Road Usage Charging as a Potential Revenue Source

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NEW PATHS TO ROAD FUNDING
1. The Problem
2. Potential Solutions
3. What is a Road Usage Charge (RUC)?
4. RUC America
5. States with Enacted RUC Programs
6. RUC America States Exploring or Piloting RUC
7. Federal Support for RUC
1 The Problem
Fuel efficiency is increasing.

Ex: Monthly fuel-tax paid for 1,000 Miles Driven
22 cents/gallon gas tax

- Electric Car: $0
- Hybrid (25-45 MPG): $6.29
- Average Efficiency (15-25 MPG): $11
Transportation revenue is not keeping pace with system costs and demands

The erosion in gas tax revenue will accelerate as more vehicles use less gasoline (or no gas at all).
2 Potential Solutions
States are exploring multiple solutions to address fuel tax revenue loss.
Alternative Fuel Vehicle Fees: 2023

Highest: $225
Lowest: $50
$240 (for vehicles over 8K)

Fee Range: $50 – $240
Average: $130.45
Median: $120

CDM Smith

NEW PATHS TO ROAD FUNDING
Kilowatt Hour (kWh) Taxes: 2023

- kWh tax enacted for charging stations
- Adopted annual registration surcharges
- No annual registration surcharges

* Utah is 12.5% of the retail cost. This value assumes retail cost = $0.35 / kWh
What is a Road Usage Charge?
What RUC is:

- Tax or fee collected from vehicle owners proportional to their use of the public roadway network
- A “pay for what you use” approach to funding transportation

What RUC is NOT:

- Congestion charging – it does not vary by time or location
- Tolling – RUC charges for miles driven on all roads & funding applied to all roads

Also referred to as:
Per-mile fee, Vehicle Mileage Tax (VMT), Mileage-Based User Fee (MBUF), Distance-Based Fee (DBF), Road Charge
A road usage charge is a return to the “user pays” approach.

Drive more. Pay more.

Drive less. Pay less.

NEW PATHS TO ROAD FUNDING
RUC Model: **Pay for what you use.**

Ex: Monthly RUC paid for 1,000 Miles Driven
1.2 cents per mile road usage charge

- **Electric Car**
  - $12

- **Hybrid (25-45 MPG)**
  - $12

- **Average Efficiency (15-25 MPG)**
  - $12

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NEW PATHS TO ROAD FUNDING
RUC Mileage Data Collection Methods

No-Tech/Low-Tech Options

- Odometer Reporting (In Person)
- Odometer Reporting (self)
- Odometer Image Capture

Technology Options

- Plug-In Devices
- Smartphone App
- Automaker telematics
Example of how RUC works

**Vehicle Owner**
- Chooses mileage reporting option
- Chooses account manager
- Reviews invoice
- Makes RUC payment

**Account Manager(s)**
- Processes mileage data and transactions
- Sends invoice to vehicle owner
- Collects payment
- Transfers vehicle owner’s RUC payments to State

**State(s)**
- Certifies and oversees Account manager
- Adjusts RUC policy as needed
4 RUC America
What is RUC America?

A voluntary assemblage of state DOT’s working together

Build public sector organizational capacity and develop expertise for the potential of mileage-based road usage charging

Collaborative forum – facilitate resource sharing, functions as a best practices: discuss issues, observe and lessons learned

Facilitate joint research projects

RUC America has fully funded 24 projects related to feasibility and implementation of RUC
Who is RUC America?

Leading authority on road usage charging including 20 states sharing best practices, ideas, and information

LEGEND

Tier 1: Active Program
Tier 2: Exploring & Piloting
Tier 3: Monitoring Trends

RUC America was created in 2013
Some areas that RUC America is working on

- Platforms and operations for state or regional pilots
- Technical research and development
- Research of fiscal and economic issues
- Administration and operational issues
- Legal and policy issues
- Inter-jurisdictional concerns
- Standards and certifications
- Stakeholders outreach and communications

Visit rucamerica.org
5 States With Enacted RUC Programs
Active RUC programs are growing

- Oregon (2015)
- Utah (2020)
- Virginia (2022)
- Hawaii (2025)
2013 HB 810 directs ODOT to establish a fully operational RUC program by July 2015

2001 HB 3946 explores alternative funding methods and reduce dependance on traditional fuel taxes. Road User Fee Task Force created

2006 1st RUC pilot executed; Custom-built in-vehicle technology integrated with gas station point of sale systems for a "pay at the pump"

2007 2nd RUC pilot executed; Open system for per-mile charging with two service providers and three technology options

2012 HB 2881 OReGO program modification addressing:
- Unlimited participation
- Indexing RUC rates to compare with fuel tax rate
- Vehicles less than 20 MPG not ineligible for program
- 40 MPG and electric vehicles exempt from registration surcharged if enrolled in OReGO
- Converting excess fuel taxes paid to non-refundable RUC credits

2013 OReGO goes live

2015 RUC charges increased to 1.9 cents per mile

Implementation Date
July 1, 2015

Mileage Reporting Options
- Plug-in devices with GPS, no charge for out-of-state miles
- Non-GPS plug-in device does not calculate or credit out-of-state miles

