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Study of Public Acceptance of Tolling with New Capacity and Credits: Concepts of FAST Miles and FEE Lanes

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16. Abstract (Limit: 250 words)

Conversion of high-occupancy vehicle (HOV) lanes to high-occupancy toll (HOT) lanes has become a relatively common managed lanes technique now employed in cities across the U.S. HOT lanes are created by developing a pricing system for existing HOV lanes that allow single occupancy vehicles to gain access to HOV lanes by paying a fee. Conversion of existing general purpose lanes to toll lanes or HOT lane operations, however, has not yet won public support as the perception persists that these "free" lanes have already been paid for and such conversions are a take-away. Focus groups were held in Minnesota to understand what policies, conditions, designs and operational characteristics could be considered that may satisfy concerns about general purpose lane adaptations to optional toll lanes or Flexible and Efficient Express (FEE) Lanes. FEE Lanes envision all users, except transit, paying a toll during peak-periods, with the lane reverting back to "free" operation outside of the peaks. Three configurations of FEE lanes were presented and a toll credit system was offered as a means to compensate users who may view the conversion as a take-away.

Participants liked what they have already seen work, which is one priced lane on I-394 MnPASS, but were also concerned about user safety and equity. The credit system, which attempts to address user equity, was a source of confusion for many focus group participants. Although some participants seemed to like the idea of getting the credits to use FEE lanes, there were numerous concerns about logistics of credit management and distribution. These findings highlight the need for increased education and marketing about road pricing options which can assist in building support for a variety of pricing options, such as FEE lanes.

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EXECUTIVE SUMMARY

The adaptation of existing high-occupancy vehicle (HOV) lanes to high-occupancy toll (HOT) lane operation has proven to be successful on a number of projects around the United States. In some cases, HOT lanes have demonstrated improved performance over HOV operations alone, and have achieved relatively high public satisfaction without compromising safety. Conversion of existing general purpose lanes to managed lane operations such as HOT lanes, however, remains elusive as public perception persists that these "free" lanes have already been paid for. Although transportation authorities argue that roads are never fully paid for, there is widespread belief that tolling existing facilities is a take-away, that it makes users pay twice, and that there is a fundamental inequity in lane conversions from free to toll. At the same time, there is an increasing recognition that opportunities for providing additional capacity through highway system expansions are growing more financially and environmentally constrained.

This research seeks to examine the question of what policies, conditions, designs and operational characteristics could be considered that may satisfy public concerns about general purpose lane adaptations to HOT, or Flexible and Efficient Express (FEE) lanes. Under the FEE Lane concept all users of the lane, except transit, pay the toll during peak-periods, but the lane reverts back to "free" operation outside of the peaks. A number of variations of FEE Lanes are possible.

Focus groups of transportation users and stakeholders were conducted in May 2009 in the Minneapolis-St. Paul Metropolitan Area of Minnesota. The goal of the focus groups was to examine user reactions to a variety of options that might be considered as a means to better manage existing capacity on the region's highways. Six focus groups were held and were composed of the various market segments. Qualitative research conducted in focus groups is exploratory in nature and is used to define the important issues and attitude parameters in relation to a particular subject. Because of the small number of people involved, the moderator can probe beyond the initial response into participant attitudes and perceptions. This type of research is a useful tool in finding out not only how people feel, but also why they feel that way.

HOV lanes allow buses, motorcycles and vehicles with two or more persons (sometimes three or more) to use the lane for free or a discount during designated times, such as peak-periods. HOT lanes allow buses and vehicles with two or more persons to continue to use HOV lanes for free and charge a fee for single occupancy drivers to use the lane. Fees are paid electronically with a transponder and a pre-established account. To guarantee a free flowing facility, fees increase as vehicle demand in the lane increases. I-35W and I-394 MnPASS were cited as an example of regional HOV and HOT lanes when the project was explained to focus group participants.

Participant Reactions

Focus group participants were shown slides of the current configurations of the HOT and HOV lanes on I-394, and nearly all exhibited total acceptance of HOT lanes. Although the HOT lane was generally positively received, some participants were concerned that it was a form of double taxation and some thought the primary purpose was to collect revenue. Several variations of the FEE Lane concept were tested and a detailed description of each concept was provided. Under all FEE Lane concepts, drivers are given new options including added peak-period capacity, and possible tolling credits that could be applied for use of the FEE Lane. The credit concept was

offered as a means to compensate users who may feel harmed by the temporary lane conversion or perhaps could not otherwise afford to use the lanes. This research aims to explore the conditions under which conversions from free lanes to toll lanes might be made acceptable to users, specifically the likes, concerns and suggestions for improvement on the FEE Lane concepts. A motorist, who is qualified to receive the toll credits, could at his or her discretion, apply those credits to use on the FEE lanes. Once credits are exhausted, the motorist is then charged the going rate to use the express lanes.

If implemented, FEE Lanes would give travelers clearer price signals, which may reduce congestion, increase mobility and more efficiently allocate limited roadway capacity during peak period hours.

The FEE Lane configuration (Configuration A) that was first presented to focus group participants involved converting one general purpose lane to a FEE Lane during peak period times. This FEE Lane would be free for buses, but all other users, including carpoolers and motorcycles, would be required to pay a fee for use of the lane.

The focus groups identified some features they liked about Configuration A such as giving people choice and the ability to pay to get somewhere on time. Another feature that focus groups found desirable is the increased throughput by using the shoulder as a travel lane. There were numerous concerns about safety, the system being unfair to carpoolers, and ability of the public to understand the system.

The second configuration (Configuration B) presented to focus group participants involved converting two general purpose lanes to FEE Lanes during peak period times and providing credits for motorists to use the FEE Lanes. An additional feature of this configuration is that credits would be given to all motorists so that they could use the FEE Lanes on an occasional basis.

The focus groups identified some features they liked about FEE Configuration B, many of which were similar to Configuration A. Participants liked the choice that the FEE Lanes offer motorists, enhancement of the HOT lane concept, and the credits allowing for minimal out-of-pocket expenses. There were numerous concerns about equity, the credit system, and people not fully utilizing the FEE Lanes.

The third configuration (Configuration C) presented to focus group participants involved converting all general purpose lanes and the right shoulder to FEE Lanes during peak period times and providing credits for motorists to use the FEE Lanes.

The three most prominent features that focus group participants liked were that it is easier to understand, egalitarian, and inevitable. Participants thought this configuration with all lanes as FEE Lanes is more straightforward than two FEE and two free lanes. There were concerns about having no choice, the system being unfair, difficulties administrating a credit system, logistics of using FEE Lanes, and resistance to fees.

Lessons Learned

The preferred configuration across the six focus groups was to pursue HOT lanes (such as MnPASS) and FEE Configuration A (one FEE lane) on all major highways. Participants seemed to like what they have already seen work, which is one priced lane. Since focus group participants were familiar with the HOT lane on I-394, support for HOT lanes and one FEE lane is most likely due to familiarity. Two paramount concerns in all focus groups were uniformity and the ability to understand the new system.

Many focus group participants were concerned about equity. Questions arose such as affordability for minimum wage earners and single moms. Other participants thought such a system would be unfair to those who have no choice but to travel during the peak period. One feature that could remedy this concern is to give extra credits, which would provide a more affordable option to low-income persons to use the FEE lanes.

Conclusions

HOT lanes, which were initially proposed on the I-394 corridor in Minneapolis in 1997, met substantial public resistance that ultimately halted the project. Part of that resistance can be traced to a lack of familiarity with the HOT lane concept at the time. This research has shown a shift in public attitude toward HOT lanes after four years of MnPASS operation. When asked about preferred FEE Lane concepts, focus groups in this research generally favored HOT lanes and FEE Configuration A.

The credit system operation was a particular source of confusion for many focus group participants. Although some participants seemed to like the idea of getting the credits to use in FEE lanes, there were numerous concerns about logistics of credit management and distribution. To alleviate some of these concerns as well as to create an equitable system that doesn't appear to "punish" carpoolers, it is necessary that the system be simple and easily understood.

This research underscores that a FEE Lane road pricing system will require an extensive education and marketing campaign to win broad support. Particular focus must be placed on why the FEE Lane is necessary, what are the operational and performance benefits, and then to communicate rules such as how to safely use a shoulder lane, when it is open and when it is closed, and how the credit system would work.

1 INTRODUCTION

In an era of increasing congestion and limited state budgets, there is a need to develop cost-effective solutions to accommodate increasing travel demand. Despite attempts to expand highways in many metropolitan areas across the United States, congestion continues to grow. A 2007 study by the Texas Transportation Institute (TTI) found that "traffic congestion continues to worsen in American cities of all sizes, creating a $78 billion annual drain on the U.S. economy in the form of 4.2 billion lost hours and 2.9 billion gallons of wasted fuel—that's 105 million weeks of vacation and 58 fully-loaded supertankers" (Texas Transportation Institute, 2007). How can policy makers and Departments of Transportation around the nation help to provide options for motorists? How can DOTs use existing infrastructure as efficiently as possible to meet current and future transportation needs? Two concepts, FAST Miles, and Flexible and Efficient Express (FEE) lanes, offer a potential solution for more efficiently using infrastructure.

The FAST Miles concept derives its origin from the concept of Fast and Intertwined Regular (FAIR) lanes. Patrick DeCorla-Souza, Tolling and Pricing Program Manager at the Federal Highway Administration (FHWA), first proposed FAIR Lanes as a pricing concept for application at the facility level in 2000. The concept of FAIR lanes combines road pricing with a credit system to address equity concerns (Eno Transportation Foundation, 2002). The FAST Miles concept expands the application of FAIR lanes to the system level and proposes to ease highway congestion on a system of limited access facilities by pricing the road to promote the use of carpools and public transportation (DeCorla-Souza, 2006). Under this concept, each motorist is provided a number of dollar credits per month. The motorist, at his or her discretion, can apply those credits to use the priced lanes. This provides an incentive to carpoolers since they can pool their credits to use priced lanes. Once credits are exhausted, the motorist is then charged the going rate to use the express lanes, which are dynamically priced depending on the current demand and rate of speed. If a commuter chooses to use public transportation, unused toll credits could be rebated to the commuter through reduced vehicle registration or property tax fees or other mechanisms. In both cases, occupants of multiple occupancy vehicles are rewarded by improved access to free flowing traffic and lower use costs. The FAST Miles concept addresses equity concerns such as lack of alternatives to pay the toll, burden on low-income drivers, as well as taking away lanes that were previously free. FAST Miles addresses these concerns by offering a credit system to compensate motorists for the lost free highway capacity. This credit system makes priced lanes more politically viable than other road pricing systems.

Flexible and Efficient Express (FEE) lanes can serve as the backbone of the FAST Miles System. FEE lanes are a combination of active traffic management (AcTM) and congestion pricing and may be combined with a credit based system (DeCorla-Souza, 2009). FEE lanes could be implemented in a short period of time using existing freeway rights-of-way. A network of free-flowing express lanes could be created by re-striping freeways to convert the left general-purpose lane(s) into FEE lanes during rush hours, and by creating a dynamic shoulder travel lane for general-purpose use on the right shoulder to replace the converted left general-purpose lane. To increase the likelihood of public acceptance, a limited quota of credits could be made available to all employees in the metropolitan area for use of the FEE lanes. The advantage of creating a lane through restriping is that it sharply decreases the capital costs by eliminating the

need for road widening. Another variant of a FEE lane is a FEE highway where all lanes are priced FEE lanes. These concepts are similar because only buses can use these lanes for free, but are distinct from FAST Miles because FEE lanes *per se* do not provide credits. FAST Miles is a credit system that provides credits for use of priced lanes, one variety of which is FEE lanes. Other varieties of priced lanes include High-Occupancy Toll (HOT) lanes which allow free service for carpools.

Several research papers have tried to address how a FAST Miles system and FEE lanes could be created, but few studies have tested public opinion on these concepts with a wide range of transportation stakeholders. Focus groups were conducted in May 2009 to test how understandable the FAST Miles concept is to the public as well as public opinion on converting existing freeway right-of-way to priced lanes – FEE lanes. From these focus groups we wanted to elicit opinions about the FEE lanes, as well as address what options might be the most politically feasible to implement. These concepts were tested with transportation users and stakeholders such as transit users, peak period drivers, and commercial drivers. Each of these stakeholder groups, such as transit users, met separately so we could assess the opinions of these different groups independently. From the focus groups, potential barriers to comprehension and implementation of the FAST Miles program were highlighted. The Minnesota Department of Transportation (Mn/DOT) and the Metropolitan Council have explored the possibility of implementing a system of MnPASS lanes (HOT Lanes) in the Twin Cities Metropolitan Area for over a decade. The results of this study will be used to help develop an implementation initiative with improved potential for success.

