

# The Roll of Tolls in Moving Freight

## INTRODUCTION

If one accepts the conclusions of recent studies predicting an increase in congestion on the national highway system then it becomes apparent that new strategies must be developed to manage freight's impact on the country's transportation system.

Tolling strategies are a possible mechanism to relieve congestion caused by freight traffic. They can also facilitate freight movement, thereby providing economic benefits. If the region chooses to employ these tools it must be done on a region-wide basis to help improve the flow of freight through the region. In other words, to get a regional benefit, toll strategies should be deployed at a regional level.

## FEDERAL RULES ON TOLLS

Federal rules and programs for toll roads are delineated in the new transportation bill, SAFETEA-LU. This discussion gives a brief overview of existing federal rules concerning tolling as codified in SAFETEA-LU and investigates different tolling strategies that the Upper Midwest states should consider to benefit regional freight movement.

SAFETEA-LU (§1604) provides states with increased flexibility to use tolling not only to manage congestion, but also to finance infrastructure improvements and maintenance. Tolling programs in SAFETEA-LU, while not freight specific, can be used to manage freight as well as motor-vehicle traffic.

SAFETEA-LU provides the following programs for states to launch tolling projects on a pilot or demonstration basis.

- **Interstate System Construction Toll Pilot Program.** Under this program, the Secretary may permit a state or compact of states to collect tolls on an Interstate highway, bridge, or tunnel for the purpose of constructing Interstate highways. This program is limited to three projects in total (nationwide).
- **Interstate System Reconstruction and Rehabilitation Toll Pilot Program.** Established in TEA-21 and continued in SAFETEA-LU, this program allows up to three interstate tolling projects for the purpose of reconstructing or rehabilitating interstate highway corridors that could not be adequately maintained or improved without the collection of tolls.

- The **Value Pricing Pilot Program** is continued in SAFETEA-LU. The program supports costs of implementing up to fifteen variable pricing pilot programs nationwide to manage congestion and benefit air quality, energy use, and efficiency.
- The new **Express Lanes Demonstration Program** will allow a total of fifteen demonstration projects through 2009 to permit tolling to manage high levels of congestion, reduce emissions in a nonattainment or maintenance area, or finance added interstate lanes for the purpose of reducing congestion. Automatic toll collection is required. This program encourages the use of electronic tolling that is compatible across regions and states. Developing this type of system will be a great improvement in efficiency for all road users, including freight shippers. The Upper Midwest Freight coalition can benefit from this type of interoperability in tolling to reduce freight congestion on highways.

These programs can be used by the Upper Midwest Regional Freight Coalition to both manage congestion on the highway system through road pricing and raise funds for highway maintenance and improvements. Funding for express lanes with electronic toll collection promises to establish infrastructure that will offer significant efficiencies for shippers and could benefit freight movement through the Upper Midwest.

The Upper Midwest states can use these programs to their advantage if they choose to implement tolling programs.<sup>1</sup> It is imperative that the Upper Midwest Freight coalition plan any future toll projects jointly. Only by planning projects with an eye to current and future regional congestion issues will a complete and fully functional freight tolling program be established in the region.

## **CREATIVE USES OF AVAILABLE TOLLING OPPORTUNITIES**

Now that these programs are in place and road pricing is gaining more attention in highway planning circles, what should be done in the Upper Midwest to capitalize on the new opportunities for road pricing made available through SAFETEA-LU? How can the states in the Upper Midwest region use what is being learned through these new programs to improve freight movement through the region? The following are some suggestions of ways the Upper Midwest Freight partners could use tolling to manage congestion and increase freight flows through road pricing.

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<sup>1</sup> A summary of federal tolling rules in SAFETEA-LU is available at: <http://www.fhwa.dot.gov/safetealu/summary.htm>. This section is summarized from information available on this website.



**Figure 1: New York's E-ZPASS system**  
[http://www.jai.com/db\\_billeder/its.jpg](http://www.jai.com/db_billeder/its.jpg)

## Electronic Toll Collection

This tool is an automated way to pay tolls without stopping at a toll booth through the use of an electronic transponder.

Electronic toll collection technology has been available for more than ten years. In the past few years this time-saving tool has gained increasing acceptance and the benefits of this technology are being realized. The **New York State Thruway**, which is funded through users' tolls, has

been a leader in implementing electronic tolling technologies. The E-ZPASS program provides truckers with incentives to use the E-ZPASS system through offering discounts on the necessary transponders that allow trucks to use the electronic tolling system.




The Thruway further encourages use of electronic toll collection by offering reduced toll rates for vehicles using the E-ZPASS system. Commercial vehicles get a five percent discount over the standard toll rate for using E-ZPASS. Volume discounts further decrease Thruway tolls for truckers.

