

Public Private Partnerships

Well-structured and well-implemented PPPs offer the prospect of efficiency gains in the construction of infrastructure assets and the provision of infrastructure-based services and, therefore, also lower the government's costs in making these services available.¹

Introduction

Public agencies, developers, companies, investors, and the general public have different perspectives on projects. The public sector is much more focused on identifying and satisfying public needs, whereas the private sector is much more concerned with achieving financial benefits. The public sector is led by elected officials who must justify their actions and decisions to voters, and these officials are involved in many aspects of society, from education to provisions of parks to water resources and waste management. The division of labor in the private sector produces leaders who are much more sharply focused on specific problems or types of activities. Some are concerned with finance, others with planning and design, and others with operations and management of specific types of infrastructure or industries. The public sector has the ability to raise money from taxation and, at the national level, to adjust the supply of money and the availability of credit for financing projects. The private sector offers entrepreneurs a chance to get rich by designing, promoting, constructing and operating particular projects. Elaborate systems have evolved that enable developers to obtain the funds necessary to build projects, and people or companies who are willing to take risks have a chance to achieve great rewards. The public sector has the ability to guide development through tax policy, zoning, building codes, and provision of infrastructure. The public sector also has the responsibility for public health, public safety, and environmental protection. People who are successful in the public sector have a chance to attain great influence over policy and development.

There are few if any projects that do not require some sort of cooperation between the public sector and the private sector. Even a small addition to your house or the construction of a dock for your boat will require a building permit and perhaps a wetlands permit, while construction of any large building will only be possible if the developer secures numerous approvals from various government agencies related to the location, design, construction materials, and construction processes. Likewise, when a government agency sets out to build a school or a road, that agency will typically employ private sector contractors and sub-contractors. These interactions between the public and private sector do not constitute a partnership. Building a house or a dock or an office building is clearly a private project, even though it must be sanctioned by government and follows rules and regulations specified by law. Likewise, building a school or a road is clearly a public project; even though the work is actually done by the private sector, the project is defined and funded by the public sector.

Figure 1 summarizes what is needed to have a successful project in the private sector. First, the decision to proceed will depend upon having a positive net present value (NPV) or an internal rate of return (IRR) that exceeds the company's hurdle rate for new investment. The project will then need to have regulatory approvals, which could relate to zoning, environmental impact assessment, site management, building codes, and any other regulations that are mandated. If financing is available, and if the company has access to the resources and managerial expertise to manage the project, it can proceed to implementation. But that is just the beginning. Whether or not the project is successful depends at first upon the ability to complete the project as designed, within the specified budget, and on schedule. Once the project is completed, ultimate success will depend upon the way that it is utilized; in particular, it must function safely and efficiently, and it must generate revenues that will eventually be sufficient to cover both operating and investment costs.

¹ Bernardin Akitoby, Richard Hemming, and Gard Schwartz, *Public Investment and Public-Private Partnerships*, International Monetary Fund, Washington D.C. 2007, p. 9