1.1 Minnesota Experience

The concepts of FAST Miles and FEE lanes are an attempt to build off the success of the existing High-Occupancy Toll (HOT) lanes in Minnesota. High-Occupancy Toll (HOT) lanes are being developed in cities all around the nation as a way to manage traffic congestion. HOT lanes often replace High-Occupancy Vehicle (HOV) lanes, which are typically limited to buses, motorcycles, and cars with more than two passengers. HOT lanes are created by developing a pricing system for an existing HOV lane that allows single occupancy vehicles to gain access to the HOV lane by paying a fee. There are numerous uses for the toll revenue collected from HOT lanes, including to "…pay off bonds issued to finance construction, provide for maintenance, operations and enforcement of the lanes, and to fund new or enhanced transit service" (Metropolitan Transportation Committee, 2009). In addition, HOT lanes can benefit commuters by improving trip time reliability and allowing for travel at higher speeds. All of these benefits can lead to greater mobility at the corridor level. This not only improves the travel experience for the HOT lane user, but also those who continue to drive in the general purpose lanes.

The dynamics of a HOT lane are centered on the forces of demand and supply. A HOT lane allows single-occupancy drivers to pay a fee to enter a relatively free flowing lane. The toll that users pay depends on the time of day (peak or off-peak) and the level of congestion already in the lane. This dynamic pricing for the use of the HOT lane is known as congestion pricing, since the price depends on the current demand and rate of speed in the lane. The prices are set to consistently move traffic in free flow condition, and the prices are adjusted to reflect current traffic flow. As the number of cars entering the lane increases, the price will increase because the greater number of cars will decrease the overall lane speed. The higher price will reduce the

number of drivers who are willing to pay the premium for faster travel times. The premise behind the HOT lane is that increasing the price will lower demand and thus preserve the speed within the lane.

Minnesota's experience with HOT lanes began with Interstate 394, an 11-mile highway built in 1992 that runs from the western suburb of Minnetonka to Downtown Minneapolis. As the western suburbs of Minneapolis grew, so did the congestion on I-394. During the summer of 1997, the Minnesota DOT sought to test the possibility of developing a HOT lane on I-394. Although this project was designed as a demonstration, there was significant public opposition, so the project was withdrawn (Lari and Buckeye, 1999). In the early 2000s, I-394 had become more congested and there was clamoring from citizens who traveled the roadway to open up the underutilized HOV lane to single-occupancy vehicles. For some time there had been congestion in the general purpose lanes and a free flow of traffic in the HOV lane, which lead to the perception that the HOV lane was being underutilized. There was also excess capacity in the HOV lane, as it was not being used during most hours of the day. Despite the clamor from citizens, opening these lanes was not possible for legal and political reasons (Halvorson and Buckeye, 2006). For these reasons, conversion of the HOV lanes to HOT lanes was pursued as the most viable option. Buckeye and Munnich (2004) discuss numerous reasons the strong public opposition against HOT lanes in the late 1990's had faded by the early 2000's:

- "State budget deficits exceeding $4 billion,
- Administration promise of no new taxes,
- Growing population and congestion,
- Widespread agreement that transportation issues had to be addressed, and
- Growing understanding of the benefits of value pricing."

After an extensive public outreach campaign, the HOV lanes were converted to HOT lanes in May 2005. These new lanes were branded as MnPASS Lanes.

There are numerous lessons that have been learned from the MnPASS program in Minnesota, but only three will be highlighted here: revenue generation, transit usage, and perception of equity (for more information see Munnich and Buckeye, 2008). First, the legislation that allowed for the creation of the HOT lane on I-394 contained a provision that any excess revenue would be split evenly between road improvements in the corridor and transit (MINN. STAT 160.93 User Fees; High Occupancy Vehicle and Dynamic Shoulder Lanes). The total cost to convert the HOV lane and implement the MnPASS program was $12 million, $2.5 million of which was contributed by the private sector (Halvorson and Buckeye, 2006). This high price tag coupled with the fact that MnPASS only generated $865,000 in revenue during the first full year of operation means that it will take numerous years to repay the capital expenditures (Varaiya, 2007). The lesson learned is that although HOT lanes may more effectively use transportation infrastructure, they may not be revenue generating for many years.

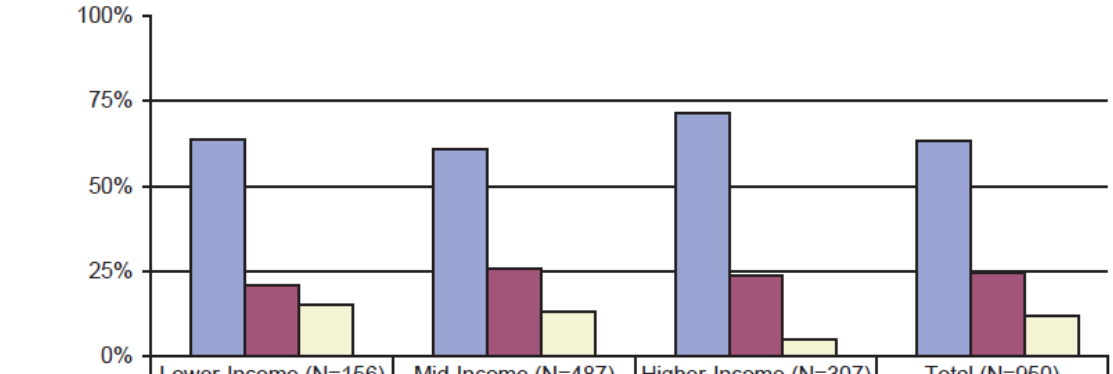
The second lesson learned is that the MnPASS lane increased transit usage. When comparing transit usage along I-394 to that along I-35W, which has a HOV lane, transit usage increased more rapidly along the I-394 corridor (Munnich and Buckeye, 2007). Table 1 on the next page shows Peak Period Transit Ridership (6 to 9 AM, 3 to 6 PM) for I-394 and I-35W and

compares ridership in 2004 to ridership from July to September of 2005, after the HOT lane opened. The table shows that transit usage increased 14% on I-394 and only 4% on I-35W. This highlights that the HOT lane did not hurt transit ridership, but may have helped increase it. A caveat to this finding is that although the increase in ridership may have been the result of concurrent improvements to transit service rather than the introduction of tolls for single-occupant vehicles in the HOT lanes. (Since traffic did not get any worse for solo-drivers in the free lanes, and traffic congestion may have been alleviated in the free lanes due to the shift of some vehicles to the HOT lanes, there would be no disincentive to drive alone or incentive to shift to transit from the conversion from HOV to HOT *per se*).

Table 1: Peak Period Transit Ridership (6 to 9 AM, 3 to 6 PM) for I-394 and I-35W
Source: Cambridge Systematics, 2002

Location	**Ridership Change** (2004 vs. July-Sept, 2005)
394 Reversible Road	+14.3%
394 Diamond Lane	+13.4%
35W Diamond Lane	+3.7%

The third finding is that there is a consistent level of support for HOT lanes across all income levels. This level of support is in contrast to the perception that HOT lanes are only for wealthy drivers who can afford to pay to use the lane, also known pejoratively as a "Lexus Lane." Figure 1 shows the opinion of various income groups on allowing single drivers to use carpool lanes. Although the level of support is highest among those in the high income group (71%), there are also strong levels of support among low income persons (64%) and mid-income persons (61%). This finding is significant because frequently equity concerns arise when metropolitan areas consider the creation of HOT lanes.



	Lower-Income (N=156)	Mid-Income (N=487)	Higher-Income (N=307)	Total (N=950)
Good Idea	64%	61%	71%	63%
Bad Idea	21%	26%	24%	25%
No Opinion	15%	13%	5%	12%

Figure 1: Opinion of Various Income Groups on Allowing Single Drivers to Use Carpool Lanes
Source: Munnich and Buckeye, 2007

The creation of the HOT lane on I-394 has shown that implementing value pricing can be an uphill battle. When the HOT lane on I-394 was first proposed in 1997 there was significant public opposition against the conversion. As congestion steadily increased in the corridor and the coalition to support the conversion emerged, the HOV lane was converted to a HOT lane and opened as "MnPASS" in 2005. The lessons to be drawn from Minnesota's experiences are that even though the HOT lane was not initially accepted, support for the concept grew over time and contributed to the successful implemented in 2005. Once citizens saw how a HOT lane works, they supported it. The same might be said for some of the concepts in this study – although support may be low at first, over time and through public education, support for value pricing initiatives can grow.

2 LITERATURE REVIEW

The rationale for using road pricing mechanisms, such as HOT lanes and FEE lanes, is found in economics. Economic theory suggests that congestion in major metropolitan areas around the U.S. is a symptom of market failure. Since motorists are not charged directly for their incremental use of the roads, most motorists tend to overuse the roads and thus cause congestion. Congestion on public roads is an example of the tragedy of the commons, which occurs because no one person owns the roads, and thus they are overused by all. Drivers do not consider the cost (via congestion) that their driving imposes on other commuters, leading to overuse and long travel times. Road pricing is one mechanism that is explored in this paper that can be used to reduce the amount of demand placed on roads. Although road pricing can help to relieve congestion and maximize throughput on roads, it does not address equity concerns. Addressing equity concerns in the context of road pricing was the impetus for developing the FAST Miles concept, which is further explored in this section.

The literature on FAST Miles and FEE lanes discuss the logistics of creating these systems, potential benefits, and public acceptance (Eno Transportation Foundation 2002; Parsons Brinckerhoff, 2005; DeCorla-Souza, 2006; DeCorla-Souza, 2009). A FAST Miles system allows motorists to use credits to access networks of priced lanes. The priced lanes that comprised these networks can be created through restriping existing limited access highways or converting general purpose lanes. The benefits of these priced lanes include travel time savings, trip time reliability, increased incentive to use transit, and increased throughput (DeCorla-Souza, 2009). The three key elements of a FEE lane are described by Patrick DeCorla-Souza (2009):

> "(1) Dynamic use of shoulders as travel lanes to enhance capacity,
> (2) Pricing of left lanes to create a reliably faster trip and control demand, and
> (3) Free service provided only for buses and registered vanpools to simplify vehicle occupancy enforcement."

FEE lanes combine active traffic management with congestion pricing and can be implemented in a short period of time using existing freeway rights-of-way. "Active Traffic Management involves a group of strategies to improve traffic flow and reduce congestion on freeways" (DeCorla-Souza, 2009). AcTM systems are developed to use existing transportation infrastructure more efficiently. Examples of AcTM strategies include converting a shoulder lane to a driving lane during peak periods, dynamic message signs, and overhead lane controls. AcTM will be implemented on I-35W in Minnesota as part of an Urban Partnership agreement with the U.S. Department of Transportation. There will be signs above each lane informing drivers of the current speed and there will also be a dynamically priced shoulder lane.

Despite the ability of FEE lanes to use existing infrastructure more effectively, they are not without issues. Two of the major challenges identified by Patrick DeCorla-Souza (FHWA) are safety and public acceptability. The level of public acceptance surrounding FEE lanes depends on whether these lanes are created from the conversion of an existing general purpose lane or are created from restriping the highway. If a highway is restriped to create a FEE lane, the controversy may be minimal. If a FEE lane is created through conversion of a general

purpose lane, the controversy is heightened because of the perception of taking away something that was free. One method to increase public acceptability, highlighted by DeCorla-Souza, is to offer credits to motorists. These credits can be distributed by employers and used by motorists to drive in the FEE lanes, which would accept credits.

One of the first attempts to test public opinion on the credit-based congestion pricing concept of FAIR Lanes took place in New York in 2001. Focus groups were conducted with persons who commuted from the outer suburbs into Manhattan. The participants were from different income groups and a mix of genders (Eno Transportation Foundation, 2002). The results suggested that:

- The most attractive part of FAIR lanes is the choice it creates.
- Reaction to credits was generally positive but participants did not understand how the tolling and credit systems would work.
- Many participants already commuted solo and believed the credit system was a "get something for nothing" system.
- Many participants would ride in general purpose lanes to avoid the toll.
- Participants were unlikely to carpool, even when carpooling could allow for a free ride in the toll lane.

The most recent attempt to study tolling and credits was conducted in 2005 by a team of consultants in California. The study, *HOT Credit Lanes Feasibility Study*, was commissioned by the Alameda County Congestion Management Agency in Oakland, California. The study was a simulation of various policy options to create a credit system on I-680 and I-580 in Alameda County. The scenarios differed in terms of the crediting rate, eligibility for credits, and the definition of carpooling. The relative benefits and costs of each scenario were estimated, as well as the potential revenue that could be generated and the level of service (LOS) that could be maintained on the highway. The feasibility of a credit system was then explored through a survey to residents primarily in Alameda County and two focus groups of users of I-680 and I-580. "Findings from both the focus group research and the public opinion survey suggest that the single most important factor determining support or opposition to HOT lanes is the context in which they are presented to the public" (Parsons Brinckerhoff et al, 2005). This finding is significant because it suggests that marketing new transportation options can be an influential factor in how these options, such as FEE lanes and or a credit system is received by the public. The authors then further expanded on this idea by stating that the focus groups and survey respondents react less favorably if HOT lanes are presented as a congestion management tool and more favorably if they are presented as a funding mechanism for improved transportation infrastructure. Another major finding from the survey is that equity concerns are *not* a primary factor influencing the acceptance of HOT lanes in cases where there is no lane take-away. In addition, because the scenarios studies involved only a single HOT lane, limited capacity was available for pricing. So, having a FEE policy that allows *all* motorists to receive credits has a large impact on revenue, which requires low crediting rates, and thus raises the question whether developing such a system is worth the cost of implementation. Although these findings helped to inform the work presented in this paper, the study conducted in Alameda is different from the work presented here due to two reasons. First, the Alameda County study determined that 100 percent eligibility for credits was not politically feasible due to loss of revenue concerns. Second, the Alameda study did not investigate the possibility of converting existing general purpose lanes

to HOT lanes because of lack of parallel routes. In the focus groups that were conducted for this paper, we did investigate 100% eligibility and converting existing free general purpose lanes to toll lanes.

