Sustainable Transportation Funding Options for Minnesota

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Minnesota Department of Transportation
Analysis conducted as part of the Study of Long-Range Transportation Funding Solutions (Dec. 09)

Minnesota Laws 2009, Chapter 134, Section 8

“The commissioner of transportation shall conduct a study in consultation with other state agencies and key stakeholders to evaluate the current and long-range needs of the state's transportation system, and investigate possible strategies to meet these needs.”
Purpose of the Study:
Identify and evaluate options for transportation funding during the next 20 years

Includes:
- Trunk highways
- Greater Minnesota transit
- Twin Cities metropolitan area transit
Note: The Local Option Sales Tax began collecting revenue in Fiscal Year 2009 and is therefore not represented in these numbers.
Highway User Tax Revenue 2002-2009 Actuals, 2010-2013 based on February 2010 Forecast

- **$ millions**
  - **2002**: $193, $479, $508
  - **2003**: $195, $487, $642
  - **2004**: $176, $496, $648
  - **2005**: $165, $492, $651
  - **2006**: $163, $488, $656
  - **2007**: $159, $481, $644
  - **2008**: $195, $477, $648
  - **2009**: $196, $501
  - **2010**: $216, $521
  - **2011**: $280, $540
  - **2012**: $283, $567
  - **2013**: $286, $590

- **Motor Vehicle Sales Tax**
- **Tab Fees**
- **Motor Fuel Tax Revenue**
The 2006 Constitutional Amendment dedicated 100% of MVST revenue to transportation

- More money for transportation (particularly transit), but
- Total MVST has been in decline since 2002
Current and Future Trends

- Disparity between identified system needs and projected available funds
- Increasing vehicle fuel economy
- Fuel price volatility
- Increased transit use
- Environmental policies
- Demographic shifts
- Construction cost volatility
Rising and increasingly volatile gas prices have stalled the growth in vehicle miles traveled.
More fuel efficient vehicles pay less taxes per mile driven

Vehicle Fuel Economy (Miles Per Gallon)

Gas Tax Paid Per Mile Driven

- Current Fleet Avg.
- Obama Administration's Proposed New Fleet Avg. in 2016

MN State Gas Tax Paid per Mile Driven

$0.030

$0.025

$0.020

$0.015

$0.010

$0.005

$0.000
Modeling the Impact of Fuel Efficiency

- Six Scenarios
  - Current CAFE Standards (35 mpg by 2020)
  - Proposed CAFE Standards (35.5 mpg by 2016)
  - Plug-in Hybrids reach 50% market penetration by 2030
  - Electric Vehicles reach 50% market penetration by 2030
  - Plug-in Hybrids reach 100% market penetration by 2030
  - Electric Vehicles reach 100% market penetration by 2030
Assumptions

- Tax remains $0.285 beginning 2013
- 5% rate of new vehicle purchases
- Average of 100 mpg for Plug-in Hybrids
- Gasoline sales only (excludes sale of diesel and other fuels)
Motor Fuel Tax Revenue (millions, year of collection)

- Fuel economy follows 2007 CAFE standards (35 mpg by 2020)
- Fuel economy increases at rate implied by proposed CAFE standards (35.5 mpg by 2016)
- PHEV adoption rate increases annually before leveling at 50%
- Electric vehicle adoption rate increases annually before leveling at 50%
- PHEV adoption rate increases annually before leveling at 100%
- Electric vehicle adoption rate increases annually before leveling at 100%

Revenues from sale of gasoline only
Excludes revenues from diesel and other fuels
Fleet grows at 0.8% due to population growth
Rate of new vehicle purchases is 5%
Tax remains at $0.285/gallon starting 2013
For plug-in hybrids, an average fuel economy of 100 mpg was assumed
Fuel Economy Impact on Gas Tax Revenues Assuming No Growth in VMT

Revenues from sale of gasoline only
Excludes revenues from diesel and other fuels
Fleet Grows at 0.8% due to population growth

Rate of new vehicle purchases is 5%
Tax remains at $0.285/gallon starting 2013
For plug-in hybrids, an average fuel economy of 100 mpg was assumed
Fuel Economy Impact on Gas Tax Revenues Assuming 1% Annual Decrease in VMT

Revenues from sale of gasoline only
Excludes revenues from diesel and other fuels
Fleet Grows at 0.8% due to population growth

