Findings from the Third National Symposium on Mileage-Based User Fees

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ABSTRACT

The traditional mechanism for financing the national surface transportation system, the motor vehicle fuel tax, is quickly losing the ability to support system needs. Government regulations and market choices are increasing the average fuel efficiencies for passenger vehicles. A recent initiative from the Obama administration will increase the CAFE standard to 54.5 mpg for passenger vehicles by 2025. Many panels composed of experts from the transportation sector have suggested that road user fees are the likely successor to the fuel tax due to declining sustainability over time.

The Third Symposium on Mileage-Based User Fees was held on June 13-14, 2011 in Breckenridge, Colorado. There was participation from all levels of government, academic institutions, trade associations, advocacy groups, and private businesses. At the beginning of the event, participants were presented with 13 questions and were given the opportunity to vote for the three most critical. The results of the voting yielded the following topics as the highest priority for discussion: implementation pathways, state coordination in research and testing, and public coordination. The majority of symposium attendees believed, if mileage fees are determined to be a supportive revenue source, that a State-led implementation pathway is the most practical step forward as opposed to a Federal initiative. Public acceptance was the topic that generated the most interest and discussion during the event as it is viewed as being one of the most significant barriers to implementation.

BACKGROUND

The possibility that fuel taxes can financially support the transportation system on a long-term basis is highly suspect. Government regulations and market choices are increasing the average fuel efficiencies for passenger vehicles. Recently, The Obama Administration announced an agreement between the EPA and automakers to increase the Corporate Average Fuel Economy (CAFÉ) standards from 35.5 mpg for model years 2012-2016 to 54.5 mpg in 2025 (*1*). The funding that supports the Highway Trust Fund will likely decrease because, over time, drivers will pay less in fuel taxes to travel roughly the same distances. This issue is compounded because the Federal fuel tax has remained static at 18.4 cents per gallon since 1993, and the public and their representatives in Congress are hostile to any increase in taxes.

Transportation professionals have not let these concerns go unnoticed. The Transportation Research Board formed a committee in 2006 to consider an evaluation of technical options for alternatives to replace the fuel tax with a user-fee based system (*2*). The *National Surface Transportation Policy and Revenue Study Commission* made a similar recommendation in their 2008 final report by recommending the next transportation reauthorization act require major national studies to develop strategies and mechanisms for transitioning to a usage-based revenue collection system (*3*). The final report from the *National Surface Transportation Infrastructure Commission* found that a user-based fee derived from the number of miles driven was the most viable long-term mechanism for supporting transportation needs (*4*).

The Congressional Budget Office (CBO) released a report in March 2011 that stated that mileage-based user fees are a practical option for raising new revenues to offset the funding gap for highway maintenance. The report tested the hypothesis that the costs of implementing a mileage fee with physical toll barriers would outweigh any potential benefits, but found that the practicality of such a system increased with the use of electronic tolling. The CBO did not offer any specific recommendations in the report, but did suggest that miles driven is a more significant factor of respective usage as opposed to the amount of fuel used (*5*).

Researching the implementation of mileage-based user fees, even through small-scale demonstration pilots, is difficult due to hardened political opposition. A draft version of the Transportation Opportunities Act, offered by the Obama Administration, was leaked to the press in May 2011 and the text of the document mentioned the creation of the Surface Transportation Revenue Alternatives Office within the Federal Highway Administration. The purpose of the new office was to look at a framework for administering a public communications plan and to conduct field pilots to test the application of mileage fees. Four factors would have been considered during the field trials, which were: the capability to enforce payment, technological reliability, cost of administering and acceptance by users. Top administration officials immediately scuttled the plan after members of the press began questioning the proposal (*6*). A spokesperson from the White House had offered the following statement:

> "This is not a bill supported by the administration. This was an early working draft proposal that was never formally circulated within the administration, does not take into account the advice of the President's senior advisors, economic team or Cabinet officials, and does not represent the views of the President." (*6*)

STRUCTURE OF THE SYMPOSIUM ON MILEAGE-BASED USER FEES

The Third Symposium on Mileage-Based User Fees was held on June 13-14, 2011 in Breckenridge, Colorado and hosted by the Texas Transportation Institute (TTI) and the Hubert H. Humphrey School of Public Affairs at the University of Minnesota. Additional support was given from the University Transportation Center for Mobility of the Texas A&M University System, MOVE Colorado, and the Transportation Research Board. The overall vision of the conference was to discuss mileage-based fees as a possible revenue generation source to finance the transportation system and to engage participants in a facilitated discussion on the potential implementation pathways to mileage-based fees (*7*).

