final version of the bill, the state would have collected a fee schedule of:

- $190 for AFV’s weighing 6,000 pounds or less, and $240 for AFV’s weighing up to 10,000 pounds.
- $30 for hybrids weighting 6,000 pounds or less, and $40 for hybrids weighing up to 10,000 pounds.

Additionally, the bill would have created a fee schedule for AFV’s and hybrids that drive less than 12,000 miles based on 3,000-mile segments.

Bill died on last days of session due to a non-germaine amendment.
What’s Next?

- In March 2021, the Texas House of Representatives released their interim charges. One of note:
  - 5. Study the impact of the increasing sale and use of electric and alternatively fueled vehicles on revenue predictions for the state highway fund. Recommend a road use revenue equalization methodology to create fairness and parity between gasoline, electric and alternatively fueled vehicles.
- Additionally, the number of AFV’s, especially electric vehicles and hybrids, continues to grow.
- According to the TxDMV FY 2021 Alternatively Fueled Vehicle Report, the number of AFV’s in Texas has increased by 110,183 vehicles in the last five years.
Meeting Minutes
March 22, 2022

TASK FORCE MEETING

Objectives:

1) Identify major ongoing innovative efforts within TxDOT and Texas in fields of electrification, automation, and more.
2) Prioritize methods for state transportation agencies to promote and prepare for further autonomous vehicle safety regulations.
3) Recognize the growing need for alternative revenue sources in transportation in the wake of market shifts towards increasingly fuel-efficiency, and growing adoption of electric vehicles.

Key Takeaways:

● Autonomous vehicle (AV) technology is developing at an increasing rate and with limited federal leadership, state transportation agencies are able to develop regulatory standards that allow for the safe, effective, and accessible deployment of AV’s.
● State transportation agencies may coordinate to adopt a set of foundational safety regulations as de facto AV regulations, which can be expanded by state agencies that opt in to these standards.
● Allowing roadway users the option between an annual flat fee and road user charges is one method of ensuring equity in the transition away from transportation funding based primarily on fuel taxes.
● Scalability of alternative funding methods to fuel taxes is a substantial obstacle in shifting revenue sources, however prioritizing adaptation and continual updates of existing alternative funding methods promotes success.

8:30 AM | Call-in Period to Do Sound and Technology Check

9:00 AM | Introductions & Updates – Darran Anderson, TxDOT, and UT Austin Research Team

● Darran Anderson of TxDOT kicked off the meeting by welcoming participants.
● Kristie Chin and Mark Werner, of the University of Texas at Austin (UT Austin), reiterated the mission of the Task Force and discussed goals and inspirations for the day’s topics.
● Darran presented slides depicting updates and ongoing innovative transportation efforts by TxDOT, and within Texas.
  o TxDOT Executive Director, Marc Williams, has emphasized a renewed focus of transportation safety by leveraging internal and external data sources, and stakeholder participation.
  o Currently, there are more than 10 active autonomous vehicle projects on Texas roadways.
  o TxDOT is conducting an Electric Vehicle (EV) charging station study to support deployment of charging stations at each Texas County seat, though some expansion efforts are limited due to the worldwide computer chip shortage.
  o TxDOT is still identifying the full scope of digital twin technology and its viability for advanced opportunities on Texas roadways.
  o Hydrogen fuel cell is another effort TxDOT is studying, though the need to prioritize resources between project planning and project implementation is still in review.

9:20 AM | Fireside Chat: Evolving AV Safety Regulations – Avery Ash, Inrix and Mark Kopko, PennDOT

Mark Kopko, PennDOT
Mark highlighted the current state of AV safety regulations, principles for a safety framework, and future expectations and guidance on AV safety regulations.

- With limited federal guidance, some states have taken initiative to internally develop AV regulations, a trend that is gaining traction regionally between states.
- Effective AV safety regulations require flexibility to address shifting legislation and technology, and comprehensive partnerships to establish a holistic safety perspective.
- An AV safety framework is like a three-legged stood, supported by technology, operator training, and a culture supportive of safety.
- When setting safety metrics, first identify who the most vulnerable roadway users are, like maintenance and construction crews.
- When creating a regional safety framework, begin with identifying minimum commonality regulations to achieve safety, but allows other states or public agencies to add prescriptive regulations as needed upon adoption.
- Public agencies should work to promote transparency in the process of decision making and regulatory requirements when setting a safety framework, this can be done through public input and presentation events.
- While awaiting federal safety guidelines, state transportation agencies may adopt a set of collaboratively established de facto standards.

