



Minnesota
Department of
Transportation

**RESEARCH
SERVICES**

Office of
Policy Analysis,
Research &
Innovation

Mileage-Based User Fee Policy Study: Supporting Technical Information

Lee Munnich, Principal Investigator
Humphrey School of Public Affairs
University of Minnesota

April 2012

Research Project
Final Report 2012-11

Your Destination... Our Priority



To request this document in an alternative format, call Bruce Lattu at 651-366-4718 or 1-800-657-3774 (Greater Minnesota); 711 or 1-800-627-3529 (Minnesota Relay). You may also send an e-mail to bruce.lattu@state.mn.us. (Please request at least one week in advance).

Technical Report Documentation Page

1. Report No. MN/RC 2012-11	2.	3. Recipients Accession No.	
4. Title and Subtitle Mileage-Based User Fee Policy Study: Supporting Technical Information		5. Report Date April 2012	
		6.	
7. Author(s) Lee Munnich, John Doan and Matt Schmit		8. Performing Organization Report No.	
9. Performing Organization Name and Address Humphrey School of Public Affairs University of Minnesota 301 19th Avenue S. Minneapolis, MN 55455		10. Project/Task/Work Unit No. CTS Project #2011046	
		11. Contract (C) or Grant (G) No. (c) 89261 (wo) 235	
12. Sponsoring Organization Name and Address Minnesota Department of Transportation Research Services Section 395 John Ireland Blvd., MS 330 St. Paul, MN 55155		13. Type of Report and Period Covered Final Report	
		14. Sponsoring Agency Code	
15. Supplementary Notes http://www.lrrb.org/pdf/201211.pdf			
16. Abstract (Limit: 250 words) <p>The Mileage-Based User Fee (MBUF) Policy Study Supporting Technical Information document is intended to offer necessary detail regarding the work performed and reviewed as part of the MBUF Policy Study. The document serves to complement the separate MBUF Policy Task Force Report; it summarizes activity within and inputs informing all phases of the MBUF Policy Study process, including findings from: Greater Minnesota listening sessions; 2011 MBUF Symposium in Breckenridge, CO; perspectives from national experts; national expert and transportation finance roundtable events; Internet panel survey of Minnesotans; and additional targeted outreach.</p> <p>The MBUF Policy Study was commissioned by the Minnesota Department of Transportation (MnDOT) to identify and evaluate issues related to potential future implementation of an MBUF system in Minnesota. 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, instead of being charged by the gallon for fuel consumed in operating a vehicle.</p> <p>Over a period of approximately one year, the MBUF Project Management Team – comprised of individuals from MnDOT and the Humphrey School of Public Affairs, as well as consultants – secured valuable quantitative and qualitative policy feedback, drove completion of several deliverables including development of potential MBUF business models, and staffed a Policy Task Force.</p>			
17. Document Analysis/Descriptors Mileage-based user fees, MBUF, Vehicle miles of travel, Vehicle Miles Traveled, VMT, Minnesota MBUF Policy Study		18. Availability Statement No restrictions. Document available from: National Technical Information Services, Alexandria, Virginia 22312	
19. Security Class (this report) Unclassified	20. Security Class (this page) Unclassified	21. No. of Pages 218	22. Price

Mileage-Based User Fee Policy Study: Supporting Technical Information

Final Report

Prepared by:

Lee W. Munnich, Jr.
Matt Schmit

Humphrey School of Public Affairs
University of Minnesota

John Q. Doan

Atkins Global

April 2012

Published by:

Minnesota Department of Transportation
Research Services
395 John Ireland Boulevard, Mail Stop 330
St. Paul, Minnesota 55155

This report represents the results of research conducted by the authors and does not necessarily represent the views or policies of the Minnesota Department of Transportation or the University of Minnesota. This report does not contain a standard or specified technique.

The authors, the Minnesota Department of Transportation, and the University of Minnesota do not endorse products or manufacturers. Any trade or manufacturers' names that may appear herein do so solely because they are considered essential to this report.

Table of Contents

Chapter 1.	Introduction.....	1
Chapter 2.	Public Outreach and Data Collection.....	2
A.	Stakeholder and Issue Identification.....	2
B.	Greater Minnesota Listening Session Prevailing Themes	6
C.	Internet Panel Survey Results	7
Chapter 3.	National Context.....	9
A.	2011 MBUF Symposium Summary – Breckenridge, CO	9
B.	Breckenridge Session with National Experts.....	10
C.	Possible MBUF Implementation Options.....	11
D.	Rethinking Transportation Finance Roundtables.....	12
Chapter 4.	MBUF Policy Task Force	14
A.	Task Force Questions.....	16
B.	Task Force Problem Statement	18
C.	Task Force Discussion Items	18
D.	Task Force Report.....	19
Chapter 5.	Project Conclusion.....	21
Appendix A.	Greater Minnesota Listening Session Tool	
Appendix B.	Study of Transportation Long-Range Funding Solutions	
Appendix C.	Greater Minnesota Listening Session Tool	
Appendix D.	Greater Minnesota Listening Session Themes	
Appendix E.	Internet Panel Survey Results	
Appendix F.	Possible MBUF Implementation Options	
Appendix G.	Task Force Presentation – Dr. Paul Sorensen	
Appendix H.	Policy Task Force Minutes	
Appendix I.	Policy Task Force Report	
Appendix J.	Policy Task Force Report Presentation	

List of Tables

Table 1: Stakeholder Groups	2
Table 2: Outreach and Stakeholder Input Opportunities	3
Table 3: Anticipated Policy Areas of Interest for Key Stakeholder Groups.....	5
Table 4: Policy Task Force Meeting Schedule	15

List of Figures

Figure 1: MBUF Influence/Interest Grid	4
--	---

Executive Summary

The Minnesota Department of Transportation (MnDOT) commissioned the Mileage-Based User Fee (MBUF) Policy Study to identify and evaluate issues related to potential future implementation of an MBUF system in Minnesota. 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, instead of being charged by the gallon for fuel consumed in operating a vehicle.

Over a period of approximately one year, the MBUF Project Management Team – comprised of individuals from MnDOT and the Humphrey School of Public Affairs, as well as consultants – secured valuable quantitative and qualitative policy feedback, drove completion of several deliverables including development of potential MBUF business models, and staffed a Policy Task Force.

The MBUF Policy Study Supporting Technical Information document is intended to offer necessary detail regarding the work performed and reviewed as part of the MBUF Policy Study. The document serves to complement the separate MBUF Policy Task Force Report and it summarizes activity within and inputs informing all phases of the MBUF Policy Study process, including findings from:

- Greater Minnesota listening sessions;
- 2011 MBUF Symposium in Breckenridge, CO;
- Perspectives from national experts;
- National expert and transportation finance roundtable events;
- Internet panel survey of Minnesotans; and
- Additional targeted outreach

Stakeholder analysis was useful in identifying MBUF stakeholders and aiding in the design of appropriate outreach activities. Once stakeholders were identified, the specific MBUF policy areas of interest (e.g., revenue collection, transit, equity) were anticipated for each group. An Influence/Interest Grid was also assembled to determine the level of influence and interest of each of the stakeholder groups. Finally, the various outreach activities were analyzed to ensure that the activities gave each of the stakeholder groups an opportunity to stay informed and provide input on the project.

To incorporate stakeholder feedback from throughout the state, the Policy Study included a series of five listening sessions in Greater Minnesota. Each session began with an overview of the MBUF concept and proceeded to poll participants regarding their individual attitudes on various attributes of a potential MBUF system. Invitations were extended to select local government leaders, transportation officials, and trucking and business representatives. The listening sessions took place in Bemidji, Duluth, Rochester, Saint Cloud and Willmar, occurring over a course of eight weeks from April to June 2011. On average, listening sessions included about a dozen participants each and lasted approximately two hours.

The Policy Study included public opinion polling to measure baseline attitudes among the general public regarding attributes of a potential MBUF approach. An online survey was hosted

by Accora Research, with 400 interviews conducted from May 18 – 23, 2011. The sample was census balanced to metro and Greater Minnesota, and the survey included a representative sample of Minnesota residents who each were sent an email invite to participate in an online study design-ed to gain input on a possible future funding source for transportation.

Engaging national experts, policymakers and agency officials familiar with the MBUF concept was an important aspect of the MBUF Policy Study. A small delegation of MBUF Policy Team and Task Force members attended the 2011 MBUF Symposium held June 13 – 15, 2011, in Breckenridge, CO. In addition, Parsons Brinkerhoff conducted a separate analysis of possible implementation options for MBUF as part of the research for the MBUF project. Since the Task Force focus was on the policy level issues rather than implementation details, the business model analysis was not introduced in the Task Force deliberations. However, the alternatives analysis developed by Parsons Brinkerhoff was used in framing the Task Force policy options that were included in its recommendations.

The Policy Task Force was a crucial component of the MBUF Policy Study. The stated purpose of the Task Force was to identify and evaluate issues related to potential future implementation of a MBUF system in Minnesota. The Task Force was formed to assist in providing policy direction to the Department of Transportation's commissioner for the technology demonstration and potential broader implementation of MBUF in Minnesota.

The Policy Task Force was comprised of 25 Minnesotans who were charged with examining the state's long-term transportation needs. The group considered the challenges and opportunities for an MBUF system to support broad societal goals for mobility, safety, sustainability, and transparency. While Task Force members had been invited to serve by key stakeholder groups, they were not expected to strictly represent the perspective of their particular constituency. The Task Force was balanced geographically and politically, and members were appointed by the MnDOT commissioner.

Under the leadership of Task Force Chair Bernie Lieder and Vice Chair Jim Hovland, the Task Force was responsible for charting its own agenda and deliberations, as well as producing eventual findings and policy recommendations in a Task Force report. 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 listening sessions and a large sample public survey of Minnesotans. In addition, the Task Force viewed presentations and received information from national MBUF experts, as well as MnDOT staff familiar with Minnesota's separate MBUF technical demonstration.

The Policy Task Force met monthly on six separate occasions between June and November 2011. The Task Force delivered its findings and recommendations via a Task Force report to the MnDOT commissioner in December 2011.

Following adoption of the MBUF Policy Task Force report, the Task Force chair and vice chair – along with project staff – briefed the MnDOT commissioner on report findings and recommendations. In their conveyance letter to the commissioner, the chair and vice chair noted:

Ultimately, the Task Force ... “does not recommend a statewide, full-scale implementation of MBUF until concerns are satisfactorily addressed.” The Task Force report does ask MnDOT to propose a detailed MBUF system design for the public and policymakers to consider...the Task Force report recommends goals, parameters and a next step for thoughtfully moving the MBUF conversation forward to the next stage of consideration.

MnDOT subsequently issued a press release on December 16, 2011, highlighting the Task Force and its report.

Although both the Task Force and the broader MBUF Policy Study have concluded its official work, project staff anticipates the report and related activity will give rise to continued discussion of MBUF as a potentially more fair and flexible transportation funding option. Project staff looks forward to future legislative hearings on the topic, as well as a “Rethinking Transportation Finance” round-table event featuring MBUF expert James Whitty of Oregon DOT during the first quarter of 2012.

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.

Chapter 1. Introduction

The Mileage-Based User Fee (MBUF) Policy Study was commissioned by the Minnesota Department of Transportation (MnDOT) to identify and evaluate issues related to potential future implementation of an MBUF system in Minnesota. 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, instead of being charged by the gallon for fuel consumed in operating a vehicle.

Over a period of approximately one year, the MBUF Project Management Team –comprised of individuals from MnDOT and the Humphrey School of Public Affairs, as well as consultants – secured valuable quantitative and qualitative policy feedback, drove completion of several deliverables including development of potential MBUF business models, and staffed a Policy Task Force.

The Policy Task Force consisted of 25 Minnesotans who met six times between June and November 2011. It was charged with evaluating the overall MBUF concept and related issues, determining related benefits and concerns, considering potential system design options and preferences, and formulating policy objectives, findings and recommendations. The Policy Task Force issued its findings and recommendations in a report dated December 2011.

The MBUF Policy Study Supporting Technical Information document is intended to offer necessary detail regarding the work performed and reviewed as part of the MBUF Policy Study. The document serves to complement the separate MBUF Policy Task Force report; it summarizes activity within and inputs informing all phases of the MBUF Policy Study process, including findings from:

- Greater Minnesota listening sessions;
- 2011 MBUF Symposium in Breckenridge, CO;
- Perspectives from national experts;
- National expert and transportation finance roundtable events;
- Internet panel survey of Minnesotans; and
- Additional targeted outreach

Chapter 2 provides information on public outreach and data collection, with Chapter 3 focusing on the national context and Chapter 4 offering an overview of the Task Force process and outcomes. Two foundational reports that served as forerunners to the study of mileage-based user fees and proceedings of the MBUF Policy Study and related Policy Task Force are included as Appendices A and B, respectively.

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.

Chapter 2. Public Outreach and Data Collection

A. Stakeholder and Issue Identification

Stakeholder analysis is useful in identifying MBUF stakeholders and aiding in the design of appropriate outreach activities. Once stakeholders were identified, the specific MBUF policy areas of interest (e.g., revenue collection, transit, equity) were anticipated for each group. An Influence/Interest Grid was also assembled to determine the level of influence and interest of each of the stakeholder groups. Finally, the various outreach activities were analyzed to ensure that the activities gave each of the stakeholder groups an opportunity to stay informed and provide input on the project.

Stakeholder Identification

One of the first steps in a stakeholder analysis is the identification of stakeholders. Stakeholders may be directly or indirectly affected by the implementation of MBUF. In addition, they may have concerns related to the project that should be addressed or bring up ideas that have not yet been considered. Furthermore, they may have decision-making authority or influence to shape a potential MBUF approach and/or make a policy decisions on future implementation.

Table 1: Stakeholder Groups

<p>Elected Officials Governor Legislators Regional Officials County and Local Officials Regional Council of Mayors (ULI Supported) Association of Minnesota Counties League of Minnesota Cities</p> <p>Public Agencies State Agencies Department of Transportation (MnDOT) Department of Revenue Department of Public Safety Minnesota Management and Budget Department of Employment and Economic Development Department of Commerce Minnesota Pollution Control Agency</p> <p>MPOs Twin Cities Metropolitan Council Fargo-Moorhead Council of Governments Rochester Olmsted Council of Governments Duluth-Superior Metropolitan Interstate Commission St Cloud Area Planning Organization Grand Forks-East Grand Forks MPO La Crosse-La Crescent Area Planning Committee Regional Development Commissions County Finance Officials</p>	<p>Opinion Leaders Citizens League Transportation Alliance Minnesota Public Transit Association Minnesota Taxpayers Association Minnesota AAA</p> <p>Environmental and Social Justice Groups Transit for Livable Communities Foundations McKnight Foundation Blandin Foundation Northwest Area Foundation Fresh Energy Sierra Club Urban League United Way American Civil Liberties Union</p> <p>Business and Industry Groups Minnesota Association of General Contractors American Council of Engineering Consultants Minnesota Trucking Association American Trucking Research Institute Chambers of Commerce Minnesota Business Partnership Itasca Group Oil Distributors & Gas Stations</p> <p>General Public</p>
---	--

The comprehensive list of stakeholder groups was broken into six main categories as shown in Table 1. Major stakeholder groups included:

- Elected Officials
- Public Agencies
- Opinion Leaders
- Environmental and Social Justice Groups
- Business and Industry Groups
- General Public

Stakeholder Input Opportunities

A number of activities were planned as part of this effort to help gather input on a potential MBUF. Table 2 describes the stakeholder input opportunities and the groups targeted for each activity. There is a wide range of different ways in which input was gathered from stakeholders. Some activities targeted stakeholders with higher levels of influence such as the legislative and executive briefings. Other activities, such as the Internet panel survey gauged interest and understanding on the project from the general public.

Table 2: Outreach and Stakeholder Input Opportunities

Activity	Description	Stakeholder Group Involvement
1. Policy Task Force Meetings	6 meetings	<ul style="list-style-type: none"> • Elected Officials • Public Agencies • Business/Industry Groups • Environmental/Social Justice Groups
2. Internet Panel Survey	1 wave of 400 respondents	<ul style="list-style-type: none"> • General Public
3. Greater MN Listening Sessions	5 meetings	<ul style="list-style-type: none"> • Elected Officials • Public Agencies • Business/Industry Groups • Opinions Leaders
4. Legislative and Executive Briefings	1 meeting with MnDOT Commissioner	<ul style="list-style-type: none"> • Public Agencies
5. Expert Panel / Transportation Finance Roundtables	3 sessions (1 at MBUF Symposium and 2 in MN)	<ul style="list-style-type: none"> • Elected Officials • Public Agencies • Business/Industry Groups • General Public • Opinion Leaders • Environmental/Social Justice Groups

Influence/Interest Grid

An Influence/Interest Grid is used to evaluate each stakeholder group in regard to their level of interest in the project and their degree of influence. The stakeholders are placed in one of four quadrants based upon these two variables (Figure 1). For a project such as this, level of interest can be generally estimated based on the level of impact or general concern, either positive or negative, that a change to a MBUF system would have on a particular group. Influence can either be formal, such as that exerted by elected officials, or informal such as is the case with the media. The arrows in Figure 1 suggest that stakeholders are not isolated to one quadrant, but can vacillate between two quadrants depending on the stage of the project and other project happenings.

By understanding the quadrant or quadrants that a stakeholder group belongs, project leaders can adjust their level of engagement and amount of information sent to stakeholders.

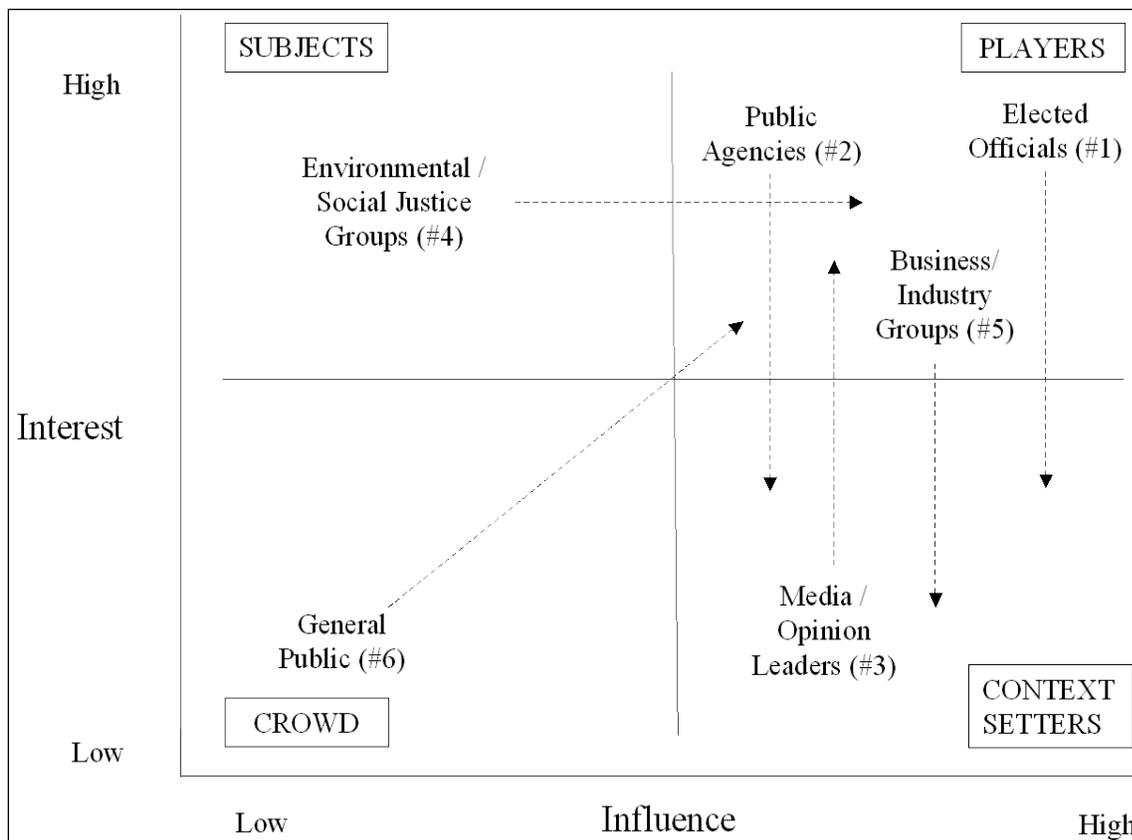


Figure 1: MBUF Influence/Interest Grid

A brief description of each of the four quadrants in Figure 1 follows:

- Players (High Influence, High Interest) – these stakeholders should be actively engaged in the project, so that they feel a sense of ownership in the outcome. They should be informed and comfortable with the process and its potential outcomes. These individuals or groups can become major project champions.

- Context Setters (High Influence, Low Interest) – these stakeholders will not be overly concerned with the details of the project, so they should not be overwhelmed with data and project materials. However, they should be informed of major project activities/outcomes.
- Crowd (Low Influence, Low Interest) – stakeholders in this quadrant should be given an opportunity to provide input on the project, but their overall interest is often minimal. Outreach events should cover the main issue areas and not delve too much into the details of the topic.
- Subjects (Low Influence, High Interest) – this group will want to be engaged in the topic area because it affects them in a meaningful way. Project leaders should try to meet the needs of these groups, so that they feel that their voice was heard in the process. Oftentimes, these stakeholders can add positive elements to the overall discussion. Groups in this quadrant can form allies to positively or negatively affect the process or outcomes.

Anticipated Policy Issues by Stakeholder Groups

After identifying the various MBUF stakeholders, the potential policy areas of interest for each group were anticipated. Table 3 displays 13 major policy and issue areas, and includes topics such as freight, enforcement, and equity. For example, it can be anticipated that the Minnesota Trucking Association and the American Trucking Research Institute will be interested in how a MBUF will affect freight movements. Making these connections will help to design opportunities to engage specific stakeholder groups in activities that address their major topic area(s), yet at the same time provide a forum to discuss other more indirect issues.

Table 3: Anticipated Policy Areas of Interest for Key Stakeholder Groups

Policy and Issue Areas	Key Stakeholder Groups							
	Elected Officials	Public Agencies	Media & Opinion Leaders	Environment & Social Justice Groups	Business & Industry Groups			
Transit	<ul style="list-style-type: none"> • Governor • Legislators • Regional Officials • Regional Council of Mayors (ULI supported) • County Officials • Local Officials 	<ul style="list-style-type: none"> • Mn/DOT • MPOs 	<ul style="list-style-type: none"> • Transportation Alliance • Minnesota Public Transit Association 	<ul style="list-style-type: none"> • Transit for Livable Communities 	<ul style="list-style-type: none"> • MN Association of General Contractors • American Council of Engineering Consultants • MN Trucking Association • American Trucking Research Institute 			
Roads								
Freight								
State and Local Budgets Implications		<ul style="list-style-type: none"> • MN Management and Budget • Department of Revenue • Regional Development Commissions • Department of Employment and Economic Development • County Finance Officials • Department of Revenue • Department of Public Safety 	<ul style="list-style-type: none"> • News Media • Citizens League • Minnesota Taxpayers Association • Minnesota AAA 	<ul style="list-style-type: none"> • Foundations 	<ul style="list-style-type: none"> • Chambers of Commerce • Minnesota Business Partnership • Itasca Group • Oil Distributors & Gas Stations 			
Use of Revenues								
Revenue Collections								
Revenue Adequacy								
Enforcement								
Efficiency								
Equity						<ul style="list-style-type: none"> • Mn/DOT • MPOs • Department of Commerce • MN Pollution Control Agency 	<ul style="list-style-type: none"> • Urban League • United Way 	<ul style="list-style-type: none"> • Fresh Energy • Sierra Club
Environmental Sustainability & Energy Consumption								
Feasibility								
Privacy								

B. Greater Minnesota Listening Session Prevailing Themes

In order to incorporate stakeholder feedback from throughout the state, the Policy Study included a series of five listening sessions in Greater Minnesota. Each session began with an overview of the MBUF concept and proceeded to poll participants regarding their individual attitudes on various attributes of a potential MBUF system. The focus group discussion tool with results is available in Appendix C. Invitations were extended to select local government leaders, transportation officials, and trucking and business representatives. The listening sessions took place in Bemidji, Duluth, Rochester, Saint Cloud and Willmar, occurring over a course of eight weeks from April to June 2011. On average, listening sessions included about a dozen participants and lasted approximately two hours. The following provides a summary of aggregate findings, organized by topic area and emphasized to properly convey overall participant priorities. More detailed findings are provided in Appendix D.

General

- Concern that elected officials will lack the “political will” to implement a system as complex as MBUF.
- Lacking knowledge of specific project characteristics, some individuals had trouble answering hypothetical questions about MBUF.

Road User Pays Principle

- Strong sense that current fuel tax regime is inequitable, not all users pay their fair share.
- Frame MBUF discussion on fact that some vehicles don’t pay for using roads; identify equity issues that are larger than revenue shortfalls.

MBUF Policy Issues

- General belief that any MBUF approach would be best if implemented at national rather than state level; concern over scale and complications due to interstate travel.
- Including additional pricing factors and policy objectives may muddy the water on MBUF costs and benefits and hinder the likelihood of MBUF implementation. Keep it simple.
- Some concern over social engineering and potential for market distortion.

Revenue

- Widespread belief that current system is flawed and/or failing to raise necessary revenue.
- Any MBUF scheme should result in additional revenue for transportation system; strong, consistent opposition to revenue-neutral approach.
- Curiosity over whether MBUF would replace or supplement current fuel tax system.

Fuel Efficiency & Environmental Concerns

- Some aversion to penalizing environmentally-conscious consumers who purchase electric or hybrid vehicles to reduce gas consumption and emissions (especially if anticipated fuel cost savings factored into decision). MBUF could introduce disincentive for electric and hybrid vehicle ownership, advancing one policy objective to the detriment of another. Would MBUF put a damper on future technology and fleet choice?

Heavy Commercial Vehicles

- Concern that increased freight costs will be passed along to consumers in the form of increased prices for goods.

Rural vs. Urban

- Impression that MBUF could discriminate against rural drivers; belief that rural populations drive longer distances in course of daily life.

Technology

- Does MnDOT know all potential costs of various technologies?
- Concern about bureaucracy associated with implementing a complicated MBUF scheme

Privacy

- MBUF sounds like more government intrusion. What units of government would be able to access data? Who would protect data privacy?
- General understanding that smart phone technology already tracks consumer location; however, recognition that consumer choice makes this privacy risk more accessible (and privacy risk under a mandatory MBUF system less acceptable).

Other Considerations

- Concern over costs of implementing and administering MBUF, especially given relative efficiency of current fuel tax system.
- Regardless the funding mechanism, some people will try to game or cheat the system.
- Skepticism over whether general public or policymakers could ever support MBUF given its complexities.
- Appreciation for familiarity with fuel tax system; “we may not love what we have, but we know what we have.”
- Some expressed difficulty in answering questions (due incomplete information and limited understanding of specifics of a potential MBUF system).
- Would MBUF stigmatize those who drive more? Strong reaction to any use of a fee for “social engineering” purposes.

C. Internet Panel Survey Results

The Policy Study included public opinion polling to measure baseline attitudes among the general public regarding attributes of a potential MBUF approach. An online survey was hosted by Accora Research, with 400 interviews conducted from May 18 – 23, 2011. The survey tool and detailed findings are available in Appendix E. The sample was census balanced to metro and Greater Minnesota, and the survey included a representative sample of Minnesota residents who each were sent an email invite to participate in an online study designed to gain input on a possible future funding source for transportation. All respondents were 18 years of age or older. Following is a summary of survey findings.

The primary objectives of the survey were to determine:

- Familiarity with fees based on vehicle miles traveled;

- Public acceptance for various system characteristics/features; and
- Level of overall support for fees based on vehicle miles traveled.

Almost half of the respondents claimed to have heard of a fee based on miles traveled concept prior to the survey; of those aware, more than three fourths claimed to have some familiarity with the concept.

Overall, respondents' ratings were not as negative on the system or system characteristics as may have been expected (Neutral range on a 10-point scale).

In addition, there was a higher awareness and familiarity with a vehicle miles traveled system than may have been expected (48% and 76%, respectively).

Important characteristics of a mileage-based user fee system include:

- Transparency – Driver must always know the costs being incurred.
- Operating costs – All costs related to a mileage-based user fee should be the responsibility of the government.
- Auditing – System should be audited regularly to ensure privacy and accuracy.
- Flexibility – System should be flexible to accommodate requirements that may come up in the future.

The primary hurdles of a mileage-based user fee are:

- Privacy. High tech devices alone imply loss of privacy, however, the use of high tech devices with explained driver benefits tend to be rated higher.
- Expensive to implement and maintain. Overall, respondents think that the cost of a mileage-based user fee is more expensive to operate than the current motor fuel tax.
- Perception of an added tax. Mileage-based use fees are thought to be in addition to the motor fuel tax, and therefore, it is considered to be double-taxing or a new tax.
- Use of MBUF system for public policy issues. Statements that put forth different user fees depending on where or when drive tend to be rated lower.

Chapter 3. National Context

A. 2011 MBUF Symposium Summary – Breckenridge, CO

Engaging national experts, policymakers and agency officials familiar with the MBUF concept was an important aspect of the MBUF Policy Study. A small delegation of MBUF Policy Team and Task Force members attended the 2011 MBUF Symposium held June 13 – 15 in Breckenridge, CO. Representing the MBUF Policy Study were: Bernie Lieder, MBUF Task Force chair; Jim Hovland, MBUF Task Force vice-chair; Ken Buckeye, MnDOT; John Doan, Atkins; Cory Johnson, MnDOT; Lee Munnich, Humphrey School; Marthand Nookala, Hennepin County; and Ferrol Robinson, Humphrey School. The following provides a summary of symposium proceedings:

- Growing agreement that MBUF approach is feasible, and that the focus should be on implementation and transition issues: What’s the sequence of implementation and adoption leading to a national system for all vehicles? Many uncertainties remain. System trials are needed to address these (Paul Sorensen).
- Consensus that MBUF initiatives will have to come from multiple states. To ensure a basic level of coordination, avoid duplication, and ensure a certain level of interoperability, an implementation framework will be needed. This would come either from the federal government or from a coalition of states – perhaps through AASHTO. In any case, federal funds will be needed to help jump-start the states’ initiative.
- There was a lot of discussion of keeping the initial implementations “simple”: Oregon electric vehicle pending legislation; Arizona’s flat fee; voluntary subscription; low tech. It was agreed that simple referred to “what was seen by the public,” even if what was behind the scene was complex.
- Oregon vision of how to move forward includes five elements (Jim Whitty):
 1. Motorists choice of reporting
 2. No mandate for GPS
 3. Open technology platform
 4. Public-private partnerships
 5. Apply to vehicles that have the equipment
- Additional implementation principles for truck VMT fees (Dick Mudge):
 1. Revenue generation
 2. Implementation in short term
 3. Keep simple and understandable
 4. Deal with actual revenues (unlike recent trials)
 5. Scalable hardware and software
 6. Control costs (keep less than 10%, motor fuel: 1%; tolls or registration fees: 10 – 25%)
 7. Tangible benefits (e.g., reduce administrative costs to truckers through single instead of current multiple fees across states)

- Emphasis on articulating a Value Proposition: How is MBUF going to help the public? What are they getting? Develop a credible statement of benefits. The deal with the practicalities of privacy, cost, technology, etc. Develop a coherent framework: Aging infrastructure; inadequate funds; infrastructure and traffic are key policy concerns; public needs to be educated (Bruce Schaller).
- Some are adding national security to other traditional benefits (congestion relief, environmental benefits, securing funding, etc.) National security is a reason for federal involvement.
- An important point: we have failed to make it clear to the public that MBUF is a substitution fee for the fuel tax, not an additional tax.
- Many participants indicated the need to clearly point out equity (or lack thereof) as one of the main shortcomings of the motor fuel tax. The equity issue resonates better than the revenue-generation argument (Alex Hergott).
- Two user groups now support MBUF: AAA and GMAC Insurance (PAYD).
- Lack of public trust in government is seen as a serious impediment for supporting government initiatives such as MBUF. Need to restore public trust.
- Evolutionary approach for MBUF implementation (Bern Grush):
 1. Design for congestion
 2. Adjust for the environment
 3. Scale for funding
 4. Plan for national security as byproduct

B. Breckenridge Session with National Experts

The following provides a summary of a separate discussion among MBUF Policy Study participants and national experts at the 2011 MBUF Symposium held June 15 in Breckenridge, CO. Discussion participants included: Bernie Lieder, MBUF Task Force chair; Jim Hovland, MBUF Task Force vice-chair; Ken Buckeye, MnDOT; John Doan, Atkins; Ginger Goodin, TTI; Cory Johnson, MnDOT; Adrian Moore, Reason Foundation; Lee Munnich, Humphrey School; Marthand Nookala, Hennepin County; David Reeves, Colorado DOT; Ferrol Robinson, Humphrey School; Paul Sorensen, RAND; and Jim Whitty, Oregon DOT.

Paul Sorensen, RAND Corporation

- MBUF will likely be state-led with a strong market-oriented approach. The provision of other user services utilizing the in-vehicle technology that goes well beyond the collection of MBUF, such as Pay-As-U-Go insurance will be the enabling factor.
- Voluntary adoption by individuals will be a key feature to implementation
- Issues of interoperability will need to be addressed. The federal government will need to lead on this issue.
- The two key challenges will be (1) public acceptance and (2) cost.

- Starting with electric vehicles resonates with decision makers and the public.

Jim Whitty, Oregon DOT

- Described pending legislation in Oregon and their use of a task force process to get there. He is not sure if it will be passed this year, but these efforts tend to take multiple years to accomplish. The Oregon legislation focuses on electric vehicles.
- Discussed strategies he has employed to work with the media.
- Recommends that technology should stay in the background and that the policy discussion should focus on the why not the how.

Ginger Goodin, Texas Transportation Institute

- Described the different approach TXDOT has taken due to their political environment. TXDOT has deferred to the Texas Transportation Institute (TTI) as the face of MBUF in Texas, as they are seen as a more neutral, independent academic institution.
- TTI has done extensive market research (primarily statewide focus groups). In her testimony to the Texas legislature, she stressed the following three points:
 1. Need for fairness to all users
 2. Public desire to have a low cost, low technology option
 3. Agreement that the user pays principle is strong in Texas.
- Presented an update for the FHWA National Concept of Operations for MBUF project. They are developing three concepts and will have a stakeholder meeting on July 25, 2011, to discuss these concepts.

