



Report of Minnesota's
Mileage-Based
User Fee Policy
Task Force

DECEMBER 2011

About the Mileage-Based User Fee (MBUF) Policy Task Force Report

The goal of the Mileage-Based User Fee (MBUF) Policy Study was “To engage stakeholders and a Policy Task Force, with the intent of identifying and evaluating issues for potential implementation of MBUF in Minnesota.” The Mileage-Based User Fee (MBUF) Policy Task Force was asked to stay true to this goal, and not expand it’s scope to other transportation finance issues.

Task Force members are listed in the back page of this report.

This report was prepared by the Humphrey School of Public Affairs at the University of Minnesota in December, 2011. The report represents the views of the Mileage-Based User Fee Policy Task Force and does not necessarily represent the views or policies of the Minnesota Department of Transportation or the University of Minnesota. The Humphrey School of the University of Minnesota is hospitable to a diversity of opinions and aspirations. The Humphrey School itself does not take positions on issues of public policy.

The MnDOT Project Management Team consisted of Cory Johnson (Project Manager), Ken Buckeye, Christine Krueger, and Ray Starr. The Consultant Team consisted of Lee Munnich (Principal Investigator), John Doan (Project Manager), Ferrol Robinson, Joe Loveland, David Ungemah, John Chambers and Matt Schmit.

Contact:

<http://www.dot.state.mn.us/mileagebaseduserfee>



The Mileage-Based User Fee (MBUF) Policy Task Force (“Task Force”), appointed by Minnesota Department of Transportation (MnDOT) Commissioner Tom Sorel, was formed to identify and evaluate issues related to potential future implementation of an MBUF system in Minnesota.¹ Under a potential MBUF system, drivers would be charged based on the number of miles they drive, regardless of the type of energy source used to propel the vehicle, and instead of being charged by the gallon for fuel consumed in operating a vehicle.

Over a period of six months, the Task Force discussed and evaluated the overall MBUF concept and related issues, determined benefits and concerns, considered potential system design options and preferences and formulated policy objectives, Findings and Recommendations.

The Task Force was comprised of 25 Minnesotans representing a broad range of experience in the transportation industry, from both a public and private sector standpoint, the economic development community and a privacy expert. A list of Task Force members is included at the end of this Report. While many Task Force members serve key stakeholder groups, they were asked to represent both the interests of their particular constituency and the entire state in the analysis of a potential MBUF system.

The University of Minnesota’s Humphrey School of Public Affairs and MnDOT staff facilitated the process and provided technical advice to the Task Force. The Task Force was provided market research derived from focus groups and the results of a large sample public survey of Minnesotans on MBUF. The Task Force reviewed information from technical experts on the subject, and held a series of six meetings discussing the various MBUF system related issues.

This Report is the outcome of the Task Force’s deliberations and work over a six-month period, from June through November 2011. The Report is divided into two parts:

- Part 1 briefly summarizes what the Task Force learned during its discovery/investigative phase.²
- Part 2 describes the Findings and Recommendations of the Task Force to the Commissioner.

¹ In a separate but related initiative, MnDOT is conducting a demonstration project wherein 500 people from Hennepin and Wright Counties are testing technology that could potentially be used to collect MBUF in the future. Aggregated participant feedback will be supplied to the MnDOT Commissioner and other state policymakers upon completion of the project.

² A detailed technical report regarding the work performed and reviewed will be issued subsequent to the release of this Report. Information from the market research work performed as well as technical expert reports, will be included in the MBUF Policy Study Technical Report.

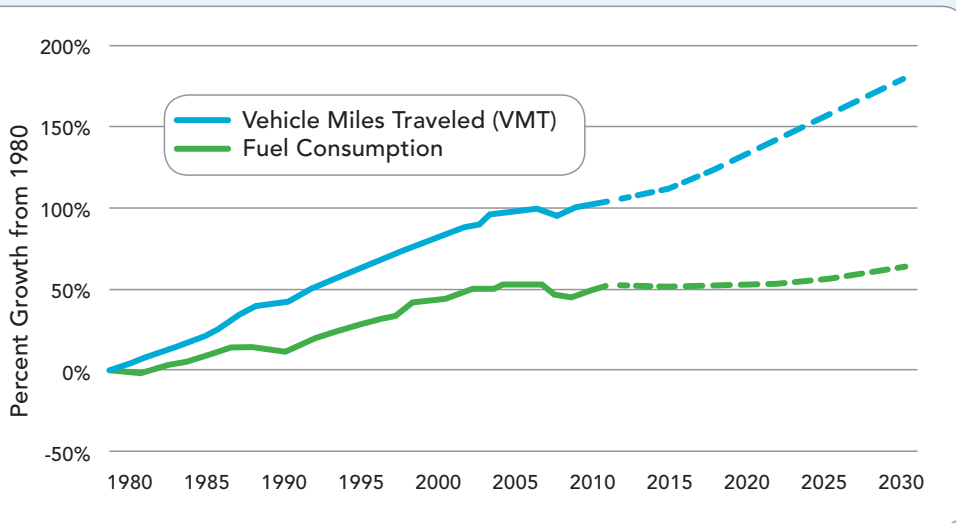
PART 1

Task Force Learning

A state tax on motor fuels is one of the major sources of funding for Minnesota’s roadway transportation system.³ Concerns have been raised, however, regarding the ability of the motor fuel tax to sustain and expand Minnesota’s roadway transportation system over time. Modern vehicles are increasingly using less gasoline/diesel fuel, and that trend is expected to continue into the future. Additionally, the number of non petroleum-powered vehicles, some of which will not pay any motor fuel tax, will also increase over time. While decreasing reliance on petroleum-based fuels and greater fuel economy is a good thing for the environment, diminished use of fossil-based fuels and increasing use of alternatively powered vehicles will inevitably result in less motor fuel tax revenue being available to directly fund preservation and expansion of Minnesota’s roadway transportation system.

Figure 1: Trends in VMT and Fuel Consumption, 1980-2030

Source: Federal Highway Administration, Energy Information Administration



As seen in Figure 1, since 1980 the trend in fuel consumption—and associated fuel tax collections—has lagged the growth in vehicle miles traveled. The growing gap between vehicle miles traveled and fuel used is projected to experience even greater divergence into the future.

