

Study of Transportation Long-Range Funding Solutions



Executive Summary

The purpose of the Study of Transportation Long-Range Funding Solutions is to identify and evaluate options for transportation funding in Minnesota during the next 20 years. As directed by the Minnesota Legislature, the study investigates the ability of existing sources of revenue to meet current and future transportation needs. The study includes state trunk highways, Greater Minnesota transit and Twin Cities metropolitan area transit. Freight movements outside the trunk highway system and other modes of transportation such as air, water and intercity bus and rail are not included. This study builds on previous Minnesota Department of Transportation and Metropolitan Council plans as well as the work of two national commissions that have examined the issue of long-term funding for transportation.

The revenue-generating potential of current sources was compared with long-range plans for each system in the study. Projected future trends affecting the current fuel tax and motor vehicle registration and sales taxes were then considered. In particular, changes to the vehicle fleet, such as increased fuel economy and the potential of alternative fuels, are noted. Combined with rising construction costs and changing demographic patterns, the result of these effects is that future revenues are unlikely to be sufficient to maintain and operate the transportation system or sustainable if funding remains at current sources and levels. Alternative funding strategies are investigated, and their potential application in Minnesota is evaluated using several criteria.

Transportation Investment Needs

The Statewide 20-Year Highway Investment Plan 2009-2028, the Mn/DOT Draft Greater Minnesota Transit Plan 2010-2030 and the Metropolitan Council 2030 Transportation Policy Plan each contain information about investment needs and current funding sources. Highway investments are needed to improve traveler safety, preserve infrastructure and provide increased mobility. Increased transit operations in areas outside the Twin Cities will be needed as the population continues to grow and age. Transit expansions are also planned for the Twin Cities metropolitan area to provide an alternative to congestion and improve service, with a goal of doubling ridership by 2030.

The investment needs for each plan are summarized in the table to the right, along with the revenue projection from existing sources used to develop the plans. The state

Summary of 20-year transportation needs and revenues

Type of service	Investment need	Revenue projection
Highways ¹		
Operating	\$14B	
Capital	\$65B	
Total	\$79B	\$29B
Greater MN Transit ²		
Operating	\$2B	
Capital	\$1B	
Total	\$3B	\$2B
Twin Cities Transit ³		
Operating	\$12B	
Capital	\$9B	
Total	\$21B	\$17B
Total	\$103B	\$48B

Note: All figures in year-of-construction dollars

¹ Statewide 20-Year Highway Investment Plan 2009-2028; operating estimate is based on current budget levels and does not reflect all performance-based needs. Mn/DOT is preparing to develop a highway operations and investment plan, which will better evaluate operations and maintenance needs.

² Mn/DOT Draft Greater Minnesota Transit Plan 2010-2030

³ Metropolitan Council 2030 Transportation Policy Plan

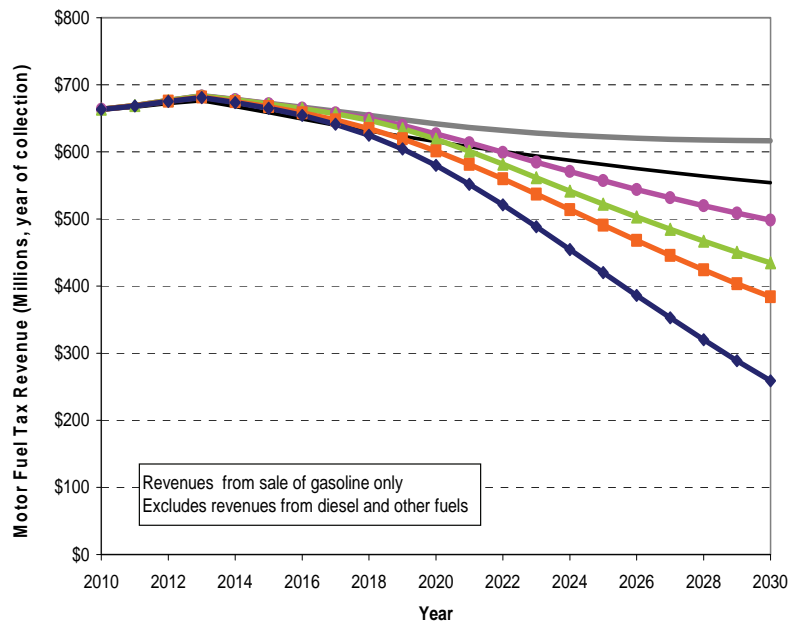
motor fuel tax, motor vehicle sales tax and motor vehicle registration tax are included in the revenue projection, along with projected federal and state general funds and other dedicated sources such as fares and local option sales taxes.

