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# **Implications of Changes in Procedures and Laws To Advance Public-Private Partnerships**

**April 30, 1995**

*Prepared for:*  
Federal Highway Administration

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## FOREWORD

This report summarizes research performed for the Federal Highway Administration covering various topics related to overcoming barriers to public-private partnerships for developing and financing highway transportation projects.

Public funds have not kept pace with the demand to maintain and improve the nation's extensive network of high-quality roads and bridges. Increasingly, national highway programs have encountered restraints caused by overriding budgetary objectives. State and local bodies face similar pressures. As a result, government agencies charged with providing and maintaining highway infrastructure are considering the option of turning to the private sector to develop partnerships that will enable investment to continue to meet growing travel needs.

In the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, the Congress significantly increased the opportunities for non-traditional involvement in transportation projects by authorizing greatly increased flexibility in

blending Federal-aid with private financing and operating arrangements. Section 1012 of ISTEA expands opportunities for Federal-aid participation in toll roads and permits a wide range of public and private ownership of facilities constructed with Federal-aid financing. Further, it authorizes Federal cost-sharing in construction and reconstruction of toll roads of up to 50 percent, except for Interstate highways, and up to 80 percent for bridges and tunnels, including Interstate facilities.

Even with the additional private participation possible under ISTEA, however, significant barriers continue to inhibit realization of the potential for public-private partnerships in highway investment. As part of a continuing effort to understand these barriers and, more importantly, to develop ways to overcome them, the Federal Highway Administration retained Apogee Research, Inc. supported by Parsons Brinckerhoff, Skadden Arps, Smith Barney, and Reason Associates to conduct this five-part research project.

**Gloria Jeff**  
*Associate Administrator for Policy*

# EXECUTIVE SUMMARY

Highway infrastructure in recent decades has been provided largely with public funds based on motor fuel taxes and other user fees, channeled through a variety of State funds and supplemented with Federal aid from the Federal Highway Trust Fund. This system has worked well, providing a reliable source of development capital to build new roads and rebuild old ones. However, public funds have not kept pace with the demand to maintain and improve the nation's extensive network of roads and bridges. Personal and commercial vehicle ownership and use has grown rapidly and has outpaced efforts to keep highway capacity at acceptable levels. State highway programs have been restrained by overriding budgetary and policy objectives, inflation, rising vehicle fuel economy, and transport user charges being diverted to other programs.

At the Federal level, similar pressures have held Federal aid for highways to gradual, uneven growth. In fact, Federal aid has declined significantly relative to State and local highway spending over the period since the Highway Trust Fund was initiated in 1956, notwithstanding periodic Federal tax increases. Local government highway programs are also feeling these pressures. As a result, Federal, State, and local administrations and legislatures are exploring many options for new funding sources. One of the more promising options is to allow partnerships with the private sector to develop, finance, own, operate, and maintain highway facilities. This study looks at how public-private partnerships can help transportation infrastructure investment continue to meet growing travel needs.

At the Federal level, the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 significantly increased the possibilities for involvement of non-traditional entities in transportation projects. Section 1012 expands opportunities for blending Federal aid with private financing of toll roads and permits a wide range of public and private ownership of facilities built with Federal-aid financing. In particular, that section authorizes Federal cost sharing in construction and reconstruction of toll roads. Innovative financing techniques have been encouraged by this increased flexibility but remain underused by the States because of significant administrative, legal, and financial barriers. States need continuing technical and educational assistance in order to implement highway development effectively under these new options. The Federal Highway Administration (FHWA) seeks to assist the States and project sponsors in solving certain fundamental financial problems through implementation of ISTEA.

Significant barriers continue to inhibit public-private partnerships in highway development. As part of a continuing effort to understand these barriers and, more importantly, to develop ways to overcome them, FHWA retained Apogee Research, Inc., supported by Parsons Brinckerhoff, Skadden Arps, Smith Barney, and Reason Associates, to conduct a five-part research project. The project reports are summarized in the body of this final report. Three summary topics are addressed in this executive summary. The first section outlines an array of partnership structures or models available for financing infrastructure improvements. In the second, experience from case studies is used to identify and discuss barriers to public-private partnerships. Finally, various means to overcome the barriers are suggested.

## MODELS OF HIGHWAY DELIVERY BY PUBLIC-PRIVATE PARTNERSHIPS

A public-private partnership can be built on virtually any mix of public and private financial sponsorship that departs from the traditional public highway model. 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 examined in this effort evolved along a continuum from traditional public to mostly private:

- *Traditional New Public Highway*: 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.
- *Innovative Financing for New Public Facilities*: Public ownership and operation with full or partial reliance on local benefits, captured by targeted exactions 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; non-recourse financing delivers a complete, stand-alone project.

- *Public-private Partnerships to Deliver New Road Capacity*: Substantial private equity participation and a strong private role in structure, delivery, and operation; public role tends more toward framing the concession 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 at-risk equity combined with the issuance of taxable debt.

## ROLE FOR PUBLIC-PRIVATE PARTNERSHIPS

The appropriate role for partnerships is evolving. Two essential determinants are public acceptance and the level of unmet highway needs. But several unresolved issues regarding the blending of public and private roles in project development and finance require further research. It seems clear, however, that partnership development can effectively augment traditional financing sources for highway construction and reconstruction. The infusion of private funds necessarily introduces marketplace criteria: essentially, the probability of an attractive return on investment will be required. Hence, an important feature of a partnership project is the imposition of project-related user fees, tolls, development impact fees, and other exactions associated with value capture from the project.

In essence, project users and beneficiaries will be expected to pay for use of a given facility in a given location. Where the facilities are needed and users are willing to bear these direct charges, public-private partnerships should enable highway development to proceed more quickly than traditional funding sources. The development of proposals by private syndicates is also likely to produce some innovative solutions to transport problems. Reliance on user charges, in turn, may well moderate the demand for new facilities and reduce the size of highway needs assessments.

## BARRIERS TO PUBLIC-PRIVATE PARTNERSHIPS

All large-scale highway investments face financial, technical, and political barriers. Several additional challenges must be overcome to implement a public-private partnership project in highway development. These barriers were identified and discussed throughout this research effort. The conclusions of the report reflect actual project experience in facing and overcoming hurdles. Projects reviewed in some detail include the Maricopa County, Arizona, urban express-

way; the Dulles Greenway in Loudoun County, Virginia; the SR-91 and Transportation Corridor Agencies toll-road projects in Orange County, California; Denver's E-470 project; and the Laguna San Jose bridge in Puerto Rico. Several phases of our analysis identified and addressed the barrier issues facing a prospective public-private partnership in the highway sector. The two paramount categories of barriers identified were the enabling environment and the establishment of financial feasibility.

Private sector participation must, first and foremost, be possible. To be possible, a conducive enabling environment must exist. FHWA has provided guidance to the States, outlining issues to be considered and steps to be taken in order to take advantage of ISTEA's expanded financing opportunities. If projects are to include private partners, then State agencies must operate in an environment that allows them, under appropriate laws and agency powers, to enter into partnerships and approve specific private activities in conjunction with highway development. In order to blend private investment into Federal-aid highway programs and to capitalize on ISTEA's financing flexibility, new State enabling legislation will generally be required to clarify the implementation of such projects in a State's highway program. The barriers related to the enabling environment that were ranked by the contractor as most important are State contractual powers, concession and franchise agreements, land acquisition, and environmental clearances.

The financial barrier is probably the number one overall barrier faced by partnership projects. The public-private partnership project must be able to support some degree of private financing while competing with other road services provided by the public sector. Since most public sector roads are not priced at the point of use, the resultant unusual competitive situation renders the financing barrier very significant. The barriers related to financial feasibility that were ranked by the contractor in the highest, very important, category, were "start-up" financing problems, tort liability, and regulations on prices and rates of return.

These paramount barriers and many other specific hurdles are analyzed in depth in the body of this report. A broad spectrum of information sources was examined in the course of this research effort; including a review of the literature addressing public-private partnerships, development of case studies of several real projects, a symposium of experts representing both public and private sector entities nationwide, and further analyses to distill the results of these efforts into well-defined problems and possible solutions.



## OVERCOMING THE BARRIERS

The research summarized in this report clearly indicates that the future of transportation funding will include more public-private partnerships for highway development. Following are key suggestions for overcoming barriers faced in expanding these partnerships:

- *Create an Attractive Investment Climate:* States should create a climate that encourages and facilitates the participation of the private sector in the development, financing, and operation of public-private transportation projects. The State's lead project office should have full authority to commit the State on important negotiating issues.
- *Provide Direct Government Support:* State and Federal government assurances may be required to convince the private sector of governmental commitment. Franchise agreement provisions need to attract at-risk private capital. A special purpose authority could ease restrictive State DOT procurement and design standards.
- *Develop Community-wide Support:* The developer must gain wide-ranging support for the project. The business community and local governments need to carry greater responsibility by becoming stakeholders with actual equity interest.
- *Provide Start-up Financing or Other Early Development Stage Support by Government:* The State or public partner could consider taking responsibility for the permitting process to reduce project risks (and finance needs) early in development. States could obtain environmental clearances, with a private sector pay-back later. A one-stop office for attaining permitting and negotiating all governmental requirements would expedite projects.
- *Place Time Limits on Environmental Challenges:* Another approach suggested was for the public sector to consider a statute of limitations for challenges lodged against Environmental Impact Statements. Public agencies could join in seeking summary court judgments to forestall challenges after project construction is under way.
- *Enhance Tax Incentives to Use Private Bonding:* The public sector could consider extending the five-year maximum management contract period to facilitate franchising, allowing more extensive application of private activity bonds to include private transportation infrastructure, and allowing the private sector to recover development and capital costs over a shorter period.

- *Provide Funding as a Catalyst for Public-private Arrangements:* The State and Federal governments could develop new ways to provide financing to promote partnerships. Some barriers might be overcome through further use of State Revolving Funds. Section 1012 of ISTEA offers an opportunity for States to leverage scarce Federal and State resources with public and private sector resources.
- *Develop Innovative Financing Based on Federal Aid:* Innovative use of Federal aid, ranging from loans to loan guarantees and advance take-downs, could help projects get a running start. A Federal line of credit or revolving fund to provide seed money for special projects could be considered. Other ways to support debt ratings on partnership offerings were requested. FHWA has begun identifying, testing, and evaluating new approaches under its Innovative Financing Initiative.
- *Look Beyond Tolls for Revenue Streams:* Federal and States laws could be modified to expand the eligibility of loan repayments to revenue streams other than tolls. Current law allows Federal-aid loans only for projects generating revenue through tolls. States could work with the Federal government and private sector to develop financial structures that could use other revenue-stream structures and, therefore, allow more effective leveraging.
- *Open the Interstate System to Tolling:* Substantial restrictions remain against imposition of tolls on Interstate System road segments. Allowing tolling on Interstate roadways (and/or new lanes in the median) would greatly expand the opportunities for privately financed road improvements.
- *Establish Ongoing Communications:* Support was expressed for establishing a vehicle for ongoing communication between private sponsors, interested States, and FHWA. FHWA sponsorship of an annual or semi-annual symposium or working group was suggested by many governmental and private representatives.

Many other suggestions appear in this report and in the various task reports prepared as part of this research effort.

## PUBLIC-PRIVATE PARTNERSHIPS: A FINANCING TOOL FOR THE FUTURE

Public-private partnerships are a relatively new and rapidly evolving financing tool which is already contributing significantly to highway development. ISTEA

provides the flexibility to enable private partners to be part of a Federal-aid project, and several States have passed enabling legislation in order to integrate private funds into their highway programs. Most importantly, several highway projects with major private roles have obtained final financing (largely from the private sector) and begun construction. In California, the San Joaquin Hills Corridor toll road and the SR-91 median express lanes and, in Virginia, the Dulles Greenway are all under construction, and in Puerto Rico, the Laguna San Jose toll bridge has been completed.

As with initiation of any new project, there are uncertainties and more than a few problems. Both SR-91 and the Dulles Greenway projects had considerable difficulty in closing financing for their projects. The San Joaquin Hills project encountered a court injunction on

environmental impacts blocking work on the middle road segment (after construction was under way), and the San Juan bridge has had only light traffic in its first months of operation. It is too early to tell how these projects will work out or to forecast the ultimate role of public-private partnerships in the national highway infrastructure. However, additional projects remain under serious consideration in Denver, Phoenix, Minneapolis-St. Paul, and other cities, while Florida, Texas, Washington, California, and other States are actively soliciting proposals based on their enabling laws and ISTEA's flexibility. Significantly, a continuing stream of private developer proposals are being submitted. Therefore, it seems probable that more public-private partnerships will be playing a role in future infrastructure development.

# I. REVIEW OF THE HIGHWAY PRIVATIZATION LITERATURE

A fairly large body of literature now exists on public-private partnerships for highways, bridges, and tunnels, and the project team searched a variety of sources. Documents were reviewed, summarized, and categorized in one or more of the following areas: history, economics, recent experience, guidelines, and policy analysis. Only English-language literature is included; however, other literature of interest exists in French, Spanish, Chinese, and other languages. This literature review was completed in the fall of 1992. The results of this review can be obtained by contacting the Federal Highway Administration, Office of Policy Development.

## GOING PRIVATE

In 1993, during the course of this project, a major work was published on transport privatization. This work, *Going Private, The International Experience with Transportation Privatization*, by Jose A. Gomez-Ibanez and John R. Meyer (The Brookings Institution, Washington, DC, 1993), reviewed and analyzed much of the existing experience with public-private partnerships. A summary of Gomez-Ibanez and Meyer's thoughts on privatization, basic lessons from recent experience, and key opportunities for the future is presented here as an adjunct to the literature review.