³ Minnesota has three constitutionally dedicated revenue sources that it relies on to fund state highways and bridges, the county state aid system and the municipal state aid system. In FY 2010, the motor fuel tax (currently 28 cents per gallon) generated \$823.4 million in revenue, which represented 52.2 percent of total state-derived transportation revenues. The state has also relied on proceeds from the motor vehicle registration tax and recently added the motor vehicle sales tax as a dedicated revenue source for the roadway and transit transportation system. Motor vehicle registration taxes produced \$531.8 M in revenue (33.7%) and motor vehicle sales taxes (MVST) produced in \$216.7 M (13.7%) in revenue in FY 2010. Minnesota also relies on revenue from the federal gas tax to fund roadways and bridges. In FY 2010, the state received \$472.8 million in federal highway funds.

Figure 2 below shows the amount of state and federal gas tax paid by drivers annually based on differing vehicle fuel economies and miles driven.

Figure 2: State and federal gas taxes paid annually

	Light Duty Truck at 20 mpg		Car at 30 mpg		Hybrid at 40 mpg		Electric vehicle	
	State Tax*	Federal Tax**	State Tax	Federal Tax	State Tax	Federal Tax	State Tax	Federal Tax
20,000 miles/year	\$280	\$184	\$187	\$123	\$140	\$92	\$0	\$0
15,000 miles/year	\$210	\$138	\$140	\$92	\$105	\$69	\$0	\$0
10,000 miles/year	\$140	\$92	\$93	\$61	\$70	\$46	\$0	\$0

* Minnesota tax on gasoline is \$0.28 per gallon as of publication.

** Federal tax on gasoline is \$0.184 per gallon as of publication.

As noted in Figure 2, based on current state and federal laws, electric vehicles do not pay for any portion of their use of the roadway transportation system through the state or federal motor fuel tax, and vehicles achieving better levels of fuel economy pay proportionally less in fuel taxes for use of that roadway system than vehicles achieving lower levels of fuel economy. Additionally, with the exception of kerosene and biodiesels, vehicles using special fuels are taxed at a lower rate by the state under Minnesota Statutes 296A.08 "Special Fuel Tax." Special fuels are taxed in Minnesota at the following rates:

Figure 3: Special Fuel Tax Rates

Special Fuel	Current Tax
Liquified petroleum	21¢ per gallon
Liquified natural gas	16.8¢ per gallon
Alcohol	28¢ per gallon
Compressed natural gas	0.2435¢ per cubic foot
E-85	19.8¢ per gallon
Kerosene	28¢ per gallon
Biodiesel	28¢ per gallon

It is noteworthy that a system to collect the various special fuel taxes is not as reliable or robust as that for collecting traditional fuel taxes (i.e., gasoline and diesel). In addition, State law provides for various fuel tax exemptions to specified user groups, which presents significant enforcement challenges for accurate collection of fuel tax.



This relentless reduction in motor fuel tax revenue precipitated by increasing use of alternatively fueled vehicles that pay little or no motor vehicle tax and the ever greater fuel efficiency in fossil fuel powered vehicles⁴, has led to the need to explore alternatives to supplement or replace the motor fuel tax, in part to ensure that all drivers pay their fair share of roadway transportation system costs and in part to ensure that the roadway transportation system in Minnesota is adequately funded.

While electric car owners do not pay the motor fuels tax that other drivers pay, electric car owners do join other drivers in paying for roadway transportation through payment of property taxes, motor vehicle sales taxes and license tab fees.

The MBUF Concept

The MBUF concept is a user-based taxing system that charges drivers for the miles they drive on the roadway system. This concept requires a taxing authority to collect a tax based upon the number of miles traveled by each vehicle. The concept assumes that the owner of a vehicle would pay the MBUF for the mileage traveled. Recent national commissions created by the U.S. Congress concluded that any migration to an MBUF funding approach would take 10 to 15 years to implement. This time period would be required to resolve policy, public outreach, technical and administrative issues and concerns related to MBUF. The following sections describe benefits, concerns and design issues that need to be addressed as part of any MBUF implementation.

⁴ On July 29, 2011, the federal government, with support from thirteen major carmakers, agreed to increase Corporate Average Fuel Economy (CAFE) for cars and light-duty trucks to 35.5 miles per gallon (mpg) by model year 2016 and 54.5 mpg by model year 2025.

Consistent with the findings of the Congressional-appointed commissions, the Task Force found that an MBUF system is both promising and problematic. The benefits and concerns regarding MBUF systems, briefly summarized below, will vary, depending upon how an MBUF is implemented.

Benefits. MBUF holds a number of promising potential benefits:

- **Fairness.** Unlike the motor fuel tax, MBUF could ensure that all drivers pay for their use of the roadway transportation system.
- **Flexibility.** MBUF offers a flexible funding approach that is effective regardless of the fuel source(s) chosen by drivers for their vehicles.
- **Sustainability.** MBUF could be a more sustainable revenue source than the motor fuel tax, as revenue would not diminish with increases in vehicle fuel efficiency (see CAFE standards discussed at footnote 3, and revenue would increase with growth in vehicle miles traveled.
- **Multiple Potential Applications.** Differential MBUF rates could potentially serve as a policy tool for addressing a variety of the difficult transportation policy problems Minnesota faces, including covering the cost of:
 - Excessive road wear
 - Traffic congestion
 - Pollution
- **Services.** Depending on how MBUFs are collected, value-added services could possibly be offered to drivers, as described later under MBUF System Design Options.
- **System Management.** Depending on how MBUF is implemented, more accurate real-time travel data could be available to more efficiently manage peak period demand on the roadway system.

Concerns. The Task Force has a number of concerns about a potential MBUF system:

- **Cost.** MBUF would cost more to implement and operate than the fuel tax collection system.
- **Privacy.** The possible availability of personal travel information is a concern to many individuals.
- **Jurisdiction Issues.** It could be difficult for individual states to charge out-of-state drivers, and potentially complex to have varying state-by-state MBUF systems in the absence of a federal system of MBUF.
- **Feasibility.** Technologies, existing or emerging, could prove to have accuracy, reliability or security vulnerabilities.
- **Complexity.** Depending on implementation, some forms of MBUF could be perceived as overly complex.
- **Acceptance.** Public acceptance is a concern. Many decision makers and the broader public currently know little about the MBUF concept, and need answers to many or all of the aforementioned concerns.
- **Use of Revenues.** The Minnesota Constitution requires that all proceeds from the motor fuel tax be deposited in the Highway User Tax Distribution Fund and that those funds must be used for a highway purpose. Since current law does not address MBUF, policy makers would need to determine the specific use and/or dedication of revenues generated by MBUF.