In conclusion, findings from the 2001 focus groups in New York and 2005 study in California show that there are still numerous barriers and concerns to a FAST Miles system. Although there have been research papers discussing how a FAST Miles system and FEE lanes could be created, there have not been any focus groups to date to test public opinion on this concept with a *diverse* range of transportation stakeholders, such as transit users, peak period drivers, and commercial drivers. This paper adds to the literature by synthesizing findings from focus groups that were conducted in May 2009. It highlights the different opinions of FEE lanes from different groups, as well as addresses what options are the most feasible. The study concludes with recommendations for the future practice of road pricing and credit systems.

3 FOCUS GROUP FINDINGS

Focus groups were conducted to study the public acceptability of the FAST Miles concept with transportation users and stakeholders. A total of six focus groups were conducted with two groups of peak period drivers; one group of non-peak period drivers; one group of transit riders (bus or light rail); one group of MnPASS users; and one group of business owners/managers whose employees need to drive the Twin Cities Metropolitan Area freeways to do their work (local trucking firms, local delivery services, local service firms such as plumbers, electricians, and glass installers). Participants were randomly selected by calling Twin Cities' residents and using screening questionnaires, which can be found in Appendices A, B, and D. Each group contained approximately 8 to 10 participants for a total of 55 participants. Each participant that attended a focus group was compensated anywhere from $65 to $90 depending on whether they were participating as a personal driver or due to their position as an employer or a professional driver. The focus groups discussed their current experience on the Twin Cities freeways and commuting patterns, and then discussed five potential roadway configurations to reduce congestion. The freeway configurations discussed are as follows:

- HOV Lanes: A High-Occupancy Vehicle (HOV) lane provides a lane for carpoolers and buses to use, often allowing them to bypass congestion.
- HOT Lane: A High-Occupancy Vehicle (HOV) lane is converted to a High-Occupancy Toll (HOT) lane. Vehicles with two or more persons or motorcyclists can use the lane for free and single occupancy vehicle drivers are charged a fee to use the lane (e.g., the MnPASS Lane on I-394).
- FEE Lane: The left general purpose is converted into a toll lane and the right shoulder is converted into a general purpose lane. Both of these lanes would be converted only during rush hours and a fee would be charged in the FEE lane for all motorists except for buses.
- FEE Lanes with Credits: An additional general purpose lane would be converted to a toll lane, making two FEE lanes, and credits would be provided to all motorists in the metropolitan area for free use of the FEE lanes.
- FEE Highway with Credits: All general purpose lanes as well as the shoulder travel lane would be converted to FEE lanes during peak periods. This option would provide more credits than under the FEE Lanes with Credits scenario.

3.1 Current Experience on Twin Cities Freeways

To evaluate their current experience on the Twin Cities freeways, focus group participants discussed the current freeway configuration, effects of the recession, and how traffic has changed in the past five years. With regard to the current freeway configuration, focus group participants have adjusted to the current system of free lanes, HOV lanes, and HOT lanes. Participants are used to the configuration on I-394 where motorists can use the HOT lane if they are in a carpool, a motorcyclist or single occupant vehicle driver willing to pay a fee. Motorists are also familiar with the HOV lane configuration on I-35W where motorists can use the lane when carpooling. Focus group participants also discussed the effects of the recession on traffic, which has resulted in fewer people on the roads during peak commuting periods. The perception is that this has opened up the freeways during the morning commute. Lastly, participants discussed how traffic has changed in the past five years. Several mentioned that their morning commute does not seem to take any longer than it did nearly five years ago. Most of the

participants suggested that the amount of traffic on the freeways in the afternoon has increased over the past five years. The various focus groups discussed different ways that they deal with congestion, from MnPASS users using the MnPASS lanes to business owners/managers using radio updates, Map Quest or GPS systems to navigate around congestion.

3.2 HOV and HOT Lanes

Participants were shown slides of the current configurations of the HOT lanes on I-394, and the HOV lanes on I-35W. Nearly all of the participants were aware of these two freeways and their HOT or HOV lanes. Participants exhibited almost total acceptance of the HOT lane on I-394. Although the HOT lane was generally positively received, some participants were concerned that it was a form of double taxation and some thought the primary purpose was to collect revenue. The misconception that the purpose of the HOT lane is to collect revenue could be remedied through a marketing campaign. Participants thought allowing carpoolers to use the lanes for free seemed justified because of the difficultly in setting up and maintaining a carpool. Several mentioned they would like to carpool if they could, but family or job considerations prevented them from being able to "come and go" on the fairly rigid schedule required of carpoolers. Participants also noted that carpooling can make it difficult to respond to a personal or family emergency. (Despite the Guaranteed Ride Home program in Minnesota, the perception still exists that carpooling can be inconvenient.) Lastly, some participants commented that they felt the HOT lanes and HOV lanes were underutilized.

3.3 FEE Configuration A

The first FEE lane configuration that was presented to focus group participants involved converting one general purpose lane to a FEE lane during peak period times. For the purposes of this study, peak period times were defined as 5:30 to 9:30am and 3:00pm to 6:30pm. This FEE lane would be free for buses, but all other users, including carpoolers and motorcycles, would need to pay a fee. In addition, the right shoulder would be opened to general purpose traffic. During the non-peak period times the FEE lane would revert to a general purpose lane and the right shoulder would revert to being a shoulder. The existing configuration, also known as the non peak period configuration and the potential conversion are shown in Figure 2:

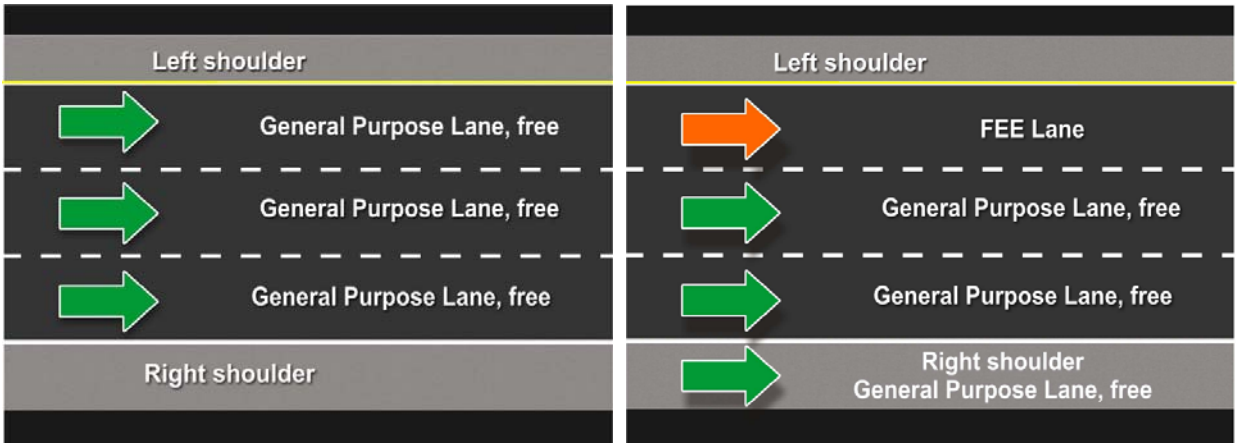


Figure 2: Non Peak Period Configuration and FEE Configuration A

The focus groups identified some features they liked about FEE Configuration A such as giving people choice and the ability to pay to get somewhere on time. Another feature that the focus groups found desirable is the increased throughput by using the shoulder as a travel lane. Participants highlighted experiences using the shoulder lane for driving on I-94 after the I-35W bridge collapsed in August 2007. Participants also mentioned that a majority of the time the shoulder is not in use, and therefore could be open for driving during peak times. Some participants also cited examples of successful shoulder lane driving in Washington, D.C.

Although the benefits of such a proposal were clear to many participants, there were numerous concerns about safety, the system being unfair to carpoolers, and ability of the public to understand the system. The first concern that was mentioned in-depth in all six focus groups was safety. There were concerns about the lack of space to pull over, access for emergency vehicles, snow and debris on the shoulder lane, and merging and exiting. Also, motorcyclists think that the space would need to be better maintained for sand and debris removal. The second concern that was mentioned in all six focus groups is that this conversion would be unfair to carpoolers. Since HOV and HOT lanes currently allow carpoolers to use them for free, converting a lane to a FEE lane would require carpoolers to pay, and be unfair to them. (These concerns seemed to be based on the assumption that the HOV lane was being converted to a FEE lane and not a general purpose lane to a FEE lane.) The third concern was how understandable the system would be. Many participants thought it would be confusing to have the shoulder open only during peak period times, as this might confuse off-peak drivers and visitors. Another concern that was mentioned, but not as frequently, was that the FEE lane would be underutilized because people would not want to pay the tolls and that therefore all lanes should be opened for free travel. Another comment was that if everyone could use the FEE lane free, traffic as a whole would move faster. (Participants did not understand the concept of induced demand, where demand rises when there is excess capacity. Opening up another lane would have only temporarily allowed traffic to move faster). A business person was concerned that if the FEE lane is restricted only to passenger vehicles, it would not be very useful to businesses.

In addition to the comments on benefits and concerns of FEE Configuration A, focus group participants also had numerous suggestions. The two main topic areas that the suggestions fell into were regarding enforcement and how to make the system more understandable. The first suggestion was on enforcement because many participants believe that cheaters would use the shoulder lanes even when they were not “open.” A suggestion given by more than one participant to aid in enforcement is to have barrier arms that swing down over the shoulder lane during off-peak times to ensure they are not used by cheaters. The second set of suggestions was on how to make the system more understandable to users. The participants suggested that the FEE lanes should be implemented on all freeways at once to avoid confusion. This uniformity is necessary because otherwise there might be confusion regarding whether some roads are tolled and others are not. Some other suggestions about improving the efficacy of the system were to have a “fast” guarantee in the FEE lane and that using the left shoulder to create the extra lane may work better. One other suggestion was that the use of the FEE lane should be restricted to those going a long distance, to reduce weaving into and out of the lane. The aspects of FEE Configuration A that focus group participants liked, aspects they had concerns about, and suggestions they made for improvements are summarized in Table 2 on the next page:

Table 2: Summary of Focus Group Findings on FEE Configuration A

Like	Concerns	Suggestions
• Choice • Increased throughput • Using shoulder as a lane	• Safety • Unfair to carpoolers • Lack of understandable system	• Enforcement, use metal arms • Implement on all highways at same time

There are numerous conclusions that we can draw as a result of the opinions about FEE Configuration A. In general, this configuration seems to make sense to people. It feels like the HOT lane to users and they generally thought it would be better use of the shoulder space in peak periods. They liked the idea especially for river crossings. As mentioned earlier, numerous focus group participants pointed to the re-striping of I-94 as an example of how it would look and work. Some suggested that this concept would work better on the left shoulder; other suggested leaving it open all the time. Focus group participants found this configuration to provide significant value over the status quo. The extra capacity created is a big plus that the public understands and could be emphasized in marketing this option. Although motorists understood the value of the extra capacity gained from using the shoulder lane, an extensive public education campaign on how to use the shoulder lane will be needed. A part of marketing and simplifying the concept to avoid confusion may involve keeping the shoulder lane open all the time. The last issue to address is fairness and taking away free use by carpools, i.e., converting HOV to FEE would be of great concern, but converting general purpose lanes to FEE lanes (with a new shoulder lane) may be OK, but will need marketing to explain that each carpooler would actually pay half, one-third, or one-fourth of the fee depending on carpool size.

