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Guidelines for Best Practices in Toll Development Agreements

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Abstract:	**Keywords:**	No. of Pages:
This research product presents a synthesis of best practices in toll project development agreements to minimize the impact of traffic competition between tolled and non-tolled facilities and thus reduce the need for a non-compete clause. These practices are extracted from 20 case studies of toll agreements in several U.S. states and internationally. The details of the case studies are presented in Technical Report 0-5020-1.	Toll agreements, risk sharing, non-compete clause, best practices	33

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1. Introduction

Based on twenty case studies documented in Technical Report 0-5020-1, this product presents best practices in toll development agreements for both the public and private sectors. As states continue to grapple with diminishing public funds to meet the demands for a new and improved transportation infrastructure, public-private partnerships (PPP) have been increasingly sought after by state departments of transportation (DOTs). In most cases, PPP provide the opportunity to build projects more quickly and at a lower cost. Such partnerships require risk sharing, which must begin with an evaluation of each party's objectives and respective ability to bear risks. The objectives and associated risks in transportation investments are outlined below.

Public-Sector Objectives

The objectives of DOTs include:

- Add network capacity (increase mobility; reduce congestion) more quickly than by traditional tax-funded means
- Move to a self-sustaining transportation financing mechanism
- Borrow against future revenue
- Assist the economic development of a region
- Encourage more efficient use of transportation infrastructure
- Support a legislative or political initiative.

Not all of these objectives may be explicitly considered when a DOT contemplates tolling. The associated risks include:

- Added costs for project acceleration and oversight of the private sector
- Possibility of revenues not meeting commitments
- Development/traffic growth not occurring where or when forecasted
- Suppression or displacement of economic activity
- Public opposition to tolling
- Loss of political support.

Private-Sector Objectives:

Private-sector objectives include:

- Bring private-sector efficiencies to transportation provision
- Create investment opportunities for private capital
- Create employment for construction resources
- Make a reasonable profit on investment.

Again, not all of these objectives may apply to a project or an investor. Associated risks include:

- Inability to translate efficiencies into revenue
- Competition
- Low or negative return, especially in early years
- Changes to the contract.

Risks should be assigned to the party best able to mitigate them [World Bank, 2000]. The key to successful PPP is the ability to strike a balance in the allocation of risks between the public and private sectors, while allowing both parties the opportunity to achieve their respective objectives. In this product, the risks faced in transportation investments will be discussed under financial, legal, planning, operational, regulatory, and political headings.

2. Best Practices for the Public Sector

Public-sector initiatives are intended to improve quality of life at a reasonable cost. Transportation solutions can improve quality of life for the public by providing congestion relief or by creating economic development opportunities. Toll projects allow elected officials to increase road capacity in a timely manner without raising taxes. Tolling is therefore being viewed by DOTs as a solution to shortfalls in financing.

The following discussion of public-sector best practices, with regard to toll development agreements, focuses on the public's desire for transportation improvements at minimum cost and shortest time of delivery. Not all the practices discussed will directly relate to the issue of non-compete clauses (NCC), but in stressing financial outcomes they all address the underlying issue of financial exposure. Each best practice is accompanied by a header showing the nature of the risk and whether the best practice provides a potential alternative to a non-compete clause.

2.1 Public-Sector Best Practices in Financial Issues

- ***Require a competitive bidding process and establish a defined set of tools for evaluating bids.***

Nature of Risk	Alternative to NCC?
Project cost: PPP could be more expensive than publicly funded projects (costs of administration, legal, borrowing, interest, profit).	No

PPP projects could cost the public sector more than publicly funded projects due to administrative and legal costs coupled with the costs of borrowing and interest payments, as well as the profit margin required by the investor. Moreover, if the contractors are aware of the revenue estimates for the project, they may bid up to that level. The public sector must have a competitive bidding process and must establish a set of tools for evaluating bids. Evaluation must include both technical and financial aspects of bids, and a way to compare the value of each. Competitive bidding at project inception is not an alternative to a non-compete clause.