Current and Future Revenue Trends

Revenues from taxes on vehicles and fuel have not kept pace with needs, and are forecast to decline in the years ahead for a variety of reasons. Motor fuel tax revenue is likely to decrease due to increased fuel economy, and its buying power will decline because the rate does not keep up with inflation. Sharp increases in the price of fuel cause consumers to drive less and thus decrease revenue potential, since the fuel tax is fixed and does not vary with price. As electric vehicles, plug-in hybrids and alternative fuels are developed and become more widespread, this effect is magnified. The potential effects of increasing fuel economy, plug-in hybrids and electric vehicles are shown in the figure below. Federal funds collected from the national fuel tax are susceptible to the same trends as the state tax.

Changes to the vehicle fleet can also affect sales and registration tax revenues. The recent adjustments to the depreciation schedule for vehicles means owners of newer vehicles are paying a larger share of registration taxes. Therefore, revenues are sensitive to economic downturns that cause drivers to put off buying new vehicles. Smaller cars with better fuel economy also tend to be less expensive than the larger trucks and SUVs they are replacing. An extra challenge arises from funding transit operations with vehicle sales taxes. As transit ridership increases, vehicle sales and the associated tax revenues decrease.

Other economic and policy trends will have a broader impact. Volatility in the costs of construction materials makes the revenue needed for specific projects less predictable. Environmental policies and changing land use and demographic patterns can affect the demand for transportation services.



- 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 adoption rate increases annually before leveling at 50%
- ▲ Electric vehicle adoption rate increases annually before leveling at 50%
- Plug-in hybrid adoption rate increases annually before leveling at 100%
- ◆ Electric vehicle adoption rate increases annually before leveling at 100%

Assumptions:

- Gas Tax remains at \$0.285 starting 2013
- Average annual VMT per vehicle assumed to be constant
- Rate of new vehicle purchases is 5%
- Fleet grows at 0.8% annually due to population growth
- For plug-in hybrids, an average 100 miles per gallon was assumed

Effects of electric and plug-in hybrid vehicles on state motor fuel tax revenues

Source: Mn/DOT Office of Investment Management

Evaluation of Revenue Options for Minnesota

The potential effectiveness of several alternatives for use in Minnesota was evaluated based on the following categories of criteria:

- **Viability** – Revenue potential, implementation complexity, and public acceptance
- **Resilience** – Susceptibility to increased fuel economy and use of alternative fuels, increased use of alternate modes, and fuel price volatility
- **Policy Impact** – Potential to relieve congestion and reduce greenhouse gas emissions

The funding alternatives considered ranged from user fees and value capture strategies to existing sources and general revenues. The following strategies were evaluated:

- **Existing Sources** – Motor fuel excise taxes, motor vehicle sales taxes, vehicle registration taxes, state general funds, local option sales taxes, property taxes, High Occupancy Toll lanes, tax increment financing, wheelage taxes, fares, and advertising
- **Modification of Existing Sources** – Indexed motor fuel excise taxes, motor fuel sales taxes, and emission-based vehicle registration taxes
- **Potential Sources** – Mileage-based taxes, emission-adjusted mileage-based taxes, location- or time-adjusted mileage-based taxes, tolling existing lanes, tolling new lanes, tolling based on congestion level, cordon pricing, parking pricing, general sales taxes, land value taxes, transportation utility fees, and cap-and-trade revenues

Each strategy was given a positive, negative or neutral rating with respect to the criteria. No single strategy is perfect, and revenue will likely need to continue to come from a variety of sources.