Account Manager(s)
- Multiple third-party account managers for mileage collection, accounting, payment processing, and customer service

Vehicle Types
Voluntary participation with discounted annual registration fee (no fee cap) for:
- passenger cars and light trucks ≥40 MPG
- electric vehicles

Program Size
630 as of November 2023
2018  SB 136 establishes Utah RUC program to be implemented by January 1, 2020

2019  SB 72 granted rulemaking authority to UDOT and Transportation Commission and directed information sharing between UDOT and DMV

2020  Utah Legislature adopted SB 150 which directs UDOT to prepare a plan to enroll all vehicles registered in the state in RUC program by December 2032

2023  Legislature reduced initial 1.5 cents per mile to 1 cent per mile (reduced to encourage program participation); conducted customer experience research

2023-2024  Conducting UDOT Local Road Usage Charge (RUC) and Tolling Integration Pilot
Virginia

**Implementation Date**
July 1, 2022

**Mileage Reporting Options**
- Plug-in devices with or without GPS
- In-vehicle telematics
- Annual odometer photo true up via mobile app required

**Account Manager(s)**
- Single, private third-party account manager for processing, invoicing, payment processing and customer service

**Vehicle Types**
Voluntary participation in lieu of highway use fee (fee cap) for:
- passenger cars and light trucks > 25 MPG
- electric vehicles

**Program Size**
22,000 as of December 2023

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**2020** SB 890 established highway use fee and RUC program to become operational by July 1, 2022

**2022** July 1st Mileage Choice Program became effective
### Hawaii HiRUC

**Implementation Date**
- July 1, 2025

**Mileage Reporting Options**
- Annual motor vehicle inspection-collect/report vehicle odometer reading

**Program Manager**
- Department of IT for processing & RUC calculation
- County DMVs for payment processing and customer service

**Vehicle Types**
- 2025 – 2027: Voluntary participation in lieu of registration surcharge (fee cap) for electric vehicles
  - 2028: Mandatory RUC for all EVs

**Program Size**
- 2028: all EVs (~50,000 vehicles)

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>2016</td>
<td>HDOT conducts feasibility study to explore RUC as an alternative to state gas tax</td>
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<td>2016</td>
<td>HDOT applies for and receives STSFA grant and launches Hawaii RUC Demonstration</td>
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<td>2019</td>
<td>HiRUC Pilot, Part 1: Assessing public understanding and preferences</td>
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<tr>
<td>2020</td>
<td>HiRUC Pilot, Part 2: Testing technology approaches</td>
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<td>2023</td>
<td>SB 1534 establishes RUC Program with a July 1, 2025, implementation date.</td>
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<td>2025</td>
<td>RUC program launches; HDOT to deliver a transition for all vehicles to be on a RUC by 2033</td>
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<td>2028</td>
<td>Mandatory RUC for all EVs begins</td>
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Pilot Focus

- Test mileage-based fee system with different technology and payment options
- Test how RUC can work with usage-based insurance, ridesharing, electric vehicle charging stations/pay-at-the-pump systems, and autonomous vehicles
- Billing methods: identity challenges with mileage-based fees, credits, and refunds

Technologies Demonstrated

- GPS Pre-paid permits, odometer image self-reporting, odometer inspection, smartphone app with location, plug-in devices with or without GPS to differentiate between exempt and nonexempt roadways and charge accordingly, telematics, and heavy vehicle OBU's

Account Management

- Private third-party account managers used for data collection and processing, invoicing, payment processing, fuel tax credits and customer service.

Next Steps

- Charging rate structure- 1st group charged a per mile rate 2nd group charged based on the fuel economy rating of their individual vehicle

Year | Event
--- | ---
2014 | SB 1077 is introduced, directing creation of a RUC
2015 | RUC pilot program is designed
2016 | RUC pilot is executed statewide
2017 | Findings of the pilot program are made public
2018 | SB 1328 is introduced, which is an extension of SB 1077
2019 | Four-phase demonstration is introduced and aimed at evaluating emerging technologies
2021 | Live operations of the pilot are executed; SB 339 is introduced, extending all existing road charge laws until 2027; collection pilot is authorized
2022 | Findings of the four-phase pilot are released
2023 | Public/private road charge pilot is executed
2035 | In accordance with Advanced Clean Cars II regulations, only zero emission vehicles will be sold in the state
Colorado

Pilot Focus
- Evaluate per-mile RUC system with multiple reporting options

Technologies Explored or Demonstrated
- Plug-in devices with or without GPS
- Odometer image
- Significantly Higher participant satisfaction with technology-based reporting solutions

Account Management
- Private third-party account manager(s) for data collection, processing, invoicing, fuel tax credits and customer service

2007
Governor Bill Ritter Appoints Transportation Finance and Implementation Pannel

2008
Transportation Finance and Implementation Pannel Recommends Exploring RUC fee

2011
Colorado Mileage Based User Fee Study to identify Strategies and engage the public

2014
CDOT joins RUC West to collaboratively research RUC systems

2015
CDOT Submits an internal research proposal to test the viability of RUC system

2016
RUC pilot begins

2017
RUC pilot launches and final report released
## Minnesota

### Pilot Focus
- Assess public opinion and understanding of transportation funding and awareness of RUC
- Test per-mile RUC system