## Open Lanes

With open lane, or open road, tolling, drivers do not need to pass through a toll booth and do not need to slow down to pay their toll. The **Illinois State Toll Highway Authority** is currently in the process of constructing an open-road tolling system that holds great potential for reducing congestion and therefore providing time savings to shippers. Open-road tolling allows truck drivers with an electronic transponder (e.g. I-PASS or E-ZPASS) to use the new open lanes *and* benefit from an agreement with the Illinois Trucking Association to give these truckers preferential toll rates. Truck drivers using Illinois' I-PASS receive discounted congestion pricing during the night time and off-peak daytime hours. The goal of this system is to simultaneously facilitate movement of freight while managing traffic congestion during peak periods.



**Figure 2: Ariel View of Open Lanes on Illinois Toll Highway**  
Source: <http://www.tollroadsnews.com/cgi-bin/a.cgi/yPFw.PfYEdiRW6r2jfFwDw>

TRUCKS & TRAILERS			
PEAK	<u>2 AXLE 6 TIRES</u>	<u>3-4 AXLES</u>	<u>5+ AXLES</u>
 & CASH 6 AM - 9 AM 3:30 PM - 6:30 PM	\$1.50	\$2.25	\$4.00
DAYTIME NON-PEAK			
 WEEKDAY NON-PEAK & DAYTIME WEEKENDS	\$1.00	\$1.75	\$3.00
CASH	\$1.50	\$2.25	\$4.00
OVERNIGHT			
 & CASH 10 PM - 6 AM	\$1.00	\$1.75	\$3.00
*Rates reflect typical mainline toll plaza rates that can vary by location.			

It is important to note that tolls for trucks on the Illinois Tollway vary not just with distance traveled and time of day, but also by axle. Figure 3 displays the breakdown of tolls for shippers based on both number of axles and time of travel.

Figure 3: **Toll Table for the Illinois Tollway.**

Source:

[http://www.illinoistollway.com/portal/page?\\_pageid=53,178636,53\\_178660&\\_dad=portal&\\_schema=PORTAL](http://www.illinoistollway.com/portal/page?_pageid=53,178636,53_178660&_dad=portal&_schema=PORTAL)

Some of the additional savings to shippers using I-PASS include<sup>2</sup>:

With I-PASS alone:

- Commercial vehicle operators who currently use I-PASS are reducing their travel time by up to 20 minutes for a round trip, using a trip on I-294 between Indiana and Wisconsin as an example.
- Truckers spend less time on the road in traffic, and can spend less on fueling and operating their rigs.
- Truckers save \$25 for every 15-minute reduction in trip time, (The Midwest Truckers Association). For example, truckers can save as much as \$333 per month if they take 10 round trips using I-PASS on the full length of the Tri-State Tollway (I-94/294) compared to operating on roads with manually operated toll booths.
- Vehicle operators experience savings due to less wear and tear on vehicles (engines, tires etc.) due to harsh braking and acceleration.

<sup>2</sup> <http://www.illinoistollway.com/pls/portal/docs/PAGE/ISTHA/CONGESTIONRELIEFPLAN/TAB64482/BENEFITS%20OF%20OPEN%20ROADS%20FOR%20A%20FASTER%20FUTURE.PDF>

With I-PASS funded road improvements:<sup>3</sup>

The Toll Highway Authority anticipates that trucks will save even more with improvements included in the state's Congestion-Relief Plan. These improvements are funded through tolls collected with I-PASS. The following planned improvements will *reduce travel times*:

- Rebuilding/restoring 90 percent of the Tollway system
- Widening 117 miles of existing roads
- Tearing down 20 mainline toll plazas and replacing them with Open Road Tolling
- Building the long-anticipated I-355 South Extension

These time savings promise to increase efficiency and promote economic development. Illinois is a partner state in the Upper Midwest Freight Corridor Study and this effort can be expanded and built upon to create a regional approach to address congested areas that have become problematic for moving freight through the region.

### **Truck-Only Open Lanes**

In addition to these two options, some state departments of transportation have begun planning for separated truck lanes on their sections of interstate in order to meet the predicted growth in truck-traffic volume. These types of projects, which include efforts in Texas to build the Trans Texas Corridor that incorporates existing highways and new construction to create a statewide highway network with truck-only toll lanes. The "STAR Solutions" project proposed by the Virginia Department of Transportation (VDOT) calls for construction of truck-only toll lanes on I-81 through the Shenandoah Valley. Both projects are also facing significant opposition from impacted communities and environmental groups. The project proposed for I-81 in Virginia will be discussed in more detail here.

