Monday, October 25
9:00am-10:30am

108 - To P3 Or Not to P3

William Culton
General Counsel
Picerne-Military Housing, LLC

Daniel Ferguson
Partner
WeirFoulds LLP

Bradley McLellan
Partner
WeirFoulds LLP

Janis Vanderburgh
Senior Counsel
York Region Rapid Transit Corporation

Session 108

Faculty Biographies

William Culton

William E. Culton, Jr. is general counsel of Picerne Military Housing, LLC, in East Greenwich, RI. Mr. Culton is responsible for the oversight of all legal matters affecting the company, including its partnerships with the US Army, major transactions, daily project-level operational issues, and various corporate matters. He is also responsible for the legal matters of several affiliated businesses, including a regional residential real estate development firm and a small chain of award-winning restaurants.

Prior to joining Picerne Military Housing, Mr. Culton was general counsel of Goodman Industrial Equities, LLC in Boston, MA; assistant general counsel of Heritage Realty Investment Trust, in Boston, MA; and assistant general counsel of Mark Centers Trust, in Kingston, PA.

Mr. Culton is a member of ACC, ABA, Rhode Island Bar Association, and Massachusetts Bar Association. Mr. Culton provides legal oversight and fundraising assistance to the Our Family For Families First Foundation, Inc., a charitable organization providing college scholarships and grants to the children and spouses of military service members living at the seven Army installations where Picerne Military Housing operates.

Mr. Culton is a graduate of The University of Rhode Island and Western New England College, School of Law.

Daniel Ferguson

Daniel P. Ferguson is a partner at the law firm WeirFoulds LLP and co-chair of the firm's Infrastructure and Public Projects Practice Group. WeirFoulds LLP is located in Toronto and practices in the areas of commercial, litigation, property and government. Mr. Ferguson has expertise in meeting the needs of both the public and private sectors in public infrastructure projects and public/private collaborations. He has worked on many high profile public infrastructure projects in the Province of Ontario in areas including: optimal risk allocation, procurement processes, the design-build phase, operations and management phases, project finance, and governance structures. He has worked on projects including rapid transit systems, various sports, entertainment, cultural and recreational facilities, various green energy and electricity generation projects, and various urban renewal projects. Mr. Ferguson's practice includes a diverse range of corporate and commercial law areas. He provides legal advice to a variety of corporations and financial institutions and to numerous public sector clients.

Mr. Ferguson has written and presented extensively in the area of public infrastructure and public/private collaborations.

Bradley McLellan

Bradley N. McLellan is a partner in the Toronto law firm of WeirFoulds LLP. He is a co-chair of the firm's Infrastructure & Public Projects Practice Group and the chair of the Commercial Real Estate Practice Group. WeirFoulds LLP is recognized by the Canadian Legal Directory by LEXPERT as a leading property development firm in Toronto, and Mr. McLellan has consistently been named as a leading practitioner in Toronto in property financing and development. He has acted for numerous clients in the development of significant infrastructure and other public projects. Projects include rapid transit, a people mover system, sports and entertainment centres, and a mixed use downtown redevelopment. His work on public-private partnership projects includes structuring the project, procurement advice, project funding and finance, and drafting project documents.

Mr. McLellan is the co-author of Real Estate Law (4th edition, 1992), and he was a co-author of Condominium: The Law and Administration in Ontario (1st edition, 1981). He has written extensively in the areas of infrastructure and public projects and real estate law. He taught the Real Estate Transactions course at the University of Toronto Law School for 17 years. He has also taught in the part-time Real Estate LL.M. program at Osgoode Hall Law School.

Janis Vanderburgh

Janis Vanderburgh is in-house senior counsel and corporate secretary to the York Region Rapid Transit Corporation (the "Corporation"), an Ontario business corporation established by The Regional Municipality of York to design and deliver a rapid transit system in the Region of York. As a member of the Corporation's senior management team, Ms. Vanderburgh is responsible for providing leadership and direction to support the Corporation's rapid transit business, including negotiating and managing its legal and business relationships with the Region of York, the Federal government, the Provincial government, and its private sector partners. She provides legal advice to the Corporation's Board of Directors on a broad range of corporate law issues including contractual obligations, governance, procurement, directors' fiduciary obligations and private-public partnerships.

Prior to joining the York Region Rapid Transit Corporation, Ms. Vanderburgh worked in-house at the Region of York handling a portfolio of municipal, corporate, and leasing matters, as well as being corporate counsel to the Region's housing corporation. Prior to joining the Region of York, she worked in private practice in Toronto, Ontario, where she advised a broad range of corporate clients on shareholder issues, corporate transactions and reorganizations.

Ms. Vanderburgh has a BCA and an MBA from McMaster University, in Hamilton, Ontario. She is a law graduate of the University of Western Ontario.

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TO P3 OR NOT TO P3?

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1. INTRODUCTION

- Wide Array of Infrastructure and other Public Projects
- The Debate over the use of P3's
- Organization of today's Presentation
- Introduction of Panelists

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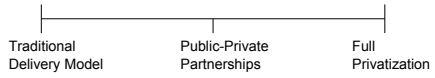
2. ALTERNATIVE PROJECT STRUCTURES

- SPECTRUM OF PROJECT DELIVERY OPTIONS



- TYPES OF MODELS
  - Design Build (DB)

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- TYPES OF MODELS (cont'd)
  - Design Build Finance (DBF)
  - Design Build Operate Maintain (DBOM)
  - Design Build Finance Operate Maintain (DBFOM)
  - Build Own Operate (BOO)
  - Build Own Operate Transfer (BOOT)

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- DIFFERENTIATING CHARACTERISTICS OF THE MODELS
  - Does the Public Sector prescribe exactly what it wants?
  - Who owns the asset?
    - Difference between Privatization and P3.
    - Who controls/ operates/ maintains the asset?

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- DIFFERENTIATING CHARACTERISTICS OF THE MODELS (cont'd)
  - What happens to the asset at the expiry of the term?
  - Is the Project publicly funded or privately financed?

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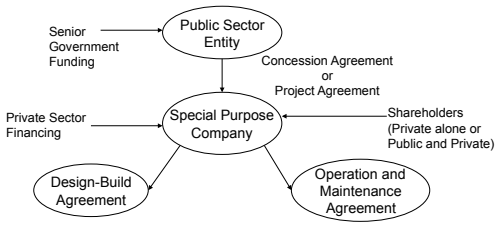
- TYPICAL P3 PROJECT STRUCTURE



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- IMPORTANCE OF EARLY PROJECT PLANNING BY THE PUBLIC SECTOR
  - The Private Sector should not be engaged until the Public Sector has done its homework
  - Project or Contract Scope and Timing Need to be Defined
  - Project Structure Needs to be Determined
  - Is a Public Private Partnership the best Model for the Project?

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- IMPORTANCE OF EARLY PROJECT PLANNING BY THE PUBLIC SECTOR

(cont'd)
  - What role will the Public Sector perform?
  - Legal authority for Public Sector to undertake and structure the Project in the proposed manner
  - Preparation of a Business Case
  - Procurement Options

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3. RISK ALLOCATION AND PROJECT DOCUMENTS

- WHAT IS RISK ALLOCATION?
  - Optimal Risk Allocation
  - Identifying and Defining Risks
  - Developing a Risk Allocation Matrix

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- DETERMINING WHO SHOULD BEAR THE RISK?
  - Power and Authority to Manage the Risk
  - Compensating the Party Bearing the Risk
    - From Project Revenues?
    - From Funding?
    - Other Sources

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- RISK ALLOCATION ISSUES IN POLITICALLY SENSITVE PROJECTS
  - Projects where Ownership or Control of an Asset are Sensitive Issues
    - Highway Tolls
    - Transit Fares
    - Water Rates
  - Statutory or Regulatory Requirements

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- PROJECT DOCUMENTS
  - Design-Build Agreement
    - Use of Standard Form Industry Construction Agreements
    - Are the Risks Appropriately Allocated?
    - Contract Prices
      - Fixed Fee
      - Guaranteed Maximum Price (GMP)

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- Design-Build Agreement (cont'd)
  - Penalties and Incentives
  - Other Key Clauses

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- Operation And Management Agreement
  - Term of Contract
  - Duties and Responsibilities of Operator/ Manager
  - Termination of the Contract
    - For Cause
    - For Convenience
  - Insurance and Indemnities
  - Other Key Clauses

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- Concession Agreement
  - Term of Concession
  - Duties and Responsibilities of Concessionaire
  - Termination of Concession
    - For Cause
    - For Convenience
  - Insurance and Indemnities
  - Other Key Clauses

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- Ground Lease
  - Term of Ground Lease
  - Rent Payable
  - Default Provisions
  - Insurance and Indemnities
  - Repair and Maintenance Obligations
  - Other Key Clauses

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- Private Financing
  - Part of a Proposal Team or Arranged Separately
  - Paid out by Senior Government on Completion?
  - Paid out through Project Revenues?
  - Lender's Approval of Risk Allocation and Project Documents
  - Role of Pension Funds in Project Financing

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4. MAKING IT WORK – PUBLIC SECTOR PERSPECTIVE – YORK REGION RAPID TRANSIT PROJECT

- INCEPTION OF THE PROJECT
  - 2001-2002 RFQ
  - 2002 RFP
  - 2002 Initial Project Agreement ("Stage One Agreement")

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- PROCURING THE PRIVATE SECTOR PARTNER
  - Very Competitive RFP Process in 2002
  - Consortium of International Corporations Chosen

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- CHANGES IN SENIOR GOVERNMENT FUNDING
  - Evolution of "Incremental Project Financing" in 2003
  - Long Term Planning More Difficult
  - Project Development in Phases and Segments
  - Success of "Quick Start"

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- PUBLIC/ PUBLIC RELATIONSHIP
  - Changes over time in roles of Senior Government (the Province and the Federal Government)
  - Political Risk
  - Roles of Infrastructure Ontario and Metrolinx
    - Master Agreement between Metrolinx and YRRTC
  - Maintenance Agreements with Local Municipalities

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- RECENT CHALLENGES AND HOW THEY WERE HANDLED
  - Procurement Agreement for Continuing Role of Private Sector Partner
  - Approval of Metrolinx to the Procurement Agreement
  - Use of "Cost Confidence Process" to ensure Competitive Pricing
  - Infrastructure Ontario for specified segment project financing

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5. MAKING IT WORK – PRIVATE SECTOR PERSPECTIVE – PICERNE MILITARY'S HOUSING PARTNERSHIP WITH U.S. ARMY

- THE MILITARY HOUSING PRIVATIZATION INITIATIVE (1996)
  - Allowed Department of Defense (DOD) to provide:

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- direct loans
- loan guarantees
- other incentives to encourage private sector firms to develop and manage housing

- TYPICAL PICERNE/ U.S. ARMY PROJECT STRUCTURE:

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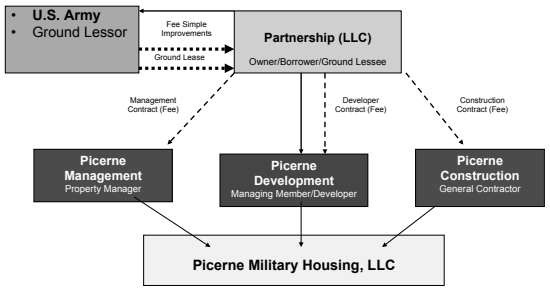

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- PROJECT DOCUMENTS
  - LLC Operating Agreement
  - Ground Lease
  - Municipal Services Agreement
  - Development Agreement
  - Construction Agreement
  - Property Management Agreement

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- CHALLENGES AND SOLUTIONS
  - Partnership with "Big Army" (DA) and "Little Army" (Installation)
    - Whose decision is it?
    - Major Decision process
  - Customer
    - Military Service Members and Families
  - Evictions
    - Exclusive Federal Jurisdiction

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6. THE P3 EXPERIENCE TO DATE

- The United Kingdom
- Australia
- Canada
  - Province of British Columbia (Partnerships B.C.)
  - Province of Ontario (Infrastructure Ontario)
  - Province of Quebec
- The United States

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7. ROUNDTABLE AND QUESTIONS FROM THE AUDIENCE

TO P3 OR NOT TO P3

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It is widely recognized that there is a critical need for construction of new infrastructure and the repair and maintenance of existing infrastructure. Infrastructure includes a very wide range of projects: highways and toll roads, rapid transit, hospitals, airports, bridges, ports, water and wastewater, energy and power, schools, courthouses, sports and recreation facilities, and downtown revitalization. There are also many other types of "public projects" which involve municipal/ local government, senior government (Provincial/ State or Federal), or government agencies.

The objective of this Article and the PowerPoint Presentation delivered by the Panel on this same topic is to help in-house counsel better understand the various ways that infrastructure projects and other public projects can be structured and whether a public-private partnership is the best model for a particular infrastructure or public project. This Article is organized into four sections: 1. What is a Public-Private Partnership? 2. Is a P3 Structure Appropriate for a Project? 3. Risk Allocation 4. Project Governance and Stakeholders. Appendix "A" contains a list of Resources used to compile this Article and the PowerPoint Presentation. Appendix "B" includes copies of two articles (Appendices B1 and B2) that are referred to in Appendix "A" and which will serve as good background reading for in-house counsel. Appendix "C" contains a sample Risk Allocation Matrix.

1. What is A Public-Private Partnership?

Spectrum of Project Models

There is a wide spectrum of project models for the delivery of an infrastructure or other public project. On one end of the spectrum would be the "traditional model", under which the public sector maintains ownership of the project asset and prescribes the specifications for what is to be constructed and operated. Most project risk in this model stays with the public sector. One of the criticisms of the traditional model has been that a project is often delivered over budget or later than the agreed upon time for delivery.

At the other end of the spectrum of project models is a "privatization". In a privatization, the public sector transfers ownership of the public assets to the private sector. As the owner of the project asset, the private sector will have control of the asset, subject only to any Agreement that may be entered into between the public sector and the private sector respecting the construction, operation and ownership of the asset. The privatization model has not been widely used in North America.

In the middle of this spectrum are public-private partnerships. There are a wide array of public-private partnership structures in and of themselves. The differentiating characteristic of the various types of public-private partnerships will be the degree of control that the private sector has over the assets. Another important differentiating characteristic of the various types of public-private partnerships is whether "private financing" is obtained.

The Essence of a P3

The very use of the term "partnerships" in the term "public-private partnerships" is misleading. There is no legal partnership between the public sector and the private sector in a public-private partnership. The public sector certainly would not want to be in a situation where there is a legal partnership because that would mean that the public sector could very well be responsible for liabilities incurred by the private sector in the ordinary course of the development or operation of the asset. Instead, the use of the word "partnerships" is more akin to the word "collaboration" and simply refers to the fact that the private sector and the public sector are collaborating on a

project and allocating project risks between them. Oftentimes, the term "public-private partnership" is short formed to "P3".

It important to distinguish between the various types of delivery models and the various type of public-private partnership arrangements. Too often, people describe a particular proposed project as a "privatization", when it is actually a P3 arrangement. Since a privatization involves the private sector's ownership of the asset and this may not necessarily be the case (and in fact usually is not) in a public-private partnership, this misunderstanding of the nature of the project can result in opposition to a proposed project simply on the basis of a mis-description of what is taking place.

P3 Project Documents

When a P3 is utilized as a project structure, there is usually an Agreement entered into between the public sector and the private sector and which may be called a "Project Agreement", a "Concession Agreement", or perhaps a "Ground Lease". This Agreement will set out what the powers, responsibilities and duties are of the private sector in the delivery and operation of the project asset. In addition, such an Agreement will deal with insurance issues, indemnification, termination (for default or, possibly, "for convenience"), and dispute resolution provisions, as well as many other detailed provisions. There may very well be project financing Agreements entered into between the private sector and the lender providing project financing. In many cases, the private sector utilizes a "special purpose company" that contracts with the public sector and also contracts with the lender.