- ***Estimate the value of Real Options in calculating project feasibility.***

Nature of Risk	Alternative to NCC?
Project value: Ultimate value of franchise not properly calculated.	Yes

Most projects ultimately are built out larger than originally planned. This expansion results from taking advantage of opportunities as demand changes or grows. Thus the Florida system has continued to expand as development and traffic patterns change. Each expansion resulted in increased revenue and thus better project feasibility [Persad and Bansal, 2004]. Real Options is a technique for estimating the value of flexibility to alter the configuration of a project at any point in its life. The technique requires evaluation of multiple expansion scenarios and associated probabilities based on potential traffic growth. In most instances, Real Options increases the net present value (NPV) of a project [Luis Brandao, class notes from MIS 383N: Valuation of Real Options, MBA Program, The University of Texas at Austin, Spring 2004]. Explicitly itemizing potential expansions in a toll agreement would allow the investor to do his own estimate of potential additional revenues and could be an effective alternative to an NCC. (Note: The Center for Transportation Research is conducting research on the value of Real Options for toll projects, and preliminary results for SH 130 indicate that the NPV would increase by over 20 percent under highly probable expansion scenarios.)

- ***Establish minimum and maximum guarantees.***

Nature of Risk	**Alternative to NCC?**
Guarantees/subsidies greater than expected; over-commitment; effect on other commitments.	Yes

In its zeal to attract private investors, the public sector may over-commit on contributions, guarantees, or subsidies. In many cases the public sector offers to contribute the cost of right-of-way for toll projects. In some cases, responsibility for maintenance is assumed by the state. It was seen in the Chilean case study that offering guaranteed minimum revenue can be an effective means for reassuring investors. However, sometimes subsidies may be higher than anticipated, becoming a drag on the state's ability to support other projects. In conjunction with its minimum revenue guarantee, Chile also established a maximum rate of return. In instances where revenue exceeds specified levels, a portion of the excess goes to the state. As a best practice, the public sector should not only offer minimum revenue guarantees but also prescribe the maximum annual rate of return, allowing the public sector to benefit from profitable routes. As a risk-sharing arrangement, this provision is an alternative to a non-compete clause.

➢ ***Set standards and define categories for expenditures if guaranteeing minimum return.***

Nature of Risk	**Alternative to NCC?**
Private monopoly: guaranteed return on investment, thus unnecessary expenditures.	Yes

Instead of offering a minimum revenue guarantee, some public agencies offer a guaranteed minimum rate of return. A potential downside to this guarantee is the possibility of investors inflating expenditures. As with cost-plus contracts, the public sector must avoid overpayments by setting accounting standards and defining acceptable expenditures. With appropriate safeguards, guaranteeing a minimum rate of return is an alternative to a non-compete clause.

2.2 Public-Sector Best Practices in Legal Issues

➢ ***Require the construction contractor to obtain adequate performance bonds.***

Nature of Risk	**Alternative to NCC?**
Non-completion: default during construction; DOT has to complete project with other funds.	No

As in the construction of any project, there is the potential for the contractor to default, leaving the project incomplete. In such a situation the DOT would face exposure to additional costs in finishing the project. While it is standard practice to have a performance bond in a construction contract, the unique schedule and cost characteristics of toll projects make it important that the amount of bonding is carefully considered, as has been the case in the Texas SH 130 Exclusive Development Agreement (EDA). This best practice is not an alternative to a non-compete clause.

➢ ***Include a re-bidding process at the end of a defined stage in an agreement.***

Nature of Risk	**Alternative to NCC?**
Franchise entrenchment: Franchise becomes powerful, prevents competitors from entering.	Yes

In situations similar to European toll agreements where the public sector offers a toll road developer a franchise agreement, there is potential for franchise entrenchment to occur. As the franchise expands, competing developers may find it hard to enter the marketplace. A re-bidding process at defined stages in the agreement may result in the public sector being able to garner a higher price for the franchise. Paradoxically, this provision, in creating competition among potential franchisees, may actually reduce the need for a non-compete clause.

2.3 Public-Sector Best Practices in Planning Issues

➢ ***Use innovative approaches to get less attractive segments completed.***

Nature of Risk	**Alternative to NCC?**
Project selection: Only financially attractive projects might be selected. Economically beneficial projects or necessary connections might not be built.	Yes

As seen in the Colorado case study, only financially attractive projects are likely to be chosen by private investors. However, to achieve connectivity or to provide benefits to smaller communities, lower feasibility segments must also be built. For example, to ensure corridor completion TxDOT sought bids for the entire TTC-35 corridor. Alternatively, surplus revenue from more profitable segments could be used to subsidize less trafficked segments, as in Florida. In Ireland the support incentives offered by the government are linked to the feasibility of a route. All of these approaches implicitly bind the public sector to the private sector in ensuring a successful outcome to the toll project, and are therefore viable alternatives to a non-compete clause.

