

Toll Roads in the United States: History and Current Policy

History

The early settlers who came to America found a land of dense wilderness, interlaced with creeks, rivers, and streams. Within this wilderness was an extensive network of trails, many of which were created by the migration of the buffalo and used by the Native American Indians as hunting and trading routes. These primitive trails were at first crooked and narrow. Over time, the trails were widened, straightened and improved by settlers for use by horse and wagons. These became some of the first roads in the new land.

After the American Revolution, the National Government began to realize the importance of westward expansion and trade in the development of the new Nation. As a result, an era of road building began. This period was marked by the development of turnpike companies, our earliest toll roads in the United States. In 1792, the first turnpike was chartered and became known as the Philadelphia and Lancaster Turnpike in Pennsylvania. It was the first road in America covered with a layer of crushed stone. The boom in turnpike construction began, resulting in the incorporation of more than 50 turnpike companies in Connecticut, 67 in New York, and others in Massachusetts and around the country. A notable turnpike, the Boston-Newburyport Turnpike, was 32 miles long and cost approximately \$12,500 per mile to construct.

As the Nation grew, so did the need for improved roads. In 1806, the Federal Government passed legislation to fund the National Road, known as the Cumberland Road. This road would stretch from Maryland through Pennsylvania, over the Cumberland Mountains, to the Ohio River. For a period of time, these roads served the new Nation well. However, with the use of heavier wagons and the large movements of entire families across the country, a strain on the infrastructure was evident. The roads in this country were still dirt and gravel-paved, rutted and impassable in bad weather.

Toward the 1880s, America began to see the increased use of bicycles as a form of transportation, which led to the "Good Roads Movement," mainly through bicyclist clubs across the country. In addition, with the advent of the automobile, new and better roads were required. The Federal Government responded by creating the Office of Road Inquiry in 1893. This agency was responsible for collecting data, answering questions, and assisting in road improvements. Later, this infant agency grew to help finance road construction (Post Office Appropriation Act of 1912), the beginning of Federal-aid roads. Soon, connecting highways emerged from contributions of State and local governments as well as Federal financing. People were traveling further and more frequently.

World War I saw greater dependence on these vital roadways, especially manufacturing centers. Following the war, the Federal Highway Act of 1921 provided financial assistance to the States to build roads and bridges. The need for a nationwide interconnecting system of highways became clearer. By the end of the 1920s, more than half of all American families owned automobiles. Engineers were kept busy building highways, bridges, and tunnels, especially in the larger cities such as New York, Boston, Los Angeles, and San Francisco. Tolls were used on many roads, bridges, and tunnels to help pay for this building boom. The Holland Tunnel in New York was completed in the mid-1920s and opened up routes into the heart of New York City. It was referred to as the "Eighth Wonder of the World." The Golden Gate Bridge in San Francisco, built in the 1930s, provided access into San Francisco from across the bay.

World War II created even greater reliance on our vital highway systems. The roads, bridges, and tunnels served as defense routes for the war effort. After the war, the growth of the suburbs increased the use of the automobile. The use of the automobile grew to include not only trips to work but to social activities and

recreational outlets as well. In the immediate post-World War II era, several States recognized that modern, high quality highway systems were needed to meet this demand. The Pennsylvania Turnpike was the first of these roads, and was an immediate success. From around 1945 to 1955, many States, mainly located in the North and East, began to build State turnpikes on their primary long-distance travel corridors.

Beginning around the time of World War I, the Federal Government, for primarily military reasons, began to study the possibility of building high-quality roads across the Nation. One option for the financing of these roads was to collect tolls. However, the Federal-Aid Highway Act, enacted in 1956--which provided for a coast-to-coast highway system, connecting important cities and industrial centers to one another--was legislated as a tax-supported system, not a toll system. With the implementation of Federal-aid to States to build the Interstate System, proposals for additional toll roads languished. By 1963, the last of the toll roads planned before the Federal-aid system was legislated opened, and few additional proposals were seriously considered.