Potential MBUF System Design Options

The Task Force heard from experts about a number of ways an MBUF system could be designed. Design details are very important, as they can serve to address many of the issues and concerns previously discussed. In addition, stated system objectives will help select among design options. Following is a list of design elements and a brief description of design options potentially available:

- 1. Collecting Miles-Traveled Data.** The number of miles traveled could be measured in different ways, including:
 - Periodic odometer inspections
 - Mileage estimates, based on vehicle fuel economy and fuel consumption
 - Cell phone tower-based electronic mileage-metering devices
 - GPS-based electronic mileage metering devices
- 2. Collecting Fees.** MBUF could be collected in many ways, including:
 - Payment with vehicle registration. Alternatively, vehicle registration taxes and other fees could be incorporated into the MBUF fee structure
 - Payment at refueling stations
 - Automated transmission of periodic invoices via electronic mileage-metering devices
 - Pre-paid debit cards
- 3. Use of Revenues.** Revenues from MBUF could be dedicated in a variety of ways, some of which would likely require changes to existing law:
 - Roadway uses only
 - Roadway and transit use
 - Broader use of revenues for transportation system purposes
- 4. Preventing Evasion.** Among the ways to reduce evasion are:
 - Random and/or regular odometer inspections
 - Random and/or regular electronic equipment inspections
 - Roadside electronic monitoring to verify the functioning electronic mileage-metering devices
- 5. Protecting Data.** Privacy can be protected in several ways:
 - Odometer readings only
 - Data kept in the vehicle and only the fee charged is transmitted
 - Anonymous user accounts that do not disclose the vehicle ID
 - Sophisticated data encryption
 - Immediate deletion of data after the mileage fee is determined
 - Use of pre-paid debit cards
 - Contracting responsibility to a third-party, non-governmental entity to protect individual privacy
- 6. Adding Driver Services.** In addition to metering miles, some electronic metering devices could also offer other types of services that would provide customer choices, including:
 - Pay-as-you-drive vehicle and liability insurance
 - Convenient electronic payment of parking ramps and meters
 - Full-speed electronic payment of tolls
 - Safety information and traffic alerts
 - Navigation assistance

7. Keeping Costs Down.

- Several strategies could be considered for managing costs, including:
- Using factory-installed technology that is already being mass produced by a manufacturer
 - Using proven, off-the-shelf technology that is already being field tested in the marketplace
 - Restraint in consideration of non-essential features
 - Setting reasonable system performance and compliance requirements
 - Establishing a cost threshold requirement
 - Having the open market subsidize devices in exchange for the right to provide value-added services
 - Achieving economies of scale due to large number of vehicles involved

8. Transition Challenges.

To move from a fuel tax to an MBUF system, a number of transition issues would have to be resolved, including, but not limited to:

- Supplement fuel taxes versus full replacement of motor fuel taxes
- Limited vehicle types versus all vehicles
- Single or multiple states versus national implementation
- Incorporation of MnPASS and other legacy tolling systems
- Revenue flows to the appropriate taxing authorities
- Level of uniformity of per mileage rates among states

MBUF Pilot Projects



While federal leaders have been cautious about moving ahead with a national MBUF system, they have in the past encouraged states to explore the use of mileage-based systems. The following studies and pilots have been conducted around the country.

Iowa. The University of Iowa Public Policy Center conducted a National Evaluation of a Mileage-Based Road User Charge. The four-year study involved placing an on-board computer (OBC) into participants' vehicles. Data was collected from both the technology used and the participants. Participants were selected from six locations nationwide and ranged in age, education, and background. The GPS located in the OBC in participants' vehicles kept track of the number of miles traveled and submitted the information to the University for processing and evaluation. The study involved two major objectives: (1) testing the appropriateness of the technology and (2) looking at user accessibility and acceptability. Results indicated that support increased considerably as drivers became more familiar with MBUF, and perceptions were positively affected by user experience and exposure. Initially, 42 percent of participants viewed MBUF favorably, while 17 percent had a negative impression; ten months later, 70 percent reported a favorable impression, with 19 percent holding a negative view of MBUF.

Oregon. The Oregon Department of Transportation (ODOT) pilot tested a road user fee between spring 2006 and spring 2007 as a state legislature-directed attempt to seek an alternate way to raise revenue for transportation from the state's motor fuel tax. ODOT released the final report on the Road User Fee Pilot Program in 2007. The report shows the Oregon Mileage Fee Concept is feasible as an alternative revenue collection system for replacing the gas tax as the fundamental way the state pays for road work. The report also indicates that more work needs to be done to refine the prototype technology used in the pilot program so that it is commercially viable for statewide implementation. The purpose of this first phase of work under the Road User Fee Pilot Program was to prove concept, and that purpose has been met. The next phase will be to prepare for legislative adoption and statewide implementation.

These early state projects are yielding actionable findings about MBUF systems that could potentially guide future initiatives.

Washington State. The Puget Sound Regional Council conducted the Traffic Choices Study and released its findings in 2008. The study evaluated traveler response to GPS-based variable road tolling using a sample of about 275 volunteer households.

Participants were given a travel budget from which tolls were deducted. Preferential toll rates were provided to encourage participants to change their driving patterns to reduce the amount of driving on tolled roads. The experiment aimed to determine the feasibility of using GPS-enabled OBCs with a cellular-based transmission system. Puget Sound's primary goal was to reduce vehicular trips and maintain a high level of public acceptance. Transportation finance was not a main consideration in the experiment. The study showed that participants reduced their travel in a manner that, if aggregated across the whole Puget Sound Region, would have a "major effect on transportation system performance." The net benefit generated by the system over a 30-year period was estimated at \$28 billion in 2011 dollars.

Input From Minnesotans

To inform the Task Force work, an online survey of 400 Minnesotans from around the state was conducted by Accora Research. Focus groups of key stakeholders around the state were also conducted.

The survey and focus groups found that, generally, Minnesotans have not had much exposure to the MBUF concept. The conversation with key stakeholders and the public is in its infancy. The following is a brief summary of some of the key themes that ran through the market research.

