

The logo for the year 2009, with each digit in a separate black square with a white border.

SYMPOSIUM ON MILEAGE-BASED USER FEES

Mileage-Based User Fees: The Path Forward

Symposium on Mileage-Based User Fees, April 14-15, 2009

Report on Closing Discussion Session

Background

The conventional wisdom that fuel taxes can provide adequate long-term funding for transportation programs is being questioned. Various market pressures and governmental regulations are working to drive up average vehicle fuel efficiencies, meaning that the average driver will be paying less fuel tax in the future to use the nation's surface transportation system. Furthermore, the federal fuel tax has remained static since 1993, and many state legislatures have shown a reluctance to increase their respective state's fuel tax rates. As a result, the fuel tax has lost significant purchasing power due to inflation, a trend which has been exacerbated by steep increases in the cost of building and maintaining roadways.

These concerns have not gone unnoticed. In 2006 the Transportation Research Board (TRB) formed the *Committee for the Study of the Long Term Viability of Fuel Taxes for Transportation Finance*. Among the committee's numerous recommendations was a proposal to conduct rigorous evaluations of technical options for use-based fee systems as promising replacements for the fuel tax. The 2008 final report of the *National Surface Transportation Policy and Revenue Study Commission* echoed this sentiment by recommending that the next surface transportation authorization act require major national studies to develop mechanisms and strategies for transitioning to usage-based alternatives to the fuel tax for funding surface transportation programs. Furthermore, the recently-released final report of the *National Surface Transportation Infrastructure Financing Commission* concludes that use-based fee systems, and specifically systems based on miles driven, are the most viable mechanisms for funding long term surface transportation needs.

Purpose

The Texas Transportation Institute (TTI) and the University of Minnesota's Hubert H. Humphrey Institute and Center for Transportation Studies hosted the first national Symposium on Mileage-Based User Fees in Austin, Texas, April 14-15, 2009. The vision of the conference was twofold: to advance the discussion on mileage-based fees as a potential replacement for the fuel tax, and to engage participants in a facilitated discussion to articulate a possible path forward.

Eighty transportation professionals from twelve states and over fifty organizations gathered for a day-and-a-half to hear presentations from experts on the state-of-the-practice in mileage-based fees, also called vehicle-miles traveled (VMT) fees. Participants represented all levels of government, academic institutions, trade associations, advocacy groups, and the private sector. Panelists from a variety of organizations spoke on a number of issues surrounding this topic, including institutional issues, public acceptance, technology options, and perspectives of stakeholders and local officials. The symposium program can be found at the web site <http://utcm.tamu.edu/mbuf>.

At the opening of the conference, participants were asked to consider three questions during the course of the symposium:

1. What are the greatest challenges or barriers to transitioning from the fuel tax to a per-mile fee?
2. What would the transition look like and who would lead?
3. What additional research, testing and demonstration are needed?

The closing activity of the conference featured an interactive discussion session facilitated by Robert Johns of the Center for Transportation Studies and Katherine Turnbull of TTI. Using an innovative “conversation circle” format, each question above was posed by a moderator and participants were invited to join the circle and offer their responses to the individual questions.

The purpose of this document is to provide: (1) a summary of the general themes based on responses to each of the three questions; and (2) a detailed synopsis of the individual responses.

Summary of Responses: General Themes

In general, there was not clear consensus among the group on responses to the three questions, but there were a number of general themes that emerged from the discussion. A summary of the themes is presented below, with a detailed synopsis of all responses provided in the following section.

Question 1: What are the greatest challenges or barriers to transitioning from the fuel tax to a per-mile fee?

The greatest challenges or barriers can be categorized into three groups:

1. Public Acceptance Challenges

- *Privacy* – Refers to public concerns over what data is collected at the vehicle and what is transmitted to assess a mileage fee. System design must ultimately address privacy concerns.

- *Need* - The benefits of a mileage-based user fee system must be stated. The new system must add value over the current system, and public policy and education needs to articulate those benefits to the public.
- *Trust* - Public trust in the transportation investment and the transportation planning processes is low. The current revenue allocation process does not inspire public trust, and that does not bode well for garnering support for a new, costly fee collection system. General government distrust is also a factor in technology design.