3.4 FEE Configuration B

The second configuration presented to focus group participants involved converting two general purpose lanes to FEE lanes during peak period times and providing credits for motorists to use the FEE lanes. These FEE lanes would be free for buses, but all other users, including carpoolers and motorcycles, would need to pay a fee. In addition, the right shoulder would be opened to general purpose traffic. During the non-peak period times the FEE lanes would revert to general purpose lanes and the right shoulder lane would revert to being a shoulder. An additional feature of this configuration is that credits would be given to all motorists so that they could use the FEE lanes on an occasional basis. The non-peak period configuration and the potential conversion are shown in Figure 3 on the next page:

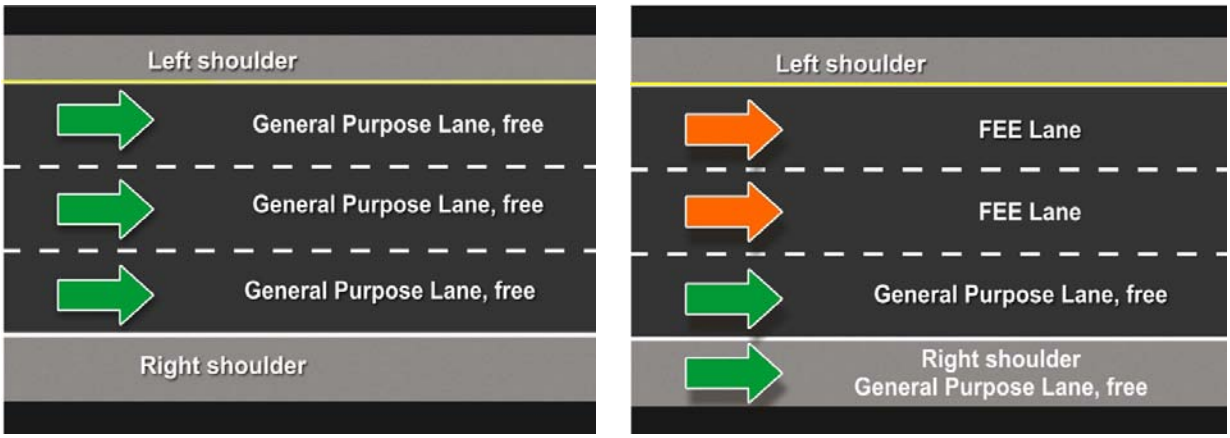


Figure 3: Non Peak Period Configuration and FEE Configuration B

The focus groups identified some features they liked about FEE Configuration B, many of which were similar to FEE Configuration A. Features focus group participants liked were the choice the FEE lanes offer motorists, enhancement of the HOT lane concept, and the credits allowing for minimal out-of-pocket expenses. The focus group comprised of business owners/managers felt that the FEE lanes could be used by their service vehicles.

Although the benefits of such a proposal were clear to many participants, there were numerous concerns about equity, the credit system, and people not fully utilizing the FEE lanes. First, the issue of equity arose from taking a lane that people felt had already been paid for with their taxes. Many participants stated that they had already paid taxes and felt that paying for a FEE lane is double taxation. Many participants did not see real value in providing an additional FEE Lane and as a result losing a free lane. Participants also worried that the government would raise taxes to give them credits. (Participants did not understand that credits were not a real cost to government, but would just reduce revenue). Another dimension of the equity issue involved participants thinking it would be unfair to penalize carpoolers and hurt low-income persons.

A second major concern that focus group participants had was about the credit system. Participants were concerned about the complexity of administration, and difficulty in distributing credits fairly. Some worried that advocacy groups would be asking for more credits, while some in the transit rider group worried that buses would get overcrowded because people would use their free credits to ride the bus. Even though carpoolers could combine their credits to use the FEE lanes, participants still believed it was not fair to charge carpoolers and motorcyclists. Another participant advocated for a more simple approach, like the one used on I-394 with the MnPASS system.

The third major concern that participants have is that people will not use the FEE lanes. This concern arose for numerous reasons, such as the time savings not being big enough to justify paying. Another participant thought that FEE lanes would be underutilized, because people will cash in their credits rather than use them on the FEE lanes. Many people believed that having two FEE Lanes would increase congestion in free lanes because not enough people will use the two FEE lanes. There appeared to be a perception that there would be a “fixed” price for using the FEE lanes that most would not be willing to pay. (Participants did not understand that lanes would be dynamically priced so that the price level would ensure full utilization of the

FEE lanes.) Lastly, some business persons claimed they would not use the FEE lanes, other said they would.

In addition to the comments on the benefits and concerns that the focus group participants expressed on FEE Configuration B, they also had numerous suggestions. The suggestions were primarily on the credit system and the logistics of the FEE Lanes. The suggestions on the credit system involved providing more information on how to use the credit system, how many credits would be awarded, and how they could be redeemed. For logistics, participants suggested that the shoulder should be open all the time. Another suggestion was to build transponders into license plates. The aspects of FEE Configuration B that focus group participants liked, had concerns about, and suggestions they made for improvement are summarized in Table 3 below:

Table 3: Summary of Focus Group Findings on FEE Configuration B

Like	Concerns	Suggestions
• Choice • Enhancement of HOT concept • Credits allow for less out of pocket expenses	• Equity – for carpoolers, for low-income drivers; taxes already paid for highways • Complexity of credit system • People would not use the FEE lanes	• Credit system • Logistics of FEE lanes

There are several conclusions that we can draw as a result of the opinions on FEE Configuration B. In general, FEE Configuration B received less support than FEE Configuration A. One important point is that the ability of variable pricing to help fully utilize the FEE lane capacity should be emphasized in marketing this option. This is important to emphasize because some focus group participants commented that the configuration should change from two FEE lanes to one FEE lane when the second FEE lane is not being used. The ability of dynamic pricing to accomplish efficient use of the infrastructure was not well understood and thus could be explained in marketing this option. Few fundamentally understood the credits as compensation for the conversion of a free lane, and most really struggled with the complexity of the credit system. Although some thought a credit system was a good idea, others strongly disliked it. A very simple system of "credits" will be needed. For example, a "flat" cash rebate on annual vehicle registration taxes could be provided to all metro area residents who have driver's licenses (one rebate per driver) in the impacted counties.

3.5 FEE Configuration C

The third configuration presented to focus group participants involved converting all general purpose lanes and the right shoulder to FEE lanes during peak period times and providing credits for motorists to use the FEE lanes. These FEE lanes would be free for buses, but all other users, including carpoolers and motorcycles, would need to pay a fee. During the non-peak period times the FEE lanes would revert to general purpose lanes and the right shoulder would revert to being a shoulder. An additional feature of this configuration is that credits would be given to all motorists so that they could use the FEE lanes free of charge on a more frequent basis than under FEE Configuration B. Since all lanes would be FEE lanes during

peak periods, more capacity would be available, so the number of credits provided under this scenario would be much greater than the number of credits provided under FEE Configuration B.

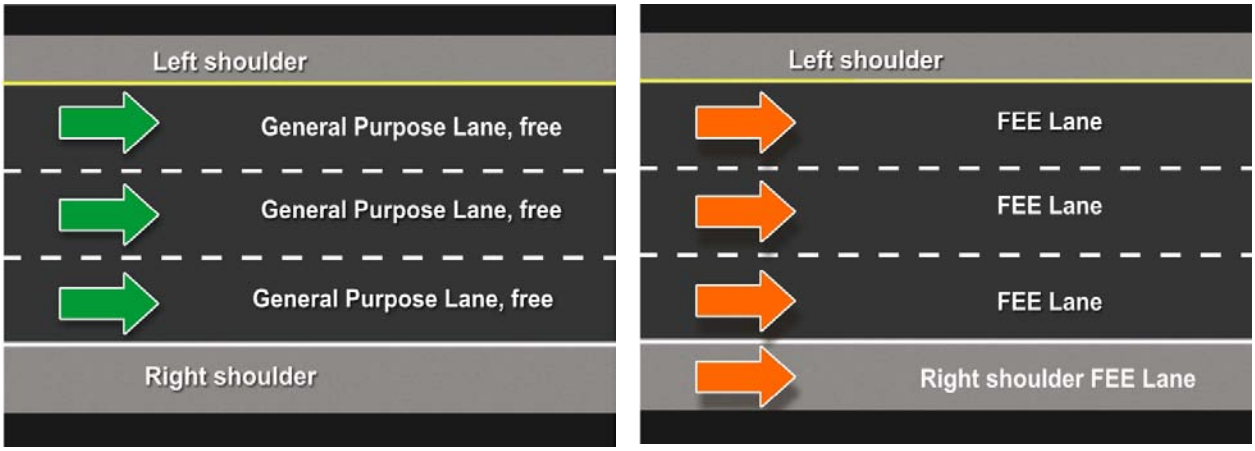


Figure 4: Non Peak Configuration and FEE Configuration C

The focus groups identified some features they liked about FEE Configuration C. The three most prominent features that focus group participants liked were that it is easier to understand, is egalitarian, and is inevitable. Participants thought this configuration with all lanes as FEE lanes is more straightforward than FEE Configuration B with 2 FEE and 2 free lanes. Other participants thought this configuration was not a bad idea for paying to maintain roads, but essentially would be a toll road. This configuration is similar to a toll road, but the toll only occurs during certain hours, in this case, peak period times. Many participants thought that if the freeways were to become toll roads during rush hours, they would prefer to simply go ahead and make them permanent toll roads. Participants seemed to be more accepting of the concept of toll roads if there were no credits offered. The business focus group commented that this would be great for commercial vehicles because it would allow them to get around more quickly. On equality, participants thought that equality for all is good and that you should provide better service for all, not just those who pay for use as when you have separate sections with the prior FEE concepts (A and B). For being inevitable, some participants commented that the highway system will be going this way in 20 years anyway in metro areas; the alternatives are more taxes or more congestion.

Although the benefits of such a proposal were clear to many participants, there were numerous concerns about having no choice, the system being unfair, difficulties administrating a credit system, logistics of using FEE lanes, and resistance to fees. For having no choice, many focus group participants felt that this configuration left no option for free service. They felt that two FEE lanes is better because it provides a choice, and is a win-win because even if you don't pay, there is less traffic in your free lanes. On the topic of being unfair, participants felt strongly that those who have paid taxes should be able to drive for free and this is an unfair system for those who have no choice but to travel during the peak period. One participant raised the question about affordability for minimum wage earners and single mothers. On the credit system, participants worried that the system would be too complicated and that it would need another department/bureaucracy to manage the system. For the logistics of the system, focus group

participants were concerned about how out-of-town travelers would get transponders if they needed to travel through the Twin Cities and use freeways during peak period times. Also, some participants were not sure how traffic would be better if everyone has free credits. Many participants also said that traffic on side streets would go through the roof as people would be trying to avoid the toll roads. Lastly, numerous participants voiced concerns that could be categorized as resistance to fees. They felt that with toll roads, you know where the revenue goes but the same is not true with fees. Other participants discussed fees being okay if taxes are lightened. Some commented that this system would be a business killer, since it would reduce consumers' willingness to travel.

In addition to the comments on benefits and concerns that the focus group participants made on FEE Configuration C, they also had numerous suggestions. Most of the suggestions were on improvements that could be made to the credit system. Some participants suggested that motorists should receive their credits when they renew their vehicle registration. Other participants suggested that credits should not be given to licensed drivers who do not have a vehicle. Lastly, the business owners/managers focus group suggested that businesses could recover fee costs through surcharges for customers who need service during peak periods. The aspects of FEE Configuration C that focus group participants liked, had concerns about, and suggestions they made for improvement are summarized in Table 4:

Table 4: Summary of Focus Group Findings on FEE Configuration C

Like	Concerns	Suggestions
• Understandable • Inevitable • Equality – all lanes are tolled	• No choice • Unfair • Credit system • Logistics • Resistance to fees	• Credit system improvements

There are numerous conclusions that we can draw as a result of the opinions on FEE Configuration C. In general this configuration had mixed reviews. Some said that it would work well to manage congestion and it contained the "right" incentives such as discouraging discretionary trips whereas others strongly disliked the idea. One participant mentioned that if a system like this were imposed that there would be an uproar, but then people would get used to it. This comment highlights the need for a "trial" approach to road pricing with a referendum, such as in Stockholm, Sweden. Another recommendation is to have a marketing campaign to inform people where the revenue is going so they can see how it benefits them. This seems necessary because numerous focus group participants commented that it is difficult to know where the revenue is going with fees and some believed the fees were primarily to be revenue-raising. Another conclusion is that to reduce the amount of traffic diversion, fee gantries should be located where diversion potential is limited, such as on bridges. Lastly, and similar to the conclusion on FEE Configuration B, a very simple system of credits will be needed, for example a "flat" cash rebate on annual vehicle registration taxes to all residents who have driver's licenses (one rebate per driver) in the impacted counties of the metro area.

4 STAKEHOLDERS DIALOGUE

On Friday October 9th, 2009 a series of presentations on the "Public Acceptance of Toll Lane Options" was held at the Humphrey Institute at the University of Minnesota. These presentations were part of a series of presentations entitled Rethinking Transportation Financing Roundtable.

