What does it take to put a road usage charge in place?
Nine essential functions of a RUC system

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
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<tr>
<td>Identify subject vehicle &amp; owner/lessee</td>
<td>Connect with vehicle registry &amp; set up account</td>
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<td>Generate road usage data for subject vehicle over designated time</td>
<td>Report data</td>
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<td>Access road usage data</td>
<td>Receive reporting of road usage data</td>
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<td>Apply per-mile charging rates</td>
<td>Process data to determine amount of charges</td>
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<td>Provide invoice to owner/lessee</td>
<td>Issue notice of the charge</td>
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<td>Collect payment</td>
<td>Provide one or more ways to pay</td>
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<td>Issue acknowledgement of payment</td>
<td>Create a receipt</td>
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<td>Enforce payment</td>
<td>Apply mechanisms for ensuring everyone pays</td>
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<td>Integrate revenue collection with financial systems</td>
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## Nine essential functions of a RUC system

1. **Identify subject vehicle & owner/lessee**—connect with vehicle registry & set up account
2. **Generate road usage data for subject vehicle over designated time**—report data
3. **Access road usage data**—receive reporting of road usage data
4. **Apply per-mile charging rates**—process data to determine amount of charges
5. **Provide invoice to owner/lessee**—issue notice of the charge
6. **Collect payment**—provide one or more ways to pay
7. **Issue acknowledgement of payment**—create a receipt
8. **Enforce payment**—apply mechanisms for ensuring everyone pays
9. **Remit revenue to appropriate fund**—integrate revenue collection with financial systems
2 Mileage Reporting

What are the choices for collecting mileage data?
Currently viable RUC systems in the U.S.

**Low tech**
- Builds on existing DMV systems
- Odometer readings manually reported
- Government operated

**High tech**
- Account-based
- Data collected via automation
  - Plug-in devices
  - In-vehicle telematics
- Private sector operated
Spectrum of reporting options

- Odometer reporting
- Odometer image capture
- Smartphone app
- In-vehicle devices
- Automaker telematics
Key considerations

- Privacy
- Cost
- Simplicity
- Compliance
- Accessibility
- Interoperability
- Ease of administration
Odometer reporting

Two flavors: self-reported or third-party verified
In use: New Zealand
Tested: Hawaii, Washington

- **Privacy**: ✓ Maximum privacy protection
- **Cost**: ✓ Low cost on par with vehicle registration fees
- **Simplicity**: ✓ Simple for vehicle owners
- **Compliance**: ❖ Possibility for fraud
- **Ease of administration**: ✓ Works easily with DMV systems
- **Accessibility**: ❖ Requires working odometer, long payment intervals
- **Interoperability**: ❖ Cannot distinguish miles by location
Odometer image capture

Like mobile check deposit, works via any web-connected mobile device
In use: Oregon, Utah
Tested: California, Hawaii, Washington, Eastern Transportation Coalition

Privacy ✓ Strong privacy protection
Cost ✓ Low cost on par with vehicle registration fees
Simplicity ✓ Simple for vehicle owners
Compliance ✓ Fraud protection measures available
Ease of administration ✓ Works easily with DMV systems
Accessibility ✓ Short payment intervals possible
Interoperability ❖ Cannot distinguish miles by location
Odometer image capture
Smartphone app

Using a smartphone alone to report mileage has promise, challenges
Tested: California, Washington

Privacy ✓ User control over privacy
Cost ✓ Low cost on par with vehicle registration fees
Simplicity ✓ Simple for most vehicle owners
Compliance ✓ Susceptible to gaps in reporting
Ease of administration ✓ Not dependent on vehicle registration
Accessibility ❖ Short payment intervals, requires smartphone
Interoperability ✓ Can distinguish miles by location
Smartphone app
In-vehicle devices

In use: Oregon, Utah
Coming soon: Virginia
Tested: California, Washington, Hawaii, Colorado, TETC

Privacy ✓ User control over privacy
Cost ❖ Costly to deploy today and at small scales
Simplicity ✓ “Plug it in and forget it”
Compliance ✓ Tamper-evident
Ease of administration ✓ Not dependent on vehicle registration
Accessibility ❖ Available on cars since 1996, some EVs not covered
Interoperability ✓ Can distinguish miles by location
### Automaker telematics

**In use:** Utah  
**Tested:** California

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Promise/Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Privacy</strong></td>
<td>Potential for user privacy control</td>
</tr>
<tr>
<td><strong>Cost</strong></td>
<td>Holds promise for low-cost data</td>
</tr>
<tr>
<td><strong>Simplicity</strong></td>
<td>Holds promise for little user actions required</td>
</tr>
<tr>
<td><strong>Compliance</strong></td>
<td>Holds promise for accurate, tamper-proof data</td>
</tr>
<tr>
<td><strong>Ease of administration</strong></td>
<td>Not dependent on vehicle registration</td>
</tr>
<tr>
<td><strong>Accessibility</strong></td>
<td>Available on almost all new cars</td>
</tr>
<tr>
<td><strong>Interoperability</strong></td>
<td>Has potential to distinguish miles by location</td>
</tr>
</tbody>
</table>
Automaker telematics

Gaps

▪ Widespread interest, cooperation from automakers
▪ Understanding of range of possible business models
▪ Standard formats for reporting vehicle data for tax purposes

Opportunities

▪ Agency-automaker engagement to develop standards, conduct tests
▪ Laws directing state agencies to engage with automakers
▪ Standards for vehicle data ownership and usage
Making Choices
Spectrum of reporting options

- Odometer reporting
- Odometer image capture
- Smartphone app
- In-vehicle devices
- Automaker telematics
Spectrum of reporting options

Low tech

High tech
“High tech” contracting considerations

**Don’t**
- ✗ Pick a technology
- ✗ Lock in with one vendor
- ✗ Work in isolation
- ✗ Wait for the federal government to “figure it out”

**Do**
- ✓ Set open standards
- ✓ Create an open market
- ✓ Collaborate with other states
- ✓ Leverage federal support to craft solutions that work across the states
Mileage-reporting elements of enabling law

- Direct one or more state agencies to develop mileage reporting solutions
- Prescribe characteristics that matter in your state, e.g., at least one method that does not require location data
- Authorize innovative contracting approaches to ensure evolution in technology, business models
- Require automaker participation by making miles driven data available to authorized agency for specific purposes
Questions are Welcomed