By 1980, the Nation's highway transportation infrastructure began to show signs of age through heavy use. There was general public concern that the U.S. was falling behind in its commitment to building and maintaining highway infrastructure. Several trends contributed to this perception. There had been phenomenal growth in the purchase and use of highway vehicles. There was an acknowledgment that governments at all levels were short of funds, and that in some cases, rather than continuing to raise taxes, it would be easier to defer maintenance and reconstruction of infrastructure of all kinds. Furthermore, there was a timing problem in that roads built in the peak years of new Interstate construction (roughly 1960-1980) were approaching the end of their design life and were wearing out. These concerns were one reason the toll road concept began to re-emerge.

Another reason toll facilities are being reconsidered is the increasing ability of electronic equipment to identify vehicles and record and store large amounts of data: a technology that is transforming our way of thinking about toll collection. Electronic toll collection (ETC) leads to significant declines in the operating costs of toll facilities. Furthermore, ETC, by not requiring the vehicle to stop, reduces lines at tollbooths, reduces vehicle operating costs, and therefore directly benefits the traveling public. Public acceptance and familiarity with the ease, accuracy, privacy, and fairness of ETC are likely to make these toll-charging methods much more pervasive on toll roads in the near future. Technology does come at a cost. For example, more work must be done to increase compatibility among competing electronic toll collection technologies, but the shortcomings can and will be overcome.

But toll financing concepts are changing in other ways. In some circles, the proposition is put forward that goods and services currently provided by the public sector could also be provided by the private sector, perhaps with gains in efficiency. Highway facilities are identified as one of the areas where the private sector might be willing to invest if there were a high probability of recouping the investment through the collection of tolls. With the possibility of privately financed toll roads, some large engineering and construction management firms believe that a highway market might exist that had not been explored by their firms. Under typical public provision of U.S. highways, the State does (or contracts out) the design work and then awards distinct contracts to carry out parts of the completed plans. If the project meets certain criteria, it is eligible for Federal-aid reimbursement (Federal-aid pays the State back a portion of its costs of construction). Some private firms, however, have proposed to do the whole process themselves and take advantage of efficiencies such as simultaneous design and construction. Furthermore, there was the feeling by these firms that the time might be right to put some of their own equity into these projects, and finance, build, and operate the entire facility themselves.

These forces appear to suggest that both public and private toll roads may be additional means of financing and

constructing U.S. highway facilities in the near future. Public-private partnerships, defined as an agreement between the public (government) and the private sector to develop, finance, construct, operate, own, and maintain highway facilities, will be one of the alternatives. To what extent they could become a major force in highway finance will depend on the abilities of the individual public-private ventures to overcome existing institutional barriers.

Current Policy: State Legislative Provisions

It should not be surprising to find that States which pass toll road legislation do not follow a fixed pattern as each State confronts unique circumstances. But the following provisions in State toll road legislation are common:

- creation of an authority or commission,
- scope, purpose, and function of the entity,
- definition of terms
- delineation of the district within the entity operates,
- details about the entity's governing board,
- the legal powers of the entity,
- the authority to issue bonds and use tolls,
- authority to set and revise tolls,
- ability to invest bond proceeds,
- administrative requirements (audits, annual reports, etc.),
- constraints on the use of the funds,
- rights and remedies of bondholders,
- tax-exempt status of the entity's property and bonds,
- venue and jurisdiction for legal actions,
- police powers,
- operating, maintenance and repair obligations, and
- relationships with other entities.

A successful toll road project can be built with virtually any mix of public and private financial sponsorship. Several prototypical models have developed, incorporating increasing amounts of private involvement along with non-governmental funds. As the private sector contributes more equity financing and assumes more risks, the partnership develops more characteristics of full privatization. The structures described here fit along a continuum from traditional public to mostly private:

- *Traditional New Public Highway:* State government ownership and funding with investment commonly justified by general system-wide public needs.
- *Traditional New Public Toll-Road Delivery:* Public authority ownership and operation, using toll revenues to finance non-recourse and State-backed tax-exempt debt to construct the facility and provide interim operating funds.