Summary of Findings and Conclusions

With the Metropolitan Council and the Center for Transportation Studies at the University of Minnesota, Mn/DOT held a symposium to inform interested parties about long-range transportation plans and to gather input about what to include in the study. Based on the assessment of current and future needs, options and input from stakeholders, the following conclusions can be drawn:

1. **Minnesota's primary transportation revenue sources are unlikely to be sustainable in the long term.**
 - The combined effects of increases in fuel economy and alternative fuels, increasing use of alternative modes of transportation, and demographic shifts will begin to erode fuel tax revenue after the full rate increase is implemented in 2012.
 - Federal funds are heavily dependent on the federal motor fuel excise tax, which is susceptible to the same trends affecting Minnesota's motor fuel tax.
 - The constitutional dedication of the Motor Vehicle Sales Tax revenue to transportation has increased funding for transportation, but total MVST revenues

have been declining. The recent economic recession and increasing consumer preference for smaller, more fuel efficient cars have decreased MVST receipts in the past two years. Cars are lasting longer and the demand for additional vehicles has slowed, so MVST revenues are likely to be slow to recover.

- Fees from newer vehicles constitute a significant portion of annual vehicle registration fees because of the depreciation schedule for vehicles. As a result, at least in the short term, the same trends impacting MVST revenues also impact registration fees.
- New revenues have been dedicated to fund transit capital improvements, but funding transit operations is likely to be an ongoing challenge.

2. **Reliable and predictable funding sources are important for planning purposes.** Transportation investments are planned years in advance of construction, and it is difficult to plan and program investments if revenues fluctuate widely. Therefore, the sustainability and reliability of those revenue sources are important considerations.
3. **Despite the many options available, only a few revenue mechanisms offer the potential to generate significant revenue similar to the current primary revenue sources.** Most of the options considered in this study are unlikely to generate revenue similar to the current primary sources. Other than modifying existing sources, mileage-based fees, tolling existing lanes, and dedicating a portion of the general sales tax are the only three options with the potential to generate revenue comparable to the fuel tax.
4. **Dependence on a single revenue source exposes transportation funding levels to more risk.** A portfolio of revenue sources reduces the risk of negative trends and is more likely to provide stable revenue to fund the transportation system.
5. **Fuel taxes are still a viable option in the short term.** The fuel tax is inexpensive to administer and provides an incentive to reduce greenhouse gas emissions. Historically, it has taken roughly 20 years for the passenger vehicle fleet to fully turn over, so even with increasing fuel economy a decade may pass before fuel tax revenues are significantly reduced. Nevertheless, under the current CAFE standards (35 miles per gallon by 2020), fuel tax revenues are projected to begin decreasing after the increased tax rate is fully implemented in 2012. Even if the nominal value of tax revenues remained constant through rate increases, the purchasing power of the tax revenue would continue to decline due to inflation.
6. **Mileage-based fees, or VMT fees, have the potential to generate significant revenue, but there are many implementation and public acceptance issues that need to be resolved.** Mileage-based fees may be best implemented at the national level. More directly linking taxes to system use could help achieve other policy goals.
7. **Minnesota transportation revenue mechanisms could better recognize and support multiple established policy goals related to economic development, natural resource preservation, GHG emissions and safety.** These goals can conflict at times and can have unintended revenue consequences. The mix of revenue sources used should generate

sufficient and stable revenue, and support diverse goals and objectives for the Minnesota economy, transportation system and natural environment. Some options like congestion pricing may generate less revenue, but may be desirable for their environmental or congestion benefits.

8. **The Minnesota approach to funding could better support and enable the emerging vision of a multi-modal transportation system.** Both the Statewide Transportation Policy Plan and the Metropolitan Council 2030 Transportation Policy Plan envision a more multi-modal transportation system in the future. Mn/DOT and the Metropolitan Council are currently working together to develop strategies to optimize the existing system, provide advantages for transit and find other ways to meet transportation needs. Statewide plans are also being developed for freight, passenger rail and transit. These efforts offer an opportunity to create a safe, efficient and sustainable transportation system for the future. Minnesota revenue sources could be more consistent with these new approaches to achieving mobility and access objectives for the population of Minnesota.