➢ ***Require privately funded projects to use the same standards as publicly funded projects with design review conducted by the state DOT.***

Nature of Risk	**Alternative to NCC?**
Minimal designs that reduce capital outlay (e.g., construction in median, no overpasses, etc.), resulting in no crossings, safety problems, difficulty with upgrades.	No

To maximize return on investment, privately funded projects may use designs that minimize capital costs, but create long-term upgrade problems. For example, SR 91X was built in the median, meaning that entry and exit was difficult, and expansion would require conversion of existing lanes. Since the public sector will ultimately own the project, it must ensure that privately funded projects incorporate the same standards as publicly funded projects. This provision is not an alternative to a non-compete clause.

➢ ***If non-compete clause is necessary, require exceptions for safety projects or projects in an approved long-range transportation plan.***

Nature of Risk	**Alternative to NCC?**
Non-compete agreement: inability to add capacity or modify adjacent system.	No

The primary concern of this research was the use of non-compete clauses in toll road agreements. Non-compete clauses restrict the ability of the public sector to add capacity or modify segments of the road network, but in some circumstances may be the only way to bring in the private sector. As a minimum, the public sector should require exceptions for safety projects or projects in an approved long-range transportation plan. Responding to the political and public backlash surrounding the SR 91 agreement, the transportation corridor agencies (TCA) agreement included an allowance for safety-related projects and projects within a congestion management plan. Following in TCA's footsteps, the Central Texas Turnpike Project (CTTP) agreement includes a similar arrangement. This provision is an amendment to non-compete clauses.

2.4 Public-Sector Best Practices in Operational Issues

- ***Define maintenance schedule or take responsibility for maintenance.***

Nature of Risk	Alternative to NCC?
Maintenance: Near end of franchise/transfer of ownership, operator might neglect maintenance or stop investing in newer technologies.	No

During the life of the toll agreement, it is in the operator's interest to ensure that the facility is well maintained in order to attract users. However, nearing the end of the franchise, it is likely that the operator will skimp on major maintenance, and in the end, turn over a barely acceptable facility. To avoid major spending soon after takeover, the public sector should establish a schedule for the rehabilitation of pavement and bridges. For example, in Ireland the private operator must ensure a 10-year maintenance-free period from the time the road is transferred to the government. Alternatively, the public sector can accept responsibility for maintenance, as in the case of the CTTP. A similar scenario applies to toll collection technology, with investment likely to diminish in the later years. The public sector must ensure that the technology it takes over is not outdated or incompatible with other systems. These provisions do not mitigate concerns over a non-compete clause, but ensure the public's interest in the investment.

2.5 Public-Sector Best Practices in Regulatory Issues

- ***Establish a schedule of toll rates and future increases; require capacity improvements if demand exceeds defined level.***

Nature of Risk	Alternative to NCC?
Profiteering: Operator charges higher tolls in response to demand.	Yes

If the private sector is fully responsible for pricing, then in the quasi-monopoly situation of a toll road, it is conceivable that the operator may charge whatever the market will bear (as suggested by an executive of the M6 toll road in Britain), restricted only by the elasticity of demand. The Ontario public and government have reacted negatively to the perception that this is the case on the Toronto ETR 407. The toll agreement should either establish a schedule of rates and scheduled increases that are reasonable or submit to a regulatory panel all disputes over toll rates.

In response to demand, SR 91X used variable pricing to maintain time savings on the toll road, closely monitoring volumes and raising toll rates when congestion threatened. This strategy, even though effective and profitable, created a lot of public anger. Instead, a metering system might have achieved the same operational goal (but not the revenue). In Canada the operator is supposed to add capacity if demand consistently exceeds specified levels. Such a provision would give the driving public the mobility it desires without the appearance that it is being gouged. It would also lessen the likelihood that competing routes would be upgraded, and is therefore an alternative to a non-compete clause.

2.6 Public-Sector Best Practices in Political Issues

- ***Separate funding obligations by category and make information readily available to the public.***

Nature of Risk	**Alternative to NCC?**
Public opposition: mixing public funds with private; perception that public money is being given away.	No

When public and private funds are used jointly to build a toll road, the public may have the perception that public funds are being given away to the private sector. Public officials must work diligently to demonstrate that the public funds are being used to leverage private capital so that the public can receive transportation benefits sooner. Such an arrangement is not very different from local governments offering incentives to attract businesses. To avoid the appearance of giveaways, funding obligations should be separated out by category. For example, the public sector might pay for all right of way, or maintenance. The information on the project financing should be made readily available to the public in a way that is easy to understand. This provision is not an alternative to a non-compete clause.