In most cases, the public-private partnership arrangement will also include a Design-Build Agreement between the special purpose company and a contractor and an Operations and Management Agreement between the special purpose company and the operator. These two additional project agreements are very detailed documents and the public sector will, in almost all cases, require that its approval to the form and content of these documents be obtained prior to their being entered into.

One of the important issues to be negotiated between the public sector and the private sector when a P3 is entered into is the term of the Agreement under which the private sector has the

rights and responsibilities set out in the Agreement between the public sector and the private sector. Depending on the type of project and how it is structured, the term can range from 15 years to 99 years. To the extent that ownership of the asset is transferred to the private sector during the term of this arrangement, the Agreement between the parties will need to address repair and maintenance responsibilities, so that the asset is returned to the public sector in a state of maintenance and repair that the public sector expects. Even if ownership of the project asset stays with the public sector, repair and maintenance are important issues.

2. Is a P3 Structure Appropriate for a Project?

Studies to be Undertaken

Prior to undertaking an infrastructure or other public project, it is important for the public sector involved in the project to undertake a business case study. This analysis should assess what particular type of project model would best suit the particular project. Additionally, the public sector should also consider, prior to embarking on the project, what project risks it wishes to retain and which project risks should be allocated to the private sector. The public sector may consider undertaking a "public sector comparator" to assess what the expected cost savings would be by undertaking the project other than by way of the "traditional model". It is paramount that the public sector consider which particular type of project model will result in "value for money" for the public sector.

Accountability and Transparency

No matter which project structure or model the public sector chooses for the project, the public sector must ensure that the project is carried out in an accountable and transparent manner. The principles of "accountability" and "transparency" are critical to the public sector. If the public sector contracts with the private sector for delivery of a particular infrastructure project, the public sector remains accountable for delivery of the infrastructure. An often-quoted principle in this regard is "you cannot contract out accountability".

Factors to Consider

Since privatizations are quite rare in North America, the decision for structuring the project becomes a decision whether to undertake the project using the "traditional model" or whether to choose one of the various types of P3s. In making this decision, the public sector should, among other things:

- Conduct a business case that compares the various models that could be used to undertake the project and compare the costs and benefits of each.
- Undertake financial modelling to determine what the appropriate funding and financing options are and what the anticipated costs of the project will be.
- Determine whether the public sector is prepared to transfer at least some of the control over the project asset to the private sector? If the public sector is not prepared to do that, then the private sector will not be prepared to take project risk and a public-private partnership is not the appropriate project model.
- Has a "total life cycle cost approach" been undertaken to the infrastructure project assets?
- Are there are any regulatory or other legal restrictions on the manner in which the private sector can be engaged by the public sector to undertake the particular project?
- What is the impact of the proposed project on current public sector employees and how would they be affected by the alternative ways that the project could be delivered?
- What are the estimated "pursuit costs" under the proposed project procurement and should any compensation be offered to private sector proponents where a Request for Proposals is issued for the project?

Sensitive Sectors

There are certain infrastructure sectors where privatization is extremely unlikely and where there has also been considerable debate about the use of P3s. One of those sectors is water and wastewater. Even though a P3 in the water sector does not mean that the private sector operator would necessarily own the drinking water facility, many people have expressed outrage that the private sector will "own" a city or town's drinking water under a P3 arrangement. In reality, the private sector operator will usually only operate and maintain the water facility (and potentially construct the facility if it is to be a new facility) with the city or town maintaining ownership of the water facility. It is important, however, to recognize the sensitivity, both politically and among citizens, to a P3 in the water sector.

3. Risk Allocation

Optimal Risk Allocation

One of the most important areas for the public sector and private sector to focus in on in a P3 is the allocation of project risks between the public sector and the private sector. "Optimal Risk Allocation" occurs where project risks are allocated to the parties best able to handle and manage the particular risks. Optimal Risk Allocation does not occur where the public sector is able to allocate all project risk to the private sector. The result of all project risk being allocated to the private sector is a project cost that is much higher than would be the case if project risks are optimally allocated. When the private sector is required to accept a particular project risk, the private sector builds the assumption of that risk into the cost that the private sector charges for undertaking the project. The public sector's approach to risk allocation can vary, depending on the political environment at the time and the level of government involved, and it is important for the private sector to be aware of this in order that the appropriate risk allocation is achieved.

Risk Allocation Matrix

It is not easy to allocate project risks. Appendix "C" to this Article includes a sample Risk Allocation Matrix that lists numerous project risks. A Risk Allocation Matrix is utilized to determine which of the parties ought to bear the risk that is set out. As the Risk Allocation Matrix in Appendix "C" indicates, there are numerous project risks during the various phases of

the project. Those risks can include environmental risks, force majeure risks, political risk, the risk of changes in the law, and the risk of increases in cost charged by suppliers and others.

The way in which project risks are allocated will not only impact on the pricing offered by private sector proponents, but will also determine whether the private sector is interested at all in such a project and whether lenders are prepared to provide private financing to the project. When undertaken properly, risk allocation can be a "win-win-win" for all parties concerned, but if it is too one-sided, the project will not be a successful one for at least one of the parties.

4. Project Governance and Stakeholders

Governance Model

In addition to assessing which risks should be borne by which party, it is important for the public sector and private sector in a proposed P3 project to agree on an appropriate governance model for the project. The governance model will determine how project decisions are undertaken and when approvals are required for particular decisions. The governance model will also be critical when disputes arise between the parties during one of the phases of the project. The particular governance model may depend, in part, on the legal and regulatory framework that applies to the particular project.

Arguments For and Against P3s

There has been considerable debate in North America about the use of P3s in infrastructure and other public projects. In many infrastructure and other public projects across Canada that have been proposed to be delivered using a P3 structure, special interest groups, in particular public sector unions, have opposed the use of P3s for such projects. It has been argued by such groups that the use of P3s results in windfall gains for the private sector, at the expense of the public sector. It has also been argued by such groups that the use of P3s to deliver new infrastructure projects can result in public sector job loss. Finally, it has been argued that P3s should not be utilized because the public sector can borrow the funds necessary to develop an infrastructure project at a lower interest rate than the private sector can borrow such monies through private financing.

On the other hand, many have argued that P3s are an appropriate delivery model for many infrastructure and other public projects. Those favouring P3s have argued that the P3 model will result in the delivery of infrastructure and other public projects "on time, on budget". Many have pointed to cost overruns when the "traditional model" has been used for the construction and delivery of infrastructure and other public projects. Proponents of P3s have also pointed to innovation that the private sector can bring to an infrastructure project when a P3 structure is utilized.

In certain parts of Canada, some municipalities have been wary of using P3s to develop, build, finance, operate and maintain infrastructure and other public projects. In addition to bearing the burden of delivering most of the required infrastructure and having to determine where the funding or financing for the project is going to come from, municipalities are now also bearing the burden of determining which particular model should be utilized. Some municipalities are concerned that, since such projects are delivered in a "fishbowl" like environment, criticisms from stakeholders opposed to P3s can result in adverse media publicity that can affect the project itself, local politicians, and staff working on the project.

Interestingly, the Canadian Federal Government announced a couple of years ago that its preference was that a P3 structure be utilized when municipalities apply to PPP Canada Inc. (a Federal Crown corporation) for Federal financing for a particular municipal infrastructure project, or that a business case be presented showing why a P3 structure was not used.

Public Sector Champion

When structuring a P3 transaction, from both the public sector's and private sector's perspective, it is important that there be a "public sector champion". This is someone that is involved in the project from the beginning and "shepherds" the project along. For a public sector champion to be successful in his or her role, they must have the respect of the politicians involved in the project, the public sector staff working on the project, and the private sector partner. Looking at successful infrastructure and other public projects, one usually sees that there was an effective public sector champion throughout the project.

Objective Assessment

Clearly, not every infrastructure or other public project should be undertaken as a P3 but, equally clearly, the P3 option should be considered for every infrastructure other public project as part of an overall business case assessment. Much could be gained in North America from a thorough, fair, balanced and objective analysis of both the successful and unsuccessful infrastructure and other public projects which have used the P3 model and the lessons learned from such projects. Such an analysis would be beneficial to both the public sector and the private sector.

APPENDIX "A": RESOURCES

1. Australian Government "*National Public Private Partnership Policy and Guidelines*", available at http://www.infrastructureaustralia.gov.au/public_private_partnership_policy_guidelines.aspx

2. Brubaker, Elizabeth "*Water and Wastewater Treatment in Canada: Tapping into Private-Sector Capital, Expertise, and Efficiencies*", Chapter in A Breath of Fresh Air: Market Solutions for Improving Canada's Environment, The Fraser Institute, 2007

3. California Debt & Advisory Commission "*Privatization vs. Public Private Partnerships: A Comparative Analysis*" (Issue Brief, CDIAC #07-04), August 2007

4. Deloitte Research "*Closing America's Infrastructure Gap: The Role of Public-Private Partnerships*", 2007

5. Deloitte Research "*Closing the Infrastructure Gap: The Role of Public-Private Partnerships*", 2006

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APPENDIX "B"

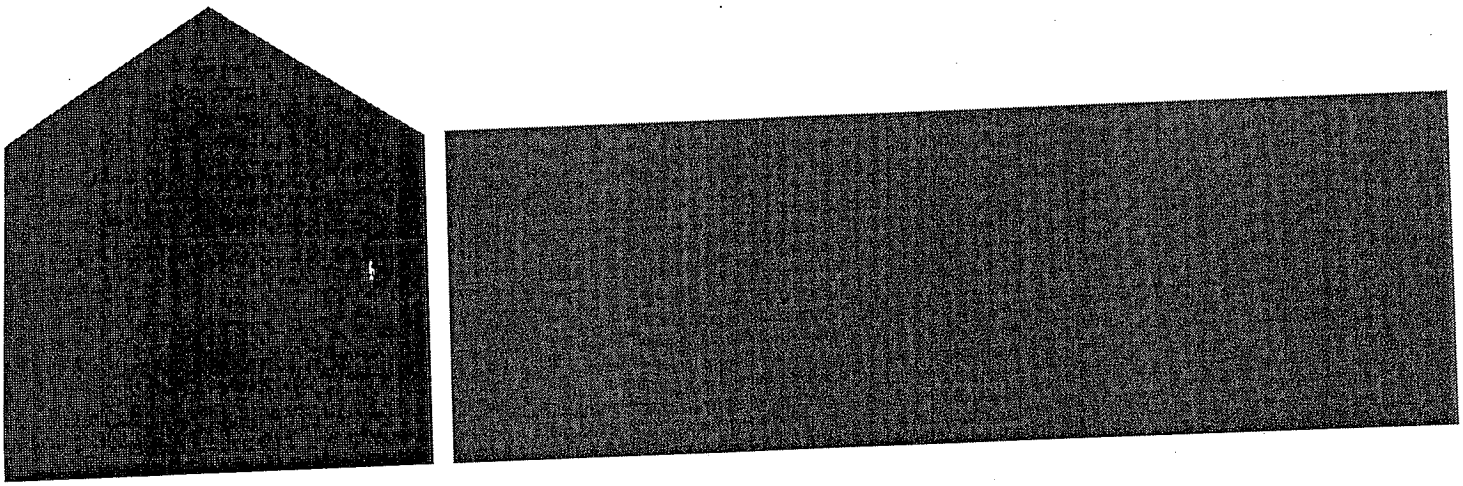
1. **Report of the Forum on Privatization and Partnerships "*The Promise of Public-Private Partnerships – Principles and Proposals for the Next President*", August 2008**
   (Appendix "B1")

2. **The Conference Board of Canada "*Dispelling The Myth – Pan-Canadian Assessment of Public-Private Partnerships for Infrastructure Investment*", January 2010**
   (Appendix "B2")

APPENDIX "B1"

Report of the Forum on Privatization and Partnerships
"*The Promise of Public-Private Partnerships – Principles and Proposals for the Next President*"

August 2008



The Promise of PUBLIC-PRIVATE PARTNERSHIPS

Principles and Proposals for the Next President

Urban Land Institute

Woodrow Wilson International Center for Scholars

Jones Lang LaSalle

Report of the Forum on Privatization and Partnerships

AUGUST 2008

THE PROMISE OF PUBLIC-PRIVATE PARTNERSHIPS: PRINCIPLES AND PROPOSALS FOR THE NEXT PRESIDENT

REPORT OF THE FORUM ON PRIVATIZATION AND PARTNERSHIPS

CONTENTS

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The Woodrow Wilson International Center for Scholars (WWICS), established by Congress in 1968, is the official national memorial to President Wilson. The Center aims to unite the world of ideas to the world of policy by supporting preeminent scholarship and linking it to issues of concern to officials in Washington. As both a distinguished scholar and national leader, President Wilson felt strongly that the "scholar and the policymaker were engaged in a common enterprise." Today, the Center takes seriously his views on the need to bridge the gap between the world of ideas and the world of policy, bringing them into creative contact, enriching the work of both, and enabling each to learn from the other. The Wilson Center brings together influential thinkers and doers to engage in a dialogue on current and future public policy challenges, with the confident hope that through such discussions there will emerge better understanding and better policy.

Urban Land Institute

The Urban Land Institute (ULI) is a nonprofit research and education organization supported by its members. Its mission is to provide leadership in the responsible use of land and in creating and sustaining thriving communities worldwide. Founded in 1936, the Institute has more than 40,000 members in more than 90 countries representing the entire spectrum of land use and real estate development disciplines, working in private enterprise and public service. As the preeminent, multidisciplinary real estate forum, ULI facilitates the open exchange of ideas, information, and experience among local, national, and international industry leaders and policy makers dedicated to creating better places.

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Jones Lang LaSalle (JLL) is a financial and professional services firm specializing in real estate. The firm offers integrated services delivered by expert teams to clients seeking increased value by owning, occupying, or investing in real estate. JLL has approximately 170 offices worldwide and operates in more than 700 cities in 60 countries. The firm is an industry leader in property and corporate facility management services, with a portfolio of approximately 1.2 billion square feet worldwide. LaSalle Investment Management is one of the world's largest and most diverse in real estate with approximately $50 billion of assets under management. JLL has been lead real estate consultant to the Army's Residential Communities Initiative; advised the Navy, Air Force, and other components of the Department of Defense on privatization issues; serves the Veterans Administration on Enhanced Use Leasing; and supports the General Services Administration on its leasing program.

PREFACE

The Woodrow Wilson International Center for Scholars (WWICS) and the Urban Land Institute (ULI) are independent, non-profit, non-partisan organizations that help to shape public policies in various fields through research, education, meetings, and publications. While each organization has a unique mission and emphasizes different areas of study and practice, we share the belief that long-term prosperity, security, and effective governance rest in part on close and continuing cooperation between business and government to meet a wide range of public needs.

Thus, we responded enthusiastically when Mahlon (Sandy) Apgar, IV, proposed that he convene a small group of experienced government officials, business executives, thought-leaders, and scholars under our auspices to produce a policy agenda on privatization and partnerships for the next Presidential Administration. We agreed that a discussion forum and related research could yield important insights for public policy and private enterprise.

During the ULI-WWICS Forum, participants examined the progress and problems of privatization and partnerships in military housing and considered the potential for broadening the principles and practices to other public needs. Their deliberations, as well as external research and other meetings, inform the findings and proposals in this report. Our organizations do not advocate specific policies and recommendations, but we commend the report for consideration by the Presidential aspirants and their advisors.

Lee H. Hamilton
President and Director
Woodrow Wilson International Center for Scholars

Richard M. Rosan
President, Worldwide
Urban Land Institute

EXECUTIVE SUMMARY

This Forum reviewed 10 years of progress in federal privatization and public-private partnership programs, called "P^2" for short, primarily in the Department of Defense (DoD), the Department of Veterans Affairs (VA), and the General Services Administration (GSA). From the programs' successes and participants' experiences, the Forum concluded that wider use of P^2s in selected federal functions could achieve public purposes more effectively, solve long-standing problems, and gain billions of dollars in efficiencies, savings, and value improvements, compared with conventional government actions.

