NCSL

MILEAGE DATA COLLECTION OPTIONS FOR ROAD USAGE CHARGING

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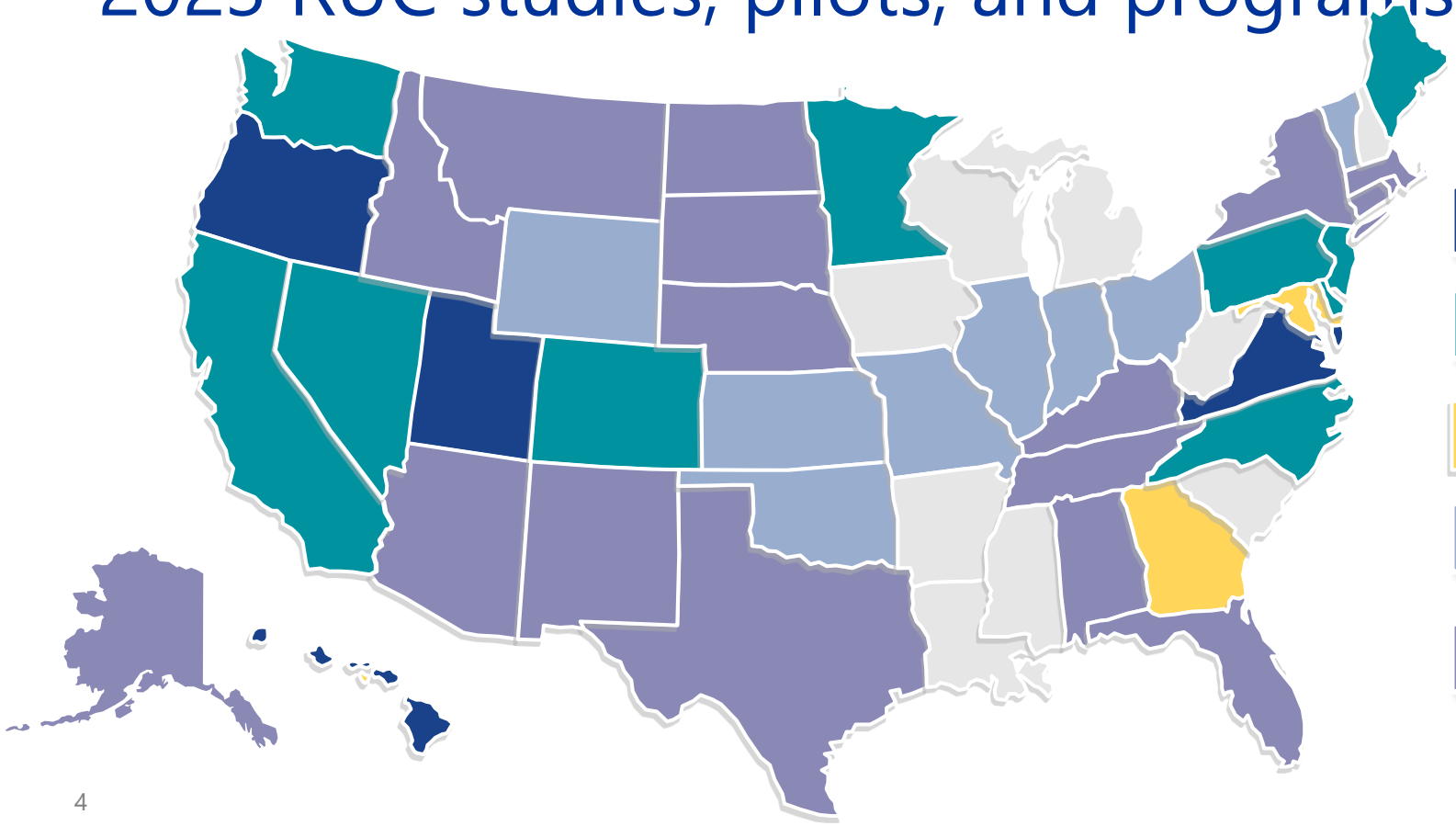
Agenda

- RUC Study Status impacting mileage data collection
- RUC Lessons Learned impacting mileage data collection
- RUC Collection Options
- Concluding Remarks

1 RUC Study Status

Status of RUC research in 2023

2023 RUC studies, pilots, and programs



2 RUC Lessons Learned

Impacting mileage data collection

Lessons learned about RUC: Policy

- **Privacy**
  - Must be explicitly addressed in every pilot/program. Provisions:
  - Offer non-location based milage reporting
  - State never gets location data
  - Have privacy policy and legal protections
- **Rate setting**
  - Avoid perception of “double taxation” / “raising taxes”
  - Charging in lieu of flat fee is easier than charging in lieu of gas tax
  - Vehicle owners should understand rate / how it is set
  - Single rate, revenue neutral with gas tax is most common choice

Lessons learned about RUC: User Interaction

- **Communications / PR**
  - Begin with clear communications about reasons for RUC
  - Fairness and “user pays” are popular messages
  - Explain how RUC is collected, so it’s not scary/burdensome
  - Pilots serve as communications tools
- **User experience**
  - Simple, clean user interface, with as few touch points as possible
  - Have good customer service