Discussion

- Much of the discussion centered around strategies for working with the media. Jim went into length about his experience in Oregon. He suggested using the task force and other experts as surrogates for the DOT. Also, he said that there is nothing better than a pilot project (i.e. trial) to help answer many of the questions from policy makers and the public.
- Paul Sorensen suggested bringing policy makers from Oregon to Minnesota to share their experience and perspective.
- Jim strongly recommended that the task force should lead the effort. Give them the information and resources they need to come to their own conclusion. They became credible and strong champions on this issue. Due to the length of time Oregon has worked on MBUF, they have needed to outreach and educate several cycles of legislators over the years due to turnover.

C. Possible MBUF Implementation Options

Parsons Brinkerhoff conducted a separate analysis of possible implementation options for MBUF as part of the research for the MBUF project. Since the Task Force focus was on the policy level issues rather than implementation details, the business model analysis was not introduced in the Task Force deliberations. However, the alternatives analysis developed by Parsons Brinkerhoff was used in framing the Task Force policy options that were included in their recommendations. The alternatives analysis is included in Appendix F.

D. Rethinking Transportation Finance Roundtables

Are Mileage Based User Fees a Good Idea? – Dr. Adrian Moore

The first of two roundtable events to take place during the course of the MBUF Policy Study, this session was held in partnership with the Citizens League on May 25, 2011. The event featured Dr. Adrian Moore of the Reason Foundation – a California-based think tank.

The roundtable agenda featured introductory remarks by the Humphrey School's Ferrol Robinson, followed by a keynote presentation from Dr. Moore. A reaction panel and audience questions concluded the 90-minute event. A published description of the roundtable follows:

With the emergence of electric cars and broader use of highly fuel-efficient and hybrid vehicles, the gas tax may not produce enough long-term revenue to build and maintain Minnesota's roadway infrastructure. In 2007, the Minnesota Legislature and Governor passed a bill requiring the Minnesota Department of Transportation to conduct a research study on the feasibility and implications of implementing a mileage-based user fee in Minnesota. This study includes a policy task force as well as a technology demonstration, which will kick-off in June 2011.

At the national level, heated discussions are underway regarding the potential application of mileage-based user fees. The concept was highlighted and recommended by the 2009 Congressional National Surface Transportation Infrastructure Financing Commission. Adrian Moore, Ph.D., served on this commission, which offered "specific recommendations for increasing investment in transportation infrastructure while at the same time moving the Federal Government away from reliance on motor fuel taxes toward more direct fees charged to transportation infrastructure users."

The roundtable event attracted approximately 20 attendees, including leading lawmakers and government officials.

Opportunities and Challenges to Direct Usage-Based Charges for Transportation Funding – Dr. Paul Sorensen

The second of two roundtable events to take place during the course of the MBUF Policy Study, this session was held at the Humphrey School of Public Affairs on September 21, 2011. The event featured Dr. Paul Sorensen, a researcher at the RAND Corporation and leading national expert on MBUF. The presentation is provided in Appendix G.

The roundtable agenda featured introductory remarks by the Humphrey School's Lee Munnich, followed by a keynote presentation from Dr. Sorensen. Audience questions and discussion concluded the 90-minute event. A published description of the roundtable follows:

As vehicles become more fuel efficient, the motor vehicle fuel tax is becoming a less equitable and sustainable user fee for funding transportation in the U.S. Dr. Paul

Sorensen is a leading national expert on the potential for replacing or supplementing the motor vehicle fuel tax with a new approach referred to as mileage-based road user charges. He is the lead author for two seminal national studies on the challenges and potential for replacing the fuel tax with a mileage-based user charges: *Implementable Strategies for Shifting to Direct Usage-Based Charges for Transportation Funding* (2009) and *System Trials to Demonstrate Mileage-Based Road Use Charges* (2010).

The roundtable event attracted approximately 20 attendees, including a number of MBUF Policy Task Force members.

Chapter 4. MBUF Policy Task Force

The Policy Task Force was a crucial component of the MBUF Policy Study. The stated purpose of the Task Force was to identify and evaluate issues related to potential future implementation of a MBUF system in Minnesota. The Task Force was formed to assist in providing policy direction to the Department of Transportation's commissioner for the technology demonstration and potential broader implementation of MBUF in Minnesota.

The Policy Task Force was comprised of 25 Minnesotans who were charged with examining the State's long-term transportation needs. The group considered the challenges and opportunities for an MBUF system to support broad societal goals for mobility, safety, sustainability, and transparency. While Task Force members had been invited to serve from key stakeholder groups, they were not expected to strictly represent the perspective of their particular constituency. The Task Force was balanced geographically and politically, and members were appointed by the MnDOT commissioner.

Under the leadership of Task Force chair Bernie Lieder and vice-chair Jim Hovland, the Task Force was responsible for charting its own agenda and deliberations, as well as producing eventual findings and policy recommendations in a Task Force report. 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 had presentations and reviewed information from technical experts on the subject and held a series of six meetings discussing the various MBUF system related issues.

The Policy Task Force met monthly on six separate occasions between June and November 2011. Table 4 provides a meeting schedule and agenda outline. The Task Force delivered its findings and recommendations via a Task Force report to the MnDOT commissioner in December 2011.

Table 4: Policy Task Force Meeting Schedule

#1 – June 6, 2011	#2 – July 27, 2011
<ol style="list-style-type: none"> 1. Background <ul style="list-style-type: none"> ○ Policy Study Overview & Schedule ○ Task Force Charge ○ MBUF Tech Demo ○ MBUF Issues and Concerns 2. Transportation Funding Issues <ul style="list-style-type: none"> ○ Description of Problem 3. Policy Alternatives 4. List of Issues 5. Task Force Policy Questions and Problem Statement 6. Stakeholder Identification 7. Core Transportation Funding Principles 	<ol style="list-style-type: none"> 1. Informational Items <ul style="list-style-type: none"> ○ Transportation Revenues and Uses ○ Technology Demonstration ○ Online Survey & Listening Sessions ○ Discussion ○ Problem Statement
#3 – Aug 31, 2011	#4 – Sept 21, 2011
<ol style="list-style-type: none"> 1. Informational Item <ul style="list-style-type: none"> ○ Online Survey Summary Results (10-15 minutes max) 2. Review and approval of Problem Statement 3. Definition of Policy Objectives <ul style="list-style-type: none"> ○ User-pays principle ○ Revenue generation; 4. Replace vs. supplement fuel taxes <ul style="list-style-type: none"> ○ Revenue neutrality vs. revenue enhancement 	<ol style="list-style-type: none"> 1. Uses of Revenues (dedication and allowable uses) 2. Privacy 3. Rate setting criteria <ul style="list-style-type: none"> ○ Distance ○ Vehicle Weight and Per-Axle ○ Fuel Efficiency ○ Level of Emissions ○ Time of Day ○ Geographic Area 4. Cost of MBUF System 5. Implementation and Transition Issues (cost, transition, complexity, technology, etc.)
#5 – Oct 26, 2011	#6 – Nov 29, 2011
<ol style="list-style-type: none"> 1. Review draft Task Force report 2. Task Force Recommendations 	<ol style="list-style-type: none"> 1. Adopt Task Force report 2. ID potential next steps

A. Task Force Questions

To help guide Policy Task Force discussion and deliberation, the MBUF Policy Team assembled a list of questions for Task Force consideration. Following is a list of policy questions confronting the MBUF Policy Task Force as identified by the project team:

1. What are the objectives and intended outcomes of an MBUF's solution in MN?
 - Is MBUF a means for collecting transportation revenue?
 - Increased revenue from certain classes of vehicles
 - Collect fees from underpaying vehicles
 - Or is MBUF intended to serve other societal goals, such as providing explicit pricing and price signals (to give users a better understanding of costs and benefits of travel)
 - Time-of-day pricing to help reduce congestion (on all roads or on selected roads)
 - Pricing of high-emission vehicles to help reduce emissions
 - Pricing to achieve an overall reduction in VMT and fuel consumption
 - Collect more fees from heavy vehicles to cover the greater road damage caused
2. If additional revenues are collected, what should these revenues be used for?
 - For roads and safety improvements
 - For roads, safety and transit improvements
3. Should MBUF replace the gas tax or supplement it?
 - If MBUF is implemented, should gasoline become untaxed?
 - The fuel tax rewards environmentally beneficial behavior and vehicle purchase choices. Should MBUF pricing replicate these advantages?
4. Should a switch from fuel tax to MBUF be revenue neutral, or should it generate additional revenue to fill the shortfall in transportation funding?
5. If MBUF is revenue neutral, will it need to be raised at some point to meet transportation funding needs?
6. How would a state-based MBUF and a federal MBUF coexist?
 - Would the state collect MBUF for the federal government?
 - Would the federal government collect MBUF for the states?
 - Would drivers have to pay state MBUF separately from federal MBUF?
7. What level of technology should be required in vehicles?
 - High technology can save manual effort, but it could be more expensive to implement and maintain
 - Many people are afraid of technology and of government's ability to protect individual privacy
 - Market research has indicated that people prefer simpler systems
8. Who pays for the cost of the required MBUF technology: the driver – or the implementing agency or jurisdiction?

9. Should private companies operate MBUF systems?
 - Private companies could be certified as meeting the state's requirements for data quality, auditability, privacy, etc.
 - Private companies could be allowed to provide whatever type of in-vehicle technology they want
 - Data could be provided by private companies to the state in a specified format
 - Drivers could choose which company to get their technology from, with private companies offering options for additional features
10. Should alternate fuel vehicles be treated differently?
 - Should owners of these vehicles be charged a lower MBUF fee as an incentive to purchase these vehicles?
 - What are the alternatives to collecting fees from these vehicles, and what are the comparative costs?
11. How should fees be collected?
 - At the fuel pump? (What about electric vehicles?)
 - Sending monthly invoices? (What about people who are unable to pay?)
 - Annually, similar to tab fees? (Would a year's worth of MBUF be too much for some?)
 - Does a person have to have a credit card, as with MnPASS? (Would a special MBUF credit card be issued?)
12. What entity should administer the MBUF program and collect the fees?
 - MN Department of Revenue, which now collects the fuel tax?
 - MnDOT, which now collects MnPASS fees (using a contractor)
 - MN Department of Public Safety, which now keeps vehicle records?
 - A new MBUF authority?
13. What process for rate-setting should be put in place?
 - Who sets the rates? (See question 11)
 - Should rates be tied to inflation?
 - How many rates are an acceptable number? A single flat rate? Multiple rates to achieve policy objectives? (See Question 1)
 - What should be the process for modifying rates?
14. What would be the enforcement mechanism if someone does not pay?
 - Deny renewal of tabs?
 - Criminal charges?
 - Impound vehicle?
15. How might a transition to MBUF occur?
 - Start with vehicles that do not currently use taxed fuels?
 - Start with vehicles that are already equipped with most of the technology needed?
 - Allow MBUF to coexist with fuel taxes for some time; expand to all vehicles in time?

B. Task Force Problem Statement

Among the first challenges facing the Task Force was adopting an appropriate Policy Study Problem Statement. The project team and Task Force leadership presented the full Task Force with proposed Problem Statement language for consideration at the July 27, 2011 Task Force meeting. However, alternative language was offered by a member of the Task Force. After thorough discussion, including consideration of the respective roles of equity and revenue in driving the need for MBUF, the Task Force adopted the alternative language – albeit following additional revision included in several friendly amendments. As subsequent Task Force discussions tended to shift focus away from revenue concerns toward issues of equity, the Task Force chairs agreed to final Problem Statement language that reflected this change in Task Force discussion. The final Problem Statement language was incorporated into the draft and final Task Force report, each of which was subject to approval of the Task Force.

Final language adopted following July 27, 2011 Task Force Meeting:

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.

C. Task Force Discussion Items

The MBUF Policy Study Project Team provided the Task Force with a list of various discussion items, including potential policy objectives. The initial list is provided below:

1. MBUF Policy Objectives
 - **Equity** – Everyone pays for the roadway system regardless of their power source.
 - **Transportation Funding** –Generate revenue to replace or supplement motor fuel taxes with a MBUF.
 - **Environment** – Help achieve environmental objectives such as reducing vehicle emissions and fuel consumption.
 - **Congestion Mitigation** – Help achieve travel demand management objectives such as increasing transit usage and reducing peak period congestion.
 - **Other Options** – Other policy objectives or combinations of the above
2. Use of Revenues
 - **Roads Only** – Roadway construction and maintenance only, which supports the direct user-pays-and-benefits principle)
 - **Roads and Transit** – For highway and transit purposes, if an objective of MBUF is to direct resources to encourage transit usage

- **Transportation** – Dedicated for broad transportation uses, particularly if MBUF is a replacement for fuel taxes

3. Other Issues for Future Discussions

- Privacy
- Rate setting criteria
- Cost of MBUF System
- Role of Public and Private Sectors (business model)
- Implementation and Transition Issues (cost, transition, complexity, technology, etc.)

Following considerable deliberation of these discussion items, the Task Force distinguished between two Primary Objectives and a pair of Ancillary Long Term Objectives:

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.

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 primary objectives and ancillary long-term objectives were highlighted in the full MBUF Policy Task Force Report. A comprehensive record of Task Force deliberations are included in Appendix H.

D. Task Force Report

The MBUF Policy Task Force report was the product of Task Force discussion and deliberation over a six-month period from June through November 2011. The Task Force report was based directly upon Task Force proceedings and included a set of findings and recommendations. The Policy Task Force report was the product of an iterative writing process involving contributions from the Task Force chair and vice-chair, as well as the MBUF Project Team. Task Force proceedings informed the report's first draft, and the full Task Force in turn provided detailed feedback that led to a final draft – which was adopted unanimously before the Task Force adjourned.

The final Task Force report is included as part of Appendix I and was divided into two parts:

- Part 1 briefly summarizes what the Task Force learned during its discovery/investigative phase.

- Part 2 describes the findings and recommendations of the Task Force to the MnDOT Commissioner.

The Report also included a Minority Opinion supported by three Task Force members.

Task Force findings and recommendations were summarized in a presentation for future stakeholder audiences (Appendix J).

Chapter 5. Project Conclusion

Following adoption of the MBUF Policy Task Force report, the Task Force chair and vice-chair – along with project staff – briefed the MnDOT Commissioner on report findings and recommendations. In their conveyance letter to the commissioner, the chair and vice-chair noted:

Ultimately, the Task Force, as our report says, “...does not recommend a statewide, full-scale implementation of MBUF until concerns are satisfactorily addressed.” The Task Force report does ask MnDOT to propose a detailed MBUF system design for the public and policymakers to consider...the Task Force report recommends goals, parameters and a next step for thoughtfully moving the MBUF conversation forward to the next stage of consideration.

MnDOT subsequently issued a press release on December 16, 2011, highlighting the Task Force and its report.

Although both the Task Force and the broader MBUF Policy Study have concluded its official work, project staff anticipates the report and related activity will give rise to continued discussion of MBUF as a potentially more fair and flexible transportation funding option. Project staff looks forward to future legislative hearings and public discussion on the topic.

Appendix A. Greater Minnesota Listening Session Tool

TABLE OF CONTENTS

	PAGE
I. Summary of Findings	i
II. Summary of Recommendations	ii
III. Final Report	1
1. Introduction	1
• Legislation	2
• Advisory Council Membership	3
2. Summary of Advisory Council Meetings	4
3. Transportation Funding Needs	6
4. Financing Alternatives	9
5. Council Findings and Recommendations	12
IV. Appendix	17

I. SUMMARY OF FINDINGS

MAJOR TRANSPORTATION PROJECTS – PLANNING

1. In general, the priorities for investing in major transportation projects should be to:
 - Preserve existing levels of highway and transit service
 - Reinvest in existing systems
 - Improve highway and transit service beyond their present levels
 - Undertake major transportation projects

2. Major transportation projects are those projects that:
 - Have a high cost
 - Require several years to plan and construct
 - Are critical elements of a regional transportation system
 - Are vital to the economic health of the region or state

3. Major transportation projects must:
 - Emerge from a comprehensive planning and selection process
 - Support land use planning
 - Expand transportation choices
 - Reduce highway congestion and improve air quality
 - Achieve broad state and local policy goals

4. The Legislature should have no greater role in selecting major transportation projects than in selecting other projects.

MAJOR TRANSPORTATION PROJECTS – FUNDING

1. Changing the Minnesota Constitution as part of a comprehensive transportation funding proposal would be divisive and politically challenging.
2. The Advisory Council believes that a workable funding package can be assembled without changes in the Constitution.
3. A sound transportation funding package must provide for preserving the existing transportation system and making necessary improvements to it, as well as providing for major transportation projects.
4. The Advisory Council identified the most important criteria in evaluating funding options as:
 - Revenue potential
 - Public acceptability
 - Potential for having an impact on travel behavior

II. SUMMARY OF RECOMMENDATIONS

1. The Legislature should increase the present motor fuels tax by five cents per gallon and provide for annual indexing of the tax at the rate of inflation in subsequent years.
2. The Legislature should authorize the Metropolitan Council to impose a sales tax of up to one-half cent within the seven-county area to fund transit improvement projects currently identified by the Metropolitan Council, to replace general fund metro transit appropriations (other than Metro Mobility) and to replace the metro transit property tax currently levied by the Metropolitan Council.
3. The Legislature, Metropolitan Council, and Department of Transportation should take the necessary steps to authorize and eventually implement a system of road pricing to fund major transportation projects by the year 2000. Beyond the funding initiatives already proposed by the Advisory Council, the Legislature should identify a funding source or sources, following the recommended priorities established by the Advisory Council, to support the development of major transportation projects until such time as sufficient road-pricing revenues become available to underwrite those projects.
4. The Legislature should examine the state trunk highway system with a view toward reducing the size of the system and placing some trunk highways under local jurisdiction.

2

**STATE ADVISORY COUNCIL
ON MAJOR TRANSPORTATION PROJECTS
FINAL REPORT**

1. INTRODUCTION

In 1994, the Legislature passed a bill creating a State Advisory Council on Major Transportation Projects. This Council was to provide a forum at the state level for education, discussion, and advice to the Legislature regarding the financing of major transportation projects. The Council's charge was to identify projects that could not be funded within the current transportation funding structure, evaluate funding methods, receive public testimony, and submit to the Legislature a report and recommendations for a preferred financing plan for significant highway and transit projects.

The Council consisted of fifteen members appointed as follows: three senators and two public members appointed by the Senate, three representatives and two public members appointed by the Speaker of the House, and five public members appointed by the Governor. In addition, one of the legislative members appointed by the Senate and the House was a member of the minority caucus to assure that the work of the Council represented a bi-partisan effort.

A copy of the 1994 legislation and listing of the Council members is shown on pages 2 and 3.

The Advisory Council met eleven times between September 1994 and January 1995. These meetings covered a variety of topics and issues, and resulted in a recommendation for a transportation financing package which was submitted to the Legislature in February 1995.

One of the most difficult issues the Council struggled with was how to define the scope of their work. While the legislation specifically mentioned the financing of major transportation projects, there was a realization on the part of Council members that it was very difficult to limit their discussions and recommendations to this narrow mission. Transportation projects -- whether they be for preservation and maintenance, or expansion and upgrading of the existing system, or for major construction and reconstruction projects -- are intertwined and may compete for the same revenue sources. There was a general fear that if the Council were to concentrate only on the financing of major transportation projects, the need for increased financing of the existing transportation system would be ignored and possibly foregone.

The Council came to the agreement that while major transportation projects are important to the state's economic vitality, they should not be funded at the expense of preserving the public's existing investment in the transportation system and making needed improvements to it. The Council's recommendations, therefore, include measures both for addressing the financing needs of our existing transportation system and for major transportation projects. While not all votes of the Council were unanimous, this report represents a consensus of the Council's membership.

The remainder of this report contains a summary of the Council's meetings, a review of transportation funding needs within the state, potential financing mechanisms for meeting these needs, and a listing of the Council's final findings and recommendations.

LEGISLATION

Laws of 1994, Chapter 635, Article 1

Sec. 31. [ADVISORY COUNCIL ON MAJOR TRANSPORTATION PROJECTS.]

Subdivision 1. [ESTABLISHMENT; PURPOSE.] A state advisory council is established to provide a forum at the state level for education, discussion, and advice to the legislature on the financing of major transportation projects.

Subd. 2. [AUTHORITY; DUTIES.] The advisory council shall:

(1) identify significant highway and transit projects that could not be funded within the current transportation funding structure;

(2) evaluate methods for funding the identified projects;

(3) receive public testimony and consult with governmental units; and

(4) submit to the legislature a report and recommendations for a preferred plan to finance significant highway and transit projects by February 1, 1995.

Subd. 3. [MEMBERSHIP.] The advisory council shall consist of 15 members who serve at the pleasure of the appointing authority as follows:

(1) six legislators; three members of the senate appointed by the subcommittee on committees of the committee on rules and administration, and three members of the house of representatives appointed by the speaker; and

(2) nine public members who are residents of the state: two appointed by the subcommittee on committees of the committee on rules and administration of the senate, two appointed by the speaker of the house of representatives, and five appointed by the governor. The appointing authorities must consult with each other to assure that no more than eight members of the advisory council are of the same gender.

Subd. 4. [CHAIRS.] The legislative appointing authorities shall each designate a legislative appointee to serve as co-chair of the advisory council.

Subd. 5. [ADMINISTRATION.] Legislative staff and the commissioner of transportation shall provide administrative and staff assistance when requested by the advisory council.

ADVISORY COUNCIL MEMBERSHIP

Senate Appointments

Senator Carol Flynn, Council Co-Chair
Senator Keith Langseth
Senator William Belanger
Gary DeCramer, Senior Fellow, State and Local Policy Program, Humphrey Institute
of Public Affairs
Rebecca Yanisch, Executive Director, Minneapolis Community Development Agency

House Appointments

Representative Bernie Lieder, Council Co-Chair
Representative Betty McCollum
Representative Virgil Johnson
El Tinklenberg, Mayor, City of Blaine
James Prosser, City Manager, City of Richfield

Governor Appointments

Dottie Rietow, Chair, Metropolitan Council
Sally Evert, Special Assistant to the Chair, Metropolitan Council,
and former Chair, Regional Transit Board
Elaine Hanson, Commissioner, Department of Administration, and former Director
of Finance, City of Duluth
Diane Vinge, Owner, L and D Trucking Corporation
Charles Ferrell, Partner, Faegre & Benson

2. SUMMARY OF ADVISORY COUNCIL MEETINGS

The Advisory Council's meetings can be categorized into three distinct phases: a gathering of transportation information and review of financing needs; establishment of group consensus on transportation needs, the definition of major transportation projects, and criteria for evaluating financing mechanisms; and selection of a package of financing mechanisms for funding transportation needs. A copy of the agenda for each meeting can be found in the appendix.

Information Gathering

During its first five meetings, the Council invited a number of individuals from the transportation industry to make presentations on the existing transportation financing system and transportation needs within the state. The purpose of this information-gathering phase was to give the Council members a common base of knowledge and understanding of transportation from which to make decisions.

In particular, the Council's second meeting was devoted to a full-day retreat held at the Minnesota Department of Transportation's training center in Arden Hills. At this meeting, the members received presentations on the:

- Present highway financing system and constitutional dedication of highway funds
- Present transit financing system for both Greater Minnesota and the metro area
- The State Transportation Improvement Program for 1995-1997
- Metropolitan area highway/transit plan to year 2015
- Travel behavior inventory and major transportation trends
- Comparison of Minnesota's transportation financing with other states

Meetings three and four concentrated on the financing needs for both highways and transit and the unfunded portions of these needs. These needs are described in more detail in Section 3 of this report. The Council's fifth meeting consisted of a number of presentations on the subject of road pricing (congestion pricing) and a mileage-based revenue system.

Consensus Building

At the sixth and seventh meetings, the Council members split into two separate groups and discussed identical questions relating to spending needs, the definition of major transportation projects, investment priorities, constitutional dedication, and preferred criteria

for evaluating financing options. At the end of each meeting, the two groups came back together to compare responses and identify areas of agreement. The consensus items which emerged from these meetings are shown below.

- The present level of spending is too little for both highways and transit, although highway spending is closer to being adequate than is transit spending.
- Transit and highway service levels can range from superior to inadequate although, in general, both have inadequate service levels.
- The primary characteristics of major transportation projects are:
 - Large cost and long time to build
 - Vital to the economic stability of the state; are of critical importance to the state or a region; are a critical element of a transportation system
 - Positive economic benefit over the long term
 - Achieve state and regional policy goals
- Selection of a major transportation project should:
 - Emerge from a comprehensive planning process
 - Be evaluated through a cost-benefit analysis
 - Involve the public and stakeholders
 - Be objectively selected through a professional process
 - Avoid legislative project selection
- Transportation needs exceed funding availability and available funding limits transportation spending.
- Transit and highway funding must be linked.
- The highest investment priority is to operate and maintain key transportation service levels.
- Transportation financing should generally move towards more flexibility to respond to future changes. The existing constitutional dedication of highway user fees tends to limit flexibility and separates highway and transit funding.
- Major transportation projects will most likely require a unique funding source that does not distract from other transportation needs.

• The preferred criteria for evaluating financing options in order are:

- | | |
|-------------------------------|---------------------------------|
| 1. Revenue yield | 7. Environment/energy impacts |
| 2. Public acceptability | 8. Sensitivity to inflation |
| 3. Effects on travel behavior | 9. Interstate competitiveness |
| 4. Equity | 10. Effect on state finance |
| 5. Ease of administration | 11. Constitutional restrictions |
| 6. Progressivity | |

Selection of a Transportation Financing Package

At its final meetings, the Council's efforts centered on the selection of a financing package that would contain recommendations for meeting both the funding needs of the existing transit and highway systems and major transportation projects. The staff presented a number of potential funding options and described the potential revenue yield for each. The Council reviewed each option in light of the criteria it had previously identified in its work. A detailed description of the financing options is contained in Section 4 of this report.

The public was invited to testify at the eighth meeting of the Council. Each testifier was asked to respond to the following questions:

1. What constitutes a major transportation project and why are they needed?
2. How should major transportation projects and other transportation needs be financed?

Eight individuals chose to testify before the Council, and one additional individual submitted written comments. A copy of the public testimony and written comments is contained in the appendix to this report.

The Council's final three meetings concentrated on further analysis of the financing options, developing consensus on the preferred financing package, and approving the final report and recommendations of the Council. The Council's final findings and recommendations are shown in Section 5 of this report.

3. TRANSPORTATION FUNDING NEEDS

As part of its charge, the Advisory Council looked in detail at the level of transportation need facing the state. This need is often difficult to quantify because it can vary considerably with the level of service goals which are to be met. While there is not widespread agreement on the precise dollar amount of need, there is general agreement that transportation funding must be increased if we are going to maintain and improve the existing system.

There are a number of factors and trends which are contributing to Minnesota's growing transportation needs and the gap between these needs and transportation spending. Over the past decade, travel on Minnesota's highways has increased at a rate much faster than population or job growth. From 1980 to 1990, population rose seven percent, the number of households grew by 14 percent, Minnesota added over 400,000 new jobs, and total travel on our roadways increased by over 36 percent. This rapidly growing travel demand is being put on an aging transportation system that receives comparatively fewer dollars than it did in 1972.

Minnesota's last gas tax increase occurred in 1988, at which time the tax went from 16 cents per gallon to the present-day 20 cents per gallon. However, because the gas tax is not indexed for inflation, Minnesota's buying power in the area of transportation has dropped. An Information Brief prepared by House Research and shown in the appendix to this report indicates that, since 1972, highway expenditures as a percent of total state and local government spending have dropped from 11.6 percent of total spending in 1972 to 7.5 percent of government expenditures in 1992.

In 1988, the Legislature created the Transportation Study Board to conduct a study of Minnesota's Surface Transportation Needs into the 21st century and recommend a program for making transportation improvements to meet those needs. The Study Board issued its final report in 1991 and found substantial needs in all areas of Minnesota's transportation systems. Unfortunately, the funding recommendations of the Study Board were never implemented and most of these needs continue to exist today. A summary of the identified needs from this report is shown below and was presented to the Advisory Council on Major Transportation Projects at its third meeting.

- The Study Board needs were identified in two broad categories: "full service needs" which include all identified transportation needs through the year 2011 and "acceptable level of service needs" which are those needs critical to maintaining current levels of mobility.
- Full-service transportation needs (both highways and transit) through 2011 were estimated to be \$63.9 billion (1990 dollars); the state and federal share of this 20-year need was estimated at \$38.5 billion, or \$1.9 billion annually.
- Current state and federal 20-year revenues are projected at \$24 billion, or \$1.2 billion annually.
- Resulting in a 20-year unfunded full-service transportation need of \$21.6 billion, or \$725 million annually. This is a 60 percent increase over existing funding levels.
- Acceptable level of service 20-year needs were estimated at \$54.5 billion; the state and federal share of this need was estimated at \$32.1 billion, or \$1.6 billion annually.
- Resulting in a 20-year unfunded acceptable level of service need of \$8.1 billion or an annual unfunded need of \$400 million, a 33 percent increase over existing funding levels.

In 1992, the Minnesota Department of Transportation (MnDOT) also conducted an extensive study into Minnesota's transportation needs through the year 2000. MnDOT looked at five potential funding scenarios and identified the increased level of transportation funding that would be needed to accomplish each scenario. The results of this study were also presented to the Advisory Council at its third meeting and a complete description of each scenario is contained in the appendix. A summary of the results of this study is shown below.

The first scenario -- described as a "deteriorating infrastructure" scenario -- estimates the impacts on the state's transportation system if no funding increases occur through the end of the decade. The scenario predicts a loss of federal funds due to insufficient matching state funds, no annual construction program beginning in FY 2000, a serious decline in transit programs, and a significant reduction in private-sector jobs dependent upon highway construction. (MnDOT has taken steps to avert this scenario through implementing efficiency measures and reducing agency costs.)

The "investment preservation plus transit" scenario would maintain the existing level of highway construction program spending at \$400 million annually and would provide for identified transit needs. This scenario would require an additional average annual investment of \$93 million for state highways and \$45 million for state transit programs. The third scenario is similar, except that funding would be provided only for the next biennium to avoid cuts in the annual construction program. This would require an increase of \$65 million for highways and \$27 million for state transit programs.

The final two scenarios -- "economic development" and "competitive advantage" -- describe instances in which significant funding increases would be devoted to transportation to provide for greater levels of highway construction and reconstruction and new transit program development. The economic development scenario would require an increase of \$465 million per year for highways and \$45 million per year for transit (similar to the Study Board's adequate level of service needs), and the competitive advantage scenario would require \$867 million per year for highways and \$47 million per year for transit programs (similar to the Study Board's full-service needs).

While the Advisory Council did not spend a lot of time and effort trying to reach agreement on the exact level of transportation need in Minnesota, it did come to the conclusion that significant funding increases were necessary to bring our transportation system up to an adequate level of service. Further, it concluded that if major transportation projects were to be funded, these projects would require a source of funding that was capable of raising substantial revenue and which did not have an adverse impact on the level of funding needed to maintain our existing system. A description and summary of the revenue options considered is given in the following section.

4. FINANCING ALTERNATIVES

As part of its exploration of how to pay for major transportation projects, the Advisory Council considered a wide variety of revenue sources. In doing so, the Advisory Council began with the broadest possible range of alternatives, gradually reducing them to a manageable number.

The Advisory Council began with this range of options:

Fuel-Based Revenue Sources

- Fuel tax
- Extension of general sales tax to fuels
- Wholesale fuel tax
- Local fuel tax
- Diesel differential
- Indexed fuel tax
- Petroleum gross receipts tax
- Environmental taxes

Vehicle-Based Revenue Sources

- Increased vehicle license taxes
- Indexed vehicle tax rates
- Increased minimum auto tax
- Weight-distance tax
- Motor vehicle sales (excise) tax
- Mileage tax
- Environment-based taxes
- Driver license fees

General Sales Tax Revenue Sources

- Statewide sales tax for transportation
- Sales tax on vehicle repair services
- Metro-area regional sales tax

Property-Based Revenue Sources

- Value-capture financing
- Public-private partnerships
- Transportation benefit districts
- Severance taxes
- Parking taxes

Highway-Based Revenue Sources

- Toll financing
- Road pricing

Credit Financing

- Bonding

Local Revenue Sources

- Tax increment financing
- Transportation impact fees
- Wheelage taxes
- Local sales tax
- Local fuel tax
- Transportation districts

Numerous criteria were used to systematically evaluate these alternatives. The first range of criteria was intended to be as wide-ranging as the revenue alternatives.

FINANCIAL CRITERIA

Revenue yield. What revenues has the alternative yielded in the past? How do these compare with the scope of the needs? Is the alternative likely to be significantly more or less productive in the future?

Revenue certainty. Does the alternative produce a reasonably predictable revenue yield? What fluctuations in revenue yield has it historically experienced? Is it sensitive to inflation? What other factors can affect revenue certainty?

Administrative efficiency. How easy or difficult is the alternative to administer? Does the administrative framework already exist, or would it have to be invented? What is the cost of administration/collection compared to the revenue generated?

State finance. What effect would the alternative have on the state general fund?

Local finance. Would the alternative have an effect on the finances of local governments?

ECONOMIC CRITERIA

Equity. How is collection of the revenue related to use of the transportation facility being financed? Is there a relationship between taxes paid and cost imposed? Does the alternative involve cross-subsidization among facility users? To what extent does the alternative reflect the true overall cost of the transportation improvement?

Progressivity. How is payment of the revenue related to ability to pay? Is it more or less progressive than existing revenue sources?

Transportation efficiency. Does the alternative promote efficiency in the use of transportation systems?

POLITICAL/LEGAL CRITERIA

Public acceptability. How likely is the public to accept the alternative? Can it be explained in readily understandable terms? Is it likely to be perceived by the public as fair and reasonable? Would it be perceived as a "new tax"?

Constitutional status. Does the alternative potentially conflict with any constitutional restrictions? What is the likelihood of having to defend it in court? What would be the likelihood of its constitutionality being sustained?

SOCIAL/ENVIRONMENTAL CRITERIA

Travel behavior. How would the alternative affect travel behavior? Would it affect an overall goal of reducing average peak-hour vehicle occupancy? Would it expand or limit transportation alternatives?

Environmental. What are the alternative's likely environmental effects?

Development. Would the alternative have identifiable effects on development patterns in metropolitan areas, regional centers, or rural areas?

Energy. How would the alternative affect energy consumption?

OTHER CRITERIA

Experience. Has the alternative ever been used in Minnesota, and what were the experiences? Is the alternative being used in other states or regions? Has it ever been used in other jurisdictions? Is their experience with it relevant to Minnesota?

The Advisory Council ranked these criteria in importance, then evaluated the major revenue sources (major in terms of revenue potential) according to the weighted criteria. The leading financial alternatives according to this process were:

- Road pricing
- Motor vehicle sales (excise) tax
- Gasoline tax increase
- Sales tax on gasoline
- General or regional sales tax
- Gasoline tax indexing

Further refinement of these alternatives led to detailed revenue estimates over a five-year period. These estimates are shown in Table 1. Using these revenue estimates, the Advisory Council then developed findings and recommendations on funding.