Roughly 115 participants attended the Symposium on Mileage-Based User Fees with representation from over 60 organizations, 20 States, the District of Columbia, and Canada. Conference attendees were affiliated with all levels of government, academic institutions, trade associations, advocacy groups, and private businesses and heard two full days of panel sessions and discussion. The panel sessions featured speakers presenting on implementation pathways, demonstration projects, public and political acceptance, user perspectives, the roles of the public and private sectors, and perspectives from taxation and revenue agencies.

A total of 13 questions were presented at the beginning of the symposium to all of the conference attendees. These questions addressed various issues confronting an implementation of a mileage-based user fee. Speakers from each of the seven panel sessions attempted to address at least a few of the questions. Throughout the conference, the participants were given the ability to pare the list down to three critical questions that were then discussed during the interactive discussion. A large poster board was used as the interactive tool to pare down the original questions to those that were the most pertinent. The poster listed all 13 questions and each participant was given five adhesive dots to place near the question or questions, indicating a preference for an issue. The dots, or votes, were tallied near the conclusion of the conference and the three questions with the highest accumulated scores were presented as topics during the interactive discussion.

The original 13 questions presented at the start of the symposium were:

1) What is the most effective way to increase public acceptance?
2) How can development be advanced in the face of the lack of public trust in government and public ownership in the problem?
3) How should research, development, and implementation activities at the State level be coordinated?
4) What is the likely implementation pathway? (National framework, State led, voluntary opt-in, etc.)
5) How can national, state, and local political leadership be developed?
6) What are the most compelling reasons to pursue? What is the problem being addressed by implementing MBUF?
7) Who has a stake in the development and how should stakeholders be engaged?
8) Where will funding come for research, testing, and implementation?
9) Who should lead the development of privacy standards?
10) What will be required to produce a coherent vision?

11) Given the amount of research and testing that has occurred over the past decade, what is the next logical step? Are we at the point of where only large-scale implementation or trials will answer the crucial questions that remain?
12) Who should lead the development of privacy standards?
13) Is it possible to develop a dual infrastructure system to implement a limited, voluntary opt-in MBUF system?

After the voting finished, two of the questions with the most interest were combined into one because both had a similar theme – public acceptance. The three questions that were presented during the interactive discussion were (the third question combined the questions on public acceptance):

1) What is the likely implementation pathway?
2) How should research, development, and implementation activities at the state level be coordinated?
3) What is the most effective way to increase public acceptance, particularly in the face of lack of public trust in government and public ownership in the problem?

The basic structure of the interactive discussion consisted of an inner circle of chairs where symposium participants would sit and discuss the questions presented. Individuals were given roughly one minute per response and only those who sat inside the circle could speak. The overall time limit to discuss each question was set at 20 minutes. Symposium participants also rotated in and out of the circle in a process to encourage involvement from all the attendees.

These three questions form the structure of the main body of this paper. Under each of the three topics, the general ideas presented during the panel sessions as well as the interactive discussion are presented.