Figure 1 Overview of the Private Sector's View of a Successful Project

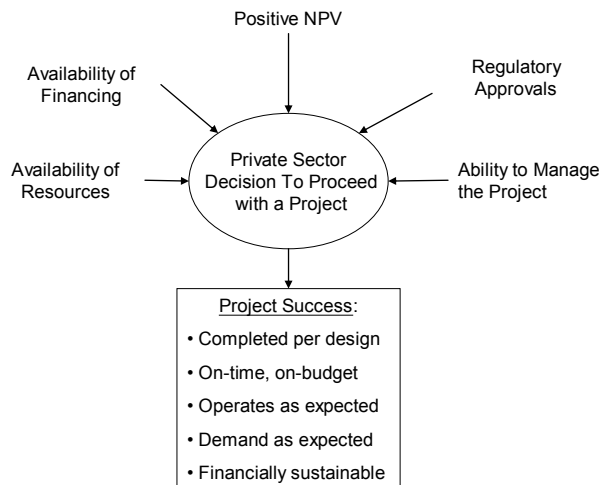


Figure 2 illustrates the broader perspective of a public agency. The first major difference is that the project can no longer be considered merely as a financial effort. Instead, economic, environmental, and social impacts must be considered and incorporated within a benefit/cost analysis. If taxpayers are willing to support a project because of economic or other benefits, then taxes can cover some of the costs and the project does not require a positive NPV. The public sector will face similar regulations regarding land use and environmental impact assessment, but there is a major difference. Laws and regulations can be used to limit or restrict what either a private company or a public agency might do, but political actions can defeat proposed public projects. A private project must meet the regulations, but a public project must also satisfy the elected officials and ultimately the public. The second major difference is that the definition of success is much broader, because economic, social, and environmental factors will also be of direct interest to a public agency. To sustain a project over the long term, especially if tax dollars are required to support operations, public officials and the public must be convinced that those tax dollars are worth spending.

Reasons for Considering a Public Private Partnership

Public/private partnerships arise when a public agency or agencies work with the private sector on a project to build, finance, and/or operate a facility. The public and private sectors are partners because they share in the risks and rewards of the project, and they share in the design and ownership of the project.

Some public/private partnerships arise in order to take advantage of the differing strengths of the two sectors. Table 1 compares some of the strengths of the public and the private sector as related to the implementation of infrastructure projects. Broadly speaking, the public sector must be more concerned with social, economic and environmental issues, while the private sector is more concerned with finance. The public sector has greater ability to identify public needs and to allocate funds to address those needs in a reasonably fair manner; the private sector can quickly respond to perceived needs, without worrying so much about what is fair or what is most important to society as a whole. The public sector can raise money via taxes and the sale of low-interest bonds, and it has real powers related to land use. The private sector can raise money from investors, and it can obtain very large sums for clearly profitable projects. The comparisons could go on and on. Some people would add that the private sector is more efficient or more honest, but there are certainly examples of very efficient and inefficient operations in both sectors, just as honesty, wisdom, fraud and foolishness can be found in both. The point is that the two sectors have different strengths and there are some projects that will be better designed, constructed, and operated if the two sectors work together.

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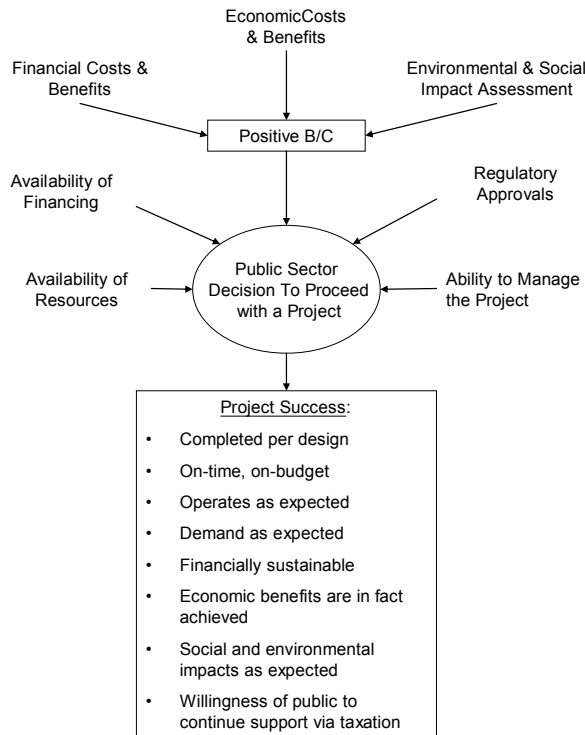
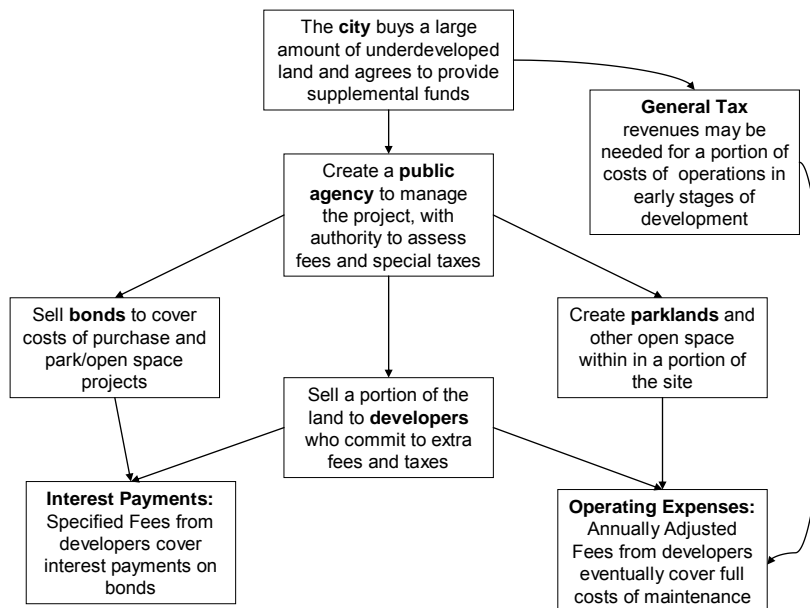