## Varieties of Privatization

In the 1980s, many countries turned to private sources to provide services formerly offered by public agencies. Privatization can assume many different forms, but three are most common: sale of an existing State-owned enterprise; use of private financing and management rather than public for new infrastructure development; and outsourcing (contracting out to private vendors) of public services previously provided by government employees. A wide variety of competitive, regulatory, and subsidy policies has accompanied these forms of privatization.

The first type of privatization, the sale of State-owned enterprises, has occurred often in Europe, in the developing world, and in formerly planned economies like those of Eastern Europe and the former Soviet Union. The United States and Canada, however, have not been exempt from such activities, as Conrail, Air Canada, and several other cases illustrate.

The second principal form of privatization, infrastructure development by the private sector rather than the public sector, has become quite popular—at least in an

experimental sense—almost everywhere. In the United States, several private proposals were made during the 1980s to build highways, urban rail transit, sewage and water treatment plants, solid waste incinerators, and landfills. Private provision of infrastructure was popular elsewhere, though, well before its revival in the United States. Private toll roads, for example, account for a large percentage of all high-performance highways built in France and Spain since the late 1960s.

The third common form of privatization, the takeover of (conventional) public sector functions through contracting to private vendors, has been mainly (although not exclusively) an American and British phenomenon. Numerous services have been proposed for such privatizations, including waste disposal, transit operations, sewage and water treatment, and airports and airways operations.

Privatizations have been accompanied by diverse regulatory, deregulation, and competitive policy packages. For example, privatizations are sometimes linked with additional or new regulation to prevent abuse of ostensible monopoly powers. They have also been accompanied by deregulation. The British bus experiment is a prominent example. Privatization combined with deregulation has been proposed in several instances for rail enterprises in developing countries. At the other extreme, deliberate enhancement of monopoly sometimes occurs with privatization.

## Motives and Objections

The three basic types of privatization usually arise from three somewhat different motives: efficiency improvements, immediate financial gains, and tapping new sources of funds. Efficiency may be claimed as an important advantage: the private sector is thought by some to build infrastructure cheaper or faster than public counterparts can. Or, the prospect of an immediate financial gain may prompt a cash-strapped government to sell or outsource facilities. But usually the primary concern is that the public sector simply does not have the financial resources to build the infrastructure needed. Infrastructure privatization is often motivated by a desire to tap new sources of funds to supplement the constrained resources of the public sector. Unlike many other government services, moreover, infrastructure can often be supported by charges levied on users. Privatization offers the potential for financing infrastructure without overtly increasing taxes; in many ways privatization can take an activity off the political agenda.

These efficiency and financing arguments for privatization, however, are not always convincing. Nor does private provision necessarily increase investment in infrastructure; it may substitute for public provision. A public agency often is able to tap private capital markets by issuing bonds secured by revenues from infrastructure facilities, just as a private firm would; such a strategy would neither increase taxes nor raise general obligation debt.

### Five Basic Lessons

Five basic lessons or themes, supplemented by some important corollaries, emerge from the Gomez-Ibanez and Meyer analysis. First, competition is especially important in encouraging the cost savings or efficiencies that often motivate privatization. Competition is not indispensable to privatization—indeed, in certain situations (e.g., highway development), too much competition can create serious problems.

Second, privatization is easier to effect, all else being equal, when the efficiency gains from privatization are fairly large;—that is, when the private sector is for some reason inherently more efficient than the public sector. Large gains in efficiency can provide the financing means for mitigating other problems, such as concerns about the environment or equity. Needless to say, large gains in efficiency also enhance the incentives to privatize.

Third, privatization is easier to implement when there are not too many redistributions or transfers linked with it. Advocates of privatization sometimes mislabel transfers as efficiency gains, but opponents of privatization seldom make this mistake. For example, loss of subsidized services is often connected with privatization.

Fourth, privatization works best when associated with fewer controversial consequences such as environmental concerns or general opposition to economic development or growth. The complexities created by these issues are well documented for private highway development in the United States.

Finally, privatization is easier when the activity or service approximately covers its costs, neither requiring significant government subsidy nor generating significant surplus. The need for subsidies, even if they are sought from private sources rather than government, greatly complicates the effort to privatize by invariably extending the nature and scope of the political discussion. It is far simpler and easier if privatization can be financed strictly from available tolls or fares. Large prof-

its are likely to cause controversy with the users of the activity and stimulate fears of monopoly abuse.

### Prospects and Opportunities

After examining recent U.S. experience, Gomez-Ibanez and Meyer make suggestions about the opportunities for private sector toll roads in the United States. To start, experience indicates that new roads may have a slightly better chance of being developed privately than congestion relieving enhancements to existing roads, although much depends on local or site-specific considerations. Financing development roads with tolls is probably likely to be politically acceptable and can be accomplished at costs that are not so exorbitant that they cannot be recovered from tolls. The congestion relievers, by contrast, are almost by definition very high-cost facilities.

Congestion reliever projects often will need to tap into other sources of financing, which will greatly complicate the task of establishing the political alliances and coalitions needed for implementation. Furthermore, congestion reliever projects, since they affect areas that are already built-up, will have fewer opportunities than road development projects to tap into the most obvious source of outside financing, that of donations from private developers with large, nearby, vacant land holdings. Gomez-Ibanez and Meyer conclude that private toll roads probably will not be built in very large numbers in the United States given the constraints of financial feasibility and political acceptance.

The most important limitation on the building of private toll roads is the sheer size of the existing U.S. road system, which means that many of the potential opportunities for profitable toll roads have already been preempted. Tolling may also not be politically acceptable in some situations, and the high costs of delays will make private investors avoid roads facing significant opposition.

Nevertheless, Gomez-Ibanez and Meyer argue that private toll roads may make a contribution in the United States by stimulating innovation and by serving as a benchmark from which the performance of public highway authorities can be measured and stimulated. The principal advantages are not likely to be in lower-cost construction or operation or in shorter times to reach operation, although these beneficial results may sometimes occur. The main contribution of private toll roads is more likely to be the willingness of their builders to be innovative and to explore new technologies and techniques.

## II. MODELS OF HIGHWAY DELIVERY

A public-private partnership may reflect virtually any mixture of public and private financial sponsorship that departs from traditional public highway delivery. A variety of new project formats or “models” are evolving in response to budgetary constraints and provisions in ISTEA. Actual projects to date have varied widely with respect to the degree of private involvement. Six prototype models of project development were identified and arrayed along a continuum from “traditional public” to “private.” These six options reflect an array of choices available for financing infrastructure improvements. Each approach has certain features in common with the others, yet each is unique for one or more specific aspects. They incorporate increasing amounts of private involvement along with the infusion of non-governmental funds. As the private sector contributes more equity financing and assumes more risks associated with the project, the project model develops more characteristics of full privatization.

The following partnership structures were identified, evolving from public to private:

- *Traditional New Public Highway*: Characterized by governmental 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/or State backed tax-exempt debt to construct the facility and provide interim operating funds.
- *Innovative Financing for New Public Facilities*: Public ownership and operation but with full or partial reliance on local benefits which can be captured by targeted exactions, such as development impact fees in addition to tolls.
- *Blended Public-Private Financing for New Public Toll Road Delivery*: Blending of roles and financing; con-

trol and direction continues under governmental oversight, usually by a local authority, with non-recourse financing to deliver a complete, stand-alone project.

- *Public-Private Partnerships to Deliver New Road Capacity*: Substantial private equity participation and a strong private role in the structure, delivery, and operation of the project. The public role tends more toward framing the concession agreement, contributing pre-development costs, or assembly of right of way.
- *Privately Supplied New Highway*: Finance is provided and risk borne almost entirely by private developers and their financial supporters. Important characteristics include significant at-risk equity combined with the issuance of taxable debt.

Public highway, characterized by governmental ownership and funding. Virtually all risks associated with traditional project delivery are borne by the governmental sponsor and subsumed to highway users in general. On the private end of the spectrum is the privately supplied new highway, the financing for which is provided and the risk borne almost entirely by private developers and their financial supporters.

To summarize, the project team developed this series of models as a useful framework for analyzing actual highway projects and the barriers facing their development. A comparison chart containing key features of those models for developing and financing highway projects is presented in Appendix A. The contractor also analyzed the timing of various stages of highway development. Appendix B shows the timeline of the stages through which the typical public-private project must pass; it also identifies the risks associated with each step and who bears the risk at each stage. Most actual partnership projects should be expected to fall somewhere between the two ends of the public-private spectrum..



### III. SELECTED PROJECT CASE STUDIES

After identifying and developing a continuum of approaches (or “models”) to financing highway construction projects, several contemporary projects were examined to see where they fell on the continuum and what barriers they encountered. These “case studies” are the focus of this chapter.

Innovative financing involving significant private sector participation has been used in at least six important highway projects. Each project faced, and most still face, a variety of barriers associated with one or more phases of the project. To stimulate a better understanding of ways that barriers to public-private partnerships may be overcome, brief descriptions are presented here of how each project has contended with the key barriers. Information presented on the projects is current as of February 1994. Appendix C contains complete descriptions of the projects discussed in this chapter.

#### **CALIFORNIA: SR-91**

The SR-91 project was able to overcome barriers because of its relatively sound underlying traffic demand and overall economics. The route is situated along an established and highly congested traffic corridor, and traffic projections do not depend on estimated real estate development or population growth. In addition, environmental challenges were settled before construction, which allowed the sponsors to bypass significant costs and time delays. Provision of toll-free HOV-3 service is one feature of the initial SR-91 implementation.

Critical barriers for this project were the inability to use tax-exempt debt or to supplement project toll revenue with benefit-related fees or exactions. No direct State or Federal financial assistance was provided, although a favorable lease on existing median right of way significantly lowered capital requirements. Despite these barriers, the project did complete financing—owing to significant private equity, local government acceptance of subordinated debt, fewer than usual environmental problems, and an established traffic history. However, such special circumstances may not be replicable.

#### **CALIFORNIA: SAN JOAQUIN HILLS TRANSPORTATION CORRIDOR**

The San Joaquin Hills project in California is an innovative yet “mostly public” model of toll highway project development. San Joaquin was named as a pilot toll project under the 1987 Surface Transportation and Uniform Relocation Assistance Act. A critical step was

the early creation of a quasi-governmental entity by State and local Joint Powers Authority statutes. The resulting Transportation Corridor Agencies (TCAs) were able to use development impact fees as a cash advance to finance preliminary activities. Construction financing was obtained through the issuance of tax-exempt debt by the TCAs.

Significant environmental challenges arose and some still exist. The absence of direct Federal aid reduced some environmental hurdles. Also, innovative legal tactics, such as taking environmental groups to court, were used effectively. Traffic projections were credible, but financial markets questioned the use of traffic studies to underwrite this large-scale (\$1.2 billion) bond issue without further financial support. A tiered financing of senior and junior bonds, backed by tolls, fees, and a small, standby Federal commitment, characterized the final package. Construction cost risks were largely removed by negotiation of a guaranteed price contract which included delay penalties.

This was one of the first innovative projects to obtain financing. A key barrier was the lack of established administrative procedures, which created delays and drained fee revenues.

#### **COLORADO: E-470**

The Denver E-470 project was one of the first public-private partnership proposals and, therefore, had to overcome significant hurdles without the benefit of experience elsewhere. The proposed project was ambitious and faced considerable economic hurdles that were exacerbated by a severe regional economic recession and the related real estate crash.

Critical problems included toll revenue forecasts that were highly dependent on continued rapid growth in the Denver metropolitan area. The staging of the project required an initial segment with low revenue potential, which raised financing risks. In addition, a State referendum made it impossible for the E-470 Authority to use taxes to augment revenue shortfalls. The project is being reconfigured and could move forward soon.

#### **VIRGINIA: DULLES GREEN WAY TOLL ROAD**

This project extends from Dulles International Airport to Leesburg, Virginia. Sponsors overcame several barriers to finalize financing of about \$300 million and break ground in the fall of 1993. Relative to other public-pri-

vate partnerships, the Dulles Green way tends toward the “mostly private” model. It incorporated significant private equity from the outset, and no Federal aid was sought. Development costs associated with right-of-way acquisition and State and local interaction were significant. In addition, environmental problems associated with brand-new roadways were eased by voluntary mitigation measures.

Virginia’s enabling legislation was designed as a “private corporation act,” covering only the Dulles extension project. The State had already built a toll road, which extends east from Dulles Airport to the Capital Beltway (I-495). This separate State-sponsored road clouded the enabling issue and rationale for the public. Traffic projections depend on development beyond Dulles, which stalled in the recession. Also, toll rates will be subject to rate-of-return control by Virginia’s State Corporation Commission. As delays lengthened, development was threatened and no Federal or State aid was forthcoming to cover shortfalls in the overall financing package. However, provision of significant additional private equity coupled with efforts by a new contractor/finance team ultimately completed the financing.

### **ARIZONA: MARICOPA COUNTY EXPRESSWAY**

Lack of a unified political and administrative process was the single largest barrier to the success of this project and several other toll road projects solicited and proposed in Arizona. The public-private partnership dissolved when initial political support withdrew and public support for the partnership declined. A special

problem was historical: a half-cent sales tax earmarked to finance the original network proposal fell short of expectations, because of the recession and cost overruns. The State then passed enabling laws that permitted two different partnership models, but it had no precedents for franchised toll roads. Also, there was strong political distrust and misunderstanding of public-private partnerships and a desire to rely on toll-revenue only, which discouraged blended finance approaches that might have helped obtain project financing.

### **PUERTO RICO: LAGUNA SAN JOSE BRIDGE**

This toll bridge over the San Jose Lagoon is the first and one of the most promising segments of a much larger network of private capital projects proposed by the Commonwealth of Puerto Rico and solicited by the Department of Transportation and Public Works. The Lagoon Bridge project serves the San Juan Airport and connects it with the heavily populated south shore of the Lagoon. The Commonwealth issued tax-exempt bonds and financed a consortium to build a stand-alone bridge and to operate and collect tolls for a lease period.

