Low–Cost/Low–Tech VMT Fee Collection

A practical implementation pathway
The failing fuel tax: Lost revenue due to increasing fleet economy

Estimated average state gas tax collected per each mile traveled by LDVs in nominal dollars

<table>
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<tr>
<th>Year</th>
<th>Gas Tax per Mile (in nominal dollars)</th>
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<tr>
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State gas tax collected per LDV VMT
The failing fuel tax: Lost revenue due to increasing fleet economy

Projected state gas tax revenue loss with decline from 2008 LDV per mile rate of collection in nominal dollars
Vehicles in the same class have similar impacts on roadway damage and congestion.

For vehicles in the same class, VMT Fees would collect the same amount for each mile driven regardless of fuel type.

Decouples fuel economy from per mile revenue collection.

BUT...

VMT fees have been discussed for more than 20 years, yet significant implementation is always “10–20 years from now”
Federal fuel tax collection

- Collected at the refinery or import terminal level from large oil companies
- Direct participants in collection process are the IRS and about 200 other parties
- No direct accounting of where the fuel goes
- Allocation to states based upon a complex estimating process using inconsistent and non-uniform data from the states
- Suppliers, retailers, and users have no active role
Nevada state and local fuel tax collection

- Fuel taxes collected monthly by DMV for approximately 125 fuel suppliers
- State taxes on special fuels used for interstate commerce are further adjusted between the states through the IFTA process
- Direct participants in collection (excluding IFTA) are the DMV and about 125 suppliers
- Retailers/end users (1,710) and motorists (1.8 million in Nevada and ? millions from outside the state) have no active role
- Cost of collection about 4% of revenue
Nevada fuel tax collection

Existing Nevada Fuel Tax Collection and Vehicle Registration Process

NV Registered Vehicles
- Registration Renewal Notice
- Smog if required & pay registration fee

Out-of-State Vehicles
- Pump, Pay, Drive Away
- Buy/Sell with local & state fuel taxes prepaid

DMV
- Remit local & state taxes

Retailers
- Buy/Sell with local & state fuel taxes prepaid

Suppliers

Users

Industry
Criteria for any replacement to the fuel tax

- Addresses the privacy concerns of users
- Minimal or no additional effort/cost for industry (e.g. fuel suppliers, fuel retailers)
- Minimal or no additional effort/cost for users (pump-pay-drive away)
- Minimal or no additional burden for administering governmental agencies
- Equity among system participants, and between participants and non-participants
- Revenue reliability (predictable, reliable monthly income)
- Revenue stability (mitigates the revenue impacts of increasing fleet fuel economy)
- Cost of revenue collection is comparable to the current fuel tax system and compatibility with other transactions such as vehicle sales, registration, titling, etc.
- Ability to be implemented on a jurisdictional basis and accommodate outside users
- Ability to incorporate optional technologies and user services
- Longevity (system can be used for 20+ years)
- Ability to deal with any mix of federal, state, and local fuel taxes or VMT Fees and an evolving mix

Any new mechanism must be at least as good as or better than the current fuel tax system
VMT Fee implementation

- “Big–bang”: Universal implementation across all US jurisdictions
- Incremental: By individual jurisdictions; for selected classes of vehicles
- “Big–bang” but will probably never be done due to politics
- Incremental approach is most likely
Insight into VMT issues: Two illustrative approaches

- Simplifying assumptions
  - Odometer based to address privacy issue
  - Incremental implementation
  - Non-enrolled vehicles pay fuel tax instead of a VMT fee
  - “Pump-pay-drive away” experience for all motorists would be maintained

Not all inclusive, many variations are possible, only to illustrate the problems/issues
Illustrative approach: VMT fees paid at the pump

![Illustrative "Pay-at-the-Pump" VMT Collection Process Diagram]

Key points:
- Pay VMT fee, fuel cost, & local taxes in single transaction at POS
- Pay fuel cost, state & local taxes in single transaction at POS
- Smog if required & pay registration fee
- Registration Renewal Notice
- Calculate miles driven since last fueling; calculate VMT fee; convert price to include local taxes & calculated VMT fee.
- Transponder responds to retailer query with current & previous odometer reading.
- Query for VMT Transponder
- Yes: Collect VMT fee, local taxes & fuel cost in single transaction for VMT registered vehicles.
- No: Collect fuel cost, state & local taxes in single transaction for non-VMT registered vehicles.
Nevada fuel tax collection