Table 1 Complementary Strengths of Public and Private Sector

Area	Public Sector Strengths	Private Sector Strengths
Identifying societal needs	Political process can establish priorities among competing needs	Private firms can respond quickly to perceived opportunities
Design	Establishment of building codes and construction standards	Development of new techniques or designs
Construction	A stable work force can be assembled for continuing needs, such as road maintenance	Numerous companies exist or can be created for all types of construction
Finance	Access to tax revenues and ability to issue bonds with low (possibly tax-free) interest rates; possible difficulties in raising fees to keep pace with inflation	Ability to raise capital for projects; recognizing the level of risk involved; greater freedom in raising fees to keep pace with inflation
Politics	Political approval may require more complete assessment of alternatives and a fairer distribution of costs and benefits	Insulation from politics may result in more objective assessment of projects
Land Use	Able to assemble large tracts of land for public purposes using eminent domain	Owners can use their land any way they like, so long as zoning and other regulations are followed
Labor	May be required to use local labor or union labor, resulting in higher costs for construction or operation	May be able to use more efficient procedures or non-union labor, resulting in cheaper construction

Sometimes a PPP is pursued in order to take advantage of the relative strengths of each party. For example, the City of Tempe, Arizona needed better flood control, it wanted to clean up an area largely used for waste disposal, and it hoped to encourage economic development.² An innovative arrangement was developed whereby the city assembled a large parcel of land around the Salt River; they then re-zoned the land for higher density development and sold plots to developers with the stipulation that they would pay special fees and taxes that would ultimately pay for the creation of a 5-mile long lake and extensive park land. The combination of open space and nearby high-density development achieved substantial public benefits, while developers had the opportunity to make profits that were based upon the proximity of their land to what would become a very attractive site. Tempe’s experience shows how investment in public space can be financed through a combination of taxes and fees targeted to those who will most benefit from being close to the open space and those who will be attracted to the area because of the open space. Coordinating flood control, recreation, waste removal and habitat restoration allowed tremendous improvements in what was previously a rather derelict portion of the city. The financing for the project was very successful and could serve as a template for similar investments in other cities (Figure 3). One potential problem with this project is that it led to a continuing demand for water, because of evaporation, and water supply could become an ever increasing concern in that region of the country. Other options could have been considered that would have needed much less water, such as having a landscaped region surrounding a small creek or restoring the area to its original desert habitat.

Figure 3 Outline of the Financing for the Tempe Town Lake Project



A second reason for public/private partnerships is that there are significant public and private benefits for a potential project. Taken together, the benefits might be enough to justify the project, while neither the public nor the private sector may be willing to tackle the project on their own. In Kansas City, private railroads worked with public agencies to construct a flyover, which is a railroad bridge that takes one rail line over another rail line. The railroad benefited because the north-south trains no longer interfered with the east-west trains, while the city and its residents benefited because delays at rail-highway grade crossings were eliminated or sharply reduced. Public financing reduced the costs of the project, while per car fees collected from the railroads will eventually pay for their portion of the project.