The key barriers involved risk assignment and compensation in the concession agreement. Resolution of cost, schedule, technology, and traffic risks plus rate of return and sharing of excess revenues with the Commonwealth required almost two years of detailed negotiations. Traffic levels were “guaranteed” through an option for a developer to sell or lease the bridge back to the Commonwealth, providing additional assurance that debt service would be forthcoming.



## IV. SUMMARY OF THE FHWA SEMINAR ON OVERCOMING BARRIERS TO PUBLIC-PRIVATE PARTNERSHIPS

On December 6, 1993, the Federal Highway Administration (FHWA) held a Symposium in Washington, DC, to discuss ways of overcoming barriers to public-private partnerships in highway transportation. The seminar was attended by more than 75 participants representing both the public and private sectors. It provided an opportunity for a broad range of parties interested in public-private partnerships to discuss experiences that posed barriers to implementing projects and to explore ways to overcome them.

Public-private partnerships offer the possibility for private capital to augment the budgets of the government sector with fresh capital. Innovative financing techniques, such as toll financings or commingling private with public funds, have been encouraged by the increased flexibility contained in the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). However, these mechanisms remain underutilized by the States because of various institutional, legal, and financial barriers.

The Clinton Administration has stressed the central role that investment in transportation and other infrastructure plays in creating jobs and stimulating lasting economic growth. At the same time, the tradition of having government solely responsible for the maintenance and development of infrastructure is no longer considered appropriate. The Administration's approach views the private sector as a partner in developing innovative and efficient solutions to public policy problems. Three overall themes or topics were addressed by the seminar participants: first, an array of partnership structures available for financing infrastructure improvements was identified (see Chapter 2); second, experience from case studies (see Chapter 3) was used to identify and discuss barriers to public-private partnerships; and finally, various means to overcome the barriers were suggested and discussed in an open forum. This chapter summarizes the barriers and proposed solutions derived from the seminar.

### BARRIERS TO PUBLIC-PRIVATE PARTNERSHIPS

All large-scale infrastructure investments face numerous barriers of a financial, technical, and political nature. However, because of the non-traditional nature of public-private partnerships in highway development, many additional challenges must be overcome to implement a partnership project.

The barriers facing public-private partnerships in highway development were identified and discussed throughout the Symposium. Apogee Research identified a series of barriers or issues and summarized these for the response panel, classifying them into two categories: (1) enabling environment, and (2) economic regulation and financial risk. Each presenter or discussant also focused on specific barriers, most of which reflected actual project experience with hurdles faced and, in many cases, overcome during project development. Projects presented to the Symposium included the Maricopa County, Arizona urban expressway proposal; the Dulles Greenway in Loudoun County, Virginia; and the SR-91 and San Joaquin projects in Orange County, California. Numerous other projects were referenced during the Symposium.

The following barriers or issues drew the most attention and comment during the Symposium:

- **Financial Barriers:** Mixing public and private financial interests presents attractive possibilities for expanding the range of projects initiated, leveraging limited public funds, and injecting a private-sector test for financial reality and cost effectiveness into the project decision making. However, because of partnership complexity, the most frequently mentioned and apparently most significant barrier is financing. Inadequate or faulty economic projections result in reservations about financial viability. Project revenues must be able to support, with some safety margin, both debt service and a return to equity investors. The financial risks include start-up financing problems, unsure traffic levels and income streams, uncertain completion costs, general uncertainty about the economy, questions about tax treatment and depreciation, exposure to tort-liability, unfavorable Federal tax laws, and the ability to obtain non-toll revenue. Under this category, participants stressed the difficulty of obtaining financing in the early stages of project development, because project risks cannot be accurately estimated at this stage. If not adequately addressed, these risks can render a project unfinanceable.
- **Equity Capital:** Equity capital barriers are a subset of financial barriers, but reflect the difficulty of obtaining equity capital from private sources. Limits on revenue sources and pricing policies will restrict the potential for profit and incentive for private investment. Governmental partnership poses a greater risk that the private entity will not realize project returns.

- **Concession or Franchise Agreements:** Major issues generally addressed by franchise agreements include explicit definition of the project and governmental requirements, risk assignment, regulatory oversight, and provisions for public funding participation. Important hurdles include agreement on default or non-compliance provisions, service standards, and policing arrangements. Financial issues that can appear in the franchise agreement include regulation of toll rates and returns on equity investment and provision for the time limitation of the agreement and options for extensions. Assignment of tort liability and provision for environmental permitting and condemnation assistance to ease right-of-way assembly are especially important hurdles.
- **Powers of State Agencies:** The authorizing framework within which State agencies operate can vary significantly. Adequate, clear delegation of authority to a governmental representative in the enabling legislation was viewed as essential to project implementation. Key issues include the political complexities of competing jurisdictions, historical/legal limitations on State contractual and police powers, and more flexible avenues for State-Federal support.
- **Procurement:** The equity partners involved in a public-private partnership may have interests that conflict with traditional government interest. Issues include choice of contractors and vendors, local content provisions, competitive bidding, minority business participation, receptivity of the design/build process, and protecting intellectual property. Alignment of these issues may involve redefinition of roles and responsibilities.
- **Permitting Process:** Significant time and financial risk are associated with obtaining the proper environmental clearances and work permits. To alleviate this burden, it was suggested that the public sector pre-clear the environmental permits before substantial private equity has to be put at risk. Challenges to permits and the risks of new interpretations imposing added requirements represent significant barriers.
- **Tax Structure:** The existing tax structure poses several hurdles to partnership projects. The two-tiered tax structure, involving private taxable bonding and public tax-exempt bonding, is one key disincentive. Since private funding can be at a 30 percent disadvantage, the inability of partnership projects to issue tax-exempt debt means that projects funded with public-issued bonds are often preferred. Highway development costs are substantial and mostly incurred early in the life of a project, while revenue streams tend to develop slowly but come in over long

periods of time. Thus, higher taxable rates impose an extra disincentive for public-private infrastructure projects.

- **Support from government and the Community:** Because of the non-traditional and complex nature of public-private partnerships in highway development, support from both government and community interests takes on greater importance than with more traditional types of development. Without continuous local, State and Federal support, the public-private partnership is more vulnerable. In addition, support by local business can help to promote the positive aspects of a project.

## OVERCOMING THE BARRIERS

The participants indicated that the future of transportation funding in the United States undeniably leads us further along the road to more public-private partnerships. Informative commentary and recommendations were put forward in presentations and discussions during the day. A summary of key suggestions to overcome the barriers follows:

- **Create an Attractive Investment Climate:** The States should create an attractive climate to encourage and facilitate the participation of the private sector in the development, financing, and operation of public-private transportation projects. The State's lead project office should have full project authority to commit the State on important negotiating issues.
- **Provide Direct Government Support:** State and Federal government assurances may be required to convince the private sector that the government is committed to the project. In addition, provisions in the franchise agreements need to attract at-risk private capital. The creation of a separate, special-purpose State transportation authority was suggested as an alternative where State DOTs must operate under more restrictive procurement and design standards.
- **Develop Community-wide Support:** The developer must gain wide-ranging support for the project. The business community and local governments need to carry greater responsibility by becoming stake holders. One way this could be accomplished is by allowing landowners and local governments to trade right-of-way privileges for equity interest.
- **Provide Start-up Financing or other Early Development Stage Support by Government:** To increase private interest in the projects by reducing project risks (and finance needs) early in the project development stages, the State or public partner could consider taking responsibility for going through the

permitting process. States could obtain the environmental clearance with a private sector pay-back when the project is developed. A one-stop office for attaining permitting and negotiating developer agreements, including the Federal, State and local requirements, would expedite projects.

- **Place Time Limits on Environmental Challenges:** Public entities could consider a statute of limitations for court actions protesting the Environmental Impact Statement (EIS). Further, seminar participants proposed that it would be helpful if public agencies would seek summary court judgments to resolve challenges against projects they support.
- **Enhance Tax Incentives to Use Private Bonding:** The public sector could consider expanding the definition of private activity bonds to include private infrastructure, relaxing tax law restrictions on contract periods to facilitate franchising, and providing an opportunity for the private sector to recover development and capital costs over a 20 to 30 year period of time.
- **Provide Government Funding as a Catalyst for Public-Private Arrangements:** The State and Federal governments could develop new methods of providing financing to promote these partnerships. Earmarking funds from existing highway-aid programs was suggested, as was reprogramming unobligated balances. It was also proposed that barriers to financing could be overcome through further use of State Revolving Funds (SRFs). Section 1012 of the IS TEA offers an opportunity for States to leverage scarce Federal and State resources with public and private sector resources, thereby expanding the total amount of funds available for transportation infrastructure investment. With Federal legislative changes, a SRF could be capitalized with a defined portion of Federal IS TEA funds augmented by State contributions from non Federal sources.
- **Develop Innovative Financing Based on Federal Aid:** Innovative use by States of Federal aid, ranging from loans, loan guarantees, and advance take-downs, could assure the projects got a running start. Also suggested was a Federal line-of-credit or revolving fund to provide seed money for special projects.

Direct Federal assistance to toll authorities could bypass cultural barriers at State DOTs. Additional methods for supporting debt ratings on partnership offerings were cited, including traffic guarantees and exercising/lending of eminent domain powers on behalf of developers. It was suggested that FHWA should actively support further innovative financing initiatives for infrastructure development.

- **Look Beyond Tolls for Revenue Streams:** States could expand the eligibility of potential revenue streams to repay loans. Current law only allows Federal-aid loans for projects that are revenue generating, such as toll bridges. States could work with the Federal government and the private sector to develop a series of financial structures and partnerships that will allow more effective leveraging.
- **Preserve Legitimate Uses of Motor Vehicle Registration Data:** Private operators of toll-road facilities rely on public access to motor vehicle registration data to combat toll evasion. Some versions of “anti-stalking” legislation could severely restrict access to license plate data. It was suggested that FHWA should support access to motor vehicle records for toll enforcement purposes.
- **Open the Interstate System to Tolling:** Substantial restrictions remain against imposition of tolls on Interstate System road segments. Allowing tolling on Interstate roadways (and/or new lanes in the median) would greatly expand the opportunities for privately financed road improvements.
- **Expand Application of Design/Build Approach:** The “design/build” approach is one way to shift the risks and incentives to private entrepreneurs, and its use in highway procurement could be expanded. Public-private partnerships are an appropriate vehicle for assessing/obtaining the benefits of design/build methods.
- **Establish and Nurture ongoing Communications:** Support was expressed for establishing an ongoing communication vehicle between private sponsors, interested States, and FHWA. FHWA sponsorship of a Symposium or working group discussion once or twice per year was suggested.



## V. BARRIER ISSUES AND PRIORITIZATION

This chapter highlights the key issues encountered and the barriers associated with developing partnerships between the public and private sectors for the provision and maintenance of highway infrastructure. The research team consulted the literature on public-private partnerships, reviewed case experiences of barriers encountered in the field, and assessed developers' perceptions of the relative importance of barriers associated with that experience.

### PARAMOUNT ISSUES

The two paramount categories of barriers facing proposals seeking to initiate public-private partnerships are

- The Enabling Environment (laws and powers of the State), and
- Financial Feasibility of the Project (financing).

#### The Enabling Environment

The enabling environment is a paramount barrier because private sector participation must, first and foremost, be possible. Many States do not allow private sector participation in highways or, for that matter, most public-use projects. Indeed, there is a long history of public project development within most States, and their programs may need to be revised gradually to facilitate private participation. New enabling legislation at the State level will generally be required, at least initially, in order to blend private investment into traditional highway programs. The flexibility provided in ISTEA, such as the blending of private funds with Federal aid, will also require State enabling legislation in order to implement projects using blended funds within a State's program.

The barriers associated with the enabling environment include issues relating to the powers of the State agencies, concession and franchise agreements, procurement procedures, and a wide variety of regulations. If State policy makers intend to give serious consideration to public-private partnerships, then they should consider providing agencies with an operating environment that allows them to enter into partnerships and approve specific private activities in conjunction with highway development. To be effective, most observers conclude that State privatization legislation needs to designate a leading State agency, usually the State DOT or a toll authority, to implement highway partnerships. Effective review of partnership proposals requires focus of governmental responsibility. The designated public agency

must have the authority to act on behalf of the State; therefore, it must have certain statutory powers. For most projects, these powers should include the power to procure projects through negotiation; to acquire right of way through eminent domain (or otherwise) and transfer use of it to a private developer; to acquire and confer environmental permits; to confer exclusive franchises; to establish a geographic non-compete zone; to enter into binding concession agreements and lease arrangements; to regulate tolls or rates of return; and to blend or lend State and Federal funds to a project. Without some of these powers, it will be difficult for a State to undertake public-private investment initiatives.

Even with appropriate legislation, the enabling environment may pose additional hurdles. State officials can expect to face relatively new issues in implementing partnership projects, many of them not fully understood by either party. Partnership projects which rely on some State financial support will have to compete with other, more traditional projects for State and Federal aid. Further, many traditional projects have already been included in every State's Transportation Improvement Program (TIP), creating a barrier to reprogramming funds toward partnership projects in the near future. To keep a project proposal moving toward approval and eventual realization, private developers also cite the need for advocates, or at least enthusiasts, among State policy makers.

