



# THE ROLE OF TOLLS IN FINANCING 21ST CENTURY HIGHWAYS

by Peter Samuel and Robert W. Poole, Jr.

## INTRODUCTION

Congestion in America is bad and getting worse. The lack of adequate investments in road capacity has resulted in traffic congestion that costs Americans at least \$168 billion each year. Vital centers of American life, including our cities, are increasingly clogged by traffic, making them unsustainable as centers of culture and economic activity.

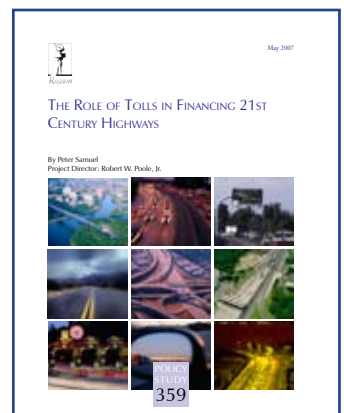
America's congestion problem largely stems from the inadequacy of traditional financing mechanisms. Federal and state highway budgets are determined by government grants and funded by taxes on gasoline. The gas tax-and-grant system, a product of the period between 1920 and 1950, is running on fumes. First, as cars have become more fuel efficient, the revenue generated by gas taxes has fallen relative to the need for more roadways. Second,

since the completion of the Interstate Highway System in the 1980s, the federal gas tax has been used by politicians less to build needed roadways, and increasingly as a source of money for pork projects. Finally, while a sensible transportation financing policy would link revenue with road use, providing critical information about where new road construction is most critically needed, gas taxes are paid at the pump and, therefore, provide no information about where transportation construction is warranted.

## AN OVERVIEW OF TOLL CONCESSIONS

Policymakers, however, have another tool to provide critical transportation infrastructure to their citizens at their disposal that reduces congestion, improves travel time, and conserves

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public resources.

Toll concessions, sometimes referred to as franchises, leases, or public-private partnerships, grant a private company the right to operate a toll business under specified conditions for a specified long-term period. Analogous in many ways to the long-term franchises granted to investor-owned utilities, such as electric utilities, today's toll concessions are a refinement of 19th century road and bridge charters that permitted private firms to build and operate infrastructure along public rights-of-way under terms outlined in the charter.

Toll concessions operated by businesses offer customers a specific service—the use of the road—in return for a fee (the toll). Toll facilities are businesses that thrive only if they provide a valuable service to customers, manage costs, and provide competitive rates of return to potential investors who provide the necessary capital for the construction of infrastructure. Toll facilities' single-minded devotion to these factors means that over the long run they can provide transportation infrastructure more efficiently than government, which is often subject to many competing special and political interests.

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The successes of tolls are so striking that they should rapidly become an important part of our transportation system.

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## THE ADVANTAGES OF TOLL CONCESSIONS

Toll concessions offer policymakers several advantages over traditional methods of highway and road financing:

### 1. Toll Concessions Offer Greater Access to Capital

Traditional public financing of the kind used by public toll authorities is limited by the historical growth of revenues because investors in public toll bonds do not share in any profits earned by the toll authority. Consequently, such investments in public toll bonds tend to be extremely conservative, generating far less upfront financing than could be secured by

using toll concessions.

Private concessionaires, by contrast, can raise far greater amounts in upfront financing through the use of equity money. For example, toll road concessions in Australia have carried out large initial public offerings (IPOs) of stock to help finance construction. Since private concessionaires are able to offer investors a share of profits earned by the business through tolls, investors are far more willing to provide the initial capital necessary to build the infrastructure with the hope that they will benefit from future returns.

Texas's Central Texas Turnpike (SH 130) was initially constructed as a conventional toll-financed road by the Texas Turnpike Authority, a division of the Texas Department of Transportation. Texas DOT estimated that a 40-mile southward extension to San Antonio could raise, at best, \$600 million of the project's \$1.3 billion cost through traditional public toll financing. When the project was offered as a long-term concession, however, Cintra Zachry offered to finance the entire \$1.3 billion project, pay a \$25 million upfront concession fee, and offer the state a share in profits over the 50-year term of the deal.

Many policymakers look with skeptical eyes on such apparent generosity by private toll concessionaires such as Cintra Zachry. If a private concessionaire is able to offer such a favorable deal to a public transportation authority, how much more must the private concessionaire be profiting off the concession? But there are important institutional differences that allow the private toll concessionaire to make such investments.

First, private concessionaires tend to be less conservative in projecting future traffic use of their concessions, allowing the concessionaires to raise greater amounts of initial financing. Second, since toll concessions generally have longer terms—50-year concessions versus the traditional 30-year tax-exempt financing for traditional tolls—toll facilities are able to take into account longer-term development, new interchanges, and traffic growth in their initial projects, which creates greater incentives for investors to contribute the initial capital.