Existing Nevada Fuel Tax Collection and Vehicle Registration Process

- NV Registered Vehicles: Smog if required & pay registration fee
- Out-of-State Vehicles: Buy/Sell with local & state fuel taxes prepaid
- Users: Pump, Pay, Drive Away
- DMV: Registration Renewal Notice
- Industry: Retailers
  - Buy/Sell with local & state fuel taxes prepaid
- Suppliers
  - Remit local & state taxes

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Illustrative approach: VMT fees paid at the pump

Illustrative “Pay-at-the-Pump” VMT Collection Process

- Pay VMT fee, fuel cost, & local taxes in single transaction at POS
- Smog if required & pay registration fee
- Registration Renewal Notice
- Smog if required & pay registration fee
- DMV
- Process local tax transactions from retailers
- Process VMT transactions from retailers
- Process state tax transactions from retailers

NV Vehicles
- VMT Transponder*
- NV Vehicles w/o VMT Transponder**
- *Transponder responds to retailer query with current & previous odometer reading.
- **Calculate miles driven since last fueling; calculate VMT fee; convert price to include local taxes & calculated VMT fee.
- Remit VMT fees and local and state taxes collected at POS

Out-of-State Vehicles**
- Pay fuel cost, state & local taxes in single transaction at POS
- Pump, Pay, Drive Away

Users

Retailers
- Buy/Sell without local & state fuel taxes prepaid
- Query for VMT Transponder
- Yes
- Collect VMT fee, local taxes & fuel cost in single transaction for VMT registered vehicles.
- No
- Collect fuel cost, state & local taxes in single transaction for non-VMT registered vehicles.

Suppliers

Industry
Illustrative approach: VMT fees paid as a separate transaction
Nevada fuel tax collection

Existing Nevada Fuel Tax Collection and Vehicle Registration Process

- NV Registered Vehicles
  - Registration Renewal Notice
  - Smog if required & pay registration fee

- Out-of-State Vehicles
  - Pump, Pay, Drive Away
  - Buy/Sell with local & state fuel taxes prepaid

- DMV
  - Remit local & state taxes

- Retailers
  - Buy/Sell with local & state fuel taxes prepaid

- Suppliers
  - Buy/Sell with local & state fuel taxes prepaid

- Users
  - Industry
Illustrative approach: VMT fees paid as a separate transaction

Illustrative VMT Collection Process as a Separate Transaction from Fueling

- Pay fuel cost, & local taxes in single transaction at POS
- Smog if required or submit odometer reading & pay registration & VMT fee
- Registration Renewal Notice
  - Smog if required & pay registration fees
  - Convert price to include local taxes only
  - Query for VMT Transponder
  - Yes
    - Remit local & state taxes collected at POS
  - No
    - Convert price to include state & local taxes

Users
- NV Vehicles VMT Transponder*
- NV Vehicles w/o VMT Transponder**
- Out-of-State Vehicles**
- Pay fuel cost, state & local taxes in single transaction at POS

DMV
- Calculate & Collect VMT Fees
- Process local tax transactions from retailers
- Process state tax transactions from retailers
- Suppliers
- Industry
- Collect fuel cost, local taxes in single transaction for VMT registered vehicles.
- Collect fuel cost, state & local taxes in single transaction for non-VMT registered vehicles.
- Retailers
- Buy/Sell without local & state fuel taxes prepaid

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Illustrative approaches: Fatal flaws

- Minimal or no additional effort/cost for industry (e.g. fuel suppliers, fuel retailers)
- Minimal or no additional effort/cost for users
- Minimal or no additional burden for administering governmental agencies
- Cost of revenue collection is comparable to the current fuel tax system and compatibility with other transactions such as vehicle sales, registration, titling, etc.
Odometer based to address privacy issue
Initially applied only to “light duty vehicles” (LDVs) registered in Nevada
- 96% of registered vehicles
- Account for about 89% of VMT
DMV would continue to collect state and local fuel taxes on all fuel from suppliers
Non-enrolled vehicles pay fuel tax instead of a VMT fee
Enrolled vehicles would pay a VMT Fee instead of state fuel tax
“Pump-pay-drive away” experience for all motorists would be maintained
Low-cost/low-tech VMT Fee collection concept

Low-Cost/Low-Tech VMT Collection Process

DMV

NV Vehicles
VMT Enrolled

NV Vehicles
Not Enrolled

Registration Renewal Notice
Smog if required & pay registration fee

Smog if required or submit odometer reading if required & pay registration fee + Net VMT fee