The purpose of this seminar was to discuss fee lane options and next steps in Minnesota with the stakeholders. The format of the seminar was a series of three presentations followed by a question and answer session. The first presentation was entitled "Express Lane Networks: Effectiveness and Acceptance" by Patrick DeCorla Souza, Tolling and Pricing Program Manager of the Federal Highway Administration (FHWA). The second presentation was on "Public Acceptance of FEE Lanes: Study Methodology" by Adeel Lari, Director of Innovative Transportation Finance, Humphrey Institute of Public Affairs, University of Minnesota. The third presentation was "Public Perceptions of FEE Lanes: Focus Group Impressions" by Kenneth Buckeye, Program Manager, Minnesota Department of Transportation.

The first presentation reviewed the historic acceptance of express lanes in other areas and introduces the FEE lane concept. The second presentation discussed who participated in the focus groups, what types of questions focus group participants were asked, and the four potential FEE lane configurations participants were shown. The third presentation discussed the focus group findings and the likes, concerns and suggestions participants had for the four fee lane configurations.

After the presentation a moderated discussion was held with the participants. Participant were asked of their reaction to the concepts of FAST miles and Fee Lanes, what are the potential impacts for transit if express lane networks were expended in the Twin Cities area and what further steps should be taken in Minnesota.

A summary of the roundtable presentation and questions and answers is included in Appendix F.

5 RECOMMENDATIONS

The Preferred Configuration: Pursue HOT lanes and one FEE lane on all major highways.

In each of the six focus groups, different configurations were discussed and then the focus group concluded by asking participants which option they feel would work best to mitigate congestion in the Twin Cities. The preferred configuration across the six focus groups was to pursue HOT lanes and FEE Configuration A (one FEE lane) on all major highways. Participants seemed to like what they have already seen work, which is one priced lane. Since focus group participants were familiar with the HOT lane on I-394, support for HOT lanes and one FEE lane is most likely due to familiarity. Local experience needs to be considered when crafting road pricing policies because public acceptance may depend on what residents are used to. Two paramount concerns in all focus groups were uniformity and the ability to understand the new system. To address these concerns, we recommend that HOT lanes and FEE lanes be created on all metropolitan highways to create uniformity. In addition to creating these lanes on all highways, we also recommend these lanes be developed close in time, since one source of confusion is if some highways have FEE lanes and others do not. Note that credits will not need to be included in such a system, since there will be no lane "take-aways."

Develop policy tools to deal with equity

Many focus group participants were concerned about equity. Questions arose such as affordability for minimum wage earners and single moms. Other participants thought such a system would be unfair to those who have no choice but to travel during the peak period. One feature that could remedy this concern is to give extra credits which would provide a more affordable option to low-income persons to use the FEE lanes. Although credits could provide options to low-income persons, focus group participants felt that credits would not completely address the equity issue.

Keep right shoulder open all the time, not just during peak periods.

Numerous focus group participants expressed concern about the confusion that would arise from only having the shoulder open during peak periods. If the shoulder were open all the time, and not just during peak periods, this source of confusion should be eliminated. Participants also discussed safety concerns from opening the shoulder, but some participants highlighted that there is a small percentage of time that a shoulder is blocked by an accident, and the rest of the time this potential highway capacity is not being utilized. One participant highlighted that even if there were an accident and the shoulder had to be closed, the driving conditions would be no worse.

Need for public education and marketing

In order to develop road pricing systems in the Twin Cities and other cities around the U.S. there needs to be an extensive education and marketing campaign. These campaigns need to include information, such as how to use a shoulder lane, when the shoulder is open and when it is closed, and how to use FEE lanes. The FEE lanes will need to be distinguished from the HOT lane on I-394 which allows carpoolers and motorcycles to use it for free. Education will also be needed for how carpoolers could benefit if a credit system is utilized. This is important because many people had objections to "punishing" carpoolers. Lastly, marketing is necessary to correct the misperception that the purpose of the MnPASS (HOT) lane is to collect revenue. When discussing a HOT lane as a possible option to reduce congestion, numerous focus group participants thought the purpose of the HOT lane was to collect money for the state. Public education and marketing should be used to correct this misconception and communicate that the purpose of MnPASS is to more efficiently utilize existing transportation infrastructure.

Accommodate emergency service vehicles and accidents.

Safety was a major concern for most focus group participations. One way to address the safety concern with regard to using the shoulder lane during peak periods is to develop turn outs. These turn outs are currently present along parts of the Chicago freeway system and they are spaced every mile to allow for accidents to be pulled off to the side.

Consider a FEE Highway with a credit system.

In the longer-term, a FEE highway system (all lanes priced) could be considered in combination with a credit-based system. However, much work needs to be done to develop and market this concept to the public. The credit system was a source of confusion for many focus group participants. Although some participants seemed to like the idea of getting the credits to use in FEE lanes, there were numerous concerns about logistics of credit management and distribution. To alleviate some of these concerns as well as to create an equitable system, we recommend that a credit system be implemented that is simple and easy to understand. This could be done through awarding a certain number of credits through transponders and/or through a "flat" cash rebate on annual vehicle registration taxes to all residents who have driver's licenses (one rebate per driver) in the impacted counties of the metro area. An explanation of the credit system will need to be incorporated into public outreach efforts so that users understand how the system works. An extensive public education campaign would need to be conducted to have broad stakeholder buy-in, not just for the credit-system, but also for the concept of rush hour pricing of all lanes on existing free highways as a way to pay for future transportation needs.

REFERENCES

Buckeye, Kenneth and Munnich, Lee (2004). "Value Pricing Outreach and Education: Key Steps in Reaching High-Occupancy Toll Lane Consensus in Minnesota," *Transportation Research Record,* 1864: 16–21.

Cambridge Systematics (2002). Internet. "Twin Cities HOW Study: Volume I," (cited Jan. 2010) http://www.dot.state.mn.us/information/hov/pdfs/full_study.pdf.

DeCorla-Souza, Patrick (2006). Internet. "Improving Metropolitan Transportation Efficiency with FAST Miles," *Journal of Public Transportation,* 9(1), (cited Jan. 2010) http://www.nctr.usf.edu/jpt/pdf/JPT%209-1%20Decorla-souza.pdf.

DeCorla-Souza, Patrick (2009). Internet. "Congestion Pricing with Lane Reconfigurations to Add Highway Capacity," *Public Roads, Federal Highway Administration,* (cited Jan. 2010) http://www.tfhrc.gov/pubrds/index.htm.

Eno Transportation Foundation (2002). Internet. "The Role of Fast and Intertwined Regular (FAIR) Lanes in the New York Metropolitan Region," (cited Jan. 2010) http://ops.fhwa.dot.gov/tolling_pricing/value_pricing/fairlanes.htm.

Halvorson, Randy and Buckeye, Kenneth (2006). "High-Occupancy Toll Lane Innovations: I-394 MnPASS," *Public Works Management Policy,* 10: 242-255.

Lari, Adeel Z. and Buckeye, Kenneth (1999). "High-Occupancy Toll Lane System," *Transportation Research Record,* 1659: 111-118.

Metropolitan Transportation Commission – Planning Division. Internet. "High-Occupancy-Vehicle (HOV) and High-Occupancy/Toll (HOT) Lanes – Frequently Asked Questions," (cited Jan. 2010) http://www.mtc.ca.gov/planning/hov/faq.htm.

Munnich, Lee W. and Buckeye, Kenneth R. (2007). "I-394 MnPASS High-Occupancy Toll Lanes: Planning and Operational Issues and Outcomes (Lessons Learned in Year 1)," *Transportation Research Record,* 1996: 49-57.

Parsons Brinckerhoff Quade & Douglas, Inc., Acumen Building Enterprise, Dowling Associates, Inc., ECONorthwest, Evans/McDonough Company, Inc. (2005). Internet. *HOT Credit Lanes Feasibility Study,* (cited Jan. 2010) http://ops.fhwa.dot.gov/tolling_pricing/value_pricing/pubs_reports/projectreports/hot_credit_lanes.htm.

Texas Transportation Institute (2007). Internet. "Annual Study Shows Traffic Congestion Worsening in Cities Large and Small," (cited Jan. 2010) http://tti.tamu.edu/infofor/media/archive.htm?news_id=4449.

Varaiya, Pravin (2007). *An Analysis of the I-680S HOT Lane Project*, Department of Electrical Engineering and Computer Sciences, California: University of California, Berkeley.

APPENDIX A: TELEPHONE SCRIPT TO RECRUIT FOCUS GROUP PARTICIPANTS

William & Kaye, Inc.
1771 Green Crest Drive
Victoria, MN 55386
(952) 443-3431

May, 2009
W-1024

PUBLIC ACCEPTANCE FOCUS GROUPS

NAME: _____
ADDRESS: _____
CITY/STATE/ZIP CODE: _____
PHONE (HOME): _____ (WORK): _____
PHONE (CELL): _____
INTERVIEWER: _____ DATE: _____

GROUP 2 _____ (5:30 p.m., Wed., May 20th) -- **RIDE THE BUS/LIGHT RAIL**
GROUP 3 _____ (7:30 p.m., Wed., May 20th) -- **PEAK DRIVERS/COMMUTERS**
GROUP 4 _____ (2:30 p.m., Thurs., May 21st) -- **NON-PEAK DRIVERS**
GROUP 5 _____ (5:30 p.m., Thurs., May 21st) -- **BUSINESSES/SHIPPERS**
GROUP 6 _____ (7:30 p.m., Thurs., May 21st) -- **MnPASS USERS**

Hello, my name is (NAME), calling from (AGENCY), a marketing research firm located in Minneapolis. Today, we're conducting a brief survey on behalf of Mn/DOT with people who drive the freeways and divided highways in the Twin Cities metro area. We would like to include your opinions on this important survey. I am not trying to sell you anything. May I speak to an adult in your household?

YES ..... 1. → **CONTINUE.**
NO ..... 2. → **THANK & DISCONTINUE.**

QA. Do you own or lease – and drive…? **READ LIST. CIRCLE ALL MENTIONS.**

An automobile ..... 1.
A pickup truck ..... 2.
An SUV ..... 3.
A van ..... 4.
Something else ..... 5.
(DO NOT READ) NONE OF THE ABOVE ..... 6.

Q1. In order to include persons from all age groups, into which of the following age categories does your age fall? **READ LIST. CIRCLE ONE.**

Under 21 ..... 1. → **THANK & DISCONTINUE.**
21 - 29 ..... 2. → **CONTINUE.**
30 - 39 ..... 3. → **CONTINUE.**
40 - 49 ..... 4. → **CONTINUE.**
50 - 59 ..... 5. → **CONTINUE.**
60 - 69 ..... 6. → **CONTINUE → NO MORE THAN PER GROUP.**
70 or over ..... 7. → **THANK & DISCONTINUE.**

Q2. Do you work a job for 30 or more hours a week outside of your home? **DO NOT READ. CIRCLE ONE.**

YES ..... 1. ➔ **CONTINUE.**
NO ..... 2. ➔ **SKIP TO Q8.**

Q3. You mentioned you work outside of your home. During what times of the day are you traveling to work and home from work? **DO NOT READ. CIRCLE ONE.**

TO WORK		FROM WORK	
BEFORE 5:30 AM	1.	BEFORE 5:30 AM	1.
5:30 AM – 9:30 AM	2.**	**5:30 AM – 9:30 AM**	2.**
9:30 AM – NOON	3.	9:30 AM – NOON	3.
NOON – 3:00 PM	4.	NOON – 3:00 PM	4.
3:00 PM – 6:30 PM	5.**	**3:00 PM – 6:30 PM**	5.**
AFTER 6:30 PM	6.	AFTER 6:30 PM	6.

** **PARTICIPANTS MUST ANSWER ONE OF THE STARRED (**) "TO WORK" TIMES OR ONE OF THE STARRED (**) "FROM WORK" TIMES TO CONTINUE.**

Q4. How do you usually get to and from work? **READ LIST. CIRCLE ALL MENTIONS.**

Drive alone in your vehicle ..... 1. ➔ **CONTINUE.**
Carpool with one or more other people ..... 2. ➔ **CONTINUE.**
Ride the bus or Light Rail ..... 3. ➔ **CONTINUE.**

Walk ..... 4. ➔ **THANK & DISCONTINUE.**
Some other way ..... 5. ➔ **THANK & DISCONTINUE.**

Q4a. **ASK Q4a. FOR ANY/ALL OF THE ABOVE CIRCLED AT Q4. CIRCLE ONE NUMBER FOR EACH.** Think about a typical week; how many days in a typical week do you…? **READ ANSWERS CIRCLED AT Q4., ABOVE. CIRCLE ONE NUMBER FOR EACH.**

	NUMBER OF DAYS				
Drive alone in your vehicle or Carpool with one or more other people 1	2	**3**	**4**	**5**
Ride the bus or Light Rail 1	**2**	**3**	**4**	**5**

REFER TO "NUMBER OF DAYS" ABOVE. IN ORDER TO QUALIFY FOR ONE OF THE FOCUS GROUPS, THE PERSON MUST ANSWER 3, 4 OR 5 FOR "DRIVE ALONE OR CARPOOL" OR 2, 3, 4 OR 5 FOR "BUS/LIGHT RAIL." OTHERWISE, THANK & DISCONTINUE.