TABLE 1

**Revenue Estimates for Major Financial Alternatives
(in \$ millions, for fiscal years)**

	1995	1996	1997	1998	1999
One cent gas tax	21.5	24.1	24.6	25.2	25.6
Three cent gas tax	64.6	72.3	73.8	75.6	76.7
Five cent gas tax	107.7	120.4	123.0	126.0	127.9
6.5% Motor vehicle sales tax	362.6	361.1	371.5	389.7	404.5
6.5% Gasoline sales tax	165.3	182.9	184.7	186.6	188.5
.5% Statewide sales tax	205.2	208.8	215.6	224.7	232.4
.5% Metro sales tax (including vehicles)	121.8	154.5	159.5	166.3	172.1

(The assumed effective dates for each of these alternatives is July 1, 1995, except for the metro sales tax which probably could not be implemented before September 1, 1995. Revenue from a gas tax imposed effective July 1, 1995, would not be received until the next month. The gasoline sales tax estimate assumes a pump price of \$1.10 per gallon with the entire price taxable.)

5. COUNCIL FINDINGS AND RECOMMENDATIONS

MAJOR TRANSPORTATION PROJECTS -- PLANNING

In general, the priorities for investing in major transportation projects should be:

- Preserve existing levels of highway and transit service
- Reinvest in existing systems to provide the capital necessary to maintain existing service levels
- Improve highway and transit service beyond their present levels
- Undertake major transportation projects

Major transportation projects are those projects that:

- Have a high cost (in excess of \$100 million or, in the case of highway projects, exceed 100 percent of a district's annual improvement budget)
- Require several years to plan and construct
- Are critical elements of a regional transportation system
- Are vital to the economic health of the region or state

Major transportation projects must:

- Emerge from a comprehensive planning and selection process that includes the public and local elected officials, following the model of area transportation partnerships and the Metropolitan Council's transportation advisory board
- Support land use planning
- Expand transportation choices
- Reduce highway congestion and improve air quality
- Achieve broad state and local policy goals

In general, the Legislature should have no greater role in selecting major transportation projects than in selecting other projects.

This policy recognizes that the Legislature may need to identify major transportation projects in order to fund them.

The Legislature should examine the state trunk highway system with a view toward reducing the size of the system and placing some trunk highways under local jurisdiction.

One factor complicating highway funding is the cost of providing for Minnesota's large state trunk highway system. Those trunk highways that MnDOT has identified as belonging on the 4,800-mile market artery system clearly serve a statewide function and should be a state responsibility, as do many other miles of state highway. However, testimony before the Advisory Council indicated that some 2,000 miles of trunk highways are potential candidates for turnback to local government. The Legislature should seriously consider how many miles should be turned back, how the process should be handled, whether overall cost savings would result, and what requirements should be imposed as to pre-turnback improvements.

MAJOR TRANSPORTATION PROJECTS – FUNDING

Changing the Constitution as part of a comprehensive transportation funding proposal would be divisive and politically challenging.

Although there is considerable support for either loosening dedication of highway user taxes or for constitutionally dedicating another revenue source for transit, there is also considerable opposition. This controversy has helped to doom transportation funding packages that otherwise had broad support in the Legislature.

The Advisory Council believes that a workable funding package can be assembled without changes in the Constitution.

Although statutory, rather than constitutional, dedication of funds runs the risk of subsequent diversion of revenue for non-transportation purposes, the Advisory Council still believes that avoiding constitutional changes offers the best prospect of assembling a politically viable funding proposal.

A sound transportation funding package must provide for preserving the existing transportation system and making necessary short- and mid-term improvements to it, as well as providing for major transportation projects.

As important as major transportation projects are to the economic vitality of the state, they should not be funded if it means that preserving the public's investment in the present transportation system and making needed improvements in present-day service levels would be neglected. Transportation needs must be seen as a whole, even while they are being addressed with separate measures.

The Advisory Council has identified the most important criteria in evaluating funding options as:

- Revenue potential
- Public acceptability
- Potential for having an impact on travel behavior

RECOMMENDATIONS FOR FUNDING TRANSPORTATION NEEDS

The Legislature should increase the present gasoline tax by five cents per gallon and provide for annual indexing of the tax at the rate of inflation in subsequent years.

A five cent tax increase would make up for declines in purchasing power of the gas tax since the last increase in 1988, and allow the state not only to maintain the present level of highway service but also to make a modest expansion in the highway improvement program. Indexing the gas tax to annual changes in the consumer price index would protect this revenue source from future erosions in its purchasing power.

The Legislature should authorize the Metropolitan Council to impose a sales tax of up to one-half cent within the seven-county area to fund transit improvement projects currently identified by the Metropolitan Council, to replace general fund metro transit appropriations (other than Metro Mobility) and to replace the metro transit property tax currently levied by the Metropolitan Council.

A one-half cent sales tax in the region would generate approximately \$150 million per year when fully implemented, assuming that it applied to motor vehicles as well as to other purchases. This revenue would take the place of the \$80 million in transit property taxes collected in the region each year as well as most of the present (FY 1995) general fund appropriation of \$36 million to metropolitan transit. (Metro Mobility, which is funded at about \$15 million per year, is a state-mandated program and therefore should continue to be paid for by state general fund appropriations.) It would also make up a projected \$8 million deficit in the metropolitan transit budget and make substantial strides toward funding the Metropolitan Council's "vision for transit" to meet the region's transit needs.

Stability is a major issue in transit funding, and the fear that a dedicated revenue source for transit could be "undedicated" by a future legislature is a widespread one. Delegation of the taxing authority to the Metropolitan Council would diminish the likelihood of this kind of diversion and help to insure long-term continuity in funding transit.

The Legislature, Metropolitan Council, and Department of Transportation should take the necessary steps to authorize and eventually implement a system of road pricing to fund major transportation projects by the year 2000.

"Road pricing" is the collection of payments from motorists for the privilege of using a specific highway. The form of road pricing that most persons are familiar with is toll collection at plazas, but technology is now making it possible to electronically record highway use by a particular vehicle and periodically bill the vehicle owner for that use. Road pricing offers the potential to raise money for funding major transportation projects that cannot be funded by other methods (including the methods recommended

above), while helping to manage the transportation system to achieve greater efficiency and reduce social costs. It may be implemented statewide or in the metro area only.

Much work remains in order to identify the steps needed to implement road pricing and determine the specific policies that will guide its use. The Advisory Council recommends that these general policies be followed in that process:

- Road pricing should eventually be implemented in the metropolitan area on all freeways and expressways and at all major access points to the region.
- Road prices should attempt to recover the actual cost to the system of each class of vehicle, and also to encourage single-occupant drivers to shift to transit or high-occupancy vehicles during peak periods.
- Implementation of road pricing should be preceded by an environmental impact statement. Where there is private involvement in the construction or operation of a road-priced facility, the cost of the EIS should also be shared between the public and private sectors.
- Projects that involve road pricing should have components to increase transit and HOV use, with road pricing revenues helping to support those components.
- Road pricing should first be undertaken on a demonstration-project basis, possibly using a major river crossing.
- The road-pricing study now being done by MnDOT and the Metropolitan Council should guide the decision as to whether road pricing should be in place during the construction of a major highway project or be implemented only after completion of the project.

Initially, road pricing would probably supplement rather than replace existing highway user taxes as a source of road financing. Eventually, however, it is reasonable to expect that for these projects road pricing would eventually replace highway user taxes as a financing source. In the long run, as envisioned in legislation passed in 1994 (Laws 1994, chapter 635, article 1, section 30), highway user taxes would largely be replaced statewide by an electronically-monitored mileage tax where each vehicle would be taxed directly on the basis of actual miles traveled. Road pricing as a means of funding major transportation projects would be integrated into such a system.

Beyond the funding initiatives already proposed by the Advisory Council, the Legislature should identify a funding source or sources, following the recommended priorities established by the Advisory Council, to support the development of major transportation projects until such time as sufficient road-pricing revenues become available to underwrite those projects.

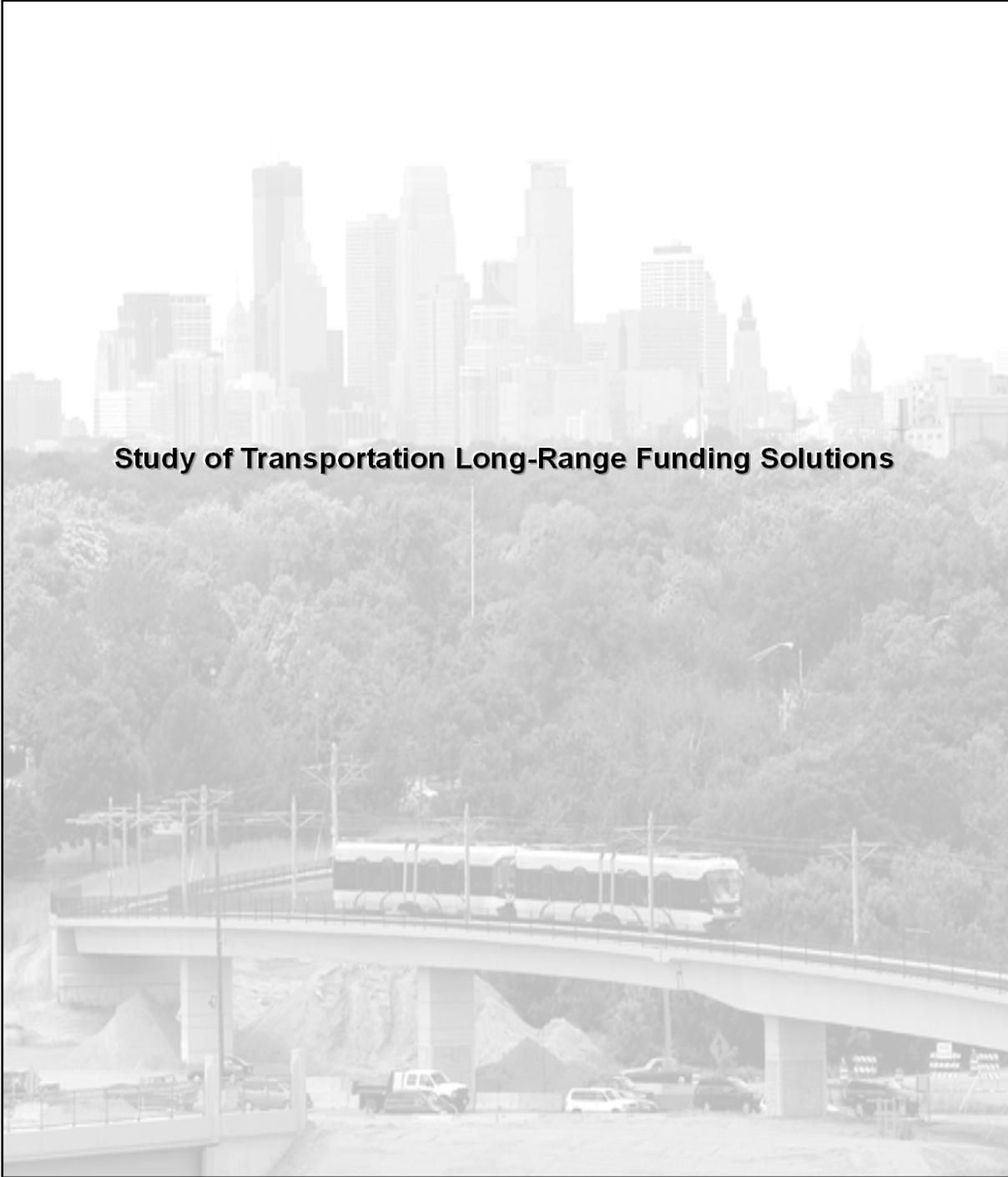
IV. APPENDIX

- A. Meeting Agendas.
- B. House Information Brief, "Highway Spending in Minnesota 1972 to 1992."
- C. Minnesota Department of Transportation, "Minnesota Transportation Scenarios",
Fall/Winter 1992-93.
- D. Public Testimony/Written Statements.

The appendix to this report is available upon request.

Please call (612) 296-7681 to receive a copy.

Appendix B. Study of Transportation Long-Range Funding Solutions

A grayscale photograph of a city skyline, likely Chicago, with a train on an elevated track in the foreground. The train is moving from left to right. The skyline features several prominent skyscrapers. The foreground shows a road with some vehicles and utility poles. The overall scene is viewed from an elevated perspective.

Study of Transportation Long-Range Funding Solutions



Study of Transportation Long-Range Funding Solutions

Report to the Legislature

Minnesota Department of Transportation

December 2009

Prepared by

Minnesota Department of Transportation
Office of Investment Management & Performance Measures
395 John Ireland Boulevard
Saint Paul, Minnesota 55155-1899

Phone: 651-366-3798
Toll-Free: 1-800-657-3774
TTY, Voice or ASCII: 1-800-627-3529

www.dot.state.mn.us

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

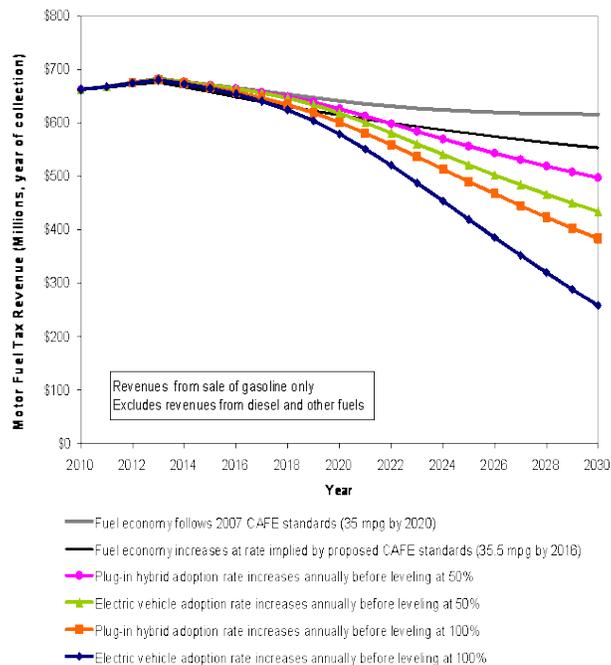
motor fuel tax, motor vehicle sales tax and motor vehicle registration tax are included in the revenue projection, along with projected federal and state general funds and other dedicated sources such as fares and local option sales taxes.

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.



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.

Appendix C. Greater Minnesota Listening Session Tool

Mileage-Based User Fee Community Listening Session

June 9, 2011
Mn/DOT District 8
Willmar, MN



HUBERT H. HUMPHREY SCHOOL OF PUBLIC AFFAIRS

Welcome

- John Doan, Facilitator, SRF Consulting
- Jon Huseby, Mn/DOT District 8 Engineer
- Lee Munnich, Humphrey School, University of Minnesota
- Introductions of participants



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

Agenda

- Welcome & Introductions
- Policy Study Overview
- Instant Polling “Clicker” Instructions
- MBUF Issues and Discussion
- Wrap Up and Adjourn



Policy Study Overview



Why are we here today?

- Mn/DOT is conducting a research project on Miles Based User Fees (MBUF)
 - One possible funding alternative
 - Approved legislation to study MBUF in 2007
- Mn/DOT needs your help
 - Want to hear from you
 - Your feedback will help us learn



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

Mileage-Based User Fee

- Drivers pay for road use on a per-mile rather than per-gallon basis
- In-vehicle technology could be used to record total miles driven
- Payment collected on a periodic basis
- Complex issue with many technical and policy options



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

Characteristics of Mileage-Based User Fees (MBUF)

- Also called vehicle-miles traveled (VMT) fee
- Charges based on distance and other potential factors, rather than strictly on amount or type of fuel used
- Revenues increase or decrease with vehicle miles traveled



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

Study Overview

Two-Part Research Effort

1. Technology Demonstration

- 500 vehicles in Hennepin and Wright Counties
- Recent news headlines

2. Policy Study

- Will engage stakeholders to identify and evaluate MBUF issues (including your involvement today)



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

Policy Study Overview

1. Focus Group Discussions in Greater MN
 - Rochester, Duluth, Bemidji, Willmar & St Cloud
2. Individual Stakeholder Meetings
3. Internet Panel Survey
4. Expert Panel Roundtable Forums
5. Policy Task Force led by:
 - Bernie Lieder, Former State House Transportation Committee Chair (Crookston)
 - Jim Hovland, Mayor, City of Edina



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

Instant Polling “Clickers”



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

How do I use my “clicker?”

- Press number on “clicker” that corresponds to an answer that is asked
- Allows for instant polling of the group
- Let’s practice!



Who is your favorite Twins player?

- | | |
|----|-------------------|
| 0% | 1. Joe Mauer |
| 0% | 2. Jim Thome |
| 0% | 3. Joe Nathan |
| 0% | 4. Justin Morneau |



How will the Twins finish the year?

- 0% 1. Win the World Series!
- 0% 2. Forfeit the season due to injuries
- 0% 3. Lose to the Yankees again in the playoffs
- 0% 4. Don't care



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

Where do you live?

- 0% 1. Unincorporated area
- 0% 2. Township
- 0% 3. City less than 50,000
- 0% 4. City 50,000 or greater



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

Who are you?

- 0% 1. Elected official
- 0% 2. Local government staff
- 0% 3. DOT staff
- 0% 4. Business or industry group position
- 0% 5. Non-profit staff
- 0% 6. General public
- 0% 7. Other



What type of vehicle do you drive regularly?



How familiar are you with the concept of Mileage-Based User Fees?

- 0% 1. Very familiar
- 0% 2. Somewhat familiar
- 0% 3. Not familiar



Transportation Funding



History of the Fuel Tax

- State fuel tax (commonly referred to as gas tax) introduced in MN in 1925
- National fuel tax introduced in 1950s
- In MN, fuel tax revenues are constitutionally dedicated for highway use
- Other sources for transportation funding
 - License tabs
 - Property taxes
 - General fund revenues
 - Vehicle sales tax
 - Tolls



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

How much is the MN state gas tax?

- 0% 1. Less than 16 cents/gallon
- 0% 2. 16 to 25 cents/gallon
- 0% 3. 26 to 35 cents/gallon
- 0% 4. 36 to 45 cents/gallon
- 0% 5. More than 45 cents/gallon



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

How much is the federal gas tax?

- 0% 1. Less than 16 cents/gallon
- 0% 2. 16 to 25 cents/gallon
- 0% 3. 26 to 35 cents/gallon
- 0% 4. 36 to 45 cents/gallon
- 0% 5. More than 45 cents/gallon



Gas Tax

	gasoline (cents/gallon)	diesel (cents/gallon)
State Gas Tax.....	27.5	27.5
Federal Gas Tax.....	<u>18.4</u>	<u>27.5</u>
Total Gas Tax.....	45.9	51.9



How much do you pay in MN state gas tax per year?

- 0% 1. Less than \$50
- 0% 2. \$51 to \$100
- 0% 3. \$101 to \$150
- 0% 4. \$151 to \$200
- 0% 5. \$201 to \$250
- 0% 6. More than \$251



MILEAGE-BASED USER FEE (MBUF) - Community Listening Sessions

Annual MN State Gas Taxes Paid

Average (miles per gallon)	10,000 miles per year	15,000 miles per year	20,000 miles per year
20 mpg	\$138	\$206	\$275
30 mpg	\$92	\$138	\$183
40 mpg	\$69	\$103	\$138



MILEAGE-BASED USER FEE (MBUF) - Community Listening Sessions

How much do you pay per mile in MN state gas tax?

- 0% 1. Less than 1 cent per mile
- 0% 2. 1.1 to 2 cents per mile
- 0% 3. 2.1 to 3 cents per mile
- 0% 4. 3.1 to 4 cents per mile
- 0% 5. More than 4 cents per mile



Gas Taxes Paid per Mile

Fuel Consumption (mpg)	State Gas Tax (cents per mile)	State + Federal Gas Tax (cents per mile)
10 (delivery truck)	2.8	4.6
20 (passenger car)	1.4	2.3
30 (passenger car)	0.9	1.5
40 (hybrid)	0.7	1.1
50 (hybrid)	0.6	0.9



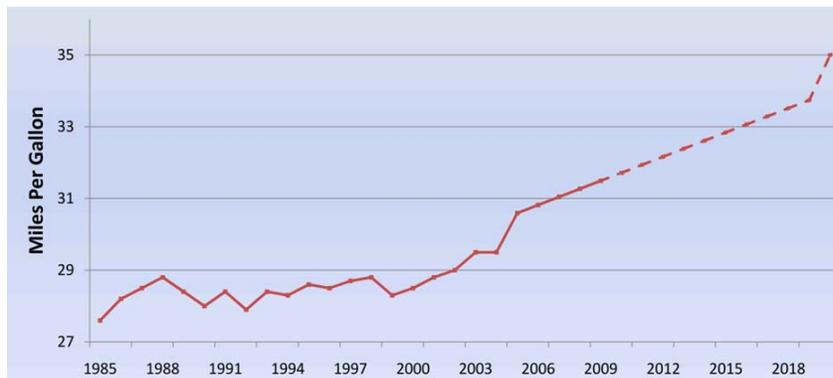
Emerging Trends

1. Gas tax revenues expected to trend downward due to:
 - Greater number of hybrids and electric vehicles
 - Higher fuel-efficient vehicles
2. Growth of auto VMT may moderate, but truck due to higher gas prices
3. Decline in purchasing power of fuel tax due to inflation



MILEAGE-BASED USER FEE (MBUF) - Community Listening Sessions

Average New Vehicle Fuel Efficiency (MPG)

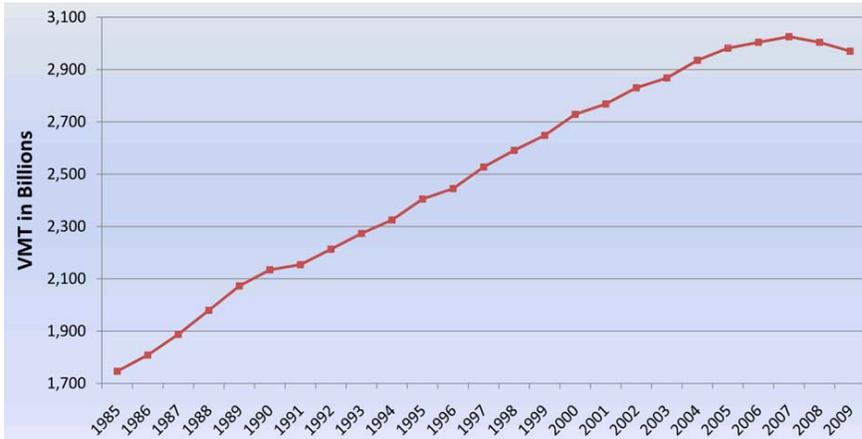


Source: U.S. Department of Transportation National Highway Traffic Safety Administration. "Automotive Fuel Economy Program: Annual Update Calendar Year 2004." DOT HS 809 512. http://www.nhtsa.gov/DOT/NHTSA/Vehicle%20Safety/CAFE/2004_Fuel_Economy_Program.pdf Accessed June 29, 2010.



MILEAGE-BASED USER FEE (MBUF) - Community Listening Sessions

U.S. Average Annual Vehicle-Miles Traveled (Billions)

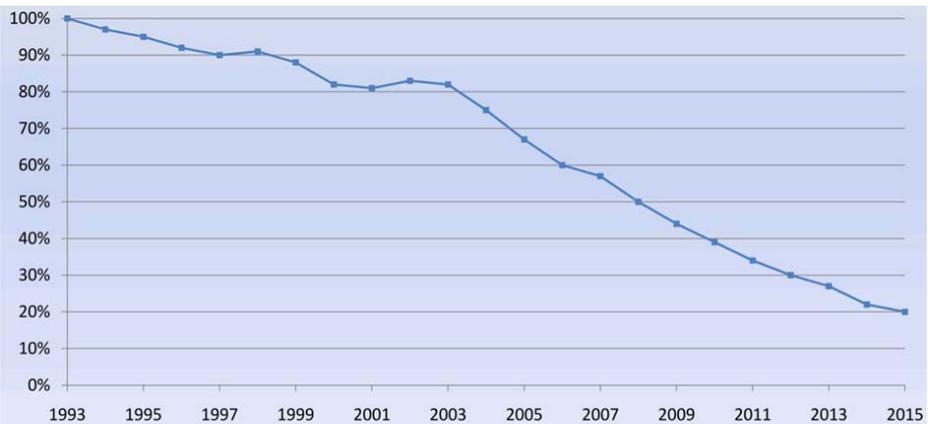


Source: U.S. Department of Transportation Federal Highway Administration Office of Highway Policy Information. "Traffic Volume Trends: April 2010." Compiled data on hand as of June 16, 2010. <http://www.fhwa.dot.gov/ohim/tvtw/tvtpage.cfm> Accessed June 29, 2010.



MILEAGE-BASED USER FEE (MBUF) - Community Listening Sessions

Decline in Federal Gas Tax Purchasing Power (Based on Inflation Since 1993)



Source: AASHTO. Jack Basso, Director of Program Finance and Management presentation January 26, 2010. "Transportation systems. The outlook for reauthorization of the Surface Transportation Programs."



MILEAGE-BASED USER FEE (MBUF) - Community Listening Sessions

Other Factors

1. Reluctance to raise gas tax or adjust it for inflation
2. State estimates \$50 billion shortfall for road construction and maintenance over next 20 years (\$2.5 billion per year)



Potential Alternatives

1. Continued reliance on the gas tax & other transportation fees (tabs, MVST, wheelage tax, CTIB, etc)
2. General fund revenue transfer (sales tax, income tax, property tax, etc)
3. New user-pays system (mileage-based user fees) to supplement or replace fuel taxes



Road User Pays Principle



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

User Pays Principle

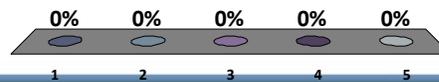
1. Road construction and maintenance costs are a function of road use and vehicle/axle weight
2. Vehicles of the same weight that use less fuel or no fuel at all cause the same damage to roads as those that use more fuel
3. Users should pay based on how much they use of a public good and its impact



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

User fees should be tied to distance traveled & vehicle weight

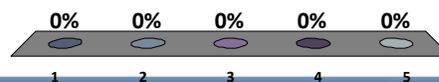
1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree



MILEAGE-BASED USER FEE (MBUF) - Community Listening Sessions

MBUF can address impact of electric, hybrid and alternative fuel vehicles to gas tax revenues

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree



MILEAGE-BASED USER FEE (MBUF) - Community Listening Sessions

Purpose of Mileage-Based User Fees, June



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

Purpose

- Collect revenues that are adequate and sustainable to fund the roadway system
- Promote policy objectives such as:
 - Reduce fuel consumption
 - Reduce total miles traveled
 - Reduce emissions
 - Reduce congestion



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

Policy Objective

- Collect revenues that are adequate and sustainable to fund the roadway system
- Per-mile rate could be adjusted by:
 - Weight
 - Class of vehicle
 - Vehicle fuel economy
 - Type of roadway
 - Time of day



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

Potential MBUF Benefits & Concerns

BENEFITS

1. Affects total vehicle-miles traveled
2. Not tied to fuel consumption
3. Environmental incentive
4. Versatility
5. Congestion management tool
6. Improved safety

CONCERNS

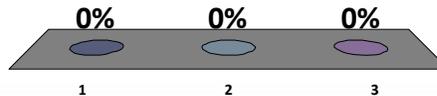
1. Enforcement Challenges
2. Cost to administer
3. Does not provide incentive to drive in less congested times or areas
4. May not provide incentive to use a hybrid, electric or highly-fuel efficient vehicle
5. Potential privacy concerns



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

If MBUF were implemented, what level of revenue should be collected?

1. Revenue neutral-
Replace dollar for
dollar existing fuel
tax revenues
2. Generate more
revenue to cover
future road funding
shortfall
3. None of the above

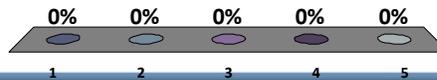


How should Mileage-Based User Fee rates be set?



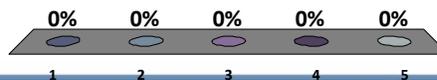
Aside from distance and weight, other rate setting factors should be considered, such as fuel efficiency, time of day and type of roadway.

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree



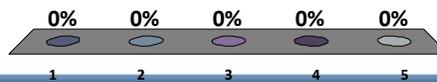
Mileage-based user fee rates should provide incentives for owning a fuel-efficient vehicle.

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree



Plug In electric vehicles should pay a mileage fee (they currently do not pay the gas tax).

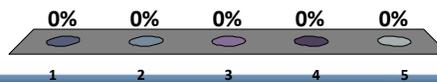
1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree



MILEAGE-BASED USER FEE (MBUF) - Community Listening Sessions

Heavy commercial vehicles should pay a higher rate per mile than cars and light-trucks.

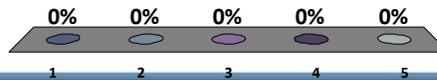
1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree



MILEAGE-BASED USER FEE (MBUF) - Community Listening Sessions

Higher polluting vehicles should pay higher fees per mile than less polluting vehicles

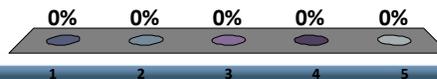
1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree



MILEAGE-BASED USER FEE (MBUF) - Community Listening Sessions

Drivers in rural areas should pay a different rate per mile than drivers in urban areas

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree



MILEAGE-BASED USER FEE (MBUF) - Community Listening Sessions

Technology & Privacy



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

Technology

Three possible technology approaches:

1. Annual odometer reading (low tech)
 - similar to former emission checks
 - no location information obtained
2. On-board unit (medium tech)
 - connect with diagnostic port of any vehicles since 1996
 - Uses cellular communications, general location information obtained



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

Technology (cont.)

Three available technology approaches:

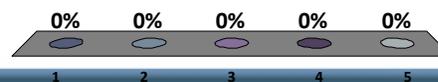
3. Geographical Positioning System (GPS)

- High tech
- Provides accurate mileage, route and location information
- Uses wireless communications



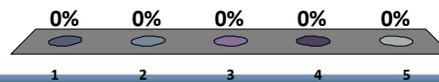
Periodic odometer reading is an acceptable approach (low tech)

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree



On-board unit is an acceptable approach (medium tech)

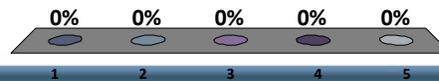
1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree



MILEAGE-BASED USER FEE (MBUF) - Community Listening Sessions

GPS is an acceptable approach (high tech)

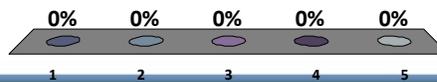
1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree



MILEAGE-BASED USER FEE (MBUF) - Community Listening Sessions

Irrespective of technology, MBUF user data must be protected and this confidential.

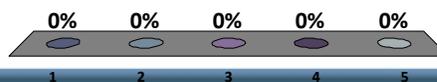
1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree



MILEAGE-BASED USER FEE (MBUF) - Community Listening Sessions

Private companies are better able to protect privacy of individual data than the government

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree



MILEAGE-BASED USER FEE (MBUF) - Community Listening Sessions

Cost & Use of Revenues



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

Collection Costs

- Gas tax is simple and cost effective to collect
 - 1% to 2% collection cost
 - Collected from wholesalers, paid for at the pump
 - Included in price of gas
- MBUF requires entirely new collection method
 - Upfront capital cost to install equipment
 - Likely more expensive to collect, administer and enforce relative to gas tax



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

MBUF revenues should be constitutionally dedicated to transportation purpose?

- 0% 1. Yes
- 0% 2. Maybe
- 0% 3. No



MBUF revenues should be constitutionally dedicated to roadway purpose?

- 0% 1. Yes
- 0% 2. Maybe
- 0% 3. No



If MBUF were used to achieve objectives, such as reducing emissions and congestion, would that justify higher short-term costs?

- 0% 1. No
- 0% 2. Maybe
- 0% 3. Yes



If MBUF provided other services (directions, crash avoidance, emergency assistance) would that justify higher short-term costs?

- 0% 1. No
- 0% 2. Maybe
- 0% 3. Yes



What would be an acceptable cost to collect Mileage-Based User Fees in the short-term?



Collection of Fees



Transparency

- Mileage-based user fees can provide drivers direct price signal
- Price signal can give drivers better information to manage how much, where and when they drive so as to reduce their driving cost



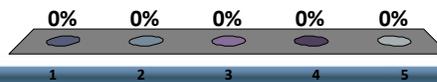
How to collect fees?

- Fees could be collected in a number of ways:
 - At the gas pump
 - Monthly invoices
 - Quarterly, or less often
 - Using a credit card account to replenish once minimum threshold is reached



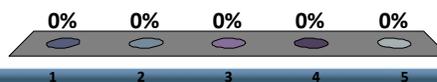
Drivers should be billed monthly or more frequently

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree



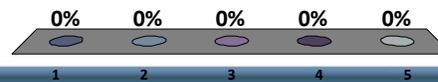
Drivers should be billed quarterly or less frequently

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree



Receiving periodic bills showing mileage and per-mile costs will help users make better driving decisions.

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree

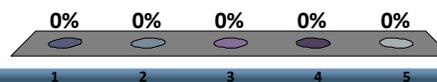


Other Issues



Is MBUF a good idea for the future?

1. Strongly Agree
2. Agree
3. Neutral
4. Disagree
5. Strongly Disagree



Wrap Up

- Your feedback will inform the MBUF Policy Task Force
- Task Force final report will be available in December 2011
- Visit MBUF study website for additional information

www.dot.state.mn.us/mileagebaseduserfee/



Thank you!

Additional comment forms are available

Lee Munnich
Humphrey School, University of Minnesota
lmunnich@umn.edu

John Doan
SRF Consulting Group
jdoan@srfconsulting.com



HUBERT H. HUMPHREY SCHOOL OF PUBLIC AFFAIRS



MILEAGE-BASED USER FEE (MBUF) - *Community Listening Sessions*

Appendix D. Greater Minnesota Listening Session Themes

In order to incorporate stakeholder feedback from throughout the state, the Policy Study included a series of five listening sessions in Greater Minnesota. Each session began with an overview of the MBUF concept and proceeded to poll participants regarding their individual attitudes on various attributes of a potential MBUF system. Invitations were extended to select local government leaders, transportation officials, and trucking and business representatives. The listening sessions took place in the communities of Bemidji, Duluth, Rochester, Saint Cloud and Willmar, occurring over a course of eight weeks from April to June, 2011. On average, listening sessions included about a dozen participants and lasted approximately two hours. The following provides a summary of aggregate findings, organized by topic area and emphasized to properly convey overall participant priorities.