2. Political Leadership Challenges

- Political leadership challenges were articulated by the participants as “lack of political will” and “lack of national direction.” Most participants believe action at the national level is important because interstate commerce and travel will be impacted. The lack of clear national vision and clear system objectives was cited as a significant impediment.
- The absence of an organized coalition with an agenda and plan for implementation was expressed as a barrier.
- Education of state and local officials, especially during initial demonstration of the concept, was highlighted as more urgent than general public education.
- There was discussion about the lack of policy definition of mileage-based fees as a replacement for the fuel tax at current levels versus a means for expanding funding levels. Revenue neutrality likely has the best chance of gaining public support, but the true need is expansion of the funding base.

3. Fuel-Tax-to-Mileage-Fee Transition: Challenges and Barriers:

- *Standards* – Technology standards are necessary to guide system development and ensure interoperability as opposed to a collection of independent systems. Federal leadership will be particularly important in this regard, as the federal government is best positioned to ensure that a system can be developed with the broadest applicability to state and local agencies.
- *Resources* - There is concern that costs are high and moving forward will require significant federal support for pilot projects at the state level and for ultimate implementation nationally.

Not all participants agreed with the general themes highlighted in the three categories above. Two individuals expressed concerns about moving too quickly toward a “quick fix”, with poor decisions resulting. On the other hand, one felt that “experts” are the barrier because of a greater interest in studying rather than implementing.

Another participant requested a wholesale reexamination of the question: maybe there is no transition to a per-mile fee and the gas tax remains in place because it has high public acceptance. This individual suggested that other fees (such as vehicle registration) be based on actual use of the system.

Question 2: What would the transition look like and who would lead?

Five overarching themes emerged on the question regarding transition and leadership:

- The federal government should provide policies, frameworks, enabling legislation, and financial support, and the states should test the concept with more, diverse, larger, and even multi-state pilot projects.
- An empowered consortium or national commission should be convened to develop a road map for implementation.
- There was a general expression of a desire for the federal government to lead, but a recognition that the states will move faster toward a transition to address their own needs.
- There were opposing viewpoints on the timeframe and pace of transition. Several suggested an interim DMV-based system deployed in the near term, while others proposed an incremental transition over a longer period.
- Listening to the public was encouraged in early stages to define the “value proposition” and to help articulate benefits.

Question 3: What additional research, testing and demonstrations are needed?

The responses to this question represent a mix of technological and social science research needs:

- Conduct pilot projects to test multiple technology platforms with possibilities for bundled or value-added services.
- Perform research to identify objectives that can be achieved by mileage-based fees.
- Identify a framework for implementation and estimated costs.
- Study equity issues, comparing the existing system with a mileage-based system, and research fairness concerns, such as urban versus rural interests.
- Research public acceptance issues to gain an understanding of resistance to the concept and identify what is necessary to build trust.

Conversation Circle Participants:

Moderators: Robert Johns, Center for Transportation Studies, University of Minnesota
Katherine Turnbull, Texas Transportation Institute

Discussants: Trey Baker, Texas Transportation Institute, Texas A&M University System
Ken Buckeye, Minnesota Department of Transportation
John Cloutier, North East Texas Regional Mobility Authority
John Collura, University of Massachusetts
Jerry Dike, DMV consultant, Jerry Dike and Associates
Ron Fagan, Central Texas Regional Mobility Authority
Deepak Gopalakrishna, Batelle Memorial Institute
Bern Grush, Skymeter Corporation
John Habermann, Indiana Local Technical Assistance Program, Purdue University
Matthew Kitchen, Puget Sound Regional Council
Jon Kuhl, University of Iowa
Jim March, Federal Highway Administration
Adrian Moore, Reason Foundation
Richard Mudge, Delcan Corporation
Lee Munnich, Hubert Humphrey Institute of Public Affairs, University of Minn.
Mark Muriello, Port Authority of New York and New Jersey
Greg Oliver, Delaware Department of Transportation
Carla Perez, Office of Governor Bill Ritter, Jr., State of Colorado
Michael Replogle, Environmental Defense Fund
Darrin Roth, American Trucking Associations
Shelly Row, US Department of Transportation Joint Program Office
Duncan Stewart, Texas Department of Transportation
David Ungemah, Texas Transportation Institute, Texas A&M University System
Jason Van Havel, Nevada Department of Transportation
Jim Whitty, Oregon Department of Transportation

Recorders: Tina Geiselbrecht, Texas Transportation Institute, Texas A&M University System
Joan Hudson, Texas Transportation Institute, Texas A&M University System

APPENDIX: Detailed Responses by Participants

The following are individual responses by symposium attendees to the questions being discussed and should not be construed a consensus view of all those in attendance.