Q4b. Each day, how many miles do you travel, one way, to work? **DO NOT READ. CIRCLE ONE.**

LESS THAN 3 MILES ..... 1. ➔ **THANK & DISCONTINUE.**
3 MILES TO LESS THAN 5 MILES ..... 2. ➘

5 MILES TO LESS THAN 10 MILES..... 3. ↘
10 MILES TO LESS THAN 15 MILES..... 4. → **OBTAIN A**
15 MILES TO LESS THAN 20 MILES..... 5. → **GOOD MIX.**
20 MILES OR MORE ..... 6. ↗

Q4c. Do you usually begin your work day at the same work location, each day? **DO NOT READ. CIRCLE ONE.**

YES..... 1. → **CONTINUE.**
NO..... 2. → **THANK & DISCONTINUE.**

Q5. Thinking about your commute to work, from which community do you begin your commute and what is your destination? **FILL IN BELOW. FOR <u>DESTINATION</u>, WE ARE LOOKING FOR DOWNTOWN MINNEAPOLIS, DOWNTOWN ST. PAUL OR THE NAME OF A COMMUNITY/PLACE; NOT THE NAME OF THE PLACE WHERE THEY WORK.**

START POINT: _____

DESTINATION: _____

Q6. On which freeways or divided highways do you commute to work? **READ LIST, AS NECESSARY. CIRCLE ALL MENTIONS.**

I-94……..…. 1. → **CONTINUE.**
I-35W between downtown Minneapolis and I-694… 2. → **CONTINUE.**
I-35W between downtown Minneapolis and I-494 …3. → **THANK/DISCONTINUE.**
I-35W between Burnsville and I-494……. 4→ **THANK/DISCONTINUE.**
The Crosstown between Eden Prairie and where it merges with I-35W……. 5.→ **THANK/DISCONTINUE.**
Hwy. 77/Cedar Avenue ……6.→ **THANK/DISCONTINUE.**
I-394……... 7. → **CONTINUE.**
I-494…….. 8. → **CONTINUE.**
I-694…… 9. → **CONTINUE.**
I-35E between downtown St. Paul and I-694…….. 10. → **CONTINUE.**
I-35E between downtown St. Paul and I-494…..… 11. → **CONTINUE.**
Hwy. 36 between Roseville and I-694……..…..……12. → **CONTINUE.**
Hwy. 10……..……13. → **CONTINUE.**
Hwy. 610…….…….....14. → **CONTINUE.**
Hwy. 169 north of I-494 or south of I-94.……..15. → **CONTINUE.**
Hwy. 100 north of I-494 or south of I-94....……...16. → **CONTINUE.**
The new divided lanes of Hwy. 212 ….....…….....17. → **CONTINUE.**
OTHER OR NONE (DO NOT READ)……..….18. → **THANK/DISCONTINUE.**

Q7. What type of work do you do? **FILL IN BELOW. IF NOT CLEAR, ASK FOR EXPLANATION AND NAME OF COMPANY.**

_____

_____

IF ANSWER IS DRIVE TRUCK, DRIVE ANY TYPE OF DELIVERY VEHICLE, COURIER DELIVERY SERVICE, ROUTE SALESPERSON, POLICE, FIRE OR EMERGENCY VEHICLE DRIVER, THANK & DISCONTINUE. ALL OTHERS, CONTINUE. **SKIP TO Q11.**

Q8. Do you work a job of less than 30 hours a week outside of your home or are you not employed outside the home? **DO NOT READ. CIRCLE ONE.**

WORK LESS THAN 30 HOURS ..... 1.
NOT WORKING OUTSIDE HOME ..... 2.

Q9. At what times of the day, if ever, do you drive around the Twin Cities metro area on a freeway or a divided highway? **DO NOT READ. CIRCLE ONE.**

BEFORE 5:30 AM..... 1.
5:30 AM – 9:30 AM ..... 2. ******
9:30 AM – NOON ..... 3.
NOON – 3:00 PM..... 4.
NOON – 3:00 PM..... 4.
3:00 PM – 6:30 PM..... 5. ******
AFTER 6:30 PM..... 6.
NEVER..... 7.

Q9a. **ASK Q9a. IF EITHER OR BOTH STARRED TIMES ARE CIRCLED AT Q9.** You mentioned driving around the Twin Cities metro area **(READ AS APPROPRIATE:** in the morning between 5:30 and 9:30 and/or in the afternoon between 3:00 and 6:30**)**. How often, in an average week, are you driving in the metro area at these times? **READ LIST. CIRCLE ONE.**

2 or fewer..... 1. ➔ **CONTINUE.**
3 or more..... 2. ➔ **THANK & DISCONTINUE.**
DON'T KNOW (DO NOT READ)……..…3. ➔ **THANK & DISCONTINUE.**

Q10. On which freeways or divided highways do you drive in an average week? **DO NOT READ. CIRCLE ALL MENTIONS.**

I-94..... 1. ➔ **CONTINUE.**
I-35W between downtown Minneapolis and I-694..... 2. ➔ **CONTINUE.**
I-35W between downtown Minneapolis and I-494 ……..… 3. ➔ **CONTINUE.**
I-35W between Burnsville and I-494..... 4. ➔ **CONTINUE.**
The Crosstown between Eden Prairie and where it merges with I-35W ..... 5. ➔ **CONTINUE.**
Hwy. 77/Cedar Avenue ..... 6. ➔ **CONTINUE.**
I-394..... 7. ➔ **CONTINUE.**
I-494..... 8. ➔ **CONTINUE.**
I-694…….…..… 9. ➔ **CONTINUE.**
I-35E between downtown St. Paul and I-694…….…… 10. ➔ **CONTINUE.**
I-35E between downtown St. Paul and I-494……..… 11. ➔ **CONTINUE.**
Hwy. 36 between Roseville and I-694……..……12. ➔ **CONTINUE.**
Hwy. 10……..……..……13. ➔ **CONTINUE.**
Hwy. 610……..……...14. ➔ **CONTINUE.**
Hwy. 169 north of I-494 or south of I-94....…….....15. ➔ **CONTINUE.**
Hwy. 100 north of I-494 or south of I-94....…….....16. ➔ **CONTINUE.**
The new divided lanes of Hwy. 212 ….....…….....17. ➔ **CONTINUE.**
OTHER OR NONE (DO NOT READ)…….18. ➔ **THANK/DISCONTINUE.**

Q11. Do you, or have you ever, worked in any of the following fields? **READ LIST. CIRCLE ALL MENTIONS.**

Advertising or promotions	1.	↘
Radio or TV station, newspaper or magazine	2.	↘ **IF YES TO ANY,**
Market research or marketing	3.	→**THANK &**
The state patrol or a police or sheriff's department	4.	→**DISCONTINUE.** ↗
A bus company or Metro Transit	5.	↗
The Met Council	6.	↗
Mn/DOT or a city or county road construction, maintenance firm or public works department	7.	↗
NONE OF THE ABOVE (DO NOT READ)	8.	→ **CONTINUE.**

Q12. **DO NOT ASK. RECORD GENDER.**

MALE	1.
FEMALE	2.

Q13. When, if ever, did you last participate in a market research focus group discussion? **DO NOT READ. CIRCLE ONE.**

LESS THAN 6 MONTHS AGO	1.	→ **THANK & DISCONTINUE.**
6 MONTHS AGO OR LONGER	2.	→ **CONTINUE.**
NEVER	3.	→ **CONTINUE.**

Our company frequently conducts informal group discussions with people like you to explore perceptions and attitudes about various products and services. These discussions consist of eight to ten people and a group facilitator who guides the discussion. <u>There is no attempt to sell you anything</u>. Most participants find these discussions to be very interesting and enjoyable.

The reason I have been asking you these questions is that we would like to invite you to participate in a focus group discussion. The group will be held at **<u>Location</u>** on **<u>Day/Date</u>** at **<u>Time</u>.** As our way of thanking you for your participation, you will receive **<u>$65.00</u>** for your time. The discussion will last approximately two hours. Will you be able to join us on that evening?

YES	1.	→ **CONTINUE.**
NO	2.	→ **THANK & DISCONTINUE.**

GROUP 2 _____ (5:30 p.m., Wed., May 20th) -- **<u>RIDE THE BUS/LIGHT RAIL: QUALIFIES FOR THIS GROUP IF AT Q4a. RIDES THE BUS OR LIGHT RAIL 2 OR MORE TIMES IN A TYPICAL WEEK.</u>**

GROUP 3 _____ (7:30 p.m., Wed., May 20th) -- **<u>PEAK DRIVERS/COMMUTERS: QUALIFES FOR THIS GROUP IF AT Q4 DRIVES ALONE OR CARPOOLS.</u>**

GROUP 4 __ (2:30 p.m., Thurs., May 21st) --**<u>NON-PEAK DRIVERS: QUALIFIES FOR THIS GROUP IF ASKED Qs 8 THROUGH 10.</u>**

GROUP 5 _____ (5:30 p.m., Thurs., May 21st) -- **BUSINESSES/SHIPPERS: USE A SEPARATE SCREENING QUESTIONNAIRE.**

GROUP 6 _____ (7:30 p.m., Thurs., May 21st) -- **MnPASS USERS: USE A SEPARATE SCREENING QUESTIONNAIRE.**

$65.00

Because we invite only a small number of people, your participation is very important to us. If for some reason a scheduling conflict should occur, please call our office as soon as possible, as we will need to replace you. Our telephone number is _____.

CONFIRM NAME, PREFERRED FIRST NAME, ADDRESS (CITY & ZIP), PHONE NUMBER (CELL, HOME & WORK).

APPENDIX B: TELEPHONE SCRIPT TO RECRUIT BUSINESSES AND SHIPPERS

William & Kaye, Inc.
1771 Green Crest Drive
Victoria, MN 55386
(952) 443-3431

May, 2009
W-1024

PUBLIC ACCEPTANCE FOCUS GROUPS

(BUSINESSES/SHIPPERS)

NAME: _____

BUSINESS NAME: _____

ADDRESS: _____

CITY/STATE/ZIP CODE: _____

PHONE (HOME): _____ (WORK): _____

PHONE (CELL): _____

INTERVIEWER: _____ DATE: _____

GROUP 5 _____ (5:30 p.m., Thurs., May 21st) -- **BUSINESSES/SHIPPERS**

Hello, my name is (NAME), calling from (AGENCY), a marketing research firm located in Minneapolis. Today, we're conducting a brief survey on behalf of Mn/DOT with companies who have some employees driving trucks or vans into or around the Twin Cities metro area during "rush hour" times in the mornings and afternoons. If this describes your company, I would like to speak to the (OWNER, OPERATIONS MANAGER, FLEET MANAGER) or the person who sets the schedules for those driving into or around the Twin Cities and determines the freeways or highways to be driven in the metro. Would that be you, or could you switch me to that person? I am not trying to sell you anything. (WHEN CONNECTED TO THE APPROPRIATE PERSON, RE-INTRODUCE YOURSELF AND CONTINUE.) May I ask you a few questions?

YES ..... 1. ➔ **CONTINUE.**
NO ..... 2. ➔ **THANK & DISCONTINUE.**

Q1. Does your company have a "fleet" of trucks or vans and have employees who are driving the trucks or vans into or around the metro area during morning or afternoon "rush hour" times? **DO NOT READ. CIRCLE ALL MENTIONS.**

YES ..... 1. ➔ **CONTINUE.**
NO ..... 2. ➔ **THANK & DISCONTINUE.**

Q2. Approximately, how many employees, in an average day, would be driving metro area freeways and highways during morning or afternoon "rush hours? **DO NOT READ. CIRCLE ONE.**

2 OR FEWER ..... 1. ➔ **THANK & DISCONTINUE.**
3 - 7 ..... 2. ➔ **CONTINUE.**
8 - 15 ..... 3. ➔ **CONTINUE.**
MORE THAN 15 ..... 4. ➔ **CONTINUE.**
DON'T KNOW/REFUSED ..... 7. ➔ **THANK & DISCONTINUE.**

Q3. What are your responsibilities (READ NAME OF COMPANY) when it comes to decisions about when drivers on company business will be driving metro area freeways or highways during "rush hour" times? **FILL IN BELOW. IF NOT CLEAR, ASK FOR EXPLANATION AND NAME OF COMPANY.**

_____

_____

Q4. During morning or afternoon "rush hour," are there any metro area freeways or highways that you try to have your drivers avoid driving? **DO NOT READ. CIRCLE ONE.**

YES ..... 1. ➔ **CONTINUE**.
NO ..... 2. ➔ **SKIP TO Q6.**

Q5. IF "YES" AT Q4, ASK: Which freeways or highways would that be? **DO NOT READ. CIRCLE ALL MENTIONS.**

I-94. ..... 1. ➔ **CONTINUE.**
I-35W between downtown Minneapolis and I-694 ..... 2. ➔ **CONTINUE.**
I-35W between downtown Minneapolis and I-494 …… 3. ➔ **CONTINUE.**
I-35W between Burnsville and I-494 ..... 4. ➔ **CONTINUE.**
The Crosstown between Eden Prairie and where it merges with I-35W ..... 5. ➔ **CONTINUE.**
Hwy. 77/Cedar Avenue ..... 6. ➔ **CONTINUE.**
I-394. ..... 7. ➔ **CONTINUE.**
I-494. ..... 8. ➔ **CONTINUE.**
I-694……..… 9. ➔ **CONTINUE.**
I-35E between downtown St. Paul and I-694……..… 10. ➔ **CONTINUE.**
I-35E between downtown St. Paul and I-494…….. 11. ➔ **CONTINUE.**
Hwy. 36 between Roseville and I-694……..…….....12. ➔ **CONTINUE.**
Hwy. 10……..……...……13. ➔ **CONTINUE.**
Hwy. 610…….…….....14. ➔ **CONTINUE.**
Hwy. 169 north of I-494 or south of I-94....……..….15. ➔ **CONTINUE.**

Q6. Do you, or have you ever, worked in any of the following fields? **READ LIST. CIRCLE ALL MENTIONS.**

Advertising or promotions ..... 1. ➘
Radio or TV station, newspaper or magazine ..... 2. ➘ **IF YES TO ANY,**

Market research or marketing ..... 3. ➔**THANK &**
The state patrol or a police or sheriff's ..... ➔
DISCONTINUE.
department ..... 4. ↗
A bus company or Metro Transit ..... 5. ↗
The Met Council ..... 6. ↗
Mn/DOT or a city or county road construction,
maintenance firm or public works
department ..... 7. ↗
NONE OF THE ABOVE (DO NOT READ) ..... 8. ➔ **CONTINUE.**

Q7. **DO NOT ASK. RECORD GENDER.**

MALE ..... 1.
FEMALE ..... 2.