Most of these new powers raise difficult issues which will often impose unpredictable delays in the time line for a partnership development. For example, how can the public interest best be protected in a negotiated (sole-source) procurement process? over half the States allow certain utilities to exercise some powers of eminent domain, but under what circumstances should the power of eminent domain be exercised on behalf of a private or partially private toll road project? Environmental clearances require true partnerships. Although no prohibition appears to exist in State laws, it is not clear whether environmental permits can be acquired by a State agency and transferred to a private developer, and whether challenges to such transfers might be upheld in the courts. Under what terms can and should an exclusive franchise and grant of right of way to construct and operate a road, and use the airspace above it, be given by State authorities to a private developer? How can or should the franchisee be protected against the construction of alternate travel routes which may compete for the same traffic, and over

what geographic area? Can the concession agreement or a lease arrangement be made legally binding on a public agency and not subject to legislative revision? Should a scheme for regulation of tolls be identified by law (as in Virginia) or should the public agency regulate toll revenue through its concession agreement (as in California)? When seeking to blend funds, are there clear-cut ways for a public agency to lend State or Federal funds to a private project without running afoul of State restrictions on the lending of credit, and is the enabling environment sufficiently clear about the legislative intent to provide such powers?

As should now be apparent, the enabling environment encompasses a large number of specific barriers. The paramount barrier to innovative partnerships may be the difficulty of overcoming pressures against experimentation, even after a project is assessed to be in the public interest. An evaluation of the importance of these specific barriers is presented in more detail below.

### Establishing Financial Feasibility

The study team concludes that the financial barrier is another paramount barrier. When making the transition from public-funded, general-use projects, the scrutiny of a project's credentials enters a new dimension: the project must be able to support some degree of private financing. Most of the financial burden will adhere to the prospective users in some fashion (e.g., tolls, exactions, or land contributions). Most public sector roads are not priced at the point of use. Hence, the public-private partnership is being asked to compete against other road services provided by the public sector, and this potential competitive situation renders the financing barrier significant.

The demand for capital improvements to the highway infrastructure seems regularly to exceed the supply of public capital available, and recurrent shortfalls occur. At the same time, the calls made on public capital from all sectors, and on the overall public budget, far exceed the revenue streams available. Thus, the competition for public dollars is becoming more and more fierce.

Public-private partnerships are only one mechanism for funding highway development projects. However, the potential for increasing capital investment in roadways by promoting partnerships is attractive for many reasons. If private capital is applied to highway development, then governmental funds can be devoted to other services and facilities, either in transportation or in other spheres of governmental activity.

To make a partnership project work, the developer must thus bridge the gap between the public and private approaches in terms of identifying a project and estab-

lishing its financial feasibility. Most traditional projects were tested for benefits, but it was the large system-wide benefits, often of an uncaptured or external nature, that were important in their eventual approval. The paramount financial barrier is provision of a definitive answer to the viability question: Can this project support itself in the infrastructure marketplace?

The question of financial viability for an individual highway project presents some special dilemmas. A highway system is composed of individual roadway links. Projects serving each individual link may or may not be able to generate revenues that cover facility costs and yield a return on investment, as required by the private sector, even though unmet highway needs are evident. Furthermore, the U.S. highway network is an extensive, mature system built over a long time period, yet relatively few miles in the network are high volume, primary or Interstate-type routes. New, financially feasible projects are most likely to be for high-capacity facilities. While inadequacies exist, few obviously crucial projects have been left unbuilt, narrowing the candidates for partnership development.

Another dilemma is the problem of designing road capacity to address peak-period traffic, which by definition leaves underutilized capacity at other times of the day. Attempts to address uneven traffic flows by construction of excess capacity further narrows opportunities for public-private capacity enhancements. Through these dilemmas, existing highway capacity puts a damper on revenue stream possibilities for public-private partnership projects even though inadequacies are evident in the performance of the overall network.

In sum, the developer/sponsor of even an apparently attractive project must solve certain fundamental financial problems, which taken altogether present a formidable barrier:

- **Financial Risk:** The prospective project revenue stream must be viewed as adequately secure to support a certain long-term stream of debt service payments. Although relatively predictable along trend lines, the questions of whether the traffic will come, pay the requisite tariff, and grow at a sufficient rate pose a serious financial risk.
- **Marketability Risk:** While two established markets exist for tax-exempt debt, and credit insurance services are emerging for that market, it is difficult to sell private-activity, project-oriented debt to finance infrastructure development. Instead of the anticipated premium of approximately 300 basis points for taxable debt, the issuer may face a much larger debt service cost, endangering coverage ratios and posing marketability risk.

- **Equity or Venture Capital at Risk:** The need to provide up-front private equity funds as working capital and put it at risk before project endorsements or approvals poses special risks. In essence, this capital will be drawn down for project development at the initial and conceptual stages, without creating any asset or improvement, and with little or no resolution of challenges to completion.
- **Construction and Completion Risk:** Substantial risks are involved in the highway construction process. They include unforeseen/uncontrollable design, engineering, and cost elements which can undermine the financial viability of an otherwise sound project. Completion delays alone can add substantially to completion costs while deferring user revenues.

Many proposed highway development projects appear necessary and beneficial, but their self-financing capability is usually unknown. The project often arises to fill a perceived need. As the concept develops, more detailed benefit and cost quantifications are performed. However, benefit-cost parameters raise as many questions as they answer and do not often provide a definitive go-ahead from the financial feasibility perspective. As the project advances toward implementation, quantitative analyses often find either higher cost, higher impact, or uncertain traffic projections dependent on a continuation of economic development trends. The summary impact of these risks provides many reasons for questioning the financial feasibility of almost any particular project development.

## INDIVIDUAL BARRIER ISSUES

This section develops additional explanation and analysis of the specific issues that pose barriers in developing public-private partnerships for highway infrastructure construction and maintenance. These issue discussions are based on the research and analysis conducted for this study, incorporating experience from projects and input from symposium participants. Sixteen specific issues are categorized under the subheadings “enabling environment” and “economic regulation and financial risks.” For each issue, there is a subsection beginning with the “issue” title and “ranking.” Based on project experience and importance as revealed in the symposium, a ranking, ranging from “very important” to “less important,” was applied to the issue, followed by a “discussion” containing explanation and analysis. The ranking system used four designations: very important, important, fairly important, and less important. Relevant examples from “project experience” are then given, and finally, based on the analysis and project experience, suggested “solutions” to over-

come the barrier are presented. Many other issues were examined but found to carry insufficient importance for discussion in this final report.

## ENABLING LEGISLATION

This subsection addresses powers of the State agency to facilitate the development of public-private partnerships. Some State powers may require new legislative authorization. It also addresses barriers related to concessions or franchise agreements, procurement barriers, and regulations.

### Powers of the State Agencies

ISSUE: POLITICAL PROCESS

Ranking: Important

#### Discussion

The political process issue involves both public acceptance and the importance of coordination when several political jurisdictions with veto power are involved or contain project land. Public participation is important for gaining public and political acceptance.

The analysis identified not only barriers relating to political complexities of competing jurisdictions, but also any political process that can hinder the private sector's participation in highway development (e.g., lack of support from the general public and the business community). It is often difficult to convince the general public of the societal benefits of a highway project, particularly one developed by a public-private partnership. A wide base of support and effective coordination among multiple jurisdictions is important to project realization. Collectively, these issues are important barriers to public-private partnerships.

- **Multiple Jurisdictions:** Because highway projects cover a lot of geographic space, they typically span several political jurisdictions, each of which can veto the project. To be successful, each jurisdiction must agree with and support the project. The project may require land from the locality or need to borrow its power of eminent domain to obtain the right of way. Additional time is usually needed to align the goals of competing jurisdictions.
- **Lack of Support:** Without support from the locality, general public, and business sector, the project, even one that creates significant benefits,—may not be able to overcome any negative attacks initiated by the media or environmental or single-issue groups.

#### Project Experience

Lack of a unified political and administrative process was a barrier to success for the Arizona/Maricopa

County Expressway project (known as VUE-2000). Although the State passed enabling laws that permitted different partnership models to overcome a financing shortfall, a political distrust or misunderstanding of public-private partnerships remained.

In California, the political issue involved balancing the demands of the many groups that wanted to be involved in project development. For example, because a small stretch of the San Joaquin project fell within its jurisdiction, the California Coastal Commission wanted to dictate stronger policies of wetland mitigation and wildlife habitat provisions. A considerable amount of litigation was brought against the project. Heavy regulation was promoted by environmental interests and, coupled with other legal issues, considerably increased project development costs. However, the project eventually moved forward because toll revenue projected from the high traffic demand could absorb the increased costs.

### **Solutions**

There are several ways to overcome barriers related to political process.

- *Stakeholdership*: Since highway projects involve many landowners, several jurisdictions, and millions of users, the private partner, working with the State, could make more groups into stake holders. Stakeholdership, or the potential of receiving direct benefits, produces incentive for each player to see the project through to success. One way to make local governments into stake holders is to trade rights of way for a share of downstream revenues.
- *Fairness*: Political jurisdictions are concerned about equitable treatment. To obtain broad jurisdictional support, the private partner and the State must ensure fairness across all road sections, recognizing and dealing with differentials in section cost or projected traffic.
- *Communication*: Effective, continuous communication, coordinated with all stake holders and the general public, can alleviate distrust and promote the positive aspects of a project. For political acceptance, public participation is essential and must be coordinated among the jurisdictions and within the State. Initial and continuing support from the business community and other community groups needs to be solicited and nurtured.

## **ISSUE: STATE CONTRACTUAL POWERS**

**Ranking: Very Important**

### **Discussion**

State contractual powers relate to the ability of the State to make commitments to encourage partnership

arrangements. This ability depends on enabling legislation. If the State does not have adequate powers, partnerships will not be created because there will be no real way to develop a secure financial relationship with the State. States will need to obligate contractually to promote private involvement in highway projects, and in particular, to enforce non-compete zones or to ensure the private developer against tort liability. Not all States are prepared to enter into design/build, build-transfer-operate (BTO), or build-operate-transfer (BOT) arrangements; but this ability is a contractual power that is attractive to the private sector. To be able to execute viable franchise and concession agreements, the State will need clear and usually new contractual powers.

### **Project Experience**

The E-470 Public Highway Authority is a body corporate and political subdivision of the State of Colorado with all the powers, duties, and privileges permitted by the Public Highway Act. However, a State referendum made it impossible for the Denver E-470 Authority to adjust taxes to augment revenue shortfalls when fees fell short of expectations.

Virginia's enabling legislation was designed as a "private corporation act" covering only the Dulles extension project. It allowed private entities to incorporate as public utility corporations to build, own, and operate toll roads on receipt of a Certificate of Authority from the Virginia State Corporation Commission. The Dulles Green way developers had trouble acquiring land, and the State was not able to lend its eminent domain authority.

The Arizona Attorney General challenged ADOT's ability to incorporate prior Federal-aid roadways into a tolled system; this presented a formidable hurdle.

California's comprehensive AB-680 enabling legislation and the Transportation Corridor Agencies (TCAs) provided relatively clear powers to undertake projects. The AB-680 included resolution of tort-liability and risks, but severely restricted State financial support.

### **Solutions**

The enabling legislation must comprehensively support public-private partnerships and provide adequate agency powers and must be flexible enough to deal with unforeseen needs.

*Agency Contact*: Ideally, a single agency should be designated to work on behalf of the State. This results in time efficiencies, including a single negotiation process. Private developers see the clear delegation of authority to a designated governmental representative as highly important.



Public-Private Agreement: In developing the franchise agreement, the allocation of rights and responsibilities between the public agency governing the project and the private developer is important. The agreement should define the types of partnerships permitted. The legislation should explicitly state the right to use a design-build construction method or BOT or BTO, define the rates of return allowed, define compensation allowances for planning and permitting costs, and address tort-liability issues and safety and design standards.

#### **ISSUE: STATE-FEDERAL SUPPORT**

##### **Ranking: Important**

###### ***Discussion***

Government financial support is often the difference between a project's success or failure. Financial support from the State or the Federal government, such as subordinated debt or a local government guarantee may be necessary to ensure successful financing of a partnership highway project. Although IS TEA encourages private involvement in highway development and offers new opportunities for commingling funds, States are not clear on how to use the IS TEA provisions and few have passed legislation that would make it possible to use Federal aid to fund private partnerships. Without direct State or Federal support, financing has proven difficult to obtain. Federal and State support is required to convince the private developer (and the financiers) that the government is committed to the project. Without direct financial support, the partnership commitment of the public sector remains in doubt. This barrier must be overcome before project development.

###### ***Project Experience***

Although the San Joaquin Hills Transportation Corridor had credible traffic projections, financial markets were reluctant to issue \$1.2 billion in bonds without direct State or Federal financial participation. A tiered financing of senior and junior bonds, backed by tolls, fees, and a small stand-by Federal commitment characterized the final package.

The Dulles Green way developers were unable to turn to Federal or State aid or IS TEA loans to augment funding, resulting in project delays and dissolution of the original venture team. Additional private equity commitments were required to obtain final financing, a path probably not replicable for other projects.

###### ***Solutions***

Additional vehicles are required to make State and Federal funds available to public-private partnerships for highway development:

State Revolving Fund: The State can provide low-cost financial support to toll road programs to partner with private sector interests by creating a State Revolving Loan Fund (SRF). This is a natural extension of the basic IS TEA authorization of a project loan. The SRF could be capitalized with a defined portion of Federal IS TEA funds to establish a permanent, self-renewable source of capital dedicated to transportation infrastructure investment. State contributions could leverage the SRF to provide support for credit enhancement, guarantees, collateral, financing or refinancing for qualifying projects, and creating reserve funds.

Direct Program Funding: The State or Federal government could earmark funds for public-private partnerships as a direct incentive. As it stands, traditional models and public-private models compete for IS TEA funds. A designated portion of Surface Transportation Program (STP) funds could be used by States to seed public-private highway development.

Indirect Funding: IS TEA allocates money to each State for highway development use. States that do not use their allotment can transfer the funds to other less traditional projects. To promote private involvement, highway statutes could be revised so the funds that are not obligated could be reprogrammed for public-private partnerships highway projects in the same or other States.