➢ ***Define projects and selection process in advance.***

Nature of Risk	**Alternative to NCC?**
Cronyism: Well-connected developers get projects.	No

When the public and private sectors enter into an agreement, there is the potential for the perception that favoritism plays into decisions. Politically influential developers may lobby for contracts. To avoid any suggestion of cronyism, the public sector must operate a transparent and above-board selection process. A prequalification process should include the minimum requirements for submitting a bid. The basis for final selection should also be published.

➢ ***Rebate the gas tax or discount toll by an equivalent amount.***

Nature of Risk	**Alternative to NCC?**
Double taxation: having to pay a toll plus gas taxes.	No

A common source of public opposition to tolling is the claim of double taxation: paying a gas tax as well as a toll. The gas tax amounts to about 40 cents per gallon or about 2 cents per mile, far less than typical tolls of 10 to 25 cents per mile. To counter the double-taxation argument, a discount of 2 cents per mile off the toll rate can be offered as a rebate of the gas tax. On the other hand, it is not as easy to dispose of the argument that the public paid gas taxes over a period with the expectation that a specific improvement would be built with the money. A counterpoint would be that tolling is a more effective way of keeping the user fees for reinvestment within the region. These actions are not an alternative to a non-compete clause.

➢ ***Provide an income-related toll discount.***

Nature of Risk	**Alternative to NCC?**
Inequity: "I can't afford the toll but I need to use the road."	No

Another concern for public officials is inequalities created by toll roads. Low-income residents may be unable to afford tolls but need to use the roads due to a lack of available transportation options (limited mode choice). Since toll road charges are the same for each user, they have a higher impact on low-income users. A potential solution is to provide an income-related toll discount, similar to cell-phone plan discounts for government and military employees.

➢ ***Provide a non-tolled alternate route.***

Nature of Risk	**Alternative to NCC?**
Fairness: "My road is tolled but not other routes."	No

In a network where there are already a number of "free" roads, commuters may react negatively to their road being tolled while others are not. To address this issue, many agencies require a non-tolled alternate route. However, some states do not. The Chilean Supreme Court ruled that the public is not entitled to a non-tolled alternative. South Africa has moved away from providing toll-free alternatives. Elsewhere, what constitutes a viable alternate route has not been settled. In the original SR 91 agreement only roads of freeway standard or those likely to funnel traffic to other freeways were considered to be competing facilities. In the United States, because of the extensive nature of the non-tolled network, most commuters have an existing non-tolled alternative, albeit not of standards comparable with a toll road. Obviously, providing a toll-free alternative route is not a solution to a non-compete clause.

➢ ***Maximize throughput to provide congestion relief.***

Nature of Risk	**Alternative to NCC?**
Revenue maximization: congestion on other routes.	No

In the SR 91X case, the developer's objective of maximizing revenue did not translate into congestion relief for the public. Commuters crawling along on the non-tolled SR 91 lanes could see "Lexus lane" users zipping by at 65 mph on a road that appeared to be empty most of the time. High-occupancy vehicle (HOV) lanes have elicited similar reactions. A strategy that maximizes the throughput is likely to meet less opposition from the public. However, the solution will have to be continuously tuned depending on demand. While it appears that variable pricing is an effective strategy, the public perceives it as gouging. Alternative solutions are needed that maximize throughput to provide congestion relief on parallel routes. However, provisions for maximizing throughput may not lessen the private sector's desire for a non-compete clause.

3. Best Practices for the Private Sector

In the business world the goal is to achieve profits. Without the potential for profit, the private sector is not likely to invest in toll roads. Thus, best practices in toll agreements for the private sector strive to improve the profit-making potential of toll road endeavors. The following discussion focuses primarily on the goals of the private sector and does not necessarily represent provisions that may be in the best interest of the public sector.

3.1 Private-Sector Best Practices in Financial Issues

- ***Establish a minimum percentage of project cost assigned to each party.***

Nature of Risk	**Alternative to NCC?**
Investment equity: disagreement over investor contribution versus public contribution.	Yes

Due to the volatility of traffic and revenue projections, investors face a number of financial risks on toll road projects. One concern in a public-private partnership is the balance of investment equity contributed by the public and private sectors. Without a reasonable stake by both parties in the successful outcome of the project, there is a high risk of breach of agreement. Toll road agreements should establish a minimum percentage of project costs assigned to each party (e.g., one party pays for right of way, the other for pavement, etc.). Such delineation of cost responsibility allows each party to manage its risk and control its costs. In Texas the SH 130 project uses public funds to pay for right-of-way acquisition and private investment to pay for construction. This provision may negate the need for a non-compete clause.