The Forum defined five principles for a P^2 strategy to achieve these benefits, mainly through reforms in federal asset management and in selected public services:

- **Value**: P^2s produce economic value through new forms of private sector participation, injecting business ingenuity, energy, efficiencies, and capital into federal agencies, and applying a "funding multiplier" to leverage government investment.
- **Solutions**: P^2s solve complex, costly public problems in critical government functions such as housing, infrastructure, energy, and healthcare, with faster, cheaper, and better outcomes than government-driven programs.
- **Hurdles:** P^2s overcome hurdles to encouraging broader business engagement in public problems through persistent, focused communications with key influencers, and through flexibility to meet unforeseen conditions.
- **Enablers**: P^2s require motivated agencies, enabling authorities, dynamic markets with able and willing private enterprises, incentives for all parties to participate, and methods of managing risk.
- **Trust:** P^2s establish and sustain trust through shared goals, incentives, and safeguards; transparent working relationships; and life-of-partnership agreements.

The Forum proposes five actions by the next President:

- **Endorse P^2 philosophy**: Endorse public-private partnerships as part of the Administration's philosophy for reform, by promoting wider reliance on business partners and proven approaches to producing economic value and solving public problems.
- **Appoint P^2 commission**: Appoint a commission on public-private partnerships to raise awareness of P^2, identify and prioritize high-value opportunities, define the rationale for action, and galvanize support.
- **Establish P^2 office**: Establish an office of public-private partnerships to convert the commission's findings into agency actions, foster interagency alliances, and encourage P^2 program implementation through communications and public relations campaigns.
- **Institutionalize existing P^2 programs**: Institutionalize existing P^2 programs in DoD, VA, GSA, and other agencies by removing regulatory and procedural hurdles and ensuring adequate funding for the government's contribution.
- **Extend P^2 model to other functions**: Extend the Forum's P^2 model to other major federal functions -- e.g., housing, buildings, infrastructure, transportation, education / training, and healthcare; and explore other potentially high-value areas.

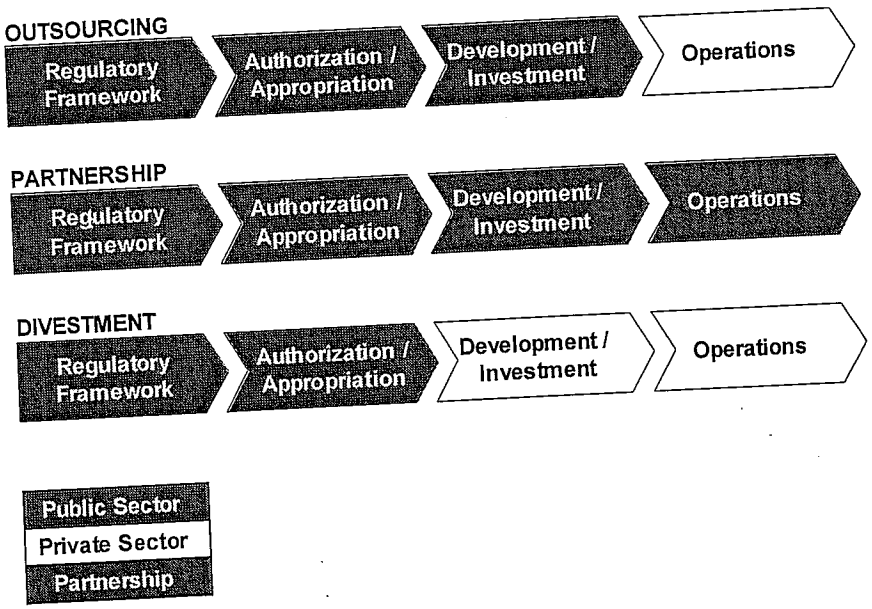
INTRODUCTION

Partnerships with business change the way government works. By infusing private capital and capabilities with public purpose, government-business partnerships in selected public functions can meet many community and individual needs cheaper, faster, and better. Public-private partnerships do not supplant government, with its unique legitimacy and constitutional authority; instead, they improve the efficiency and effectiveness of many non-core government functions that are mirrored in the private sector. Through partnerships, the public and private sectors achieve goals that neither could accomplish alone.

Some of the best examples of such partnerships are found under the rubric of privatization, and the terms have been used interchangeably, if incorrectly, in recent years. With the advent of mixed economies, privatization described the *divestment*, or outright sale, of government-owned enterprises to the private sector, and *outsourcing*, or transfer of responsibility, of government functions to contractors. In the 1990s, the Clinton Administration broadened the interpretation of privatization to include many forms of shared ownership and management between government and business through public-private partnerships. The landmark 1996 legislation named "Military Housing Privatization Initiative" (MHPI), discussed later in this report, specifically embraced such partnerships in spirit and in form. This policy has been continued and strengthened by the Bush Administration. (See *"Privatization" Models.*)

"PRIVATIZATION" MODELS

Three Common Definitions of Privatization



Building on the MHPI authorities, I set up the US Army's Residential Communities Initiative, known as RCI, shortly after my appointment by President Clinton as Assistant Secretary of the Army for Installations and Environment in 1998. I had been given a mandate by the Administration and Congress to "fix the Army's housing problem." The solution was to

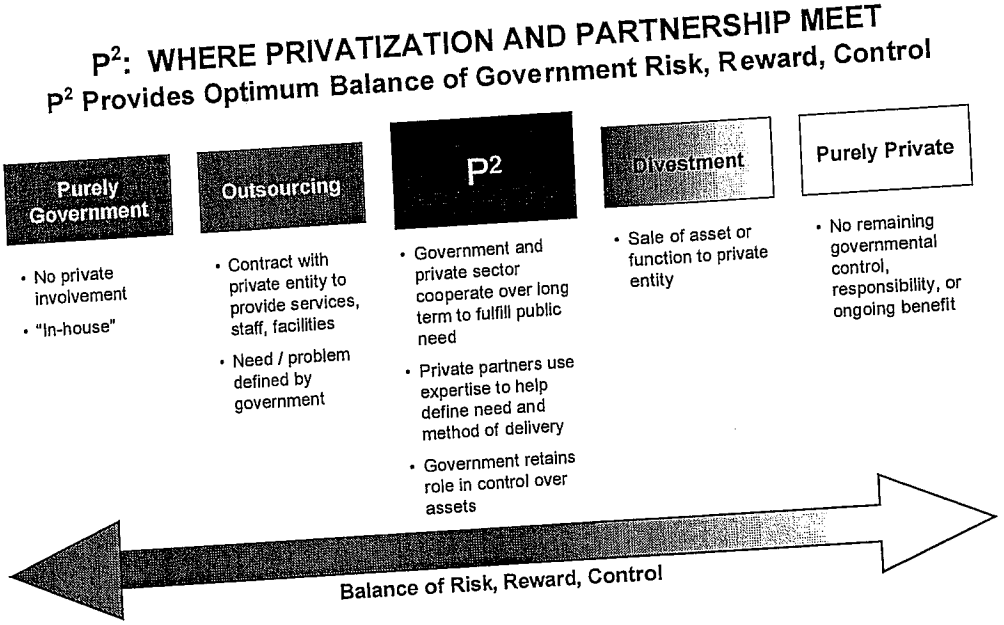
enlist the real estate industry, with its vast capabilities and resources, in long-term partnerships with the Army. Now in its tenth year, RCI has become one of the largest public-private partnership programs in the federal government. RCI demonstrates how business can help government to fulfill public needs and, in the process, produce innovations in the ways government meets those needs.

Military housing may seem an unlikely foundation for a discussion of partnering in other government functions. Both business and civic leaders ask how a military program, even if successful, would be relevant to meeting non-military public needs. The short answer is that the military is in many ways a microcosm of American society and, in recent years, has been an inventive test bed for transformation in its structure and processes. Military installations are small cities, with nearly all of the functions, most of the problems, and many of the solutions demonstrated by communities everywhere. In solving its housing problems and meeting other challenges requiring flexibility and creativity, the military has earned Americans' trust and respect.

A more complete answer lies in the following pages as we examine the military model to discover how this large, complex government institution has fundamentally changed its policies and management approach by engaging the private sector in meeting a major challenge. The military has learned how to attract high-quality business partners and cooperate with them -- seizing opportunities to create efficiencies and provide market returns, structuring projects to balance rewards and risks, setting incentives to encourage excellent customer service, and involving many stakeholders in decision-making.

In April 2008, I invited 25 government officials, business executives, and thought leaders to review the lessons from RCI; identify other public-private partnerships undertaken by federal, state, and local agencies; and explore ways to adapt the RCI model in other federal government functions. Meeting as the Forum on Privatization, we sought to distill the participants' knowledge and experience of the private-public nexus into principles and proposed actions for consideration by the next Presidential Administration. The Forum was co-hosted by the Urban Land Institute (ULI) and the Woodrow Wilson International Center for Scholars (WWICS), with financial and staff support from Jones Lang LaSalle (JLL). (See *Participants and Expert Resources.*)

To resolve the semantic conundrum, we chose to append "Partnerships" to "Privatization." This convention, also enshrined in the Army Secretariat, embraces the spirit of government-business partnerships that, to the Forum participants, defines our topic and ensures more comprehensive treatment. From here on in this report, we will use the shorthand "P^{2}" to denote joint public-private efforts whether they are called partnerships or privatization. (See *P^{2}: Where Privatization and Partnerships Meet.*)



We recognize that any reference to "privatization" in this report may be controversial because of its recent association with contracting excesses and breakdowns in Iraq. Without opining on those specifics, the Forum observed that such arrangements are strictly government outsourcing to contractors; they are not privatization as we use the term. We therefore ask readers to set aside the negative connotations about privatization. Dispensing with the term entirely in this report would ignore the many gains we describe below.

The Forum intentionally did not address P^2 for warfighting functions. Some of these are non-combatant in their purpose or roles and either are performed under P^2 principles or could be candidates for P^2 programs. However, the P^2 landscape is sufficiently large and opportune without confronting the philosophical, political, and operational difficulties of P^2 in the battlespace.

This report synthesizes the Forum discussions in April, a separate session on "lessons learned from military housing" at the ULI's spring conference in May, and a parallel research effort undertaken at WWICS. The findings and conclusions are built mainly on the focused thinking and dialogue of participants who brought some 500 years of experience to the table for purposeful, open discourse. The report is the product of a team effort and is written in the third person to reflect the group's collective wisdom. While the group's contributions were essential to producing this report and they are individually recognized in the Acknowledgments, no portion of this should be attributed to any individual or to the ULI, WWICS, or JLL; I take full responsibility for the report's contents.

Mahlon Apgar, IV
Baltimore, Maryland
August 2008

ARMY RCI: A P^2 FOR MILITARY HOUSING

The Forum focused first on lessons learned from the Army's military housing privatization program, known as the Residential Communities Initiative (RCI). The principles and proposals in this report draw heavily on concepts and methods that have been institutionalized in RCI. Thus, the following background on RCI will help in understanding the remainder of this report. RCI demonstrates how a willing and able industry can work with government, in a spirit of collaboration and trust, to multiply public assets and services through private sector capital prowess and entrepreneurial zeal.

RCI was proposed to remedy severe problems in family housing on Army posts nationwide. Analysis in 1998 showed that 70,000 units -- three-quarters of the US inventory -- were substandard. Peeling paint, leaky plumbing, outdated designs, and drab neighborhoods were hurting recruiting, retention, and morale. Even so, waiting lists for on-post housing, favored by soldiers because it is affordable and convenient, were long. The maintenance backlog, combined with a shortage of on-post housing, exceeded $7 billion. Because Army housing competed for resources with many other military priorities, full funding to fix the problem was unlikely to materialize. And by relying on traditional construction and management processes, the backlog would take at least 20 years to clear.

The Army's situation, mirrored in other Military Services, had led Congress to enact the landmark MHPI legislation in 1996. This gave the DoD and Service secretaries the authority to convey land and property to private businesses in exchange for housing renovation and construction. It allowed companies to build to market standards, instead of restrictive, complex military specifications; and it enabled them to receive soldiers' Basic Allowance for Housing (BAH) as their revenue stream. It also provided for a variety of risk-reduction measures in the case of base closures and long troop deployments. An effort to enlist the real estate industry to revitalize Army family housing had begun soon after the legislation passed, but had stalled due to issues about the procurement process and indecision about the desired scope, scale, and direction of the program.

In 1998, Mahlon (Sandy) Apgar was appointed Assistant Secretary of the Army for Installations and Environment (ASAI&E), with a mandate to solve the Army's housing problem. Drawing on his background in community development, Mr. Apgar saw an opportunity to transform the way the Army approached on-post housing. Until then, the focus was on production -- building and renovating houses. Instead, he envisioned master-planned, "New Urbanism" communities, with up-to-date homes that fit their natural surroundings in neighborhoods with amenities common to their civilian counterparts. He also emphasized preservation of the large stock of historic homes that define part of the Army's heritage in these military communities. His challenge was to persuade leaders that the American real estate industry could create a superior product more quickly and efficiently, at lower cost, and with better quality, than could the Army itself, and that developers could be attracted to work with the military in a collaborative partnership.

Two key Army officials were convinced and took an immediate interest. General Jack Keane, Army Vice Chief of Staff, began building support among senior officers. Dr. Bernard Rostker, Under Secretary of the Army, guided departmental approvals within the complex

organization and budgeting system. In DoD, Dr. Jacques Gansler, Under Secretary of Defense for Acquisitions, showed how existing mechanisms could jump-start the program; and Dr. John Hamre, Deputy Secretary of Defense, enhanced the proposal with his wisdom and protected it with his authority.

Similarly, in Congress, Representative Chet Edwards combined his real estate experience and a passion for soldiers' well-being to save RCI in the appropriations review process and promote it among his colleagues in the House Army Caucus. Other champions in the early incubation were Representatives Joel Hefley, who chaired the authorizing committee for MHPI; Norm Dicks, who served with Edwards on the Appropriations Subcommittee; and Senator Jack Reed, whose military credentials cemented support on the Armed Services Committee. These leaders took risks to give RCI a chance; they stayed the course as it matured; and they deserve much credit for the program's very existence as well as later success.

Mr. Apgar's meetings with developers and industry associations revealed that the scale of projects envisioned for RCI would attract highly-qualified partners, but the procurement process discouraged them. Government contracting had a reputation for rigid, formulaic procedures and an emphasis on process over problem-solving. The typical Request for Proposal (RFP) document was hundreds of pages long, with detailed instructions for building the final product. Responding to RFPs was expensive and time-consuming. The process favored companies with expertise in government procedures -- wholly different skills from those required to develop communities. In fact, the RFP process dissuaded companies from applying their own creativity and skills to defining and solving the problem. Mr. Apgar assembled a task force to address this and other hurdles, and found the solution in the Request for Qualifications (RFQ), a little-used procurement method that asked companies to document their experience, financial and management capabilities, and vision for the project in shorter, simpler formats.

An RCI Program Office was set up within the ASAI&E organization, modeled on the long-established program management units for complex weapons systems, and the RCI team began building the business case for change. The RCI Office hired JLL as real estate consultant to provide skills in structuring and valuing individual projects, evaluating developers' proposals, and negotiating final contracts. With their and others' expert help, RCI received an "A" from debt-rating agencies, based chiefly on the longstanding security of the BAH.

Armed with the RFQ, the high bond rating, and large project packages of 2,000 to 6,000 housing units (compared to the few hundred for typical military projects), Mr. Apgar returned to the real estate community to market the program. The response was gratifying. Well-qualified firms from across the country, many of whom had never before bid on a government contract, responded to solicitations for pilot projects at Fort Hood, Texas; Fort Lewis, Washington; and Fort Meade, Maryland -- posts chosen for their diversity across a range of dimensions that would test the program's viability at scale, while containing financial, operational, and political risks. (A project begun earlier at Fort Carson, Colorado under an RFP was later brought into the RCI program.)