#### **ISSUE: CONCESSION OR FRANCHISE AGREEMENTS**

##### **Ranking: Very Important**

###### ***Discussion***

Concession agreements between public bodies and private parties codify the basic framework of standards, assurances, warranties of performance, completion dates, and other commitments by either party. They are legally binding and provide the formal statements of contract. As such, achieving a workable agreement that is acceptable to both parties, stands the scrutiny of regulatory control, and survives the test of financial marketability is a key hurdle for a public-private partnership. The specific provisions, including limitations under existing legislation, areas of uncertainty, and the thoroughness with which details are expounded determine the success or failure of the public-private venture.

This crucial barrier has been, to a large extent, overcome in the examples of actual public-private ventures that have obtained construction financing or at least to a point closely preceding it. The ranking remains very important, however, because this key barrier must be overcome in the course of each project's development.

The concession agreement is a living statement of provisions and principles that will govern actions of both parties in a public-private venture over the life of the agreement. It emerges from intense negotiation and review by both parties. The public agency seeks to codify measures that attempt, at a minimum, to (1) protect the public interest, as defined by various principles and operational standards; and (2) provide a framework for regulating the private entity's financial returns and ability to sharply increase tolls. The private entity seeks terms that will allow it to obtain acceptable project financing and/or attract additional equity investors. It also seeks protection from events beyond its control that would cause default or a major disruption of revenue service.

Symposium participants identified the most important concession provisions: Provisions defining the project scope, boundaries, phasing, and timing, outlining mutual obligations and associated warranties

- Provisions outlining the extent and nature of regulatory oversight, control, and redress
- Provisions for the concession holders to be bound by existing Federal, State, and/or local standards and requirements (fair labor laws, competitive procurement laws, standards for performance or design, construction and operating standards)
- Agreements on right-of-way assembly and negotiation
- Agreements on environmental clearance and/or permitting requirements, and the allocation of private and government obligations under such processes
- Provisions for the zone of franchise or the zone of exclusivity for the private sponsors, as well as mechanisms to enforce such a zone
- Force majeure clauses and associated provisions for restitution of economic loss and/or damage
- Provisions for transfer of operational responsibilities and liabilities in the event of default by either party.

### ***Project Experience***

In the Puerto Rico-Laguna San Jose project, after nearly two years of detailed negotiations, a successful concession agreement was reached in which the Commonwealth issued \$117 million in bonds and reloaned the proceeds to the developer. The agreement incorporated a variety of risk-sharing provisions, including Authority guarantee of traffic levels through an option for the contractor to sell back the facility (or the lease) if it is not achieving an acceptable return on capital.

The California AB-680 legislation established the general terms and conditions for negotiation of a concessions agreement, and provided Caltrans with adequate authority short of actual financial participation. The SR-91 project stands as an example of a successfully executed concession agreement under the AB-680 framework.

### ***Solutions***

The State must have the authority and the ability to enter into concession agreements that are attractive to the private sector while maintaining public acceptance by balancing the public interest. The State needs to analyze each term of the agreement to ascertain its effects on the private and public sectors. As proof of the ability of public-private ventures to overcome this barrier, consider that several ventures have achieved financing concession agreements. A sound agreement provides a *raison d'être* for private involvement; it must withstand the scrutiny of financial due diligence, weather legal challenges, and be subject to considerable public agency oversight. Future public-private ventures will obviously look to these concession agreements as guides for successful implementation.

### **ISSUE: PROCUREMENT**

**Ranking: Important**

### ***Discussion***

Several issues included in procurement barriers have been identified, including the following: choice of contractors and vendors, local content provisions, competitive bidding, minority business participation, design/build process, and protecting intellectual property. Analysis indicated that for public-private partnerships to attract equity capital and work effectively, new procurement mechanisms are needed.

The symposium input and other analysis indicates that procurement barriers are major inhibitors of private sector involvement in roadway development. Both public and private parties must recognize that their needs differ. Rules and requirements imposed on the private sector based on public sector needs or experience will, in general, reduce the incentive for private sector involvement. The traditional procurement process conflicts with the private sector goal of increasing shareholder value, especially by increasing project costs or delivery time. Resolution of these conflicts involves redefinition of roles and responsibilities. Several sub-issues are analyzed below:

- *Choice of Contractors and Vendors:* State procurement laws restrict the flexibility of the public sector in selecting contractors and equipment suppliers, impos-

ing rules that ensure that the State acquires services and supplies fairly and at the lowest price. These rules are based on projects for which the State bears all financial responsibilities and seek fair competition. Elaborate steps safeguard public funds against waste and fraud by contractors whose primary interest is securing a one-time contract. However, in projects where the private company is bearing risk, the State's procurement process should be modified to reflect the difference between public and private needs and allow the private risk bearer the flexibility to hold down costs and share risks among its subcontractors. Subcontractors working with private developers are generally interested in longer-term relationships and are often major equity partners. The desire to develop longer-term relationships and the desire to increase shareholder wealth will cause the private consortium to work towards efficiencies, both of which should result in benefits for the public.

- *Local Content Provisions:* Local jurisdictions use local content requirements to support employment and economic development, but this restricts private companies in their choice of contractors and vendors. In these instances, large, national, proven construction companies may be disqualified from the bidding process, with resulting inefficiencies in project time and cost.
- *Minority Business Participation:* Although minority business participation was initially included as a procurement-related barrier, the number and quality of minority-owned businesses have increased. Requirements are having little effect on private companies and do not constitute a major barrier. Symposium participants indicated that requirements are not an issue because the supply of quality minority subcontractors is adequate.
- *Competitive Bidding:* In traditional public procurement, competitive bidding is the accepted process. Contractors are selected after project design is completed, based on the lowest-priced qualified bid. Title 23 provisions (23 U.S.C. 112) generally require competitive bidding on construction contracts using Federal aid, with award to the lowest responsive bidder. Selection of the low-cost proposal often overlooks the bidder's solvency and work quality, shifting risk elements to the public sector. Competitive bidding on partnership developments eliminates the ability to achieve several desirable features: equity investment by the contractor, deferment of fees at a negotiated rate of return, turnkey supply of materials based on performance specifications (in lieu of completed design), and minority business participation at target levels.

### **Project Experience**

Response from symposium participants strongly reinforced the notion that private firms need to be able to choose their contractors and vendors. These choices permit projects to be built on a relatively firm, privately finance able schedule. The Dulles Green way project's largely private orientation enhanced the ability to get the project moving quickly, and well ahead of the public sector's probable schedule. Participants also indicated that developers must be able to choose proven subcontractors and vendors to perform a turnkey project.

### **Solutions**

To alleviate these barriers, the State needs to incorporate alternative procurement processes, such as the design/build process and protection of proposal ideas. Progress has been made in this direction.

- *Design/Build Process:* In the design/build process, construction begins after preliminary planning and design is completed but before detailed construction plans are done. This can speed project completion and reduce costs, as final design and construction are done concurrently. Federal law (23 U.S.C. 112(b)(1)) provides for an exception to the competitive bidding requirements if the "State highway department demonstrates, to the satisfaction of the Secretary, that some other method is more cost effective," but to date, the design/build concept has been approved only on an experimental basis for a few contracts. Expansion of the design/build process to transportation facilities will require attention to improved means of specifying and ensuring performance standards.
- *Protecting Intellectual Property:* Several private developers stressed the importance of intellectual property protection, and public officials recognized this need. In order for private sponsors to see an incentive for developing innovative proposals, while incurring extensive development costs, the private entity should not view the State as a potential competitor but as a partner in developing the project. Intellectual property protection may encourage the private sector to be more innovative and to conduct thorough investigations into project feasibility and design before submitting proposals. Such information warrants protection where the private firm is bearing the financial risk and sharing information with the State in a good-faith effort to achieve public objectives. Negotiations often require revelation of highly proprietary information on corporate finances, strategic business plans, and unique design and technology.

Without protection, private companies are risking public access to their financial and proprietary information. Obtaining the desired protection of intellectual property is likely to require separate enabling legislation.

## Regulatory Barriers

ISSUE: LAND ACQUISITION

Ranking: Very Important

### Discussion

The ability to assemble rights of way at a reasonable cost is critical to highway development. While private sector acquisition methods may allow the private developer to negotiate lower acquisition costs or even obtain right-of-way donations at no cost, the concern here is one of timeliness or certainty. Private methods may not be enough to ensure timely acquisition of needed property. Governmental power of eminent domain may be required and may even be essential.

Assembling land at a reasonable cost in a timely fashion constitutes a formidable barrier to private financing. According to symposium participants and the experience reflected in project case studies, land acquisition is difficult, time-consuming, and expensive for private partners. It can represent a large portion of project costs (about \$800 million, or 40% for the Maricopa County Expressway). Without appropriate rights of way, project timing and costs can escalate dramatically.

Private developers, lacking the power of eminent domain, must persuade land owners to relinquish the property needed through a buy/sell agreement. Land owners approached at the end of the acquisition process have an incentive to hold out for additional compensation, and these additional costs may jeopardize the project schedule or funding. Private developers can provide innovative compensation packages, however, based on projected increases in value. Large land owners with adjacent property may find it in their interest to donate parcels for highway development at below-market valuation.

### Project Experience

Review of recent projects illustrates the importance of securing rights of way at reasonable costs. The SR-91 project leased the State-owned median at favorable terms to overcome this hurdle. The Dulles Green way developers experienced difficulty in acquiring land, and Virginia's enabling law did not provide the developers with clear eminent domain power. Many of the rights of way were donated by local land developers, but several landowners held out, costing the developers significant

time and money. The local county government used its power of eminent domain to acquire the final parcels.

In Arizona, the projections for Maricopa County land acquisition cost escalated so much that the planned funding package fell short, being projected recently to deliver only 70 of the 210 miles planned. This barrier has halted the project.

### Solutions

States can grant or lend the power of eminent domain to the private partner for rights of way and buffer land through appropriate enabling legislation. Investor-owned electric, water, and gas utilities have regularly been granted powers of eminent domain by State charter. Railroad lines were built with these powers in the 19th century. However, since eminent domain represents a reduction of individual property rights and is often viewed as an aggressive governmental tactic, granting this power to a private party will probably be opposed by the public (and by opponents of highways and highway privatization).

A more acceptable and cost-effective way to overcome this barrier is for the State to use its power of eminent domain on behalf of the project as a last resort. California law states that, as a last resort, Caltrans can exercise the State's power of eminent domain on behalf of an approved private project. The SR-91 project was able to lease rights of way from Caltrans at nominal cost, reducing capital needs and avoiding the acquisition issue entirely. Washington law also provides for the power of condemnation on behalf of private parties seeking to build and operate toll facilities. It is advantageous for the private firm to obtain as much land as possible through negotiated transfers, then use the State's assistance where acquisition prices exceed estimated market value. This balances private acquisition procedures with the certainty of governmental assistance.

Innovative resolutions of the land acquisition barrier might be accomplished through the establishment of stake holder relationships, similar to a shareholder structure for the public-private partnership. For example, the Maricopa County Expressway proposal faces right-of-way acquisition hurdles involving high up-front costs and many landowners in several political jurisdictions. ADOT is exploring an arrangement whereby property owners, including local governments and private holders, can be offered an exchange of rights of way for equity in the public-private toll road project. Another way to alleviate high up-front costs for the developer would be to use revolving funds for land acquisition, with repayment from the developer when project financing is completed.

## ISSUE: ENVIRONMENTAL CLEARANCE

Ranking: Very Important

### Discussion

Acquiring the necessary environmental permits can be one of the most frustrating and costly aspects of highway development, either public or private. Private highway projects, unlike many power and gas pipeline companies, cannot rely on assured markets generating revenue to offset the time and cost of environmental clearances. Since there is no statute of limitations on legal challenges to environmental processes, private parties often find that risk to be too substantial.

Environmental clearance issues clearly constitute a very important barrier. Significant time and financial resources are required to obtain the proper clearances and permits. Much of this cost occurs during the financially volatile early stages of a project. Uncertainties about how many permits are required, whether the private franchisee must meet the varying requirements of numerous overlapping jurisdictions, and whether other State or Federal agencies may exert jurisdiction unexpectedly.

Although all construction projects are required to obtain environmental permits under State and Federal laws, the risk to private highway projects is greater because they have no revenues until operations begin and cannot usually access the State's revenue flow from highway fees. Environmental risk drives up the required rate of return, adding to the difficulty in securing financing. Preparing an EIS for a controversial project can easily cost \$10 million and take up to two years. There is a substantial risk of failing to obtain environmental permitting and losing the entire investment. State, local, or Federal agencies may veto the project on environmental grounds, after the private sector has injected large sums and extensive time into detailed environmental studies. This risk is estimated to account for 70-80 percent of the pre-construction risk. Judicial challenges to permits and the risk of new interpretation imposing added requirements also present significant barriers. Recently promulgated regulations regarding air quality conformity make an already challenging process more so.

### Project Experience

Permitting was a significant barrier for most projects. The Dulles Green way project dealt with numerous State and Federal permits, as well as permits for Loudoun County and 27 other land districts with various governmental responsibilities; this required much attention and financial resources. The two Southern California projects faced high hurdles regarding envi-

ronmental clearances. The San Joaquin Hills project sought to counter the risk by initiating action seeking declaratory judgments in advance of lawsuits.

### Solutions

Since many of the issues raised in the environmental process are related to broader public policies, such as air quality and growth management, it may be appropriate for the public sector to share in these risks as well as streamline the process. Several methods to alleviate the environmental clearance barrier have been identified.

