

The Federal Perspective

Tuesday, April 14, 2009

JIM MARCH

*Industry and Economic Analysis Team, Federal Highway Administration,
U.S. Department of Transportation*

[Click to return to Table of Contents](#)

As we look into the current status of the Federal Highway Trust Fund and the question of what we are going to do next, many are looking at long-term alternatives to the fuel tax, including a mileage-based user charge. There couldn't be a better time to have a symposium like this to discuss this particular issue. I too would like to recognize Dave Forkenbrock for his contribution to this area.

I am going to give you, as the program says, a federal perspective. But I have to tell you, I am not going to give you a United States Department of Transportation (USDOT) perspective. The administration this year, as you all know, is very new. We had one controversy over mention of this particular tax. The administration is very, very busy on things like the economic recovery. We haven't had time yet to develop a firm policy position with respect to a mileage-based user fee. But I will try to reflect what understanding I have, having been with the Federal Highway Administration for almost 40 years and having talked with numerous people.

I want to talk about a number of topics, first on the importance of having a sustainable revenue source for transportation programs, and in particular highways. Some of the issues are related to the coordination of federal, state and local agencies and the private sector. This is going to be one of the big challenges: trying to figure out the relationship between a federal tax and state taxes for each of the states and the potential to implement local taxes much more broadly given the technology. I will talk a little bit about the transition to a more sustainable charge including mileage-based fees.

We already talked about the importance of fuel tax in the overall transportation financing system, which is particularly true at the federal level. Fuel tax revenues account for more than 90 percent of federal Highway Trust Fund (HTF) revenues. The fuel tax is not the only tax of concern. The failure of HTF revenues to keep pace with outlays is a concern. The federal excise tax has gone down precipitously during the economic downturn. The trust fund balances continue to fall. There are increasing disparities in the miles per gallon for different vehicles on the road, which contributes to making the fuel tax less sustainable. We saw this last fall when the trust fund was about to become insolvent. We had to develop plans to postpone payments to states because the trust fund balance could not be sustained. Fortunately, Congress came in and transferred \$8 billion from the

general fund. We are approaching a similar situation this year, and unless something is done, the trust fund balances are going to be in danger of being insolvent.

The gas tax has been the primary means to finance highways for many, many years at the state and federal level, and that is for the most part is still true. Many of you will recognize, however, that you get to a point where the revenues are insufficient to meet the needs. How long can you hold out not increasing the gas tax? Certainly 1982 is similar to the current situation. At that time there were a number of things done to create an environment where we could increase the gas tax. However, it has been getting increasingly difficult to get legislatures at the federal and state levels to approve gas tax increases. During an economic downturn such as what we now face, it is particularly difficult to ask motorists to pay more in fuel taxes. The current situation is just unsustainable.

(Referring to presentation)

Desirable revenue characteristics—first, we need to be able to raise sufficient revenues to fund these massive surface transportation improvement programs. There are very few taxes that really can do that. Revenue sources must be reliable. They should be economically efficient. They should reflect the cost associated with the use of transportation. They should be easy and not too costly to administer. Revenue sources should be equitable and should be accepted by the public.

This is a chart I put together to compare fuel tax and mileage-based charges based on these criteria. It turns out that both the gas tax and the mileage-based charge have the ability to raise the kinds of revenues that you need to support major highway programs at the federal or the state level. In terms of reliability, I think the mileage-based charge comes out a little ahead, simply because in the future we are going to see increasing fuel economy, which is going to erode the gas tax revenues. We are going to see alternative fuel vehicles. These kinds of issues will not affect mileage-based charges. Economic efficiency also favors mileage-based charges. We are charging directly for the amount of travel that takes place, not just the fuel consumed. There are many opportunities to construct mileage-based charges so that they can address congestion.

Administration is clearly a gas tax strongpoint. The cost of administration is much lower for the gas tax. Equity is about a wash, which is what most experts conclude. I heard mention of the rural areas and driver concerns about the mileage-based charge. Since they are getting charged for the gallons that they burn driving those long distances in rural areas, I am not sure that they present a strong argument for retaining the gas tax or opposing the mileage-based charge. Public acceptance leans toward gas tax. The users don't like to have the gas tax raised. It is going to be a tough sell to get them to understand and accept the mileage-based charge. The tendency seems to be for us to look at the mileage-based charge as a silver bullet. But I think that many of the same difficulties that we face with the gas tax are also going to be faced by the mileage-based charge. We still need to raise revenues at all levels of government. Just imposing a revenue neutral mileage-based charge is not going to get us out of the situation. We are going to have to increase our transportation revenues. We are still going to be subject to

inflation, which means that the mileage-based charges are going to have to be indexed or we are going to have to count on being able to increase the mileage-based charges periodically, what with increasing needs and with effects of inflation. It's not likely to be easier to raise mileage-based charges than it is raising fuel taxes.