Overall MBUF Concept

Benefits. Minnesotans tend to like the following things about MBUF:

- All drivers pay their fair share for roadway use
- It is flexible enough to work with all future vehicle fuels

Concerns. Minnesotans tend to be concerned about the following aspects of MBUF:

- Cost and complexity
- Reliability of the technology
- Privacy

MBUF Design Specifics

Benefits. Minnesotans tended to be more favorable towards an MBUF system that would:

- Charge large and heavy polluting vehicles more per mile
- Use a non-governmental audit firm to ensure data privacy is maintained
- Make the cost and maintenance of equipment a governmental responsibility, not a driver responsibility

Concerns. Minnesotans tended to be unfavorable towards an MBUF system that charges differential rates based on:

- Time of day
- Level of congestion
- Location of driving

Part 2 of this Report focuses on the Task Force's Findings and Recommendations. Based upon its comprehensive work, the Task Force set about creating a Problem Statement, and defined its Policy Objectives.

Problem Statement. The Task Force formulated the following Problem Statement:

As more people continue to use fuel-efficient and alternative-fuel vehicles that are not fully taxed or are untaxed, less revenue will be generated by the fuel tax. In addition, changes in demographics and travel trends will further reduce revenue contributed to the fuel tax fund. As a result, future revenues will be inadequate to fund Minnesota's transportation infrastructure. Several states, including Minnesota, Oregon and Washington, are evaluating charging motorists based on the miles they drive, referred to as mileage-based user fees, to understand the opportunities and challenges of such a transportation funding approach in Minnesota. The Mileage-Based User Fee Task Force will recommend to the Commissioner of the Department of Transportation if such an approach has merit for Minnesota.

Policy Objectives. The Task Force endorsed the following Policy Objectives:

I. Primary Objectives

Promote Equity: Ensure that all motorists pay for their use of the roadway transportation system, regardless of vehicle energy source.

Generate Transportation Funds: Generate transportation revenues by supplementing or replacing the motor fuel tax with mileage-based user fees over time.

II. Ancillary Long-Term Objectives

Protect the Environment: Support environmental objectives by reducing vehicle emissions and fuel consumption.

Improve Transportation System Performance: Reduce the need for additional investment in roadway transportation system capacity by more efficiently managing travel demand.

The Problem Statement and Policy Objectives helped guide subsequent discussions about the Task Force's Findings and Recommendations.

Task Force Findings and Recommendations⁵

Finding #1: Minnesota has entered an era in which an increasing number of vehicles are using little or no conventional motor fuel. With the current state funding system relying on the motor fuel tax for more than half of its revenues, some drivers are now paying much more than others for the cost of building, maintaining and operating Minnesota's roadway transportation system. Over time, this trend will cause the motor fuel tax to be more disproportionately applied and become an increasingly inadequate transportation funding method. Therefore:

Recommendation #1: The Task Force believes that any future transportation funding method(s) must ensure that all drivers pay their fair share for building and maintaining the roadway transportation system they use.

Finding #2: Minnesota is entering an era of uncertainty regarding the mix of fuel sources drivers will choose. Electric, hydrogen, solar, gasoline, diesel, natural gas, biofuels, gasoline-electric hybrid and perhaps other fuels could be used in the near and distant future, but it is difficult to predict which and how fast new fuel technologies will be adopted. Therefore:

Recommendation #2: The Task Force believes that Minnesota's roadway transportation funding methods must cover all vehicles using that system, regardless of the type of fuel(s) used.

Finding #3: While MBUF faces significant challenges that must be overcome before it can be considered broadly for use in Minnesota, it is a transportation funding method that can (a) ensure that all drivers pay their fair share for using the roadway system, and (b) is flexible enough to be effective with any future fleet of vehicles using the system. Therefore:

Recommendation #3: The Task Force recommends that state policymakers engage in a thoughtful discussion regarding whether to use an MBUF system to address future funding gaps between motor fuel tax revenues collected and the cost to preserve, maintain and expand the roadway transportation system.

Finding #4: The Task Force thinks that a federal MBUF system would more appropriately address interstate travel and commerce. The Task Force believes, however, that individual states or group(s) of states may need to take the lead on a system of MBUF to avoid a transportation funding crisis.

Recommendation #4: The Task Force recommends that state government conduct MBUF trials, possibly in partnership with contiguous states.

⁵ Based upon its six-months of work, the Task Force chose to focus its Findings and Recommendations on policy related matters and accordingly makes no operational or technological specific recommendations. The Findings and Recommendations reflect the majority opinion of the Task Force members.

Finding #5: Due to the complexity of MBUF, the Task Force is reticent to make recommendations about detailed design aspects of an MBUF system. However, after studying data gathered from conversations with hundreds of Minnesotans and learning from experts on this subject, the Task Force has reached certain opinions about the broad parameters of a potential MBUF system and presents the following recommendation:

Recommendation #5: The Task Force believes that before Minnesota moves forward with any MBUF system, MnDOT, in conjunction with local road authorities, should conduct a detailed technical analysis of MBUF to evaluate the types of issues, concerns and design options discussed in this report. Such a study should be guided by clear MBUF implementation objectives as well as by the following general parameters:

- a. Fees should be set at a level sufficient to fund an adequate roadway transportation system for all of Minnesota.
- b. Revenues from MBUF should be constitutionally dedicated for roadway transportation system purposes and not directed for general fund use.⁶
- c. MBUF system administration and operating costs should be kept as low as possible without compromising system effectiveness.
- d. Rates should reflect the relative cost and benefit that different vehicles and users have on the roadway transportation system and the environment. Fee levels should take into account other fees levied on users.
- e. Fees established under an MBUF system should clearly disclose the fee amounts paid by users in a way that is transparent.
- f. The entity in charge of setting up the MBUF rate structure should be accountable to the public and elected officials.
- g. Any MBUF system should be designed in a way that protects user privacy.⁷
- h. Any initial MBUF system, if implemented, should start out simply, and phase-in additional features and value-added services to users and the transportation system over time.

⁶ A minority of the Task Force does not support limiting revenues from a new MBUF to roadway purpose only. Instead, they support the use of new MBUF revenues for surface transportation purposes to give the state and future decision makers greater flexibility on investments.

⁷ All Task Force members felt very strongly that user data should be protected with any MBUF system. The representative of the American Civil Liberties Union (ACLU) of Minnesota believes the use of GPS information to calculate MBUF should be deemed unconstitutional. Tracking people in order to administer MBUF is an idea that the ACLU of Minnesota opposes.