Although the traditional public toll authority does not incorporate private sector participation in the ways that the models described in the following sub-bullets do, it nonetheless provides an alternative structure for tollways. The following illustrates a number of variations of the traditional public toll authority.

- *City or County Government:* Local toll road and bridge financial and ownership aspects which are completely controlled by a local government. Local taxes and bond revenue may be set aside for specific toll projects as the need arises, and the toll revenues are disbursed as the local government sees fit.
- *Local Commissions or Authorities:* Toll entities which are created by State statute and act like independent State commissions. They are completely financially independent of the local government, although they may be directed by a board of commissioners appointed by the government or actually be a division of the local government. These authorities have ultimate financial responsibility for all commitments entered into and completely fund their own projects.
- *Dependent State Authorities:* In essence, this type of authority acts as a financial extension of the State Department of Transportation. The authority is responsible for all debt issued, but transfers the bond revenues and the operation of the toll system to the State under a lease agreement. The lease payments received from the State are then applied to service the debt.
- *Independent State Authorities or Commissions:* State commissions and authorities which are autonomous in financial responsibilities such as fixing toll rates and charges as well as repayment of debt, but subject to some degree of political control as the governor appoints members of the board and the authority's debt issuance may or may not be subject to review by a State finance board. No funding is received from the State, and ultimate payment of debt is the sole obligation of the authority.
- *Innovative Financing for New Public Facilities:* Public ownership and operation with full or partial reliance on revenue sources such as development impact fees as well as tolls.
- *Blended Public-Private Financing for New Public Toll Road Delivery:* Control and direction under governmental oversight, usually by a local authority; financing delivers a complete, stand-alone project without recourse to government funding if toll revenues are not sufficient.
- *Public-Private Partnerships to Deliver New Road Capacity:* Substantial private equity participation and a strong private role in finance, construction, and operation; public role tends more toward framing the overall agreement, contributing pre-development costs, or assembling rights of way.
- *Privately Supplied New Highway:* Finance provided and risk borne almost entirely by private developers and their financial supporters; significant private equity combined with the issuance of taxable debt.

Current Policy: Federal Legislative Provisions

Tolling and Pricing Programs

The Federal-aid Highway Program, Title 23 of the United States Code (23 U.S.C.), offers States and/or other public entities a variety of opportunities to toll motor vehicles to finance Interstate construction and reconstruction, promote efficiency in the use of highways, reduce traffic congestion and/or improve air quality. In addition to providing States and/or other public entities the authority to toll motor vehicles, the

Value Pricing Pilot program is unique in providing grants for pre-implementation and non-construction related implementation costs of tolling, and for non-highway related pricing activities.

The tolling and pricing programs include:

- [Express Lanes Demonstration Program](#)
- [High Occupancy Vehicle \(HOV\) Facilities](#)
- [Interstate System Reconstruction & Rehabilitation Pilot Program](#)
- [Interstate System Construction Toll Pilot Program](#)
- [Title 23 USC Section 129 Toll Agreements](#)
- [Value Pricing Pilot Program](#)
- [High Occupancy Vehicle \(HOV\) Facilities](#)

Express Lanes Demonstration Program

This demonstration program permits tolling on selected facilities to manage high levels of congestion, reduce emissions in a non-attainment or maintenance area under the Clean Air Act Amendments, or finance added Interstate lanes for the purpose of reducing congestion.

The Secretary is authorized to carry out 15 demonstration projects through 2009 to allow States, public authorities, or public or private entities designated by States to collect a toll from motor vehicles at an eligible toll facility for any highway, bridge, or tunnel, including on the Interstate. An "eligible toll facility" includes those accomplishing any of the following:

- manage high levels of congestion typically by varying the toll price by time of day or level of traffic;
- reduce emissions in a non-attainment area or maintenance area;
- finance the expansion of a highway, for the purpose of reducing traffic congestion, by constructing one or more additional lanes (including bridges, tunnels, supports, or other necessary structures) on the Interstate System.