Under Virginia's 1995 Public-Private Transportation Act (PPTA), which encourages Virginia agencies to enter into partnerships with private-sector interests, the VDOT has contracted with STAR Solutions to increase the capacity of I-81. STAR has proposed to create truck-only lanes, as well as some minor upgrades to the local freight-rail system. The project will be funded initially through a package of public and private-sector funds, and is ultimately envisioned to be self-sustaining through tolls.

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<sup>3</sup> <http://www.illinoistollway.com/pls/portal/docs/PAGE/ISTHA/CONGESTIONRELIEFPLAN/TAB64482/BENEFITS%20OF%20OPEN%20ROADS%20FOR%20A%20FASTER%20FUTURE.PDF>

Virginia's I-81 project remains in the planning stages and is controversial for a variety of reasons. The proposed project is on a section of I-81 that runs through environmentally and culturally sensitive lands. The tourism industry, which is an economic force throughout the Shenandoah Valley, remains wary about the future impacts of adding four additional lanes of highway through an area marked by high-quality watersheds and civil war battlefields. Additionally, public watchdog groups question the viability of the toll revenue projects generated by STAR.



**Figure 4: Ariel view of proposed I-81 Truck-Only Open Lanes in Virginia.**  
Source: [http://www.improve81.com/images/Interstate81\\_Final.jpg](http://www.improve81.com/images/Interstate81_Final.jpg)

The problems VDOT has experienced should provide a caution to other agencies considering construction of this type of large infrastructure project. It is important to accurately gauge public sentiment and take federal regulations such as environmental requirements fully into account before proceeding too far with an infrastructure project of the scale of the one being planned for I-81.

### **Congestion Pricing**

Congestion Pricing refers to variable road pricing, which charges higher prices under congested conditions and lower prices at less congested times and locations. This strategy is intended to reduce peak-period vehicle trips. Congestion pricing can be utilized with any toll-road option. It provides another powerful tool to manage congestion and free valuable space on the highway. By decreasing congestion and improving travel times freight movement becomes more efficient. Shippers can also choose to move freight at non-peak times, thereby lowering their costs.

### **INDUSTRY ISSUES WITH TOLL LANES**

Not surprisingly, the trucking industry views the possibility of increasing numbers of toll roads with skepticism, asserting that placing tolls on highways will simply divert traffic to arterial and local roads and place an undo burden on the industry.

This outcome is unlikely to occur to the extent many in the industry claim. If road prices are set appropriately, truckers will benefit through congestion management more than they would by rerouting to slower-speed roadways. Recent studies have shown that proper use of tolling can provide an appropriate

incentive to the freight industry and increase productivity through enhancing the level of service on the interstate highway system.<sup>4</sup>

Perhaps the lesson the Upper Midwest Freight stakeholders should take from the industry cautions is to coordinate with the trucking associations well in advance of proposing a tolling project. By including this important group in discussions from the beginning, the industry will be able to voice concerns and perhaps come to agreements that benefit the states and improve freight movement while minimizing harm to the industry.



**Figure 5:** Untolled Rickshaw Highways, A Preventable Tragedy.

Source: [www.flickr.com](http://www.flickr.com)

highways to not only more closely reflect the true cost of using the roads, but, importantly, to help fund roadways. Many of the same consultants suggest that the improved roads should be constructed by private corporations that would

## THE ROLE OF PRIVATIZATION

Recently the private sector has become more involved in the discussion of tolls on the interstate. Private firms are showing interest in constructing and managing toll roads for states seeking to establish a toll structure for their highways. Most of the information coming from this sector has supported the use of road pricing to reflect the true cost of trip making. Different groups have also suggested this strategy would manage congestion and improve the flow of freight.

The precarious nature of our current highway funding system is yet another argument put forward in favor of implementing tolls on the interstate. States and municipalities are having difficulty maintaining existing infrastructure and funding new road projects under the current system. To address this impending funding crisis, some transportation consultants have suggested tolling

<sup>4</sup> Poole, Robert. 2004. Corridors for Toll Truckways, Suggested Locations for Pilot Projects, <http://www.reason.org/ps316.pdf>. Reason Foundation Policy Study 316; Phone interview with Kevin Soucie, 2 November 2005.

then charge a toll to recoup their costs and maintain the infrastructure.<sup>5</sup> A caution should be noted in regard to this strategy. Any agreement with a private firm to construct and manage a toll road should include language allowing the contracting states to construct additional travel lanes on parallel, publicly managed roads if traffic volumes warrant. In addition, the Illinois Tollway and the New York Thruway examples discussed here suggest that states are capable of managing their own toll roads. There is no one-size-fits-all solution to who should manage a toll road, and this decision should be made based on the information specific to the state or region contemplating instituting a tolling strategy.

