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## FROM THE EDITOR

### **HOT Networks: An Idea Whose Time May Have Come**

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*HOV lanes could be transformed into a more effective component of the urban transportation system by turning them into premium lanes that would serve as uncongested guideways for express buses, while providing a faster and more reliable travel option to toll-paying individual motorists. So argue the authors of a new report by the Reason Public Policy Institute unveiled at a recent press conference that included representatives of the American Automobile Association, Environmental Defense and the Progressive Policy Institute.<sup>1</sup> In effect, the proposal marries two promising transportation innovations: high-occupancy toll (HOT) lanes and Bus Rapid Transit (BRT). The authors summarize their case for HOT Networks below.*

Today's high occupancy vehicle (HOV) lanes represent a valiant but largely unsuccessful effort to reduce traffic congestion in America's large metropolitan areas. Evidence is growing that despite huge capital investment and many years of rideshare promotion, HOV lanes have not changed Americans' driving habits. Instead of gradually gaining strength, carpooling has been slowly eroding. The fraction of commuters sharing the ride to work declined in the decade of the '90s from a nationwide average of 13 percent in 1990 to 11.4 percent in 2000 according to the 2000 Census. Although HOV lanes reduce travel time for the remaining small percentage of commuters who are able to carpool, a vast proportion of the traveling public does not benefit from them.

HOV lanes could be transformed into a more effective component of the urban transportation system by turning them into premium lanes that would serve as uncongested guideways for express buses, while providing a faster and more reliable travel option to individual motorists traveling in personal automobiles. Buses and vanpools would use the premium lanes free of charge, while other motorists would pay a variable toll. Tolls would be debited electronically from users' smart cards, thus doing away with toll booths and cash transactions. In effect, our proposal marries two promising transportation innovations receiving growing attention in the transportation community: high-occupancy toll (HOT) lanes and Bus Rapid Transit (BRT).

**HOT lanes** are access-controlled lanes reserved for buses and other high occupancy vehicles but open to single-occupant vehicles upon payment of a toll. The number of cars using the reserved lanes can be controlled through variable pricing (via electronic toll collection) so as to maintain free-flowing traffic at all times, even during the height of rush hours. California's two HOT lane projects, which have been in operation for several years, have demonstrated convincingly the ability of electronic variable pricing to maintain congestion-free conditions

even during peak hours. Moreover, surveys in California have shown widespread public acceptance of the HOT lane concept. People of all income levels use the HOT lanes when saving time is an important consideration. Indeed, utility vans and delivery trucks are a far more common sight on California's HOT lanes than the proverbial Lexus.

**Bus Rapid Transit (BRT)** refers to express bus service operating in special lanes. BRT aims to provide performance and service qualities comparable to those of rail transit but at a cost that is considerably lower than that of light rail systems (an average of \$9 million/mile versus \$34.8 million/mile for light rail transit according to US General Accounting Office estimates). Because of its favorable economics, BRT is receiving increased attention from the US Department of Transportation and is picking up support in the transit community. Transit officials realize that the federal New Starts program can only fund a small fraction of the rail candidate projects currently in the pipeline. They see BRT as offering a new generation of less costly transit systems that would extend the benefits of rapid transit to a much larger number of communities.

However, to fully realize the potential of these two innovative concepts, the fragmented and unconnected HOV facilities that already exist in metropolitan areas must be extended, linked and interconnected so as to create seamless region-wide networks of premium lanes. Only then would transit riders and motorists be able to take full advantage of the benefits of time savings and increased travel reliability of premium lanes.

In one sense, our proposal calls for a return to an earlier concept, in which special reserved lanes were developed primarily as guideways for regional express bus service. But instead of offering the significant remaining capacity of these premium lanes to carpool vehicles at no charge, the proposal would open these lanes to all personal vehicles that choose to pay a fee. Charging such vehicles serves two purposes: it generates the funds needed to pay for the network, and it manages traffic flow to preserve the time-saving advantages necessary for high-quality express bus service.

We believe there is a way to accomplish this vision without drawing heavily on public-sector funds. Experience with California's two HOT lane facilities has shown that motorists are willing to pay tolls to save time even if there is a free highway alternative. These facilities have further demonstrated that tolls paid by motorists can generate a significant annual revenue stream. Our proposal is to use these revenues as the basis for issuing tax-exempt toll revenue bonds to finance the build-out of the HOT networks.

Analysis of potential HOT networks in eight of the most-congested metro areas (Miami, Atlanta, Dallas/Ft. Worth, Houston, Seattle, Washington, DC, the San Francisco Bay Area, and Los Angeles/Orange County) suggests that toll revenue bonds could cover a substantial portion of construction costs of HOT Networks.

To implement this plan, we recommend that Congress authorize a multi-year program of HOT Network development, to be jointly implemented by the Federal Highway and Federal Transit Administrations. Specifically, the program would aim to encourage local jurisdictions to:

- Incrementally create networks of premium toll lanes (HOT Networks) by extending, linking, interconnecting and filling in gaps in existing metropolitan HOV systems;
- Implement Bus Rapid Transit services on the completed portions of the HOT networks as soon as practicable; and
- Develop innovative public-private financing arrangements involving tax-exempt toll revenue bonds to help fund a significant portion of the capital cost of these projects.

Funds to support the federal portion of the program would come from special fund allocations drawn from FHWA's National Highway System or Surface Transportation Program. The FTA's

New Starts program would provide funds for bus acquisition and related BRT system components.

### **An Idea Whose Time May Have Come**

Two basic notions underlie our proposal. The first notion is that high occupancy lanes are a scarce resource for which there is pent up demand as urban roads become ever more congested and as highway travel becomes increasingly slower and less reliable. Confining the use of these lanes, as we have been doing, to those who are lucky enough to find travel companions going to the same destination is not the fairest or most productive use of this scarce resource. The second notion is that the customary revenue source used to finance transportation investments – the gasoline tax—may prove to be insufficient to keep pace in the longer run with the nation's growing transportation needs. Our proposal responds to both of these concerns. Pricing the high occupancy lanes would ensure the most productive use of this scarce road space, and the fees collected in this manner would provide a significant supplementary source of transportation revenue.

The HOT Networks concept is an approach by which, everyone, would win. Transit riders would win because many cities that cannot afford to build a large-scale rail system would be able to implement effective region-wide express transit service. Individual motorists would benefit by having the option of faster and more reliable travel on a network of congestion-free lanes when predictable arrival time is really of importance to them. Users of regular lanes would gain because regular lanes would become less congested as some motorists switched to the toll lanes. And, importantly, HOT Networks could be built without the need for major new public funds by utilizing the revenue stream from toll charges paid by individual motorists.

In the 2003 surface transportation reauthorization, Congress will have an opportunity to make this vision a reality. A congressionally authorized program of HOT Networks—built to benefit motorists and transit users alike—would constitute a powerful expression of the increasingly intermodal nature of our federal surface transportation program.