The Army-developer relationship in RCI demonstrates the change in mind-set from government "contractor" to business "partner." Under RCI, the selected developer spends the first year working with an on-post Army team to plan, in detail, the houses and amenities it will build and renovate, the financing it will contribute, and the maintenance and operating services

it will provide. Once this Community Development and Management Plan (CDMP) is approved by Congress, the developer takes possession of the existing housing (while the Army retains ownership of the land) and contracts to build, renovate, operate, and manage it for 50 years. The developer receives the soldiers' BAH as rent. Because their profits depend on high occupancy, and because soldiers can choose whether to live on post or off, the developers have a powerful incentive to create and maintain superior residential communities. RCI's combination of cash flow and site control allows developers to leverage the Army's investment with private capital.

RCI will have private partners in charge of all inadequate Army housing by early 2009 -- one year earlier than the original goal. The program will cover about 98 percent of the Army's family housing stock, or 88,000 homes, on 45 posts in 23 states. So far, 35 installations have RCI partnerships in place for 77,000 homes; the remainder is in solicitation or under development; and two of the original pilot projects are in their second development phases.

Balancing fundamental tradeoffs (e.g., cost vs. quality, speed vs. service, flexibility vs. standardization) as they do in the private sector, RCI partners have developed exceptional products. The housing units are spacious, modern, and appealing, with community centers, tot lots, green space, and other amenities. One post is piloting the incorporation of retail into housing neighborhoods. With the Army's long-standing emphasis on environmental stewardship, RCI developers are pioneering "green" building and management techniques. Neighborhoods of 150-300 homes are produced in 15-18 months compared with 3 to 5 years using previous methods. Customer service is quick and efficient, with a maintenance schedule that protects the investment long after construction. Army families are delighted, and their new housing is helping soldiers to join, stay, and more happily serve in the Army.

RCI communities are built and managed by nine major real estate groups which raised $10 billion of new private capital, leveraging public funds approximately 11:1. RCI has matured to a sustainable partnership program not only because of its economic and operational logic, but also because of successive leaders' determination; bipartisan, non-ideological support; and persistence through two Administrations. JLL has developed a Portfolio and Asset Management (PAM) program to monitor the performance, compliance, and financial health of RCI projects. The following table summarizes major outcomes of RCI over the past decade:

RCI OUTCOMES -- 1999-2008

Elements	Metrics / Indicators	Beneficiaries
Speed	50-200% faster than prior government approach	Soldiers, Army
Quality	100% market product; twice the number of maintenance inspections	Soldiers
Satisfaction	NCO: "I'll reenlist for an RCI home"	Soldiers, Army
Backlog / shortage	100% of housing deficit met; original maintenance backlog cleared	Soldiers, Army
Service	98% on-time response for maintenance problems	Soldiers
Construction costs	30% lower than prior government approach	Army
Development value	$10 billion increase in 10 years	Army
Sustainment	100% lifecycle sustainment	Army
Funding	11:1 leverage of private-to-public funds	Taxpayers

Despite these successes, there have of course been problems as the program has moved rapidly ahead. Perhaps the most visible issue has been the replacement of original partners on five posts for inadequate performance. While arresting progress for a time, these actions have demonstrated the strength of the partnership structure and the CDMP process. New partners were found within 12 to 15 months, a reasonable time frame by business standards, and the projects have adapted to changing circumstances through negotiation instead of litigation. Elsewhere, initial occupancy rates have been lower than projected when families not assigned to new homes have opted to live off post. Intra-agency conflicts, Congressional interventions, and data gaps have sometimes hampered developers' abilities to plan and execute as efficiently as they expected. Standards and processes have been installed for building and environmental code compliance, but overall program-wide design and development quality assurance has yet to be implemented. Since RCI's organizational home was shifted, misalignments in decision-making and accountability have occurred. And some participants believe that the government is becoming enmeshed in tasks, such as routine change orders, that should be the business partner's responsibility, with consequent delays and added costs.

The severe capital and housing market disruptions in 2008 also have tested the RCI partnership ideal. For example, interest rate hikes increased costs for projects still in the CDMP stage, resulting in changes to scope from the planning objectives. Some stakeholders with traditional mind-sets believe that the changes represent violations or defaults. But as partners completing the CDMP process, the Army and developers have negotiated reasonable, pragmatic solutions -- for example, performing renovations and deferring new construction -- that deliver the program's broad objectives while adapting to specific capital market conditions. Flexible provisions for this kind of risk management are built into the RCI framework, helping to ensure that when unforeseen circumstances arise, the partnerships can survive.

From the problems and successes of RCI, a number of notable lessons can be distilled:

- Effective, lasting government-business partnerships require coalitions among numerous stakeholders across the political and commercial spectrum.
- Transparency in the structure and management processes is essential throughout the project lifecycle, both within the local installation and development teams, and when presenting the program to residents.
- Problems are resolved and decisions made more quickly when responsibility, authority, and resources are unified.
- Projects move more quickly and smoothly when the development team members have previously worked together.
- Plans are most effective when they build in flexibility to accommodate frequent, major changes in the market and business environment, when they present a range of outcomes, and when both partners understand what is contractually binding and what is not.
- Bi-partisan efforts, with leadership from both the executive and legislative branches, can overcome numerous obstacles to institutional change.

- Bold visions, clearly articulated with concrete objectives, can mobilize people and institutions and open the way to enduring change.

RCI is now the centerpiece of DoD's P^2 asset strategy, and the Army has commissioned an official history to study it in depth. During the past decade, the program has moved from idea to implementation and transitioned from central leadership by the secretariat to local management at military installations. The Bush Administration calls RCI the "most important military housing improvement program in our nation's history." And as one Forum participant emphatically stated, "RCI is the best government housing program ever conceived. What makes it successful is that the government figured out its goal and concentrated on that one goal with laser-like focus, turning aside all the many objections on spurious issues that so often compromise government programs." The current leadership has successfully built on the initial platform constructed during the Clinton era by creating the Army's Privatization and Partnerships Office, delegating authority to RCI program managers, and ensuring continuity through key senior executive staff appointments and expert consultants.

In the years since the program's launch, RCI staff and developers have continued to generate innovations in policy, planning, marketing, financing, design, and organization. Above all, RCI developers have met the housing industry's greatest challenge -- harnessing its full range of capabilities to produce beautiful homes for low- and moderate-income residents while protecting the environment, navigating the political process, and fostering business-government cooperation. In recognition of its achievements, RCI received a 2008 ULI Award for Excellence.

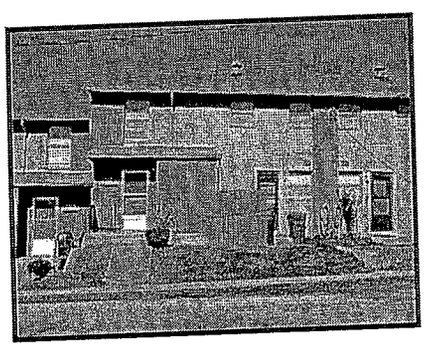
The RCI model holds much promise for partnering with business to solve other problems the military faces in managing its infrastructure. The Privatization of Army Lodging (PAL) initiative follows RCI principles in attracting hotel developer-operators to recapitalize and manage aging temporary lodging on posts. Programs for senior non-commissioned officers' quarters, single soldier housing (dormitories, apartments), retail and "lifestyle" centers, office parks, and warehouse developments are also in process. Long-term out-leasing of underutilized land and facilities is underway through a complementary program called Enhanced Use Leasing (EUL). RCI is increasingly linked to related programs for base realignments and closures (BRAC). The Navy, Marine Corps, and Air Force are pursuing their own P^2 programs, designed for their distinctive cultures and systems. Other federal departments -- as well as states and cities -- have expressed interest in how RCI's policies and practices could be adapted to their needs, and foreign governments are looking at the model for their military and civilian applications.

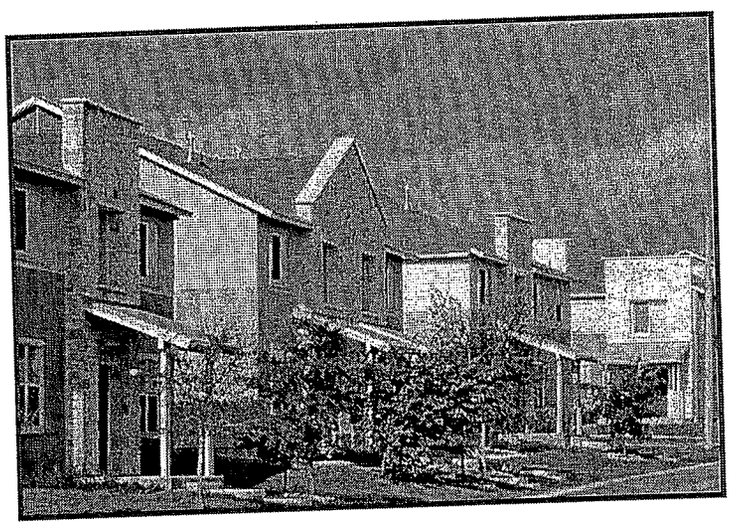
RCI has shown how the capital, expertise, and innovation of private enterprise -- in this case, developers, builders, and financial services -- can be marshaled to provide soldiers and their families with a quality of life on par with other Americans they are pledged to serve and defend. They should expect, and receive, nothing less.

* * * *

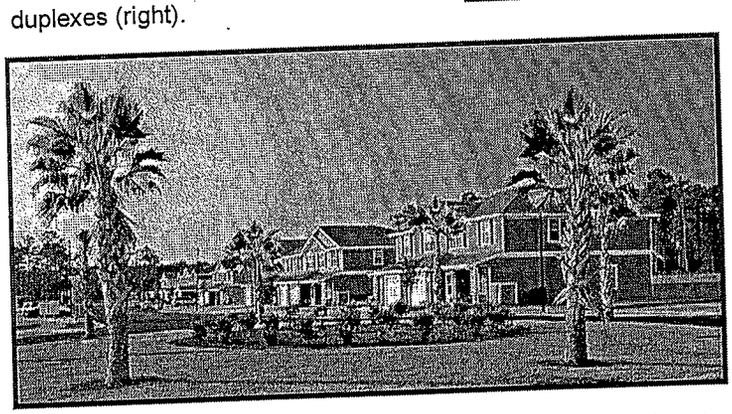
RCI: BEFORE AND AFTER

FORT BELVOIR, VIRGINIA, was the first Residential Communities Initiative (RCI) community to incorporate apartments for all military ranks above retail space (left). The Army post also offers new RCI housing for company-grade officers and their families (above).





Multiplexes for junior enlisted and junior noncommissioned officers (NCOs) were built in the late 1940s at **FORT HOOD, TEXAS** (above). The post's junior enlisted and junior and senior NCOs can now live in RCI duplexes (right).



A new RCI community for junior enlisted soldiers and their families (above left) takes the place of older, pre-RCI townhomes (above right) at **FORT STEWART, GEORGIA.**

PRINCIPLES

From the success of RCI, as well as other P^2 programs in the DoD, the VA, and the GSA, the Forum concluded that wider use of P^2s in selected federal functions could achieve public purposes more effectively, solve long-standing problems, and gain billions of dollars in efficiencies, savings, and value improvements, compared with conventional government actions. The Forum defined five principles for a P^2 strategy to achieve these benefits, mainly through reforms in federal asset management and in selected public services.

To be chosen over government-only solutions, P^2 programs and projects must *produce economic value* and *solve public problems*. *Hurdles* arising from the way government operates limit the potential for successful P^2 programs and must be overcome. P^2 *requires enablers and incentives* to develop programs that interest business. Finally, if structured correctly, P^2 *builds the trust* necessary for the private sector to contribute its ideas, energy, and capital.

In this section, we summarize selected projects that reflect both the principles and the wide array of P^2 possibilities. The variety and ingenuity displayed in these examples vividly illustrate the benefits P^2 can confer on agencies, their customers, and taxpayers. However, the summaries result from a limited research effort; they are indicative, not comprehensive, and the numeric data are not definitive.

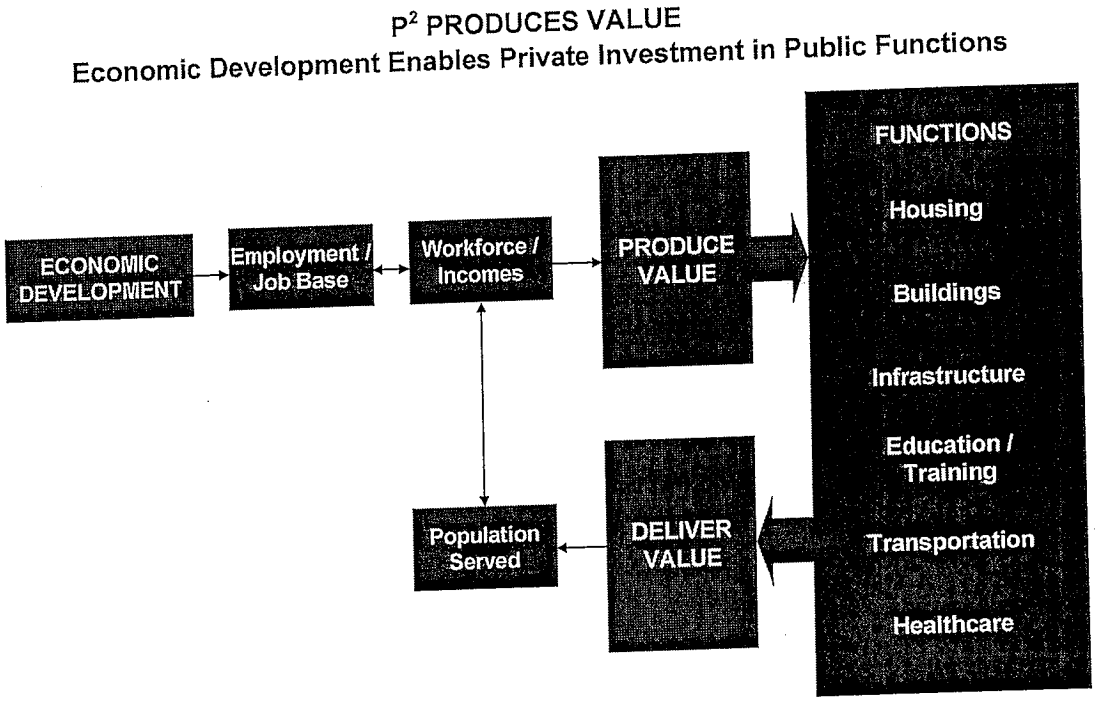
The federal government's real property asset base is also a major platform for the principles and proposals in this report. Some of the value in these assets can be activated as P^2s build, renovate, occupy, and/or re-use government land and facilities. In fact, DoD's P^2 programs have achieved a remarkable 12:1 "funding multiplier" through such strategies.

PRINCIPLE ONE: P^2 PRODUCES VALUE

P^2s produce economic value through new forms of private sector participation, injecting business ingenuity, energy, efficiencies, and capital into federal agencies, and applying a "funding multiplier" to leverage government investment.

P^2s produce economic value in the form of recapitalized and lower-cost assets (e.g., buildings, facilities, land, infrastructure, equipment) or more effective and lower-cost services (e.g., housing, transportation, healthcare, education). Over the life of a P^2 project, its total economic value is significantly greater than the current or short-term costs on which government budgets usually focus. P^2s, if deftly designed, may also create a ripple effect of value in their surrounding communities, as they not only help the government fulfill its program mandates, but also foster economic development necessary to support the partnership. (See *P^2 Produces Value.*)

The RCI summary above and EUL examples below illustrate this principle in practice. To apply the principle, lifecycle analysis (explained below) is critical in justifying projects and in measuring their long-term success. Because P^2s are an alternative to conventional federal programs in achieving public goals, the features of federal budgeting and the value of the "funding multiplier" should be well understood in assessing P^2 progress and outcomes.



