

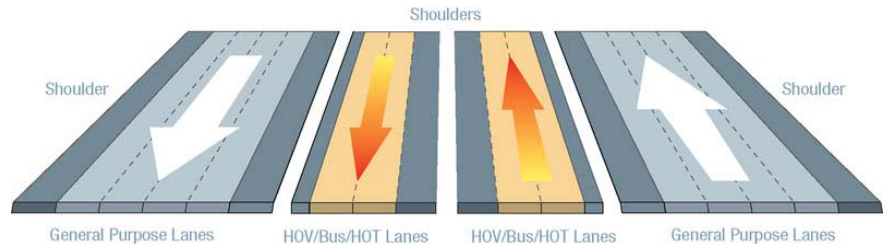
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Congestion Pricing and NEPA: Environmental Benefits and Considerations

Plagued by increasing traffic congestion, rising costs, and tightening budgets, States are increasingly looking at operational management techniques as alternatives to the familiar strategy of adding highway lanes to increase capacity. During the last 10 years, despite the increased popularity of managed lanes and pricing techniques, the question still remains as to the best method of evaluating these approaches during the National Environmental Policy Act (NEPA) review process.



The Capital Beltway HOT lanes project will add two lanes in each direction on a 14-mile stretch of I-495 in Virginia. Construction started in July 2008, and the lanes are expected to open in 2013. (See www.virginiahotlanes.com.) Image courtesy of Transurban.

Managed Lanes and Pricing Techniques

The goal of managed lanes is to move traffic more efficiently by placing restrictions, such as time of day, vehicle type, or price, on designated lanes. The most common form of managed lanes are high-occupancy-vehicle (HOV) lanes that restrict use to carpools, vans, and buses. Other examples include truck-only lanes and reversible lanes.

Unlike tolls, the primary purpose of which is revenue generation, pricing techniques are used primarily for congestion mitigation. Congestion pricing uses various signals to reduce congestion. In Singapore and London, vehicles must pay a toll to enter the central business district. Other cities are exploring the use of variable parking fees; San Francisco is just beginning a program to charge parking rates on the basis of actual space availability. Another congestion-pricing option is the addition of high-occupancy-toll (HOT) lanes, in which single-occupancy vehicles are charged a toll to use HOV lanes. HOT-lane tolls vary on the basis of actual driving conditions, and electronic tolling is used to ensure that highway speeds are maintained. Minneapolis, Houston, San Diego, Denver, Salt Lake City, and Seattle currently have HOT lanes, with tolls ranging from 25 cents to more than \$8.00. In five other States, HOT lanes are currently under construction. Virginia is planning to add close to 70 miles of HOT lanes along the Capital Beltway, through a public-private partnership (PPP) with Fluor Enterprises Inc. and Transurban. The State began to construct 14 miles of HOT lanes along I-495 in July 2008; these lanes are expected to be operational in 2013.

Washington SR 167 HOT Lanes



In May 2008, 10 miles of HOT lanes on Washington SR 167 opened in Seattle. These lanes are free of charge for buses, motorcycles, and carpools of two or more passengers, while single-occupancy vehicles pay a toll collected electronically. The amount depends on driving conditions, but the minimum is 50 cents. In the first two months of operation, the lanes averaged more than 1,000 tolled trips per day. The average toll was \$1.25, but users paid as much as \$9.00. During peak hours, users save an average of nine minutes heading northbound and six minutes traveling southbound. Photo courtesy of WSDOT.

Incorporating Pricing into the NEPA Process

A major challenge of congestion pricing is determining the level of public involvement. Public opposition poses a significant risk to the implementation of congestion pricing, so it is important that the public and elected officials, who may have their own reservations about congestion pricing, discuss the potential for pricing early in the NEPA process. It is important to both educate and clearly explain to the public the impact of a pricing project on users of the facility as well as on the greater community. The importance of an open dialogue was evident in New York City's recent failed attempt to introduce a congestion-pricing scheme similar to one used successfully in London. With early and consistent public involvement in pricing projects, such delays and failures might not occur.

When considering priced alternatives, communication with resource agencies is also very important. Agencies may become concerned if toll revenue requirements appear to restrict the size, scope, and location of these alternatives. Such issues should be discussed openly with agencies as early as possible to avoid misunderstandings. Transportation agencies should assure their resource-agency partners that the same amount of flexibility in scope, design, and location has been provided whether or not the facility uses pricing or standard management techniques. As with other efforts to improve stewardship, early engagement of resource agencies can help to ensure that sensitive environmental resources and other impacts are considered throughout the project-development process and that mitigation options are appropriately evaluated.

Ideally, transportation agencies should consider pricing during the planning stage of project development, before projects begin to go through the NEPA process. If this is not possible, it would be prudent to introduce pricing when determining the project's purpose and need, to help identify any appropriate pricing and managed-lane techniques. Since pricing and managed-lane techniques often encourage higher occupancy in vehicles, framing the purpose of a project in terms of passenger volume as opposed to vehicle volume can also open the discussion for pricing mechanisms. Alternatively, the project's purpose could be identified as reducing passenger delay or variability of travel times.

Decision-makers should consider both priced and non-priced options during the alternatives-analysis phase of the NEPA process. Pricing as a modification to the current condition can be considered under a no-build-alternative scenario. In order for pricing-only options to be considered in the NEPA process, tolling must be assumed in the financial forecasts to meet fiscal constraints, pricing must be identified in the purpose and need, or all non-tolled alternatives must be eliminated during the alternatives-screening process.

Managed Lanes and Pricing Offer Significant Benefits

Economists have been making the argument for using pricing to manage traffic congestion since the 1920s; however, this approach has only recently been implemented in a few locations. Pricing mechanisms benefit users and nonusers. One benefit pertains to HOV/HOT lanes that promote higher vehicle occupancy, which can reduce the number of vehicles on the road and in turn reduce congestion for all vehicles. HOV/HOT lanes also offer time-sensitive users the option of bypassing traffic, thereby reducing congestion and improving safety for both users and the greater community. For example, managed truck lanes can remove less maneuverable vehicles from the general traffic, thereby reducing the hazards associated with merging trucks.

Managed lanes and pricing can also have environmental benefits. By reducing the number of vehicles traveling on the road and by smoothing traffic flow and maintaining freeway speeds, managed lanes help to reduce air pollution and may also contribute to a decrease in greenhouse-gas emissions. Furthermore, revenues from priced traffic lanes can support public transportation both on the road and in the greater community. This revenue could be used to support more extensive environmentally sensitive design elements or other mitigation programs. Additional environmental benefits specific to a project location may also be possible for managed lanes. All of these benefits make managed lanes and pricing mechanisms an important option for States to consider as they struggle to meet their transportation needs.

Given the increasing interest from various stakeholders, congestion pricing and managed lanes are likely to receive added attention in the next Federal Highway authorization bill.

For more information and resources, go to:

- [FHWA's Tolling and Pricing Program](#)
- [AASHTO's Practitioner Handbook 03: Managing the NEPA Process for Toll Lanes and Toll Roads](#)

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The Woodrow Wilson Bridge and Bay St. Louis Bridge were recently honored by AASHTO as the Best Transportation Projects. The Woodrow Wilson Bridge was honored with the Grand Prize, selected by a panel of expert judges and the Bay St. Louis Bridge received the People's Choice Award. To learn more visit [AASHTO's website](#).

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