### Technologies Explored or Demonstrated
- GPS equipped smartphone to collect travel data and assess the reliability of a road use fee
- Real-time traffic alerts, accident notifications, and road hazards to enhance driver safety
- Telematics, Fleet-based shared mobility services with 2 providers

### Account Management
- Private third-party account managers for data collection, processing, invoicing, and customer service

### Next Steps
- Test the scalability of using embedded telematics systems directly sourced from automobile manufacturers for the purposes of computing distance-based fees

### Timeline
- **2003** Formed multi-state pooled fund project to assess RUC
- **2006** Conducted pay-as-you-drive RUC pilot
- **2010** Conducted public opinion research
- **2013** RUC policy task force and RUC pilot
- **2017**-**2021** Tested RUC Technologies that enhance RUC administration and collection effectiveness and 12-month pilot for shared mobility fleet
- **2024** New Pilot to test embedded telematics (STSFA Grant funded); Partner on Kansas RUC Study
Pilot Focus
- Evaluate RUC methods and technology
- Study EV and hybrid vehicles of varying fuel efficiency

Technologies Explored or Demonstrated
- Self-reporting, odometer image, smartphone app with location via Bluetooth connection, and telematics

Account Management
- Private third-party account manager for data collection, processing, invoicing, and customer service

2021  HB 1721 passed, and RUC Task Force begins exploration of declining fuel tax

2023  Fair Miles Oklahoma RUC Pilot begins
Pennsylvania

Multi-State Pilots Focus (Through The Eastern Transportation Coalition (TETC)) Passenger Vehicles
- Assess public opinion and awareness of RUC
- Conduct a geographic equity analysis
- Tolling, congestion mitigation and rate-setting

Technologies Explored or Demonstrated
- GPS enabled smartphone, Plug-in devices with and without GPS
- Installed mileage recording device (commercial)

Account Management
- Private third-party account manager for data collection, processing, invoicing, fuel tax credits and customer service

Commercial Vehicles
- Participant Surveys and Interviews
- Motor Carrier Working Group
- Rate-setting tests to analyze weight-based rate setting approach that can be uniformly applied

2018
- Multi-state passenger vehicle RUC pilot with stakeholders

2018 - 2019
- Multi-state truck pilot participant (via TETC); Conducted general public passenger vehicle pilot

2020 - 2021
- National truck pilot participant (via TETC); Passenger vehicle pilot focused on rural stakeholders

2022 - 2023
- Vehicle Telematics pilot with PennDOT Fleet vehicles and state specific public outreach effort

2024
- Ongoing RUC work through TETC
Washington

Pilot Focus
- Per-mile charge system with various service providers and reporting methods
- Exploring RUC policy, public acceptance, user experience, and program options

Technologies Explored or Demonstrated
- First pilot: Pre-paid time permits, pre-paid distance permits, odometer image reporting (self-reported and assisted), smartphone app with optional location, plug-in devices with and without GPS
- Second pilot: Self declaration of odometer readings and telematics

Account Management
- First pilot: Private third-party account managers for data collection, processing, invoicing, and customer service
- Second pilot: Simulation of DMV management of RUC reporting and payment

Next Steps
- Small-scale program legislation
- Multi-state research

2012 - Legislature directs the Washington State Transportation Commission (WSTC) to research RUC as a potential alternative to declining revenue from fuel taxes

2012 - Business case analysis, operational concept development, policy analysis, pilot design

2016 -

2017 - Regional pilot with 2000+ participants including ~20 Idaho drivers

2020 -

2020 - Federally funded research on equity, cost reduction, and user experience including RUC simulation with 1000+ participants

2023 -

2013 - Legislative directives guiding research activities

2023 -
Federal Support for RUC
Federal Grant Programs for RUC

Fixing America’s Surface Transportation Act
Surface Transportation System Funding Alternative Grant Program (2016-2021)

- Authorized grants to states for demonstrating user-based alternative revenue mechanisms
  - $95M over 5 years
  - 50% match (can include toll credits & in-kind services)
- Application eligibility
  - State DOTs

Bipartisan Infrastructure Law
Strategic Innovation For Revenue Collection Grant Program (2022 – 2026)

- Continues funding for RUC pilot programs
  - $75M over 5 years
  - Match is 20% for new applicants; 30% for previous applicants
  - Expanded application eligibility
    - State DOTs
    - Local governments
    - MPOs
- Notice of Funding Opportunity (NOFO) expected Quarter 1 2024

NEW PATHS TO ROAD FUNDING
Federal National RUC Pilot

Bipartisan Infrastructure Law
Strategic Innovation For Revenue Collection Grant Program (2022 – 2026)

- USDOT is required to carry out a national RUC pilot
  - At $10M per year
    - For fiscal years 2022 through 2026
  - Required to establish an advisory board
    - Federal System Funding Alternative Advisory Board

$50M over 5 years for National RUC Pilot!
Thank you!

Randal Thomas, Administrator
RUC America