Question 1: What are the greatest challenges or barriers to transitioning from the fuel tax to a per-mile fee?

- The big challenge is effectively communicating with and educating elected officials. Elected officials need to have answers first before the general public. This is more immediate than the issue of engaging the public. State and local legislators need answers immediately.
- Political will is the biggest challenge. Several groups have already endorsed the concept but Congress has to accept this, put it into the legislation, and set a time-specific framework. If there is the political will the experts and FHWA can make it happen. FHWA's role would be to ensure cooperation of the states. Talk with various states to see how state VMT charging systems would be compatible with federal system.
- "Experts" are the barriers. Stop doing pilots and just move forward. Mileage-based fees cannot be done from a national level. The presumed need to focus on a national system is another barrier. This should all begin at the state level with trucks and the focus should ultimately be on replacing the gas tax. The barriers are the attitudes and assumptions of those who want to do something but will study it too much.
- The greatest challenge is to state clearly the value of the program. Public policy and communication needs to clearly define the value proposition to the public. The toll industry does this well on tolled facilities.
- The biggest challenge is having the necessary resources for implementation. It will be difficult for states to do this individually. A national system should support state development.
- Privacy, standards and trust are the challenges. Legislation is essential to establish privacy controls. Standards need to be developed in the US. Trust needs to be built in the technology. There is a need for bigger pilots to demonstrate how this can work.
- The barrier is the people who want a quick fix. We cannot mangle VMT fees to meet the unrealistic wants of politicians. People are unwilling to see more investment at the national level, but rather the investment needs to be at the state and local level. The federal government must recognize that it should have a more limited role and concentrate only on federal level projects.

- The challenge will be expansion of the financing base into the future. This implies that people will be paying more for transportation, but what if people don't want to spend more of their money on transportation? The value proposition offered to the public needs to be not only in transportation context but others. This value proposition will have to be articulated in terms of quality of life and in relation to other priorities.
- The barrier: moving too quickly. In our rush for action, we will make poor choices, especially in the area of technology. This is not trivial. We need to study the options more. We should look at several design options through several pilots. Technology is not ground-breaking, but the technology issues are key to successful implementation.
- The biggest barrier is the need for specific guidelines. If a VMT fee system is not mandated you will get 50 different standards. VMT fees need to remain a revenue-raising approach rather than a revenue redistribution approach.
- Political will. We need to be legislatively empowered to do this type of program. Unfortunately, we will probably need a crisis to reach that point. It may take more bridges falling down, because Congress will not have the political will to make changes until we have a crisis.
- Federal leadership. Since interstate commerce and travel will be impacted, federal leadership is essential. We cannot have different states with different technologies and expect to have an efficient system.
- Cost is the barrier. Funding is needed at all levels and should be provided to implement VMT fees using the state Department of Motor Vehicle (DMV) systems that are in place.
- The challenge: reexamine the question to see if it is the right one. Is the motor fuel tax the right tax to replace? Registration fees are a better replacement as they have no link to use. Retain the fuel tax and change registration fees to a use-based system.
- The biggest barrier is convincing public that we need a new system when we haven't tried the "easy" solutions: raising the gas tax, indexing the gas tax, reducing diversions and eliminating earmarks. These may be politically difficult but in the public's eyes these are the logical solutions.
- The barrier is the transportation investment process. We need to recognize that we cannot rush to a solution when there is not a clear understanding of what the problem is. It is not just funding, but decision making for transportation investment. As an industry, we need to own up to the imperfection of formulas, distributions and earmarks.