Third, toll facilities are willing to set tolls at levels that keep pace with economic growth over the life of the 50-year period. Publicly operated toll roads could in theory adjust tolls accordingly on public toll roads, but public toll authorities are generally constrained by political considerations from setting the appropriate toll. Many public toll authorities have kept toll rates the same for periods longer than 15 years, in the face of rising maintenance costs and inflation.

Given the amazing array of financial instruments available in private equity markets, it's no surprise that the financial industry, including toll concessionaires, has the wherewithal to raise considerably larger amounts in initial capital for transportation projects.

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Congestion is clogging the arteries of our cities, and if we don't solve the problem our cities will begin to die as centers of economic productivity.

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## 2. Toll Concessions Encourage Much-Needed Toll Flexibility

Private concessionaires can adjust toll rates according to traffic patterns and usage. The development of electronic toll technology over the past two decades offers toll concessionaires the ability to adjust toll rates in real time. Traditional public toll authorities are, in theory, capable of using the same technology and adjusting toll rates accordingly. Indeed, the initial tolls established by public toll authorities often match market rates. However, traditional public toll authorities are often subject to political pressures that keep tolls below their market rates.

While many policymakers are understandably concerned that private toll concessionaires will set toll rates at the expense of commuters, toll flexibility is a vital tool in building, maintaining, and expanding America's transportation infrastructure.

First, toll concessionaires' ability to adjust—both raise and lower—tolls as conditions change enables them to manage traffic flow and avoid congestion in the short term and, with newer technologies, even in real time.

Public toll pricing faces both problems because it has none of the flexibility common to pricing in other

areas of our lives. More often than not, tolls set too low encourage more drivers onto a given road than the road can handle, creating congestion and long traffic delays.

Toll concessionaires, by contrast, can use pricing mechanisms to manage traffic flow, providing a superior product—faster commute times and minimal congestion—to drivers. Those tolls are capped in the concession agreements between toll concessionaires and public transportation authorities to prevent toll concessionaires from raising toll rates too rapidly or beyond certain levels.

Second, traditional toll pricing offers very little information to toll authorities or departments of transportation about emerging traffic patterns and future transportation needs. Toll concessionaires, who can deploy newer technologies to adjust tolls on their roads, are able gather data that enable them to judge which parts of their highways are in high demand. Correspondingly, toll concessionaires have both the data and the ability to raise new investment capital for needed expansions.

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Over half of urban Interstates remain congested and one-fourth of bridges are rated deficient.

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## 3. Toll Concessionaires Achieve Greater Cost Savings

At the Massachusetts Turnpike the base pay rate for toll collectors is \$52,239 a year or about \$26 an hour. On top of that are generous public-sector benefits including health and pension entitlements, overtime opportunities, automatic pay increases by seniority, and job security. Privately operated parking garages can recruit attendants to collect parking fees—a similar job—for about half the cost.

While state and local toll authorities in some states tend to be locked in with labor contracts that rigidly demarcate work between different trades and departments, private concessionaires enjoy a more flexible labor market that allows them to adjust staffing resources as needed.

## CAN THE PUBLIC SECTOR MATCH PRIVATE CONCESSIONS?

Critics have emerged in the wake of the long-term leases of the Chicago Skyway and Indiana Toll Road claiming that the public sector could have refinanced those roadways and raised just as much money as was obtained via the long-term leases.

What really drives the value difference between private and public toll road operators is the private toll road operator's ability to operate more efficiently to keep costs down and to increase tolls on a commercial basis, in a way that cannot subsequently be second-guessed politically. The financial markets value this significantly greater certainty of steady toll revenue increases over time.

Private toll road operators have the ability to:

- **Adopt new technologies.** Electronic tolling technologies change about every seven years as new innovations occur. Private firms unhesitatingly upgrade if the new technology will pay for itself with better service. Public authorities, by contrast, tend to be tied to out-dated technology in part because of bureaucratic inertia and in part because public financing doesn't provide the same incentives to innovate that's provided by private financing.
- **Adapt to Changing Circumstances.** Public authorities tend to be overstaffed and under-trained, while private firms are able to be more flexible in their staffing needs.
- **Maintain Roads Effectively.** Where toll revenues may be diverted from one public agency to another through the political and bureaucratic process, private concessions have requirements that do not allow deferred maintenance.
- **Minimize Congestion.** While public authorities are reluctant to adjust tolls, private firms set the toll at levels that prevent congestion and that balance maximum throughput with demand.