Some of the potential applications—I think it is good to think about this separately as well as a package. I don't think everyone necessarily sees the whole package as the way to implement the mileage-based charge. Certain conversations that I had with congressional staff, frankly the ones that I've talked to at least, are not so concerned about being able to implement congestion pricing. They are primarily looking at it from a federal revenue perspective. What is the least costly way to transition to a mileage-based charge? The state user charges—I think those two can be viewed as a package or independent of federal charges. We need federal leadership. Implicitly, states would one way or another piggyback on the charge, but at the same time you are dealing with 50 different states with different views going in as to how to implement the mileage-based charge and whether they want to. If we start making assumptions that all states automatically are going to want to piggyback, there may be some difficulties with that.

If you are talking just about the federal tax, you don't need to worry about where travel is occurring. There are concerns on the hill about privacy, which is one of the big issues for them in seeing a path to getting this implemented. The notion of global positioning system (GPS) units in vehicles raises a red flag in terms of potential privacy issues. Basing a mileage-based charge on odometer readings might be more acceptable to some. Electronic odometer applications can be seamless. At least at the federal level, we really don't need to have location-specific information. Some conversations have also pointed out that, currently, state gas taxes are collected at the point where motorists purchase their fuel. They don't need to account for the amount of travel in various jurisdictions. That's another option: use the odometer readings and not worry about where the travel occurs. But many local areas are going to want to capture where travel occurs.

Facility-based pricing is currently being implemented without any GPS units, relying instead on transponders. There are ways to implement all these potential types of applications without building in the geographic specifics on the vehicle. I mention that not because I think this is the way to go, but it is the way some people are looking at this issue. We need to make a decision considering all of the issues, integrating all these functionalities into the technology and the way we implement these kinds of things. There has to be a conscious decision that we are going to enable various capabilities into the vehicles.

Pricing applications—congestion pricing, environmental charges, improved infrastructure cost recovery. I don't think we need to go into much detail other than just to point out that we could implement these various types of pricing now without the use of a mileage-based charging mechanism. It's not impossible to implement all these things. I think it is just a lot more efficient, perhaps, if we had an overarching framework where we could apply these various types charging to.

Pricing caveats—we could be implementing this much more widely than we are today. It should be common sense that there is going to be opposition. The concept of using mileage-based charges to implement congestion pricing would make it easier to implement, but in terms of public acceptability it probably doesn't get around the most important of the impediments. One of the conclusions of the Phase 1 study that Jon Kuhl mentioned was that all states recognized the value of implementing congestion-based pricing with the mileage-based charge. The consensus; however, was that we must go slowly and not immediately implement some of the advanced features of mileage-based charging. For many years there have been a number of people at the USDOT that desire the ability to have a federal weight distance tax. I don't think the Department would suggest that we go immediately to a weight-distance tax in connection with transitioning to a mileage-based tax. I think there are some real difficulties that need to be considered in how we market this and the functionalities that need to be highlighted.

Opportunities—there are also many opportunities in this area. Intellidrive uses many of the same technologies (formerly Vehicle Infrastructure Integration, part of the Intelligent Transportation System [ITS] program). There are opportunities to take advantage of the infrastructure that is going to be implemented, we hope, with respect to intellidrive technologies that would include vehicle-to-vehicle communications and vehicle-to-roadside communications. The same technology has been recognized to help support a mileage-based user charge, and there would be many benefits in terms of improving mobility and safety. That would potentially be a win-win situation to gain both revenue and improve mobility and safety.

Impediments—we talked about impediments and all of the problems with public acceptability. Users will see very few benefits. What is in it for the public? It is incumbent upon the political leadership to recognize that support is not going to come from the bottom up, but it has got to come from the top. We have to keep in mind that while we may want the perfect system that enables a variety of pricing and other policy objectives, we may end up with too a complex system that will be difficult for the public to understand and then support.

Administrative costs—there are now about 1400 taxpayers that pay the federal fuel tax while 250 million motor vehicles would be responsible for paying a mileage-based user fee. One consideration when thinking about administrative costs is that the more payers that you can get to contribute to pay the administrative cost, the lower the individual cost will be. If you look only at the cost of implementing at the federal level, that would be very high. But if you have a system that states are also using, and part of the functionalities you extend to not just fuel taxes but also in terms of mileage-based charges, you are suddenly spreading administrative costs over a much wider variety of users and at the same time reducing administrative costs to collect other fees.