Finding #6: Many important and complex decisions need to be made about the specific form an MBUF system could take; these are decisions that technical experts should guide, following policy guidelines developed by policymakers. Absent operational and technology specifics, MBUF debates tend to be too vague and speculative to be constructive. Having the benefit of a specific set of design features available would help policymakers make more thoughtful decisions about whether or not to pursue an MBUF approach to funding. Therefore, the Task Force makes the following recommendation:

Recommendation #6: Once MnDOT has completed its current MBUF technical demonstration project⁸, the policy study, and the detailed MBUF technical analysis, the Task Force recommends that the Commissioner of Transportation supply state policymakers with a document that provides a clear answer to the question: “If the Legislature and Governor decide to modify Minnesota’s roadway transportation funding system to achieve Recommendations 1 and 2, how would MnDOT, in conjunction with local road authorities, recommend setting up and phasing in the following three potential roadway transportation funding models?”

- a. **Adjusted Status Quo Model.** This potential model would adjust the motor fuel tax, vehicle registration fees, and other existing transportation funding methods to achieve the goals described in Recommendations 1 and 2. The use of an MBUF system would not be required; **and/or**
- b. **Partial Benefits MBUF Model.** This potential model would include some type of MBUF system to achieve the goals described in Recommendations 1 and 2, but not the Ancillary Benefits of an MBUF described above. The model would be more basic and thus less complex than a Full Benefits MBUF model; **or**
- c. **Full Benefits MBUF Model.** This potential model would incorporate a more intricate MBUF system designed to achieve both the goals described in Recommendations 1 and 2, and the Ancillary Benefits described above.

Summary of Recommendations

The mileage-based user fee approach is a potential supplement or an alternative funding method to Minnesota’s current motor fuel tax. An MBUF system could be created that requires all drivers to pay their proportional share of roadway system costs while being flexible enough to be effective regardless of the type of future energy sources used for a vehicle. Still, MBUF is largely unfamiliar to the public and policymakers, and complex from the technical and policy standpoints. Many policy, technological and operational issues remain unanswered. Therefore, the Task Force does not recommend a statewide, full-scale implementation of MBUF until concerns are satisfactorily addressed. However, **the Task Force recommends that exploration of an MBUF system for Minnesota continue to advance in a measured, informed and thoughtful manner guided by the six findings and recommendations presented above.**

On November 29, 2011, the Task Force unanimously passed a motion to adopt this report, and convey it to the Minnesota Commissioner of Transportation.

⁸ MnDOT’s current MBUF technology demonstration is based on assumptions related to potential design models. This was necessary to carry out the 2007 legislation that directed the agency to investigate the feasibility of future applications of MBUF. MnDOT’s technical advice on these models should not be considered an endorsement of MBUF by the agency. In addition, 2008 and 2009 legislation directed MnDOT to complete a “Study of Transportation Long Range Funding Solutions” (available at <http://www.dot.state.mn.us/planning/program/longrangesolutions.html>), that included consideration of electric and plug-in hybrid vehicles. This Study provides a basis and framework for policymakers to discuss potential transportation funding reform models.



Task Force Members

Front row: Margaret Donahoe, Mayor Jim Hovland (Vice Chair), Bernie Lieder (Chair), Steve Elkins, Ron Erhardt, Wade Kline.

Second row: State Representative Frank Hornstein, State Senator Scott Dibble, Steve Murphy, Bob Anderson, Christine Zimmer.

Third row: John Mock, Barb Thoman, Roy Terwilliger, Bob DeBoer, State Representative Mike Beard.

Back row: Bob Krogman, John Hausladen, Don Jensen.

Note: Additional information about members is provided on the final page of this report.

APPENDIX A: Minority Opinion

Task Force members were invited to submit minority opinions. A minority opinion was submitted by John Hausladen, Bob Anderson, and Donald Jenson, which follows.

Minority Opinion Introduction

Minnesota's economy, the prosperity of its businesses, the well-being of its citizens, and the competitiveness of the state both domestically and abroad, all depend on the soundness of the state's system of transportation, the most important element of which is Minnesota's highway system. The health of that highway system in turn depends on the soundness of Minnesota's highway funding structure. For decades, road maintenance and improvements at the state level have depended largely on receipts from taxes on motor fuel and from motor vehicle registration fees.

Recently, the perception has arisen that the current transportation funding structure might not be adequate for the future. As a result, the Minnesota Department of Transportation appointed members of a group designated the Mileage-Based User Fees Policy Task Force to identify and evaluate issues related to potential implementation of a mileage-based user fee (MBUF)¹ in Minnesota.

After some six months of consideration, the Task Force has issued its report. We, the undersigned members of the Task Force, find that report unacceptable, for the following reasons:

- The Task Force report has a strong bias in favor of the MBUF concept, and significantly overestimates benefits for Minnesota from the establishment of an MBUF.
- The Task Force report seriously understates the problems associated with an MBUF. The Task Force report contains practically no analysis of how an MBUF might actually work in practice.
- The Task Force report, unwarrantedly and without consideration of more reasonable alternative sources of funding, leaps directly to a conclusion that Minnesota might safely adopt an MBUF in place of the fuel tax.

We therefore offer this Alternative Report for the consideration of state policymakers and Minnesotans at large.

In particular, and as set out more in detail in the body of our Report, we would emphasize that:

- Although the current transportation structure is showing some stress, there is not, contrary to the Task Force report, sufficient cause to warrant wholesale changes in that structure, which can in fact continue to serve the state well, probably for decades to come.
- Compared to the fuel tax and to vehicle registration fees, which have shown themselves to be efficient, easily administered taxes, experience with MBUFs has shown them to be highly problematic, more costly to collect, and largely unsuccessful taxes.
- Many of the conclusions set out in the Task Force report are unjustified, and rest on exaggerated or speculative assessments of the feasibility and capabilities of MBUFs. The report is in fact very short on analysis of any kind.
- We conclude that although the state should not necessarily eliminate all consideration of an MBUF as a minor element of Minnesota's future transportation funding structure, there are other alternatives that appear to be far more promising for the protection and enhancement of our vital transportation system.

The body of the Alternative Report elaborates on these four themes in turn.