## 4. Toll Concessionaires Are Able to Spread Risk and Achieve Synergies

Concession toll road operators also have greater ability to spread risk and to pool expertise. Most public toll authorities are constrained geographically in their operations. Thus the Pennsylvania Turnpike only operates within the state of Pennsylvania. By contrast the Cintra-Macquarie partners in the Chicago Skyway and Indiana Toll Road plan to operate across the Indiana-Illinois state line with integrated management, and they plan to take advantage of the synergy of two toll roads that feed one another. Indeed, the broad geographical horizons under which many private concessionaires operate allow private concessionaires to apply best management practices from one geographical region to another and to move talented managers from one state or region to another to implement those best practices.

## UNDERSTANDING THE CONCESSION AGREEMENT

While the details of concessions are contained in long-term contracts called "concession agreements" that run into the hundreds of pages, policymakers ought not be daunted by the length and detail of such agreements.

Successful concession agreements that benefit the public should include several key considerations:

### 1) Concession Agreements Do Not Relinquish Ultimate Control

Concession agreements show plainly that the public entity retains possession of the road. Concession agreements cover every detail from maintenance requirements to the amount of time in which snow or road kill must be removed from the road, in order to make the concessionaire accountable to the public's standards. As such, these contracts are not the blanket handover of control to investor interests that critics sometimes suggest.



## 2) Concession Agreements Must Be Competitively Awarded

Modern toll concessions are awarded as part of a competitive process. This starts with hiring consultant expertise in this subject and spelling out a selection process. The next step is to assemble comprehensive information including the history of the corridor and data relevant to the prospects of the project. Simultaneously with this, a request for qualifications should be issued. There needs to be a winnowing process that drops from competition those judged less capable of fulfilling the contract due to more limited expertise or resources. This leads to an invitation to the best-qualified parties (the “short list”) to submit detailed proposals. From here there are various paths. If one proposal is clearly the best, it can be accepted. More likely, more than one will have valuable ideas. The government may take the best features from each (by purchasing intellectual property rights) to synthesize a revised proposal and ask the contenders for their best and final offers on that common synthesized project.

## 3) Restrictions on Concessionaires Have Costs... and Benefits

Limitations placed on concessionaires may be deemed by the public transportation authority or legislature as vital to the public interest. But controls and limitations placed on the concessionaire usually reduce the value of the concession. Such controls are not necessarily wrong, but policymakers and public authorities need to carefully consider not only the pre-

sumed benefit of those restrictions to the public, but the cost of compliance to concessionaires. In certain cases, restrictions on concessionaires may make it difficult for the concessionaire to offer generous upfront concession fees or profit-sharing agreements with the public authority.

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Facilities tend to be shaped with scant attention on how well the project actually moves people and goods or relieves congestion.

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## 4) Approaches to Concession Bidding Vary According to Locality and Needs

Bidding in U.S. concessions for existing toll facilities has usually been based on who offers the maximum upfront concession fee. A second approach is to get bids in terms of the lowest toll rates over the term of the concession. Another approach is for the government agency to garner a share in annual revenues, which is usually specified as a percentage of profits beyond a baseline rate. For new toll roads, the competition may be to see which investors will fund the most improvements (or for some projects, with the smallest state contribution). Yet another variation is to link the term of the concession to a defined payback plus an agreed rate of return.

# CONSIDERING CONCESSION PROVISIONS

Concession agreements spell out the obligations of the concessionaire and the owner (the government agency granting the concession). Important provisions include:

### 1) Arbitration and Monitoring Provisions

The contract spells out monitoring and compliance mechanisms and defines the concessionaire’s responsibility to grant access and to make regular reports. There is usually an arbitration mechanism for disagreements about whether the provisions of the concession agreement are being met, a process for remedying deficiencies, provisions handling default by either party, and finally hand-back requirements that

come into play if the concession is terminated prematurely or at the end of the concession term.

## 2) Maintenance Standard Provisions

Among the standards to be met may be maintenance standards, response times to accidents and other problems, and levels of service on the traffic engineers' scale of A through F, measuring the degree of congestion. Many concession agreements require the concessionaire to add capacity or make other improvements to avert a deterioration of service through congestion.

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Fuel taxes are unfair to the poor. Under fuel tax funding, the poor may pay more per vehicle-mile than the rich.

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## 3) Toll Rate Provisions

Toll rates to be charged under the concession may be controlled by “caps” on tolls for specified periods and a formula—often related to a price index or GNP per capita—for increases. There are cases where parallel facilities are considered to provide sufficient competition to the concession and where no toll rate controls are needed. In other concessions an independent adjudicator or adjudicating agency hears applications for toll increases. In others there are no direct controls over toll rates as such but limits on the rate of return and increasing pass-back of profits to the government owner beyond a specified rate of return.