- *Governmental Pre-Clearance:* To alleviate this burden, the public sector could clear the project's environmental permits before substantial private equity has been put at risk. Some private sector spokes people suggested that this barrier could be removed by having the public sector assume the full responsibility and risk of securing environmental permits. In this situation, State transportation agencies would select projects and do the initial environmental review work, bringing them to the point of environmental clearance. However, this remedy would require that the government define the project, thereby reducing the prospects that private involvement will result in innovative highway projects.
- *Loan Pay-Back:* An option suggested by Caltrans as a modification to the AB-680 process would authorize the State transportation agency to bear the costs of the environmental review (on a project for which it has a signed franchise agreement). Once environmentally cleared, the private developer, as a condition of being awarded that project, would reimburse the State for all costs incurred in obtaining the permits. The governmental costs are treated as a contingent loan and repaid with project revenues.
- *Statutory Limit on Challenges:* An innovative proposal to alleviate barriers related to environmental clearances would have the Federal government adopt a statute of limitations for court action protesting an EIS. Other developers suggested that FHWA join them in seeking summary court judgments to resolve challenges against projects.
- *One-Stop Shop:* A significant amount of time is expended to obtain the correct permits from the correct agencies. Numerous permits (county, State, Federal, and land district) can be required. The private partner must discover the agencies that enforce the regulations. Compliance affects project cost, and early definition of compliance requirements needs to be agreed to by all parties. Multiple reviews result in

conflicting comments, the resolution of which requires time and delays implementation, which in turn increases cost. A “one-stop shop” could reduce the time required for clearance, enhance the ability for a joint review, and expedite projects substantially.

- *Other:* Symposium participants indicated two other ways to minimize this barrier: (1) settle challenges before construction, and (2) use innovative legal tactics. Environmental challenges were settled before construction of SR-91, which allowed the sponsors to bypass significant costs and time delays. Provision of toll-free HOV-3 service is one resultant feature of the SR-91 implementation. In the San Joaquin Hills development, the absence of direct Federal aid reduced some environmental hurdles and joint powers agency developers used innovative legal tactics, such as taking environmental groups to court to forestall later challenges. Environmental problems associated with the new Dulles Green way roadways were largely satisfied by voluntary mitigation measures.

#### **ISSUE: PUBLIC OVERSIGHT**

**Ranking: Fairly Important**

##### ***Discussion***

Ongoing oversight is desirable to protect the public interest but may pose unforeseen risks to private partners, hence raising perceived costs and hampering private participation. Highway development will have government oversight because highways are public goods. Public oversight may take the form of regulation of toll rates or rates of return, specification of construction standards, enforcement of safety, and supervision of operation and maintenance. oversight may change when governmental changes occur.

We rank the issue of public oversight on its own as only fairly important. It is ultimately of highest importance that the public interest be protected, but our analysis suggests that the public interest is best protected through the terms in the franchise agreement and by regulatory oversight over fee levels and rates of return (see relevant sections of this report).

##### ***Project Experience***

When the Dulles Green way project began, the private sector, believing in its efficiency compared with the public sector, did not solicit any involvement from the public sector. This resulted in several false starts, and the project did not successfully begin until the developer learned that the project had to be viewed as meeting the public need through private capital. A successful project depends on the two sectors working together.

##### ***Solutions***

It is important to protect the public interest and the means to do that should certainly include oversight by the public sector. However, government needs to adopt consensus-building approaches instead of command-control techniques that can squelch private involvement. A real partnership arrangement must be created. one way to ensure this is through an attractive, yet comprehensive, franchise agreement.

#### **ISSUE: APPLICATION OF FEDERAL, STATE, AND LOCAL LAWS**

**Ranking: Fairly Important**

##### ***Discussion***

Numerous constraints might be imposed on public-private partnerships by existing Federal, State, and local requirements for the public partner concerning non-discrimination, payment of prevailing wage levels, Davis-Bacon, etc. Application of these laws to public-private partnerships is uncertain and poses real risks to the developer.

Because partnerships represent a new effort in infrastructure development, the application of Federal, State, and local laws has not been thoroughly addressed. It is clear, however, that partnership arrangements incorporating significant State or Federal funds may trigger the application of laws such as the National Environmental Policy Act (NEPA) to which purely private companies would not be subject. Uncertainty, and hence risk, exists concerning the application of requirements of the Federal agencies in particular. For example, the Federal Uniform Relocation Assistance Act provides special treatment for persons displaced by Federally assisted programs. Private land acquisition need not meet these requirements, but a public-private partnership may need to comply, adding dollar and time costs for the developers. If Federal law applies but developers have not complied, then they might jeopardize their ability to apply the government's power of eminent domain. Since the State will likely be a partner, State relocation law may well apply, so developers should use caution before initiating land acquisition negotiations.

##### ***Project Experience***

The Dulles Green way project first attempted its land acquisition as a purely private endeavor. However, several government-controlled land areas were needed and the bodies that controlled them sought to introduce various new conditions on the project. After some negotiations for land acquisition broke down, the devel-

opers asked the local governmental authority to assist with the process. No Federal aid was sought, and land acquisition eventually was completed without triggering restraints.

California's AB-680 projects, after protracted franchise negotiations, specified the State's position on the application of various State laws. Litigation did arise, however, over the application of California's equivalent of NEPA by virtue of the State becoming a signatory to the AB-680 franchise agreements.

### **Solutions**

Project developers should expect to be subject to prevailing laws in their highway development proposals. However, when blending funds from Federal or State sources, due diligence requires close attention to the possibilities for triggering special requirements applying to activities using Federal or State aid. Even loan proceeds from a State fund, if associated with Federal seed capital, might bring uncertainty in this regard. A de minimus provision can limit application where Federal or State involvement is below a certain threshold.

## **ECONOMIC REGULATION AND FINANCIAL RISKS**

This section addresses several specific and significant financial barriers and economic regulations that forestall the development of public-private partnerships, grouped into two categories: financial risks and regulatory risks.

### **Financial Risks**

#### **ISSUE: UNCERTAIN COMPLETION COSTS**

##### **Ranking: Fairly Important**

#### **Discussion**

Uncertain completion costs for a highway facility are a definite barrier, because the construction phase spans several years and market conditions may change, labor and materials costs increase, interest rates fluctuate, and unexpected delays occur. Based on our analysis, we have defined this barrier to encompass the risks associated with construction costs and rank it as fairly important. The basic hurdle involves the risks associated with uncertain facility construction costs. Construction cost overruns can consume a developer's capital budget and undermine the coverage of debt service.

Traditional public highway construction projects use funds allocated from State transportation budgets and request bids for project completion. If the bids are within the budget, the project is likely to proceed; if not, it

is deferred, redesigned, or rebid. Partnership projects normally seek financing for some portion of construction costs (beyond the equity or public investment), yet these costs are relatively difficult to predict before contracting and thus pose a barrier. The structure and marketability of these financing arrangements require relatively firm knowledge of project costs; new approaches to control and allocate construction risks are necessary. Large projects face possible design and engineering changes and uncertain costs for completing land acquisition and environmental clearance permitting, which can have a large impact. Construction risks will be reflected in the higher yields required by investors. The yields will not be known until financing is completed, raising further uncertainties about the overall costs.

### **Project Experience**

As plans were advanced for the Maricopa County Expressways, costs, especially right-of-way costs—, proved much higher than anticipated. The funding plan eventually proved inadequate to deliver the full 210-mile planned system, and the project has not gone forward.

The San Joaquin Hills Corridor project addressed construction risk by developing an innovative approach in which several phases occur concurrently. The TCAs entered into a \$787 million design/build contract containing a guaranteed price for completion. The relative certainty regarding cost to complete was a major factor in placing the financing.

### **Solutions**

Resolution of this barrier requires recognition that partnership projects differ from traditional public projects, which have a long planning period and are financed with allocations of existing funds. Partnership projects must raise equity and debt funding based on projected cost to complete. Different contracting vehicles are required to enhance cost control and timely completion. As evidenced by the San Joaquin Hills toll road project, contractual arrangements can overcome this barrier. A design/build or BTO arrangement can reduce the risk of completion costs, when coupled with adequate contingency and reserve funds. Design/build moves the responsibility for detailed construction plans to the contractor; this shifts more authority to complete design and construction as well as more risk to the contractor. The San Joaquin Hills contract largely shifted the risks of potential cost overruns and construction delays from the TCAs to the contractor. Incentive payments and delay penalties were also incorporated. This approach can reduce the time from conceptualization to completion and reduce costs.

## ISSUE: "START-UP " FINANCING PROBLEMS

**Ranking: Very Important**

### *Discussion*

This barrier warrants specific highlighting under the general topic of financial risks. Analysis indicates the risky, almost venture-capital, nature of the early start-up phases of a partnership project. Start-up financing problems represent a serious barrier because of the high risk involved in planning, developing, and constructing a highway partnership project. Symposium participants indicated that start-up financing is a significant problem in attracting private concerns to a partnership arrangement for highway development. Most projects will not find a bank willing to take on the high risk encountered in the initial project phases.

The initial phases involve unique and significant risks that are difficult to estimate. They include the time and cost to obtain environmental and other permits and the costs and uncertainties of land acquisition. Further, after much time and money have been invested in a project, the State DOT may not approve it. Even if the project is approved, there is the risk of losing the intellectual property (i.e., the possibility that the State DOT will undertake traditional development or release the project for competitive bidding).

In the operational start-up phase, new projects are characterized by periods in which projected debt service coverage is relatively low (below 120 percent) and there is a lack of operating history. Hence, revenue-based highway projects have difficulty in gaining credit recognition. Private credit enhancements (through banks providing letters of credit or insurance companies providing surety bonds) generally require an operating history of three or more years in order to assess risk. This creates a problem for new projects, which have no operating history and rely on feasibility studies. Revenue forecasts are based on traffic projections and depend on uncertain local and national economic growth.

This period of initial uncertainty followed by low debt service coverage requires a higher rate of return to attract a private partner; however, most States limit the overall returns that private partners can realize. This conflict between high risk and limited returns produces a disincentive for private investment in highway projects.

### *Project Experience*

The Dulles Green way project had at-risk equity financing but had trouble obtaining construction financing. The lending community was wary of the lack of government involvement and guarantees, and there was no

clear working partnership with the public sector. There were also general concerns about whether the project finances would be manageable through the initial ramp-up period, especially without any public sector commitment. More equity funds were put at risk to obtain construction financing.

To overcome the start-up financial problems, the San Joaquin Hills and Foothill/Eastern TCAs were provided limited powers of taxation through the collection of impact fees. Construction is being funded mostly by bond proceeds, but additional credit enhancements and sponsor contributions were added to increase marketability.

### *Solutions*

Several ways to overcome this barrier were identified. Our initial analysis identified the possibility of using a Federal or State guarantee program or a government-sponsored enterprise (GSE), such as Federal National Mortgage Association (FNMA); however, a GSE in transportation would require new legislation and might compete with private industry. The government could share in the early-stage development costs. Development funds are high risk to the developer, whereas established planning and preliminary engineering programs operate in the public sector. To encourage public-private partnerships, State and Federal governments could provide seed money for development costs. Public authorities could focus public assistance on specific areas such as environmental clearances and advance right-of-way acquisition. A county or regional governmental powers agency such as the TCAs could be established and given limited taxing authority.

## ISSUE: UNSURE TRAFFIC LEVELS AND INCOME STREAMS

**Ranking: Fairly Important**

### *Discussion*

Most projects proposed for public-private financing have been for new construction with no traffic patterns established for the facility. Revenue forecasts rely exclusively on predictions of traffic; realized traffic levels vary with the pace of local and national economic growth and may be influenced by environmental restrictions and technological change. Other modes of transportation and new parallel roads may divert traffic and affect income streams. This uncertainty makes investors less willing to sponsor projects.

All types of projects assess feasibility against projected revenue. However, the revenue projections from stand-alone highway projects may diverge from patterns



observed for previous projects, because they are not similar enough and depend on motorist acceptance of tolling as well as national and local economic conditions. Unlike typical commercial projects, “free” alternative routes are usually available and public acceptance is not certain.

### ***Project Experience***

The San Joaquin Hill project’s traffic projections were credible, but financial markets questioned using traffic studies alone to underwrite the \$1.2 billion bond issue without direct State or Federal financial participation. For the E-470 project in Colorado, toll revenue forecasts depended on the continued rapid real estate development and growth generated by the new airport, which created uncertainty somewhat validated by a severe regional economic recession and related real estate crash in the Denver metropolitan area.

### ***Solutions***

To reduce this barrier and encourage private participation in highway development, the State partner could 1) reasonably limit competition and 2) help private companies look for other revenue streams. The terms of the concession agreement can address and partially resolve these issues.

- *Limit Competition:* The private partner will have trouble earning a reasonable return on investment if faced with the possibility of a competing highway that might offer a free alternative to the partnership’s toll facilities. The State agency needs the authority to enter into agreements which limit future, not yet identified, projects that could compete within a specified zone around the facility.
- *Other Revenue Sources:* With State help, the private developer should look for additional revenue sources or credit enhancements to reduce its reliance on traffic level forecasts. Additional sources are possible with the development within the right of way of ancillary commercial facilities such as gas stations, hotels, restaurants, and office/retail space. These sources can provide significant revenue options and thereby enhance the financial feasibility of constructing the toll facility. The State could donate the ancillary land as a “social equity contribution” or use a lease arrangement. Concurrently, the State, working with the Federal government, needs to expand the realm of potential revenue streams that can be used to repay loans. (Current Federal law allows loans only for projects that generate user fees, such as a toll bridge.) A wide range of credit participation and enhancement mechanisms can allay the uncertainties associated with future traffic levels.

## **ISSUE: TORT LIABILITY**

**Ranking: Very Important**

### ***Discussion***

Tort liability is a very important barrier to overcome in the development of public-private partnerships. The contingent liabilities of operating a transportation facility can be extremely large. Allocating and mitigating the risk of tort liability is an important component of setting up a project. Tort liability is not initially limited for the private partner, which affects profits and returns, as evidenced in the symposium discussion.