² Tempe’s website has sections devoted to the history and management of the Tempe Town Lake (www.tempe.gov/lake).

A third reason for a PPP is that the public sector wishes to maximize its ability to undertake projects by gaining access to the financial markets. The ability of a government agency to raise money may be limited by budgets or by the credit rating of the agency, or a government may be unable to use its assets as collateral to raise money. The government can retain control over the design and location of infrastructure, while leasing or selling facilities to a private company. The financing of the project can be based upon fees that are related to the operation of the facility.

For example, the City of Toronto built a toll road that by-passes a portion of their downtown, and they wished to extend this road. Since they did not want to issue bonds or raise taxes to pay for the road, they decided to sell the road to a company that would operate it and extend it – at the company’s expense. They sold the road for more than it had cost them to build it, and they thereby were able to have a private company extend the road with no further government expense.

A fourth reason for a public private partnership would be a government interest in assisting new industries. While the potential for economic potential may be evident, and there may be companies willing to undertake projects, the companies may be unable to secure financing. The government may then decide to assist the company by making loans or even by making an equity investment. For example, when the private sector was unable to raise the financing necessary to start off-shore oil drilling in Newfoundland, the provincial government decided to make a substantial investment in return for partial ownership of the new enterprise.

In summary, there are various reasons for PPP:

- **Complementary strengths:** the partnership builds upon the complementary strengths of the public and private sectors to complete a project that could not be undertaken – or done as well – by either sector.
- **Public and private benefits:** the partnership is created because the project has substantial public and private benefits, and cooperation allows both the public and private sector to satisfy their objectives more effectively than they could by acting alone.
- **Expanded public capabilities:** the partnership allows private capital to be accessed for undertaking public projects.
- **Economic development:** the partnership is created in order to exploit opportunities for economic development that will ultimately be profitable for the private sector while increasing jobs and economic activity within the region.

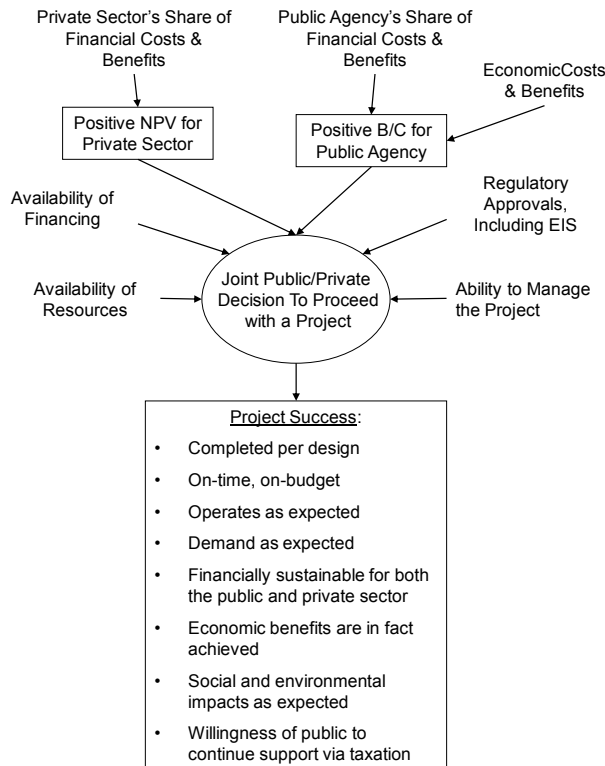
As illustrated by Figure 4, the overall structure of a PPP must incorporate all of the elements that are of importance to either sector. The private sector still seeks a positive NPV and successful completion and operation of its portion of the project. The public sector still seeks a positive ratio of benefits to cost and successful completion and operation of its portion of the project, with negative social and environmental impacts no worse than anticipated. Both sides of the partnership will need to be satisfied and financially successful if the project is to be a long-term success.