Enhanced Use Leasing (EUL)

EUL is one of the main P^2 tools for producing value. EULs allow government agencies to leverage underutilized land, buildings, or other assets by entering into long-term leases, with rent paid by the developer in the form of cash or in-kind services for construction of new facilities; facilities maintenance, improvement, or repair; and payments for utility services.

In large projects with many "moving parts," EULs can be used with other P^2 tools, such as LLCs. The projects below exemplify the variety of P^2 applications to produce long-term value and the importance of lifecycle analysis in understanding their structures and outcomes:

The Yards at Southeast Federal Center. This mixed-used redevelopment of an aging federal property next to the historic Navy Yard in Washington, DC, used special-purpose legislation enacted in 2000 authorizing the GSA to enter into a public-private partnership. GSA chose Forest City Enterprises, Inc. (FCE), a major public real estate company, in 2004. The project, with an estimated build-out value of $1.7 billion, will convert the Center and 42 acres of land by developing 1.8 million square feet of office space, 2,800 rental and condominium residential units, 300,000 square feet of retail space, and a 5.5-acre park on the Anacostia Riverfront. Adjacent to the new Nationals ballpark, it is the largest redevelopment project in DC. The initial opening for residential units, retail shops, and dining is expected in late 2009. It will generate substantial new tax revenues, provide new opportunities for local businesses, and use sustainable building design.

Presidio Trust-Public Health Service Hospital. Presidio Trust is a federal government corporation chartered to use federal and private resources for rehabilitation of the Presidio of

San Francisco's historic buildings and infrastructure. The Trust may lease property, generate and retain revenue, and provide loans or loan guarantees to encourage private investment in the Presidio. In 2007, it granted a 70-year ground lease to FCE for converting a run-down former Marine hospital into 154 apartments, and building 7 new townhomes on a nearby street. The Trust will be responsible for managing and leasing all but one of the existing buildings within this "district." Total costs for the project will be allocated between the Trust ($20.2 million) and the master tenant ($71.8 million). Replacing a maintenance burden, the facility will be a self-sustaining contributor to the Trust's community and environmental program. The project is estimated to generate $3.52 million in revenue to the Trust in 2010, the first "stabilized" year of project operation. Revenue generated by the district for the Trust over the 70-year lease term is expected to exceed $666 million.

Dulles Greenway Toll Road. Dulles Greenway is a 14-mile, limited-access highway that extends from the state-owned Dulles Toll Road to carry traffic from the Washington, DC Capital Beltway to Leesburg, Virginia. The original partner on the project was Toll Road Investors Partnership II (TRIP II), which invested $350 million (it was purchased by an Australian company in 2005 for $617.5 million). It is operated by Autostrade International of Virginia O&M, Inc. and is regulated by the Virginia State Corporation Commission. Operational responsibilities return to the Commonwealth of Virginia after 42.5 years. In the meantime, the developers receive profits over a sufficient period to recover their investment. The Greenway was one of the first projects in the US to demonstrate concepts of project revenue financing and the first toll road in the DC metro area to have variably priced tolls. This project permitted private-sector financing and construction of a major new highway that would otherwise have been built many years later, if ever. It thereby opened adjacent areas to development and increased property values, facilitating growth without using taxpayer dollars.

Bayside at Fort Howard. In 2002, the VA inpatient care services at Fort Howard were consolidated to other campuses within the VA Maryland healthcare system. Pending local approvals, the vacated Fort Howard Campus will be converted to a veteran-focused retirement community under an EUL agreement. Restricted to residents aged 55 and over, the Bayside at Fort Howard Community may provide up to 1,300 residential units in a continuing care facility for veterans of varying abilities and incomes. Veterans are eligible for discounts on 40 percent of the units and will not pay entry fees. As part of the 65-year lease contract, the developer will build a new 10,000-square-foot outpatient clinic accessible to both veteran residents and eligible outsiders, with 10 acres reserved on site for a potential State Veterans Home. The community currently has a waiting list of more than 1,400 veterans. Other benefits to the VA include compliance with historic preservation requirements on the site and $7.9 million in annual property maintenance cost savings that can be redirected to veteran healthcare. If successful, this unique project will serve as a model for other large VA campuses nationwide.

The VA has an extensive EUL program in which private partners create or achieve VA office collocations and other facility consolidations; energy facilities / utilities production / co-generation; skilled nursing facilities / assisted-care living centers; transitional or temporary housing; medical, research facilities, parking garages; child development centers / adult day-care facilities; and golf courses and other recreational facilities. The VA is continuing to pursue its EUL program, and has recently identified 47 potential VA sites with underutilized land and buildings for development.

These are a few among many existing P^2 programs and projects that are applying a "funding multiplier," thereby leveraging public assets to produce value for the taxpayer. They illustrate that agencies throughout government with large real property holdings have used P^2 tools to partner with the private sector in unlocking hidden asset values and providing value-added services.

Lifecycle Analysis

For the full value of P^2 to be recognized, the lifetime costs and benefits of all major programs and projects should be evaluated in their earliest stages. A program's or project's economic life covers inception (typically, the initial construction, major renovation, or repositioning) through ongoing operations (including maintenance and repairs) to divestment. While individual capital projects capture most of the attention in the federal budgeting process, multi-project programs, such as RCI and Barracks, also should be assessed comprehensively on their full program lifecycle costs and benefits -- including synergies that may be produced when multiple P^2 tools (e.g., RCI, EUL, BRAC) are used in the same location. And because today's dollar is worth more than tomorrow's, the net present value should be quantified to illuminate tradeoffs between initial capital investment and ongoing operating costs.

For example, real estate developments and facilities obviously have costs that continue beyond construction and renovation. Operating expenses for utilities and property management are incurred; heating and cooling equipment, plumbing, and other mechanical systems must be maintained and repaired as needed; paint, carpet, and other finishes must be periodically reapplied; and all spaces need updating on a regular cycle to remain appealing in a competitive marketplace. The total costs of operating and maintaining a facility over its useful economic life (typically 30 to 50 years, but the range is from 20 to 60 or more) can be many times the initial costs of building or renovating it.

In contrast to the lifecycle view, the federal budgeting process compels agency attention on short-term spending and appropriations. Thus, when officials consider building or renovating facilities, they tend to focus on initial costs for demolition, construction, and start-up operations. Ongoing operations and future maintenance and repair costs usually are recorded and decided separately. Because the government's structure and processes for construction, operations, and maintenance are so complex, it is nearly impossible for government decision-makers to quickly forecast the full financial implications of programs and projects as their business counterparts can do more readily. Consequently, decisions are made with limited analysis, or staffs spend time and effort on customized analyses.

Moreover, ever-increasing pressures on government budgets can lead agencies to make trade-offs that favor immediate needs over best practices that will pay off over the long term. Funds earmarked for maintenance are "borrowed" to meet other funding requirements -- especially in the military where priorities for training, equipment, and operations usually trump facilities. But as repairs and maintenance are deferred year after year, conditions worsen and costs increase. The commitments are fragmented by time and circumstances. The Army's recent barracks incident at Fort Bragg has shown, among many issues, that it costs more to clean up the water damage from broken pipes than it does to check them each year and prevent or fix problems as they arise. In contrast, private developers with a predictable income stream and access to capital markets can commit to a program of scheduled maintenance and periodic renovation that protects asset quality, sustains value, and contains total lifecycle costs.

Lifecycle analysis first requires independent, parallel analyses for both private sector and government approaches, followed by a comparison of the results. Taking into account all of the inherent tradeoffs between short-term vs. long-term costs, and between business vs. government economics, can reveal the advantages of the private sector approach over government. Private partners can often deliver the product at lower initial costs due to superior efficiency, experience in building to current market standards, and access to sophisticated capital structures. However, they may also incur higher upfront costs -- for example, in energy-saving materials and equipment -- to achieve lower long-term costs for operating and maintenance. Because P^2 covenants generally include incentives to ensure that facilities are attractive to tenants, they are motivated to operate and maintain them effectively, leading to lower repair costs and greater sustainment of value over time.

* * * *

Some of the best opportunities to produce value arise when government functions cross organizational boundaries and political jurisdictions, involve substantial federal assistance, or use public property. These conditions impel consideration of new and different ways of developing and delivering services. One of the private sector's key contributions is the capacity to conceptualize, define, budget, finance, and partner on a portfolio of multiple asset classes, services, and geographies -- a skill set and attitude of mind that is very challenging to achieve within the conventional "silos" of government organizations. Yet when the government is open to the contributions of private partners, significant value can be produced for our military, other federal employees, and our citizenry.

PRINCIPLE TWO: P^2 SOLVES PROBLEMS

P^2s solve complex, costly public problems in critical government functions such as housing, infrastructure, energy, and healthcare, with faster, cheaper, and better outcomes than government-driven programs.

As pressure builds to cut federal budgets, and constituent populations grow larger, many seemingly intractable problems could be solved through cooperative partnerships with business. Tradition, culture, and politics may stand between change and the status quo, but the potential impact could be substantial. The sections below summarize two government functions -- infrastructure and military lodging -- where P^2 strategies are solving long-simmering problems, one -- military healthcare -- where the elements are in place to so, and one -- education -- where the Forum observed that P^2s could have enormous impact though they have yet to be proven.

Infrastructure

After decades of neglect and under-funding, US infrastructure -- roads, bridges, tunnels, airports and the air traffic control system, rail track, terminals, water and waste management -- needs to be recapitalized at annual costs that are tens of billions of dollars beyond currently available funding. With its access to capital and innovation, business is already helping state and local governments remedy their infrastructure problems. But a comprehensive federal infrastructure policy incorporating P^2 must be promptly developed and implemented.

The Forum focused on transportation infrastructure as a prime candidate for P^2 because the problem is so clear and urgent. Population growth, especially in urban areas, increases demand for transportation facilities and services. Taxes, tolls, and user fees have been the traditional methods for funding transportation, but are not keeping pace with the demand for construction, repair, maintenance, and operations. Current annual funding for transportation infrastructure is estimated at $84 billion, while a bi-partisan study commission estimated the average capital investment needed for all modes of transportation is nearly three times that level ($220 billion *annually* for 2008 through 2035).

The Highway Trust Fund is forecast to be $14 billion in debt by the end of 2012. Requirements to modernize the air traffic control system may exceed current appropriations by $1 billion per year over the next 20 years. Freight traffic is projected to grow substantially, with uncertain public sector capability to meet the needs of this growth. Taken together, the US transportation infrastructure truly falls in the "High Risk" category to which the GAO assigned it earlier this year.

Investment banks, private equity funds, and institutional investors -- well aware of these funding shortfalls -- have the resources to participate in recapitalizing the nation's infrastructure. Goldman Sachs estimates that US transportation assets alone have an enterprise value of $300 to 400 billion. Infrastructure funds are forming to capitalize on the potential opportunity. US-based private equity funds have been established to invest in infrastructure projects here and overseas. From 2005 to 2007, the "infrastructure market" quadrupled, and in 2007, some $31 billion flowed into these funds. In 2008, Morgan Stanley's infrastructure funds, totaling nearly $10 billion, are investing in airports, roads, and other public-works projects around the world. To some extent, the credit crisis has diluted this enthusiasm, but the global thirst for capital and expertise is likely to continue the trend.

State, local, and foreign governments, especially the UK, have used private funding to bridge the gap between their infrastructure needs and resources. Since 1985, an estimated 2,000 governmental projects have been planned worth about $887 billion in public-private funding. The US Department of Transportation reports that spending on road projects overseas tops spending in the US by 6 to 1. State and local governments in the US have begun to embrace private investment in infrastructure projects, often implementing legislative and regulatory changes to attract and maintain public-private partnerships. During 2005 and 2006 combined, state and local government partnership projects valued at more than $54 billion were planned or funded.

One example of an integrated P^2 for transportation infrastructure is Puerto Rico's Tren Urbano. In 1996, the Puerto Rico Highway and Transportation Authority (PRHTA) partnered with Siemens Transportation Systems, Inc. to build and operate a 17-kilometer rapid rail line serving the growing San Juan metropolitan area, whose roadways had become extremely congested. Paid fare service began in 2005. Tren Urbano is a design-build demonstration project in the Federal Transportation Administration's program to evaluate turnkey delivery on a federally financed project. The system has 16 stations and 5,000 park-and-ride spaces, is closely integrated with the local bus system, and currently carries approximately 30,000 riders per day. Siemens supplied the overall control and communications systems, track, power distribution, vehicles, and five years of operations. The plan is to extend the rail system service

to other municipalities. PRHTA contributed approximately $305 million of the project's $2.2 billion cost.

The massive infrastructure challenge can only be solved through cooperation between government and business. It requires not only capital but also ingenuity and expertise. Government must create the conditions and rules of engagement and, in some cases, provide the "seed capital" or market base for the partnership to work. The demonstrated willingness of the private sector to participate, and the successes of other governments, show that P^2s are the next frontier for transportation infrastructure.

Army Lodging

After decades of insufficient capital investment and operating deficiencies, the Army's temporary lodging program (on-post facilities similar to motels) faces a revitalization backlog of more than $1.6 billion, with over 80 percent of the current 19,000 room inventory in need of either replacement or major renovation to meet minimally acceptable standards. To solve this problem, Army lodging facilities are being recapitalized through Privatization of Army Lodging (PAL). The first PAL phase consists of some 4,500 rooms on 13 US posts.

On average, the current Army Lodging inventory is more than 30 years old. It is an eclectic assortment of buildings, most designed originally as barracks, family housing units, and even office space. Cinder-block walls, exterior corridors, linoleum floors, and geographically dispersed buildings are commonplace within Army Lodging -- a condition that is inconsistent with contemporary, mid-scale, limited-service hotels. For decades now, room rates have been kept at artificially low levels (i.e., rates that do not reflect the true cost of operations and capital utilization) in an effort to keep travel budgets down. As a result, the trend in facility conditions can best be described as an ever-accelerating downward spiral.

The Army designed an internal plan to clear the backlog and improve conditions. But leaders soon realized that it would take too long (20-plus years) and did not include long-term sustainment. Instead, the Army developed the PAL program, based on the MHPI authorities used by RCI. The PAL Office compared the privatization strategy to the same development scope and schedule of an Army-delivered program. Privatization showed 17 percent savings and cost avoidance. When appropriate adjustments were made for all operational expenses and recapitalization / sustainment needs, the government-managed scenario would result in charging 87 percent of the lodging per diem to eliminate the revitalization backlog. In contrast, the PAL program will achieve the same results at an average cost of 75 percent, creating an estimated annual cost avoidance of $12 million or $10 per room night.

Long-term sustainment is a major goal of the PAL program. Buildings that are renovated today will need to be replaced within the next 25 years. New facilities will need major renovation in about 40 years. By incorporating performance metrics in the PAL lease documents, the Army is assured of adequate sustainment and replacement, not just in the initial development period but throughout the 50-year lease term.

The Army is now implementing PAL as its primary transient housing portfolio strategy to ensure quality construction, renovation, operations, and long-term sustainment. The PAL program partner, Actus Lend Lease, is applying its capabilities in arranging capital and in overall program management. One of its main goals is to accomplish revitalization of the first phase in

the next five years. Actus has brought in the operator of InterContinental Hotels, Holiday Inn, Holiday Inn Express, Staybridge Suites, Candlewood Suites, and other brands. Military travelers will for the first time have on post all of the facilities, reservation choices, amenities, and even frequent traveler points that have been available to the civilian traveling public for many years.

Military Healthcare

DoD and VA administer two healthcare programs that together serve nearly 12 million people at a current cost of some $80 billion, with costs growing at the rate of 7 to 8 percent annually. The programs' clients are bonded by a unique affinity for service and loyalty to the institutions. Adapting DoD's approach to the VA through a P^2 strategy could eliminate duplication, increase veterans' access to care, and reduce costs, while preserving the quality of service that is central to the VA's mission.