RESPONSE TO THE OVERALL THEMES

The Third Symposium on Mileage-Based User Fees provided a rare opportunity for transportation professionals of varying expertise and backgrounds to collectively meet and discuss mileage-based user fees. There was some consensus on a few main issues pertaining to implementation pathways, but other points yielded divergent opinions. Most of the symposium participants felt that a State led implementation pathway was the most practical. However, there was disagreement on the reasons behind the difficulty in gaining public acceptance. A summary of the themes is presented below:

Implementation Pathway

The overall consensus from the symposium was that a State led initiative to implement mileage-based user fees was the most practical approach due primarily to the current lack of action the federal government on the issue thus far. A national framework would be beneficial in giving the states guidance in adopting mileage-based user fee systems and coordinating standards that can be used within all political jurisdictions. Users of transportation systems do not want to confront a scenario where they have to account for multiple charging formats. Interoperability

was stressed as a key component to implementation due to the issues within tolling industry caused by incompatible electronic tolling technology and back office interfaces.

A mileage-based user fee system that may be implemented will probably have a variety of attributes that will appeal to the users of the system. These characteristics include flexibility, cost effectiveness, public confidence in the system, and user simplicity. Specifically, it was recommended by a panelist that any mileage-based user fee system incorporate the following capabilities from a user perspective:

- Motorists should have the ability to choose the methods and technologies for reporting their mileage.
- Users should have options to wirelessly report undifferentiated mileage from the odometer and differentiated mileage using technologies with vehicle location capability.
- An open system for data collection that can allow technologies to evolve with motorist preference is preferred.
- Allow the public to choose, through market forces, either government or private sector provision of on-vehicle technologies for data collection and payment services.

A voluntary approach to implementation was identified as the preferred alternative to mandatory adoption because it was suggested that not all users might be compliant. Any new MBUF system should illustrate the benefits of the new program to the user. It should also show how it would credibly address the problem.

Administrative issues would need to be addressed if an MBUF system was to be implemented. These concerns would be institutional in nature and would involve data processing requirements, system costs, and legal issues. System functionality will likely define the operational requirements and will probably require the re-engineering of systems required for the registration, payment, fee collection, and reconciliation components of the system. The administrative costs of a mileage-based user fee system will probably be greater than the existing processes of administering a motor vehicle tax and registration fees. The I-95 Corridor Coalition recently concluded a study that assessed and compared administrative costs under various revenue collection systems. In summary, the study estimated administrative costs by system type to be:

- Motor vehicle fuel tax = $1.20 per vehicle (0.82% of revenue)
- Motor vehicle registration = $13 per vehicle (11% of revenue)
- VMT-based charges = $30 to $40 per vehicle (6 to 20% of revenue)

The possibility of private sector involvement was discussed during the symposium. Some participants had the viewpoint that sole public agency administration of mileage fee systems is unlikely without a private sector contribution. A perspective was offered during the symposium on the preferred roles of both the public and private sectors. In this view, the preferred role of the public sector is to provide seed money to support the development of sustainable programs and auditing practices that can ensure interoperability, provide equity, and grant access. The preferred role of the private sector is to create thousands of new value-added services, prioritize customer service, and maximize profitability.

A panelist at the symposium discussed the mileage fee system that has been in place in New Zealand since 1977. The main components of the New Zealand mileage-based user fee is a charge on all diesel vehicles that is based on weight-mass and distance variables. The fee is currently in place on 10,700 kilometers and only costs 3% of gross receipts to administer. A key feature of the New Zealand MBUF system was that private third parties were permitted to build, distribute, and administer thick-client on-board units to assess and charge fees. Roughly 80% of all active OBUs are from private parties, a dramatic change since the provision was accepted in 2005.

State Coordination in Research and Testing

Many participants at the symposium stressed that coordination amongst the various States was critical to the implementation of mileage-based fees as a preventative measure to avoid duplication of research activities. For example, Minnesota and Nevada are both considering test pilots for implementing mileage-based user fees. The Minnesota approach is heavily reliant upon technology to provide a discounting incentive that assesses fees based on the zone, route, and time period of travel. The Nevada pilot is considering a straight mileage charge without accounting for vehicle weight, classification, jurisdictional boundaries, or time of travel. Neither state-based approach was selected based on the influence of a national research framework, but rather, each pilot was crafted with the input of State legislatures responding to the needs of their own constituents.