General

1. **Concern that elected officials will lack the “political will” to implement a system as complex as MBUF.**
2. **Lacking knowledge of specific project characteristics, some individuals had trouble answering hypothetical questions about MBUF.**
3. Participants were curious if other states had studied MBUF and, if so, what issues each state dealt with in examining the system.
4. Widespread belief that current system is flawed and/or failing to raise necessary revenue; skepticism if MBUF is the best alternative.
5. From trucking industry:
 - Some sensitivity over use of the term “gas tax;” “fuel tax” tends to be more acceptable and reflects various taxes paid by the trucking industry.
 - Pointed criticism of the assumption that vehicle miles traveled is declining or stabilizing, especially when one controls for commercial vehicles.
 - Attitude that vehicle miles travelled is not tied to gas tax levels; rather, change in fuel prices has greater bearing on behavior than gas tax levels.
 - Consistent support for continued use of current fuel tax regime and increase in fuel tax rates as future need requires.
 - The Oregon MBUF study was unreliable, inaccurate and expensive according to the Minnesota Trucking Association.

Road User Pays Principle

1. **Strong sense that current fuel tax regime is inequitable, not all users pay their fair share.**
2. **Frame MBUF discussion on fact that some vehicles don’t pay for using roads; identify equity issues that are larger than revenue shortfalls.**
3. MBUF could solve current inequities and be adjusted based upon any number of variables, such as vehicle weight, fuel source, etc.
4. Understanding that general fund could supplement fuel tax revenues, serve as alternative to MBUF; however, concern that funding levels could vary considerably as legislative composition and priorities, as well as fiscal realities, changes from year to year.
5. Some support for increased license or tab fees, or wheelage or sales taxes, to address inequalities with electric and hybrid vehicles – or with revenue shortfall generally.
6. Some appreciation for idea that just as paying for roads and paying for fuel are two separate issues, funding sources for road construction and road maintenance should be distinguishable. As such, license or tab fees should be used to fund initial construction of roads and bridges; user fee such as fuel tax or MBUF should be targeted to maintenance.
7. Understanding that many miles are driven on all types of roads and that people want safe, smooth roads that can carry heavy loads; however, Minnesota is not even close to being able to fund the required annual road maintenance for its existing infrastructure.

MBUF Policy Issues

- 1. General belief that any MBUF approach would be best if implemented at national rather than state level; concern over scale and complications due to interstate travel.**
- 2. Including additional pricing factors and policy objectives may muddy the water on MBUF costs and benefits and hinder the likelihood of MBUF implementation. Keep it simple.**
- 3. Some concern over social engineering and potential for market distortion.**
4. Incorporating a timely billing and/or payment system is important; pay at the pump or on a monthly basis. How would MnDOT charge people who don't have credit cards?
5. If MnDOT makes the effort to implement MBUF, be sure to incorporate added value of congestion pricing, for instance.

Revenue

- 1. Widespread belief that current system is flawed and/or failing to raise necessary revenue.**
- 2. Any MBUF scheme should result in additional revenue for transportation system; strong, consistent opposition to revenue-neutral approach.**
- 3. Curiosity over whether MBUF would replace or supplement current fuel tax system.**
4. How would MBUF revenue be distributed – to roads and bridges exclusively, or to transit, public safety and state patrol as well?
5. How much revenue would each additional incremental increase in the MBUF rate add to the state transportation revenue pie?

Fuel Efficiency & Environmental Concerns

1. Some aversion to penalizing environmentally-conscious consumers who purchase electric or hybrid vehicles to reduce gas consumption and emissions (especially if anticipated fuel cost savings factored into decision). MBUF could introduce disincentive for electric and hybrid vehicle ownership, advancing one policy objective to the detriment of another. Would MBUF put a damper on future technology and fleet choice?

Heavy Commercial Vehicles

- 1. Concern that increased freight costs will be passed along to consumers in the form of increased prices for goods.**
2. Trucks already pay more to use the roads since they are less fuel-efficient.
3. Questions over how to measure average vehicle weight, classify vehicles.
4. Freight community has the International Fuel Tax Agreement (IFTA). It is an agreement between the lower 48 states of the United States and the Canadian provinces, to simplify the reporting of fuel use by motor carriers that operate in more than one jurisdiction.

Rural vs. Urban

- 1. Impression that MBUF could discriminate against rural drivers; belief that rural populations drive longer distances in course of daily life.**
2. How do you classify rural versus urban under an MBUF pricing scheme?
3. Sensitivities over potential for large income disparities in between urban centers and rural Minnesota communities.
4. Belief that current transportation finance system allocates revenues inequitably; would this change under MBUF?
5. MBUF could introduce unintended social and economic consequences, such as additional costs and disincentives for the freight deliveries to rural markets.

Technology

- 1. Does MnDOT know all potential costs of various technologies?**
- 2. Concern about bureaucracy associated with implementing a complicated MBUF scheme**
3. Will collection costs differ depending on the type of technology used?
4. Some concern that odometer readings can be manipulated rather easily.
5. Would someone need to record odometer readings?

6. Skepticism over accuracy of GPS units.
7. If necessary, how to phase in older vehicles if on-board technology is needed?

Privacy

1. **MBUF sounds like more government intrusion. What units of government would be able to access data? Who would protect data privacy?**
2. **General understanding that smart phone technology already tracks consumer location; however, recognition that consumer choice makes this privacy risk more accessible (and privacy risk under a mandatory MBUF system less acceptable).**
3. Consistent concerns over privacy, protection of private information.
4. Could data be admissible in a court of law?
5. Privacy would be a greater concern under a GPS approach.
6. Devices could be installed to track data for insurance purposes, such as data related to acceleration, deceleration, near misses, etc.
7. The more data that is collected creates more opportunities for accessing or selling it.

Other Considerations

1. **Concern over costs of implementing and administrating MBUF, especially given relative efficiency of current fuel tax system.**
2. **Regardless the funding mechanism, some people will try to game or cheat the system.**
3. **Skepticism over whether general public or policymakers could ever support MBUF given its complexities.**
4. **Appreciation for familiarity with fuel tax system; “we may not love what we have, but we know what we have.”**
5. **Some expressed difficulty in answering questions (due incomplete information and limited understanding of specifics of a potential MBUF system).**
6. **Would MBUF stigmatize those who drive more? Strong reaction to any use of a fee for “social engineering” purposes.**
7. How do you collect taxes from other transportation modes not using roads? Should bikes pay into the system since they benefit from well-maintained roads and bridges?
8. How do we capture revenue from vehicles crossing the border from Canada or Mexico?

Appendix E. Internet Panel Survey Results

MBUF Policy Study

Online Survey Wave 1

MBUF Policy Task Force Meeting
July 27, 2011

Accora Research, Inc.
7101 Northland Circle North
Brooklyn Park, MN 55428
612-616-4635

Objectives & Methodology

Objectives

The primary objectives of this study were to determine:

- Familiarity with fees based on vehicle miles traveled
- Public acceptance for various system characteristics/features
- Level of overall support for fees based on vehicle miles traveled

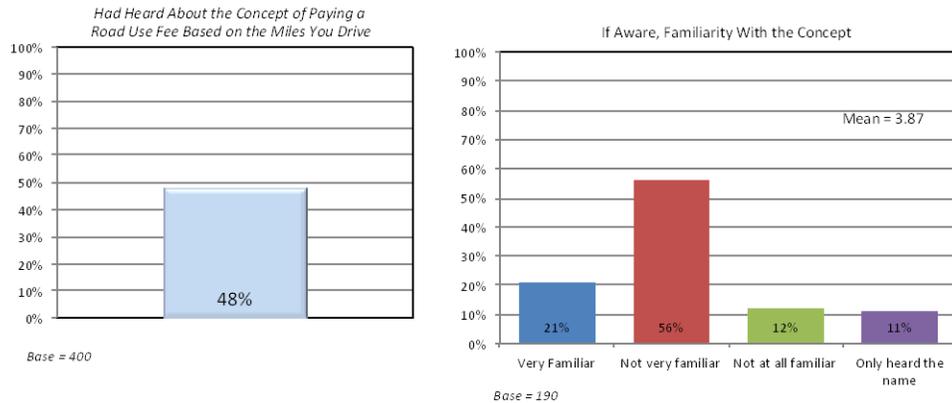
Background and Methodology

A representative sample of Minnesota residents was sent an email invite to participate in an online study designed to gain input on a possible future funding source for transportation.

- All respondents were 18 years of age or older
- 400 interviews – census balanced to metro and GM
- Survey hosted by Accora Research
- Interviews conducted May 18 – May 23, 2011

Familiarity with MBUF Concept

Almost half of the respondents claimed to have heard of a fee based on miles traveled concept prior to the survey; of those aware, more than three fourths claimed to have some familiarity with the concept.



12. Before participating in this survey, had you heard about the concept of paying a road use fee based on the miles you drive?
13. How familiar are you with the concept of paying a road use fee based on the miles driven?

MBUF Policy Study, June 2011

3

Overall Perception of Program Characteristics

Respondents were asked to rate their level of agreement with statements that related to possible characteristics of a Vehicles Miles Traveled System. Statements were related to:

- How to Charge Fee Based on Miles Traveled (10 statements)
- Collection of Miles Traveled Information (10 statements)
- General Requirements of a Transportation Funding Mechanism (8 statements)

At the end of each statement group, respondents were given the opportunity to provide their comments.

Key points from each statement group follow.

MBUF Policy Study, June 2011

4

How to Charge Fee Based on Miles Traveled

People are more likely to agree that different rates should be charged for vehicle size or pollution emissions than for congestion pricing.

More likely to agree

14b. Large, heavy trucks should be charged a higher fee based on miles traveled than regular vehicles; because trucks cause more road/bridge wear than cars. (Mean 5.98)

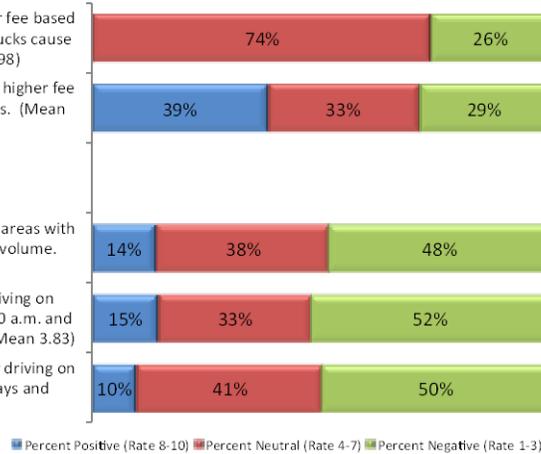
14c. Heavy polluting vehicles should be charged at a higher fee based on miles traveled than light polluting vehicles. (Mean 5.90)

Less likely to agree

14f. Vehicles should be charged more for driving in areas with high traffic volume than in areas with low traffic volume. (Mean 4.08)

14d. All vehicles should be charged more for driving on roadways during rush hour periods (5:30 a.m.-9:00 a.m. and 3:00 p.m.-6:00 p.m.) to help reduce congestion. (Mean 3.83)

14e. Vehicles should be charged the regular rate for driving on city streets and more for driving on state highways and freeways. (Mean 3.80)



MBUF Policy Study, June 2011

5

Collection of Miles Traveled Information

A majority agree that a system should be transparent and all costs be the responsibility of the government. Whereas, a majority disagree that a system should use high technology to collect information.

More likely to agree

16d. If a fee based on miles traveled is ever implemented, the driver of a vehicle should always know the cost per mile and the total amount being charged to-date. (Mean 7.55)

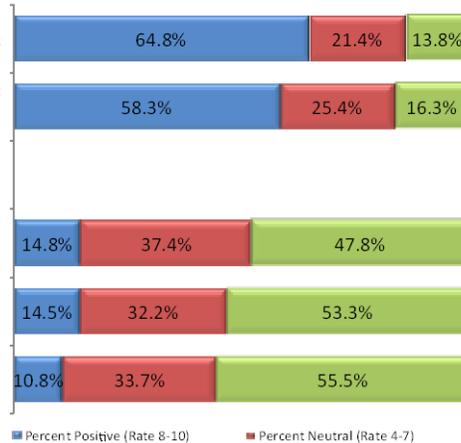
16f. The cost and maintenance of basic devices to collect information about vehicle miles traveled should be the responsibility of the state and federal governments, not the drivers. (Mean 7.11)

Less likely to agree

16h. When I buy motor fuel, a device in my car should tell the pump how many miles have been driven since my last reading and should charge accordingly. (Mean 4.01)

16c. Miles traveled on Minnesota roadways should be collected on a device in my vehicle that uses Global Positioning Systems (GPS) technology and then transmitted securely to a central location for billing purposes. (Mean 3.88)

16b. Miles traveled on Minnesota roadways should be collected on a device in my vehicle that uses cellular phone-based technology and then transmitted securely to a central location for billing purposes. (Mean 3.53)

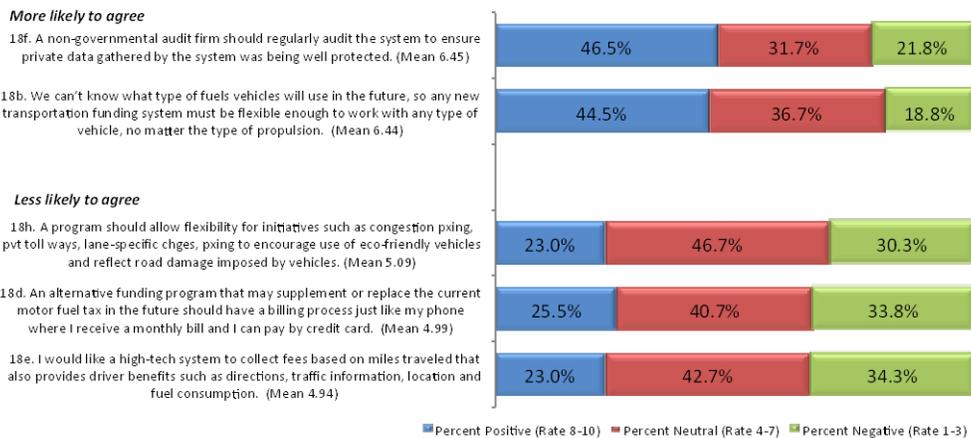


MBUF Policy Study, June 2011

6

General Requirements of a Transportation Funding System

*People want their privacy protected; flexibility to accommodate future vehicles.
They are less likely to favor the use of high tech devices and social policy initiatives.*



MBUF Policy Study, June 2011

7

Conclusions

- Overall, respondents ratings not as negative on the system or system characteristics as may have been expected (Neutral range on a 10-point scale).
- Higher awareness and familiarity with a vehicle miles traveled system than may have been expected (48% and 76%, respectively).
- Important characteristics of a mileage-based user fee system are:
 - Transparency – Driver must always know the costs being incurred
 - Operating costs – All costs related to a mileage-based user fee should be the responsibility of the government
 - Auditing – System should be audited regularly to ensure privacy and accuracy
 - Flexibility – System should be flexible to accommodate requirements that may come up in the future

MBUF Policy Study, June 2011

8

Conclusions

- The primary hurdles of a mileage-based user fee are:
 - Privacy
 - High tech devices alone imply loss of privacy, however, the use of high tech devices with explained driver benefits tend to be rated higher
 - People are more concerned about the government having travel information than a private firm having it
 - prefer a non-governmental firm audit the system to ensure privacy
 - more likely to accept high tech devices with driving benefits if from a private firm certified by the government
 - Expensive to implement and maintain
 - Overall, respondents think that the cost of a mileage-based user fee is more expensive to operate than the current motor fuel tax
 - Perception of being an added tax
 - Mileage-based use fees are thought to be in addition to the motor fuel tax, and therefore, it is considered to be double-taxing or a new tax
 - Use of mileage-based user fee system for public policy issues
 - Statements that put forth different user fees depending on where or when drive tend to be rated lower

Appendix F. Possible MBUF Implementation Options

Minnesota Mileage Based User Fee: Business Models

Working Draft (version 1.4); 12 September 2011

Introduction

Various agencies at the local, state, and federal level have begun assessing the efficacy of Mileage Based User Fees (MBUF) as a replacement or supplemental funding mechanism to the fuel tax. Since changing how road maintenance and expansion are funded would represent a fundamental shift in how fees are assessed, numerous issues challenge proponents of this alternative. The structure of the fuel tax, as it is levied on the physical amount of fuel purchased, poses the primary long-term sustainability challenge.

The Minnesota MBUF Task Force adopted a problem statement that clarifies this problem and defines the parameters for the study (August 26, 2011):

Current revenue collections are inadequate to fund Minnesota's transportation infrastructure. Changes in travel behavior, combined with an increase in vehicle fuel efficiency and use of non-taxed alternatively fueled vehicles (primarily for passenger use), are making this problem worse. Interest is growing in systems that could assess motorists based on the miles driven, referred to as mileage-based user fees (MBUF). The State of Minnesota should determine if MBUF is a viable option for the state's transportation users, and, if so, assess the opportunities and challenges posed by adding MBUF to Minnesota's long-term funding options.

This problem statement also informs the potential business models for MBUF that serve as the topic of this technical memorandum.

The Transportation Research Board (TRB) estimates that government regulations and sustained fuel price increases could drive a 20 percent reduction in fuel consumption per vehicle mile by 2025. This figure was determined well before a new Federal policy was enacted for an average fuel efficiency of 54.5 miles per gallon by 2025. As vehicle fuel efficiency increases and the market for alternative fuel vehicles grows, the fuel tax system fails to serve as a reasonable proxy for road use into the future, creating a deficit between funding needed for road maintenance/expansion and funding secured through fuel tax revenues.

There are several primary factors threatening the long-term sustainability of the fuel tax:

- An upward trend in fuel efficiency due to: environmental interest in reducing emissions, strengthening of federal environmental regulations, national interest in reducing reliance on foreign oil, and consumer interest in offsetting the effects of high fuel prices.
- As alternative-fuel vehicles gain greater market penetration, a large segment of the auto fleet will eventually fall outside of the traditional fuel tax collection framework
- Fuel taxes are largely a hidden cost to consumers and fail to send appropriate market signals to drivers, leading to overutilization of scarce roadway resources at peak periods of the day.

Furthermore, a significant gap has already developed between the revenue collected from the existing fuel tax and the costs for rebuilding a statewide highway system that has reached (and in many cases passed)

maturity. This gap will increase given existing trends. At its core, the consideration of MBUF strategies constitutes a mitigation of this funding gap; however, use-based strategies can do more than simply generate revenue. Use-based transportation fees, including MBUF, are among the oldest of the "new" ideas for the relief of traffic congestion and generation of revenue. The idea is derived from the concept of economic efficiency. In the early 1960s, Sir Alan Walters, a young transportation economist destined to become one of Britain's leading economists, suggested that roadway efficiency would be enhanced by exacting a fee upon transportation users. As users pay for their incremental contribution to congestion, unnecessary trips would be avoided and system efficiency would be enhanced. Sir Walters' theory provides the basis for most modern interpretations of road use pricing.

Demand for roadway capacity fluctuates depending upon the time of day, the nature of travel generators and attractors, and other key variables. Use-based transportation policies permit the transportation authority (be it the Minnesota Department of Transportation, regional agencies, or city governments) to provide for efficient peak-hour roadways, and, at the same time, generate revenues independent of vehicle fleet characteristics, by using tolls and other direct user fees. These policies attempt to eliminate the discrepancy between the marginal cost of an individual's use of a roadway and the net impact of that use upon the system.

The most commonly applied use-fee in the United States is tolls. Half of all states (25) have toll roads already implemented, and, an additional seven states are building toll facilities. In almost all facilities and plans around the United States, tolling takes place only on limited access highways, bridges, and tunnels. Although there are many such congested freeways in the Twin Cities, by mileage, Minnesota's highway infrastructure is largely based around two-lane trunk highways in rural conditions. In examining the realm of use-based policies for statewide purposes, MBUF offers a different opportunity to achieve the goals of the Department than traditional tolling of new capacity.

The purpose of this technical memorandum is to build upon the principles as established by the ongoing work of the Minnesota MBUF Task Force, and, research conducted by the Minnesota Department of Transportation (MnDOT) and the Intelligent Transportation Systems Institute at the University of Minnesota. In a recent publication from the latter (*From Fuel Taxes to Mileage Based User Fees: Rationale, Technology, and Transitional Issues*, 2011), the researchers addressed the nexus for replacing the fuel tax, and whether MBUF should be the strategy to replace the fuel tax. This technical memorandum does not revisit this analysis or its conclusions; rather, this paper addresses policy options as they apply to MBUF as a business strategy. In order to do this, this paper provides an articulation of potential implementation models for MBUF and affiliated alternatives. These models are largely derived from a seminal National Cooperative Highway Research Program (NCHRP) report authored by Paul Sorensen (*Implementable Strategies for Shifting to Direct Usage-based Charges for Transportation Funding*, 2009). Whereas both reports identified MBUF implementation options and scenarios, this paper will extend these scenarios to include the roles of the private and public sectors.

Choice is a powerful component of MBUF policy and payment options. "How" to pay can matter more to individuals than "what" or "how much" to pay, as evident in the MBUF Online Survey results (June 2011). As such, to the greatest extent possible, the selected business model should incorporate as many taxation options for vehicle owners as possible. The mobile telecommunications industry exhibits the strength in payment and assessment options, that allows customers to find their own best fit – ranging from "prepaid, by the minute" plans through unlimited data and voice plans. A similar model of choice can be designed and implemented with MBUF. This may include maintaining the fuel tax (albeit at a different rate and levy mechanism than today for equity purposes), manual or automatic MBUF assessments, or even choice in payment timeframes (monthly, quarterly, annually, etc.). With choice, it should be recognized that a subset of the population may desire to pay for an "unlimited mileage" plan, much like they do for their mobile phones. One could imagine the expression of interest: "Just tell me what I owe for an

entire year, and let me just write the check without having to worry about collecting my mileage.” Even under an MBUF system, it should be possible to provide this option, albeit at a refined rate of pay (much like the mobile phone providers have tailored their price algorithm to account for typical usage on such an unlimited plan).

Mileage-based User Fee Business Scenarios

For the purpose of this paper, the combination of technologies and systems used to levy and collect mileage-based user fees is referred to as the business model. The business model encompasses many interrelated aspects and affects every stage from collection of data sufficient to assess a charge to the payment for use, and distribution to the revenue collection authority. This entire process can incorporate multiple parties, and may involve multiple charges. Just as an individual who buys a candy bar, a beer, and a gallon of gas from a fuel station pays multiple different tax levies, so may the user of the transportation system. It is the responsibility of the business model to articulate a clear policy framework, so that technical requirements to implement the model are understood and defined.

As indicated in NCHRP Web Only Document 143, the technological options for assessing and ultimately collecting vehicle mileage fees are numerous, ranging from low-tech approaches to high-tech methods, some that may offer a range of consumer services. Many factors will inform the agency’s choice of method(s): consumer choice and interest in various systems, robustness of technology, generational concerns, interoperability, and vehicle integration. Depending upon the methodologies for calculating mileage will ultimately determine how the user charge will be accounted, assessed, and paid by road users.

The three components of MBUF are: assessment, charge computation, and communication. The assessment refers to the collection and processing data that relates directly to the mileage accumulated by the user. It should be noted, as indicated by Sorensen, that the mileage need not be directly measured – it can be estimated or projected. Regardless, there are several options available for the collection of this data:

- Proxy estimation from geographic location and vehicle type;
- Certified manual odometer readings;
- Speed data from vehicle on-board diagnostics (OBD) to compute distance traveled; and
- Detailed time and location stamping with a vehicle device on board, such as a smartphone with a GPS system on the phone.
- Detailed time and location stamping with a permanently installed vehicle device, such as a GPS system coupled with a cellular device or Connected Vehicles Initiative (formerly IntelliDrive) devices.

Charge computation refers to assessing the collected data in order to determine an amount owed by the user. Depending on how the system is designed, this stage may occur entirely on board the vehicle, through a third party, at Driver and Vehicle Services, MnPASS customer service, another administrative account office, or other trusted entity.

There are several possibilities for computing the charge:

- Processing an estimated charge with vehicle and location lookup tables;
- Retrieving the raw data from the vehicle and processing it in a billing center;
- Processing the usage data within the on-board vehicle device itself; or
- Retrieving usage data and sending it to a third party, where it is processed before being sent to a billing office.

Communications refers to the transmission of an already-computed amount owed from the user to an administrative back office, which is responsible for accounting, invoicing, and collections. The communication options are not mutually exclusive and could be implemented in combination with each other.

- Manual calculation from estimates, odometer readings, or OBD data download; most typically at vehicle registration or annual inspections.
- Automated detection-based transmission through localized infrastructure, such as roadside beacons or tolling gantries, and sent to a billing center.
- Automated wide-area transmissions, downloading data from vehicles within a large radius and forwarding the data to a back office. Cellular phone and Near Field Communication (NFC) systems are examples of this form of transmission.

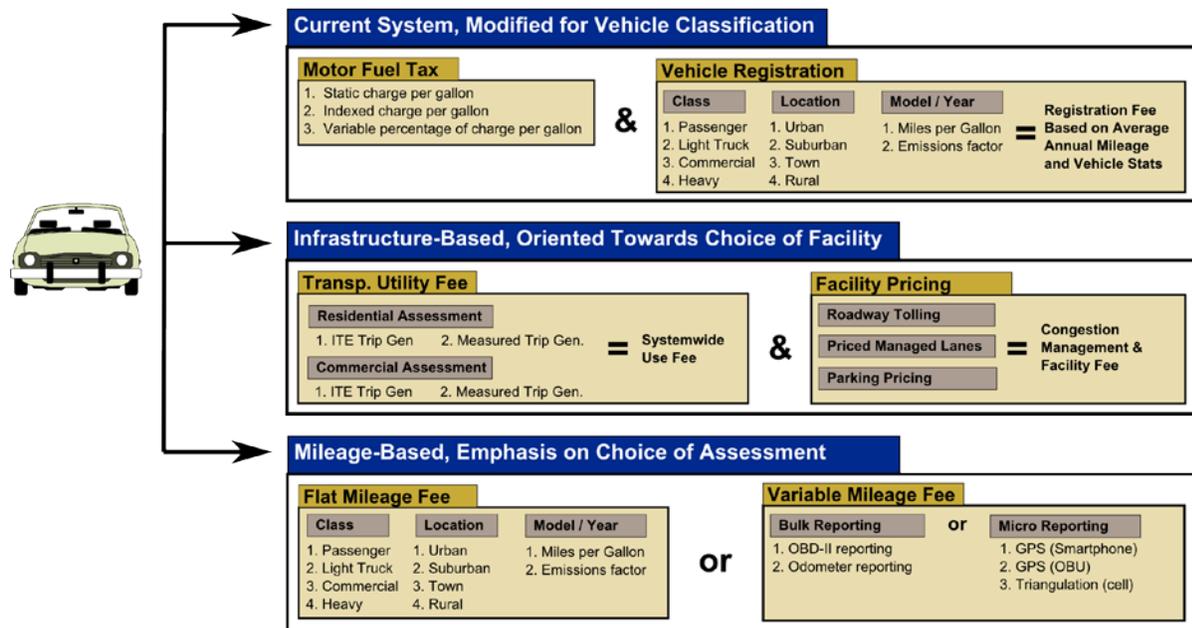
A mileage-based system can be described as three potential business models that comprise the basic functionality described above. This paper also recognizes the comments and input as provided through the stakeholder outreach process as conducted under the MBUF Policy Study, and adapts the three business models to accommodate public desires. For example, many stakeholders (such as those who attended listening sessions at Willmar and St. Cloud) expressed a desire to simply augment the existing system of fuel taxation and vehicle registration. Yet, a strong sense was also found in the listening sessions that the existing fuel tax system is inequitable, especially in the long run. A business model has been developed that tries to achieve the preference for existing mechanisms for taxation, at the same time exhibit some elements of MBUF for revenue stabilization and equity purposes. To the extent possible, the preferences expressed in the listening sessions have been incorporated in the three business models described below:

1. **Current System, with modifications for vehicle classification.** In the simplest calculation of a mileage-based charge, this business model reflects only minimum change from current procedure for revenue calculation. The motor fuel tax is maintained as currently collected; however the Minnesota legislature may wish to consider changes to the charge. These options include 1) maintaining the static charge per gallon, 2) indexing the charge to inflation, transportation program requirements, or some other scale, and 3) varying the tax as a percentage of fuel cost. The fuel tax would be coupled with a refined vehicle registration fee that would compute an estimated mileage fee based upon vehicle class, location of registration, model of vehicle, and year of manufacture. Altogether, these inputs provide a scalar vehicle registration fee that accounts for mileage driven based upon a lookup table. At its base, this system falters from the same policy assessment as the motor fuel tax, described by Coyle et al. However, it does require only minor adaptations to existing policy and taxation procedure, comes at minimal cost and disruption to users, and incorporates a mileage-base fee.
2. **Infrastructure Based System, oriented towards choice of facility.** Sorensen et al and Coyle et al identified Dedicated Short Range Communications (DSRC) as a near-term option for collecting road user charges. Existing systems in Minnesota include priced managed lanes (such as on I-394 and I-35W), but may also include full facility tolling and/or enabled parking systems. The primary benefits of this system include publicly acceptable technology, existing back office systems, and the ability to infuse congestion management into road user charges. The most significant detriment is the cost of implementation. As a result, facility pricing in this business model is limited to freeway corridors and select trunk highways where congestion management is desirable and independently feasible. In order to backstop the vast remainder of the roadway network, a transportation utility fee would be collected from each property owner, as a means of serving a system use fee. Similar in assessment to transportation impact fees as assessed in California and Florida, a transportation utility fee would assess a charge based upon each property's trip generation and average mileage. In this model, the system for fee collection currently exists, albeit with a change in approach. Whereas the first business model estimates mileage based upon vehicle and location characteristics, this model reflects real-time congestion management on facilities that warrant management coupled with a systemwide charge that derives from trip generation rates for each property.

3. **Mileage Based System, with an emphasis on choice of payment procedure.** The various mechanisms for mileage fee data, assessment, and collection identified by Coyle et al can be aggregated into one business model, with an orientation towards offering users the choice of how they wish to be assessed a fee. The choice of assessment reflects current application of MBUF in the technical pilot test to be conducted in Wright and Hennepin Counties. In this model, users would have the choice of subscribing either to a flat mileage fee identical to the vehicle registration fee modification identified in the *Current System* business model or to a variable mileage fee. The variable fee would be structured similar to the current Minnesota pilot test, with bulk reporting from the OBD or odometer on a regular schedule or micro reporting with date, time, and location information passed through location-aware devices. As Coyle et al noted, the latter mechanism provides the strongest opportunities for efficiency and equity, but falters on feasibility and public acceptance. As such, it will likely be necessary to offer multiple systems of payment. This system comprises the greatest change from current taxation, and has served as the basis for most MBUF policy development to date.

The graphic below summarizes these three models for mileage-based assessment.

Mileage-Based User Fee Policy Options



For actual payment of mileage fees, there are multiple payment options available. However, these payment options can be summarized in one of three main categories: direct payment, point-of-sale, and periodic billing.

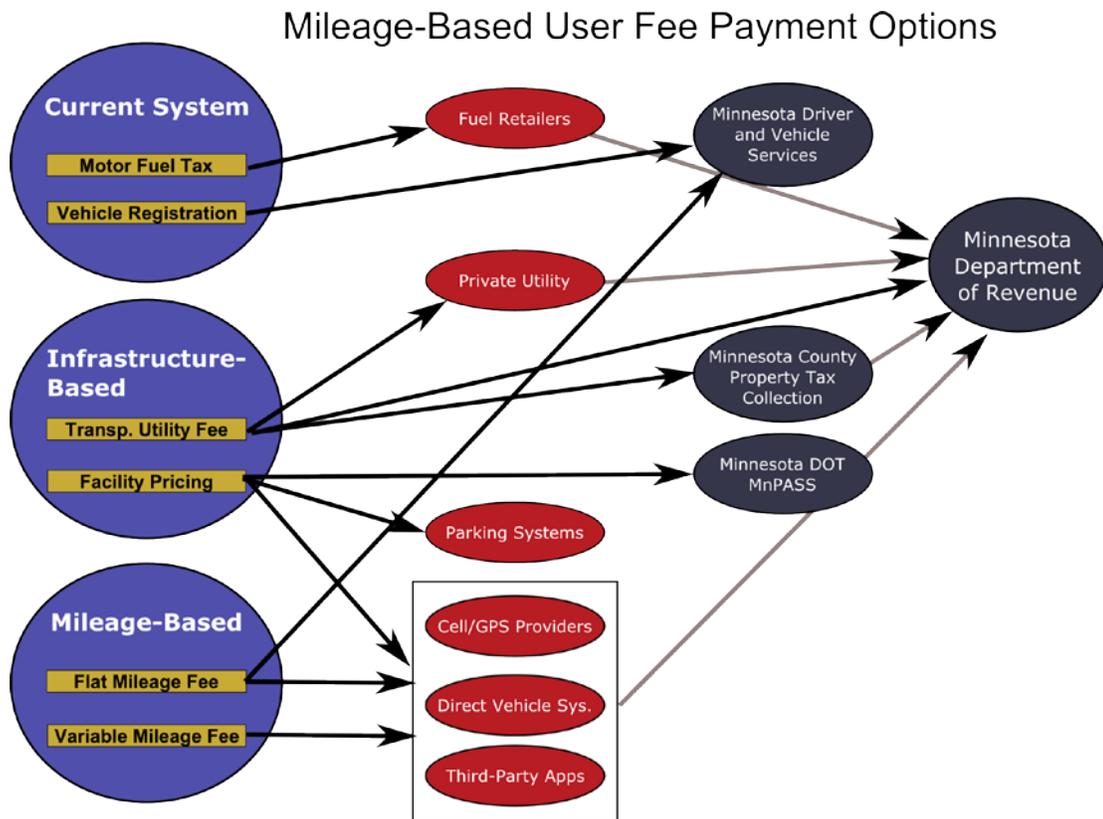
Direct payment comprises a variety of governmental agencies that assess and collect fees directly. This would include Driver and Vehicle Services collection of registration fees, or county-based property assessors for transportation utility fees.

Point-of-sale typically includes fuel stations (where fuel taxes are currently collected from users, but could be adapted for mileage fee payment). Oregon and Nevada have tested the point-of-sale method for MBUF, which has an advantage in that it is similar to how drivers already pay for road use through fuel

taxes. Paying at the pump could also more easily accommodate cash payments and would help ensure drivers pay the fees, since vehicles could not be refueled without paying either the mileage fee or the fuel tax. However, the costs of adapting fuel stations to accommodate a pay-at-the-pump vehicle mileage fee system could potentially be significant. Furthermore, a pay-at-the-pump configuration would likely not accommodate payment of fees by vehicles that run on alternative fuels.