Q8. When, if ever, did you last participate in a market research focus group discussion? **DO NOT READ. CIRCLE ONE.**

LESS THAN 6 MONTHS AGO..... 1. ➔ **THANK & DISCONTINUE.**
6 MONTHS AGO OR LONGER ..... 2. ➔ **CONTINUE.**
NEVER..... ..... 3. ➔ **CONTINUE.**

The reason I have been asking you these questions is that we would like to invite you to participate in a focus group discussion. The group will be held at **Location** on **Day/Date** at **Time.** As our way of thanking you for your participation, you will receive **$90.00** for your time. The discussion will last approximately two hours. Will you be able to join us on that evening?

YES..... 1. ➔ **CONTINUE.**
NO..... 2. ➔ **THANK & DISCONTINUE.**

$90.00

Because we invite only a small number of people, your participation is very important to us. If for some reason a scheduling conflict should occur, please let us know as soon as possible, as we will need to replace you. Our telephone number is _____.

CONFIRM NAME, PREFERRED FIRST NAME, ADDRESS (CITY & ZIP), PHONE NUMBER (CELL, HOME & WORK).

APPENDIX C: INVITATION TO MNPASS USERS

May 7, 2009

TO: MnPASS Users

FROM: Harold W. Cook, William & Kaye, Inc.

RE: A Focus Group Discussion with MnPASS Users

William & Kaye, Inc. is a Twin Cities-based marketing research firm currently conducting a focus group research project for Mn/DOT and the Humphrey Institute at the University of Minnesota.

One of the focus groups will be comprised of drivers who have signed up for the MnPASS Program and drive the MnPASS lane on I-394, at least occasionally – either to or from work. If this description fits you, we would like to hear from you!

The focus group discussion with MnPASS Users will be held on Thursday, May 21st at 7:30 in the evening – to last for approximately 2 hours. If this time would work for you and you would like to be considered for the group, please send me an e-mail at harold_judy.cook@mchsi.com. You will be contacted and scheduled for the focus group, if your usage of the Lane meets the profile of the user we are seeking.

There are a few questions that need to be asked about how often you use the MnPASS lane and where you enter the lane when you are driving from the western part of the metro. We are looking for a good mix of people who use the Lane and how they access it.

If you are interested in being contacted for this focus group discussion, please call or send an e-mail by next Wednesday – May 13th.

Thank you, in advance, for your interest in this project. I look forward to hearing from you.

Regards,

Harold W. Cook
President

APPENDIX D: TELEPHONE SCRIPT TO RECRUIT MNPASS USERS

William & Kaye, Inc.
1771 Green Crest Drive
Victoria, MN 55386
(952) 443-3431

May, 2009
W-1024

PUBLIC ACCEPTANCE FOCUS GROUPS – MnPASS USERS

NAME: _____
ADDRESS: _____
CITY/STATE/ZIP CODE: _____
PHONE (HOME): _____ (WORK): _____
PHONE (CELL): _____
INTERVIEWER: _____ DATE: _____

GROUP 6 _____ (7:30 p.m., Thurs., May 21st) -- **MnPASS USERS**

Hello, my name is (NAME), calling to thank you for sending an e-mail about the focus group we are conducting among MnPASS Users. The focus group is being held on behalf of Mn/DOT. I am not trying to sell you anything. I do have a few questions to ask to ensure you match the profile of the MnPASS User we are looking for. May I ask you a few questions?

YES	1.	➔ **CONTINUE.**
NO	2.	➔ **THANK & DISCONTINUE.**

QA. Do you own or lease – and drive…? **READ LIST. CIRCLE ALL MENTIONS.**

An automobile	1.
A pickup truck	2.
An SUV	3.
A van	4.
Something else	5.
(DO NOT READ) NONE OF THE ABOVE	6.

Q1. In order to include persons from all age groups, into which of the following age categories does your age fall? **READ LIST. CIRCLE ONE.**

Under 21	1.	➔ **THANK & DISCONTINUE.**
21 - 29	2.	➔ **CONTINUE.**
30 - 39	3.	➔ **CONTINUE.**
40 - 49	4.	➔ **CONTINUE.**
50 - 59	5.	➔ **CONTINUE.**
60 - 69	6.	➔ **CONTINUE**.
70 or over	7.	➔ **THANK & DISCONTINUE.**

Q2. Are you working a job for 30 or more hours a week outside of your home? **DO NOT READ. CIRCLE ONE.**

YES ..... 1. ➔ **CONTINUE**.
NO ..... 2. ➔ **THANK & DISCONTINUE**.

Q3. You mentioned you work outside of your home. During what times of the day are you traveling to work and home from work? **DO NOT READ. CIRCLE ONE.**

TO WORK		FROM WORK	
BEFORE 5:30 AM	1.	BEFORE 5:30 AM	1.
5:30 AM – 9:30 AM	2.	5:30 AM – 9:30 AM	2.
9:30 AM – NOON	3.	9:30 AM – NOON	3.
NOON – 3:00 PM	4.	NOON – 3:00 PM	4.
3:00 PM – 6:30 PM	5.	3:00 PM – 6:30 PM	5.
AFTER 6:30 PM	6.	AFTER 6:30 PM	6.

Q4. When driving to and from work, how many days of the week do you drive I-394? **READ LIST. CIRCLE ONE.**

Usually once a week or less often ..... 1. ➔ **THANK & DISCONTINUE.**
2 – 3 times ..... 2. ➔ **CONTINUE.**
4 – 5 times ..... 3. ➔ **CONTINUE.**
DON'T KNOW (DO NOT READ) ..... 4. ➔ **THANK & DISCONTINUE.**

Q5. On average, how many days of the week do you use your MnPASS Account and pay to drive in the I-394 MnPASS Lane? **READ LIST. CIRCLE ONE.**

Usually once a week or less often ..... 1. ➔ **THANK & DISCONTINUE.**
2 – 3 times ..... 2. ➔ **CONTINUE.**
4 – 5 times ..... 3. ➔ **CONTINUE.**
DON'T KNOW (DO NOT READ) ..... 4. ➔ **THANK & DISCONTINUE.**
"AS NEEDED" (DO NOT READ) ..... 5. ➔ **ASK:** How often would that be?

PLEASE FILL IN ANSWER: _____
(COMPLETE SCREENING, AND "PUT ON HOLD.")

Q6a. Each day, how many miles do you travel, one way, to work? **DO NOT READ. CIRCLE ONE.**

LESS THAN 3 MILES ..... 1. ↘
3 MILES TO LESS THAN 5 MILES ..... 2. ↘
5 MILES TO LESS THAN 10 MILES ..... 3. ↘ **OBTAIN A**
10 MILES TO LESS THAN 15 MILES ..... 4. ↗ **GOOD MIX.**
15 MILES TO LESS THAN 20 MILES ..... 5. ↗
20 MILES OR MORE ..... 6. ↗

Q6b. Do you usually begin your work day at the same work location, each day? **DO NOT READ. CIRCLE ONE.**

YES ..... 1.
NO ..... 2.

Q7. In the mornings, where do you get onto I-394? **DO NOT READ. CIRCLE ONE.**

BEFORE CARLSON PARKWAY. ..... 1. ↘
FROM CARLSON PARKWAY ..... 1. ↘
FROM HWY. I-494. ..... 2. ↘
FROM PLYMOUTH ROAD (RIDGEDALE AREA) ..... 3. → **CONTINUE.**
FROM THE HOPKINS CROSSROAD. ..... 4. ↗
FROM HWY. 169. ..... 5. ↗
FROM LOUISIANA BLVD. ..... 6. ↗
FROM HWY. 100. ..... 7. ↗
FROM PENN AVE. ..... 8. → **THANK & DISCONTINUE.**

Q8. What type of work do you do? **FILL IN BELOW. IF NOT CLEAR, ASK FOR EXPLANATION AND NAME OF COMPANY.**

_____

Q9. Do you, or have you ever, worked in any of the following fields? **READ LIST. CIRCLE ALL MENTIONS.**

Advertising or promotions ..... 1. ↘
Radio or TV station, newspaper or magazine ..... 2. ↘ **IF YES TO ANY,**
Market research or marketing ..... 3. →**THANK &**
The state patrol or a police or sheriff's ..... →**DISCONTINUE.**
department ..... 4. ↗
A bus company or Metro Transit ..... 5. ↗
The Met Council ..... 6. ↗
Mn/DOT or a city or county road construction, maintenance firm or public works department ..... 7. ↗
NONE OF THE ABOVE (DO NOT READ) ..... 8. → **CONTINUE.**

Q10. **DO NOT ASK. RECORD GENDER.**

MALE ..... 1.
FEMALE ..... 2.

Q11. When, if ever, did you last participate in a market research focus group discussion? **DO NOT READ. CIRCLE ONE.**

LESS THAN 6 MONTHS AGO. ..... 1. → **THANK & DISCONTINUE.**
6 MONTHS AGO OR LONGER ..... 2. → **CONTINUE.**
NEVER. ..... 3. → **CONTINUE.**

The reason I have been asking you these questions is that we would like to invite you to participate in a focus group discussion. The group will be held at **Location** on **Day/Date** at **Time.** As our way of thanking you for your participation, you will receive **$65.00** for your time. The discussion will last approximately two hours. Will you be able to join us on that evening?

YES.....1. ➔ **CONTINUE.**
NO.....2. ➔ **THANK & DISCONTINUE.**

$65.00

Because we invite only a small number of people, your participation is very important to us. If for some reason a scheduling conflict should occur, please let us know as soon as possible, as we will need to replace you. Our telephone number is _____.

CONFIRM NAME, PREFERRED FIRST NAME, ADDRESS (CITY & ZIP), PHONE NUMBER (CELL, HOME & WORK).

APPENDIX E: DISCUSSION GUIDE FOR FOCUS GROUPS

I. INTRODUCTION

A. Moderator
B. Focus Group
C. Facility
   1) Mirror/Observers
   2) Microphones/Audio Recording
   3) Notes from Observers
D. Respondents
E. Topic for Focus Group

II. CURRENT EXPERIENCE ON TWIN CITIES AREA FREEWAYS/DIVIDED HIGHWAYS

A. Commuting experience between the hours of 5:30 a.m. and 9:30 a.m.

   1) Leave from where? When?
   2) Eventual destination? Miles to get to your eventual destination?
   3) Route(s) you take to get to your eventual destination?
   4) Average time of your morning commute?
   5) Amount of time spent on freeway(s)/divided highway(s) during your morning commute?

B. Commuting experience for the trip home between the hours of 3:00 p.m. and 6:30 p.m.?

   1) Leave for home when?
   2) Route? ➔ A reverse of route you took in the morning?
      a) IF "NOT": Why not?
      b) Where are you going?
   3) Average time of your afternoon commute?

C. What is it like being on Twin Cities area freeways/divided highways in the morning? In the afternoon?

   1) Is it any different from what it was 5 years ago?
      a) IF "YES": What is different? Why do you say that?
      b) IF "NO": Why do you say that?
   2) Is it more difficult to travel on the freeways/divided highways today than it was 5 years ago?
      a) IF "YES": What is happening? Why do you say that?
      b) IF "NO": Why do you say that?
   3) Does your commute take you longer today than it did 5 years ago? How much longer?
   4) Are people driving differently today on area freeways/divided highways from how they drove 5 years ago?
      a) IF "YES": What is different? Why do you say that?

b) IF "NO": Why do you say that?