DoD's system has two main elements: direct medical care for active duty personnel who are injured or sickened in the battlespace, and coverage for roughly 7 million service members, their families, and retirees with at least 20 years of military service. In addition to owning healthcare facilities on military installations, DoD manages Tri-Care, a system built around private contracts for delivering medical benefits to individuals. Nationwide in scope, Tri-Care operates through health-benefits-administration contractors in three regions for active duty personnel, who have access to all of the nation's hospitals and pharmacies, and about one-third of its physicians. Beside its main objective to ensure excellent healthcare for beneficiaries, Tri-Care's chief concern is rising costs.

Tri-Care cut costs during the past decade by streamlining and simplifying its contracts with benefits administrators. It decreased its regions from seven to three; with one provider per region, this also reduced the number of contractors to three. Requirements for each region, which had been different, were standardized across the regions. Such simplification and streamlining cut administrative and solicitation costs, and created sufficient scale ($2-3 billion per year in contract payments) to attract the best private partners. These ideas parallel the methods used to attract developers to RCI, and could be adapted elsewhere in the complex US healthcare market to control spending growth.

The VA, in contrast, is a government-owned and managed system providing healthcare to some 6 million non-active duty veterans of the nation's wars. It owns and operates a network of 170 hospitals and more than 1,000 clinics and employs its own doctors and other staff. The VA, too, is concerned with rising costs; convenient, quick patient access to services and facilities is also a critical priority.

The Forum concluded that one way to improve access for military veterans would be to create a system mirroring Tri-Care in the VA, with a private partner administering benefits delivery throughout the nation's non-military hospitals and clinics. Efficiency and effectiveness could be improved by consolidating the many VA hospitals into a smaller number of larger centers. As in the private sector, consolidation can be accomplished both geographically, by urban area and region, and functionally, through "centers of excellence" that focus on research and treatment of specific veteran-related conditions or needs. In some cases, well-managed local universities and other not-for-profit but business-like organizations could be effective P^2 partners. Savings, estimated in the range of $2.5 billion over the next 10 years, would

approximate construction costs of the new centers for the first decade; thereafter, the net result would be positive for the government and taxpayers.

Education

Concern about education quality is universal, and public pressure to raise standards, while increasing access, is mounting. Still, K-12 schools, universities, community colleges, and all but the best-endowed educational institutions find themselves without sufficient funds to build and renovate facilities, raise teacher salaries, purchase up-to-date textbooks and technology, and take other actions to recapitalize their infrastructure, increase quality, and admit more qualified students to their programs.

P^2s have been employed at the local level with varying degrees of success. Urban school districts in Baltimore, New York, Philadelphia, and elsewhere have turned to private firms, which have applied rigorous management and business concepts (such as benchmarking, competitive analysis, accountability, and performance incentives), not only to "back office" administration like purchasing and facilities operations, but also to the complex, politically charged issues of teaching and learning. These initiatives have often resulted in significant cost savings and operating efficiencies, but only sporadic improvements in student performance.

The Forum observed, however, that the so-called "failures" have more to do with the execution of education P^2s than with the concept. State and local school boards appear to have been insufficiently engaged in the initiatives, with the result that no clear definition of success has been established or agreed upon. And, expectations simply may have been too high. P^2s that involve all stakeholders in creating consensus on the problem and developing methods to solve it would likely have greater success.

In the national interest, schools should be among the top candidates for P^2. While education is largely a state and local responsibility, federal policies and actions influence education throughout the nation. As with DoD, the federal Department of Education can be a market-maker for P^2 and a sponsor of innovative initiatives. Unlike DoD, however, it does not have the authority for top-down, system-wide change management; nor, at present, do local communities appear ready to cede their authority. Still, the federal government can do much to create the standards and incentives for change -- from establishing criteria for partner selection to presenting strategies for P^2 recapitalization and operations to tying funding to private sector participation. DoD itself may become a test bed for education P^2s, as its $49 billion global school facilities portfolio -- like those in cities and towns throughout the nation -- needs renovation, rebuilding, and sustainment.

In this emerging government-business arena, which remains high-risk for both the school systems and the private firms, public purpose and profitability still await the necessary fusion and fine-tuning they have achieved in other sectors.

* * * *

By citing the above examples, the Forum intends only to highlight government assets and functions that are being, and could be, transformed from problems to advantages through P^2. All will need careful study.

This report's first and second principles describe what P^2s can do. The next two principles detail what government and business must do to create and sustain P^2s.

PRINCIPLE THREE: P^2 OVERCOMES HURDLES

P^2s overcome hurdles to encouraging broader business engagement in public problems through persistent, focused communications with key influencers, and through flexibility to meet unforeseen conditions.

Hurdles to P^2

The widespread use of P^2 is hampered by political and cultural norms, legislative and budgeting processes, and key differences in the skills of government and business professionals.

Politics and Culture

Even when the status quo is clearly not delivering solutions, political opposition to partnerships can run high. Partisan ideology, concerns about equity, workforce issues, and other factors can limit the political will and mute the public mandate for change.

In addition, the cultures of both public agencies and private businesses can work against P^2s. The federal government is a sizeable, complex, tradition-bound entity composed of disparate personalities, turfs, and territories, with a daunting array of responsibilities. Built slowly over two centuries, it can be a labyrinth of interconnected and often conflicting laws, regulations, and procedures that cannot easily be leapfrogged. For its part, business is often impatient with government "red-tape" and unwilling to partner despite large potential benefits. Business leaders express privately that regulations are too rigid or are unevenly and unfairly applied. The "Not Invented Here" syndrome operates in both spheres, but is magnified in the public sector, where officials can be distrustful of the profit motive, suspicious of contractors, and uncomfortable with alternative P^2 financing arrangements.

Legislative and Budgeting Processes

While enabling legislation is required to initiate a P^2 program, the machinery within the Congressional appropriations and authorization processes is equally important. Resistance to crossing jurisdictional boundaries can limit agencies and entrepreneurs in forging partnerships. Regulations promulgated by specific agencies may prevent or divert officials from originating P^2 programs. "Budget scoring" has proved to be a vexing hurdle blocking P^2 initiatives (discussed in Perspective: *Reforming Federal Budgetary Scoring*). Finally, decision-making and operations are fragmented in utilities and other functions regulated by federal, state, and local authorities, making it difficult to design, approve, and oversee partnerships.

Skills

Government employees' lack of familiarity with private finance can make working with business intimidating, resulting in government resistance to financial structures that are

common and effective in the private sector. Further, they may be unable to effectively evaluate their private partners' actions or advice. This can result in an automatic "no" even when the public benefits are significant. Similarly, the private sector's unfamiliarity with public financing requirements and processes can lead to unrealistic timetables and inattention to the government's many stakeholders.

Surmounting Hurdles

P^2 hurdles may be numerous and difficult, but they can be overcome through persistent communication and flexibility in design and implementation, more than through any technical solution. Changing any culture is a challenging task -- changing the culture of an organization as large, ungainly, and tradition-bound as the federal government is Herculean. But it can be done.

Communication

Provided the proposed P^2 is based on sound economics and meets a well-understood need where government alone cannot, most obstacles can be vanquished by clearly and persistently communicating the business case and garnering the support of key influencers.

RCI's communications plan was one of the most important, but least understood, factors driving the program's success. It changed the culture of the Army -- which had been averse to help from "outside the gate" -- through several modes of communication. RCI planners took senior Army officials on tours of master-planned communities to demonstrate the quality of life such developments could offer soldiers. They queried private developers about their concerns and requirements for participating in the program. They built the business case in conjunction with real estate experts, brought in to assist the Army in deal-making and also to help transfer skills to Army personnel. They developed a marketing plan, with core ideas and presentations designed to capture the magnitude of the Army housing problem as well as the potential benefits of P^2s, and delivered these presentations repeatedly up and down the chain of command and to many different congressional offices. Through this rigorous communications effort, they managed to break down parochial boundaries that had effectively locked private management and assistance out of the Army housing function. Professional marketing forums were developed to interest developers in the program, deepen their knowledge of its economics and potential, raise their comfort level with the concept of working with the government, and persuade them to participate. As the program has progressed, Army personnel have received training in community development and financing concepts, creating a skill base that is crucial to the program's continuity.

Only a few influential champions are needed for a P^2 program to flourish. With RCI, once the key Army and Congressional supporters were identified, they carried the message throughout the Army and on Capitol Hill to consistently address issues and concerns. A bi-partisan, non-ideological approach helped to build bridges among numerous constituencies who could easily have blocked RCI at the program and project levels. Thus, regular communication with Congress became essential in resisting the inevitable pressures to revert to old ways of doing business.

The US military is an inventive mixture of central planning and hierarchical organization combined with decentralized operations and local initiative. Some students of management

marvel, and others disbelieve, that change can occur at all within the exceedingly complex national security apparatus. But the military is a crucible of innovation in programs and processes as well as technology, and it has proven remarkably adept at developing and introducing new management concepts and methods. It demonstrates that government officials must have open minds for innovation and that proponents of change must have thoroughly formulated programs, not merely ideas, to capitalize on this open-mindedness.

Flexibility

P^2 programs must be flexible. A one-size-fits-all system is likely to be met with more resistance and is unlikely to succeed compared with a program designed to suit local circumstances and inevitable social, economic, and technological changes. Today's marketplace moves so fast that it eclipses organizations relying on status quo strategies and rewards those that know how to capture trends, change course, and compete effectively.

The RCI P^2 program was initially codified as policy, structured and organized from the center; pilot projects were conceptualized, funded, and staffed with Army-wide resources; and execution for these pilots was driven from and closely monitored by the Army Secretariat through a newly-created special office and customized systems. The center provided the vision and core concepts to drive implementation; the installations and partners enlivened the concepts through the process of negotiation. As the initiative moved from experimental pilots and real-time field testing to a permanent mainstream program, execution increasingly devolved from the center to major commands and local installation management. In fact, the center, contrary to conventional wisdom, became a support staff to local commanders as they and the garrison staffs crafted the RCI plans. The private partners, especially in the first five years, had to be deft in discerning the real (vs. paper) authorities and deciding which battles over project scope and budget to fight and which to ignore or defer. Many of the program's best ideas emerged from the day-to-day process of negotiation and compromise to forge practical applications at each installation.

Recent events in DoD have shown that flexibility is the *sine qua non* of success when unforeseen circumstances override plans. The Army and Navy, operating similar P^2 programs, confronted shortcomings in the same partner. Both Services were able to change course, exit the relationship, find substitutes, and move on, without experiencing serious delays to their overall programs.

Flexibility is also inherent in an incremental approach to overcoming hurdles. Even minor changes to the status quo can meet strong resistance. Piloting, cited earlier, was a pragmatic response to overcoming resistance both within the Army and in Congress. The RCI pilot projects were chosen to test the program's assumptions and features in a variety of situations and at sufficient scale. Feasibility was demonstrated through small successes early in the process; the lessons were incorporated step by step; and the learning became both organic and systematic. As successes mount, fragmentation can be overcome, and a broader coalition of supporters can be built.

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While P^2s harness much hard expertise, their success also depends on soft values of communications and flexibility. Even so, certain preconditions must exist for P^2s to be developed and approved.

PRINCIPLE FOUR: P^2 NEEDS ENABLERS AND INCENTIVES

P^2s require motivated agencies, enabling authorities, dynamic markets with able and willing private enterprises, incentives for all parties to participate, and methods of managing risk.

Government must be *motivated* to consider business partnerships if they offer savings, speed and better service. For public officials and business executives to pursue P^2s, *authorities* must enable agencies to develop programs that interest business. Whichever government function is at stake, open *markets* must foster strong firms that are capable of partnering to meet its needs. Finally, to attract businesses, government must offer *incentives* such as large scale, stable income, and potential profits commensurate with the *risks*.

Motivators

Government must have potent reasons to look to the private sector for solutions. The motivator may begin either with a crisis that has captured public attention (poor housing) or a compelling opportunity to further the organization's mission ("green" buildings). The function or asset must be important enough to draw strong support for change. It must be broadly perceived as "broken" and incapable of being "fixed" through conventional practices. The P^2 initiative must hold out the promise that the problem will be fixed and that it will provide clear, quantifiable benefits in savings, speed, service, and quality over the life of the initiative.

Savings should be greater than the cost of change and calculated on a lifecycle basis for the program or project. In federal budgeting, avoidance of future costs may be as important as cost reductions, and slowing the projected rate of cost increases may be the only predictable outcome.

Speed should capture efficiencies and recover front-end costs. Because government programs must be budgeted up front (see Perspective: *Reforming Federal Budgetary Scoring)* and competition for funds is steep, they can take years to plan and fund before they are executed. P^2s allow needs to be fulfilled sooner because the private partner's ability to raise funds is limited only by its marginal return on investment. It would have taken at least 20 years to bring Army family housing up to acceptable conditions and remedy the on-post housing shortfall under traditional programs, provided sufficient funding had been appropriated (deemed highly unlikely). In RCI, developers are recapitalizing on-post housing in approximately five years, and the program will cover improvements to all inadequate housing on US posts by early 2009.

Service and quality should be demonstrably greater than government can provide. A chief benefit of P^2 is that it allows the private sector to contribute its skills and expertise to functions that are not the core business of government. RCI emphasizes that housing, and the even more complex product of community development, are not core functions; they support the Army's core mission of warfighting. By tapping into the experience, ideas, and best practices of

private developers, the Army receives a better product, produced more rapidly and less expensively than it could do on its own.

In general, an agency's core mission should not be taken over by the private sector; the tests of constitutional responsibility and political legitimacy must be respected. Where functions are "inherently governmental," they should not be outsourced, and private employees should not replace government personnel. However, major shifts in circumstances can change the definition of inherently governmental and create opportunities for inserting P^2 principles, programs, and actions into the system. These can include:

- "Game-changing" shifts in a technology or market that make private involvement desirable or even necessary -- e.g., the rapid engagement of industry in shaping policies and practices for "green" buildings.
- Cost shifts that make providing a service too expensive for government alone, or less expensive if provided by the private sector -- e.g., the flow of private equity and enterprise into infrastructure.
- A "burning platform" -- that is, a clear realization that current practices are not sustainable and must be changed, such as costly cleanups on potentially valuable brownfield sites that cannot be redeveloped without remedial action.

A related shift can occur in the private sector's view of the government's mission and scope. Government agencies and private innovators may partner on endeavors that offer a clear public benefit but also entail more risk than private financing will support. For example, government facilities have long been provided for manufacturing activities deemed essential to the military industrial base, and they are now becoming proving grounds for alternative energy techniques developed by private companies using public funds.

Authorities

One of the most difficult aspects of government for business people to learn when they enter the public arena is the "law" of authorization. Government departments and their executives must be specifically authorized by Congress, or empowered by an authorized official (e.g., a Cabinet Secretary), to act on, and sometimes even to explore, an issue. By contrast, leaders in the private sector consider issues with a wholly different mindset. They are taught and motivated to think first about the problem or opportunity, not the authority. They behave as entrepreneurs, identifying consumer needs, creating solutions, marshaling resources, and entering the marketplace. They operate within the law, of course, but their premise is that a legal route will usually be found for any good idea. In short, most day-to-day commerce is controlled by legislation that states what an entity "may not" do, while government action is limited by laws prescribing what it "may" do.

RCI was "enabled" -- or made possible -- by the MHPI, which specifically authorized DoD to invite private sector assistance, create an income stream through the soldier's Basic Allowance for Housing, and help mitigate military-specific risks for private developers. Without this, Army executives could not have instituted the necessary reforms or invited the real estate industry to participate. However, RCI was challenged at the start in finding ways to attract and select highly qualified developers, few of whom had ever worked with the federal government,

and all of whom expressed concerns about the limitations imposed by the Federal Acquisition Regulations (FAR). A well-established, voluminous body of precedent and practice, the FAR seemed a formidable obstacle to converting from the technical and legal bias of the Request for Proposal to a business and economic model based on performance and qualifications. Without reform, the industry's best firms would not participate. But new FAR authorities for this purpose were improbable. So with considerable drive and ingenuity, the RCI task force adapted the little-used Request for Qualifications process as its main procurement and competitive sourcing vehicle.