Here are the main policy issues that I see, looking ahead. One is whether we go initially with a low-tech solution that perhaps doesn't involve GPS being able to determine where the vehicle was traveling, versus a high-tech solution. This will depend on federal-state coordination and the extent to which the states essentially partner with the federal

government in coming up with a common architecture that would be adopted by many or most of the states. Some want to pursue secondary applications immediately but it may be easier to implement an interim set of charges based on less complex technologies and determine a timeframe for full implementation. Another issue is whether to immediately substituting a mileage-based user fee for the fuel tax or to phase in a mileage-based fee while maintaining the fuel tax for some vehicles. Many would like to see this kind of fee implemented sooner rather than later. The American Association of State Highway and Transportation Officials (AASHTO) and the Transportation Research Board talk about a 2020 timeframe for when we could start implementing a mileage-based tax. But there are those who would like to do it earlier.

Questions of phasing, whether a single system or dual system, where you collect the mileage-based charge as well as the fuel tax, and transition strategy—there is some interest in implementing an interim system to get people presumably accustomed to paying a mile-based tax. This would be based on odometer readings. Some have suggested that you could piggyback on vehicle registration renewals, but this would be difficult in some states since they require registration every three to five years and then handle registration by mail or internet. When you start thinking about that you have to look at the benefits of doing that versus the administrative costs. There is no compelling case for implementing an interim fee, but phasing the implementation of a comprehensive mileage-based user charge could be considered. .

How can we begin to make this transition? What might be required during the next six to ten years to implement a mileage-based fee? Many people see the need for a major study to evaluate competing technologies, the different ways that you might be able to implement and administer a mileage-based charge, doing some considerable outreach to the various stakeholders that are involved, identifying one or more candidate system architectures to support the chosen applications, and then conducting several large-scale pilot tests involving all user groups and applications envisioned. Multi-state pilots to see how mileage-based user fees might work when you cross state lines could also be considered. The Delaware situation is important. Based upon all that work, we could have a report to Congress completed and sent to them before the next re-authorization cycle that would provide them with recommendations. They could act upon those recommendations, and regulations could be issued relating to the kind of vehicle equipment that could be required for implementing a mileage-based charge. At the end, this is just a very crude framework but is one potential path to get from here to there. We don't want to underestimate the amount of public outreach that is required. Think about the number of public service announcements related to the transition to digital cable. This is a much bigger deal than even that. I do want to emphasize that within the DOT we are still working very hard on a new authorization proposal. We are certainly not there yet, but there is no position right now on whether or not we will include anything related to a mileage-based charge in any kind of re-authorization. We are considering it and we have research underway. Thank you very much.

Questions & Discussion

[Click to return to Table of Contents](#)

1. I was very interested in your comment about how there are many challenges with the existing fuel tax system that would transfer from fuel tax to a mileage-based tax system, challenges such as ensuring that charge rates are applied at the right period of time. I was thinking myself that there are very few unique characteristics of the fuel tax system that wouldn't transfer also as a challenge for the mileage-based. One would be reliability and the other is connection to who is actually being charged. What is the specific role of mileage-based user fee systems in relation to electric vehicles? Is that potentially the right interim charging system, to only charge vehicles that don't utilize fuel provided at the pump? Should we only charge vehicles which use fuel?

Jim March answers:

We would want to start charging not just the electric vehicles but also all vehicles, just because there are such discrepancies in vehicle fuel economy that exist right now. Right now it is a very inequitable task. It wouldn't be cost effective to try to develop a specific tax just for electric vehicles. In the long run one of the benefits of a mileage-based charge is to be able to charge not only for electric vehicles but also for vehicles that are using a variety of other alternative fuels. I would not see this as being something you want to apply just when we get to the point when there are electric vehicles. There are many opportunities to improve efficiency by applying mileage-based user fees to the existing fleet and more directly relating fees that each motorist pays to their actual use of the road.

2. This second bullet on the last slide—you are saying there is currently no discussion in the administration or the DOT authorization. There are strong recommendations from the policy commission that the next authorization include significant changes. Both recognize that you can't do this in the next re-authorization, but it needs to address the framework so the following makes some changes. Why does the administration need to be convinced that a federal government mileage-based user fee is the way to go? Is it possible that the re-authorization proposal might not address mileage-based user charge?

Jim March answers:

Yes, that's possible. I would be very surprised, however, if various bills that are floated would not make reference to a mileage-based charge.

[Click to return to Table of Contents](#)