- ***Tax-free bonding is desirable for toll projects.***

Nature of Risk	**Alternative to NCC?**
Tax exemption for bonds, if not allowed, can lead to disadvantageous borrowing rates.	Yes

Tax-free bonds sell at a lower interest rate, as much as two percentage points, and therefore can support projects with lower rates of return. In the already risky climate of toll road development, the bond interest rate may be the difference between the investors breaking even or entering into bankruptcy. Current legislation does not allow private investors to secure tax-exempt bonds. Within a few years of the opening of SR 91, the California Private Transportation Company (CPTC) attempted to sell the toll lanes to NewTrac, a non-profit company. Had the sale gone through, NewTrac would have been able to secure tax-exempt bonds to finance the transaction. Allowing tax-free bonding capabilities to both publicly and privately funded toll projects places both parties on a level playing field, providing a potential alternative to the need for a non-compete clause.

- ***Leave the franchise period open, allowing the opportunity to achieve a predetermined return on investment and to determine a value at transfer.***

Nature of Risk	**Alternative to NCC?**
Franchise period: insufficient return at end of predefined franchise period.	Yes

Perhaps the greatest financial concern for investors is loss on the investment due to either lower-than-projected traffic and revenue, or insufficient return at the end of the agreement period. Chile provides innovative solutions to both scenarios. Rather than setting a fixed franchise period, Chilean toll road agreements remain in effect until the investor has recovered a predetermined return on investment. The Chilean method requires agreement on the net present value of the project and an agreed discount rate for future revenues. As toll revenues and other governmental payments come in, they are discounted accordingly and applied to the account. At any point in the agreement, both parties are aware of the current value of the balance should the public sector desire to purchase the facility from the investors. As methods for providing financial security to investors, both practices provide excellent alternatives to a non-compete clause.

- ***Secure a minimum guaranteed revenue subsidy from the public sector.***

Nature of Risk	**Alternative to NCC?**
<u>Revenue shortfall</u>: inability to make payments to debtors.	Yes

The most crucial stage of a toll project for the private sector is the first few years of operation. During this period toll roads typically struggle to attract traffic. To avoid missing payments to debtors, it is in the interest of the private investor to secure a minimum revenue guarantee from the public sector. In Britain shadow tolling has been used: the public sector pays a “rent” to the investor based on the amount of traffic on the road, with low volumes being paid at a high rate per unit, and higher volumes being paid at progressively lower rates up to a cap on total payment. In an alternate approach, Chilean toll agreements offer compensation to concessionaires if they are unable to meet 80% of their yearly revenue projections. The deal is not one-sided, however. The agreements also require that concessionaires exceeding revenue projections rebate 50% of the excess revenue to the government. As an insurance policy for private investment, the minimum revenue guarantee is an effective means for avoiding default on debt and provides investors with another alternative to a non-compete clause.

- ***Transfer revenues from lucrative to struggling segments.***

Nature of Risk	**Alternative to NCC?**
<u>Uneven demand</u> in corridor or region.	Yes

Not all segments of the transportation network have similar demand, so some toll roads are likely to be more lucrative than others. The Chilean government is experimenting with revenue transfer, in which high demand segments are allowed to charge higher toll rates, but the concessionaire's income is capped, and the excess is transferred to less lucrative routes. In a similar fashion, Florida uses excess revenues from the existing toll roads to support newer toll roads. In fact, Florida's expectation is that newer toll roads will take 22 years to be self-sustaining (collect enough revenue to meet debt service payments). Prior to that time, the state will subsidize the payments with surplus revenue from other segments. This provision is an effective alternative to a non-compete clause, since it reassures investors that low-traffic toll roads will have financial support.

➢ ***Establish bonuses when specific public objectives are met.***

Nature of Risk	**Alternative to NCC?**
Rate of return cap: returns limited—no return in early years, no incentives in later years.	Yes

Besides seeking to improve mobility, the public sector has other transportation objectives, such as environmental targets. To those ends, many regions establish goals for carpooling, air quality, etc. On the other hand, toll investors may want to see as many cars as possible on the road. Some toll agreements place a cap on the investors' rate of return to prevent them from working at cross-purposes with the public sector. However, as a partner with the public sector in providing transportation solutions, investors should seek bonuses when public objectives are met. For example, if a specified percentage of the users of the toll road is carpool traffic, then a bonus might be awarded. With such provisions, not only will the investors receive a financial reward when they help meet public goals, they may also see improved public acceptance of privately funded toll projects.