- The challenge is the lack of understanding that there is a need for increased funding. People need to believe that the current money is being spent well to accept that there is a need to increase it. Before we can talk about increasing funding the public will need to understand the unmet needs and the funding mechanism to address the problem.
- If you want to make a fundamental change in policy, there will have to be an organized coalition behind mileage-based fees with an agenda and a plan. There is no such coalition, and that is a barrier.
- The current system is a barrier. We need to change how we do everything before we even get to this, including a performance-based approach to defining system needs and allocating revenue. If the message is that we need more money then we need to say that we are going to spend it differently. This will take longer to convince people.
- The barrier is the current transportation planning process, which does not relate to a clear set of objectives. We first need to be clear about what our goals are and get that to the public. Start with performance-based planning and a planning process that reflects operation of the existing system, travel options and pricing. The public does not trust the current planning system.

Question 2: What would the transition look like and who would lead?

- Federal support is needed for more pilot projects, including simple programs associated with other fees such as inspection or registration. Concurrently, other state and local funding options will be explored such as increasing and/or indexing the gas tax and tolls on roads not currently tolled. Parallel leadership is needed: (1) Congress, DOT, AASHTO and other professional associations addressing federal issues, and (2) states addressing their own gas tax concerns.
- What we need is an empowered consortium, representing interests at all levels, to make technology and implementation decisions and plans, including definition of standards. Pilots are useful, but will not cause us to converge.
- An interim system should be deployed in the next six years that involves reporting mileage through the state departments of motor vehicles (DMV). This could involve computing approximate mileage through a Radio Frequency Identification (RFID) tag at the pump and using a vehicle fuel efficiency rating to estimate mileage. Deployment costs for an interim system through the DMV are needed. There is also a need to explore other options for a non-GPS after-market device to allay privacy concerns.
- We need to talk to people county by county - without articulating a specific solution - and let people tell us what they want. Then you have a clearer base to explain what the options are.

- First, talk to the public to identify the “value proposition,” then define federal, state and local roles in implementing. The federal government should facilitate innovation at the state/local level focusing on standards development, system architecture, business models and concepts of operation. Congress should be seeking to creatively leverage existing resources through industries such as telecommunications and banking. For example, engage the financial industry to lower transaction costs. Finally, look for agencies and institutions that will administer pilots on a multi-state basis.
- States will initiate the transition process, but federal leadership will be needed after state pilot projects are performed.
- There is a great need to define and reach a basic understanding of the general rate structure for individual users and system costs.
- AASHTO and its partners should lead state DOTs in coordination with state DMVs in a transition effort on an odometer reading system. This approach will work with different types of vehicles. Additional registration fees (state, federal or local) could be implemented to support expenses.
- Proceed with interim pilots on voluntary basis with seed money from federal government, followed by a decision at the federal level as to the best system for a national deployment.
- There is a need for a national commission; otherwise no one will make a decision. User fees will be easier to collect if they are revenue neutral, but this is the conundrum: raising revenues for transportation means we need to increase fees. As a result, there is some ambivalence over an interim system as that would most likely need to be an augmentation over and above the gas tax.
- Ideally, the federal government would seize the bull by the horns and run with it, developing technical standards, running bigger and better pilot programs, sponsoring research and development efforts, etc. The reality is that it is going to be a more decentralized effort with the states as the early movers. In this reauthorization, more pilots should be done, but work needs to be done towards an implementation plan in the following reauthorization. Some type of implementation commission is warranted. Something outside of but working closely with DOT in making recommendations.
- The federal government should enable pricing in various forms at the state and local level through the next reauthorization. The states need to figure out how to incorporate pricing more into how they do business. Industry needs to work on the technology. If the technology offers a whole new range of services that includes payment of fees, you would see how it could perform through a next phase of pilots.