## 4) Non-Compete Provisions

In many cases, new toll roads (or even old ones being modernized via new financing) are given some degree of protection from unlimited competition provided by new non-tolled, taxpayer-provided roadways serving the same market. Such “non-compete” provisions arose as a way of reassuring toll revenue bond-buyers that the state would not take actions that might divert so much traffic away from the toll road as to make it incapable of servicing its debt. Such provisions can be politically difficult, so when they are considered necessary in order to make a new toll road financeable, they should be drawn up as narrowly as possible, to avoid giving monopolistic power to the toll road provider. The recent tendency has been to have



the toll road developer stipulate that it takes the risk of any traffic diversion resulting from the completion of any project included in the region's official 25-year long-range transportation plan, but that it is entitled to compensation for lost toll revenue, based on a pre-defined formula, for other projects within a narrowly designed competition zone on either side of the toll road. A procedure would need to be established for an independent estimate of the extent to which the non-tolled roadway actually diverted traffic from the toll road.

## 5) Maintaining Flexibility in the Concession Agreement

Perhaps the most important thing is to recognize that these are long-term arrangements, and not all possible issues can be anticipated. Good long-term partnerships have mechanisms for working out changes and dealing with new issues that arise in ways agreeable to both parties. Likewise, they lay out conditions for ending the agreement if both sides agree it is no longer working.

# MAINTAINING CONFIDENTIALITY, ENSURING TRANSPARENCY

Critics are rightfully concerned that concession agreements are the result of secretive meetings. Certainly, when public rights-of-way are at stake, transparency is essential to ensure that concessionaires and

the public authorities negotiate honestly and fairly.

Nonetheless, it's important to understand that a certain level of confidentiality must be maintained in order to encourage competitive bidding. First, each bidding concessionaire brings with it ideas, innovations, and recommendations to the bidding process that might instantly be stolen by other concessionaires if negotiations were made fully public.

In addition, the public benefits from a confidential bidding process in which each concessionaire does not know the offers being made by other concessionaires. In such circumstances, the evidence suggests that private concessionaires are more eager to make increasingly generous bids for the concession.

Policymakers must keep in mind that respect for the selection process will revolve heavily around the personalities and reputation of the people doing the selection. Is the selection team balanced? Is it sufficiently expert? Is it reasonably impartial? Is it insulated from political pressures? Can it explain its scoring?

Finally, once the selection has been made, there should be full disclosure of the factors that led to that decision. And the entire concession agreement should be made public, as was done in the Chicago Skyway and Indiana Toll Road cases.

## LONG-TERM CONCESSIONS HELP CAPTURE THE BENEFITS

Concession terms have ranged between 35 years and 99 years. The California toll concessions under the AB 680 law of June 1991 provided for 35-year concession terms. The Toronto 407-ETR, the Chicago Skyway, and the Pocahontas Parkway in Richmond, VA were all concessioned for 99 years, while the Indiana Toll Road concession runs for 75 years.

Long-term concessions—those beyond 35 or 40 years—enable the project to capture revenue potential beyond the typical term of long-term bonds of 25 to 30 years. A public toll authority financing, since it provides no equity beyond the term of the bond, assumes

(de-facto) that the roadway is worthless on repayment of all the debt. By contrast a concessionaire looking at a 99-year concession sees approximately three times the nominal income—though of course the distant years' income must be discounted heavily to present value.

When the term of the concession ends, control of the road reverts to the owner (the state) which can choose to re-concession the roadway or operate it itself.

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When tax-and-grant has no tests of efficacy or public utility to pass and is seen as purely political pork, then public trust is lost.

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## CONCLUSION: PRIVATE CONCESSIONS OFFER A POWERFUL TRANSPORTATION TOOL

In the 20th century, America showed the world that investor-owned electric, gas, and telecom utilities worked better than the state-owned utilities carrying out these functions nearly everywhere else. Nearly every developed country has since privatized those utilities. This report has sought to explain why major roadways also make sense as investor-owned utilities, as pioneered in Australia, France, Italy, Portugal, Spain, and elsewhere. The global capital markets have recently discovered the U.S. highway market as an untapped business opportunity—just as consensus was developing that we have a major shortfall of highway investment.

Within just the past two decades the development of low-cost electronic tolling and other automatic vehicle identification technologies has made it far less costly to use tolling to finance roads, and less nuisance to motorists. Stopping to pay tolls has been made obsolete by technologies that allow tolls to be collected at full highway speeds. The harnessing of these new toll technologies to impose flexible market pricing in the form of toll rates which vary according to road space available has made possible management of roads to flow smoothly and fast even under peak-hour conditions. Dynamic pricing allows road service providers to

offer a valuable new service to motorists—something they will pay previously unheard of tolls rates to take advantage of.

Now that the equity-based, long-term concession model has been introduced into the United States, we have an opportunity to re-invent the 19th-century private turnpike in 21st century form. The challenge for legislators and transportation agencies is to remove the obstacles to private investment and devise the regulatory guidelines that will make it possible to take full advantage of this opportunity.

When freight and service travel are mired in congestion, higher costs are passed on to consumers in higher prices, and that is reflected in lower real incomes.

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