➢ ***Seek opportunities to take advantage of tax benefits.***

Nature of Risk	**Alternative to NCC?**
<u>Limited tax benefits</u>: none in early years (e.g., depreciation allowed only if profit earned).	Yes

Current tax law allows depreciation tax benefits on an asset only when profit is earned and only in the early years of the life of an asset. Since toll roads seldom earn profits in their early years, toll investors rarely are able to take advantage of depreciation tax benefits. On the other hand, leases are tax deductible. Thus, toll road operators should look for opportunities to take advantage of tax benefits. A number of DOTs have created semi-public toll agencies to avail public-private partnerships of tax benefit opportunities.

➢ ***Negotiate in advance a share of potential non-toll revenues.***

Nature of Risk	**Alternative to NCC?**
<u>Loss of non-toll revenues</u>: windfall tax revenues, concession rights, development rights, impact fees, etc.	Yes

Toll roads also generate non-toll revenue, which may end up in the pockets of others. For example, nearby property values generally increase, especially at intersections. Businesses enjoy improved access to markets, generating greater profits, greater employment, and more sales taxes. Those added revenues could accrue to non-partners. Similar to the way major investors seek incentives from local governments to relocate, toll investors may be able to negotiate an upfront "incentive package" or a share of the increased tax revenues. Another potential source of revenue is user information gathered through electronic tolling, for example, the number of vehicles traveling from specific origins and to specific destinations. Such information may be valuable for a variety of marketing opportunities. These alternative financial sources could offset the need for a non-compete clause.

3.2 Private-Sector Best Practices in Legal Issues

- ***Include a grandfather clause in the agreement or try to obtain payback in the shortest period possible.***

Nature of Risk	**Alternative to NCC?**
Agreement non-binding on future government; laws, and/or terms of agreement can be changed.	No

Since toll agreements typically span 30 years or more, a major unknown for the private sector is how public and political factions will respond to the terms of the agreement years down the road. In Ontario, when a different political party came to power replacing the one that had originally supported the development of ETR-407 in Toronto, unfavorable sentiment toward tolling spurred litigation. Even though so far the ETR-407 investors have been successful in court and traffic levels remain high, the conflicts could discourage future projects. The SR 91 project faced similar political opposition and litigation. As a best practice for the private sector, the toll road agreement should include a grandfather clause that protects the agreement against changes in political regime. Alternatively, in countries with unstable governmental/legal structures, the private sector should strive to obtain payback in the shortest period possible to avoid financial consequences resulting from attempts to change the terms of the agreement by future governments.

- ***Utilize a monthly reimbursement schedule.***

Nature of Risk	**Alternative to NCC?**
Contract cancellation: loss of investment up to that point.	No

Breach of agreement by the public sector or cancellation of the contract is another hazard for investors. Contract cancellation can result in loss of all the money invested in the project to that point. Especially in unstable countries, a frequent-reimbursement schedule, such as monthly, would reduce investor exposure.

➢ ***Specify a buyout valuation process and terms.***

Nature of Risk	**Alternative to NCC?**
Buyout by government: inadequate compensation.	Yes

Instead of contract cancellation, the government may seek to take ownership of the toll road but offer inadequate compensation. Toll road agreements should specify a buyout valuation process and terms. In Chile, toll road agreements establish an initial NPV of the toll project and a running valuation based on compensation received to date.

➢ ***Establish debt assumption rules.***

Nature of Risk	**Alternative to NCC?**
Bankruptcy: inability to repay debtors.	No

As with any investment, there is a potential for a toll road venture to go bankrupt. Examples include the failure of the Camino Colombia toll road in Texas and the financial debacle of the Mexican toll road program. In many other cases toll investors have had to refinance their debt, sometimes at higher interest rates, in order to satisfy creditors. Since a road has intrinsic value to the public and it is not in the public interest to see it closed because of bankruptcy, rules and mechanisms for assumption of debt by the public sector or other third party should be defined in the toll agreement.

3.3 Private-Sector Best Practices in Planning Issues

➢ ***Seek congestion relief projects over economic development goals.***

Nature of Risk	**Alternative to NCC?**
Project location/market: distance from population centers; circuitry. Regional changes: land use patterns; development might not occur as expected. Economic activity: Population and employment growth might not occur.	Yes

Toll roads located far from population and employment centers often do not meet traffic and revenue projections. Projects built to stimulate economic development, such as the TCA San Joaquin toll road in California, or with the expectation of development, such as the Camino Colombia in Texas, have struggled financially. On the other hand, the most lucrative toll roads, such as SR 91 in California, ETR-407 in Canada, and the M6 in the United Kingdom, are located in highly congested urban areas. Toll roads that serve primarily as congestion relief projects instead of economic development ventures are less likely to be affected by competing routes.