Principles of Public Private Partnerships

The most important principle of public private partnerships is that **each side must bear an appropriate portion of the cost, benefits, and risks.** Private companies are unwilling to increase their investment in projects in order to provide public benefits. Public agencies are unwilling to make investments unless there is a sufficient public benefit. Private companies will be concerned with financial performance, i.e. cash flows, profitability, and return on investment. Public agencies will be concerned with cash flow only to the extent that cash is needed to implement a project; they may be willing to make substantial investments that are justified by socio-economic benefits, such as an increase in economic activity or new jobs, reduction in congestion, or improvement in the environment or in public health.

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A second principle for private companies is that **each project is a separate case**. Just because they cooperate with a public agency in one project, they do not want to be forced to cooperate with that agency or other agencies on similar projects or other types of projects in the future.

A third principle is that **the partnership should be designed to deal with a particular situation**, since public participation can take many forms:

- Financial input and ownership.
- Leasing publicly constructed facilities.
- Authorizing private construction and operation of a facility that will ultimately revert to the government after a specified period.

Which form of participation is most appropriate will depend upon the circumstances and the aims and capabilities of both the public and private partners. What was best in one situation is not necessarily what should be used in a subsequent situation.

Creating a Framework for a Partnership

For parties to come together in a partnership, all parties must perceive that their potential benefits justify the costs and risks that they incur. As in creating any partnership, negotiation is possible and necessary. Key questions will include the following:

- Who pays how much for what portion of the project?
- What risks are accepted by each partner?

- Who controls design?
- Who controls construction?
- Who controls operations?
- Who owns what portion of the project?
- Will ownership of the project change over the life of the project?

The key differences in the public and private perspectives will include the following:

- Financial vs. economic return:
 - The private sector requires a minimum level of financial performance, but the public agency may seek economic benefits such as relief of congestion, potential for development, jobs, and increases in regional product.
- Cost of capital and access to capital
 - The cost of capital will generally be much greater for the private sector than for the public sector. The public sector can raise funds by selling government-guaranteed tax free-bonds that may have very low interest rates, assuming that the government agency has a good credit rating.
 - The private sector can raise funds for risky projects by selling stock, thereby giving investors partial ownership in the company and a chance to make a great deal of money if the project succeeds – as well as a chance to lose everything if the project fails.
 - The financial markets recognize and accept the possibility that a project will not be successful and that companies may be forced into bankruptcy; it is possible and not unusual for companies to fail, but public agencies are expected to endure despite failure.
- Institutional and organizational flexibility
 - Public agencies control many of the policies and institutional requirements that constrain or limit a project; a public agency is likely to be in a better position to obtain approvals for such things as zoning variances, building permits, and environmental approvals, because the public agency will generally be viewed as working in the public interest.
 - Private companies will likely be more flexible in creating organizational structures to deal with the design, construction, and operation of projects, especially projects that would be much different or much larger than what the public agencies have been involved in.
- Time frame
 - The time frame of private companies is heavily influenced by the fact that discounting reduces present value of both positive and negative impacts that may occur in the distant future; public agencies a) typically have a lower discount rate and b) typically have ethical commitments, constitutional outlooks, and other factors that lead them to have a much greater concern for what happens in the very long run.

These four major differences in interests and perspective suggest ways that PPP can be productive. The role of the public agency may be designing the project so that it provides economic, social, or environmental benefits to the public, providing access to low-cost sources of capital, securing project approvals from the various agencies involved in the project, or ensuring that the project provides long-term positive benefits to the public. The role of the private sector may be designing the project so that it generates cash flows sufficient to justify the necessary investments, providing access to financial markets that are willing and able to provide funds for very large or somewhat uncertain projects, creating new organizations to help in designing, constructing and operating a project, and ensuring that the project does not take too long a time perspective.

Determining How Much to Invest in a PPP

The analysis of a potential PPP will be approached by each party using the tools and techniques that they would use for any other project. Each party will have to estimate the cash flows associated with the project, and the public agency will also have to estimate the economic, social and environmental costs and benefits that are expected.