Lessons Learned about RUC: Government

- Government role in RUC varies by state
  - DMV provides database, DOT or DMV may lead
  - Exact government role depends on collection method(s)
- States can operate non-location-based methods
- Commercial Account Managers: best option for high tech
  - Private firm collects on behalf of state
  - State oversight required
- Open Market concept
  - CAMs can enter the market in a given state at any time
  - Generally appropriate for larger programs

3 RUC Collection Options

Spectrum of reporting options

Odometer Reporting (In Person)

Odometer Reporting (self)

Odometer Image Capture

In-vehicle Devices

Smartphone App

Automaker telematics

Non-location-based options

Pros	Cheaper, private
Cons	Does not capture out of state, offroad miles

Location-based options

Pros	Captures out of state, offroad miles
Cons	More expensive, privacy concerns

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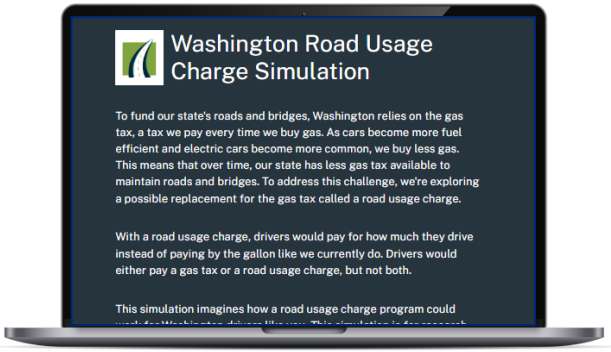
Odometer Reporting (in person)

- Annual/biannual safety inspections required in 12 states, emissions inspections required in regions of 21 states
- Hawaii's system will leverage existing inspections

Pros	Cons
Very high privacy	Challenging to implement in states without inspections
Low cost in states with inspections	Even in states w/inspections, requires substantial development

Odometer reporting: self

- Type in odometer once or more/year
- Audit some percentage of entries (odometer image and/or CARFAX)
- Cost: Low (~<$5/vehicle/year)



Pros	Cons
Very high privacy	Auditing will require effort to perfect
Low cost	

Odometer image capture

- Using camera phone / smartphone
- Employs various fraud protection measures
- "Low confidence" images require manual review
- Cost: $2-3 per photo with account management

Pros	Cons
Easy to use	Requires a lot of reminders, penalties for those who don't submit
High privacy	Requires manual image review
	Need solution for those w/o phones
	Need to link image to vehicle

In-vehicle device

- Most commonly used option today
- GPS+cellular modem
- Cost: ~$50-100/vehicle/year

Pros	Cons
Most commonly used option	High cost
Proven	Distribution/collection/inventory
	Need install device
	Limited lifespan
	What if plug is occupied?
	Little OEM support, incl errors

Smartphone App

- Uses detailed location information
- Phone linked to vehicle (e.g., Bluetooth)
- Requires periodic/annual true up
- Low cost at scale (~$12/vehicle/year)

Pros	Cons
Can be user friendly	Requires users have smartphones
Low cost	No location when phone not in vehicle

Automaker data (third party API)

- Uses third party to access vehicle telematics data. 2 varieties:
  1. Vehicle "pinging" (no agreement with automakers)
  2. Backend Data (explicit agreement with automakers)
- Cost: $75-100+/year incl API, CAM, automaker

Pros	Cons
Available today	Location precision varies by provider & automaker
Backend data approach has good data	For vehicle pinging variety, users may need to subscribe, share username/PW
	May cost $50-100+/year (could drop)
	Only for sufficiently equipped vehicles

Vehicle data (direct from automaker)

- Automakers have been reluctant to support
- SAE J3217/R in final stages of development
- Cost: $100+/vehicle/year, incl CAM, automaker

Pros	Cons
Potential for highest resolution data	Automakers have been very reluctant to support
Potential for best user experience	Could be quite expensive
	Unique implementation per automaker
	Only for sufficiently equipped vehicles

4 Concluding Remarks

Payments

- RUC payments have mostly been structured as prepayment
  - Generally in form of electronic wallet
  - Prevents fraud, keeps current cash-flow in place
- Payment methods
  - Card payment is most common, sufficient for limited programs
  - In larger programs, need cash payment (payment network) and apps (Venmo) needed to cover unbanked and underbanked
- Frequency
  - Once a year is cheapest to operate, but requiring users to pay $100+ at once has major equity implications
  - Likely keep wallet refreshes to lower amount and/or offer installment payments

Technology Forecast

- Odometer-based methods will be offered as an option in RUC programs for the next 20 (or more) years
- Smartphone apps will become and remain the most common location-based method for some time, due to capabilities and cost
- In the long-term, telematics will play an increasing role:
  - APIs without automaker agreements/vehicle pinging have limited usage
  - APIs with automaker agreements/backend data need to be trialed, but must be cost-competitive with smartphone apps
  - Automakers may need encouragement to support RUC

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Questions are Welcomed