A few participants at the symposium suggested that research would still overlap between different states as state policy makers and elected officials tend to want issues examined from the perspective of their relative constituencies. A pooled fund study established by interested State agencies was suggested as an option to coordinate research on topic areas that may not be explicatively required to be done in-state by political stakeholders. Such issues may be identified by agency representatives to address critical future needs but not those readily observed by official rule-making organizations. Symposium participants advised that a good role for the federal government may be to support funding, research and testing for MBUF and to facilitate knowledge sharing between state, regional, and local agencies. AASHTO was also suggested as a coordinating mechanism.

Public Acceptance

A major barrier to MBUF implementation identified by numerous symposium attendees was the pathway toward gaining public acceptance. Many underlying issues complicate the task of increasing public acceptance including a general mistrust of government, skepticism about the proposals under consideration, and general ignorance about the transportation system and how it is financially supported. A common viewpoint articulated by many participants was that users do not readily perceive the gas tax as a user fee and the public feels that transportation agencies are extremely wasteful with existing tax revenues. One panelist illustrated the differences in how the public and transportation professionals perceive the finance issue by providing the following examples:

- How transportation professional view the problem:
    - Complex, aging infrastructure

    - Current funding inadequate
    - Infrastructure and traffic are key policy concerns
    - Public needs to be educated
- How the public sees the problem:
    - Government has all the money
    - Don't trust the government to spend the money
    - Taxes and fees are the last resort
    - "It's the economy (and gas prices), stupid"

Conducting field tests was recommended as a means of orienting user concerns toward the achievement of positive public perception. For example, a national evaluation of mileage-based user fees was recently conducted by the University of Iowa to test the various responses from nationwide user groups. A major finding from the research is that user perception positively increased as the pilot test was being conducted. Prior to the pilot starting, the initial perception of MBUF was 42% positive (favorable) versus 17% negative. A significant remainder was undecided. At the conclusion of the study 70% had a positive perception compared to 19% negative. However, increased use of the transportation system did not translate into greater acceptability. Positive perceptions were found in the study to decrease as vehicle mileage increased in the participant group. Other significant findings from the evaluation include:

- Over 70% of the participants thought the system was fair, reliable, and accurate.
- Participants with less than a high school education had a more positive viewpoint.
- Users did not want a great deal of information on personal driving behavior; however, they did want the capability to audit the charge.
- Individuals who were the most insensitive to privacy tended to be older and lacked understanding on how the government worked.
- About 60% of the participants in the study believed the government will track their travel.

A pathway for voluntary adoption was expressed as a palatable process toward presenting mileage fees to the public. Many participants at the conference felt that acceptance of a mandated system was not realistic because a group of non-compliant users will likely always exist just to oppose the requirement. The Minnesota Department of Transportation's (Mn/DOT) pilot test of MBUF technology is an example of a voluntary opt-in system that is currently being tested. The system consists of a mobile phone that is adapted for use as an on-board unit (OBU) that is capable of identifying location and determining miles travelled. The OBU receives GPS signals to determine the location of travel, a variable that is used in assessing a fee rate by geographic zone. A key factor in pilot design was that participation was assumed to be completely voluntary and that users who chose to participate would use the technology to discount mileage generated through other means. For example, odometer readings will be taken before and after participants participate in the test. Incentives will be provided based on the amount of travel logged by the OBU relative to the final reading. Mileage not collected by the unit (as reflected in the odometer reading) will be assessed a higher rate relative to mileage accrued by the units. In this sense, Mn/DOT is testing a voluntary system, as it is assumed that in a future MBUF application drivers would have the choice of participating in either a low tech (odometer reading-based) or high tech (GPS-based OBU) system. Those participating in the high tech option would be provided discounts over those in the low-tech approach.