Calculate Net VMT Fee (Total VMT Less Fuel Purchase Credit)

Remit local & state taxes

Out-of-State Vehicles

Users

Buy/Sell with local & state fuel taxes prepaid

Pump, Pay, Drive Away

Retailers

Suppliers

Industry

Buy/Sell with local & state fuel taxes prepaid

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Nevada fuel tax collection

Existing Nevada Fuel Tax Collection and Vehicle Registration Process

- **NV Registered Vehicles**
  - Smog if required & pay registration fee

- **Out-of-State Vehicles**
  - Buy/Sell with local & state fuel taxes prepaid

- **DMV**
  - Registration Renewal Notice
  - Remit local & state taxes

- **Users**
  - Pump, Pay, Drive Away

- **Retailers**
  - Buy/Sell with local & state fuel taxes prepaid

- **Suppliers**
  - Buy/Sell with local & state fuel taxes prepaid

- **Industry**
Low-cost/low-tech VMT Fee collection concept

![Diagram of the process]

- **NV Vehicles VMT Enrolled**
  - Smog if required or submit odometer reading if required & pay registration fee + Net VMT fee
  - Registration Renewal Notice

- **NV Vehicles Not Enrolled**
  - Smog if required & pay registration fee

- **Out-of-State Vehicles**
  - Buy/Sell with local & state fuel taxes prepaid

- **Users**
  - Pump, Pay, Drive Away

- **DMV**
  - Calculate Net VMT Fee (Total VMT Less Fuel Purchase Credit)
  - Remit local & state taxes

- **Retailers**
  - Buy/Sell with local & state fuel taxes prepaid

- **Suppliers**

- **Industry**
Low-cost/low-tech VMT Fee collection concept: How it works

- All users purchase fuel with the state and local fuel taxes prepaid
- With annual LDV registration, the odometer reading would be reported
  - For most of the 80% of LDVs registered in Clark and Washoe Counties, this would be done automatically through the smog inspection process
  - The remaining 20% of LDVs would be self-reported
- Miles driven since the previous registration are calculated
- A **Gross VMT Fee** would be calculated by multiplying the current VMT per mile rate times the number of miles driven
- The gallons of fuel consumed would be automatically estimated based upon the EPA city/highway fuel consumption numbers
- A **VMT Fee Estimated Fuel Purchase Credit** would be calculated by multiplying the estimated gallons times the current fuel tax rate
- The VMT Estimated Fuel Purchase Credit would be subtracted from the Gross VMT Fee to determine a Net VMT Fee
- The **Net VMT Fee** would be paid with the vehicle registration fees
Low-cost/low-tech VMT Fee: Sample calculation

- Gasoline LDV driven: 18,000 miles
- EPA economy rating: 18 miles per gallon (MPG)
- VMT Fee per mile rate: 1 cent per mile (CPM)
- State gas tax rate: 18.455 cents per gallon (CPG)
- Gross VMT Fee: 18,000 miles X 1 CPM=$180.00
- Estimated gallons purchased: 18,000 miles/18 MPG=1,000 gallons
- VMT Fee Estimated Fuel Purchase Credit: 1,000 gallons X 18.455 CPG=$184.55
- Net VMT Fee: $180.00−$184.55= −$4.55 (Credit)
VMT Fee Estimated Fuel Purchase Credit

- Key to the low–cost/low–tech concept
- An estimate, but estimates are used all the time to reduce administrative burdens and costs:
  - Distribution of federal fuel tax revenues to states
  - Redistribution of state special fuel taxes by IFTA
  - Standard deduction for personal federal income taxes
- Drivers could be offered the choice to use more precise 3rd party services to record fuel consumption, if they desired
Fuel tax would be collected by DMV from suppliers exactly as it is today
Retailers would have no change
All drivers would pump–pay–drive away
Nevada LDVs would have a minor change in the registration process
DMV would need to slightly modify the LDV registration process and automated systems
Low-cost/low-tech VMT Fee collection concept benefits

- Collects revenue from out-of-state users without a complex crediting and refund system
- Substantially addresses revenue being lost through increasing fuel economy
- Improves user equity
- Performs as well as or better than the current fuel tax system

*Practical implementation pathway of 2–3 years rather than the eternal “10–20 years from now”*
Thank you!