10:10 AM | Electrification and Scalability of Alternative Funding Methods

**Moderator:** Maureen Bock, ODOT

Maureen focused discussion on major developments in the constantly evolving movement for identifying alternative funding methods, and ways this shift may impact TxDOT. As the number of electric vehicles continue to proliferate and the gas mileage efficiency of conventional combustion engines continues to improve, transportation agencies that have traditionally relied on gas taxes must innovate and seek out new and more diverse sources of funding. This conversation identified common challenges state transportation agencies face in this shift, the importance of pilot and research programs, maintaining adaptability, and ensuring equity in decision making.

**Cameron Kergaye, UDOT**

- Utah has an established Road Usage Charge (RUC) program, found at roadusagecharge.utah.gov, which was designed to center technology, privacy, vehicle types, and enrollment.
- Utah’s program allows road users options and flexibility by offering a choice between an annual flat fee or a per-mile fee, which adjusts based on vehicle type.
- Shortly after launching the RUC program UDOT was earning similar figures to the traditional fuel tax in place previously.
- Cameron recommends allowing at least two years to establish a RUC program, a time that should be used to create marketing materials and establish strong stakeholder connections.
- Cameron suggests Texas does not need to prioritize innovative technology to establish an effective funding program, rather a focus on adaptability and ongoing improvements has proven successful in Utah.
- As practitioners are unable to fully predict State Legislative actions, providing decisionmakers with vehicle adoption trends and funding information may better set the foundation for a successful funding program.

**Adrian Moore, Reason Foundation**
• Adrian identified scaling funding methods as one of the most difficult pieces in shifting away from traditional fuel taxes, and rather than utilizing pilot projects with thousands of vehicles, a pilot using tens of thousands of vehicles will best position Texas to establish a successful RUC system.
• Texas may wish to look to adapt pilot programs that have been used in other states and allow room to adjust over time when challenges arise.
• Texas may also explore non-traditional innovative funding methods like the opportunity for road users to reduce their fees upon providing vehicle use data.

Zeke Reyna, TxDOT
• Texas’ high population growth reinforces the need for TxDOT to prepare for alternative funding methods early-on, particularly as the rate of alternative fuel vehicles quickly grows.
• 30 states have imposed annual flat fees for EVs, Texas is exploring distanced based fees to limit potential upfront financial burdens and to better accommodate different road users.
• Utilizing partnerships with pre-existing roadway payment networks, like tollway authorities, may offer back-end expertise that could be used to better prepare and deploy dynamic road usage fees.

Travis Dunn, CDM Smith
• Several alternative funding methods are available to apply though without a strong and dynamic link between road use and user fees roadway user equity is threatened.
• The expansion of a transportation user fee will require the DMV to play a more significant role in revenue collection, thus early cooperation and resource planning will be pivotal.
• Texas can learn from Hawaii’s RUC pilot, which served as a large-scale program that annually recorded odometer readings as a method of streamlined billing procedures.
• Travis suggested alternative to road usage fees, where roadway users pay for roads through a general fund, a program used primarily in European transportation systems.

11:30 AM | Closing Remarks and Next Steps – Darran Anderson, TxDOT & C. Michael Walton, UT Austin
• Mark Werner of UT Austin summarized key points of the panel, emphasizing the need for early pilot programs, and prioritizing adaptability and equity throughout expansion of an alternative funding program.
• Darran Anderson thanked the panelists and attendees and closed out the general meeting to transition to the Task Force executive session.

11:35 AM | Adjourn

EXECUTIVE SESSION

11:35 AM | Collaborative Efforts Between TX Technology Task Force and STIC Initiatives
• Darran opens the discussion with a high-level overview of the efforts, missions, and goals of the Texas Technology Task Force (Task Force), the Texas Innovation Alliance (TIA), and the Texas State Transportation Innovation Council (STIC).
• Darran acknowledges the similarity of some efforts these initiatives conduct and opens the floor to discussion on methods for possibly combining efforts or strategies to streamline goals and limit potential redundancy.
• Kristie Chin of UT Austin presents slides further depicting the roles, organization, and make-up of the Task Force compared to the STIC and opens the floor to discussion of the benefits and challenges of combining efforts.
The Task Force, supported by UT Austin and TxDOT identifies 5-50 year goals, TIA, supported by UT and TxDOT identifies 1-5 year goals, while the STIC, supported by TxDOT and FHWA also identifies 1-5 year goals.

While each initiative poses varying visions, missions, and timelines, the distinctions are increasingly blurred and audiences of each largely overlap.

The Task Force seems to stand as an outlier amongst the three initiatives, as it is uninterested in funding opportunities and is driven by people rather than organizations and agencies.

The STIC seems to serve as a final step for implementable innovation, whereas the Task Force and TIA seem to support efforts prior to that point.

Closing Remarks and Next Steps – Darran Anderson, TxDOT

Darran Anderson thanked the Task Force members for their continued leadership and planned to reconvene in Summer 2022

12:30 PM | Adjourn