In terms of generating support for MBUF implementation, the concepts of equity and fairness may be more salient with the public in comparison to emphasizing the gap in financial support for the transportation system. For example, a bill to implement a mileage fee on electric vehicles in Oregon was proposed during the most recent State legislative session. Lawmakers who had expressed the most support for the bill cited the fact that electric vehicles do not pay any fuel tax as a reason to vote for it. The local chapter of AAA in Oregon, along with the national parent organization, has supported mileage-based user fees on the same principle. However, the bill did not progress through the legislative process despite a belief that a majority of legislators supported the concept. Some of the possibilities for failure included the fact that a few legislators opposed any increase, or change, in the taxation structure and that few lawmakers were interested in transportation issues. Furthermore, only legislators who were on the transportation committee were invested in the issue.

Value-added services were mentioned by a few participants as having the potential for increasing public acceptance. It was noted that recent successful transportation funding initiatives at the local level may be instructive to MBUF, as the success of those initiatives is credited to the public understanding how the funding will directly enhance their travel by providing tangible benefits. It was suggested that for MBUF to be successfully implemented, any new program should provide tangible value at the level where pay-for use can produce clear and direct benefits. An example of a program with value-added services is the DriveSmart Program proposed by the New York City DOT (NYCDOT). A request for expressions of interest has recently been posted by the NYCDOT, seeking innovations that will provide money-saving and time-savings benefits for drivers through in-vehicle communication technologies. The DriveSmart program will be a multi-jurisdictional, public-private program that will seek to integrate different components from the transportation system into integrated tools for users.

The trucking industry is not entirely convinced of the need to implement mileage-based user fees, at least not in the short and medium-term. A representative from the American Trucking Associations stated a few of areas of concern, namely with regards to cost effectiveness, enforcement, and geographic equity. Cost effectiveness is a concern because of the belief that even under a revenue neutral approach, a mileage fee would likely require a rate increase from the current fuel tax because of the higher share of costs attributable to administering the system. Currently, roughly 1,000 taxpayers (the oil distributors) are the source for collecting funds to support the current Highway Trust Fund and roughly 248 million vehicle (number of present day vehicle registrations) accounts would be needed nationally to collect revenue for a mileage-fee system – a massive increase. Truckers also believe that enforcement costs would be high for MBUF due to fears that the technology can be defeated. Geographic disparity was raised as a point of contention because of the possibility that select local jurisdictions could arbitrarily increase the rates for heavy vehicles as a method of discouraging travel on local facilities. Trucking fleets often cross numerous jurisdictional boundaries on a single vehicle trip.

SUMMARY OF OBSERVATIONS

A broad cross section of stakeholders within the transportation profession offered their views during the Third Symposium on Mileage-Based User Fees. Compared to the first two symposia (*8, 9*), the third exhibited a bit more refinement as to the issues confronting the implementation of a mileage-based user fee, likely due to 13 questions that were presented at the beginning of the symposium. The interactive discussion provided the opportunity address the questions and themes believed to be the most critical to the implementation of mileage fees, assuming that MBUF are a practical solution for financing the transportation system. The themes selected by the conference attendees were in the subject areas of implementation pathways, state-level coordination, and public acceptance. A few highlights from these themes were:

- A state-level implementation pathway was identified as the most practical method for advancing mileage-based user fees. The Federal government was not seen as a viable starting point to progress MBUF due to greater political resistance. However, a national framework may be useful in standardizing practices and coordinating a vision. A successfully implemented MBUF system would have a variety of attributes that would benefits the user, including the capability to be flexible, cost effective, instill public confidence, and strive for simplicity. Open system designs were recommended for future MBUF systems to encourage multiple third-party applications and to provide value-added services.
- State-level coordination of research and testing was mentioned as a priority because of the tendency to duplicate efforts done by various states or other political jurisdictions. Participants mentioned that redundancy could not be avoided because political stakeholders often require a specific analysis for their own constituencies and not all studies are transferrable to other localities. A pooled fund was discussed as a possible method of coordinating research efforts at the State-level.
- Public perception was the most discussed theme during the symposium. A main driver behind this issue is the fact that the public does not trust the government and feels distrust and skepticism toward government administering the system. Any change in collecting taxes is viewed as an increase, and a significant share of the public opposes any increase in taxes. Voluntary adoption of MBUF was mentioned as the most practical implementation approach because not all user groups will be supportive.

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