¹ As the name implies, an MBUF is a tax based, at least in part, on the distance traveled by a vehicle whose owner or operator is subject to the tax. One should not forget that although a user fee is a levy the proceeds of which are dedicated to a certain purpose, it is nonetheless a tax.

I. Minnesota's Current Road-Funding Structure Is Not Obsolete

Currently, slightly more than half of Minnesota's funding for highways is derived from receipts from the state taxes on motor fuel, primarily gasoline and diesel fuel. A few vehicles on the state's highways are powered by alternative fuels, largely gaseous fuels; these substances too are subject to state fuel taxes.

While an increasing number of cars are powered in whole or in part by electricity, this number remains very small. Contrary to the impression that a review of the Task Force report might give the casual reader, the advent of electric-powered vehicles, if they catch on at all, will be slow and gradual. The current funding structure is not about to be overwhelmed with large numbers of vehicles whose power source is not subject to the fuel tax.² Taxes on fuel, possibly in conjunction with adjustments to Minnesota's vehicle registration fees, can continue to serve for the foreseeable future as the major source of highway revenues.

It is often noted these days that while receipts from the fuel tax are increasing slowly in recent years, vehicle travel is increasing more rapidly, and highway costs much faster still. Part of this discrepancy must be attributed to improvements in vehicle fuel efficiency, but that trend has existed since the 1970s. Through the 1970s, and well into the '80s and even the '90s, fuel tax receipts increased comfortably year by year, despite the continuing improvements in fuel mileage. Only more recently have tax receipts failed to keep up. The operative cause of this change is not increased fuel efficiency, nor is it the proliferation of alternatively fueled vehicles, since these make up an insignificant portion of the total population of cars and trucks.³ We submit that the basic – and only serious – problem with the fuel tax is political: politicians have become increasingly reluctant to raise taxes.

Contrary, then, to the tenor of the Task Force report, the fuel tax isn't broken, and doesn't require replacement with a wholly new system of taxation. Rather, state policymakers should consider more seriously whether merely raising the rate of the fuel tax could not serve to restore Minnesota's highway finances to a satisfactory condition.

Nor should the other elements of the state's road-funding structure be ignored, as the Task Force report tends to do. Receipts from registration fees comprise about a third of Minnesota's highway funding, and the motor vehicle sales tax provides most of the remainder. Both these forms of taxation are highly efficient and of long standing. The state should not rule out adjustments to these levies, not only in order to raise more revenue, but to adjust the highway-funding structure so as to deal equitably with larger future populations of alternatively fueled vehicles.

Let us consider now what makes a tax a "good" tax, that is, what makes one type of levy more successful at raising revenues than another. And let's examine the U.S. experience with MBUFs – because there is in fact considerable experience with this kind of tax at the state level.

II. The MBUF Does Not Measure Up as an Effective Form of Taxation

How Should a Tax Be Evaluated?

In assessing the effectiveness of a given tax, a great deal depends on the structure of the tax and how it is to be administered. The fuel tax provides a good example. That tax is levied on an easily measurable substance, at a level in the chain of distribution high enough that there are very few taxpayers, mostly large business entities. (That is, the tax is pre-paid, withheld at a point well above that of the actual highway user.)⁴ This structure and administration of the tax helps greatly to ensure that the tax is paid.

² A study by the Center for Automotive Research estimates that there will be only some 7,500 electric-powered vehicles registered in Minnesota by 2015. In 2009, only some 1.6% of registered vehicles were electric or electric hybrids. Center for Automotive Research, *Deployment Rollout Estimate of Electric Vehicles 2011-2015*, Ann Arbor, MI, January 2011.

³ It might be noted that the diesel fuel tax in particular will continue to provide a stable source of revenues for the foreseeable future. Other fuels fail to provide the necessary power for the operation of long-haul or heavy-duty trucks, and trucking industry sources do not project any early change in this situation.

⁴ The Task Force report seriously mischaracterizes the fuel tax in this respect (see p. 2 of the Task Force report) when it states that the fuel tax is collected from end users at the pump. In fact, the tax is collected from fuel suppliers, and only passed on to vehicle operators by fuel sellers. The effectiveness of the fuel tax depends on this critical distinction.

Other taxes largely relied on by governments in this country also depend, like the fuel tax, on a withholding mechanism of one kind or another. The personal income tax, for instance, could probably not be levied at all without withholding on wages, and the rate of compliance on income that is neither withheld on nor reported to IRS (or to a state) is quite low. Sales tax is another instance, where retailers withhold and remit the tax from purchasers. This tax is somewhat less efficient, due to the large number of retailers, most of them small entities. Yet the sales tax is extremely effective compared to its complement, the use tax, which states have just about given up trying to collect at all. A final example, and one that employs a different mechanism than withholding, is the vehicle registration fee. This is of course paid up-front, at the beginning of the registration year, and a car or truck can't be operated very far without displaying a license plate.

It is much more difficult to enforce and collect a tax that includes no withholding mechanism, or which is to be collected from many (especially smaller) taxpayers, or where the measure of the tax is difficult to ascertain, or where the tax is largely self-assessed by the taxpayer. The most successful taxes – and the fuel tax is often cited in this regard – avoid all these difficulties.

An MBUF may or may not avoid some of these problems, but probably cannot avoid them all. Prepayment of the tax might be possible, though administration and enforcement might be somewhat cumbersome. It seems unavoidable that an MBUF would be collected from a multitude of taxpayers.⁵ And measurement of the tax – the miles these millions of vehicles, as well as those from outside the state traveling on Minnesota's roads – is certainly problematic, especially if the administration of an MBUF leaves the assessment of the tax up to the taxpayers themselves.

There are decades of experience with the fuel tax, the sales tax, the personal income tax, and vehicle registration fees, levies imposed by most or all of the states, and with whose administration there has, over the years, been much experimentation, some successful, some less so. With respect to these types of taxation, there is a general consensus as to what works and what doesn't.

The Task Force made a serious error in failing to consider the specifics of how an MBUF might be implemented and administered in Minnesota. A closer examination of these factors in relation to an MBUF would have brought into much clearer focus many of the inherent problems with such a tax. Equally as serious was the Task Force's failure to consider the long experience with MBUF's in the United States, and the problems associated over the years with this kind of a tax.