In a periodic billing system, travel data or an amount owed would be processed by a third-party billing service on a periodic basis (weekly, monthly, quarterly, or annually, as chosen by the user). Depending on how it is structured, this option would require more administrative functions and drivers might be resistant to paying another bill every month. Another form of periodic billing could entail payment through a credit card transaction with a financial institution or associating payment with vehicle inspections or registration. Payment over the Internet through online billing capabilities is another possibility. The current statewide toll collection and payment system, MnPASS, operates in a similar manner.

Payment options for each of the policy models are shown below.



Each of these models has advantages and disadvantages. In general, systems that provide the most accurate information for implementing an MBUF system tend to be the most expensive. These types of systems are also usually associated with the most significant privacy concerns. Other systems may be less expensive and simpler. While this will reduce privacy concerns, the information is not as transparent to the user as other types of MBUF strategies. Each of the models considered are discussed below.

Current System Model

Stated time and again in the survey and listening session data is the desire to incorporate changes in the fuel tax as an option. This business model incorporates a variant on MBUF mechanisms through variable registration fees, described below. However, it also relies on the continued use of the fuel tax for revenue

generation purposes. One suggestion of the business model is altering the structure of the fuel tax from its fixed value per gallon of fuel to an indexed rate to avoid value erosion. This index may be consumer inflation, construction inflation, or even as a variant on the price of gasoline (so as to smooth the effects of price elasticity).

However, the primary contribution towards mileage-based assessment in this business model is variable registration fees. Registration fees are usually paid annually on a per vehicle basis. These are currently based on vehicle value but could be revamped to be based on vehicle miles of travel (VMT). The VMT fees can be based on actual odometer readings or an estimate of annual VMT. If based on an estimate, the estimate could be derived based on projected VMT. This would likely vary by region. Factors that would influence the fee could include population and/or commercial density, projected variations in trip generation rates, and availability of other transportation options such as transit. Regional modeling could provide the basis for these types of VMT projections.

A variety of VMT "plans" could be provided to drivers. Drivers could select options similar to wireless plans – low mileage, moderate mileage, high mileage, or even unlimited mileage, and the registration fees would vary accordingly. This would provide the element of choice that will be particularly attractive to those drivers that make relatively few trips. To prevent fraud, programs that allow plan selection would have to be verified either through odometer readings or use of an OBD. Readings can be attained either by using a cellular connection, or using a Bluetooth® or similar connection at specified locations, perhaps at service stations. If manual odometer readings are required, multiple locations could be "certified" by the state to perform these inspections. This would increase convenience for drivers, and might be offered by these locations at no cost to the state. If reporting requirements were kept to a minimum, perhaps online using the certified inspector's login information along with the vehicle's license plate or VIN number, the effort required to provide this service would be minimal and offset by the customer contact opportunities that providing the inspection service would bring about for a vendor.

Lump sum annual payments could prove financially burdensome for many persons. It would be reasonable to provide a system that allows payments to be made annually, quarterly or monthly. Quarterly or monthly payments could be based on actual mileage or projected mileage. If based on projected mileage, reconciliation between projected and actual mileage could be made annually. The same method could be used with quarterly payments. This is similar to payment options utilized by utility companies, including Xcel energy in Minnesota.

Registration fees based on VMT could be implemented as a supplement to or a replacement for fuel taxes. If implemented as a supplement, the fee would be a mechanism to counteract the impact on gasoline taxes from an increasingly fuel-efficient fleet as well as inflationary pressures. Such a system can be based on vehicle type (as it pertains to fuel economy) with higher fees for vehicles with higher fuel economy, or the fee could be based on a fleet average fuel economy. If based on vehicle type to take into account fuel economy, the system would more equitably distribute roadway costs based on roadway use. However, such a system could be seen as discouraging the purchase and use of higher mileage vehicles. If based on a fleet average fuel economy, an incentive to purchase vehicles with high fuel economy would be provided. However, if implemented with the existing gas tax, the disparity between a very fuel efficient vehicle's use of the roadway system and its payment for the roadway system would increase.

If used as a replacement for the fuel tax, a registration fee based system could operate simultaneously with a fuel tax system. This could take several forms, and would allow the element of choice for the state's drivers. Using Bluetooth® or other DSRC systems at service stations, fuel taxes could be removed at the pump for those vehicles opting for a registration fee based system.

If the vehicle registration system were put in place as a replacement for the gas tax, and was fully adopted in the state, gasoline taxes would, presumably, be removed from the pump price. This results in a significant issue as neither gas tax nor registration fees would be collected from out-of-state vehicles. A potential solution to this could benefit both the state by eliminating those lost revenues as well as the fueling station itself by the state's subsidizing the installation of license plate cameras using optical character recognition (OCR) at filling stations. The OCR would detect a Minnesota plate and not levy the gas tax, whereas any other state plate (or plate not recognizable) would be charged the tax. If done in error, the driver can talk to the station attendant for remedy (subject to audit). The costs aren't high, relative to the benefit of still receiving fuel tax revenue from out of state vehicles. If operated as a choice to fuel tax or registration fees, the system could also be used to identify which vehicles were participating in the registration fee program. Further, the fuel station benefits from better identification of "drive away" violators. Drive away violations could be practically eliminated if the pump doesn't even begin operation until a license plate determination can be made. While this is currently handled by many stations requiring prepayment, a significant improvement in customer convenience can be realized by using the system such as this.

A system that required no devices to be installed at fueling stations could be developed by allowing fuel taxes to be rebated or "prebated" for users. Under this system, drivers would be reimbursed for the fuel taxes that have been (rebate system) or will be (prebate system) collected from them as they purchase fuel. These prebates or rebates would be calculated using the same miles of travel that calculated the registration fees.

Issues relating to registration fees can be summarized as follows:

- Pros
 - Relatively simple system collected through existing registration infrastructure.
 - Relatively low collection costs
 - Easily understood.
 - Can be used as a supplement or replacement to gas tax
 - Some incentive to reduce overall VMT
 - No data collected for any given trip (ensures privacy)
 - Multiple options for billing method and payment method
 - Can be tailored by vehicle class using existing revenue collection systems
- Cons
 - No incentive to reduce peak hour trips
 - No differentiation by roadway type
 - May require annual (or more frequent) odometer reading(s)
 - May require relatively significant onboard equipment if actual mileage is to be determined and if vehicle's on-board diagnostic is not capable
 - No ability to collect from out-of-state travelers on Minnesota roads
 - No ability to avoid collecting taxes for Minnesota vehicles driven on out-of-state roads
 - Need for rebate/prebate could significantly increase collection costs.

Infrastructure-Based Model

Two systems comprise the Infrastructure Based model for mileage-based systems: Facility pricing for tolling on congested facilities and a transportation utility fee for assessment of the roadway network.

Facility Pricing (toll systems)

Roadside systems are already used throughout the United States. Systems range from sophisticated open road tolling systems that are capable of collecting tolls through DSRC systems using transponders, and video tolling using optical character recognition (OCR) to older systems using automatic coin machines and manual toll collection lanes. It is not unusual to see several types of toll collection systems operating simultaneously at toll plazas.

While roadside collection systems are not likely to prove feasible if universal monitoring of VMT is desired, these systems have operated for many years where collection of fees for use of specific facilities is desired. As the name implies rather than having significant technology in the vehicle, with the possible exception of a low-cost transponder, the majority of collection equipment is part of the overall roadway infrastructure. The roadside sensing equipment identifies the vehicle and assesses the proper toll. Travel distance can be determined with reasonable accuracy by determining the number of roadside sensing points passed, and time of travel can be captured as an integral part of the transaction. Determining the specific facility used is not an issue with this type of system.

Roadside systems currently are used to supplement fuel tax collections. With widespread deployment they could be used to replace the fuel tax, but this widespread deployment may not be feasible.

Issues associated with roadside systems are summarized as follows:

- Pros
 - Technology is mature.
 - Relatively low collection costs, with existing systems in Minnesota.
 - Incentive to reduce VMT. Incentive to also vary trip times out of peak periods if variable pricing is employed.
 - Very low (or no) cost for in-vehicle equipment.
 - Existing use shows it can be used along with other collection plans
- Cons
 - Cannot capture all travel unless an extensive roadside network is deployed.
 - Violation enforcement can be an issue

Transportation Utility Fee

The transportation utility fee is a monthly fee assessed to property owners/tenants for access to the roadway network. As with other utility fees, in the case of rental properties, responsibility for transportation utility fees could be either retained by the property owner, or the property tenant could be required to obtain service.

While it would be theoretically possible to establish counters at all driveway locations, this is almost certainly an impractical approach. Even if capital costs were reasonable, the maintenance costs would likely be extreme. For this reason, it is suggested that assessments be based on trip generation and trip length to determine the projected VMT for each property. The methodology to determine this would be based on well-established procedures currently used to determine vehicle miles of travel of various property types for transportation impact fees. Assessments could be based on peak hour VMT, daily VMT, or a combination of both. This is very similar to utility charging systems that calculate fees based on total usage and usage peaking characteristics.

While it is believed that the utility fee for most land uses will be set based on ITE trip generation rates, and average trip length available either from modeling or from national averages, it would be possible for large generators or attractors to perform an "independent fee calculation" to determine their actual impact. Again, this is similar to methodology often found in impact fee ordinances.

Transportation impact fees are a one-time collection as properties are initially developed. The assessment is normally based on the highest trip generation a property of a particular type could likely produce. For example, a house may be initially occupied by a couple with no children and only one car. Household trip generation under this scenario is likely to be relatively low. However, that same property may someday be sold to a family with multiple children and several cars. As impact fees are used for capital costs with a significant service life, it is reasonable that they be collected based on the highest use that can occur over the life of the facility.

However, transportation utility fees, while used for capital improvements, can also be used for short-term objectives such as maintenance. For this reason, consideration should be given in the calculation of annual fees to issues such as number of occupants, or number of vehicles registered to a particular property.

Transportation utility fees are used by municipalities in many areas of the United States. The state of Oregon has a particularly large number of municipalities utilizing a transportation utility fee. While there has been some controversy regarding transportation utility fees, those controversies have tended to center around whether or not the implemented ordinance is collecting a fee or a tax. Given that transportation utility fees would be implemented in Minnesota as a substitute for gasoline tax, it is recommended that enacting legislation be written in such a manner that this distinction becomes moot.

One advantage of transportation utility fees is that the responsibility for the impact of VMT can be split between the trip origin and the trip destination. Traditionally in impact fees, this is a 50-50 split.

Transportation utility fees would also be based on roadway needs. In a method similar to establishing an ad valorem rate for property taxes per unit of assessed value, a rate per VMT can be established for transportation utility fees. This method allows significant community input into needed transportation improvements and allows the direct relationship between fees and improvements to be established. Under one model of transportation utility fees, a co-op could be established. In a similar manner to rural electric co-ops, the community takes responsibility for and establishes an ownership in its transportation infrastructure.

Transportation utility fees can act as a supplement to or a replacement for gasoline taxes. They can also operate simultaneously as a choice between continuing to pay gasoline taxes or transferring to a transportation utility fee. The mechanism to allow this to occur would be practically identical to the mechanisms identified for operations under a vehicle registration fee system.

Perhaps the single biggest disadvantage of the transportation utility fee is that once the fee is paid, there is little incentive to reduce travel. This can, however, be addressed by retaining tolls on high-level roadways. This combination will be discussed later in the document.

Issues relating to transportation utility fees can be summarized as follows:

- Pros
 - Collection is relatively straightforward and could be instituted through other utility payment systems already extant for the agency (i.e. water/sewer).
 - Relatively low collection costs
 - Distributes payment for the transportation system on both trip producers and trip attractors
 - Fees are equitably distributed between high and low producers/attractors
 - No on board equipment required

- Can be used as a supplement or replacement to gas tax
- Cons
 - Once paid, fee provides no incentive to reduce total or peak hour trips
 - Only large entities (such as regional malls) would be financially able to perform specific studies to determine fees if there was disagreement with the assessment.
 - Would favor areas with large transit densities (which may be a “pro”).
 - Costs are born exclusively by the local land use. Out of region trips are included in the fee, but no fee is collected from out of region drivers. A regional attractor like the Mall of America could be prone to “overpaying”. Note close proximity of major cities to Wisconsin, North Dakota, and Iowa.
 - Need for rebate/prebate could significantly increase collection costs.
 - Likely a regressive tax/fee. Consideration could be given for residences to number of vehicles registered at that address and/or number of occupants.

Mileage Based Model

This business model reflects the calculation and assessment of mileage data. In a flat mileage fee, the process is identical to the vehicle registration fee process described in the “Current System” model. Variable mileage fees would be collected based upon either a bulk mileage assessment or micro mileage assessment (GPS-based).

Bulk mileage assessment (OBD, odometer)

All vehicles manufactured for use in the United States since 1996 have included an On Board Diagnostics system (OBD II). This device measures many parameters relating to vehicle operation. If this includes vehicle speed, and time travel can be computed, the OBD provides a methodology for determining VMT that is already built into the majority of the nation's vehicle fleet. Mileage information from the OBD can be transmitted either via cellular links to a central billing location or via Bluetooth® or other DSRC to a gasoline pump or other collection location.

On OBD system would have many of the characteristics of a registration fee system, it has significant advantages in terms of correctly identifying actual VMT. Also, the ability to transmit the data without the need to present the vehicle for an odometer reading significantly enhances convenience. It also allows OBD systems to bill more accurately over shorter periods.

If a cellular device is used to transmit information, determination of time of day and approximate location using locational triangulation is supplemental information that could be added to the data. This would enable time of day pricing, as well as some degree of location pricing to be incorporated in the calculation.

Use of an OBD system would require development of a central billing operation. Depending on the form of data transmission chosen from the OBD, information would either flow to remote collector locations, such as fuel stations, or if cellular communication was used, information would flow directly to a central billing location. Mechanisms to collect and aggregate trips for each account can be developed based on existing software for aggregating such information such as, for instance, software to bill for cell phone use.

For vehicles that are not equipped with OBD devices, vehicle retrofits would be possible. However, it is possible for an OBD system to exist simultaneously with a fuel tax system. The mechanisms for identify-

ing vehicles participating in the system at fueling stations would be the same as those previously described for other MBUF systems. Costs for installation into vehicles without an OBD system could be borne by the State. However, if there is no governmental requirement for drivers to participate in an OBD based program, each vehicle owner that chose to go with an OBD system could be made responsible for installing the system.

As with other systems described, an OBD system can either supplement or replace fuel tax and it can exist simultaneously with a fuel tax system. The mechanisms to allow an OBD system to exist with fuel tax systems would be very similar to the MBUF systems previously described. The primary difference would be that all VMT data would be delivered automatically, and VMT information would likely be more accurate than under a self-reporting system.

Issues pertaining to OBD systems include:

- Pros
 - The majority of the vehicle fleet is already equipped with OBD.
 - OBD allows collection of all travel mileage.
 - Likely lower cost for onboard equipment than a GPS system.
 - Time of day information can be added particularly if cellular technology is used.
 - Privacy concerns are limited as trip information is less precise.
 - Encourages reduction in overall VMT and, with time coding added, peak VMT.
 - Collection infrastructure may exist within existing cellular providers.
 - Simultaneous operation with gas tax is possible using a rebate/prebate system.
- Cons
 - Higher collection costs than many other options
 - Not all vehicles are equipped
 - Retrofit of existing vehicles will be required to allow communication of OBD information.

On Board Systems – GPS

As the name implies, this system determines VMT using GPS technology within the vehicle. As with an OBD system, mileage information is transmitted either via cellular links to a central billing location or via DSRC to a fuel pump or other collection location. This type of system is capable of capturing total travel for the vehicle as well as time and location of travel. Many existing GPS systems are sensitive enough to determine the exact facility used to also allow facility-based pricing.

The onboard GPS system is the best methodology for capturing all aspects of travel connected with a specific vehicle. While this is of benefit in fee assessment, because of the very specific nature of information gathered, privacy issues have been raised as a significant concern.

To overcome these concerns, it is possible to allow the GPS system to determine within itself the toll associated with any given trip. This would allow only the toll to be transmitted to a collection center. The onboard device would be designed in such a manner that trip information would be stored for a certain period of time, say 90 days, should the need arise to audit an account, or if an account owner wished to dispute the tolls charged. Safeguards would need to be developed so that the system could not be "hacked" by users to reduce the fees paid. It would also be necessary to assure users that the information within the onboard system was secure and could not be accessed without the owner's knowledge.

Concerns have been raised about the need to track numerous individual transactions in a cost-effective manner. Those concerns cannot be ignored, however other industries routinely track small transactions and bundle them for billing purposes. Further, this type of system lends itself to automatic collection of toll charges, and, if desired, toll collection which could significantly reduce collection and processing costs.

Large numbers of small transactions are already handled by wireless carriers, and to a growing extent, by credit card companies. The existing ability to use credit cards in vending machines shows that transactions in the range of a normal toll charge can be collected electronically at a reasonable transaction cost.

In addition to its ability to correctly track and charge all travel, GPS-based systems coupled with cellular technology have the ability to add significant other applications to the system. One such application is General Motors' well known OnStar® system. Real-time traffic information is also beginning to find its way into use. Trying to determine all the potential beneficial applications that can be added to this type of system would be as difficult as trying to identify 10 years ago all the current iPhone and Android™ "apps".

With the system's ability to attract significant private sector application builders and service providers, it is highly possible that the information collection system required by a GPS-based system could be provided to the state at little or no cost. It may, in fact, be built on the same operating systems powering today's mobile devices. Further, it is very reasonable to expect that there would be competition among providers. While the state could opt to select only one provider, there is nothing inherent in the potential system that would prohibit the use of multiple providers.

In return for the provision of collection of the information necessary for toll collection, the state would likely have to allow providers to have some type of advertising on their systems. The validity of the possibility of free services can be seen by the existing information gathering systems that currently operate on the Internet at no cost to users. These services can be completely funded by advertising. Whether this potential "no cost" scenario could extend to actual fee collection is uncertain. However if the bulk of the collection were done electronically, and the state would underwrite "bad" accounts, a no cost scenario is not an unreasonable assumption. As with similar types of services, customers desiring a no advertising version could instead pay a monthly fee for toll collection services.

A GPS system can coexist within the existing fuel tax system. Fuel tax could be removed from fuel pumps using license plate recognition as previously described, or the onboard device can communicate directly with the fuel pump to indicate that appropriate taxes should be removed from the per gallon cost. It would also be possible to develop a prebate or rebate system of gasoline taxes that would be based on a vehicle's VMT as previously described. Depending on whether or not the state would like to promote fuel-efficient vehicles, the prebate or rebate could be based on either vehicle class or an average fleet fuel economy.

Issues relating to onboard GPS technology can be summarized as:

- Pros
 - Allows best determination of actual travel impact.
 - Allows customer to nullify out-of-state travel payments.
 - Could be used to incentivize specific travel patterns in congested times / areas.
 - Able to add other desirable functions
 - Real time cost of trip information can be provided likely resulting in best incentive to reduce VMT or travel during off-peak periods.

- Collection infrastructure may exist within existing cellular providers
- Simultaneous operation with gas tax is possible using a rebate/prebate system.
- Cons
 - Higher collection costs than other options
 - Refit of almost the entire vehicle fleet could be necessary
 - Significant privacy concerns have been identified.

Mobile Device- GPS

A mobile device GPS system works essentially the same way as an onboard system. However, there are issues with this type of system that differ somewhat from an onboard system. Collection of VMT and forwarding of collection information would operate in the same way as an onboard system. Billing and backroom operations would also be similar if not identical.

Mobile devices capable of GPS VMT collection are in widespread use. Minnesota is currently using such a device in its testing of MBUF fees. This would allow rapid deployment of such a system using existing devices. However it also requires a mechanism to associate the device with a vehicle, and to deal with the possibility of multiple equipped devices in the same vehicle recording the same trip.

Associating the trip with a particular vehicle could be done quite easily with vehicles that are currently equipped with Bluetooth® systems. The vehicle would simply pass on identifying information to the mobile device which would then tie the information into the toll information transmitted to the collection center. In vehicles not equipped with Bluetooth®, the mobile device could manually accept information such as a license plate number or a VIN number. To alleviate the need to enter long strings of information multiple times, this information could be entered once and the app would develop a description, perhaps something like "Dad' s car".

A potential benefit of a mobile device system is that different drivers could utilize different devices. This would allow, for instance, a family to understand the trip making patterns of its individual members. It can also allow a carpool to share the MBUF costs by rotating which device was used on any given day.

To prevent multiple devices from automatically tracking a single trip, at least two alternatives are possible. First, a specific action, such as keying in an identifier, could be required prior to a device becoming active. It might also be possible to “scrub” inputs to the collection center based on two or more simultaneous inputs from the same location.

Unlike an onboard device, however, which could be installed in such a way that tampering with the device to turn off for certain trips would be difficult, there is nothing to prevent a vehicle tracking VMT with a mobile device from traveling without such a mobile device. For this reason, mobile devices may need to be paired with another system, such as a registration fee, to provide a backup collection methodology to prevent fraudulent nonpayment of fees. Under this type of system, VMT payments can be deducted in part or in whole from the base registration fee, or VMT payments could be deducted from fees paid by the location to which the vehicle is registered under a transportation utility fee scenario.

Issues associated with a GPS-based mobile system can be summarized as follows:

- Pros
 - Can be added to existing devices and services - fleet retrofit is not needed.
 - Allows excellent determination of actual travel impact.
 - Allows customer to nullify out-of-state travel payments.
 - Could be used to incentivize specific travel patterns in congested times / areas.

- Able to add other desirable functions
- Real time cost of trip information can be provided likely resulting in best incentive to reduce VMT or travel during off-peak periods.
- Collection infrastructure may exist within existing cellular providers
- Simultaneous operation with gas tax is possible using a rebate/prebate system.
- Cons
 - Collection cost will be highly dependent on how the system is integrated into existing wireless services
 - Significant privacy concerns have been identified, however the GPS tracking needed for MBUF requirements is no different than that which the phone is already capable.
 - Business rules needed due to the device's mobility may be complex.

Hybrid Systems

There is a natural synergy between some of these collection systems that would allow their joint implementation to provide a superior system compared with individual implementation. An ideal VMT system would produce several desirable outcomes. These include:

- Cost for the transportation system would be equitably distributed among users.
- The system would accurately establish the impact of each user on the system and charge accordingly.
- Time of day, where applicable, would be taken into consideration.
- The cost of vehicle trips would become more transparent.
- Higher costs would be assessed for travel on "premium" facilities.

One drawback of VMT systems as they have often been envisioned is that they would ideally require universal tracking and monitoring. However, whether benefits of universal tracking and monitoring outweigh the costs, privacy, and other issues associated with universal tracking is a reasonable question.

The need for roadways can be divided into two categories. The first is the need for basic connectivity of the roadway system. The second is the need for capacity to handle peak loading. These are two very different issues.

Basic connectivity deals with providing the connections necessary for drivers to travel to and from desired destinations. This can include rural roadways that connect farming communities with each other and to city markets as well as local roadways that connect individual houses with the major transportation system. In both of these cases, it is almost always the need for basic connectivity that controls the development of these facilities. The need for congestion relief over the majority of these types of roadways plays little, if any, role. Due to the stepwise nature of transportation improvements, i.e. the fact that it is not possible to provide one half of the lane of a roadway, it is not unusual for the hourly capacity of these types of facilities to be far greater than the hourly demand is or is projected to become. Roadways such as these are often greenfield projects, and it is unlikely that there will be physical constraints to obtaining right-of-way. For these types of roadways, the time of day travel occurs makes little difference.

The requirement to provide capacity to handle peak loading is significantly different. Peak loading, while related to origin and destination, is much more based on the time of day that trips occur. Peak loading issues are almost always urban phenomena. Adding additional peak capacity is often very difficult due to right-of-way constraints, or the need for very expensive construction such as grade separation. Further, capacity added to handle peak loading conditions is unneeded at other times so travel during much of the day could be handled by a smaller roadway. This means that fuel taxes have a poor relationship to provid-

ing peak load capacity, as gasoline is consumed, and therefore taxes collected, for travel only during a relatively short period of the day.

Given these two very different issues that need to be addressed as part of overall transportation funding, it is logical to consider the use of a system that can address basic connectivity needs along with a complementary system that addresses peak loading capacity needs.

Both registration fee systems as well as transportation utility fees are capable of dealing with connectivity issues. It should be noted, however, that fuel taxes would also be capable of dealing with connectivity issues if rates were adjusted to meet changes in fuel efficiency and to meet the basic connectivity needs of the transportation system. Provision of peak capacity would be funded by another source. There would, of course still be an issue as alternative fuels develop significant market share.

Transportation utility fees do however, have an inherent advantage over registration fees and fuel taxes. They are better able to take into account the impacts of other modes of transportation, particularly transit. This tends to reinforce a "user pays" philosophy which includes transit that can sometimes become blurred with fuel taxes and registration fees. Keeping in mind that registration fees and fuel taxes could be used instead, the possibility of a transportation utility fee coupled with a system that focuses on peak transportation needs will be examined.

Transportation improvements that deal with the need to provide peak hour capacity are usually made on the most efficient transportation facilities, usually, limited access freeways. To a lesser extent, major arterials might also be upgraded. The relationship between limited access facilities and the needed feeder facilities will be discussed later in this document.

As only key facilities need to be identified, monitored, and priced to deal with peak capacity needs, it is unnecessary to monitor all VMT that occurs during peak hours. As an efficient mechanism to perform that monitoring already exists in the form of existing tolling technology, a roadside system can fulfill this need.

A highly synergistic system could exist with a transportation utility fee supplemented on high-level facilities with conventional tolling. Given the rapid technology advances in tolling, particularly open road tolling, this type of system can be developed with existing technology and little or no inconvenience to the driver.

Feeder roadways to major facilities would also be made somewhat sensitive to the time of day pricing provided under this type of system. While they would not be directly tolled, the roadways would be affected by the change in travel characteristics due to peak hour charging on the major facilities.

Collection efficiency is a major part of the MBUF discussion. By recognizing the fact that there are two different factors driving the need for roadways, it is possible to develop a system that most efficiently responds to connectivity issues, and then develop a system that most efficiently responds to capacity needed to handle traffic peaking.

GPS Systems

Because the potential additional benefits that GPS technology provides, it is entirely possible that many drivers would prefer a GPS-based system. While a GPS-based system is not synergistic with other types of systems, it can coexist with other types of systems.

Perhaps the biggest question regarding a GPS system is the extent to which the private sector would participate, and what percentage of the cost will be borne by the private sector? It is reasonable to consider

what incentive would there be to both the private sector as well as individual drivers to participate in a GPS system program.

From the driver's perspective, there are two primary factors that would encourage use. The first is a reduction in fees paid. From this perspective, a GPS program would be most attractive to drivers that travel relatively little compared to the average, drivers that tend to travel during off-peak hours, or both. The second factor is system convenience or other added value. A GPS system could be designed so that no action was required by the driver to pay all taxes and fees associated with vehicle use. Also, a GPS-based system coupled with wireless data transmission could offer numerous added benefits. These could include real-time traffic information, navigation assistance, a system to automatically call emergency services, concierge services, real-time information on fuel costs, and information on other surrounding opportunities.

There are also numerous potential advantages from a private service provider's perspective. Perhaps primary, is the ability to add fee-based value-added services to customer accounts such as described above. The second is the ability, with the customer's permission, to obtain a significant amount of information on the driver's behavior and travel patterns. If this were allowed to be coupled with a transaction tracking program, the amount of information gathered would be exceptionally valuable in targeting advertising or simply better understanding consumer behavior. A potential model for this type of program is UPromise. UPromise automatically rebates a percentage of eligible purchases a consumer makes into a program that provides funding for post secondary education. This information is automatically collected by providing a card with bar coded UPromise account information at the point of payment.

While an exhaustive evaluation of UPromise was not made as part of this effort, the statement: "Information about our members, former members, website visitors and mobile application users is an important part of our business." This statement is contained in UPromise's privacy policy and coupled with the description of information collected seems to confirm that this type of transactional information is considered valuable by the private sector.

As with iPhone and Android™ apps, a choice can be made by the consumer as to whether or not they wish to receive advertising and provide information in exchange for obtaining the service at no cost, or a monthly fee could be collected by the service provider for those not wishing to have advertising, or provide information on travel characteristics. By allowing multiple vendors into the market, the state would promote competition that would likely reduce costs. Also, with participation voluntary and a mechanism to provide the service at no cost, it may be possible for the state to implement this type of program at little, or potentially, no cost.

The extent to which private providers would be interested in participating in this type of program is far from certain. However, given the capabilities that exist in the private sector to efficiently collect information on small transactions, this appears to be a potentially viable business model. Consideration should be given to opening discussions with potential private sector partners. Further, there does not appear to be a need to select a single vendor. While this could be considered, allowing competition among multiple vendors might prove to be the most beneficial approach.

Public and Political Acceptance

There are numerous challenges in developing and implementing mileage based user fees. However, issues of public acceptance may be one of the most challenging, especially regarding privacy. Critical to the success of a mileage based user fee system will be the provision of user choice – choice in model, choice in payment options, and choice in assessment. The Mileage-based business model allows for a user to choose from a multitude of options, including a flat mileage charge at vehicle registration, which resem-

bles an “unlimited” cell phone plan; an anonymous bulk mileage charge; or non-anonymous micro charges that provide an opportunity for complementary services and incentives.

The public might associate a vehicle mileage fee with the notion of being “tracked.” Furthermore, there are strong public concerns about information security. Fuel taxes are easy to pay, cheap to collect and perhaps most important, anonymous. If vehicle mileage fees are to gain a high level of public acceptance, systems for the security of information and privacy protection must be demonstrated. These issues can be overcome, and the public is often more accepting of technology advancements than elected officials might believe. Add on capabilities of GPS based systems and services that can derive from them will likely be an important element in public acceptance of this methodology; however, having a non-technological option as shown in the business model may be even more important towards garnering acceptance.

The Online Survey Wave 1 results indicate that Minnesotans are concerned with GPS-based data collection, often for the reasons cited above. The Mileage-Based business model, largely derived from Minnesota’s technology demonstration, incorporates multiple options for payment. It will be important to emphasize the default policy of a fixed MBUF assessment coupled with the *choice* for drivers to opt for a variable MBUF option.

Concerns have been expressed about vehicle mileage fees essentially amounting to punishment for the drivers of fuel efficient cars and hybrids, albeit many stakeholders in the listening sessions indicated that there is enough incentive provided already for fuel efficient vehicles. Furthermore, there is widespread belief that implementing such a fee system would remove the incentive to purchase fuel efficient vehicles. While it is true that these drivers will be paying more under a vehicle mileage fee system than they would in fuel taxes, the increased cost in terms of taxes paid is minimal compared to the other savings that these vehicles provide. MnDOT analysis shows that while a hybrid driver would indeed pay more in mileage-based fees than fuel taxes annually, these drivers will still see substantial savings in terms of fuel purchased over the drivers of less fuel efficient vehicles. In other words, a vehicle mileage fee will not have enough of an impact in terms of overall vehicle ownership costs to make hybrids and similar vehicles undesirable to drivers.

There are likely to be concerns about equity (or fairness) with regard to mileage-based user fees, which can be structured to collect the same amount of revenue as the gas tax currently does. Because the public is unaware of the impact of greater fuel efficiencies on gas tax revenues, however, vehicle mileage fees might be seen as an added tax. Rural areas, specifically, have expressed concern that fees based on actual miles traveled would disproportionately burden residents of remote rural areas that generally make long distance trips. Furthermore, rural areas generally lack the availability of transit service found in larger metropolitan areas. This means that there are fewer (if any) options available for those not wishing to travel by personal vehicle and incur the fee.

Structuring a mileage fee so the rate varies based on whether travel is occurring in urban versus rural areas is logical, given that costs of highway maintenance and congestion can be lower in rural areas. It might also be necessary to develop fee systems that accurately account for and discount mileage accrued on private property. This could be a particularly important issue for ranchers and farmers, since they are more likely to generate significant mileage on their own property and should not have to pay fees for that mileage.

Implementation Timeline

Implementing an MBUF system is not merely a technological effort. In fact, technology implementation is relatively straightforward and, potentially, a relatively short part of the overall implementation timeline. There are likely to be four definitive steps in the timeline:

1. Minnesota's continuing research into the feasibility of various types of policy options, methodology for collection, and technology for implementation.
2. Political and institutional acceptance and selection of a preferred business model and implementing technologies and procedures that fit the model.
3. Technology implementation.
4. Public adoption of the new methodology/technology

While some of these steps can overlap to a minor extent, these steps will have to be undertaken consecutively.

Research

There is a significant and still growing body of research into the various types of methodologies and technologies that can be used to implement an MBUF system, including not only Minnesota sponsored research, but also other states and the Federal government. This paper discusses how those various technologies and methodologies would apply to Minnesota. The next logical step in this research is to determine the institutional steps that would be necessary to implement the various types of technologies, and to determine whether the private sector would be interested in teaming with the state to implement these technologies. Both of these steps would involve a detailed development of potential implementation plans and refinement of likely costs.

Political and Institutional Acceptance

Once likely business models, methodologies, technologies, and procedures begin to emerge from the research undertaken, the initial steps in determining political and institutional acceptance can begin. This will initially take the form of discussions with senior administrative staff and informal discussions with elected officials. In its final form, legislative action will be required, and the affected agencies will develop and implement policies to put the enacted legislation into effect.

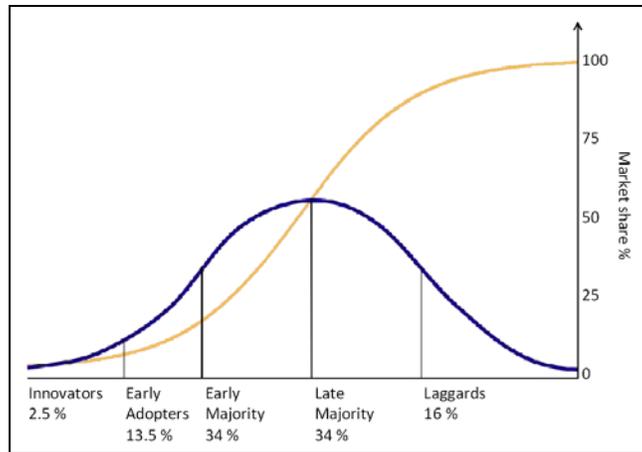
Methodology/Technology Implementation

Methodology and technology *implementation* needs to be discussed separately from *adoption*. Implementation is defined as having occurred at the time that the public is allowed to begin adopting a specific payment methodology/technology. Adoption is related to the market penetration of a particular methodology/technology and may be a significantly longer time than implementation.