➢ ***Allow construction of projects within a regional transportation plan, but require compensation for their impacts on toll revenue.***

Nature of Risk	**Alternative to NCC?**
Regional plans might include traffic competitors. Development of, increase in capacity of, or upgrading of alternate routes.	Yes

Beginning with the TCA toll road agreement, a number of agreements now include non-compete clauses with exceptions for road projects included in regional transportation plans. Allowing regional transportation plans gives the private sector a clear idea of potentially competing projects in the region, while leaving the public sector the flexibility to continue developing the road network, whether with toll projects or not. The TCA agreement includes a commitment by the public sector to compensate the investors if a competing route affects revenue. This stipulation is also included in the CTTP agreement and the Melbourne City Link agreement in Australia.

Considering that the public sector may have to pay if its non-tolled projects harm toll revenues, the likelihood of building non-essential projects is remote. However, understanding that conflicts may arise over the definition of a competing route and to ensure that claims of competition are fairly judged, it is in the best interest of the private sector to require that an independent traffic engineer be used to assess the impact of a potentially competing route. The private sector must also make sure that the terms of reimbursement are in the agreement. Even though this provision is sometimes an addendum to a non-compete clause, in other cases it is a replacement for it.

- ***Provide better service as a way to attract users.***

Nature of Risk	**Alternative to NCC?**
<u>Competition</u>: Traffic uses alternate routes; traffic on tolled route is less than projected.	Yes

It is ironic that the private sector should seek to avoid competition. In the business world the response to competition is not to seek a monopoly, but instead to differentiate from the competition by providing better products. Some toll roads struggle because the operators fail to market the benefits of their facility. Possibilities for marketing include guaranteeing travel time (or your money back), separating trucks from other vehicles, providing discounts for regular users (frequent user miles), or selling monthly passes. These actions will receive more positive responses than a non-compete clause.

- ***Ensure that the capacity of connectors to the toll road is upgraded early.***

Nature of Risk	**Alternative to NCC?**
<u>Capacity of connectors</u>: ability to funnel traffic in and out.	Yes

The capacity and location of connectors and their ability to funnel traffic into or out of the toll road are critically important to the success of a toll project. Whether their upgrading is part of toll financing or is done separately by the state, connectors should be explicitly addressed in the toll agreement. The private sector must also require that connectors receive proper maintenance and improvements over the life of the toll agreement. Ensuring effective connectors is an alternative to a non-compete clause.

- ***Establish standards for ramp spacing.***

Nature of Risk	**Alternative to NCC?**
Access: demands for more access.	No

Location and frequency of access points are critical in the success of a toll road. A limited number of accesses may lead to bottlenecks at entry and exit ramps that decrease time savings and discourage use of the route, while too many access points may degrade the operation of the roadway, as has occurred on many urban freeways. Businesses and politicians will lobby for access ramps, but toll investors should establish standards for ramp spacing and carefully consider demands for additional accesses.

- ***Design for expansion and define thresholds for adding capacity based on v/c ratios or level of service.***

Nature of Risk	**Alternative to NCC?**
Travel demand might not grow as projected; might shift to other modes; might be stifled by costs, e.g., gas prices. Congestion can worsen on alternate routes.	Yes

The central issue of SR 91 litigation was the public's desire to add lanes at the entry and exit points of the tollway to relieve safety concerns. As an alternative to a non-compete clause, investors should design the toll road for easy addition of new phases or expansion of capacity, and define thresholds for adding capacity based on v/c ratios or the level of service (LOS) in the adjacent network. This strategy would lessen financial exposure in instances where travel demand does not grow as projected, yet provide flexibility to add capacity to the toll road if the non-tolled network becomes congested. Establishing thresholds for capacity addition allows the private sector to be the responder of first choice if the adjacent network becomes congested.

3.4 Private-Sector Best Practices in Operational Issues

- ***Use standard signing conventions.***

Nature of Risk	Alternative to NCC?
Signing: no leader signs on non-tolled system.	Yes

Poor signage may result in driver confusion and the loss of potential toll road users. Toll investors must ensure that users are informed of toll choices in advance by proper signage along non-tolled portions leading to the toll route. To promote interconnectivity between the tolled and non-tolled network, toll investors should use standard signing conventions.

- ***Provide proper detour information.***

Nature of Risk	Alternative to NCC?
Lane availability: closed for repairs.	No

To paraphrase the Southwest Airlines motto, toll roads only make money when vehicles are moving. When lanes are closed or under repair, customers are delayed. Since customers are paying to save time, toll roads should provide proper information on lane closures and delays as well as detours. To shorten down time, rapid repairs systems such as precast slabs and beams should be used.