Experience with MBUFs Is Not Encouraging

Has there been any such experience in the U.S. with MBUFs? The Task Force report discloses very little.⁶ Yet in fact there have been decades of experience with MBUFs in this country, in the form of weight-distance taxes on trucks. And the consensus is that taxes of this sort haven't worked very well. Nearly half the states have at one time or another tried weight-distance, or ton-mile, or axle-mile, or simple mileage taxes on trucks, and more than twenty states have repealed them. Only four remain in effect today.

What are the problems with these MBUFs in practice? They are easily evaded, they are complex, they are unfair, and they are expensive, both to comply with and to collect and to administer.

Unlike more efficient taxes, weight-distance taxes are largely self-assessed by taxpayers rather than collected from a smaller number of less interested parties. This alone leaves these taxes far more open to evasion – and nearly every state that has tried them has concluded that they have been widely evaded.⁷ The various administrative mechanisms used to try to enforce collection of these taxes is one of the main causes of their complexity and expense, and certainly also for their unfairness. Compliant taxpayers not only have to pay their share of a weight-distance tax, but the share of their direct, less honest competitors as well, who don't pay. And compliant taxpayers must also put up with the elaborate mechanisms – mostly unsuccessful – that are put in place to ensure the tax's collection. It is no wonder that weight-distance taxes – MBUFs in practice – are universally disliked by the trucking industry, who are united as in nothing else in opposing this type of tax. Nor is it any wonder that weight-distance taxes have been repealed in state after state.

⁵ The Minnesota Department of Transportation reports that in 2009 4.8 million vehicles were registered in the state, a number approaching Minnesota's total population.

⁶ The Task Force report merely mentions three recent pilot projects, two of them very small-scale and local, in Oregon and Washington State, and the third, conducted by the University of Iowa, somewhat broader in geographical reach. These are interesting academic exercises, but none of them provides the basis for any real assessment of how an MBUF would actually work in practice.

⁷ For a couple of recent studies that conclude that New York State collects only somewhat less than half of what is owed from its Highway Use Tax, a weight-distance tax, see, American Transportation Research Institute, "New York State Ton-Mile Tax Analysis: Estimation of Untaxed Commercial Motor Vehicle Miles Traveled," Arlington, VA, February 2008; and Delcan Corp., et al., *A Practical Approach to Truck VMT Fees*, Vienna, VA, April 2011. The reader should be cautioned that the authors of the second study are among those charmed with the notion that the application of "advanced technology" can actually render an MBUF collectible.

Minnesota once levied a weight-distance tax. In 1948, the state's Legislative Research Committee issued a report on it that read, in part:

The record of repeals and narrowing of scope of the mileage tax in states which have tried it indicates that it has not been very successful, though naturally pressure for repeal from financially affected carriers may have been a factor in the repeals and revisions. The narrowing of scope of the laws indicates that too broad coverage pushes administrative problems beyond the range of effective control. State agencies responsible for administering the tax laws have indicated that very serious difficulties do exist.

Shortly after this Minnesota too repealed its weight-distance tax.

It has sometimes been argued that modern technology can overcome the defects of a weight-distance tax. Considering the history, this appears to us unlikely. At best it is unproven, and the application of technology of whatever kind would surely add complexities and expense to the already burdensome administration of the tax. This is particularly problematic if the tax were imposed, not on business entities such as trucking firms, but on the far more numerous and diverse population of car drivers. Yet it is changes in the driving habits of this larger population – that is, car drivers – the Task Force report argues, which is most in need of a substitute for the fuel tax. To be sure, there is practically no experience, either in this country or abroad, with an MBUF levied on car drivers. There is, however, good cause to expect that such a tax would be no more successful than the more limited taxes of this sort which have been imposed in the past on heavy commercial vehicles.

III. The Task Force Report Contains Many Unjustified Assumptions and Conclusions, and Very Little Helpful Analysis

Throughout its report, the Task Force makes numerous speculative statements about the benefits of an MBUF, and avoids any real analysis either of an MBUF or of reasonable alternatives.

Benefits: Fair, Flexible, Sustainable – Really?

Pages 4 and 5 of the Task Force report set out what the Task Force conceives to be benefits of the “MBUF concept.” Some of the highlighted bullets in this section look pretty good – Fairness, Flexibility, Sustainability – but the language introducing the section cautions: “The degree of benefits and concerns regarding MBUF, which are briefly summarized below, will depend greatly on how MBUF is implemented.” In other words, the Task Force doesn't go beyond the bare concept of an MBUF to consider how such a tax might be administered, collected, or enforced, and therefore all of the asserted benefits are only that – assertions.

We submit that a tax cannot be “fair” if it is administered in such a way that it cannot be collected from all those that should be paying it, or in such a way that those that do pay it are subject to significant costs and burdens associated with their payments. We mention these factors specifically because they have been widely experienced with MBUFs in the form of weight-distance taxes. (See the preceding section.)

By “flexibility,” the Task Force evidently means only that an MBUF might be applied – at least in concept – to vehicles using any type of power source. Perhaps, though whether an MBUF might be so applied as a practical matter is open to considerable question at this point. In this connection, it should be noted again that Minnesota's current fuel tax system subjects all fuels to tax, both the commonly used gasoline and diesel and alternative, mostly gaseous fuels. The only power source for vehicles not subject to the fuel tax is electricity, but this fact in no way justifies the Task Force's implication that the fuel tax should be abandoned altogether. There are obvious ways within Minnesota's current tax structure for handling the taxation of electric vehicles in an equitable manner. (See our section IV., below.)

By “sustainable,” the Task Force means that revenues from an MBUF would not decline merely because the fuel efficiency of the state's population of vehicles is increasing – a fault (if it is one) often attributed to the fuel tax. It should be noted, however, that shifting the incidence of highway user fees from the consumption of fuel (the fuel tax) to miles traveled (an MBUF) would likely reduce vehicles miles traveled.⁸ If it is true that the major problem today with the fuel tax is political, that is, the reluctance of politicians to raise the rate of any tax; an MBUF might quickly come to seem inflexible and unsustainable if miles traveled were to decrease, or simply fail to increase as fast as road costs.

⁸ “If you tax something, you will get less of it,” sometimes credited to Nobel laureate Milton Friedman.

Multiple Applications?

The other benefits the Task Force report cites to the credit of the MBUF concept all seem to fall under their heading “multiple applications.” Here, the MBUF is described as “a powerful policy tool for addressing a variety of difficult policy problems Minnesota faces, including the cost of: excessive road wear, traffic congestion, pollution.” “Demand management” is also cited here as a potential application, as well as the state’s provision to drivers of “value-added services.”