Implementation timing is highly dependent on the type of system selected – for instance a mobile GPS system can be implemented faster than an on-board GPS or even OBD system. The willingness of the private sector to become involved, and bring developed systems with them will also significantly affect the implementation schedule.

Public Adoption

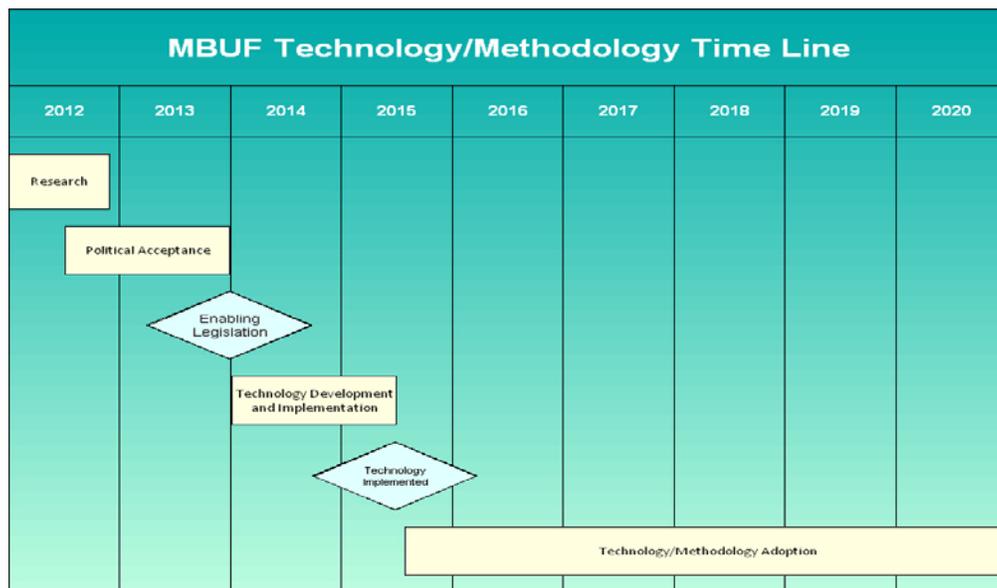
Public adoption of a methodology/technology will likely occur based on the Diffusion of Innovation Model described by Everett Rogers. Rogers found that new innovations, regardless of type, follow a similar pattern of adoption. This pattern is shown in the figure below.



While it may be possible to compress the curve so that it happens over a shorter period of time, the basic shape of the curve is likely fixed.

Understanding diffusion of innovation leads to a greater understanding of why it is very important that a new technology/methodology for replacing or supplementing fuel taxes be phased. While innovators and early adopters might be comfortable with a sudden switch to a new system, the majority of the public likely will not be comfortable regardless of how well the change might eventually be adopted and accepted. Understanding of this phenomenon also provides insight into why roadway pricing projects often initially have the majority of opinion the negative, but after implementation favorability rises significantly.

The provision of choice in education on the diffusion of innovation among policymakers will likely result in a higher comfort level among policymakers with moving forward with an MBUF system. A potential implementation time line is shown below.



Appendix G. Task Force Presentation – Dr. Paul Sorensen

Mileage-Based User Fees (MBUF):
Opportunities and Challenges to Direct
Usage-Based Charges for Transportation Funding

Paul Sorensen, RAND Corporation

*Rethinking Transportation Finance Roundtable
Humphrey Center, Minneapolis, September 21, 2011*

Today's Presentation

- Motivation for MBUF
- Mechanisms for Implementing MBUF
- Challenges and Uncertainties
- Potential Transition Strategies
- State vs. Federal Implementation

Fuel Tax Receipts Are Not Keeping Pace with Highway Revenue Needs

- Real fuel tax revenue per mile of travel is declining with inflation and improved fuel economy
 - Lack of political will to increase fuel taxes
 - Funding shortfalls at federal and state level
- Problem is expected to worsen with:
 - More economical conventional vehicles
 - Alternative-fuel vehicles
- Distributional burden of gasoline and diesel taxes will also become less equitable

Projected Growth in VMT and Fuel Consumption Illustrates Fuel Tax Challenges



Sources: FHWA, EIA

MBUF Is Viewed as a Promising Long-Term Replacement for Fuel Taxes

- **Would provide a more stable and equitable transportation revenue stream**
- **Additional policy options:**
 - **Allocate revenue by jurisdiction more accurately**
 - **Structure fees to reduce congestion, emissions, and excessive road wear**
 - **Offer value-added services**
 - **Collect detailed (anonymous) travel data for improved planning and operations**

MBUF Would Provide a More Stable and Equitable Revenue Source

- **Stability:**
 - MBUF revenue would increase with total travel, which in turn drives the need for maintenance and expansion
 - Would still need to index or periodically raise mileage fees to address inflation
- **Equity:**
 - All drivers pay based on the amount they drive (i.e., in proportion to the benefits they derive from the system)
 - Alternative fuel vehicles will initially be higher priced and purchased by more affluent drivers; with MBUF these drivers will still pay their fair share for road use

Fees Could Be Structured to Reduce Congestion, Emissions, and Road Wear

- To reduce congestion:
 - Per-mile fees could be increased for travel in congested travel corridors during peak hours
- To reduce emissions:
 - Per-mile fees could be increased for vehicles that emit more local air pollutants or greenhouse gases
- To reduce road wear (mainly for trucks):
 - Per-mile fees could be increased for heavier axle loads and for travel on local roads with lower engineering standards

In-Vehicle Metering Equipment Could Provide Many Value-Added Services

- Idea: provide driver with financial savings, greater convenience, better information about travel options, improved safety...
- Examples:
 - Pay-as-you-drive insurance
 - Automated parking payment
 - Navigation assistance based on current traffic
 - Downstream traffic incident alerts
- How would Steve Jobs design an MBUF system?

Today's Presentation

- Motivation for Considering MBUF
- **Mechanisms for Implementing MBUF**
- Challenges and Uncertainties
- Potential Transition Strategies
- State vs. Federal Implementation

The Design of a VMT-Fee System Must Address (at Least) Four Functional Components

- Metering road use
- Collecting payment
- Preventing evasion
- Protecting privacy



Options for Metering Road Use

- Periodic odometer inspections
- Mileage estimates based on vehicle fuel economy and fuel consumption
- On-board unit (OBU) connected to on-board diagnostics port (OBD-II)
- OBU with addition of cellular communications
- OBU with addition of GPS
- RFID tolling (partial road network only)

Options for Collecting Payment

- Payment with vehicle registration
- Pay at the pump
- Automated data transmission and billing
- Pre-paid debit cards

Options for Preventing Evasion

- Odometer inspections / redundancy checks
- Metering equipment inspections
- Default fuel tax payment
- Fuel consumption redundancy checks
- Roadside LPR/DSRC checks
- Device “heartbeat” signals
- Device “distress” signals

Options for Protecting Privacy

- On-board data aggregation / fee computation
- Anonymous proxy fee computation
- Trusted third party
- Prepaid debit cards
- Anonymous user accounts
- Data encryption (element of many of the above)

The Choice Among Implementation Options Involves Important Tradeoffs

- Ability to pursue additional policy goals beyond revenue collection
- Burden on users (relative to fuel taxes)
- Difficulty of enforcement
- Privacy concerns
- Cost of implementing and operating system

Ability to Pursue Policy Goals Hinges on Certain Metering Capabilities

Metering	MBUF	Accurately Apportion Revenue	Reduce Traffic	Reduce Road Wear	Reduce Emissions	Value-Added Functions	Detailed Travel Data
Mileage	•	•	•	•	•		•
Travel by Jurisdiction		•					
Travel by Local Area			○			○	
Travel by Route			•	•		•	•
Time of Travel			•			•	•
Vehicle Attributes				•	•		

Metering Options Vary in their Ability to Support Potential Policy Goals

Metering	MBUF	Accurately Apportion Revenue	Reduce Traffic	Reduce Road Wear	Reduce Emissions	Value-Added Functions	Detailed Travel Data
Odometer inspections	●				●		
Estimates based on fuel use	●				●		
OBU w/ OBD II	●				●		
OBU + Cellular	●	●	○		●	○	
OBU + GPS	●	●	●	●	●	●	●
RFID tolling		●	○		●		

Metering Options Also Vary in Terms of Potential Challenges or Drawbacks

Metering	Challenging to Enforce	Burden on Users	Privacy Concerns	Vehicle Equipment Cost	Capital and Operating Cost
Odometer inspections		○			○
Estimates based on fuel use					●
OBU w/ OBD II	○			●	●
OBU + Cellular	○		○	●	●
OBU + GPS	○		●	●	●
RFID tolling			●		●

Today's Presentation

- Motivation for Considering MBUF
- Mechanisms for Implementing MBUF
- **Challenges and Uncertainties**
- Potential Transition Strategies
- State vs. Federal Implementation

The Potential Advantages of MBUF Have Attracted Significant Attention

- U.S. experience
 - Trials conducted by Oregon, Puget Sound, University of Iowa, Minnesota
- International experience:
 - Weight-distance truck tolls in Switzerland, Austria, Germany, Slovakia, Czech Republic
 - Distance-based fees in New Zealand for trucks and diesel-burning passenger cars
 - Effort to develop program in the Netherlands
- Prior trials and programs have yielded valuable lessons...

But Numerous Issues and Uncertainties Still Need to Be Addressed

- System requirements
- Technical implementation mechanisms
- Public / private institutional roles
- Implementation and transition strategies
- System cost
- User acceptance

For details, see [System Trials to Demonstrate Mileage-Based Road Use Charges](#), NCHRP 20-24(69A), 2010.

Many of the Implementation and Transition Issues Are Quite Complex

- Phasing in the system over time
- Rebating fuel taxes for early MBUF adopters
- Charging out-of-state or foreign drivers
- Ensuring interoperability among systems from different states (assuming that a national system is not developed first)

The Prospects for Transitioning to MBUF Appear to Hinge on Two Critical Issues

- User acceptance
- High administrative cost (vs. fuel tax collection)

Public Knowledge of and Support for MBUF Is Low

- Privacy appears to be the main concern (despite multiple methods for protecting privacy)
- Other concerns
 - Low trust in government
 - Concern for increased tax burden
 - Fear of unknown
- A sliver lining:
 - University of Iowa trials have shown that support increases considerably as drivers become familiar with MBUF

MBUF Will Be Expensive to Collect Relative to Fuel Taxes

- Fuel tax collection: ~ 1% of revenue
- MBUF collection: ~ 5% - 20% of revenue
- Cost ultimately depends on such factors as:
 - Technology choice and future innovation
 - Number of users (economies of scale)
 - Total revenue collection
- Increased collection cost will be more than offset by growth in MBUF revenue vs. fuel taxes within the next decade or so

Today's Presentation

- Motivation for Considering MBUF
- Mechanisms for Implementing MBUF
- Challenges and Uncertainties
- Potential Transition Strategies
- State vs. Federal Implementation

Recent MBUF Research Has Focused on Strategies for Overcoming Opposition and Reducing Costs

- Initial focus on limited user groups
- User choice
- Value-added services and voluntary adoption

Initial Focus on a Limited User Group May Help to Reduce Opposition

- Oregon plans to levy MBUF for electric vehicles
 - Few current EV owners, limited opposition
 - Compelling argument that EV owners should pay their fair share for using the roads
 - Legislation narrowly defeated in last session, but legislature did provide funding for ODOT to develop system by 2015
- Another concept being explored: implement MBUF for Mexican trucks under NAFTA agreement

Providing User Choice May Help to Reduce Opposition

- Allow users to choose among:
 - Metering approaches, payment options, methods for protecting privacy, value-added services, etc.
- Minnesota trials provide an example
 - Pay flat rate based on odometer reading, or
 - Qualify for reduced rates based on GPS
 - No fee for out-of-state miles
 - Reduced fee for rural and off-peak miles
- Oregon exploring similar idea of allowing EV owners to choose among metering options

Value-Added Services and Voluntary Adoption May Reduce Costs and Opposition

- Concept
 - Multiple vendors compete to provide mileage metering, billing, and value-added services
 - Competition and revenue from value-added services reduce cost of collecting MBUF
 - Users voluntarily adopt system for access to value-added services
 - Experience of initial adopters demonstrates that system works and protects privacy, paving the way for subsequent mandatory MBUF
- Examples
 - NYCDOT “DriveSmart” RFEI
 - Minnesota trials (value-added services)

Is the Value-Added Services / Voluntary Adoption Concept Realistic?

Perhaps...

- Attracting users:
 - A low-mileage driver that currently pays \$1000 per year could pay well less than \$500 for pay-as-you-drive insurance
 - Automated parking payment could be structured to eliminate parking time violations
- Reducing collection cost:
 - Assume an in-vehicle metering device is used to collect \$250 in road-use fees and \$500 in pay-as-you drive insurance
 - If metering and collection costs are equally apportioned to mileage fees and insurers, the cost of collecting mileage fees would be reduced by two thirds

Today's Presentation

- Motivation for Considering MBUF
- Mechanisms for Implementing MBUF
- Challenges and Uncertainties
- Potential Transition Strategies
- State vs. Federal Implementation

Who Should Take the Lead on Developing MBUF Systems

- There is (some) interest in both Congress and the Administration in funding research to explore and refine the concept for a national MBUF system
- But some states, and even some metro areas, are interested in pursuing MBUF more rapidly
 - Oregon, Minnesota, Texas, Nevada...
 - New York City, Southern California...
- There are pros and cons for both federal leadership and state leadership

For details, see [System Trials to Demonstrate Mileage-Based Road Use Charges](#), NCHRP 20-24(69A), 2010.

Assessment of Federal Leadership on the Development of MBUF

- Advantages:
 - Addresses federal revenue shortfall
 - Allows interested states to join, focusing on policy development rather than technical issues
 - Avoids interoperability problems
 - Reduces collection costs by collecting more revenue and through economies of scale
- Disadvantages:
 - Near-term political prospects appear weak
 - More challenging to implement and enforce within states that do not choose to adopt

Assessment of State Leadership on the Development of MBUF

- Advantages:
 - Let 1000 flowers bloom...
 - States with political will for MBUF do not need to wait on the federal government
 - States have more opportunity to create user choice and foster value-added services
 - States control registration databases and law enforcement assets
- Disadvantages:
 - High risk of non-interoperable systems
 - Challenge to collect for drivers from other states
 - Reduced economies of scale

Appendix H. Policy Task Force Minutes

MBUF TASK FORCE MEETING #1

June 6, 2011, 1:00 – 4:00 PM
Humphrey School of Public Affairs

Summary Minutes

In attendance: Chair Bernie Lieder; Vice Chair Jim Hovland; Bob Anderson, Minnesota Chamber of Commerce; State Representative Mike Beard; State Senator Scott Dibble; Steve Elkins, Met Council; John Hausladen, MN Trucking Association; Bill Goins, Fed- Ex; Commissioner Donald Jensen, Pennington County; Wade Kline, Fargo-Moorhead Metro COG; John Mock, MN State Patrol; Marthand Nookala, Hennepin County; Dan Salomone, MN Revenue Department; Charles Samuelson, ACLU; Barb Thoman, Transit for Livable Communities; Kathy Tingelstad, Anoka County

Staff in Attendance: Ken Buckeye, MnDOT; John Doan, SRF Consulting; Cory Johnson, MnDOT; Christine Krueger, MnDOT; Adeel Lari, Humphrey School; Lee Munnich, Humphrey School; Ferrol Robinson, Humphrey School; Matt Schmit, Humphrey School; David Ungemah, PB World

Via phone: Margaret Donahoe, Transportation Alliance; Jason Stribiak, PB World

Task Force Chair Bernie Lieder convened the meeting with some brief opening remarks; introductions ensued. Vice Chair Jim Hovland echoed an eagerness to begin deliberation on various policy ramifications of a mileage-based user fee alternative to the existing fuel tax scheme.

John Doan provided the group with a project overview, including background information on transportation finance in Minnesota. He noted the purpose of the task force is two-fold: (1) to discuss and evaluate questions, concerns, expectations, and preferences about the use of MBUF as a future transportation funding mechanism; and (2) to provide policy direction to the MnDOT Commissioner for the MBUF technology demonstration and potential broader implementation of MBUF in MN.

Similarly, the project has two research components: (1) a technology demonstration that includes 500 vehicles in Hennepin and Wright Counties; and (2) a policy study that will engage key stakeholders to identify and evaluate MBUF issues. For its part, the policy study will include: a series of legislative and executive briefings; an internet panel survey; a series of stakeholder interviews; five focus group discussions in Greater Minnesota; three expert panel roundtable forums; and a policy task force.

He noted five principles that will guide policy discussions: efficiency; equity; revenue adequacy and sustainability; environmental sustainability; and feasibility.

Cory Johnson emphasized that a separate group would be assessing the technical feasibility of one particular approach to MBUF that involves the use of on-board mileage-tracking units.

John Hausladen asked if participants in the technical feasibility study would be asked to assess the technology strictly or if they would weigh in on various policy questions related to whether or not MBUF should be implemented. Cory noted that the technical feasibility group would be focused on assessing the

technology itself rather than broader policy questions; however, the group would be given the opportunity to offer a wide-array of feedback through use of participant surveys, project journals and exit interviews.

Donald Jensen asked if the task force should proceed under the assumption that MBUF is needed to address revenue shortfalls attributable to the current gas tax regime. Cory noted that revenue instability in the current approach is a factor, but that the work of the task force is to examine a potential alternative for the long term (20 years out or more).

Ken Buckeye provided an overview on mileage-based user fees in particular; his presentation focused on: the requisite leadership and driving forces behind scheme development and implementation; various related public acceptance and policy issues; available technology; involved risks; and next steps for project advancement. His discussion was framed by three questions: (1) What is the value proposition that we're presenting to the public? (2) Why would the public support MBUF; and (3) What information does the public need to support MBUF?

How is current fuel tax collected? Where does revenue go in terms of funding infrastructure? Why each state to look at solving transportation funding problems rather than federal government?

Representative Mike Beard asked if any members of the technical feasibility group would be expected to cross the state border during the trial and thus provide information for analysis. Cory noted that there would be no charge for miles beyond Minnesota's borders and that miles outside Minnesota would not be tracked.

Dan Salomone asked if the research team had looked at establishing a revenue-neutral fee. Cory noted that the group figured a revenue neutral fee would be around \$.02 per mile, not including administration costs.

Bill Goins asked what might be learned from MBUF approaches studied elsewhere. Ken noted that a University of Iowa approach used its own technology to address privacy concerns. In addition, the Oregon legislature is debating a bill that would charge hybrid and electric vehicles an MBUF.

Dan noted the constitutional dedication of fuel tax revenues and asked if an MBUF approach would need a similar constitutional dedication. Ken noted the answer is unclear at this time.

Ferrol Robinson provided a presentation focused on various transportation finance principles, as well as on a number of specific MBUF issues and concerns.

Charles Samuelson was concerned with the issue of GPS and privacy, recalling that Apple got into some hot water for keeping information that was gathered through their smart phones. He added that the ACLU has problems with tracking features and asked if there might be an easier, less invasive way of assessing an MBUF. Ferrol noted that an attractive option with MBUF is that it allows for increased knowledge of traveler behavior and a reduction in peak-period travel; these advantages are lost if revenues are collected via annual fee.

Representative Beard noted that the efficiency of collection is an attractive aspect of the fuel tax, adding that fraud is difficult as there are only about 100 wholesalers in Minnesota. He expressed wariness over creating a new bureaucracy to administer MBUF, revealing a preference for having a certified vendor rather than state employees administer the system and collect fees. Such an approach would create opportunity for the private market. Any approach would require strict protections of driver data, and a court order should be necessary to access any personal driver data.

Cory noted that MBUF technology demonstration planning revealed the potential for drivers to download additional “apps” – such as safety or traveler information – that would provide a value added component to an MBUF approach.

Jim recalled a comment made at the recent Rethinking Transportation Finance Roundtable event on MBUF during which the Reason Foundation’s Dr. Adrian Moore said: “Only your car should know where you’ve been.” Jim added that these sentiments were received favorably, and that his impression is that the University of Minnesota’s Center for Transportation Studies has the appropriate technology and mechanisms that would allow for consumer privacy. Jim also noted that equity is a big concern, recalling a recent CTS presentation from Dr. David Kittelson in which the speaker suggested the increasing number of alternative fuels only exacerbates the difficulty with the existing fuel tax.

John H asked if a whole new technology is necessary to address the fuel tax issue. If so, he added that a national scheme would be better than several disjointed statewide approaches. He noted the considerable difference in administrative costs between the current fuel tax regime and a proposed MBUF approach, whereby costs would be several times greater.

Charles suggested that if the real issue is an underfunding of the highway transportation system, then one possible solution would be using a system of tolls to finance highways.

Barb Thoman suggested that, given concerns about underperformance of the gas tax, it might be helpful for the task force to see a slide about state transportation revenue picture in total with all three sources of revenue: MVEST, gas tax and vehicle tabs. She added that this would allow the group to consider the overall revenue picture. She also cautioned against narrowing the scope of what services and/or infrastructure might be funded with MBUF too early and prevent the task force from fully deliberating all options. For instance, it may be a desirable policy objective to use revenue to supplant local property taxes since a large portion of property tax receipts goes to transportation.

Senator Scott Dibble echoed Barb’s point on the importance of considering MBUF in the context of the broader transportation funding picture. He added that while privacy concerns are very real, discussion of MBUF is part of a wide-reaching conversation involving a lot of different ideas; to this extend, he would like to see MnDOT share its thoughts on a number of similar or related projects, including those involving innovative finance, value capture, etc. Lastly, he noted that the Senate transportation bill faced two significant amendments while being debated on the Senate floor recently: the first amendment, which failed, included a ban on all toll roads; a second amendment, which passed in the Senate but failed to gain support in the House, included a ban on formal discussion of MBUF itself.

Chairman Lieder was pleased that initial discussion of MBUF did not focus disproportionately on privacy issues. He reiterated a call for policy changes that included provision for charging for road capacity, whether it’s through MBUF or another approach.

Wade Kline expressed an interest in pursuing a complex approach in which different roads are charged different rates according to use and need. He added that while smart phone technology is great, not everyone has access to it; as such, any system should be fair and accessible to all.

Bill recalled the stated purpose of the task force: to focus on evaluating MBUF as a potential alternative funding mechanism. He encouraged the group to think in terms of the delta, the difference, a new approach could foster, adding that behavior change – in the form of getting vehicles off Minnesota roads at peak periods – is not a bad goal. He noted that Minnesota is a leader in terms of growth rate of congestion and that more fuel efficient vehicles paired with more total vehicles may leave significant problems to solve. He said he would be curious to see if MBUF could manage behavior and provide worthwhile

systematic change. At Fed Ex, we don't want to see congested roads at the end of the day when pick-ups are in demand.

John H warned that it would be difficult for the trucking industry to recover variable charge from clients.

Lee complimented the group for engaging in such a great discussion, one in which most of the significant issues were raised and put on the table. He added that the next few meetings will allow the group to dive deeper into specific policy issues. The goal is to kick the tires over the course of next few meetings and then put forth a list of policy recommendations.

John D suggested that subsequent meetings would focus on presentation of various technology and the specific approaches taken in the Minnesota technology demonstration; MBUF in the context on the broader transportation funding picture; generation of a draft problem statement; discussion of potential MBUF administrative costs; discussion of various policy objectives and concerns, such as privacy; and a report back from MBUF Symposium taking place in Breckenridge, Colorado, June 13 – 15.

Jim acknowledged the difficulty in examining such a complex issue as MBUF and in promoting significant policy reform, recalling a passage from author James Baldwin on the human inclination to find heaven: "Everyone wants to go there, just not now."

Senator Dibble suggested that the draft problem statement should be circulated before the next meeting; in addition, he has some materials from the National Council of State Legislatures that is accessible for the non-expert and might be of use for the group.

Bill asked if there are other states that Minnesota can benchmark itself against in terms of advances in MBUF. Lee noted that Oregon in particular is out ahead on this issue and may offer some lessons.

Ken noted that the Mileage-Based User Fee Alliance is an active body studying MBUF.

Bernie announced that the next meeting is tentatively scheduled to take place on Wednesday, July 27, from 1 – 3PM at the Humphrey School. Given the potential for a state government shutdown, Cory noted that the University will be under the same rules as other contractors and thus the meeting may need to be rescheduled in the event of a prolonged government shutdown. Bill and Barb regretted to share that they each had conflicts at that time.

MBUF TASK FORCE MEETING #2

July 27, 2011, 1:00 – 3:30 PM
Carlson School of Management

Summary Minutes

Members in attendance: Chair Bernie Lieder; Vice Chair Jim Hovland; Bob Anderson, Minnesota Chamber of Commerce; State Senator Scott Dibble; Margaret Donahoe, Transportation Alliance; John Hausladen, MN Trucking Association; Commissioner Donald Jensen, Pennington County; Bob Krogman, Minnesota Petroleum Marketers; John Mock, MN State Patrol; Marthand Nookala, Hennepin County; Charles Samuelson, ACLU; Barb Thoman, Transit for Livable Communities; Christine Zimmer, Minnesota AAA

Staff in attendance Cory Johnson, MnDOT; Christine Krueger, MnDOT; Ken Buckeye, MnDOT; Lee Munnich, Humphrey School; Ferrol Robinson, Humphrey School; Matt Schmit, Humphrey School; John Doan, Atkins

Via phone: Wade Kline, Fargo-Moorhead Metro COG; Joe Nigg, Fargo-Moorhead Metro COG; Rob Zimmer, Battelle; Sheryl Miller, SAIC

Task Force Chair Bernie Lieder called the meeting to order, offering some brief opening remarks. He and Task Force Vice Chair Jim Hovland recalled their recent experience at the MBUF Symposium in Breckenridge, Colorado. Jim noted the event included several useful presentations, and he requested that the group be provided a link for accessing these.

Scott Peterson, MnDOT, provided a primer on transportation revenue sources and uses.

Rob Zimmer, Battelle, and Sheryl Miller, SAIC, briefed the group on the MBUF technology demonstration. John Hausladen commented that it seems as though the demonstration has gone way beyond its legislative directive, especially with regard to the issue of revenue neutrality. Cory Johnson noted that the enabling legislation is pretty generic and that a MnDOT review of the legislative directive led the department to believe that a thorough review of MBUF and related issues would make the effort most worthwhile.

Christine Zimmer asked if the demonstration was measuring the speed at which participant drivers were traveling; in other words, was the demonstration collecting data on time or simply miles. Rob noted that only total miles traveled were being collected.

Senator Scott Dibble asked why participants were given a choice on whether to opt in or to opt out; specifically, he wondered if the choice was provided in order to collect data for the test or to allow participants to feel more comfortable with the trial – or if MnDOT was anticipating how a system might be implemented in the future. Rob was not sure why people would want to opt out; in a real system, the opt in / opt out component would be unnecessary. Cory noted that MnDOT never got around a design problem, and that allowing participants to opt out was a better alternative than to have them simply throw the transponder units away.

Jim recalled that information was gathered at the pump in the Oregon demonstration; asked why a more elaborate approach was taken with this project. Cory noted that MnDOT did not want to duplicate what Oregon did, but rather was very interested in learning more about readily available, off-the-shelf technology and related applications.

Charles Samuelson was curious how the data would be classified under the Data Practices Act. Cory noted that MnDOT received an exemption for the demonstration, but that an exemption would not be an option if the approach was fully implemented. However, there may be some privacy advantages to having a private firm collect and retain data under an implementation scenario.

John Doan made a brief presentation on findings from the online survey and Greater Minnesota listening sessions. Christine wondered if listening session participants specified for what specific transportation purposes new revenue was needed – that is, for roads or for transit. John recalled that participants wanted new revenue for transportation generally and roads in particular.

Discussion next turned to consideration of the draft MBUF problem statement. John Hausladen indicated that he had an alternate problem statement language in mind, and he proceeded to distribute a draft alternative. He observed that the task force was in a position to add a lot of value to the broader transportation finance discussion, and that he was interested in examining some important related issues. Specifically, he's interested in establishing where the fuel tax fits into the larger transportation revenue mix; his alternative language also introduced a new term: "non-taxed alternatively fueled vehicles." Margaret Donahoe voiced support for the new language, adding that it seemed to address more issues. Ferrol Robinson expressed an interest in making sure the issue of equity is addressed in final problem statement language.

Senator Dibble offered a couple of points: first, he encouraged the group to remember that the fuel tax doesn't fund the entire transportation infrastructure system and that other taxes we all pay contribute to the system; and, secondly, changes in demographics, land use, travel patterns, and the general market will change fuel tax receipts – vehicle fuel efficiency isn't the only factor.

Charles expressed support for the provision in the alternative language about the system's failure to raise appropriate funding, suggesting that the problem statement reference this fact right away. However, Barb cautioned that the new language might refocus attention away from equity concerns and toward the need for additional revenue. Jim agreed, adding that's why the initial draft language led with the equity issue. He offered that other states such as Nevada plan to lead with equity argument, suggesting that the group carefully consider this distinction.

John Hausladen urged the group to be honest that the system needs new revenue in the future and that, above all, MBUF is about raising new revenue; he suggests the problem statement should reflect this goal rather than how to sell it.

Marthand Nookala cautioned the group against binding MBUF only to road infrastructure. John Hausladen noted that his alternative language purposely referenced roads and bridges because current constitutional language dedicates fuel tax receipts accordingly.

Christine was curious if the demonstration would track buses or similar vehicles to log their miles traveled as well, asking if buses would likely pay the fuel tax in the future. Cory noted that the demonstration is just tracking vehicle miles of participants' passenger vehicles. Senator Dibble added that buses remove vehicles from the road, thus reducing overall use of and damage to the roads.

Jim recognized that discussion of the alternative problem statement language raises a fundamental question the group needs to resolve regarding equity and revenue. However, he urged that the group not presume MBUF is simply a vehicle for raising transportation funding, adding that equity was at the heart of the project's original goal and the legislative directive; he warned that focusing on MBUF as a revenue raiser would be a mistake. However, Margaret suggested that many people look to MBUF as a way to address performance issues of the fuel tax – and the likelihood for lost revenues; Jim is fine with acknowledging MBUF's dual purpose, but he urged the group to lead with the equity piece.

John Hausladen offered that the alternative language include reference to a vehicle's "proportional share" such that the distinction be made between fuel efficient vehicles that still use fossil fuels and vehicles that use completely different sources of fuel; in both cases, the vehicle owners should contribute to funding the transportation system. Bernie suggested that the problem statement be revised to incorporate both items.

Bob DeBoer asked if the group was really satisfied with a problem statement that leads with the revenue piece. Jim stated that he would prefer reversing the first two sentences to address this issue, thus reference equity first and revenue second. Christine suggested that the alternative language clarifies that travel behavior and equity are also factors. Charles noted that this is a problem statement, not a marketing statement – and that revenue is the real problem.

John Hausladen offered an amendment to his proposed alternative language and accepted friendly amendments from Senator Dibble, Jim and Barb. Adoption of the alternative problem statement language was moved, seconded, and carried by a voice vote.

John Doan noted that MnDOT will allow Task Force members to participate in the demonstration; those who are interested should let him know before the next meeting – which is scheduled for Wednesday, August 31, at 1pm.

MBUF TASK FORCE MEETING #3

August 31, 2011, 1:00 – 3:30 PM
Humphrey School of Public Affairs

Summary Minutes

Members in attendance: Chair Bernie Lieder; Vice Chair Jim Hovland; Bob Anderson, Minnesota Chamber of Commerce; State Representative Mike Beard; State Senator Scott Dibble; Margaret Donahoe, Transportation Alliance; Steve Elkins, Met Council; John Hausladen, MN Trucking Association; State Representative Frank Hornstein; Commissioner Donald Jensen, Pennington County; Bob Krogman, Minnesota Petroleum Marketers; Steve Murphy, retired state legislator; Roy Terwilliger, retired state legislator; Kathy Tingelstad, Anoka County; Christine Zimmer, Minnesota AAA

Staff in attendance: Ken Buckeye, MnDOT; John Doan, Atkins; Cory Johnson, MnDOT; Christine Krueger, MnDOT; Lee Munnich, Humphrey School; Jeremy Neeck, Minnesota Department of Revenue; Scott Peterson, MnDOT; Ferrol Robinson, Humphrey School; John Schamber, Accora Research; Matt Schmit, Humphrey School

Others: Ron Erhardt, retired state legislator; Matt Lemke, Minnesota AAA

Via phone: Wade Kline, Fargo-Moorhead Metro COG; David Ungemah, PB World

Task Force Vice Chair Jim Hovland called the meeting to order, proposing to amend the agenda to “review” as opposed to “review and adopt” the current problem statement language; the amendment carried by voice vote. Motion to approve minutes from the July 27 Task Force meeting was raised and seconded, and the minutes were approved.

Ferrol Robinson provided a brief summary of the online survey results. Sen. Scott Dibble requested that full survey results be shared with the group; in addition, he was curious if a series of questions similar to those asked of the survey respondents also will be asked of those participating in the technology demonstration.

John Hausladen inquired as to how survey respondents were identified to take part in the survey. John Schamber replied that a list of randomized contacts was purchased from a reputable source, ensuring that the sample would be sufficient and statistically significant; he also noted that the survey results could provide a baseline to which future queries might be compared.

Regarding low survey support for peak-time charges, Steve Elkins wondered if the survey results would be different if the question was rephrased to ask if people who travel during low-peak times deserved a discount.

Lee Munnich next provided an overview of plans for targeted outreach to key stakeholders, noting that the sessions would be used both to inform opinion leaders of the MBUF project and to seek input on related issues; the group reviewed a list of such targets, and Lee asked for feedback from the group. Marga-

ret Donahoe suggested that the list include transportation engineers; Sen. Dibble noted that neither the Minnesota Center for Environmental Advocacy nor any labor groups were currently represented on the list; Steve Murphy offered that the Minnesota Service Station Association be included; Wade Kline suggested that Minnesota Public Transit Association might be helpful; and Rep. Mike Beard urged project staff to reach out to Rep. Mary Liz Holberg, the National Federation of Independent Businesses, and possibly select bloggers, too. Lee noted that project staff had not been planning to include media in the outreach, and cautioned that bloggers not be targeted at this time.

Discussion turned to consideration of revised problem statement language that no longer specified MnDOT as the agency charged with determining the viability of MBUF for Minnesota; it was widely agreed that this was a task best reserved for the Legislature. However, John Hausladen noted the reference to MnDOT was intentional in the language he had offered at the previous Task Force meeting. Cory Johnson voiced concern that the current gas tax is collected by the Revenue Department and that the Department of Public Safety collects various fees, including license tabs; as such, the issue is bigger than MnDOT and determination of MBUF viability should rest with the Legislature.

