The Oregon Road Usage Charge Pilot Program

Louis Neudorff
Gas Tax is No Longer Sustainable

- Increased fuel efficiency of vehicles
  - New CAFE standards (average 35.5 mpg in 2016; average 54.4 mpg in 2025)
- Emerging fleet of electric vehicles and plug-in hybrids
  - Pay little or no fuel tax
- Concept of “fairness” and “user pays’ principle
Fuel Tax Revenue Projection for Oregon
## Some Alternative Means

**Some viable options…**
- Increase the gas tax
- Increase registration fees
- Royalties on EV and HEV purchases
- Road Usage Charging

**Issues…**
- Short term solution; Still affected by increase fuel efficiency
- Not fair to all motorists; Doesn’t address out of state motorists
- Some motorists travel more than others; Affects only new car sales
- Available technology; Privacy concerns;
Oregon History

- 1919 – First state to implement fuel tax
  - Last increase in 2011
- 1933 – Nation’s first weight mile tax for heavy vehicles
- 2001 – Legislation creating Road User Fee Task Force
  - Develop designs for revenue collection to replace current system
- 2006-2007 – First RUC Pilot
  - Pay at the pump model; GPS
- 2011 – Legislation authorizing a pilot program
FEASIBILITY VALIDATION
Demonstrate to the Oregon Road User Fee Task Force (RUFTF), state legislators, and other stakeholders that:

• Overall goals and objectives of a Road Usage Charging (RUC) system can be achieved
• Proposed system concepts are viable
• Vendor community has the ability to provide and implement system components required for an efficient and “open” RUC.
RUCPP Goals

- Provide choices to motorists
- Do not mandate a Global Positioning System (GPS) box for motorists’ cars
- Make the system accurate, as well as simple and easy to use
- Provide credits or refunds for fuel taxes paid for vehicles that pay the mileage-based RUC (preferably via automated means)
- Allow the private sector to provide data collection options and payment options
- Base the system design on an open architecture using common standards for interoperable system components and processes
RUCPP Development Based on Systems Engineering

- Concept of Operations
- System Requirements
- Interface Control Document
- RFI and RFP
- Testing
  - Unit Testing
  - Integration Testing
  - End-to-end System Acceptance

OTHER ACTIVITIES
- Fleet Forecast & Revenue Projections
- Communications and Outreach
- Help Desk Operations
- Evaluation
- Other support for new legislation

RUCPP System Had to Commence Operations by Fall 2012
RUCPP Program

- 4-month pilot (Nov 2012 to Feb 2013)
- 88 total participants in OR, WA, NV
  - Oregon participants (44) included state legislators, state transportation commission, DOT executives
- Oregon participants actually paid RUC (1.56 cents / mile)
User Choice – Mileage Reporting Technology and Account Management

Choosing your plan
To activate your account, you must choose a charging plan. Your charging plan will include a road usage charge service provider – either ODOT or a private provider, Sanef – and a method to report the miles you drive (click on the plan title in the table below).

Need help? Call toll-free 855-797-1265 or RUCPP@odot.state.or.us

<table>
<thead>
<tr>
<th>Plan Options</th>
<th>Miles Reported</th>
<th>Invoice</th>
<th>Payment</th>
<th>Online account management</th>
<th>Uses GPS?</th>
</tr>
</thead>
<tbody>
<tr>
<td>ODOT Basic Plan</td>
<td>All</td>
<td>Mailed Monthly</td>
<td>Check</td>
<td>No</td>
<td>No, does not report where miles are driven</td>
</tr>
<tr>
<td>ODOT Flat Rate Plan</td>
<td>N/A</td>
<td>Once, at start</td>
<td>Check</td>
<td>No</td>
<td>No device</td>
</tr>
<tr>
<td>Sanef Basic Plan</td>
<td>All</td>
<td>Emailed Monthly</td>
<td>credit/debit card</td>
<td>Yes</td>
<td>No, does not report where miles are driven</td>
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<tr>
<td>Sanef Advanced Plan</td>
<td>Public roads in Oregon only</td>
<td>Emailed Monthly</td>
<td>Credit/debit card</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Sanef Smartphone Plan</td>
<td>With application running, only roads in Oregon; without application running, all roads</td>
<td>Emailed Monthly</td>
<td>Credit/debit card</td>
<td>Yes</td>
<td>Yes, when the application is running</td>
</tr>
</tbody>
</table>
SANEF Plans

Option 1: Basic Plan (without GPS)

Payment Options:
Online Credit/Debit (PayPal)

Option 2: Advanced Plan (with GPS)

Option 3: Smartphone Plan
ODOT Plans – Account Manager as the “Provider of Last Resort”

Option 4: ODOT Basic Plan (without GPS)

Payment Options:
Mail-In Payments
Check Payments

Option 5: ODOT Flat Rate Plan

No MRD
MRD Installation Instructions

HOW TO INSTALL THE MILEAGE REPORTING DEVICE

1. Locate your Port
   Your vehicle’s OBD-II port is an outlet often located near the pedals.

2. Plug-In Device
   Ensure it is installed securely and is not loose.

If your OBU becomes disconnected for any reason, simply repeat these steps.