Markets

For a P^2 initiative to succeed, there must be an established, competitive marketplace and active customer base where government can identify private firms with the necessary core competencies and skills. If necessary, the asset or function may be transferred to the private sector after the initial partnering. Competition depends on thriving, dynamic markets, and government depends on the competitors' interest. To attract private partners who have the capital and expertise for new P^2 projects and programs, the federal government will need to *create* a market, either by transferring control of assets and a funding stream, as in RCI, or by direct payments and tax credits. For its part, industry must be willing and able to take on a government partner with a defined need and a long-term view.

RCI and PAL exemplify this principle. They were based on the Army's demonstrable market knowledge of the size, structure, capacity, profit economics, and dynamics of the housing and lodging industries, combined with specific methods for applying the capabilities of market leaders in those industries to the unique challenges of financing, developing, and operating on military bases.

Incentives

Business responds to incentives and new market opportunities. If government is considering a P^2 program, it must recognize and respect the private partners' requirement for profitability and ensure that it offers attractive, risk-adjusted returns. The P^2 opportunity must possess or allow for a dedicated revenue stream sufficient to cover operating expenses, provide for debt service and replacement of capital, and generate a return for investors. The BAH appropriated by Congress made RCI possible by establishing a predictable income stream (the same is true of the per diem travel allowance for PAL). Part of the MHPI legislation's genius was its recognition that this cash flow could be capitalized by the financial markets both for building and renovating military communities and for creating capital replacement accounts. Another breakthrough was reached when three prominent rating agencies agreed that the BAH was sufficiently predictable to warrant a high bond rating for RCI, thus allowing lower-cost, long-term bond financing for military housing projects.

P^2 projects must also offer appropriate scale to attract and sustain private participants. For example, RCI attracted developers in part because it offered the opportunity to rebuild or renovate 2,000 to 6,000 houses per post versus the few hundred customarily involved in military developments. Diseconomies and potentially detrimental impacts of scale must be addressed in P^2 structures and costs.

The income stream and scale must add up to profitability. The asset must be able to generate "market-rate" returns on investment, and the function or service must be able to generate sufficient operating margins and net profits. Moreover, the profitability must be visible, accessible, and commensurate with the risks. In RCI, the principle of market-rate returns, broadly communicated through industry forums and media, was a potent draw for market leaders who otherwise would not have considered the program.

Risks

Finally, risks must be managed and balanced to encourage private sector participation. Government is predisposed to avoid risk. This concern permeates the oversight and budget scoring processes, and consumes considerable time and attention both in Congress and in the agencies.

In contrast, business views risk as a reality to be clearly identified, reduced and hedged where possible, and managed through both structure and processes. To participate in P^2s, business must have assurance that government will put the health of the partnership above its reluctance to assume risk.

Government and business partners must decide together how to balance and manage the risks inherent in a project. Agreement on how risks are distributed is essential to a partnership: some risks will be shared; others will be the responsibility of one partner alone. However, it is to the benefit not only of the partnership, but also of the ultimate beneficiaries to include triggers for renegotiation when changing conditions threaten the financial health or operational capabilities of the risk-bearing partner. For the government to be successful in its goals, the partner must also be successful. No one gains from a failed project. Ensuring partner success also allows the government to attract the best-in-class partners required for a P^2 to flourish.

In RCI partnerships, *market risk* (occupancy, cost of inputs, credit) is borne by the private partner. The partner is responsible for building and operating housing that is appealing enough to produce high occupancy rates, as families are not required to live on post. If occupancy rates are reduced by major deployments, the Army allows the private partner to fill the housing with alternative residents (such as military retirees) to maintain the necessary income stream.

The business partner also bears the *financial risks* of rising interest rates and construction costs, weather delays, and the myriad other foreseeable and unforeseen cost increases that confront investors and developers in all large, complex projects. The CDMP allows for renegotiating scope when negative conditions threaten the partner's ability to survive. And the partner bears some risk that BAH will be lowered, or that soldiers will not pay their rent. While the government does not guarantee these payments, participants look to the history of BAH appropriations for assurance that the payments will keep pace with costs. As for rent payments, MHPI allows the Army to pay BAH to the developers directly (but it has not done so because this "obligation" would trigger a scoring requirement; see Perspectives: *Reforming Federal Budgetary Scoring*). The MHPI authorities also offer some protection against losses from base closures and extended redeployments; however, the better designed and built the communities are, the easier the homes can be sold or rented by civilians. Therefore, the developer has some control over the amount of risk created by the potential for base closure.

The developer also bears the *environmental risk.* However, when environmental problems are caused by the government (e.g., groundwater, mold), as often happens on military bases, then remediation is the government's responsibility.

The government's major risk is that the chosen partner will not perform satisfactorily. In RCI, this risk is managed through a carefully designed partner selection process, extensive reporting requirements, and contract provisions for severing the relationship in the case of default. The partnership structure itself minimizes *performance risk*, as it allows the partners to quickly and easily communicate and solve problems -- in fact, the speed and ease of decision-making is one of the partnership structure's chief benefits. As an example of both these aspects, the Army and Navy were able to promptly remove a partner because it failed to meet clear performance requirements -- the partnership structure permitted a negotiated solution. If the housing had been conveyed under a lease agreement, the contract provisions would likely have slowed the process.

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RCI exemplifies the enablers and incentives necessary for P^2: legal authorities, a problem beyond government's capabilities, an efficient housing industry, and the incentives of scale, profitability, and risk management that combine to create an attractive program for business. RCI and other P^2 programs show the results in partnerships that transform costly, complex, inadequately performed functions to efficiently managed services and valuable assets with reduced burdens for the taxpayer.

PRINCIPLE FIVE: P^2 BUILDS AND SUSTAINS TRUST

P^2s establish and sustain trust through shared goals, incentives, and safeguards; transparent working relationships; and life-of-partnership agreements.

A partnership must be a winning proposition for all the participants, or it will not last. As such, it must be built in a spirit of trust and openness and supported with structures that provide equitability, transparency, oversight, and flexibility in the face of change. The process of building trust begins with the original procurement and extends through the arrangements for terminating the partnership. Through trust, the best ideas and capabilities of all participants surface and are applied for the public benefit.

Public sector managers are attuned to protecting the public trust. Private sector managers are skilled at creating and sustaining value. When the two team up as partners in developing and managing government property, there is natural tension. As the Army learned when designing RCI, some leading business executives consider the government an "unreliable client." They say privately that the government creates unnecessary bureaucratic formalities, does not understand or respect the profit motive, and even pays its bills slowly. Government employees, on the other hand, are understandably wary of business and financial concepts with which they are unfamiliar, fearing that private partners will disadvantage the government. Yet stewardship and profitability are complementary. From the procurement process through the partnership structure, a well-planned and designed project, built to last if it is a core asset and to

recycle if it is temporary, and a fully transparent relationship, create a virtuous circle of trust bolstered by the enthusiasm that results when both partners' objectives are met.

Procurement

It may seem counterintuitive, but the best place to start building trust is during the procurement process. The approach that government uses to solicit and select private partners speaks volumes about its attitude toward private sector expertise and capabilities as well as its enthusiasm for collaborative working arrangements. RCI helped build trust among development partners through the open-ended RFQ solicitation and CDMP negotiation process.

Problems in RFPs

As described earlier in *Army RCI: A P² For Military Housing*, agencies normally issue RFPs that detail both what to provide or produce and how to do so. The typical RFP for a large-scale project runs hundreds of pages. It specifies the required end product in detail. RFPs allow the agency to retain a high level of control over the project, but they have four main disadvantages: 1) they take months or years of agency effort to produce; 2) they impose substantial costs on the prospective partner with no assurance of success; 3) they discourage respondents from challenging the government's specifications and bringing creativity or expertise to the problem; and 4) they deter prospective partners who have capabilities and resources to solve public problems but are not skilled at responding to RFPs.

As such, RFPs foster contracts, not partnerships. In a contract, the chosen business may not feel incentivized to bring its best ideas to the table, and depending on the contracting officer, the relationship may feel adversarial from the start. In addition, the selection team using an RFP may be bound to choose the lowest bid rather than the "best value" -- a complex measure that includes long-term returns on upfront investments in product quality and "soft" outcomes such as customer satisfaction. Not only can "low-ball" selections compromise quality, they can also lead to higher total costs, as contractors make up inadequate revenue by requesting expensive change orders throughout the project.

Solutions in RFQs

In contrast, more open-ended, value-oriented procurement methods can instill the spirit of trust and partnership from the beginning, as well as ensure that agencies choose partners who understand, respect, and can fulfill government goals. RCI adapted the RFQ with considerable success. The RFQ asks prospective partners to document their experience in large-scale community development, their track record of performance in such projects, their ability to finance the project, and their broad vision for the on-post community. In contrast to the RFP, the RFQ document is relatively brief (30-100 pages) and straightforward. By asking for their vision rather than telling developers what they should build, an atmosphere of respect and trust is created from the beginning. The financial deal can be worked out during master planning, leading to shared responsibility and more predictable costs for the government.

In the RFQ process, a promising partner is selected; in conjunction with the Army post, that partner is then called upon to bring its ideas and expertise to bear in comprehensive planning, financing, and execution of all aspects of the final RCI community -- from land use to neighborhood layouts to community amenities to housing design. Not until the CDMP is

approved does the partner take possession of the existing housing, receive the BAH income stream, and begin construction. The CDMP negotiating process and its use in the marketing campaign were critical to RCI's success. A major departure from conventional practice, it conveyed a strong signal that the Army was ready, willing, and able to reform its approach to partnering. And this, in turn, attracted and in some ways transformed the outstanding private sector partners who were selected.

Structure

In a partnership -- whether an LLC or some other legal form -- terms must carefully define how the business relationship will work, what contribution will be required from both parties, how performance will be measured and monitored, and how the partnership will be sustained over the long term. Taken together, these define how trust will be built and maintained.

Contribution

The partners must agree how private capital should leverage public investment in both the short and long term. When a problem needs to be fixed quickly, more private capital may be required due to budgeting and appropriations constraints or capital market limits on credit. To meet such contingencies, the risk / reward allocation cited earlier needs to be sensitively constructed. If the private partner must shoulder the entire burden of a quick additional capital infusion, the public partner must be willing to adjust its risk / reward allocation. When a partnership is intended mainly to ensure long-term sustainment and recapitalization for a function, leverage is less critical and the allocation formula should reflect this.

Monitoring

Monitoring partners' performance takes on new meaning when transparency drives the relationship. Openness without information in a business relationship will not produce results. To enable effective monitoring, the partnership terms must specify the measures, timing, and procedures for performance monitoring; the remedies that will be available to each of the partners in the event that key benchmarks are not achieved; and the approach to resolving disputes. Performance measurement techniques and approaches are built into RCI, EUL, PAL, and other P^2 programs. The deeper challenge is to adjust incentive systems to reflect both capital and operating performance measures.

Longevity

The partnership must be designed to ensure that the relationship can endure for the length of the project -- or that an exit will be gracefully managed -- both to protect the long-term quality and viability of the asset or function and to establish the process for change in response to economic, social, and technological trends. Provisions in the agreements that build in longevity include timetables, performance-based payment provisions and incentives, and options for replacing partners if agreed-upon benchmarks are not met. The typical RCI agreement is 50 years -- a long time to assume the original partners will remain in place. The developers are charged with active asset management during the life of the partnership and for monitoring the quality of the housing portfolio (from both a financial and service-delivery perspective). Property managers are accountable for most day-to-day operations and are more

likely to change during the partnership's life. However, the recognition that companies are bought and sold, management responsibilities change, and unforeseen conditions occur requires that smart, solid commercial terms be incorporated into all agreements.

That said, when a government agency maintains control of the land (as in RCI and related projects), it must provide for exit strategies when the lease terms end -- often far in the future. Enhancement of public property can be achieved by the P^2 itself, as in EUL projects where developers and users produce value on fallow land. But DoD is currently dealing with fallout from expiring projects whose exit plans are no longer feasible. Some agreements require returning the land to "pristine condition" -- which may have seemed sound 20 or 30 years ago, but cannot be accomplished today at a reasonable cost. Both parties in the partnership must be willing to periodically review exit strategies and redefine them as appropriate to fit market and economic conditions.

Transparency

Transparency is the basis of trust. It is also the best form of regulation. The controls that Congress and the Office of Management and Budget (OMB) have placed on partnerships stem partly from distrust of the private sector and fear of "fraud, waste, and abuse" that periodically arises in government contracts. But wise managers have long known that the best way to prevent abuse is full transparency. The more complex the organization and system and the more compartmentalized its operations, the more likely it is for fraudulent operators to succeed. President Reagan's exhortation about nuclear weapons, "Trust, but verify," applies to government-business relationships as well. Investigating fraud after it has been discovered is expensive and ineffective. But opening the books to the partners, with appropriate protections for proprietary business data, enforces peer standards and provides early warnings of miscreants so they can be rooted out before they act.

Many states allow "closed" LLC structures which cloud or entirely hide the true ownership and activities of the company. In real estate, this is especially problematic because the underlying ownership is a key factor in due diligence and evaluation of prospective deals. Within these protective shells, frequent transactions and "asset flipping," hidden from public and market view, have helped drive the recent housing price spikes and consequent meltdown.

By contrast, under RCI and other P^2s, the LLC is a transparent, "open-book" structure where the ownership, officers, and major activities are reported and both partners have access (protected by mutual confidentiality provisions) to the relevant data about each other's commitments and operations. However, clarity and depth still depend on the quality of the partnership relationship, mutually agreed metrics, other key intelligence, and, for many complex issues, expert advice. Where public data is not as accurate or available as the private partner would like, the partners must communicate closely and frequently to avoid erosion of trust and damage to the relationship. Transparency begins with the negotiation of partnership agreements and continues through regular contact (in both face-to-face meetings and formal reporting) to ensure all parties work effectively together in achieving the partnership's mission.

Stewardship

When a P^2 is launched, the government agency cedes at least some control of that function to the private partner. Nevertheless, the public may continue to view the function as a

government responsibility and be concerned about its long-term health or operation. For example, in a public-private toll road project, what recourse will the government have if the partner stops maintaining the road? Can the partner raise tolls indiscriminately? When a soldier leases a house that is renovated or built by a private developer on public land, can the partner differentiate the rents as it would in the private market?

Because government agencies answer to legislators and taxpayers, they devise oversight structures that protect public resources and "the public interest." The challenge is to provide the kind and amount of oversight that keeps a program within the bounds of legislation and stewardship without reverting to the contracting and control model in effect before P^2. Additionally, the structure must incorporate market-based commercial terms and features to be competitive in the private financing community.

Stewardship is a more effective principle for P^2s than oversight. It is based on long-term commitments to the vision, shared values, and attention to program execution. In RCI, for example, ensuring that the program objectives are achieved and sustained does not end with the transaction closing. At that point, policy and program oversight must be executed for the project within the entire RCI portfolio. JLL, in its role as the Army's real estate consultant, developed a Portfolio Asset Management (PAM) program to provide long-term oversight of RCI. This program is tailored specifically to the nuances of the public-private relationship, recognizing that while the private sector's ultimate success measurements are return on investment and risk mitigation, the goals of a P^2 program are more subjective, including improved quality of life for military families. Such tools to monitor and measure performance are similar in both the public and private sectors. RCI has adapted and created performance metrics and standards as well as measurement and evaluation techniques to ensure the Army has accurate and relevant information to use in major portfolio decisions. Programs like PAM are one of the most important aspects of an effective P^2.