- ***Contract with public agency providers for safety management along the toll route.***

Nature of Risk	Alternative to NCC?
Safety management could be sub-standard.	No

Some toll operators have failed to contract with public agencies for providing safety management, such as fire services, emergency medical services, or police presence. In the event of an emergency, those agencies may not be able to intervene, resulting in negative public reaction. Similar situations may apply to violation enforcement, resulting in a loss of revenues. It is in the best interest of toll investors to contract with public agency providers to ensure that safety concerns are adequately addressed.

- ***Be prepared to upgrade technology.***

Nature of Risk	**Alternative to NCC?**
Interoperability: incompatibility with other tolling programs.	No

Lack of compatibility with other tolling programs may discourage use of a toll route. For example, until recently, toll transponders in Dallas and Houston could not be used on both systems. In the future, all Texas toll roads will be interoperable using TxTAG, a standardized transponder. Open road tolling is now being adopted in the Houston toll roads and elsewhere. Private investors should be prepared to upgrade technology to ensure interoperability and seamless connections between tolled and non-tolled routes.

3.5 Private-Sector Best Practices in Regulatory Issues

- ***Negotiate environmental requirements.***

Nature of Risk	**Alternative to NCC?**
Environmental: pollution management.	No

Air pollution caused by automobiles and increased vehicle miles traveled (VMT) has created a greater awareness of environmental concerns associated with road projects. To address these concerns, it is best for investors to negotiate environmental requirements with the public sector in advance of construction. Being seen as environmentally sensitive is one way to lessen opposition from regulators and the public.

➢ ***Use DOT standards for roadside signs.***

Nature of Risk	**Alternative to NCC?**
<u>Advertising</u>: clutter/eyesores.	No

During construction of the SH 130 project in Austin, billboard companies have jumped at the opportunity to advertise along the route. At many locations, billboards were placed even before construction began. In response state legislators have enacted legislation to ban billboards along the route. Toll investors must be careful to use DOT standards with regard to billboards and other eyesores.

➢ ***Remove specific identification from any information obtained about road users.***

Nature of Risk	**Alternative to NCC?**
<u>User privacy</u>: use of user records.	No

Americans are becoming increasingly concerned about the privacy of their personal information. Electronic toll facilities allow for a wealth of information to be obtained about road users. To avoid public concerns over the use of road user information, toll operators should remove individual identification from any information obtained about road users. Failure to do so could result in a major public backlash.

➢ ***Require that new regulations are only enforceable if they are also implemented on most public facilities.***

Nature of Risk	**Alternative to NCC?**
<u>Changes in regulations</u>: Standards and requirements might change.	Yes

Standards and regulations are likely to change over the life of a toll agreement. For example, new standards may be promulgated for roadside safety appurtenances. Regulators may try to hold private-sector projects to a higher standard than public-sector ones, incurring unexpected costs for investors. Thus, a stipulation that new regulations are only enforceable if they are also implemented on most public facilities should be included in the toll agreement to ensure a level playing field.

3.6 Private-Sector Best Practices in Political Issues

- ***Use industry ranges and increase toll rates regularly to match inflation.***

Nature of Risk	**Alternative to NCC?**
Public opposition: toll rate too high; steep increases; claims of gouging.	Yes

The most common source of public opposition to tolling is the complaint that the toll rate is too high and that users are being gouged. On the ETR-407 in Toronto, the operator has increased toll rates to the maximum permitted in the agreement, spurring public opposition. Toll operators should use industry ranges for toll rates. Concomitantly, toll rates should be increased regularly to match inflation, instead of large increases at lengthy intervals. Resistance to gas tax increases and the resulting shortfalls in public funding for transportation can be attributed in part to failure to gradually increase the gas tax over the years. Similarly, toll roads that raise their rates at infrequent intervals are always vilified. As a way to increase financial viability, pegging toll rates to inflation is a complementary provision that lessens the need for a non-compete clause.

4. Summary

The best practices presented in this research product were delineated according to the objectives of the public or private sectors respectively. With each proposed toll road a different set of obstacles and opportunities exists for the use of public-private partnerships. Each toll road agreement must therefore draw upon a different combination of public- and private-sector best practices to achieve the objectives of both parties. In most cases, the public sector is not likely to spend money to upgrade alternate routes unless there is a pressing need. It therefore makes sense for the private sector to seek flexibility in toll contracts to be the responder of first choice, because it has the resources to more nimbly respond to needs. Ultimately, a commitment by both parties to ensure public acceptance and support for the project is the most important ingredient in its financial success.

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