Vice Chair Hovland suggested the group treat the language as a “working problem statement” as Task Force deliberations continue, noting that he did not want to see the group further delayed while it tries to examine important aspects of MBUF that may inform future problem statement revision. Wade Kline expressed an interest in affirming a strong problem statement sooner rather than later. John Hausladen acknowledged the need for a frame to guide Task Force proceedings, but was satisfied to table discussion of the problem statement for the time being in order to move forward.

Sen. Dibble observed that the current problem statement reads like a resolution that could be broken into two paragraphs: the first describing the world today; and the second, what can be done about it. Rep. Beard suggested that the first sentence reads as a political statement that will cause controversy, while the second statement is factual. Although he agrees with much of the problem statement, he cautioned that the first sentence sounds like a call for a tax increase and thus will engender certain opposition. Vice Chair Hovland voiced support for restructuring the problem statement by leading with facts and following with potential options, akin to conveying “cause and effect.”

Ferrol Robinson led discussion of various policy objectives; John Hausladen provided alternative language for the policy objectives and he asked that it be distributed to the group, and it was. Steve Murphy believed that a national approach would be needed, but not sufficient to have meaningful pilots of MBUF. Donald Jenson shared that he was not confident any Congress would ever act on an MBUF approach. Margaret Donahoe suggested that state pilot projects have not moved to the point of widespread implementation for a reason; she added that transportation funding is the key concern. Sen. Dibble recognized that aligning state policies with those of other states and the federal government is a common problem for the Legislature on a number of issues; at a minimum, he added, we need to know what the relevant federal players are saying (for instance, what is AASHTO’s position on MBUF and what has the state of Oregon learned from its MBUF trial?). He concluded that it would be a shame if Minnesota passed on the opportunity to examine MBUF given the role states play as “laboratories for innovation.” Chair Lieder noted that a national expert would be present at the September 21 Task Force meeting, and that a number of national experts would be engaged before the project concludes. John Doan confirmed that Rand Corporation’s Paul Sorenson would be providing a briefing at the next Task Force meeting, where a number of “value added” services would be discussed. Ferrol noted that the issue of federal versus state implementation was a scheduled discussion item for the next Task Force meeting.

John Hausladen expressed an interest in prioritizing the policy objectives currently before the group. Working from his alternative language, which was very similar to that originally presented to the group, he noted that: (1) state versus national implementation is an important issue to consider; (2) it is appropri-

ate to say that MBUF is good but not appropriate for the state to implement; and (3) many trucks currently fuel outside Minnesota borders due to the comparatively lower fuel base rate; in sum, state policy decisions will likely result in consumer behavior changes.

Agreeing that implementation issues might best be left for the next Task Force meeting, Vice Chair Hovland raised the idea of an “Upper Midwest collaborative” as a middle ground between state- and federal-level implementation. He suggested the group next consider the issue of equity and the use of funds, reiterating the importance of leading the discussion of MBUF with full treatment of equity. Sen. Dibble agreed that equity is the real issue, adding that as technologies change future discussion of equity will be required. Wade believed that equity is important, but congestion mitigation is just as strong a consideration – and one that should not be lost in the discussion. Steve Elkins observed that congestion mitigation is probably the biggest benefit of MBUF. Steve Murphy noted that privacy concerns are real, too – and that liberals and conservatives alike share these concerns. Chair Lieder voiced an equity-related concern, noting that owners of bikes, ATVs and golf carts do not currently pay for the use of roads with these vehicles. Bob Krogman countered that unless these motor vehicles run on electric batteries, their owners very likely already pay the gas tax to operate them.

Margaret Donahoe suggested that there are other ways to deal with the issue of equity other than MBUF. For instance, there are existing taxes targeting electric vehicles; in addition, electricity used to power electric vehicles could be taxed in the future. She added that how revenue is collected and who is paying the bill are two entirely different questions. Steve Murphy cautioned that it is likely easier to equip a vehicle with a transponder than it is to tax electricity use. Rep. Beard offered that the issue of equity might best be dealt with through licensing and registration. Bob Krogman asked at what point MBUF might apply to an electric vehicle – at 80 mpg, at 60mph, etc.

Wade Kline suggested that perhaps the group need not prioritize objectives, but rather should reevaluate how revenues might be collected. He believed that all the objectives were good, and urged the group to take a view of the bigger picture. This is important stuff, he added, and it is vital that states start to take control of funding the transportation system; the federal government is not going to lead. Ferrol Robinson clarified that equity refers to a number of scenarios, including taxing electric vehicles, accounting for vehicle weight and use of diesel engines; he urged the group to consider the issue in a broad sense.

Steve Elkins added that another objective might be to minimize required investment in the transportation system – that is, squeezing more capacity out of existing infrastructure. Wade was curious as to the intent of the policy objectives, asking how they are intended to be used. Ferrol Robinson noted that policy objectives are needed in order to determine how to implement a potential MBUF system; the policy objectives will also guide how MBUF is explained to the public, policymakers, etc.

Bob Anderson moved for adoption of the first two objectives – namely, promoting equity and generating transportation funds. Rep. Beard voiced concern with the second objective of generating transportation funds. Vice Chair Hovland asked if there was a preference for reverting to alternative language for the second objective. Margaret Donahoe objected, adding that if there is no new revenue in an MBUF system then what is the point; she was not supportive of revenue-neutral language.

Roy Terwilliger suggested that current reference to “supplementing” the motor fuel tax is essentially the same thing as calling for “additional” revenue; Christine Zimmer agreed. Bob Anderson accepted the suggestion as a friendly amendment to his motion. Bob Krogman noted that reference to “replacing” the motor fuel tax was important, too; he asked if the goal was to replace the current tax or if the objective should simply read, “generate revenue to supplement the motor fuel tax.” To this, Sen. Dibble asked how long the MBUF vision extended, urging the group to think to the future. Eventually, he noted, we’ll run out of gas – which will force a number of decisions; in the meantime, though, we need to determine how

to fund our transportation system. Ferrol Robinson urged the group to consider a time horizon of the next 15 to 20 years.

Steve Elkins asked for estimates of the anticipated electric vehicle penetration rate; John Doan believed that growth was expected to be modest, with roughly six to seven million new vehicles added to the fleet annually in the near term, HIS Global Insight, JD Power, and Center for Automotive Research staff forecasts that in 2015, approximately 140,000 electric vehicles will be sold. Rep. Hornstein suggested that the more immediate issue relates to new federal fuel efficiency standards, which will be just as consequential as penetration of electric vehicles. Donald Jenson noted that electricity often comes from combustion of fossil fuels; nonetheless, he believes MBUF is a good idea.

Deliberation concluded and the motion to adopt the first two objectives was renewed; the objectives passed by voice vote. Discussion next turned to the remaining objectives. Sen. Dibble worried about “clouding the water” by elevating important, but peripheral, objectives such as protecting the environment or mitigating congestion. John Hausladen agreed that these latter examples should be considered as “critical issues” rather than driving objectives. Rep. Hornstein believed all the objectives were important and that acknowledging so was equally important; he added that the group is gathered due to concerns over fuel consumption.

Vice Chair Hovland worried that listing all objectives as “primary objectives” might dilute their impact and expose MBUF to undue attack; he proposed including two main objectives above all others. Ferrol noted that the use of primary and secondary objectives is customary in other studies. John Hausladen urged the group to consider the first two objectives accordingly and to refer to all others as “concerns” or “issues.” Alternatives such as “policy goals,” “secondary benefits,” and “ancillary benefits” were all raised. Support for use of the term “ancillary benefits” quickly spread.

John Hausladen voiced concern over any policy goal linked to congestion mitigation or behavioral change. Steve Murphy suggested that the group think about what the transportation system of the future might look like, adding that it would be important to keep all the potential tools in the toolbox so that future policymakers can make the eventual decision as to what is important at that time; in addition, in 15 to 20 years a much larger segment of the population will be comfortable with the related technology. Wade Kline agreed, noting that it seemed shortsighted not to mention these objectives in one form or another.

Bob Krogman warned that focus on a 15- to 20-year horizon make current discussion of MBUF moot; rather, he suggested the group determine how to sell MBUF now. Rep. Hornstein cautioned the group to be cognizant of how MBUF is framed; the term “mileage-based user fee” seems to be a challenge. Faced with the question of whether to include congestion mitigation as an “ancillary benefit,” Steve Murphy observed that elected officials need to embrace the role of educating and leading on issues such as MBUF. Sen. Dibble agreed, noting that full and fair discussion of these issues is important; given the relative concern with issues such as environmental protection and congestion mitigation, he urged that their treatment be commensurately down-played in the eventual Task Force report. The group offered support for the remaining policy pieces, provided they be referenced as “ancillary benefits” rather than “policy objectives” and referenced in the report accordingly; a motion to accept the language was seconded and approved.

John Hausladen made a motion to include “nationwide implementation” as a third policy objective. Citing limited time for discussion, Sen. Dibble suggested the issue be left for the September 21 Task Force meeting. Chair Lieder agreed, adding that the topic would be fitting given that the next meeting would focus on implementation issues.

John Doan asked that anyone interested in participating in the technology demonstration let him know as soon as possible; Bob Anderson, Rep. Beard, Sen. Dibble, Steve Elkins, John Hausladen, Vice Chair Hovland, Donald Jenson, Bob Krogman, Chair Lieder, Steve Murphy, Roy Terwilliger, and Christine Zimmer each expressed interest in taking part.

After brief discussion, the group agreed to abide by the current meeting schedule, which includes meetings on September 21, October 26 and November 29. In addition, another briefing would be offered in early October for Task Force members who missed either the third or fourth meeting.

With time running short, the Task Force adjourned.

MBUF TASK FORCE MEETING #4

September 21, 2011, 12:00 – 3:30 PM
Humphrey School of Public Affairs

Summary Minutes

Members in attendance: Chair Bernie Lieder; Vice Chair Jim Hovland; Steve Elkins, Met Council; Ron Erhardt, retired state legislator; Bill Goins, FedEx; John Hausladen, Minnesota Trucking Association; Commissioner Donald Jensen, Pennington County; John Mock, Minnesota State Patrol; Barb Thoman, Transit for Livable Communities; Christine Zimmer, Minnesota AAA

Staff in attendance: Ken Buckeye, MnDOT; John Doan, Atkins; Cory Johnson, MnDOT; Christine Krueger, MnDOT; Joe Loveland, Loveland Communications; Lee Munnich, Humphrey School; Jeremy Neeck, Minnesota Department of Revenue; Scott Peterson, MnDOT; Ferrol Robinson, Humphrey School; John Schamber, Accora Research; Matt Schmit, Humphrey School; Peter Zuniga, MnDOT

Others: Matt Lemke, Minnesota AAA

Via phone: Bob Anderson, Minnesota Chamber of Commerce; Bob DeBoer, Citizens League; Wade Kline, Fargo-Moorhead Metro COG; David Ungemah, PB World

Chair Bernie Lieder called the meeting to order; introductions ensued. He noted the amount of work facing the Task Force, adding that the group would be focusing its efforts on producing a Task Force report that reflects policy consensus, issues of disagreement, and an overall recommendation. A draft report outline would be circulated in mid-October and the framework of the report would be a topic for discussion at the October 26 Task Force meeting. The report will be the product of an iterative process, and Task Force staff will be incorporating input and feedback as Task Force deliberations continue.

Donald Jensen moved approval of the minutes from the August 31 Task Force meeting; Christine Zimmer seconded the minutes and they were approved without revision.

Dr. Paul Sorensen proceeded with a presentation on "Mileage-Based Road Use Charges: Opportunities and Challenges to Direct Usage-Based Charges for Transportation Funding."

John Hausladen asked if the lack of a solution for assessing fees on alternative energy seemed to be driving interest in MBUF; he followed by asking if there was an alternative to MBUF should it not work out. Dr. Sorensen noted that MBUF provides a sustainable transportation funding alternative to the fuel tax and that its ability to effectively charge hybrids and electric vehicles is a clear benefit. As for non-MBUF alternatives to the fuel tax that capture revenue from hybrids, electric vehicles and other alternative-fueled vehicles, Dr. Sorensen offered interstate tolling as one possible option.

Ron Erhardt asked if Dr. Sorensen could provide examples of potential value-added services that might accompany MBUF. Dr. Sorensen noted that reduced driver costs, congestion mitigation, and added user convenience and safety are all potential value adds. In particular, pay-as-you-drive insurance, automated

parking, "IntelliDrive" technology and related vehicle communications options are all likely near-term added value applications.

Ron followed by asking if Dr. Sorensen would expect states to implement different rates and fee levels; according to Dr. Sorensen, such a scenario is very likely – especially if MBUF is implemented at the state rather than federal level.

Ron also inquired as to whether Dr. Sorensen viewed MBUF as replacing or supplementing the fuel tax. Dr. Sorensen replied that full-scale replacement of the fuel tax with MBUF would be the more likely scenario; however, some may advocate keeping the fuel tax in place as a means of taxing carbon.

Barb Thoman was glad to hear that Oregon is getting closer to implementing its pilot project; she asked if it would apply to hybrids or all electric vehicles. Dr. Sorensen noted that the Oregon pilot would apply to all vehicles that get power from non-gas sources – that is, plug-in hybrids and all electric vehicles. Of the three pilots currently underway in the U.S., the Oregon model is the furthest along.

Regarding cell phone based options for counting miles, Donald Jensen asked if dead spots in rural areas would pose a problem. Dr. Sorensen noted that dead spots in cellular coverage areas could be overcome using an algorithm for estimating mileage in such areas; he added that the University of Minnesota's Max Donath would be the best person to answer this question as he has done a lot of research on MBUF applicable technology.

Wade Kline asked how, given likely concerns, Dr. Sorensen envisions progress on optimal long-term implementation while states begin moving forward incrementally. Dr. Sorensen described an evolving approach centered on user choice, which can address privacy through odometer readings rather than by using technology. Acceptance of technology should increase over time, with drivers likely opting for technology once they're comfortable with it. The real challenge will be overcoming political concerns related to privacy rather than any practical concerns. MBUF would not require detailed travel information from everyone; a small sampling of the total number of vehicles on the road would be sufficient.

Ferrol Robinson facilitated policy discussion, beginning with issues related to privacy.

John Hausladen would like to include a legal perspective as part of the discussion of privacy at the next Task Force meeting; he senses a disconnect between policy analysts and legal experts. Chair Lieder asked if MnDOT had legal staff who could address this question. Peter Zuniga introduced himself as MnDOT legal staff and noted that MnDOT generally views data collected under an MBUF scheme as public information under law; however, the current MBUF demonstration has received an exemption and any collected information will be treated as private data. MnDOT may recommend changes to privacy law under full MBUF implementation. Dr. Sorensen noted that information likely would be collected and stored temporarily through onboard computation, and then only information required for billing would be sent to the collector agency. Under this scenario, most data would not be accessible. Christine Zimmer asked if data MnDOT collected could be subpoenaed for use in a court of law; Peter replied that it could, provided a subpoena was issued. John cautioned that the state or federal government could easily change its view of how to treat data; there are no guarantees collected data will remain private.

Discussion turned to the use of potential MBUF revenues.

John Hausladen believed revenues should be used for roads and bridges only; current state fuel tax revenue does not fund transit, for instance. Wade Kline disagreed, noting that the federal fuel tax currently funds roads, bridges and transit; as such, MBUF revenue should fund transit as well as roads and bridges. Steve Elkins advocated for treating transportation as a system and funding it accordingly; he added that

transit holds the more promising potential for improving some transportation corridors. Bill Goins offered that the group consider a phased approach that devoted initial MBUF revenue to roads and bridges, with the scope of revenue use expanding to areas such as transit over time.

Barb Thoman suggested that the Task Force recommend maximizing flexibility with respect to a potential MBUF approach; her organization believes revenues should be used for the broader transportation system, including transit and sidewalks. Donald Jensen cautioned that if the state cannot afford to fund its roads and bridges, then revenue from a potential MBUF approach should not be spent on transit or airports; he agreed with previous sentiment supporting a phased-in approach that began by funding roads and bridges. Christine Zimmer believed that a phased approach to revenue use may be one way of getting political support for MBUF implementation; focusing on roads and bridges at first may be helpful.

Wade Kline urged the group to commit itself to finding middle ground; it seemed to him as if the group was boxing itself in. Chair Lieder agreed, noting that the final Task Force report will flush out both sides of many of these issues – but that the group should strive to drill deep on these issues now.

John Hausladen asked if the group was ready to consider a motion regarding use of potential MBUF revenues. General discussion followed, and Ferrol Robinson noted that the "ancillary benefits" the group previously agreed to include a call to "improve transportation performance." Wade Kline suggested that perhaps the group should recommend limiting use of potential MBUF revenues to Minnesota's surface transportation infrastructure.

Ron Erhardt sought clarity on what, exactly, MnDOT was expecting from the Task Force – a general framework, tenets of legislation, etc.; he was not sure how specific a recommendation the Task Force should propose. John Hausladen believed the Task Force charge was to delve into the issue and make an objective policy recommendation. Cory Johnson noted that early in the MBUF demonstration process MnDOT realized it would benefit from a thoughtful consideration of related policy issues. He added that the academic world had given MBUF a lot of thought, the Minnesota Legislature had not, and MnDOT was somewhere in between; above all, MnDOT is looking for additional information and thoughtful consideration of the policy issues.

In the spirit of building upon what Oregon is doing with its MBUF pilot, Barb Thoman asked if there was a step Minnesota could take in short-term – by either replicating the Oregon pilot, pursuing something similar or focusing on value-added benefits, for instance.

John Hausladen encouraged the group to consider broadening the pool of revenue collection by incorporating transit miles used, as well as miles logged on roads by bikes and golf carts. Bill Goins cautioned that such an approach could lead to a tremendous amount of debate about the transportation system and its users; he added that perhaps the group should focus on traditional vehicle road use at first, with the intent to address other policy concerns in the future.

Discussion turned to implementation and transition issues. Chair Lieder suggested the group present a report to MnDOT that identifies agreed-upon principals, develops both sides of the controversial issues, and charts a possible course for moving forward with consideration of MBUF. Wade Kline agreed, noting that the group needs to look at what the report's table of contents will look like; he urged the group to start laying out the report content by identifying major issues. He added that it is currently difficult to envision what a report would look like, and he would hate to see the Task Force confronted with a big report and only one meeting to address it. John Hausladen suggested that whatever product is produced, it needs to be balanced, must incorporate data from the listening sessions and online survey; he would like to see the report address the ultimate MBUF question: should we do it – rather than how we do it.

Christine Zimmer observed that the group had yet to address the issue of enforceability; for instance, she was curious if law enforcement would spend time checking equipment rather than writing speeding tickets following implementation of MBUF.

Chair Lieder believed the group is moving in the right direction by identifying the "pros and cons" of controversial issues rather than fully engaging in potential debates or taking drawn-out votes; devoting Task Force time to policy discussion and examination of the issues is most important. He expects that the Task Force report will lead to legislative hearings, and that any possible next steps identified in the report will be considered by MnDOT and the Legislature. Ron Erhardt agreed, adding that the Legislature will delve into all of these issues if it is serious about MBUF.

Ferrol Robinson reiterated that the purpose of this process is to promote discussion. The envisioned Task Force report would be no more than 10 pages long, and it would address discussion topics and Task Force deliberations. The report is going to the MnDOT Commissioner – not the Legislature; the Task Force charge is to advise the Commissioner. John Doan added that MnDOT and related stakeholders want more information that requires policy discussion before weighing in on the question if MBUF should be implemented; consultants and staff are here to provide support and assist the Task Force in these discussions.

Wade Kline noted that a Task Force report 10 - 12 pages in length sounds good; he is not looking for a 100-page document. He added that it would be helpful to review the report outline and see how issues will be addressed in it sooner rather than later. Ideally, he would like the group to move toward a consensus-based recommendation on how the state should proceed. Ferrol Robinson noted that a draft report outline has been discussed with the Task Force chairs at MBUF project management team meetings; the outline and related materials likely would be distributed to the full Task Force in the very near future.

John Doan urged the Task Force to continue discussion of issues related to state versus national implementation. John Hausladen thought Dr. Sorensen's presentation was quite effective; specifically, he found the three slides that summarize policy considerations to be most helpful. Dr. Sorensen noted that the report referenced in his presentation provides much fuller treatment of all related policy considerations.

Ferrol Robinson provided some framing remarks on the issue of rate-setting criteria, noting that the topic tends to come across as much too complex; however, the major potential elements include: time-of-day, road type and geography – these criteria tend to be dynamic, while most others are tied directly to vehicle specifications.

John Hausladen expressed difficulty in seeing how the issues Ferrol identified fit into the discussion as some of these are ancillary benefits rather than policy objectives; he was confused why some of these are coming back now given previous discussion and prioritization. Ferrol noted that any substantive discussion of rate-setting criteria should consider geographic, road type and time-of-day considerations, as well as vehicle weight, type and emissions. Although the Task Force previously had differentiated between policy objectives and ancillary benefits, MnDOT is seeking specific direction on the question of what rate-setting criteria should be included in a potential MBUF approach. John Doan added that the technology demonstration has assumed a number of factors when setting rates; although the Task Force previously discussed these factors generally, it would be helpful to consider and prioritize them under the context of rate-setting.

Bill Goins suggested that rate-setting also be addressed through a phased approach, with the most relevant and important criteria be utilized at first, with other factors possibly being added over time.

Barb Thoman asked which criteria were included in MnDOT's demonstration project. She added that the fuel tax currently accounts for vehicle weight and size, efficiency and emissions; any MBUF scheme that fails to include these would represent worse policy than that inherent to the fuel tax. She also noted that she felt as though Task Force is afraid to make firm recommendations; to that end, it would be helpful for the Task Force to be provided with a list of what it has agreed to already. For instance, the Task Force should be clear on whether or not it believes the fuel tax ought to be supplemented or not.

Cory noted that most of the criteria before the Task Force are currently included in MnDOT's demonstration project; the approach focuses on passenger vehicles, and all vehicles are treated equally in terms of fuel efficiency, emission level, weight and size. (the system could – but does not – account for differences in these areas). Time-of-day charges vary between \$.01 and \$.03 per mile; \$.03 per mile is charged when the vehicle is outside of Minnesota borders, and other geographical considerations are included as well.

John Hausladen suggested that geography and road type criteria are essentially consistent with political subdivisions – and that the reality is these could be proxies for revenue distribution.

Bob Anderson reiterated that the Task Force already had dealt with the rate-setting criteria, adding that the group effectively had prioritized such criteria at its last meeting; the Task Force had also weighed in on the issues of roads versus transit and fuel consumption, for instance. Chair Lieder noted that it would be helpful for the Task Force to isolate these issues for discussion in the report; he suggested it might be appropriate to record a show of hands for support of certain criteria.

Steve Elkins observed that a surcharge might be implemented to dissuade use of certain roads – although he would not encourage this. Dr. Sorensen noted that some states have discussed the possibility that local jurisdictions could impose additional fees in line with congestion pricing; perhaps the Task Force should consider the question of whether local units should be able to levy additional charges. John Hausladen thought the idea sounded like a “Balkanization” of transportation funding, and he expressed concerns regarding potential punitive policy and charging from one jurisdiction to the other.

Wade Kline was concerned that these issues have not been clearly defined, adding that it would have been nice to match the various rate-setting criteria with specific provisions in the problem statement and related policy objectives and ancillary benefits. Christine Zimmer agreed, noting that she would like to see the Task Force report take each criteria and indicate whether there were different perspectives. Dr. Sorensen noted that the rate-setting criteria are the way various policy considerations are accounted for; in other words, this is the way to address any number of various policy goals. Steve Elkins believed he could support all six criteria eventually; at first, though, the focus should be on vehicle weight and size, emission level, fuel efficiency, and mileage.

Ron Erhardt offered a motion to include all six criteria and Steve Elkins seconded the motion; a voice vote followed and the motion failed as the Task Force was split.

Steven Elkins moved that vehicle weight and size, emission level and fuel efficiency be recommended for initial implementation, with remaining criteria to be considered in time; Donald Jensen seconded the motion. John Hausladen felt the Task Force was establishing a bad precedent and that the resulting policy would not be fair to electric vehicles owners or farmers. Chair Lieder called for a hand vote; Steve Elkins, Ron Erhardt, Bill Goins, Barb Thoman, and Christine Zimmer voted in favor of the motion, and Bob Anderson, John Hausladen, Donald Jensen, John Mock, and Wade Kline voted against the motion; the motion failed as the vote was tied.

Bill Goins asked that the Task Force report recommend that some unspecified criteria be implemented. Donald Jensen would like to see staff report back to Task Force with some options for mixing and/or matching certain sets of criteria.

Lee Munnich noted that understands that the Task Force is divided on the issue of what criteria to include in a potential MBUF approach; however, he also understands that phased implementation of rate-setting criteria likely would receive the most support. John Doan appreciated that the Task Force report will reflect the full range of Task Force sentiment and the spirit of discussion; he added that it may be necessary for the group to hold a seventh meeting to provide time for more discussion.

With respect to scheduling another Task Force meeting, John Hausladen noted that switching dates is problematic; as an alternative to advancing the Task Force meeting schedule, he suggested that time be added to each remaining meeting.

With time running short, the Task Force adjourned.

MBUF TASK FORCE MEETING #5

October 26, 2011, 12:00 – 3:30 PM
Humphrey School of Public Affairs

Summary Minutes

Members in attendance: Chair Bernie Lieder; Vice Chair Jim Hovland; Bob Anderson, Minnesota Chamber of Commerce; State Representative Mike Beard; State Senator Scott Dibble; Margaret Donahoe, Transportation Alliance; Steve Elkins, Met Council; Ron Erhardt, retired state legislator; Bill Goins, FedEx; John Hausladen, MN Trucking Association; State Representative Frank Hornstein; Commissioner Don Jensen, Pennington County; Wade Kline, Fargo-Moorhead Metro COG; Bob Krogman, Minnesota Petroleum Marketers; John Mock, Minnesota Department of Public Safety; Steve Murphy, retired state legislator; Charles Samuelson, ACLU of Minnesota; Roy Terwilliger, retired state legislator; Barb Thoman, Transit for Livable Communities; Tim Worke, Associated General Contractors of Minnesota; Christine Zimmer, Minnesota AAA

Staff in attendance: Ken Buckeye, MnDOT; John Doan, Atkins; Cory Johnson, MnDOT; Christine Krueger, MnDOT; Joe Loveland, Humphrey School; Lee Munnich, Humphrey School; Ferrol Robinson, Humphrey School; John Schamber, Accora Research; Matt Schmit, Humphrey School; Peter Zuniga, MnDOT

Chair Bernie Lieder called the meeting to order and introductions followed; minutes from the September 21 Task Force meeting were approved. He noted the meeting agenda would focus exclusively on discussion of the latest Task Force Report draft. Following the meeting, staff will incorporate feedback into a next iteration to be circulated prior to the November 29 Task Force meeting. Vice Chair Hovland urged that discussion begin with Part II of the Task Force Report since Part I was addressed during the September 21 meeting. Nonetheless, written feedback would be accepted for Part I and Part II of the report.

Lee Munnich noted the report recommendations were designed to address previous Task Force discussion; however, the report is certainly open for significant editing or additions as the Task Force deems best. Steve Elkins asked if the MBUF Technical Report previously referenced would include findings from MnDOT's technical demonstration. Lee clarified that MnDOT's technical demonstration will produce a report completely separate from the MBUF Task Force process; the MBUF Technical Report discussed by Task Force staff will capture the broader MBUF Policy Study process, including various inputs and deliverables culminating with the Task Force and its proceedings. John Doan agreed, noting that MnDOT's technical demonstration currently consisted of 150 participants; there was still an opportunity for interested Task Force members to take part in the demonstration.

Given the time previously devoted to discussion of the Problem Statement, Jim Hovland urged the group to consider the report's Policy Objectives on page 10. He suggested adding the words "over time" to the end of the second policy objective such that it would read: "Generate transportation revenues by supplementing or replacing motor fuel tax with mileage-based user fees over time." He also suggested that the "Ancillary Benefits" that follow be referred to as "Potential Ancillary Benefits" due to potential for legislators and others to misunderstand or mischaracterize the current statement. He wanted to make it clear

that the Task Force is looking at the long-term picture rather than proposing significant policy changes for the near term.

Sen. Scott Dibble agreed that it's smart to anticipate the potential for statements to be mischaracterized; it's safer to insert the word "potential." Wade Kline shared his concern that important statements are being watered down. Perhaps it would be preferable to insert a sentence or two about what is meant by "Ancillary Benefits." He also shared an interest in taking a long view on the issue. Jim offered possible use of the term "Ancillary Long-Term Benefits" or "Potential Ancillary Long-Term Benefits" rather than "Potential Ancillary Benefits."

John Hausladen urged the group to take a step back for a moment. He recognized the draft report reflects a lot of work by a lot of people, and he was happy the trucking industry had been invited to the table. However, he did not believe the recommendations accurately captured the Task Force views; rather, the report reads more like an advocacy or academic piece, and he expressed concern that the background portion of the report was foreordained; he proceeded to reference a separate ITS report that had been assembled by Humphrey School researchers.

John offered three concerns with the current MBUF Task Force Report: first, it overstates potential benefits of MBUF; second, it understates major problems associated with cost, enforcement and privacy; and third, it assumes, without considering other options, that MBUF is the only alternative. Above all, though, he suggested the report fails to address the question: should Minnesota do this? In addition, the Problem Statement had been rewritten and was not the language that had been voted on by the Task Force.

According to John, MBUF was one alternative among many that is worth consideration, and he felt the report needed to be dramatically scaled back. Given the report's current form, he had an interest in issuing a minority report and he encouraged others to consider joining him. He closed by stating the Minnesota Trucking Association (MTA) opposed the current draft report and would be expressing its opposition to the Legislature.

Ron Erhardt asked if either John or the MTA had an alternative proposal. John replied that he envisioned a minority report with four central tenants: retain and increase the fuel tax; assess fees on alternative energy sources; raise registration fees; and dedicate new revenue to the Trunk Highway Fund.

Margaret Donahoe also expressed concerns with the draft report; specifically, she had questions regarding alternative fuel use, adding that Minnesota currently taxed alternative fuels and that some alternative fuels were currently taxed at the same rate as gasoline. She noted the report does not reflect this, nor does it say anything about the motor vehicle sales tax (MVST) or registration revenues. Likewise, it fails to mention that the fuel tax is constitutionally dedicated. The report must be accurate and complete, and most of this information is not hard to acquire.

Chair Lieder noted there have been many studies on alternative fuels and he was concerned that a report including a full treatment of policy similar to what Margaret suggested would take too long and be beyond the scope of the Task Force. Acknowledging the point, Margaret asked that the report at least include some baseline facts, such as the current tax on each fuel.

Jim Hovland believed the report represented significant progress. He supported the idea of including relevant baseline data such as Margaret suggests. He stated that he did not join the Task Force for it to be a show, and he was really bothered that the recent CTS Conference included a presentation that gave the impression the Task Force had reached conclusions. He was sensitive to MTA's concerns and was not interested in recommending policy that would be economically disadvantageous. However, the focus of

the Task Force is simply to consider MBUF and determine whether it should be an “arrow in the quiver” of policy tools.

Tim Worke apologized for having missed the previous Task Force meetings; however, he was able to attend the make-up session offered in October and was disappointed that the session did not cover the topic of implementation costs. As a result, he was surprised to learn that MBUF would require a new collections system. Chair Lieder noted one of the initial Task Force meetings included a thorough discussion of costs. Margaret Donahoe asked why the report did not include such discussion of costs.

Ferrol Robinson noted the Task Force Report was intended to reflect Task Force deliberations; a separate Technical Report would capture the full scope of MBUF and related content. He added that the cost of collection under the current fuel tax scheme is two percent; a potential MBUF approach likely would cost 10 – 15 percent initially, with costs declining over time. He added that the issue of determining future costs associated with a potential MBUF model is clearly identified in report Recommendation 5.

John Hausladen suggested the language used to describe potential MBUF benefits was too strong. In addition, he believed that “a 10- or 20-fold factor in cost is not acceptable. These are important considerations and they should not be buried in a technical report.” Chair Lieder replied that much of what John proposed is beyond the charge issued to the MBUF Task Force. The Task Force process was not expected to include a specific recommendation per se, but rather to identify issues and guidelines for consideration.

Charles Samuelson expressed concerns with the privacy issue, but he recognized the need for moving to a system like MBUF. Although the proposed technology was concerning, he understood that a \$650 million annual funding gap for transportation infrastructure was not sustainable. He would like to see this gap – and specifically the need for additional funding – highlighted in report. According to Charles, MBUF is probably a good way to increase funding - privacy concerns aside.

Margaret Donahoe noted the Problem Statement says that “future revenues will be inadequate.” However, she lamented that current revenues were already inadequate and that future revenues would be even more inadequate; she added that the report must be factual and that it currently left the impression that the fuel tax works.

Don Jensen recalled such discussion used to be in the Problem Statement. Jim Hovland asked when and why the Problem Statement language was changed. John Doan offered some context behind the evolution of the Problem Statement language. He noted that despite the lengthy discussion at the August Task Force meeting, there was a recognition that the equity concerns seemed to dominate over revenue issues during the course of recent Task Force discussions. Thus the current Problem Statement reflected actual Task Force deliberation rather than initial views of what such deliberation would entail.

Ron Erhardt asked, with respect to the costs of implementing an MBUF system versus the current fuel tax system, if there likely would be a point in the future where the cost differential between the existing fuel tax system and a potential MBUF approach would be less significant. Ferrol Robinson noted the German MBUF model included costs of approximately 30 percent two years after implementation; two additional years later costs dropped to 20 percent, and costs now hold steady at around 15 percent. Technology and efficiency allowed collection costs to reduce over time.

Wade Kline acknowledged that some of John Hausladen’s concerns were valid; however, he believed the report was pretty good. He suggested a section be added that captures various concerns and minority views; he offered that the section on page 5 concerning what MnDOT should do next clearly state that more review was necessary.

Steve Elkins noted that the implementation language on page 14 goes a long way in addressing John Hausladen's concerns. John proceeded to distribute a one-page summary that captured the key elements of his alternative view; he noted that it seemed as though the Task Force was addressing a really narrow problem with a broad solution. Although he was not intending to move the new language, he urged the group to consider alternatives.

Steve admitted to some concerns regarding the degree to which the report perhaps overstated Task Force consensus and glossed over important concerns; however, the report seemed satisfactory to him – and he did not want to see it get too long as accessibility and readability were important. His stated desire was to make it useful for targeted audiences.