Rate of new vehicle purchases is 5%
Tax remains at $0.285/gallon starting 2013
For plug-in hybrids, an average fuel economy of 100 mpg was assumed
Projected Revenue from an Indexed Gas Tax Assuming an Average Annual Inflation Rate of 3%

Motor Fuel Tax Revenue (millions, year of collection)

Fuel economy follows 2007 CAFE standards (35 mpg by 2020)
Fuel economy increases at rate implied by proposed CAFE standards (35.5 mpg by 2016)
Plug-in hybrid vehicle adoption rate increases annually before leveling at 50%
Electric vehicle adoption rate increases annually before leveling at 50%
Plug-in hybrid vehicle adoption rate increases annually before leveling at 100%
Electric vehicle adoption rate increases annually before leveling at 100%

Revenues from sale of gasoline only
Excludes revenues from diesel and other fuels
Avg. VMT per vehicle assumed to be constant
Rate of new vehicle purchases is 5%
Fleet Grows at 0.8% due to population growth
For plug-in hybrids, an average fuel economy of 100 mpg was assumed
Modeling a Mileage-based User Fee

• Scenario A
  • Beginning 2010, all new passenger vehicles pay a VMT tax of $0.01/mile instead of the state motor fuel excise tax
  • Existing passenger vehicles purchased prior to 2010 would continue to pay the per gallon fuel tax

• Scenario B
  • Electric and Plug-in Hybrid vehicles pay a VMT tax of $0.01/mile instead of the state motor fuel excise tax
  • All other passenger vehicles continue to pay the per gallon fuel tax
Hypothetical revenue from a phased-in mileage-based user fee of $0.01/mile

**Scenario A**
- Motor Fuel Tax Revenue (from gasoline only)
- VMT Tax Revenue on all new vehicles beginning 2010

**Scenario B**
- Motor Fuel Tax Revenue (from gasoline only)
- VMT Tax Revenue only on Electric and Plug-in Hybrid Vehicles (Electric and PHEV share of new vehicles increases to 50% in 2030)

**Assumptions:**
- Per vehicle VMT flat
- No change in VMT patterns as a result of the new fee
- Fuel economy follows 2007 CAFE standards
- Gas tax remains at $0.285 beginning 2013
- 5% rate of new vehicle purchases
- Fleet grows by 0.8% annually
- In Scenario B, adoption of PHEVs follows S-shaped curve leveling at 50%
Evaluated 26 Revenue Options Based on the Following Criteria

- **Viability**: revenue potential, implementation complexity, and public acceptance
- **Resilience**: susceptibility to increased fuel economy and use of alternative fuels, increase use of alternative modes, and fuel price volatility
- **Policy Impact**: potential to relieve congestion and reduce GHG emissions
Options Evaluated: Existing Sources

- Motor Fuel Excise Tax
- Motor Vehicle Sales Tax
- Vehicle Registration Fees
- General Funds
- Local Option Sales Tax
- Property Tax

- High Occupancy Toll Lanes
- Tax Increment Financing
- Wheelage Tax
- Fares
- Advertising
Options Evaluated: Modifications of Existing Sources

- Indexed Motor Fuel Excise Tax
- Motor Fuel Sales Tax
- Emission-Based Vehicle Registration Tax
Options Evaluated: Potential Sources

- Mileage-Based Tax
- Emission-Adjusted Mileage-Based Tax
- Location and/or Time-Adjusted Mileage-Based Tax
- Tolling Existing Lanes
- Tolling New Lanes
- Tolling Based on Congestion

Level
- Cordon Pricing
- Parking Pricing
- General Sales Tax
- Land Value Tax
- Transportation Utility Fee
- Cap-and-Trade Revenue
### Existing Revenue Sources

<table>
<thead>
<tr>
<th>Source</th>
<th>Geographic Scope</th>
<th>Viability</th>
<th>Resilience</th>
<th>Policy Impacts</th>
<th>Greenhouse Gas Emission Reduction</th>
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<td>General Funds (for Transit)</td>
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<td>Transit Fare Box Revenue</td>
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</table>

**Key:** + = Positive/High  Ø = Neutral  − = Negative/Low
Possible Revenue Strategies

- Keep Existing Structure and Rates Unchanged
- Keep Existing Structure, but Raise Rates
- Modify Existing Sources
- Adopt User Fee System
- Supplement Revenue Sources and Stretch Funds
Questions?

Full Report Available Online at:
www.dot.state.mn.us/planning/program/longrangesolutions.html