Tort liability is a barrier because public-private partnerships are not shielded from tort liabilities in the same fashion as public infrastructure projects are, making private investors reluctant to provide funding. The private partner may be subject to claims for damages related to flaws in the design and operation of the partnership facility. Such claims pose a substantial risk to the finances of the enterprise. The public partner is largely protected by the sovereign immunity of the State, operates a large system of roads over which to spread the risk, and has the general revenues of the State as reserve against any potential judgment. Transportation projects are prone to incidents involving personal injury. If subject to damage claims, the private partner will seek to be protected by insurance. The insurance cost can be significant and could undermine the project’s financial feasibility. Private companies have a strong incentive to avoid bearing this risk, and this crucial barrier must be overcome through negotiation, insurance, and risk sharing.

### ***Project Experience***

The assumption of risk associated with tort liability is a key provision of all partnership agreements. The predominant model is the BTO approach, whereby the facility is transferred to State hands, seeking to transfer the liability risk as well. To reinforce the BTO approach, maintenance and police functions have been assigned to the State for both the SR-91 and San Joaquin projects. For the San Joaquin project, the private contractor is required to maintain general liability insurance covering at least \$50 million per occurrence and property loss insurance of \$100 million or more on the road itself, earth movement, and other property damage. The contractor must warrant his design and work but is exempt from liability after the warranty expires. FOE the Puerto Rico project, the concession agreement spells out limitations of contractor and Commonwealth liability.

### **Solutions**

The case studies of projects in implementation provide examples of how the tort liability barrier could be overcome. To encourage private participation, private developer/operator tort liability should be reasonably shared and/or limited in some fashion. The State could limit tort liability risk in two ways, by addressing the liability directly or by assuming part or all of the burden.

- *State Provides Liability Limitation:* The State could limit private tort liability in the enabling legislation or the concession agreement. In California, the tort liability issue was addressed in the enabling legislation, allowing its treatment in the concession agreements.
- *State Assumption of Liability:* In the interest of making partnership projects more feasible, the State could assume more or all of the burden in the partnership agreement. The BTO method has been one solution: the private sector builds the facility, transfers it to State ownership before operation, and then operates it on a long-term lease-back arrangement. As the fee owner of a facility which is built and operated to State standards, the State assumes most of the liability. Several projects, including SR-91, have chosen to use State maintenance departments and police forces to maintain and police the facility (at private expense), further reducing the liability of the private sector partners.

### **ISSUE: NON-TOLL REVENUE**

#### **Ranking: Important**

#### **Discussion**

Few highway projects can be built today with exclusive reliance on tolls; toll revenues need to be supplemented from other sources. However, States have not enabled private financiers to pursue these other sources, such as the use of air rights, rights of way, or other components of the value that improved mobility creates. On a broader scale, the public sponsor conceivably could draw on (or be provided with revenues from) local taxes or special regional motor vehicle or other broad-based highway user fees.

The ability to supplement toll revenues with non-toll sources is important to the viability of public-private partnerships. It has become increasingly difficult to finance highway projects with toll revenues alone. The ability to apply non-toll revenue sources that have established collection histories can help overcome cred-

it problems. Such revenue can significantly enhance the financial package supporting construction of toll facilities.

The project analysis also points out the potential importance of making non-toll revenue projects eligible for Federal IS TEA loans. Section 1012 of IS TEA states in part: "The State may loan all or part of the Federal share of a toll project under this section to a public or private agency constructing a toll facility." This provision has been interpreted to allow Federal participation through loans for toll-financing projects only. This severely limits the number and range of public-private partnerships which can be undertaken. Permitting revenue streams other than tolls to be used to repay loans will allow more creative projects and more effective leveraging of Federal funds.

### **Project Experience**

The successful implementation of the San Joaquin Hills project relied heavily on development impact fees, both to provide a flow of funds before toll inception and as blended security for debt service.

### **Solutions**

Several methods can be used to overcome this barrier.

- *Expand Eligible Revenue Sources:* Federal legislation could be revised, allowing projects to pledge revenue sources other than tolls and remain eligible for IS TEA loans. State enabling laws would also need to be revised. Allowing other revenue options will attract the private sector to highway partnerships.
- *Value Capture:* Where allowed by State law, local governments can create special transportation financing districts to capture part of the economic growth created by the addition of a new transportation line. Local governments could use their taxing power to assist the partnership and recapture development benefits through special assessment districts, tax increment financing districts, and impact fee districts used to finance transportation improvements. In this way the property owners that directly benefit from a new transportation project will help pay for it.
- *Right-of-Way Development:* Private development of ancillary commercial facilities could be allowed within the State right of way to supplement toll revenues. The State can donate the land as a "social equity" contribution or lease it to the developer using a fixed rate or percentage lease agreement. Such an arrangement can apply to air rights as well.

## Regulatory Risks

### ISSUE: REGULATIONS ON PRICE AND RATES OF RETURN

**Ranking: Very Important**

#### *Discussion*

If regulation creates uncertainty about the acceptable toll level or the rate of return to investors is capped too low, a very important financing barrier is created. Investor-owned toll roads share many characteristics with public utilities: they are highly capital intensive; the capital is fixed in place; alternate routes are congested or non-existent; and public right of way is involved. To ensure fair toll levels and an acceptable rate of return, economic regulation is normally instituted by the public partner in the franchise agreement.

Highway toll roads face the risk of economic regulation of prices and rates of return. This regulation may be determined by the State or negotiated as part of the partnership. A stipulated toll rate maximum or a return-on-investment ceiling is an important risk for investors. The reasonableness of future rate commission decisions is uncertain. Too stringent limitation on rates of return or user charges may make it difficult to attract adequate investment (some upside potential is needed to offset the downside possibilities), and too lenient regulation can lead to abuses and public acceptance problems.

#### *Project Experience*

California projects demonstrate one approach to striking a balance between public welfare and private profitability interests. California's toll way franchises each have a separately negotiated ceiling on the consortium's overall rate of return, ranging from 17 to 21.25 percent. Pricing is constrained only by the ceiling on profits. This gives operators the flexibility to set rates adequate to meet debt service requirements. It eliminates profiteering yet preserves the ability to use pricing to limit or encourage demand.

Virginia put the Dulles Green way under the State Corporation Commission. Both toll levels and the rate of return are subject to review by the Commission, and investor uncertainty concerning future Commission decisions contributed to the difficulties in raising capital.

#### *Solutions*

Based on the experience of symposium participants, several methods can be used to attract private investment while maintaining public acceptance.

- **Realistic Return on Investment:** Because of the high inherent risk to investors in toll way projects, private

capital will be attracted only if the investors can earn returns commensurate with the risk assumed. Specifically allowing the developer or operator the ability to vary toll rates by time of day (congestion pricing) can increase the attractiveness of the project. Long-term control of toll rates is maintained by the rate-of-return regulation; however, this ceiling must be high enough to attract private investors.

- **Franchise Agreement Preference:** Incorporating a realistic ceiling into the franchise agreement will reduce investor uncertainties about future commission decisions when the project becomes profitable. Regulation through franchise agreement avoids the uncertainties and risks involved in public utility commission regulations, as well as future costs of regulation. The franchise agreement can also allow the private firm to share in excess profit over a first-stage ceiling, although most partnerships put excess returns after debt retirement. This results in a continuing incentive for operating efficiency and allows both sectors to share in the project's success.
- **State Assistance:** To attract private participation and alleviate the risk that an adequate return will not be realized (due to uncertain traffic flows or operating costs), the State could guarantee a minimum level of traffic, amount of revenues, or return on equity for the equity investor. Such guarantees reduce the downside risk for the private investor.
- **Assess the Need:** Economic regulation of partnership toll roads should be approached carefully, recognizing the needs of financial markets, the project risks, and the competition from other facilities. Competition from free parallel routes means that rate-of-return and price regulation may not be required, as no monopoly exists.

### ISSUE: OTHER REGULATIONS

**Ranking: Less Important**

#### *Discussion*

Regulations regarding environmental impacts, highway design, safety, and other issues affect the economic viability of a project. Environmental protection laws and regulations restrict emissions and noise levels. Such regulations may also restrain vehicle-based tolls and other fees relative to projections. For example, requirements for noise barriers will increase project costs and allowing non-tolled HOV users may threaten a project's financial feasibility even though these elements are beneficial for achieving other societal goals.

While other regulations could have a significant financial impact on a project, that impact is largely predictable, though often difficult to estimate. The project

team identified few persuasive distinctions that would single out partnerships over all activities. other regulations emanate from various sources, such as noise, disability, or environmental quality issues, and affect most development proposals.

### ***Project Experience***

All partnership projects have found other regulations somewhat problematic. For example, Indian tribes and local contractors asserted certain regulatory rights in the proposed Arizona privatization projects. However, developers have experience addressing other regulations under their standard operating procedures for doing business.

### ***Solutions***

When blending funds from Federal or State sources, due diligence requires close attention to the possibility of triggering special requirements applying to activities using Federal or State aid. Government partners need to provide adequate assurances concerning legal and regulatory changes. A comprehensive franchise agreement can alleviate many such risks.

## **ISSUE: RISKS OF FUTURE REGULATION**

**Ranking: Less Important**

### ***Discussion***

Current assessments of financial viability are developed within a given set of regulations. The prospect for changes in pricing restrictions and other economic regulations seemed to warrant separate discussion since their realization would alter the economics of the project and add significant risk. Also, new regulations are

evolving in other areas; for example, air quality non-attainment areas must take steps to achieve attainment standards, and these measures are likely to restrict vehicle travel, occupancy, and fuel use.

While future regulations could have a significant financial impact on a project, no Persuasive distinctions would single out partnerships over all activities. New regulations could originate from various sources, such as political changes or increased awareness or importance placed on environmental quality. Also, ongoing activities are commonly exempted from new regulations by “grandfather” clauses. The franchise agreement for a highway project could include a “hold harmless” clause.

### ***Project Experience***

California’s AB-680 projects contain franchise agreement clauses which insulate them somewhat from rate regulation and reduce the uncertainty about future regulation. Most items of current and future public interest seem open to a negotiated resolution in the franchise agreement.

The Dulles Green way toll road is regulated by an existing State regulatory commission, which conceivably could revise its approach to reasonable tolls and rates of return. Partly because of this risk, it was difficult for the project to obtain financing.

### ***Solutions***

A comprehensive franchise agreement can alleviate most of these risks, especially those pertaining to toll levels and rates of return. Government partners need to provide adequate assurances to private consortia with respect to future changes in law and regulation because of the government’s unique control over these risks.

## A. COMPARISON CHART FOR KEY FEATURES OF MODELS OF HIGHWAY DELIVERY

<i>Model</i>	<i>Justification</i>	<i>Structure</i>	<i>Finance</i>	<i>Risk Borne</i>
Traditional New Public Highway Delivery	System-wide needs	Public ownership and operation	Dedicated and general revenues (toll-free)	By government and general public
Traditional New Public Toll-Road Delivery	Segment traffic, characteristics	Public authority owns and operates	Non-recourse debt covered by tolls	By government and revenue-bond holders
Innovative Financing for New Public Roads	Local project-related benefits	Public ownership and operation (authority or special district)	Traditional sources supplemented by fees and extractions	By government with some sharing through fees and exactions
Blended Public-Private Financing for New Public Toll-Roads	Local needs and segment traffic	Local inter-governmental authority	Wide open blending, including traditional sources and private extractions	Shared by local government, bond holders, contributors, and subordinated lenders (contractors)
Public-Private Partnerships for New Road Capacity	Local needs and project-related benefits, and segment traffic	Private with strong public role in framing concessions	Wide open blending with substantial private equity	Shared public-private
Privately Supplied New Highways	ROI including capturable project-related benefits	Private with limited public role on concessions	Largely private	By private developer



## B. TIMELINE FOR DEVELOPMENT OF A PUBLIC-PRIVATE PARTNERSHIP

In reviewing the development of several innovatively financed projects, the project team found that certain developmental stages reoccurred. As a result, a time line for a “typical” project was identified, marking the key stages of development and the major activities which fall within each stage. Sponsors embarking on a partnership venture for highway development should find it useful to review this time line and plan for the activities indicated.

The typical life-cycle stages associated with the delivery of a highway facility through public private partnership are project genesis and preliminary feasibility analysis; enabling legislation, selection of project and project development structure, pre-construction development, financing, construction, and operation. The following pages chart these key stages in project delivery and provide a description of activities associated with these stages.

STAGE	DESCRIPTION OF ACTIVITY	RISK
<b>Project Genesis</b>		
<i>Enabling Legislation</i>	State establishes legislation enabling the use of private funding sources for public infrastructure projects. May include provisions for private concessions and the number of projects.	Specific proposals at high risk Specific proposals at high risk but require minor financial commitment.
<i>Political Coalitions</i>	State reviews political environment to determine current level of support and to provide assurances to potential private partners that may reduce political and legal risks. This may include measures to limit tort liability and assurances of fair compensation in the event of State expropriation.	Same high risks with increased, but still minor, financial commitments.
<i>Preliminary Selection</i>	State often begins preliminary selection of specific systems, corridors or routes for improvement under a public-private partnership. This pre-selection may include pre-engineering and broad-based feasibility studies that set criteria for project design and construction.	Same high risks requiring ever increasing financial commitments by private sponsor.
<b>Project Selection</b>		
<i>Engineering</i>	Prepare construction and right-of-way documents to include support of environmental and financing activities. Structure documents in accordance with owner/review agency requirements to include a reduced level of detail for a design and build program, if applicable.	Survivor still at high risk and requiring significant financial commitment. Risk borne primarily by private developer/contractor.
<i>Permitting</i>	Complete the required environmental process and secure regulatory approval of the project to include mitigation measures. Prepare permit applications and secure approval of construction activities. Challenges to permits often persist throughout the construction phase.	High risk with low financial commitments. Risk borne by private developer and government, depending on financing mix.
<i>Right-of-Way</i>	Negotiate and purchase, or transfer, ownership rights of way for the project. This activity includes temporary and permanent easements for construction and maintenance.	High risk with more significant public commitment.