D. What is your commute like? As a driver? As a bus or Light Rail rider? As a MnPASS User?

1) How is the traffic flow?
2) What, if anything, do you do to avoid the traffic? Why? Why not?

E. [FOR DRIVERS] Have you changed the way you drive the roads you take versus 5 years ago (if the change is not due to a job change or a housing move)?

1) IF "YES": What have you changed? Have you changed the route you take? Why do you say that?
2) IF "NO": Why do you say that?
3) IF "DUE TO A JOB CHANGE OR MOVE": Was your job change/move affected at all by a desire to change the roads/highways or distance you were driving? IF "YES": Why do you say that?

III. <u>INTRODUCTION TO FEE LANES' CONCEPT</u>

A. SHOW FIRST 3 SLIDE(S) – HOV LANE CONFIGURATION IN EFFECT CURRENTLY ON I-35W, SOUTH OF I-494 TO BURNSVILLE AND HOT LANE CONFIGURATION IN EFFECT CURRENTLY ON I-394 FROM WESTERN METRO TO DOWNTOWN MINNEAPOLIS, INCLUDING PHOTO OF LANES.

1) For comparison purposes, this is how the lanes on I-35W look currently. (A High Occupancy Vehicle [HOV] Lane provides a lane for carpoolers and buses to use – often allowing them to bypass congestion; encourages people to carpool and use transit, thus reducing congestion in general purpose lanes.)

2) Ever travel this section of 35W?

3) For comparison purposes, this is how the lanes on I-394 look currently. (Vehicles with two or more persons can use this lane for free, and single occupancy vehicle drivers are charged a fee to use this lane – I-394. Allowing single occupancy vehicles to use this lane can maximize throughput on the highway, while providing a choice of reliable trip time to all motorists.)

4) Ever travel this section of I-394?

B. INTRODUCE SLIDE(S) OF FEE LANE – CONVERT LEFT GENERAL PURPOSE LANE INTO A TOLL LANE **<u>AND</u>** RIGHT SHOULDER INTO A GENERAL PURPOSE LANE DURING RUSH HOURS (5:30 – 9:30 A.M. & 3:00 – 6:30 P.M.). FEE LANE CHARGES ALL MOTORISTS EXCEPT FOR BUSES.

1) Let's talk about this first concept – converting the left general purpose lane into a toll lane while the right shoulder becomes a general purpose lane during rush hours. (Converting an existing shoulder allows for more throughput on highways without any additional highway construction.) The FEE Lane charges for all motorists except for buses. The result is the same number of general purpose

lanes along with one toll lane; an additional lane is provided for rush hour use with relatively small additional capital costs to do the shoulder lane conversion.

2) Tell me what your initial reaction is to this concept for Twin Cities' area freeways. Why do you say that?
3) This configuration does not offer free service to carpools using the FEE Lane; all motorists pay a toll (except for buses), reducing the problems encountered when ensuring that single occupancy vehicles do have a transponder and are paying to drive in the current HOT Lanes.
4) Do you think this would help traffic move more efficiently on area freeways?
   a) Could this help your commute to or from work? Why do you say that?
   b) Who do you think this would help? Why do you say that? Anything you might not like so well? Why do you say that?

C. INTRODUCE SLIDE(S) OF FEE-C LANES – CONVERT AN ADDITIONAL GENERAL PURPOSE LANE INTO A TOLL LANE (2 TOLL LANES) AND REDUCE THE NUMBER OF GENERAL PURPOSE LANES BY ONE. INTRODUCE THE CONCEPT OF CREDITS.

1) Let's talk about this concept – converting one more general purpose lane into a toll lane reducing the number of general purpose lanes during rush hours to two. **Credits would be provided to all motorists**; with available capacity on two fast lanes, toll rates would be lower than on a single FEE Lane, and credits can be used to reduce the cost of driving the FEE Lanes. (Credits can also be used to help pay for riding the bus or Light Rail.)
2) Tell me what your initial reaction is to this concept for Twin Cities' area freeways. Why do you say that?
3) This configuration allows for improved throughput per lane by adding a 2nd FEE Lane (above what is possible with a single priced lane) and increases the safe movement of traffic. Credits are available to all motorists;6 this configuration does not offer free service to carpools using the FEE Lane; all motorists pay a toll (except for buses), reducing the problems that are encountered when ensuring that single occupancy vehicles do have a transponder and are paying to drive in the current HOT Lanes. (Toll revenues will go to operate the FEE Concept – shoulder improvements, technology, etc. – and the balance will be distributed as more credits.)
4) Do you think this would help traffic move more efficiently on area freeways?

   a) By providing credits to all motorists and by providing more capacity in 2 FEE Lanes, toll rates will likely be lower than on HOT Lanes and FEE Lanes (for those who pay current tolls) – more credits will be available to motorists.
   b) Could this help your commute to or from work? Why do you say that?
   c) Who do you think this would help? Why do you say that? Anything you might not like so well? Why do you say that?

D. INTRODUCE SLIDE(S) OF FEE-C+ LANE – CONVERT ALL GENERAL PURPOSE LANES AND THE SHOULDER LANE TO FEE-C+ LANES. INTRODUCE CONCEPT OF CREDITS AGAIN.

1) Let's talk about this fourth concept – converting all general purpose lanes into toll lanes, including the right shoulder lane during rush hours. **Credits would be provided to all motorists**; with available capacity on all "fast" lanes, toll rates would be lower than on a single FEE Lane, and **even more credits** will be available to motorists than with the previous scenario. (Credits can also be used to help pay for riding the bus or Light Rail.)
2) Tell me what your initial reaction is to this concept for Twin Cities' area freeways. Why do you say that?
3) This configuration allows for even more improved throughput and maximizes safety and speed due to the elimination of the need to separate two types of lanes – FEE and free. (Toll revenues will go to operate the FEE Concept – shoulder improvements, technology, etc. – and the balance will be distributed as more credits.)
4) Do you think this would help traffic move more efficiently on area freeways?

a) Could this help your commute to or from work? Why do you say that?

b) Who do you think this would help? Why do you say that? Anything you might not like so well? Why do you say that?

IV. CONGESTION ON TWIN CITIES AREA FREEWAYS/DIVIDED HIGHWAYS

A. Of these concepts, which do you think would do the best job of alleviating congestion on Twin Cities' area freeways or divided highways and help move traffic better and safer during rush hours?

1) Why do you say that?
2) What else can you tell me?
3) Is current congestion during rush hours enough of a problem that something needs to be done about it? IF "NO": Why do you say that?

B. What will it look like in the Twin Cities area when you decide that the congestion has gotten so bad that you simply can't tolerate it another day and want something better?

1) How bad will the congestion be? What will the highways and freeways look like? Visualize it for me.
2) How will you feel, personally, when this happens?
3) What do you think you will do when you have "had it?" Why do you say that?

V. CONCLUSION

APPENDIX F: SUMMARY OF ROUNDTABLE

On Friday October 9th 2009, a series of presentations on the "Public Acceptance of Toll Lane Options" was held at the Humphrey Institute at the University of Minnesota. These presentations are part of a series of presentations entitled *Rethinking Transportation Financing Roundtable*.

The format of the seminar was a series of three presentations followed by a question and answer session. The first presentation was entitled "Express Lane Networks: Effectiveness and Acceptance" by Patrick DeCorla Souza, Tolling and Pricing Program Manager of the Federal Highway Administration (FHWA). The second presentation was on "Public Acceptance of FEE Lanes: Study Methodology" by Adeel Lari, Director of Innovative Transportation Finance, Humphrey Institute of Public Affairs, University of Minnesota. The third presentation was "Public Perceptions of FEE Lanes: Focus Group Impressions" by Kenneth Buckeye, Program Manager, Minnesota Department of Transportation.

The first presentation reviewed the historic acceptance of express lanes in other areas and introduces the FEE lane concept. The second presentation discussed who participated in the focus groups, what types of questions focus group participants were asked, and the four potential FEE lane configurations participants were shown. The third presentation discussed the focus group findings and the likes, concerns and suggestions participants had for the four fee lane configurations.

Question and Answer

Impact of FEE Lanes:

Comment: If we think about the FEE lane scenarios into the future there will be resistance and eventually acceptance. Does this just become a new baseline and our roads get crowded again because we get used to paying to use the road?

Response: Our roads will become crowded again because as population grows, travel demand grows. As travel grows we will need capacity on other modes because we'll have demand that will need to be served. A major emphasis at USDOT is in cross modal cost benefit analysis – sometimes adding extra lane may be most cost beneficial method. The good thing about pricing is that it can solve a revenue problem at the same time that it can solve the demand problem.

Pricing increases the capacity of a roadway because you are using the space more efficiently. Not all trips are necessary and if people get a signal of what a trip costs the number of trips might decrease. We don't have a capacity problem, the problem we have is that everyone wants to drive at the same time.

Encouraging Behavior Changes and Considering Societal Benefits:

Comment: Transportation providers can influence behavior by pulling and pushing people. We "pull" people in a certain direction; the mentality is to build it and they will come. We can "push" people through the fee lane concepts in this presentation and through price changes. When thinking of how to incentivize people, we should focus on societal benefits. For example, when congestion is high, such as during peak period times, it should cost less to user alternatives, such as transit. Societal benefits should be directed towards building alternative choices, such as

more frequency and cost competitive transit modes. We should give people alternatives and not tax roads.

The problem with the credit system is people think it's another government system. The incentive might be clearer and better accepted by the public as a credit directly to transit. People might be more suspicious of a system that offers ultimate flexibility than a system that offers than a transit credit.

Response: A major barrier to congestion pricing is at the state level where there is legislation or constitutional prohibitions on transferring revenue. Even if the DOT wanted to give all money from congestion pricing to lower bus fares on corridors, in some states you can't do it. An example of this is in Portland where there is a constitutional prohibition on highway user fees going to transit.

The credit system is necessary to win support for converting lanes. If we announced to the public that we are converting two lanes and offer no concessions, the proposal is realistically dead in the water. There are no any examples of places that do peak period fare reductions. If we did have peak period fare reductions it would certainly increase ridership.

FEE Lanes and the Revenue Problem:

Comment: One of the presentations discussed that the money generated from FEE lanes can help to solve the revenue problem. Although fee lanes can provide some revenue, they cannot solve the revenue problem.

Responses: FEE lanes can be a large part of helping to fix the revenue problem because FEE lanes cost less to build and can generate revenue. A traditional roadway can cost nearly $13.4 million per lane mile whereas the cost of a roadway with active traffic management may be as low as $2-3 million per lane mile. FEE lanes have the advantage of lower construction costs and generating revenue but the operating costs for active traffic management is expensive.

FEE Lanes and Privacy Issues:

Comment: The fee lane scenario where all lanes are priced may face much higher obstacles because the need to address privacy issues for smart cards and transponders. MnPASS addresses privacy because you can choose whether or not to use the lane, but when you lose the ability to choose, privacy can become an issue.

Response: Although privacy issues are very important, they are much higher with VMT fees where you know the exact destination and origin of a user. The only information that is known with fee lanes is what part of a freeway a person is driving on.

A frequent comment in focus groups is the idea that we've already paid for the freeways (double taxation). The numbers show that if we were paying for our highways, the highway trust fund wouldn't be going bankrupt. A study in Florida looked at actual cost of construction and maintenance of a freeway and estimated tax paid. The taxes only covered 60% of the construction of maintenance. When you look at shortage of money over the past few decades, it's been about 40%. We need to do a better job explaining this gap to the public. In the future it

would be interesting to have another series of focus groups with the same people where you give them this information on the funding gap, ask the questions again, and see if this moves them in a positive direction.

A Critical Mass and the Future of Fee Lanes:

Comment: In order to move forward with this fee lane concept we need a critical mass. A barrier to this critical mass is that people believe they have already paid for the road (double taxation). We need to lay out what the public is really paying for.

Willingness to Pay:

Comment: I am concerned about the scenario where all lanes are FEE lanes because transit loses its travel time advantage. These scenarios should take into account the net impact of changes to the auto traveling public and transit users. For where to go next, we need to quantify a person's willing to pay for his or her trip.

Response:

There are some policy solutions so that transit can maintain an advantage, such as having a credit conversion rate where a credit is worth one on the highway and worth ten on the bus. Analysis does need to be done to examine the willingness to pay for a trip so we know how much surplus is there.

The Puget Sound Regional Council examined different pricing scenarios, such as converting HOV to HOT, adding another lane and having two HOT lanes, pricing certain points where capacity is added, demand management on freeways, and pricing entire system. This alternatives analysis has been used to start a dialogue with the public about costs and benefits of various options. A finding from this study is that there is a significant shift to alternative modes and a change in times of travel with pricing.