The private partner will have to be satisfied that its NPV is likely to be positive or that its internal rate of return is likely to be acceptable, based upon reasonable assumptions about the factors that will influence the outcomes of the project. The private partner will not be interested in increasing its investment in order to allow greater public benefits, but may be willing to agree to a modified project so long as the public sector agrees to pay for any added costs.

Likewise, the public partner will have to be satisfied the benefit/cost ratio is adequate, based upon their perception of the possible outcomes of the project. Both the benefits and costs can include non-financial factors such as improvements in congestion or air quality or access to public services. They can also include the economic benefits for the regions, such as job creation or the impact on average income or gross regional product.

Each partner will be able to determine the maximum amount that they would be willing to contribute to the project; if the combined amounts that they are willing to pay exceed the cost of the project, then it is feasible. The parties will naturally try to find an arrangement where their actual contribution is less than what they are willing to pay, a process that could take some time. Note that it is not necessary for one party to explain its reasoning or to provide its assumptions about unit costs or expected outcomes to the other party. The negotiations can proceed based upon what each partner is willing to contribute and what arrangements are made for sharing the risks associated with the project.

Figure 5 suggests how a public agency might negotiate with private developers in order to create more housing that is affordable for low income residents. From the public agency's perspective, there are three key issues:

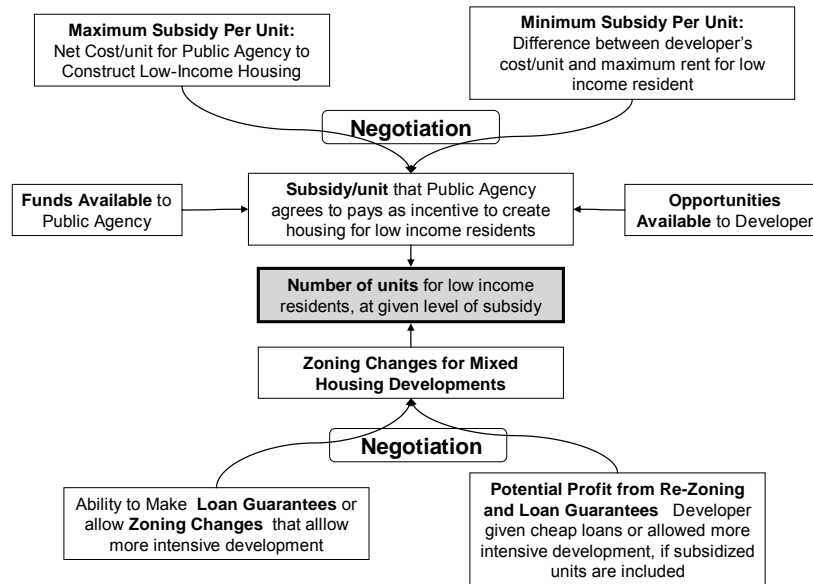
- The amount of money available for constructing or subsidizing housing for low-income residents.
- The cost/unit of constructing public housing for low-income residents, which places an upper limit on the subsidy/unit that they will be willing to pay.
- The feasibility of changing zoning rules to allow more intensive development, which will determine how much of an incentive can be offered to developers.
- The ability to guarantee the developer's loans if the developer agrees to reserve a certain number of units for low income residents.

From the developer's perspective, the key factors are:

- The cost per unit for construction, which must be covered by the combination of rent from the low income occupant and the subsidy from the public agency. This determines the minimum subsidy that they will accept.
- The ability to make more money if they are allowed to develop more units on a given plot of land, which would allow them to include more subsidized units or to reduce the minimum subsidy that they would require.
- Whether or not the benefits of lower interest rates are sufficient to offset the lost rents if some units are reserved for low income residents.
- Other opportunities for development: is it worth their while to negotiate or should they simply build what is currently allowed on the sites they own or consider projects in other locations?