Clearly, these items are more suggestions to policy makers by the Task Force than they are “benefits” of an MBUF. The Task Force is suggesting that the state’s highway-funding structure be adapted to manipulate the driving behavior of the public. The additional costs and complexity involved in any such adaptation would enormously increase the expense of highway tax administration for the state. Notions such as these are favored by many academics, but considering that the political, social, and economic consequences of such Big Government intervention are largely unexplored, such suggestions in the present context seem irresponsible.⁹ At the very least, these “multiple applications” cannot stand in as “benefits” of an MBUF.¹⁰

Concerns and Options Inadequately Addressed

The Task Force gives some lip service to the many difficulties with the MBUF concept, by listing them under generic headings on page 7 of the report, to wit: Cost, Privacy, Jurisdiction Issues, Feasibility, Complexity, Acceptance, and Use of Revenues. But there is no analysis of these serious problems, any one of which could take an MBUF right off the table as a potential element of Minnesota’s highway-funding structure.

On pages 8 and 9, there is a similar list of “Potential MBUF System Design Options.” But again, it seems merely a list of those options that happened to occur to members of the Task Force. There is no analysis of any of these critical areas, no weighing of pros and cons, nor any attempt to eliminate the clearly infeasible in favor of a system design that might conceivably work in practice.

Once again, the Task Force report has failed to go beyond a purely theoretical MBUF concept and wrestle with the details of such a tax as it might be administered, collected, and enforced.

Findings and Recommendations Contain Little Guidance

The conclusions of the Task Force report are presented confusingly, as interspersed Findings and Recommendations. Furthermore, it may be said that the conclusions hold very little in the way of guidance for state policy makers. One recommendation (number 3) declares that policy makers should “engage in a thoughtful discussion regarding whether to use an MBUF.” Another (number 4) suggests “MBUF trials, possibly in partnership with contiguous states.” And a third (number 5) recommends “a detailed technical analysis of MBUF.” And the last (number 6) recommends that MnDOT supply Minnesota’s legislators with “a clear answer” as to which kind of MBUF, if any, the state should adopt.¹¹

Although the report leaves little doubt that the Task Force strongly favors an MBUF for Minnesota, the report is so superficial in its treatment that one is left to wonder why it has reached this conclusion.

If this report is released as presented, more discussion of the benefits and risks of MBUF will remain ahead of us, as this report inadequately addresses both sides of the issue.

⁹ See in this connection the classic article by R. H. Coase, “The Problem of Social Cost,” *Journal of Law & Economics*, Oct. 1960. There, Mr. Coase warns against any such misguided government interference in economic matters without a thorough exploration of both the costs and benefits. This article was specifically cited in Mr. Coase’s Nobel Prize award in economics.

¹⁰ It should be noted that on page 8 of the Task Force report, it is stated that the Task Force endorsed these “multiple applications” as “Ancillary Long Term Objectives.”

¹¹ This final recommendation includes what the Task Force report terms the “Full Benefits MBUF Model,” that includes the Task Force’s “multiple applications” we noted earlier in this section. This might better be termed the Big Government Model or the More Intrusive Model.

IV. Conclusion: There Are More Reasonable Alternatives for Minnesota's Highway-Funding Structure

It will be clear by now that we believe strongly that the Task Force report makes no strong case for the adoption by Minnesota of an MBUF, whether in place of the current highway-funding structure or as an added element of it. The Task Force report fails to provide any practical analysis of the MBUF concept, and it makes the wholly unwarranted assumption that the state's current highway-funding shortfall is due to factors with which Minnesota's present highway-funding structure cannot deal successfully. We submit that this is untrue.

As noted above, Minnesota depends primarily on a two-structure tax system of fuel taxes and vehicle registration fees to fund its highways. Most other states do likewise. These taxes have proved to be highly efficient, largely stable revenue sources for well over half a century. In part, this is because the dual nature of the system provides a degree of flexibility that neither of its two components can provide on its own. The recent dedication by Minnesota of the vehicle sales tax proceeds to highway purposes allows the structure to be even more sensitive to changes in conditions that affect highway revenues.

We suggest that state policy makers consider the following options, either singly or together, to relieve Minnesota's current or projected highway funding shortfalls:

- Retain the fuel tax and other current highway system funding mechanisms.
- Subject vehicles powered by novel sources of energy to the fuel tax, to the extent those sources allow it, at rates that match those on traditional fuels.
- Assess additional registration fees on those alternatively fueled vehicles, such as electric vehicles and hybrid vehicles, for which the fuel tax is an inadequate levy.
- Assess an additional motor vehicle sales tax on alternatively fueled vehicles whose power source is unsuited to the fuel tax.
- To the extent that these adjustments in the current highway-funding structure yield more revenues, dedicate all the additional revenue to the highway trust fund for use exclusively on highways and bridges.

Our third and fourth points above may require some explanation. We're suggesting that additional registration fees or sales taxes be applied to vehicles whose operation, because of their source of power, are in practice wholly or partially exempt from the fuel tax. The additional fee or tax would be measured according to an average imputed mileage for these vehicles, either on an annual basis (the registration fee) or over the life of the vehicle (the sales tax).¹²

Could an MBUF have some application for these restricted classes of vehicles? Perhaps, with great caution on the part of policy makers, an MBUF might have some place here. If, following the thoughtful discussion of an MBUF suggested by the Task Force report, the state concludes that the MBUF concept, as it might be implemented in practice, has potential merit, we believe the appropriate niche for such a levy, pursuant to well-designed pilot tests, might be an application to electric and hybrid vehicles. We are highly skeptical, however, that Minnesota will ever be able to rely safely on an MBUF; however, such a tax might be implemented as a source of any significant portion of the revenues needed for the state's highways.

¹² An MBUF by proxy, if you will.

Task Force Members

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Vice Chair Jim Hovland	Mayor of Edina
Bob Anderson	Transportation Committee Chair, Minnesota Chamber of Commerce
Rep. Mike Beard	Chair, House Transportation Committee
Bob DeBoer	Policy Director, Citizens League
Sen. Scott Dibble	Ranking Member, Senate Transportation Committee
Margaret Donahoe	Executive Director, Transportation Alliance
Steve Elkins	Chair, Metropolitan Council Transportation Committee
Ron Erhardt	Retired State Legislator
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