Bill Goins recalled that the Task Force came together with a strategic goal and proceeded to lay it out in a Problem Statement. Previous discussions set aside certain concerns that were not primary to the issue of MBUF, and the distinction was made between addressing strategy and painting a picture. He speculated that the previously-referenced CTS report on MBUF painted a picture; however, the Task Force should focus on the strategic issue of MBUF's place in Minnesota's policy toolbox. He was concerned that John Hausladen's alternative language may take on too great a scope, but that some of his ideas seemed good and perhaps should seep into the Task Force report. For instance, the Problem Statement noted "several states including Minnesota are considering MBUF;" he suggested the other states be specifically named in the Problem Statement. In sum, he would rather be working with a state that is interested in coming up with a strategic solution, and he urged to group to envision Minnesota leading the country to get something accomplished.

Steve Elkins agreed, adding that the Task Force charge was not to evaluate the adequacy of the funding system, but rather to consider the benefits of adding the MBUF "arrow to quiver." Margaret Donahoe asked the group to consider whether it was, in fact, "adding an arrow" or outright replacing the fuel tax; the latter approach raised a number of concerns, not least of which was agreement on what constitutes necessary revenue.

Chair Lieder suggested that John Hausladen's concerns be incorporated into the full Task Force Report and that, if necessary, a minority report be issued. Lee Munnich recalled Bill Goins's previous recommendation of pursuing a phased approach – in this case, one that included a status-quo model, a partial benefits model and a full benefits model; perhaps the Task Force should go through the recommendations to see what things are agreeable, what things are not, and get these issues on the table so that the next report draft can address these concerns.

Bill Goins believed that Margaret Donahoe raised a great point regarding the nature of MBUF vis-à-vis the fuel tax; he sensed that MBUF was to be considered by the Task Force as a complement rather than a replacement for the fuel tax scheme; he suggested this point be made very clear in the report. Ferrol Robinson believed that, having worked through three internal drafts of the Task Force Report, that it was strong on content. For instance, MBUF System Design Option 8 identifies transition options, specifically the need for further discussion of the replacement versus supplement issue; Option 7 identifies the issue of keeping costs down.

Chair Lieder invited the group to consider recommendations regarding what specific provisions of the report merited additional review or revision.

Jim Hovland agreed that Steve Elkins had a great point regarding the rationale behind the evolving Problem Statement language; Jim agreed the new version is better crafted. He was also satisfied with how the report addressed recommendations; all in all, he thought the report was a pretty well-crafted document.

The group proceeded to read through the report findings and recommendations. John Doan read Recommendation #1, which stated:

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

Ron Erhardt asked if the recommendation suggested that the current transportation funding system was not fair. John Doan replied that it intended to state that the system was becoming unfair. Margaret Donahoe asked how it was determined that drivers were paying a fair share. John noted his intention was not to get weighed down by details of measuring fairness, but rather to acknowledge the principal that fairness is a problem

Jim Hovland suggested the group may want to couch the last sentence of Finding #1 in the future tense and remove reference to fairness such that it reads, "This trend will cause the motor fuel tax to become an increasingly inadequate transportation funding method." Steve Elkins noted that what was becoming unfair was that some people would not be charged anything beyond the registration fee for use of roads. In his mind, diplomats would call such phrasing constructive ambiguity; as such, he suggested no change to the language.

Barb Thoman called attention to Finding #1, which stated:

Minnesota has entered an era in which an increasing number of vehicles are using little or no conventional motor fuel. With the current funding system largely dependent on a motor fuel tax, this means that some drivers are now paying much more than others for the cost of building, maintaining and operating the roadway transportation system. This trend is causing the motor fuel tax to become an increasingly unfair and inadequate transportation funding method.

Specifically, she pointed to the second sentence that began: "With the current funding system largely dependent on a motor fuel tax..." She questioned whether the statement was correct, adding that MVST and tab fees raised more revenue than the fuel tax; the motor fuel tax was one of four revenue sources, and it was important to keep this in mind throughout the text. She suggested that staff refer to Scott Peterson's previous presentation for an applicable chart and urged the group to make this point clear.

Sen. Scott Dibble noted that if the group was talking about the entire transportation funding system, then property taxes and state general obligation bonds were also in play; a broad swath of Minnesotans pay for transportation system.

Steve Elkins suggested including a chart that showed the share various revenue sources played in funding the larger system; also, he suggested replacing the term "unfair" with "disproportionate." In addition, John Doan suggested the group take the word "largely" out of the sentence.

Discussion shifted to review of Recommendation #2, which stated:

The Task Force believes that any future transportation funding method must be flexible enough to cover all vehicles using the transportation system, regardless of the fuel(s) they use.

Bob Krogman asked why the word "flexible" was used. Similarly, Margaret Donahoe asked what was meant by "any future transportation funding method." Ron Erhardt urged the word "method" be pluralized.

John Hausladen suggested that Recommendation #2 presented the perfect opportunity for identifying the possibility of taxing electricity, for instance. John Doan noted the taxation of electricity was reflected in Recommendation #6; Recommendations #1 and #2 were intended to be high-level statements.

Jim Hovland offered alternative language for Recommendation #2: “The Task Force believes that Minnesota transportation funding must cover all vehicles using transportation system regardless of fuel type used.” Christine Zimmer observed that no mention had been made of including bikes, which also used the road.

Sen. Scott Dibble offered that “biofuels” be added in order to the list of fuels enumerated in Finding #2, which stated:

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

Discussion turned to Recommendation #3, which read:

The Task Force recommends that state policymakers should move towards a thoughtful debate about whether to use an MBUF system to address future gaps from motor fuel tax revenues and usage of the transportation system.

Chair Lieder suggested the word “can” be replaced with “could” in finding #3, which previously stated:

While MBUF faces significant challenges that must be overcome before it can be used broadly in Minnesota, it is a unique transportation funding method that can (a) ensure that all drivers pay their fair share of transportation costs, and (b) be flexible enough to be effective with any future fleet of vehicles.

Barb Thoman urged adding “(or any state)” after reference to Minnesota in the recommendation. Bill Goins asked if Barb’s suggestion focused too bright a national light on the document; he liked the strategic nature of the current draft and feared the new language Barb proposed might confuse the next recommendation. Barb agreed and withdrew her suggestion.

Discussion turned to Finding #4, which read:

The Task Force feels that a federal MBUF could better address interstate travel and commerce. However, a federal MBUF is widely considered to be politically infeasible in the current policy environment. Therefore, the Task Force believes that states or regions may need to take the lead to avoid a transportation funding crisis caused by an increasingly unfair, inflexible and inadequate motor fuel tax.

Charles Samuelson suggested removing the last line of the finding as it seemed a little editorial. Margaret Donahoe agreed, adding it was fine to say that the state should play a leadership role; she was not sure it was true that federal implementation was politically unfeasible. Sen. Scott Dibble suggested clarifying the sentence by inserting: “states and/or groups of states” as it was not uncommon for states to take the lead role.

Bill Goins noted a federal approach to MBUF could address interstate commerce; he suggested removing the portion of the last sentence following the word “crisis.”

Discussion shifted to Recommendation #4, which read:

The Task Force recommends that state government leaders prepare to play a leadership role in piloting larger-scale MBUF trials.

Sen. Scott Dibble inquired as to what was meant by reference to “larger scale MBUF trials.” Jim Hovland suggested removing the term “larger scale” and inserting “piloting MBUF trials in Minnesota or in partnership with other contiguous states.”

John Hausladen asked if the group was prepared to recommend that resources be allocated to a future examination of MBUF. Bill Goins believed that MBUF was a worthy goal; Charles Samuelson voiced agreement with Bill. Steve Elkins also agreed, urging some further revision of Recommendation #4. Jim Hovland suggested the group substitute the term “think” where “feel” was currently used.

Discussion turned to review of Recommendation #5, which stated:

The Task Force believes that before Minnesota moves forward with MBUF, MnDOT should conduct a detailed technical analysis of MBUF to evaluate the issues, concerns and design options discussed. 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 what the Legislature and Governor jointly deem to be an adequate roadway transportation system for all parts of Minnesota.**
- b. Revenues from MBUF should be used for transportation purposes.**
- c. Administrative costs should be kept as low as possible without compromising system effectiveness.**
- d. Fees should reflect, in part, the relative amount of cost imposed by different vehicles and users on the transportation system and the environment.**
- e. The MBUF system should clearly disclose the fee levels paid by users, in a way that is transparent.**
- f. The MBUF system should be designed in a way that does not transmit personal information and data, thus protecting user privacy.**
- g. The initial MBUF system could start out simply, and phase-in additional features and value-added**

With respect to Recommendation 5.a, Barb Thoman suggested replacing “roadway” with “surface transportation.” Bob Krogman inquired as to whether the group had established that its focus was on roadways rather than on surface transportation, broadly speaking. Steve Murphy noted state statute specified that MnDOT must take into consideration bikes and pedestrians, and he believed the term “roadways” should be inclusive.

Rep. Mike Beard observed that the constitutional dedication question had not been discussed; he asked if the group was getting away from constitutional dedication of the user fee. If so, he warned that MBUF

would have a steep hill to climb with legislators. He asked what would happen to the gas tax if MBUF were implemented; for him, this was the essence of the matter.

Sen. Scott Dibble noted the constitution states “highway purposes” rather than “roads and bridges;” he asked that Betsy Parker provide a legal perspective on related state constitutional questions. Steve Murphy added that the fuel tax has been used for a variety of purposes in the past and that the Legislature never had a problem using fuel tax revenue for shoulder lanes or broader highway purposes.

Betsy Parker provided the group with two handouts – one on the process of amending the state constitution and the other on the motor vehicle sales tax (MVST). She noted the state constitution had been amended 21 times since 1968. The trunk highway system was created in 1920; a different constitutional framework may be necessary for MBUF. The constitution did not define what was meant by “highway purpose,” but courts have determined that the term encompasses the costs of collecting transportation revenue. Next, she offered a quick overview on the MVST handout and added that a separate state statute covered fees and taxes; she noted MBUF would be considered a tax. She concluded by noting that while technology was new and constantly changing, privacy concerns were raised repeatedly at the Legislature for a variety of issues; the privacy issues raised by MBUF were not necessarily unique.

Chair Lieder asked, in the event it would ever be implemented, if MBUF revenues would be dedicated similarly as the fuel tax. Betsy noted they could be; however, the authority to levy excise taxes was granted in different sections of statute.

Steve Murphy asked if it would be necessary to introduce a constitutional amendment to dedicate MBUF revenues. Margaret Donahoe noted the Legislature could create a law to dedicate the allocation of revenues, but that future legislatures could allocate the same resources in a different manner. Rep. Mike Beard observed that the Legislature “can giveth and it can taketh away;” it would be good for the group to move forward with its eyes wide open as to what it would take to constitutionally dedicate revenues.

John Hausladen asked if transponder data could be used in a court of law – that is, could data be used for accident recreation, criminal cases, etc. Betsy noted that no law fully addressed the use of data; the Legislature would need to specify a provision governing enforcement or preventing tampering, for instance. Charles stated that such data would be admissible in courts unless there was a specific prohibition on data use.

John Hausladen asked if there was an absolute protection or guarantee to privacy regarding data collected via MBUF. Betsy stated there was no such guarantee for the use of any data. Steve Elkins noted that much of the data that would be collected via MBUF was already logged in vehicle computers, cell phones, or on-board vehicle systems such as Onstar.

Christine Zimmer noted that she was currently taking part in the technical demonstration; she added that the device knew when she left her house, how long it took her to get to a destination, how long she spent at an appointment, etc. In addition, her rate of speed could be tracked. She believed there will be many concerns over the collection, protection and use of private data. Betsy noted that MnDOT would seek to protect individual information if asked; the department would be less concerned about sharing aggregate data.

John Hausladen noted that commercial vehicles were covered by a layer of federal oversight and regulation; he wondered if MBUF data would provide regulators with a tool that could be used against the trucking industry. He believed many concerns were understated and that the report was a very car-centric document.

Peter Zuniga, MnDOT, spoke to concerns over protection of private data. He noted that absent any legislation, collected data would be public. Congress was considering legislation to clarify the matter at the federal level. Currently, data collected by the likes of Facebook, Apple or Onstar would be admissible in criminal courts, but it would not be available for civil cases without an individual's consent.

Charles Samuelson concluded that there would be no protections today if MBUF were implemented. Regardless of state legislative action, the Patriot Act would provide a carve-out for use of data in FISA courts. His concerns were not with MBUF, but rather with the collection of location data; he would feel more comfortable if miles were checked manually rather than via GPS-like technology.

Discussion returned to Finding #5, which stated:

Due to the complexity of this issue, the Task Force is reticent to recommend detailed design aspects of an MBUF system. However, after listening to hundreds of Minnesotans, and learning from experts on this subject, the Task Force has formed informed opinions about the broad parameters of a potential MBUF system.

Jim Hovland suggested the word "informed" be stricken from the finding. He also noted that report language changed subtly from one recommendation to the next; the report should be consistent. He urged the group to engage in constructive ambiguity by using the term "transportation system" wherever appropriate. Bob Krogman asked that the emphasis be placed on roadways; Don Jenson suggested a shift in language from "roadway" to "highway."

Barb Thoman asked the group to stick to a broader scope; she would like to see a potential MBUF system raise adequate revenue for city streets, for instance. Rep. Frank Hornstein observed that transportation was evolving and he supported a broader definition as well. All aspects of the transportation system were underfunded; he urged looking to the future and supporting MnDOT's continued study of alternatives.

Rep. Mike Beard expressed his support for a user-fee based transportation finance system; the question could be put to the people as to whether user fees should be used for ends beyond roads and bridges, such as transit. The question of adequacy in terms of system funding level is debatable; it would be advisable to keep the reference to "roadways."

Sen. Scott Dibble expressed support for removing Recommendation 5.a and keeping 5.b. He added that there was no silver bullet for addressing the transportation system fully. He urged use of the term "transportation system" versus "roadway." Given the division on the matter, Chair Lieder asked for a show of hands as to member preference; the vote was evenly split among the Task Force.

Jim Hovland raised the option of eliminating Recommendation 5.a; given the variability in the recommendation, he argued, it might be preferable to remove it altogether. Rep. Frank Hornstein suggested the report include a value statement regarding the desirability of optimizing overall transportation system funding. Jim offered the possible alternative, "Fees should be set at a level sufficient to fund an adequate transportation infrastructure system for Minnesota." Wade Kline was fine with the new language, but expressed concern the group was getting caught up in too much detail.

Margaret Donahoe expressed an interest in seeing the report state that revenues from MBUF would be constitutionally dedicated to transportation. Barb Thoman noted that Transit for Livable Communities (TLC) would not support allocating MBUF revenue in the same proportion as was currently specified in the constitution; it would be a mistake not to revisit the question of allocation, she argued. Margaret believed the goal regarding constitutional dedication was to ensure that revenues be used on transportation and not susceptible for use in balancing the budget. Sen. Scott Dibble urged specifying that MBUF reve-

nues should not be used for general fund purposes. Wade Kline observed that the group was in agreement on the matter and urged that it not get caught up on details.

The group expressed no reservations with the existing language for Recommendation 5.c; discussion turned to review of Recommendation 5.d.

John Hausladen believed it would be a significant undertaking to transition from a simple fuel tax system to an MBUF approach that had the potential for charging according to various values. He argued that MBUF would open the door for expanded congestion pricing and lane management, and he had concerns that costs might be disproportionately borne by the trucking industry. Of all provisions, he argued, Recommendation 5.d was likely the most problematic; it presented a way for policymakers to say “we don’t want you here at this time, so we’ll charge you more as a result.” He noted that there was already a mechanism for charging by weight – through tabs and registration fees.

Wade Kline noted that perhaps the recommendation should simply state that weight and vehicle class should be considered in the future. Sen. Scott Dibble agreed with Wade, suggesting that the spirit of 5.d be considered in advance of MBUF implementation. He recalled that some studies indicated trucks didn’t pay their fair share and this would be a way of addressing the issue. Jim Hovland offered possible alternative language: “Consideration should be given to imposing fees that reflect the relative cost of vehicle use and that are reflective of other fees levied on vehicles.”

As a means of addressing John Hausladen’s concerns, Rep. Frank Hornstein asked if there was a way within the MBUF system to incent energy efficiency and other environmental benefits within the trucking industry. He didn’t believe the issue needed to be contentious as there should be better ways of getting at these goals.

Rep. Mike Beard warned that deviation away from roadway transportation might create issues for the current, or future, Legislature. Although he was content leaving Recommendation 5.d in the report for discussion purposes, he expected it would result in lively debate if it ever came before a legislative body.

Barb Thoman observed the fuel tax sent signals to consumers and that it included important incentives. Without some of these provisions, an MBUF system would actually remove many useful policy advantages.

Bill Goins urged the group to view the report as a strategic document and to not get caught up in word-smithing; he argued that the report and its contents would be revisited by policymakers and the Legislature.

Discussion shifted to review of Recommendation 5.e. John Hausladen agreed with the provision, adding that it would be helpful to specify who would be setting the fees. Make sure there was public accountability for the fee-setting entity, he added.

Discussion turned to Recommendation 5.f. Charles Samuelson suggested replacing “...thus protecting user privacy” with “...and protects user privacy.”

Recommendation 5.g. was generally acceptable to the group, and discussion proceeded to Recommendation #6, which stated:

Once MnDOT has completed its current MBUF technical demonstration project, 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 gives a detailed

answer to the question: “If the Legislature and Governor decided to reform Minnesota’s transportation funding system to achieve Recommendations 1 and 2, how would MnDOT recommend setting up and phasing in the following three potential transportation funding reform 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 a new 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.

John Doan noted that John Hausladen’s alternative language could be incorporated here.

Margaret Donahoe observed that much of the report dealt with policy rather than technical content; as such, she was not sure why determining the acceptability of MBUF was reserved to MnDOT. She would like to see cities and counties engaged in providing a recommendation to the Legislature and Governor.

Jim Hovland suggested adding reference to “local road authorities” in the recommendation. He offered language that read: “. . .how would MnDOT, with advice of local road authorities, recommend. . .” In addition, he questioned whether “reform” was the right word for describing the process the Legislature and Governor would be undertaking to address Minnesota’s transportation funding system as noted in the main portion of Recommendation #6; the word suggested wholesale change, and MBUF may simply address the means of collecting revenue.

Bob Krogman suggested replacing the editorial-sounding language “highly promising” with the words “an alternative” in the Summary of Recommendations section.

Sen. Scott Dibble asked if the Task Force would have an opportunity to respond to the minority opinion language inserted by John Hausladen and any others. He expressed an interest in spending time on such language during future Task Force discussion. Lee Munnich observed that John’s alternative language would seem to fit under the “adjusted status quo” model. John indicated that he would like to have time to review the revised report before submitting alternative language.

Jim Hovland suggested the Task Force plan to vote on the report’s final language, especially the language included in Part II dealing with findings and recommendations.

With time running short, the meeting adjourned.

Appendix I. Policy Task Force Report

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

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 a MBUF system in Minnesota. 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 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. (Note: 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.)

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 as Attachment A. 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 had presentations and 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.¹
- Part 2 describes the Findings and Recommendations of the Task Force to the Commissioner.

¹ 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.

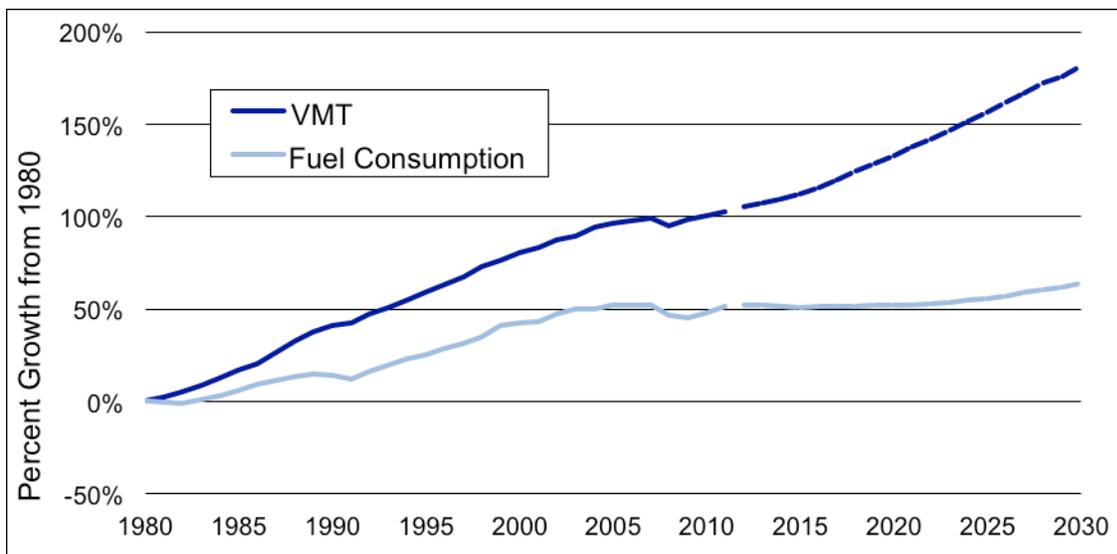
Part 1

Task Force Learning

A state tax on motor fuels is one of the major sources of funding for Minnesota’s roadway transportation system.² 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 and the growing gap between vehicle miles traveled and fuel used is projected to experience even greater divergence into the future.

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 per year.

Figure 2: State and federal gas taxes paid annually

² 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.

(taxes per year)	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, while vehicles using special fuels, such as compressed natural gas, are taxed, they 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
Liquefied petroleum	21¢ per gallon
Liquefied 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 revenues.

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 vehicles³, has led to the need to explore alternatives to supplement or replace the motor fuel tax, in part to

³ 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.

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 within their jurisdiction. 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.

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, briefly summarized below, will vary, depending upon how 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 which fuel source(s) is 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, infra), 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 MBUF 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 how it is implemented, 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. 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 is kept in the vehicle and only the fee charged is transmitted
 - Employ 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
 - Establishment of a cost threshold requirement
 - Open market subsidizes devices in exchange for the right to provide value-added services
 - 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:
 - Supplementing 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 their 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

- 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

Based upon its comprehensive work, the Task Force set about creating a Problem Statement, defined its Policy Objectives and thereafter made a series of Findings and Recommendations which are reflected in Part 2 of this Report.

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.

Part 2 Task Force Findings and Recommendations⁴

Guiding Policy Principles for Future Transportation Funding Approaches

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..

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 cer-

⁴ 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.

tain 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.⁵
- c. MBUF system administration and operating costs should be kept as low as possible without compromising system effectiveness.
- d. Rates should reflect the relative amount of 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.⁶
- 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.

Finding #6: Many important and complex decisions need to be made about the specific form an MBUF system could take; and 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 project, 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

⁵ 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.

⁶ All Task Force members felt very strongly that user data should be protected with any MBUF system. Chuck Samuelson 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.

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 a 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.

Note: 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.

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.**

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)⁷ 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.**

⁷ 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.

- **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.

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.⁸ 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.⁹ 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

⁸ 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.

⁹ 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.

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.)¹⁰ This structure and administration of the tax helps greatly to ensure that the tax is paid.

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.¹¹ 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.

¹⁰ 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.

¹¹ 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.

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.¹² 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.¹³ 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.

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.

¹² 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.

¹³ 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.

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.¹⁴ If it is true that the major problem today with the fuel tax is political, that is, the reluctance of politicians

¹⁴ “If you tax something, you will get less of it,” sometimes credited to Nobel laureate Milton Friedman.

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.

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.¹⁵ At the very least, these “multiple applications” cannot stand in as “benefits” of an MBUF.¹⁶

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 5 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 6 and 7, 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

¹⁵ 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.

¹⁶ 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.”

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.¹⁷

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.

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

¹⁷ 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.

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).¹⁸

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.

¹⁸ An MBUF by proxy, if you will.

Task Force Membership

Chair Bernie Lieder	Former State House Transportation Chair
Vice Chair Jim Hovland	Mayor of Edina
Bob Anderson	Public Affairs Manager, Boise, Inc. & 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
Bill Goins	Worldwide Account Manager, FedEx
John Hausladen	President, MN Trucking Association
Rep. Frank Hornstein	Ranking Member, House Transportation Committee
Don Jensen	Commissioner, Pennington County
Wade Kline	Executive Director, Fargo-Moorhead Metropolitan Council of Governments
Bob Krogman	Executive Director, MN Petroleum Marketers Association
John Mock	MN State Patrol
Steve Murphy	Retired State Legislator
Marthand Nookala	Assistant Administrator, Hennepin County Public Works
Dan Salomone	Deputy Commissioner, MN Department of Revenue
Charles Samuelson	Executive Director, American Civil Liberties Union of MN
Roy Terwilliger	Business Owner & Retired State Legislator
Barb Thoman	Executive Director, Transit for Livable Communities
Kathy Tingelstad	Anoka County Intergovernmental Affairs
Tim Worke	Director - Transportation and Highway Division, Associated General Contractors of MN
Christine Zimmer	Winthrop & Weinstine, AAA of Minnesota / Iowa

Appendix J. Policy Task Force Report Presentation



Mileage Based User Fee Policy Task Force

Name

Date

Overview

- Background
 - Statutory Direction
 - Charge of Policy Task Force
 - Technology Demonstration
- Problem Statement & Policy Objectives
- Public Sentiment
- Task Force Findings and Recommendations
- Summary

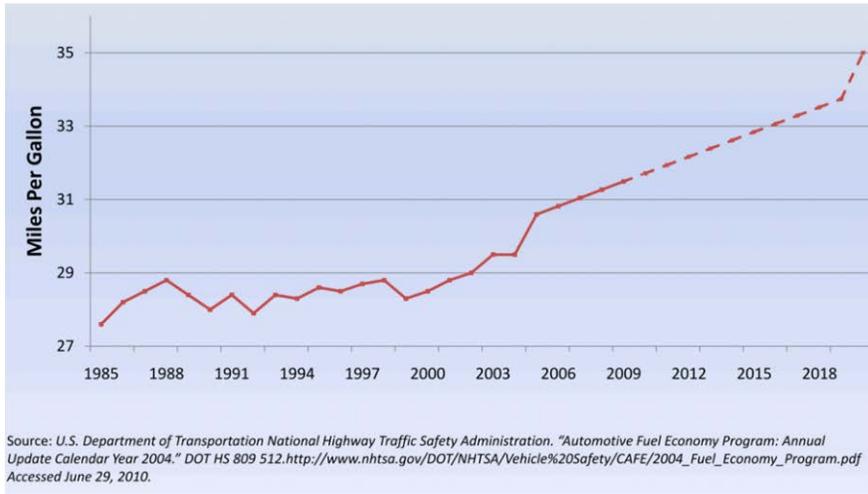
Statutory Direction



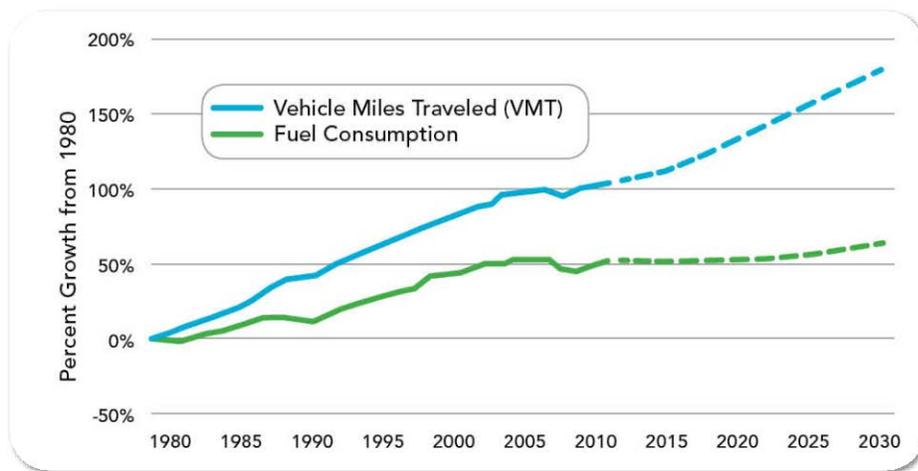
Charge of Policy Task Force

Discuss and evaluate questions, concerns, expectations, and preferences about the use of MBUF as a future transportation funding mechanism. Provide policy direction to the MnDOT Commissioner for the MBUF technology demonstration and potential broader implementation of MBUF in MN.

Estimates of Average Fuel Economy (mpg)



Trends in VMT and Fuel Consumption (1980-2030)



State and federal gas taxes paid annually

(taxes per year)	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.

Gas Taxes Paid per Mile

Fuel Consumption (mpg)	State Gas Tax (cents per mile)	State + Federal Gas Tax (cents per mile)
10 (delivery truck)	2.8	4.6
20 (light duty truck)	1.4	2.3
30 (passenger car)	0.9	1.5
40 (hybrid)	0.7	1.1
50 (hybrid)	0.6	0.9

Mileage-Based User Fee

- Drivers pay for road use on a per-mile rather than per-gallon basis
- In-vehicle technology records total miles driven
- Payment collected on a periodic basis
- Complex issue with many technical and policy options

Two-Part Effort

1. Technology Demonstration
 - 500 vehicles in Hennepin and Wright Counties
 - Recent news headlines
2. Policy Study
 - Engage key stakeholders to identify and evaluate MBUF issues



Minnesota's Technology Demonstration

Demo Objective: Use a commercially available navigation and communication device and add customized software to collect a fee

- ▶ allow for various factors to be included in fee structure
- ▶ allow the system to be used for other purposes like in-vehicle signing
- ▶ allow for market forces to improve technology
- ▶ addresses MBUF specific concerns (Privacy, Equity, Enforcement and Evasion, and Administration Costs)

Technology Installation



Minnesota's MBUF Technology Demonstration

- 2007 Legislation authorized demonstration
- 500 vehicles to be demonstrated in each of three waves, Wright and Hennepin Counties
- Using Smartphone technology
- First wave launches in September 2011
- Last wave launches May 2012
- Parallel public policy evaluation is being undertaken
- Demonstration complete in 2012

Fee Assessment Approach

- “Real” money will change hands
 - Demonstration includes invoicing and payment by participants through PayPal
- Each participant will be provided with an up-front incentive to participate
 - Incentive will be sufficient to “cover” approximately four months of travel
- No MBUF fees assessed until the third month of participation
 - Participant pays MBUF fees for months 3-6
 - Will never have to pay more than the initial incentive

Statewide Survey

Minnesotans tend to like MBUF because:

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

Minnesotans tend to be concerned about MBUF because of:

- Cost and complexity
- Reliability of the technology
- Privacy

Statewide Survey (cont.)

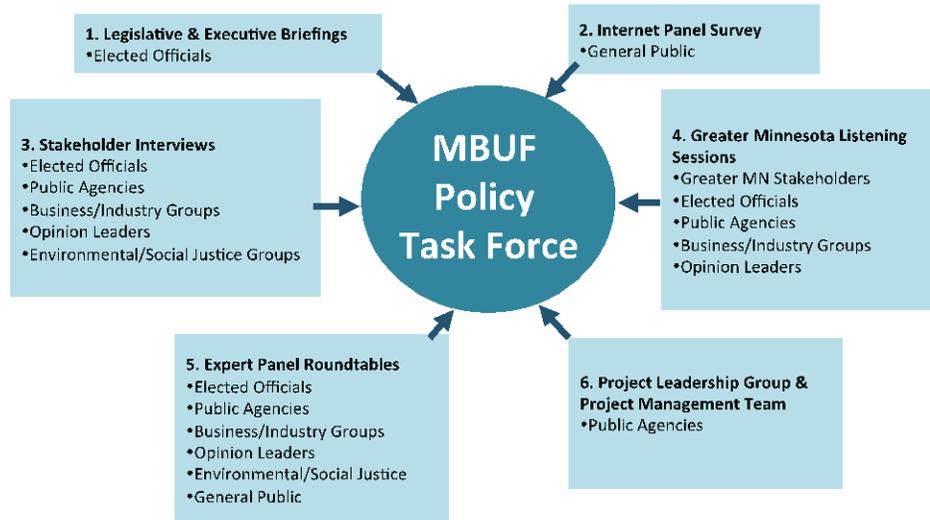
Minnesotans tend to favor MBUF if it:

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

Minnesotans tend to be unfavorable about MBUF if it charges differential rates for:

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

Stakeholder Input Approach



17

Task Force 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.

Policy Objectives

Primary Objectives

- Promote Equity
- Generate Transportation Funds

Ancillary Long Term Objectives

- Protect the Environment
- Improve Transportation System Performance

Finding #1



Minnesota has entered an era in which an increasing number of vehicles are using little or no conventional motor fuel... Over time, this trend will cause the motor fuel tax to be more disproportionately applied and become an increasingly inadequate transportation funding method

Recommendation #1

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 has entered an era of uncertainty regarding the mix of fuel sources drivers will choose

Recommendation #2

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 broader consideration 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

Recommendation #3

State policymakers should 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



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

MN state government should conduct larger scale MBUF trials, possibly in partnership with contiguous states

Finding #5



The complexity of this issue makes the Task Force reticent to make recommendations about detailed design aspects of an MBUF system

Recommendation #5

MnDOT should conduct a detailed technical analysis of MBUF to evaluate the types of issues, concerns and design options. General parameters include:

- A. Set MBUF to a level sufficient to adequately fund roadway system
- B. Revenues should be constitutionally dedicated to roadway purpose
- C. Keep costs as low as possible without compromising system effectiveness

Recommendation #5 (cont)

- D. Rates should reflect the relative amount of cost and benefit that different vehicles and users have on the roadway system
- E. Transparency
- F. Keep costs as low as possible without compromising system effectiveness
- G. MBUF's rate setting process should be transparent and accountable to the public and elected officials
- H. A potential MBUF system should be simple at first and phase-in additional features and value-added services over time

Finding #6

Many important and complex decisions need to be made about the specific form an MBUF system could take



Recommendation #6

MnDOT should conduct a detailed technical analysis of MBUF to evaluate the types of issues, concerns and design options. General parameters include:

- A. Set MBUF to a level sufficient to adequately fund roadway system
- B. Revenues should be constitutionally dedicated to roadway purpose
- C. Keep costs as low as possible without compromising system effectiveness

Summary and Appendix

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.

Report unanimously adopted by Task Force and includes Appendix A: Minority Opinion, that had three supporters

MBUF 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: Barb Thoman, Roy Terwilliger, Bob DeBoer, State Representative Mike Beard, John Mock
Back row: Bob Krogman, John Hausladen, Donald Jensen.

Minnesota Mileage Based User Fee Program

Cory Johnson

Coryj.johnson@state.mn.us [http://www.dot.state.mn.us/
mileagebaseduserfee/index.html](http://www.dot.state.mn.us/mileagebaseduserfee/index.html)