



Demonstrating Distance Based Fee with Shared Mobility Fleets

Mileage-Based User Fee Alliance 2022 Annual Meeting

Ken Buckeye, Project Director, MnDOT

<https://dbf.dot.state.mn.us/>

Demonstration Objectives

- Validate a **feasible and affordable DBF** focused on where transportation technology is going..., embedded telematics
 - Scalability
 - Security
 - Cost-Effectiveness
- Leverage partnerships for use of **embedded telematics**
 - Shared Mobility Fleet Model
- **Integrate collections** process: state and federal rates applied
- **Leverage this learning** for broader deployment models

Embedded Telematics

- Administrative Costs Reduced
- Onboarding and Operations Simplified
- Tamper-Resistant
- Privacy Protected
- Accuracy and Reliability
- Efficiency



Minnesota's Distance – Based Fee Guiding Principles

- Electric, alternative fueled, and other highly efficient vehicles should be charged a **proportionate share** for use of the roads.
- Moving to DBFs is a **migration..., not a transformation**
- **Maintain the motor fuel tax and sustain variable rates**
- Seek **simplicity** and reasonable policies and collection costs
- **Maturity of this concept** advances with vehicle embedded telematics

Demonstration Operations and Research Partners



HOURCAR

- Non-profit car sharing service
- Operations in the Twin Cities and Rochester



ZIP CAR

- Car sharing provider
- Operations in major US cities as well as Canada and United Kingdom



VSI LABS

- Minnesota-based active safety and automated vehicle research
- Provided automated vehicle for use in demonstration

- Safely and securely collected, processed, and invoiced a half million miles of travel with embedded telematics; 1400 participants
- User privacy and data security have been protected
- Customer complexity reduced
- Developed a rate setting framework to examine the basis for establishing fair per-mile charges
- Simulated collection of both State and Federal DBF (MFT equivalent)

HF 523 Example: Ford F150 Pickup Truck With State DBF Rates Applied

Ford F150 3.5L V6



19.4 MPG (avg for pickups)
11,500 miles per year avg.
State Gas Tax: 28.5 ¢
/gallon
Total Annual State: \$169

Ford F150 Lightning



68 MPGe
11,500 miles per year avg.
MBUF Rate: 1.47 ¢/mile
Total Annual State: \$169

HF 523 Example: Ford F150 Pickup Truck With State and Federal DBF Rates Applied

Ford F150 3.5L V6



19.4 MPG (avg for pickups)
11,500 miles per year avg.
State Gas Tax: 28.5 ¢/gallon
Total Annual State: \$169
**Fed Gas Tax: 18.4 ¢
/gallon**
Total Annual Fed: \$109

Ford F150 Lightning



68 MPGe
11,500 miles per year avg.
MBUF Rate: 1.47 ¢/mile
Total Annual State: \$169
Fed DBF Rate: 0.95 ¢/mile
Total Annual Fed: \$109

Minnesota State and Federal DBF Rate Comparison

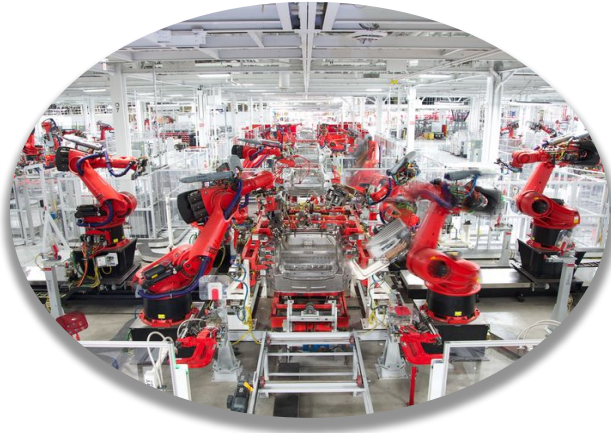
- There would be five State DBF rates, and five Federal rates; one for each EPA vehicle type:

	<u>STATE RATE</u>	<u>FEDERAL RATE</u>
• Sedan/Wagon	0.899 ¢/mile	0.581 ¢/mile
• Car-based SUV	0.934 ¢/mile	0.604 ¢/mile
• Truck-based SUV	1.188 ¢/mile	0.768 ¢/mile
• Minivan/Van	1.088 ¢/mile	0.704 ¢/mile
• Pickup Truck	1.468 ¢/mile	0.948 ¢/mile

These fee levels would be tied to the gas tax and average vehicle mpg, and would adjust to keep HUTDF revenues level during the transition

Moving Forward

Vehicle Manufacturers



The Stream of Feasibility

for implementing a distance-based fee

Fleet operated vehicles



Automated Vehicles



Vehicle Plug-in Port



Smartphone GPS Apps

Thank you!

<https://dbf.dot.state.mn.us/>

Ken Buckeye – Project Manager
Kenneth.buckeye@state.mn.us; 651-366-3737
Office of Financial Management