Thus there will be two aspects to the negotiation. First, if the minimum subsidy that the developer will accept is less than the maximum that the public agency is willing to provide, then there could be a negotiated subsidy per unit. Second, if it is feasible to modify the zoning or offer loan guarantees, it would be possible for the developer to undertake more profitable development in return for including more units for low income residents.

Figure 5 Key Factors in Negotiating for Low-Income Housing



Example: Using a PPP to Maximize a City’s Ability to Undertake Projects - Toronto’s Highway 407³

By using a PPP, a government entity can capture the value of its infrastructure, while moving the burden for creating new infrastructure to the private sector. This example shows how the province of Ontario built a state-of-the-art highway, then leased it for 99 years to a private consortium for double what it had cost to build. The consortium even committed to extend the highway, at no cost to the city.

The story begins in 1994, when construction began on a 69-km fully automated toll road that would create another route through Toronto, thereby adding capacity to one of the most congested highway corridors in Canada. The Province of Ontario financed the C\$1.5 billion project by selling taxable, general obligation bonds. The road opened in 1997, attracting 200,000 trips per day and annual revenues of C\$70 million. Two years later, Ontario decided to privatize the road by leasing it to a private company that would agree to construct the planned 39-km extension, which was expected to cost C\$0.5 billion.

The province asked for bids on the highway, assuming a 99-year lease. Since the value of the highway depended entirely upon the tolls that could be collected, certain restrictions were placed on tolls. The tolls were initially limited to 10 cents per mile for automobiles, with an increase to 13 cents per mile over 15 years plus adjustments for inflation. Toll rates were two to three times higher for trucks. Beyond 15 years, there would be no limit on tolls so long as peak-hour traffic volumes exceeded 9,000 vehicles per hour. No limit was placed on the potential ROI for the successful bidder.

The winning bid was submitted by a consortium that agreed to a purchase price of C\$3.1 billion for a 99-year lease, which was slightly more than double the construction cost of the first section of the highway. The company was required to maintain nearly \$400 million of working capital, and they were required to keep C\$775 million equity in

³ Source: Traffic Technology International Journal, June/July 1999

the project. These restrictions limited the amount that the company could borrow, thereby limiting the risk of bankruptcy. The expected return on their investment was 11%.

The key issues in this deal concern the level of tolls, future volumes of traffic, and the role of this highway in the regional transportation system. By charging tolls, the highway operator captures some of the general economic benefits of the highway. Conceivably, a private company could maximize its profit by charging very high tolls, thereby enabling this highway to operate with little or no congestion, while traffic that could easily go on this route would shift to other, much more congested highways. Selling parts of the system could make it more difficult to manage the overall highway network effectively.

This example demonstrates a way for governments to tap the enormous value of public infrastructure. Ontario had built the road as part of its on-going program of highway construction. It built the road as a toll-road on the assumption that the tolls would be sufficient to cover the interest on the construction bonds, along with the expenses of operating the highway. They wanted to sell the road to a private company largely in order to move the debt associated with the road off the public accounts, thereby protecting or improving the province's credit rating. In fact, the deal did much more than takeover the debt associated with the highway: it provided an extra C\$1.5 billion to the treasury and the winning bidder agreed to finance the next section of the road as well.

In the U.S., politicians in several states including Pennsylvania and New Jersey have considered similar projects, in which the rights to operate existing toll roads would be sold at auction. If the private operator is allowed to charge much higher tolls, then the toll roads could have a value far in excess of the original costs. Of course, similar financial benefits could be obtained if the states raised their own tolls, and that in fact is what happened in New Jersey.

Example: Using Public Investment to Stimulate the Economy - Investment in off-shore oil exploration by the Province of Newfoundland and Labrador

In 1979, after 16 years of research and exploration, oil was discovered in the Hibernia oil field located off the coast of Newfoundland, Canada. The high prices of oil at that time justified looking for oil offshore, even though the costs of offshore drilling are very high. Political disputes between the federal and provincial governments delayed exploitation of the oil field for more than a decade, as both claimed jurisdiction over the area.⁴ After the political battles were settled, construction finally began in 1991 on an enormous platform and related infrastructure for extracting 150,000 barrels of crude oil per day.