Once installed, it is important you wait 1-2 minutes before starting your vehicle to allow the Device to configure.

Your mileage data will be automatically recorded and sent for processing.

It is important to ensure that the Mileage Reporting Device does not interfere with your ability to safely enter, exit, or operate the vehicle. If so, contact the Help Desk.

Port location may vary by vehicle. It could be covered or located nearby.
MRD Installation into Vehicle OBD-II Port
Standard Mileage Message from MRD in Vehicle

- Vehicle identification number
- Mileage reporting device identification number
- Timestamp for installations and removals of mileage reporting device
- Total mileage during reporting period
- For **Advanced** (GPS) Plans, chargeable miles
  - Miles traveled in Oregon on public roads
- Fuel consumption during reporting period
  - Estimated based on other vehicle parameters
**Monthly Invoicing**

From: Sanef S.A.
8130 SW Beaverton-Hillsdale Hwy
Portland, Oregon
97225

On behalf of:
Road Usage Charge Pilot Program
355 Capitol St. NE MS 32
Salem, Oregon
97301-3871

To:
Chuck Larsen
2262 37th place NW
Salem, Oregon
97304

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**ROAD USAGE CHARGE PILOT PROGRAM**

**CUSTOMER INVOICE**

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Amount</th>
<th>Rate ($)</th>
<th>Subtotal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle: Ford Mustang</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>License Plate Number: 687 CGT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLAN: ADVANCED</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mileage Tax</td>
<td>176.30 miles</td>
<td>$0.0156</td>
<td>2.75</td>
</tr>
<tr>
<td>Total Mileage</td>
<td>176.30 miles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oregon Taxable Miles</td>
<td>7.65 gals</td>
<td>$0.3000</td>
<td>-2.30</td>
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<tr>
<td>Fuel Tax Refund</td>
<td></td>
<td></td>
<td></td>
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**Subtotal**

0.45

**TOTAL Mileage Tax Due**

Total Mileage Tax Due

0.45

Payment Due Date

Nov 25 12

Your account balance

$0.45

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CH2M HILL
### Plan Choices by State

<table>
<thead>
<tr>
<th>Plan/OBU</th>
<th>Oregon</th>
<th>Washington</th>
<th>Nevada</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sanef Advanced</td>
<td>24</td>
<td>16</td>
<td>7</td>
<td>47</td>
</tr>
<tr>
<td>Total Sanef Basic</td>
<td>8</td>
<td>5</td>
<td>16</td>
<td>29</td>
</tr>
<tr>
<td>Total ODOT Basic</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Total Smartphone</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Total Prepaid Flat Rate</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>44</strong></td>
<td><strong>21</strong></td>
<td><strong>23</strong></td>
<td><strong>88</strong></td>
</tr>
</tbody>
</table>
“Being a part of the Road Usage Charge Pilot Program has been simple. I do not notice that the device is even in my car”

“It’s been about a month being “plugged in” to the Road Usage Charge Pilot Program; frankly I don’t even think about it.”

“My first bill was $1.12...a reasonable increase for an investment in making sure our roads are well maintained and I won’t need a monthly alignment on my car!”

“The end of the Road Usage Charge Pilot Program has passed without me really noticing – and that’s a good thing!”
Lessons Learned

• System was accurate
  – +/- 2% of odometer readings
• Achieved an “open system”
  – Mileage Reporting Devices from 2 different vendors communicating with a 3rd vendor’s account management subsystem via project standard protocol
• Issues with OBD-II “standard” (developed for monitoring emissions)
  – Not all vehicles conform to the standard (EVs, Hybrids) – Requires reverse engineering
  – Odometer reading / mileage not part of the standard
  – Fuel calculations – Use average EPA MPG values for some vehicles
• Enhanced monitoring of “connectivity” between MRD and vehicle
  – Anti-tampering
Lessons Learned (cont.)

• RUC should become a “value added” to other vehicle service offerings
  – Pay As You Drive Insurance (PAYD)
  – Concierge services
  – Cell phone offerings

• Telematics are the future
  – No need for an external device
  – Projected that 49% of new vehicles will have telematics by 2017
What’s Next?

Recent Legislation (SB 810)
• For 5000 light vehicles (volunteers)
• Rate of 1.5 cents / mile
• Rebate of fuel tax paid
• Mandates choice for motorists
• At least one choice not GPS
• Open market for reporting technologies and accounts
• Penalties for tampering
• Protection of personally identifiable information

RUC Summit in Portland on November 13

Western RUC Consortium
• Pooled fund study for additional research
• Interstate transfer of funds
• Common standards

Next Federal Authorization
For Additional Information

- Lou.neudorff@ch2m.com
- http://roadchargeoregon.org/