Qualified Demonstration Projects may consist of:

- variable pricing by time of day or level of traffic, as appropriate to manage congestion or improve air quality, is required if an HOV facility is tolled; for a non-HOV facility, variable pricing is optional;
- motor vehicles with fewer than 2 occupants may be permitted to use HOV lanes as part of a variable toll pricing program;
- automatic toll collection is required in express lanes to optimize free flow of traffic; and

- toll revenue may only be used for debt service, reasonable rate of return on private financing, operation and maintenance costs, or any eligible title 23 or 49 project if the facility is being adequately maintained.

Federal share of project cost of a facility tolled under this program, including installation of the toll collection facility, is not to exceed 80 percent.

High Occupancy Vehicle (HOV) Facilities, SAFETEA-LU Section 1121 (23 USC 166)

Section 1121 of SAFETEA-LU replaces Section 102(a) of Title 23 of the United States Code (23 U.S.C.) with a new Section 166 that clarifies some aspect of the operation of HOV facilities and provides more exceptions to the vehicle occupancy requirements for HOV facilities. It also authorizes States to create High Occupancy Toll (HOT) lanes. Specifically, this section allows States to charge tolls to vehicles that do not meet the established occupancy requirements to use an HOV lane if the State establishes a program that addresses the selection of certified vehicles and procedures for enforcing the restrictions. Tolls under this section may be charged on both Interstate and non-Interstate facilities. There is no limit on the number of projects or the number of states that can participate.

If a State desires to allow HOT vehicles to use HOV lane by creating a HOT lane or converting an existing HOV lane to a HOT lanes, an [Expression of Interest](#) should be sent to the Tolling and Pricing Team and the local Division Office to initiate a Federal Review process. For more information about the Federal Review, refer to the [Federal-Aid Highway Program Guidance on HOV Lanes](#). The revised version with additional information related to HOT Lanes and new requirements sated in 23 USC 166 will be published in the Federal Register in early 2006.

Interstate System Reconstruction & Rehabilitation Pilot Program

SAFETEA-LU continued the authority initially provided in Section 1216 (b) of TEA-21, by allowing up to three existing Interstate facilities (highway, bridge, or tunnel) to be tolled to fund needed reconstruction or rehabilitation on Interstate highway corridors that could not otherwise be adequately maintained or functionally improved without the collection of tolls. Each of the three facilities must be in a different State. There is no special funding authorized for this program. By law, Interstate maintenance funds may not be used on a facility for which tolls are being collected under this program.

Interstate System Construction Toll Pilot Program

This program authorizes up to three facilities on the Interstate System to toll for the purpose of financing the construction of new Interstate highways. A State or an interstate "compact of States" may submit a single candidate project under this program. Each applicant must demonstrate that financing the construction of the facility with the collection of tolls is the most efficient and economical way to advance the project. The State must agree not to enter into a non-compete agreement with a private party under which the State is prevented from improving or expanding the capacity of public roads in the vicinity of the toll facility to address conditions resulting from traffic diverted to nearby roads from the toll facility. There is no special funding authorized for this program. By law, Interstate maintenance funds may not be used on a facility for which tolls are being collected under this program.

The "At-a-Glance" features of this program are as follows:

- States or Interstate compacts of States are eligible to apply;

- there is no requirement that the facilities be in different States;
- tolling must be the most efficient and economical way to finance the project, but it doesn't have to be the only way;
- a facility management plan must be submitted;
- automatic toll collection is required;
- non-compete agreements are prohibited -- a State may not enter into an agreement with a private entity that prevents the State from improving or expanding capacity of adjacent roads to address conditions resulting from diverted traffic;
- revenues may be used only for debt service, reasonable return on investment of private entity, and operation and maintenance costs; regular audits will be conducted;
- Interstate Maintenance funds may not be used on the facility while it is tolled;
- applications must be received by FHWA before August 10, 2015.