The project was undertaken by a consortium of five oil companies along with a new government agency called the Canada Hibernia Holding Corporation that owned an 8.5% share in the project. The government participation in the project was designed to produce income for the Province of Newfoundland and Labrador, one of the poorest provinces of Canada. The construction and operation of the site plus additional energy-related jobs provided a major boost to provincial economy. There were 5,000 construction jobs, and the growth in the energy sector boosted the region's economic activity by 3.1% during the first year of operation.

⁴ G.E. Bridges & Associates, "Due Diligence Issues Report", British Columbia Offshore Oil and Gas Socio-Economic Issue Papers, Royal Road University, Victoria BC, Canada May 2004

Summary

Motivation for Public Private Partnerships

The public and private sectors have differing types of objectives and complementary strengths in defining, financing, constructing and managing projects. Thus, there will be many situations where projects are likely to be better designed, constructed or operated if the two sectors work together. The public sector is structured so as to allocate resources among competing public needs, whereas the private sector is structured so as to achieve financial objectives. The public sector has the ability to raise funds via taxation or by issuing bonds backed by specific revenue sources (e.g. tolls or user fees), but for financial or political reasons may have limits upon the amount of money that can be raised for major infrastructure projects. The private sector has greater ability to attract investors for large projects that may be risky, but that have potential for high profits. The public sector has the power to impose and modify many of the laws and regulations that affect development, including zoning, other land use regulations, and environmental and social regulations. The public also has the power of eminent domain whereby a public agency may be able to force landowners to sell their land so that it can be used for a public purpose, such as a road, a dam, or a reservoir.

The public sector may have agencies devoted to certain types of infrastructure, such as highways and waterworks, but they may not have experienced employees capable of dealing with major new projects in important areas. Private companies with specialized skills will be able to apply those skills throughout the world. Private companies may also have greater experience and therefore greater efficiency in undertaking certain types of projects.

Creating a Partnership

Negotiation will be necessary to ensure that all parties to the agreement believe that their costs will justify the costs and the risks that they incur. The private sector will participate only if they perceive sufficient financial benefits. The public sector may in part be concerned with financial matters, but must be sure that the projected benefits - whether or not they are financial or economic benefits – are sufficient to justify whatever social and environmental costs and benefits may be incurred. The negotiations will consider design, financing, responsibility for construction management, responsibility for operations, and ownership. The risks include the usual risks associated with construction of and demand for a project. In addition, there will a question as to the extent to which the public and the private sector share the risks of financial failure: to what extent, if any, will the public sector be responsible for paying off bonds? The public sector will be able to accept long-term social and environmental benefits as justification for their participation, but the private sector will require more immediate financial benefits.

The analysis of a potential PPP will be approached by each party using the tools and techniques that they would use for any other project. Each party will have to estimate the cash flows associated with the project, and the public agency will also have to estimate the economic, social and environmental costs and benefits that are expected. The private partner will have to be satisfied that its NPV is likely to be positive or that its internal rate of return is likely to be acceptable, based upon reasonable assumptions about the factors that will influence the outcomes of the project. Likewise, the public partner will have to be satisfied the benefit/cost ratio is adequate, based upon their perception of the possible outcomes of the project. Each partner will be able to determine the maximum amount that they would be willing to contribute to the project; if the combined amounts that they are willing to pay exceed the cost of the project, then it is feasible. The parties will naturally try to find an arrangement where their actual contribution is less than what they are willing to pay, a process that could take some time.

Types of Public Private Partnerships

Four types of situations that are well-suited to the establishment of a public private partnership:

1. The project requires the complementary strengths of the public and private sector.
2. The project provides both public and private benefits, and only the combined benefits are large enough to justify the project.
3. The public sector wishes to maximize its ability to undertake projects by gaining access to the financial markets.
4. The public sector decides to assist new industries.

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