<b>STAGE</b>	<b>DESCRIPTION OF ACTIVITY</b>	<b>RISK</b>
<i>Revenue Forecasts</i>	Perform traffic and earnings forecasts and revenue determinations from other sources such as public funding, taxing district, or equity participation consistent with the project financing plan. Prepare detailed cost estimates of capital, operating, and maintenance expenditures.	High risk with degree of risk dependent on whether project is planned on previously existing or speculative corridor.
<i>Business Plan</i>	Develop a business plan summarizing operating and development organizations, costs, business structure and implementation plan for the project. Identify key resources and critical milestones for activity completion and decision making. Identify potential rates of return for financial sponsors.	High risk requiring active participation of public planning agencies. Financial commitments rising.
<b>Financing</b>		
<i>Resource Identification</i>	Determine potential sources to meet the needs estimated in the financial plan. Screen to the sources that are real and available and determine the level of participation that is desired from each.	High risk mitigated to the extent that government funding available.
<i>Solicitation</i>	Present the business/financial plan to funding entities. Market securities as appropriate. Develop financial terms and conditions with other funding sources, such as pension funds, banks and equity participants.	High risk to both private and public partners. Degree of public financial commitment helps spread substantial private risks.
<i>Closing</i>	Execute agreements and close on financing.	Continuation of other finance-related risks.
<b>Construction</b>		
<i>Bidding/Awarding</i>	Depending on project procurement process, either bid for the work to be performed or award the contract to a pre-selected participant. Award of contract and contract terms must reflect schedule, scope, and rewards (penalizes) for early (late) delivery.	High risk depending on nature of bidding process determined in enabling legislation.
<i>Construction Management</i>	Secure CM services or expand developer's staff to assure quality and performance.	Medium risk borne evenly by public and private partner. Financial commitment at peak levels.
<i>Acceptance</i>	In accordance with regulatory, permits, or other agreements, provide for as built review and acceptance for public use prior to opening.	Medium risk with continued high financial commitment. Degree of private risk dependent on public support.
<b>Operation</b>		
<i>Operation Planning</i>	Prior to opening, staff and train personnel for daily operation, inspection and maintenance. If business plan anticipates contracted maintenance, solicit and secure appropriate maintenance agreements.	Low risk but substantial risk with decreased financial requirements depending on adequacy of system engineering.
<i>Operation</i>	Traffic begins and revenues are realized. Toll collection, accident clearance, maintenance, cost control, and other processes must be set in motion.	Low risk, however, some initial uncertainty associated with public acceptance. Income stream may allow refinancing.



## C. PROJECT DESCRIPTIONS

### CALIFORNIA AB-680 PROJECTS

The State of California authorized CALTRANS to enter into agreements with private entities to develop transportation facilities. Enacted in July 1989, AB-680 legislation authorized up to four demonstration projects, at least one in the northern portion of the state and one in the south. ownership of each facility will be held by the franchisee during construction and turned over to the state upon completion. The state is empowered to lease each facility to developers for up to 35 years. During the lease period, maintenance, law enforcement and operations costs will be paid by the private sector franchisee. In addition, operators can set and collect tolls and retain toll revenues, net of ongoing debt and expenses sufficient to produce a "reasonable return on investment." However, toll revenue earned in excess of this amount must be used to retire project indebtedness or paid into the state's highway fund.

Projects developed must conform with all applicable Federal, State and local standards and laws. The state may also use its powers of eminent domain to acquire land, and may provide maintenance and policing services on a reimbursable basis. In addition, the state may lease development rights to the airspace (within the facility right of way) to developers. Finally, projects qualifying for the program must supplement the existing non-tolled system of transportation.

Four projects were selected by CALTRANS in September 1990. Exclusive franchise agreements were signed in December 1990 and one is under construction.

#### Project Descriptions

##### *SR-91 Express Lanes*

SR-91 represents a \$126 million, 10-mile project of express lanes in the median of the Riverside Freeway in orange County. It features four car pool/express lanes, two in each direction, for toll-paying single and double occupancy vehicles and non toll-paying high occupancy (3 or more) vehicles. Roadway access will be limited to AVI-carrying vehicles only. Time of day tolls will be charged. State will be reimbursed for provision of law enforcement and maintenance service costs on the express lanes.

##### *Status*

Obtained complete financing, commenced construction in July 1993, with construction to be completed in

29 months. Revenue operations are forecast for January 1996.

##### *Key Issues*

- Existing traffic history supports strong revenue forecasts.
- Environmental challenges resolved.
- Heavy existing congestion with no convenient alternate routes.
- AB-680 established sound enabling environment, including resolution of tort liability risks.
- Leased right-of-way from CALTRANS at nominal cost, reducing required capital.
- Local authority holds subordinated debt, indicating strong local support.
- Strong company commitment of private sponsors, including funded and contingent equity participation.
- Continued risks associated with depressed economy of Southern California.

##### *SR-125 San Diego Expressway*

SR-125 is a proposed new \$370 million, 10-mile highway near San Diego in a scarcely developed region extending south to the Mexican border. It features a limited access, four-lane road expandable to eight lanes as needed. A northern extension, which is essential for traffic projections, will be publicly controlled but could possibly be initially financed by private developers with reimbursement from the public sector.

##### *Status*

Awaiting completion of draft EIR/EIS that is being performed by CALTRANS staff and paid by developer. Record of Decision on environmental permits were expected late 1994.

##### *Key Issues*

- New facility, lacking established traffic history, revenue projections questioned.
- Dependent on build-out assumptions, suffers from stagnant Southern California real estate market.
- Impact of NAFTA on border crossing traffic levels.
- Real estate developer commitment.
- SANDAG commitment.
- Franchise granted before EIS completed.

### **SR-57 Extension in Orange County**

This proposal is a new \$700 million, 11-mile extension of SR-57, running over the Santa Ana River channel in Orange County. It features a four-lane, limited access, cars-only express route on an elevated platform above the river channel. The median will be reserved for a future transit way.

#### *Status*

Awaiting funding for environmental work.

#### *Key Issues*

- New, expensive facility.
- Engineering feat, with difficult connections to existing road network.
- Environmental obstacles pose major problems.
- Conformity with Corps of Engineers has been questioned.
- Major congestion reliever.

### **Mid-State Tollway**

This proposal is a new \$1.2 billion, 85-mile, five-lane highway linking the southern end of San Francisco Bay to points north. Phase I is a 40-mile stretch of new highway. Phase II includes two high-span bridges over separate rivers.

#### *Status*

Seeking funding to proceed. Redefinition of project to construct Phase I only.

#### *Key Issues*

- New, expensive facility.
- Environmental difficulties appear major.
- Needs local government multi-jurisdictional support.
- Financial feasibility and viability have been questioned.

### **San Joaquin Hills Transportation Corridor**

The California Legislature authorized in 1984 and 1985 the financing of roads and bridges by authorizing joint powers agencies with the right to collect tolls and development impact fees. Orange County and its local governments then created two Transportation Corridor Agencies (TCAs) as joint powers agencies for the purpose of financing and constructing new toll roads in the County. The San Joaquin Hills TCA has successfully financed the first toll road, while the Foothill/Eastern TCA was formed to finance and construct two other proposed corridors. The TCAs have limited taxing powers (development impact fees) to build the new

toll-roads and construction is being funded mostly by bond investors using debt to be repaid by future tolls and fees. There is limited state and Federal involvement and financial assistance.

#### *Project Description*

The San Joaquin Hills road will be a six-lane limited access toll road running almost 15 miles between Interstates I-5 and I-405. As such, the toll road is expected to serve as a reliever for traffic on I-5, I-405, and the Pacific Coast Highway, and some connector improvements. Completion is scheduled for 1997, with a sub-segment opening in 1996. The sister Foothill/Eastern TCA plans a 23-mile Eastern Corridor and a 30-mile Foothill Corridor. An initial three-mile segment of the Foothill Corridor is currently under construction, but completion of the other Corridors has not been financed.

#### *Status*

The San Joaquin Hills toll road project is under construction. TCA has given Notice to Proceed under a \$787 million Design/Build Contract with California Corridor Constructors, a Kiewit/Granite joint venture. A \$1.2 billion bond issue was successfully completed in March 1993, covering construction costs plus other development and toll collection costs. Permits were obtained and construction started in September 1993, but construction on one segment is under a restraining order stemming from environmental challenges. The environmental habitat in question appears to have been destroyed in the coastal fires of November 1993. Separately, an initial segment of the Foothill Corridor project is under construction and is scheduled to open in October 1993.

#### *Key Issues*

- This is the first modern public toll road constructed within California.
- California passed enabling legislation and the Corridor Agencies were established, providing relatively clear powers to undertake the project.
- Administrative processes, especially for environmental clearances, had to be created for every project stage, creating delays and draining resources.
- Project scale with costs of over \$1 billion for San Joaquin alone complicated financing.
- Construction cost risks were largely removed via a guaranteed-price contract.
- Construction plans encountered some public resistance and strong challenges from environmental groups.

- Traffic studies supported the financing plan, but capital markets changed and the bond issue stalled until all discretionary permits were obtained.
- Development costs of over \$80 million were funded by the impact fees.
- Contractor loans, deferred compensation, and availability of a limited Federal credit enhancement all aided in completing the financing.

## DULLES GREENWAY

Virginia enabling law was adopted in July 1988 for the Dulles-Leesburg toll road project under a “private corporation act.” Section 56-544 of the Virginia Highway Corporation Act allowed private entities incorporated as public utility corporations to build, own, and operate toll roads upon a receipt of a Certificate of Authority from the Virginia State Corporation Commission (SCC). Virginia already had built a toll road east of Dulles Airport to the Capital Beltway. This extension is to run west of the Airport to Leesburg and will be built, operated and maintained by Toll Road Investment Partners II (TRIP II) as a public utility regulated by the SCC and overseen by the Virginia Department of Transportation (VDOT) through the Commonwealth Transportation Board.

Under the initial plan, tolls will be the main source of revenue. The SCC will regulate tolls according to limits on the project’s rate of return on equity. All assets of toll road will revert to the state ten years after the debt is repaid. VDOT monitors construction, operations, and maintenance as spelled out in the terms of a Comprehensive Agreement between the State and TRIP II, now using the name Dulles Greenway. All local land use and zoning regulations need to be complied with. The State required that all land be acquired by donation or fee simple to assure use in perpetuity after turnover, and much right-of-way was donated by local land developers.

### *Project Description*

The Dulles Greenway is a new, 15-mile, limited-access four-lane extension of an existing State-built Dulles Toll Road (Route 267), extending west from Route 28 near Dulles Airport to Leesburg, Virginia.

### *Status*

This project received all necessary State and local permits to commence construction and actively sought construction financing over a relatively long period. This project overcame several barriers to finalize financing of over \$300 million and break ground in the fall of 1993.

### *Key Issues*

- Development costs associated with right-of-way acquisition and State and local interaction required significant private equity from the outset.
- VDOT developed an alternative public toll road proposal in order to evaluate the relative costs of the private proposal as required by the State statute.
- Developer team lacked new roadway experience and initial cost estimates proved low.
- Land acquisition proved difficult to finalize without any “taking” authority.
- Some new road environmental problems, eased by voluntary mitigation.
- Toll revenue estimates based on projected real estate development beyond Dulles which stalled in the recession.
- VA SCC regulation of profit levels—toll rates subject to regulatory control.
- Complicated sale/leaseback caused initial confusion.
- Complications arose from Airport Authority restrictions and compliance with local zoning regulations.
- Legislation contained ownership and other restrictions that unexpectedly came into play.
- Project delays lengthened when unable to turn to Federal- or State-aid, or ISTEA funds, to augment funding.
- Agreement on procedures in event of default proved difficult.
- Additional private equity commitments were required to obtain final financing.

## ARIZONA-MARICOPA COUNTY EXPRESSWAYS

The Arizona legislature passed a 1991 statute which authorized the Arizona Transportation Board to grant up to four franchises for privately financed transportation facilities. The enabling law reflected combined elements from California’s AB-680 and Virginia legislation allowing two projects under each approach. ADOT issued a request for privatization proposals in early 1992. In response, seven developer consortia proposed ten projects, including Pima Highway; Squaw Peak Parkway; tolled HOV lanes, and an entire urban highway system in Maricopa County (project costs estimated in excess of \$3 billion). Three projects were initially selected, but none went forward to financing.

A new project submission was accepted by ADOT in November 1992, proposing a project to complete 160-

miles of the Phoenix-area urban highway system. The project would be organized as a nonprofit corporation that can issue tax-exempt bonds and contract for services.

#### *Project Description*

The surviving project is known as VUE 2000, proposing 160-miles of urban expressway in ten interconnected corridors. Project cost is approximately \$2.8 billion.

#### *Status*

The VUE 2000 team, led by HDR Engineering, was authorized by ADOT to proceed with a technical proposal as of July 1993. The Maricopa County Association of Governments has retained consultants to review the VUE 2000 proposal and other options.

#### *Key Issues*

- Arizona has no existing toll roads and no established administrative process—the enabling legislation remains untested and faces possible legal challenges.

- When the private road proposals encountered public resistance, support declined for the public-private partnership.
- The Arizona Attorney General challenged conversion of existing Federal-aid roads to tolled use.
- Pima Corridor proposal relied on right-of-way over Indian lands.
- Disappointment when half-cent sales tax revenue to finance expanded road network fell short, due to recession and cost increases.
- ADOT discouraged blending of public and private financial resources.
- Two separate models under enabling law, franchise, and toll.
- Widespread distrust and/or misunderstanding of public-private partnerships and public opinion unwilling to accept tolls or other tax rate increases.
- Local contractors were concerned about projects being awarded to large out-of-State firm.