The opinion of the private sector is not unanimous, however. A variety of citizens and non-profit groups are questioning the benefit of the construction of additional toll lanes on the highways. Others are skeptical of the validity of any tolling scheme, citing the gasoline tax as their fare share payment into the highway system. It is clear that regardless of the need and utility of tolling congested highways, the debate concerning this practice will continue into the foreseeable future.

## **ENVIRONMENTAL AND SOCIAL ISSUES AND TOLL LANES**

Environmental surveys must be conducted for public road projects that use federal or state monies and/or involve federal or state permits. Contracting with private firms does not eliminate this requirement. Planned projects requiring additional travel lanes, such as the I-81 project, will clearly result in environmental impacts along the highway corridor. By constructing new travel lanes there is a high probability that new traffic will be generated, increasing carbon monoxide and greenhouse gas emissions that need to be addressed. The additional lane width from adding new toll lanes, either optional or truck-only, will create barriers for wildlife, potentially further degrade waterways, and in urban areas can further marginalize neighborhoods through which an interstate highway travels. The environmental and social costs of any project proposing construction of new travel lanes must seriously consider these issues early in the planning process in order properly assess these impacts. Doing this early allows alternatives to be considered before significant time and money is invested in a particular project, and allows for the development of the best possible alternatives.

However, there are certain environmental benefits from the installation of open-road and electronic tolling systems. This technology significantly reduces wait times and bottlenecks caused common at staffed toll booths. This benefit cuts down on emissions from idling at toll booths.

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<sup>5</sup> Phone interview with Kevin Soucie, 2 November 2005.

## THE DEBATE ABOUT TOLLING TRUCK LANES

Despite some of the benefits, current thinking on the use of toll lanes for trucks is mixed. In general, the experience with road pricing has been inconsistent at both the state and national levels. Freight shippers as well as private citizens historically have balked at the suggestion that they pay a fee to use public roads. However, as our highway system becomes increasingly congested and funding for maintenance and construction becomes diminished, policy makers and transportation planners have turned to tolling and variable congestion pricing as a way to manage travel choices and behavior. The different perspectives on the tolling question come from several different camps: the trucking industry; the private sector; state DOTs; and the federal government. It is helpful to compare the pros and cons of tolled lanes for freight side by side.

The benefits of tolled truck lanes include:

- Safety enhancements gained with truck-only lanes safety by limiting interactions between large trucks and automobiles;
- Reduction in congestion increases productivity;
- Capacity expansion with additional highway lanes;
- Modification of highways designed for truck lanes to accommodate heavy vehicles;
- Construction, maintenance, infrastructure improvement funded through tolls;
- Management of traffic through variable pricing, and;
- Restrictions on double and triple trailer might be lifted for truck-only lanes, allowing more freight to be transported more efficiently.

Some of the negatives associated with tolled truck lanes include:

- Potential for diversion of traffic onto local roads (particularly if the toll lanes are mandatory for trucks);
- Optional tolled truck lanes could be underutilized if cost-conscious industry does not see significant economic benefit to toll lanes and therefore avoids using them;
- Potential for political opposition since much of the public resists tolls on public roads;
- Potential for Industry opposition since view as double taxation;
- Potential for significant harm to environmental and cultural resources;
- Potential to contribute to overall traffic growth through additional lanes (induced demand);
- Possible difficulty implementing projects requiring additional lanes due to significant and understandable public opposition;
- Probably high price tag of projects requiring additional lanes, and;
- Potential that most toll-lane projects will not separate automobile and freight traffic, thereby negating the safety benefit.

## **RECOMMENDATIONS**

The pros and cons of tolled highway lanes tell a tale of the opportunities and barriers associated with implementing this type of road pricing on public highways. Documentation of increasing congestion, particularly in moving freight along the highways in the Upper Midwest, points to a clear need for a regional coalition to address this issue proactively, not after it becomes a crisis. Tolling highways is a viable option to help manage and improve freight flows through the region. Using electronic tolling and open lane tolling technology is probably the most viable of the options discussed here. Construction of additional highway lanes takes time and imposes significant financial, environmental, and social costs. Electronic tolling technology can be installed more quickly and at far less expense than constructing traditional staffed toll booths while providing efficiencies through reductions in trip times. Tolling in general provides additional funding to maintain and improve roadways as well as manage congestion.

Looking forward, the Upper Midwest Regional Freight stakeholders need to consider the range of tolling options available to them. By weighing the different choices, a strategy to improve freight movement in the region that includes some form of tolling may emerge as a good choice for the states. Any effort along these lines must be embarked on as a cooperative effort, between the states in the region, the freight industry, the private sector, and the public. By working cooperatively, the Upper Midwest has the best chance of addressing system-wide issues with freight movements. A well functioning network throughout the region will provide benefits to all the states since movement of goods and services through the Upper Midwest will enhance the economic potential of each member of the coalition.