- The motor fuel tax is a foundational tax that cannot be ignored. Gas taxes may be with us until we use the last drop of gas. The public likes it. So first, we need to recognize and explain why we are replacing it. The transition needs to be incremental. Start with classes of vehicles that we are not collecting on or under-collecting on. Start small.
- Agree today that the general revenue fund will support the trust fund deficits. Agree today that the gas tax will be increased in 2 years. Agree today that we will phase out the gas tax by 2020 and transition to VMT fees. Set up a commission to develop a road map for doing this. Agree today that expenditures will now be performance-based. Take away barriers that currently exist with regard to tolling and make it a local issue. Conduct pilot demonstrations to facilitate national standards development. A logical starting point is heavy trucks. Clear away state insurance regulations to enable pay-as-you-drive insurance.
- We are lacking in policy directives. There is a need for basic policy direction from Congress. This enables state and local agencies to point to what you are trying to achieve.
- Needs guiding principles. A national group or commission should be implementation-oriented with state and local entities engaged with the involvement of universities.
- A national commission should provide several interim reports to Congress as a way to move quickly without making rash judgments.
- Funding issues are fundamental, especially at the state and local level. This cannot be viewed as a national program. It is like an eggs-and-bacon breakfast: the chicken (federal government) is involved, but the pig (states) is committed.

Question 3: What additional research, testing and demonstration are needed?

- We definitely need additional research and demonstration. Determine first the primary objectives. Next, determine a framework for implementation. The auto industry could be involved in testing. With all due respect to the federal government, there is a state tax. States will do what they need to do to address the sustainability of their state fuel taxes.
- There is broad consensus that VMT fees are needed, so research should help define objectives. What are key objectives? Secondary objectives? Overarching objectives should be identified before starting multiple pilots. If we make a massive concentration of pay-as-you-go type services, a demonstration could be self-supporting through the private sector. Building trust would be one of the objectives of a demonstration. If such a demonstration works out, then you could toll the US for free using money from parking, which is politically easier to access than the VMT fees.

- The federal government should prepare a series of “concepts of operations” identifying conceptual system designs ranging from minimal to high functionality. This will give the states various frameworks to choose from in conducting pilots. The federal government can evaluate. This is something FHWA can begin doing right away. It will begin the process of framing the capabilities and cost. Developing concepts of operations would not be trivial; it would take time, but then we would be ready to go. Standards are also important. Right now the federal government does not have the authorization to develop these standards. We can set safety-based standards.
- There is a need to research vehicle fuel efficiency and its relationship to income in order to better understand equity issues. Is the current fuel-tax based system equitable? Do higher income people have higher fuel-efficiency vehicles?
- Research is needed in the area of public acceptance. We need to understand the resistance to gaining public support for the notion of mileage-based fees. There is work to be done on building trust. In addition to proving technology, is there a way to marry public acceptance and technology through value-added services?
- States may also require enabling legislation. I suggest we start with near-term implementation with a DMV in a DOT as a pilot.
- We need more research on what it is we are actually trying to do. I have questions about pursuing VMT fees if it turns into a social engineering experiment. Insurance should not be part of this discussion. I think a national commission only works with clearly articulated goals. There have been two commissions on national transportation and neither have done what they were supposed to do. Research is needed to identify what we are actually trying to accomplish.
- Start with the toll industry. A national toll alliance already exists. The Alliance for Toll Interoperability represents 35-40 toll agencies and would be a good candidate for a possible demonstration.
- Research is needed on options available for people in areas where technology may not necessarily work. Rural residents may not all have cell phones, credit cards, etc., so there will need to be accommodation for those individuals, including those who choose not to be tracked. Add true rural/local representation to the discussion.
- Research the fairness gaps with an honest conversation with the public. Ask them what they think is most fair. Have an honest dialogue about the need to generate new revenue. Let them help us define what funding mechanisms should exist.
- A white paper should be prepared that answers some fundamental questions: How will this improve lives? What are the real costs? What are the benefits? How will it improve the economy? How will it improve efficiency?

- Use designated strategic planning and research programs at state DOTs as a mechanism to perform more research. State DOTs should put these ideas into their research programs. The programs are there and they do not need to be looking only at asphalt and bridges.
- Conduct pilots with multiple platforms.
- There is a need to conduct more research on how to bundle services with VMT fees to lower the cost. An isolated VMT fee system will be inefficient. Research is needed to determine how to use VMT fees to link to other services: parking, new mobility services, new rideshare programs, etc.
- Solve the political problem. Research what is necessary to make it more palatable to the public. We have the brain power to solve the math in this room. We have to do more than solve the math. The research needs to look at what makes the next guy accept a sea change in the way we fund transportation, including the packaging and added-value benefits. The general public will need to buy in.