Title 23 United States Code (23 U.S.C.) Section 129 Toll Agreements

Under 23 U.S.C. 129, Federal participation is allowed in the following five types of toll activities.

- Initial construction (except on the Interstate System) of toll highways, bridges, and tunnels, including the approaches to these facilities;
- Reconstructing, resurfacing, restoring, and rehabilitating of any existing toll facility;
- Reconstruction or replacement of free bridges or tunnels and conversion to toll facilities;
- Reconstruction of a free Federal-aid highway (except on the Interstate system) and conversion to a toll facility; and
- Preliminary studies to determine the feasibility of the above toll construction activities.

If Federal-aid funds are used for construction of or improvements to a toll facility or the approach to a toll facility or if a State plans to reconstruct and convert a free highway, bridge or tunnel previously constructed with Federal-aid funds to a toll facility, a toll agreement under Section 129(a)(3) must be executed. There is no limit to the number of agreements that may be executed.

Value Pricing Pilot Program

The Value Pricing Pilot (VPP) program, initially authorized in the Intermodal Surface Transportation Efficiency Act (ISTEA) as the Congestion Pricing Pilot Program, and most recently renewed with the passage of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), encourages implementation and evaluation of value pricing pilot projects to manage congestion on highways through tolling and other pricing mechanisms. This is the only program that provides funding to support studies and implementation aspects of a tolling or pricing project. The program is limited to 15 slots (which FHWA has reserved for "states") of which only one vacancy remains. Each state can have multiple projects.

SAFETEA-LU provided a total of \$59 million for fiscal years (FY) 2005-2009 for the VPP program. \$11 million was authorized for FY 2005 and \$12 million was authorized for each of FYs 2006 through 2009. Of the amounts made available to carry out the program, \$3 million will be set-aside in each of the fiscal years 2006 through 2009 for value pricing projects that do not involve highway tolls. Funds available for the VPP program can be used to support pre-implementation study activities and to pay for implementation costs of value pricing projects.

Program Highlights

- \$12 million available, with \$3 million set aside for value pricing projects that do not involve highway tolls.
- Value pricing concepts that have become mainstream and have been adopted, as common practice, such as High Occupancy Vehicle (HOV)-to-High Occupancy Toll (HOT) lane conversions, will not be funded. See reverse side for additional details.
- Non Highway Tolls
 - Innovative parking pricing strategies, including (a) surcharges for entering or exiting a parking facility during or near peak periods, and (b) a range of parking cash-out policies, where cash is offered to employees in lieu of subsidized parking, parking operators reimburse monthly patrons for unused parking days, or renters or purchasers in multi-family housing developments are provided direct financial saving for not availing of car parking spaces.
 - Pay-as-you-drive pricing, including car insurance premiums set on a per-mile basis and innovative car ownership, leasing, and usage arrangements that reduce fixed costs and increase variable usage costs.

Project Types/Projects

- Converting High-Occupancy (HOV) Lanes to High-Occupancy Toll (HOT) Lanes
- Cordon Tolls
- Fair Lanes
- Priced New Lanes
- Pricing on Toll Facilities
- Usage-Based Vehicle Charges
- "Cash-Out" Strategies/Parking Pricing
- Regional Pricing Initiatives
- Truck Only Toll Facilities

For information on all of the above see: http://www.ops.fhwa.dot.gov/tolling_pricing/index.htm.

References

- *Congestion Pricing: A Primer* ([HTML](#), [PDF](#) 4.5MB) - Publication Number: FHWA-HOP-07-074
- [Brief Description of Urban Partnerships Program and Congestion Pricing](#)
- [Tool for Rush-hour User Charge Evaluation \(TRUCE\)](#)

Resources

- [Planning and Decision Making Tools](#)
- [Publications and Products](#)
- [Quarterly Program Reports](#)