RCI also utilized an Integrated Process Team (IPT) that coordinated policy and decision-making during the early years of the initiative. The IPT provided a structure through which to identify, sequence, and resolve issues on a timely basis. Like a "board of directors," it solved basic program issues but did not micromanage developer selection or contracts. An "issue analysis" methodology ensured complete, consistent staff work on the full range of policy, program, and budget decisions RCI faced. Its nine members, including five four-star officials, were drawn from functions and departments across the Army; their buy-in was necessary to move RCI forward. The success of the IPT depended on two ground rules: the members were required to attend meetings (they could not send surrogates) and their decisions were final (not subject to additional oversight). Combining a long-term view, a belief in the public trust, and superb staff work, the IPT's ongoing stewardship supported RCI during its development and launch.

To be successful, members of such a team must understand its limits and their own roles. To some government officials, the term "board of directors" has little meaning, so training for members may be necessary. Government needs more capable managers who can perform effective stewardship roles. More than government contract officers, these are true relationship managers who understand business principles and techniques and can negotiate as equals with their business counterparts.

A senior career government official with deep experience in P^2 programs puts it this way: "In the pure privatization model, profit is the incentive. So the first rule of privatization is that profit is not only acceptable but fundamental. I think we hid from this in the early days, and Congress also resisted it. None of our privatization is pure, so we include both incentives and controls to protect the public interest. In the context of housing LLCs and leases, we build in incentive fees for construction, property management, and customer satisfaction. And we exercise control by defining major decisions which require our agreement even though we are limited partners. I think this works well although it raises the scoring question. As the government partner, we are protecting the public interest, but if we do it primarily through controls, versus incentives, we risk being considered overly governmental. But we also take advantage of public sentiment. In 2008, companies enjoy being in the business of helping Service families, in a way that would not have been true in 1998. They do proactive projects, like memorial walks and gardens, and use them in their PR. Privatization opportunities can often capitalize on such circumstances."

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These principles reflect the premise that in our system of democratic capitalism, business has a central role in society, not just in the economy; that people, as consumers, are the province of business, much as they are constituents of government; and that profit is an essential but not the sole measure of business performance. The progress of P^2 during the last decade clearly suggests the promise of a more vigorous, comprehensive federal policy that extends the roles of the private sector into areas of public need while strengthening the effectiveness of public agencies through many and varied mechanisms to harness the private sector's ingenuity and resources. Taken together, these principles form the blueprint for a P^2 philosophy that can help business partner with government to fulfill public needs while protecting the public interest.

PROPOSALS

The foregoing principles are about reforms in the ways government works. The following proposals are about initiatives to achieve these reforms.

The Forum was convened for a non-partisan dialogue on how P^2s could help policymakers address issues of national importance and concern. Participants avoided specific partisan positions and agreed to present this report to both Presidential candidates and their advisors while their policies are being formulated.

In Presidential elections, there is a tradition of pronouncements on numerous policy issues, some with immediate impact but most with longer-term consequences. In the 2008 election, myriad issues concern the electorate, dominate the airwaves, and vie for candidates' creativity in forging fresh proposals. Several issues are "first-tier" -- jobs, energy, healthcare, war -- because they are on nearly everyone's mind. "Second-tier" issues -- infrastructure, education, globalization, social security -- may have less daily visibility but arguably are no less important to the nation. We believe P^2 can contribute on this second tier, and should receive due attention in the new Administration.

This Forum concentrated on initiatives that would have impact on national priorities through the P^2 principles defined above. The participants, all experts in their respective domains, involved in P^2s, and familiar with the relevant research, relied mainly on their experience and judgment in framing the following proposals. Three of these proposals could be implemented immediately through executive orders; two could be launched in the first two years of the Presidential term. All five would have lasting consequence for improving the federal government's effectiveness and efficiency in meeting the demands of the 21st century. They do not supersede existing public-private partnership mechanisms; rather, they provide structure for expanding P^2 policies with an Administration mandate.

ENDORSE THE P^2 PHILOSOPHY

Endorse public-private partnerships as part of the Administration's philosophy for reform, by promoting wider reliance on business partners and proven approaches to producing economic value and solving public problems.

The focus and pronouncements of the Executive Office of the President can infuse agencies with the sense of purpose and urgency that are required for bold action. During President Clinton's first term, the Marsh Panel addressed the poor state of military housing, and its deliberations, supported by expert staff work in DoD, helped in promoting passage of the MHPI authorities. In Clinton's second term, Administration leadership created RCI. President Bush's "Management Agenda" repeatedly stressed the importance of further improvements to military housing, and RCI was consequently strengthened and accelerated.

The size, scope, and complexity of 21st century problems dwarf the capabilities of institutions and programs invented in the 20th. In recent years, a broad, bi-partisan consensus has emerged that deep reforms are required in the structures and processes of government.

Signs of transformation are sporadic but significant: national action to restructure entitlement systems, especially healthcare and social security; sweeping changes in the regulations and roles of financial institutions; calls for a long-term federal capital budget and a new National Security Act; acknowledgment by the Secretary of Defense that DoD might relinquish a portion of its sizable budget to other agencies; and rapidly increasing interest in partnerships. P^2s can be a lever for these reforms.

Accordingly, the next President's endorsement of P^2 in fulfilling a range of needs, both in the military and in the broader public arena, can have similar effect. Through words and deeds, the new Administration should actively encourage collaboration with the private sector. The Administration should signal support of government-wide, interagency initiatives to extend and apply the principles and practices of P^2 -- beginning with six major functions: housing, buildings, infrastructure, transportation, education / training, and healthcare (see *P^2 Candidates - Preliminary List)*. The Commission and Office proposed below should examine these, and look across the spectrum of all government functions where the private sector already has competitive market structures and capabilities. Sustaining P^2 over time will require an approach that is rooted in a core philosophy of business's role in government, and is non-partisan and pragmatic.

APPOINT A P^2 COMMISSION

Appoint a commission on public-private partnerships to raise awareness of P^2, identify and prioritize high-value opportunities, define the rationale for action, and galvanize support.

For reasons cited above, partnerships must be positioned on a broader, government-wide platform to achieve the potential benefits shown in RCI and other P^2 programs. Presidential commissions are a proven vehicle for raising the awareness of policymakers and the public about an issue or new policy direction, assembling a fact base, establishing a rationale for action, and galvanizing opinion leaders around the new direction. In the past century, eleven such bodies have been appointed for periods of several months to years. Five commissions are notable for their purpose, scope, and sponsorship, with issues ranging from sweeping changes in the executive branch under Roosevelt, to detailed administrative reforms under Truman and Eisenhower, to an investigation of "waste and inefficiency" under Reagan, to "reinventing government" (also known as the National Performance Review) under Clinton, to caring for wounded soldiers under Bush. In all these cases, business leaders were engaged and business methods were recommended. However, only one commission specifically focused on public-private partnerships as a core concept. The National Performance Review stated this goal: "We will use federal powers to structure private markets in ways that solve problems and meet citizens' needs -- such as for job training or safe workplaces -- without funding more and bigger public bureaucracies."

Wars have often brought out the worst in business practices as well as the best, and this has been no less true in Iraq. The focus on waste and fraud, while vital, overlooks the wide array of facilities and services provided efficiently by businesses in theater that both commanders and soldiers value highly, as well as the many innovations that the private sector routinely develops to meet special needs in every war. The widely reported excesses in the past four years are not due to the private sector's performing support functions it should not

perform; they result from weak oversight, shoddy procurement practices, poor or non-existent internal controls, non-transparent dealings, and other shortcomings. As we posit above, the P^2 model -- a tool for economic growth and problem-solving, not an end in itself -- reflects the reverse of these negatives: integrity and trust-building; strong, well-informed oversight; open-book relationships; robust, performance-based metrics; and the other hallmarks of best business practices. Still, a P^2 Commission would of necessity address not only opportunities to apply P^2 solutions, but also the changing roles of the public and private sectors in government, the methods to prevent abuses, and the sanctions for those responsible for fraud and waste. Skilled direction will be required to satisfy the need to evaluate the past as well as produce forward-looking proposals.

A P^2 Commission in the next Administration would have five objectives:

1. Refine the P^2 principles.
2. Research current P^2 projects for their business models, lessons, and key success factors.
3. Identify the major opportunities for P^2 -- based on an analysis of needs, options and feasibility -- across the full range of federal functions; for each opportunity, establish clear objectives and guidelines to produce value while protecting the public interest.
4. Develop legislative proposals as required to facilitate program objectives.
5. Recommend specific opportunities and courses of action to execute the new authorities.

The Commission would be tasked to report its progress within three months of inception, and to issue its final recommendations within one year.

ESTABLISH A P^2 OFFICE

Establish an office of public-private partnerships to convert the commission's findings into agency actions, foster interagency alliances, and encourage P^2 program implementation through communications and public relations campaigns.

Periodically, issues are important enough to warrant Presidential attention and influence, but they do not fit within the Cabinet and agency structure. One effective route is to establish a lean, high-level office that operates with the President's personal imprimatur. In conjunction with OMB and the Federal Real Property Council, a new Office of Public-Private Partnerships would make the case for the public-private nexus as an engine of social and institutional change as well as economic progress.

The next President will inherit vast administrative machinery for developing policy and driving execution. The Executive Branch, with its 15 Cabinet-level departments and 65 independent agencies, covers the full range of federal functions with more than 4 million civilian and military employees and thousands of contractors. As each Administration finds anew,

quickly and efficiently establishing influence and wresting control in this maze is extremely challenging. One built-in organization, the OMB -- with its analytical focus and large professional staff -- is uniquely well-equipped to help, but it can display the same inflexibility that bedevils all bureaucracies over time and can impede the executives' ability to achieve desired change.

An Office of Public-Private Partnerships would operate with the agility of business on an interagency basis for the life of the Administration. It would seek areas of national need that are suitable for the types of cross-functional solutions and cultural transformation that business firms, supported by the capital markets, are especially qualified to provide. And, using the President's "bully pulpit," it would emphasize the prospective roles of business in partnering with government to meet public needs. The Office's functions would be to:

1. Embrace extension of the Commission's findings as they emerge and offer guidance to achieve cross-agency acceptance, programming, and roll-outs.

2. Identify "centers of entrepreneurial skill" within all federal agencies that could identify new P^2 ideas, analyze them quickly, and implement them selectively through existing agencies and programs.

3. Broker alliances between federal organizations and businesses to pursue issues, set up pilots, and define scalable opportunities.

4. Promote the P^2 concept through public relations and media campaigns.

INSTITUTIONALIZE EXISTING P^2 PROJECTS

Institutionalize existing P^2 programs in DoD, VA, GSA, and other agencies by removing regulatory and procedural hurdles and ensuring adequate funding for the government's contribution.

Throughout the DoD and Military Services, the VA, and the GSA, demonstration and pilot projects are underway to bring P^2 principles to bear on many assets and functions that contribute to Service members' quality of life, to recapitalize aging facilities and infrastructure, and to produce value from non-essential or underutilized government property. P^2 initiatives, with their "viral," self-generating characteristics, can overcome the rigidities of embedded programs that are difficult to change. RCI was designed to be self-generating -- that is, seeded by overall program objectives and incentives; structured to operate in local, site-specific, collaborative partnerships; but flexible for each military-business development team to adapt as new findings and unforeseen conditions arise.

Master planning and coordination will be essential in providing services and facilities through government agencies and private businesses. Where BRAC is being implemented and where military bases are the mainstay of the local economy, federal, state, and local governments -- as well as regional authorities -- must come together with private partners to ensure a sensible and sustainable long-term plan for the area, with access to long-term capital and relevant skills. Stovepipes in decision-making could block such coordination; prompt action on structure, processes and statues may be required to eliminate them.

Several programs merit full program status and funding to extend their benefits beyond the pilot stage. They include:

Army Lodging. The PAL program is on track to revitalize the Army's on-post temporary lodging throughout the US through a P^2 initiative. This program should be extended and funded to cover the full lodging inventory to completion.

Army Barracks. The current P^2 pilot projects to build new barracks for senior non-commissioned officers should be extended to provide new or upgraded housing for all single soldiers. (See Perspective: *The Potential in Barracks.*)

Military Retail. In Fort Belvoir's breakthrough RCI retail project, the partner joined with AAFES to integrate brand shopping with family housing, while preserving the soldiers' Morale, Welfare, and Recreation benefit stream. This and similar models should be replicated throughout the military installation system.

VA / DoD Military Healthcare. DoD's Tri-Care program, which partners with hospitals and providers nationwide, should be mirrored in the VA; and the VA should complement this strategy by consolidating its hospital-clinic system into a smaller number of larger centers, with outreach through existing provider networks, to improve its efficiency and effectiveness.

"Whole Base P^2." Whole base P^2s, conceptualized but not yet widely executed, should be fully explored. In these, the military would partner with "master" installation developer-managers, similar in scope and skills to the RCI partners, which would develop and manage entire installations. They in turn would "sub-partner" individual elements such as retail, healthcare, storage, and energy to industry leaders in those specialties.

EXTEND P^2 MODEL TO OTHER GOVERNMENT FUNCTIONS

Extend the Forum's P^2 model to other major federal functions -- e.g., housing, buildings, infrastructure, transportation, education / training, and healthcare; and explore other potentially high-value areas.

The following chart, *P^2 Candidates -- Preliminary List,* displays the Forum's proposed set of additional functions and property types that could benefit from a specific P^2 strategy, and the categories of benefits it could produce. The functions and uses include *housing* (non-military, government-supported), *buildings* (office, warehouse, industrial, laboratories), *infrastructure* (electricity, water, wastewater, natural gas, telecommunications), *transportation* (roads, bridges / tunnels, rail, air, waterways), *education / training* (child care, technical / vocational training, college-level / post-graduate), and *healthcare* (hospitals / clinics, programs / services, research facilities). The benefits categories include reductions in backlogs for maintenance and renovation, cost and time savings, increased asset development or redevelopment value, and reutilization of public lands and buildings. At this stage, the chart provides a framework for future analysis of promising opportunities by the proposed P^2 Office.

P^2 CANDIDATES -- PRELIMINARY LIST
Future Analysis May Suggest Opportunities for P^2

					$ Asset Value		$ Services Costs		$ Value Improvements			
Government Functions / Property Types	Military	Civic	Condition (Scale)	$ Capital Investment Required	Land	Structures	Opns.	Maint.	$ Backlog	$ Savings	$ Devel	$ Reuse
HOUSING												
Family	x	?										
Single – Senior	x	?										
Single – Junior	x	?										
BUILDINGS												
Office	x	x										
Warehouse	x	x										
Industrial	x	x										
Laboratory	x	x										
INFRASTRUCTURE												
Electricity	x	?										
Water	x	?										
Wastewater	x	?										
Natural Gas	x	?										
Telecommunications	x	?										
TRANSPORTATION												
Roads	?	x										
Bridges/Tunnels	?	x										
Rail	?	x										
Air	?	x										
Waterways	?	x										
EDUCATION/TRAINING												
Child care	x	x										
Technical/Vocational training	x	x										
College-level/Post graduate	x	x										
HEALTHCARE												
Research	x	x										
Hospitals/Clinics	x	x										
Programs/Services	x	x										

The federal government's property portfolio is over $1.5 trillion in replacement value. With such vast scale and scope, it is imperative that the government combine effective oversight of many owners and occupants with creativity in managing the assets. The corporate analogue is a senior real estate executive office with global portfolio responsibility, performance-based metrics, an integral role in corporate strategy, and incentives to continually improve asset utilization. By extending partnership programs, enlarging the P^2 toolkit, and strengthening the GSA's role in implementation, the federal government should be able to emulate these best business practices. The Commission and Office proposed above would help to create a government-wide mandate and platform for P^2. Individual P^2 agencies would be challenged to employ P^2s wherever possible within their missions.

As an indicator of the potential benefits from a proactive P^2 strategy, the Forum's Army barracks analysis (see Perspective: *The Potential in Barracks*) showed, in that function alone, upwards of $5 billion in potential lifecycle net present value advantage to the federal government compared with the conventional approach. Through P^2s, the avoidance of government costs for construction and operations that eventually reach many billions more would be a powerful advantage when applied to the full range of candidate functions. One of the new Administration's first priorities should be to apply similar reasoning and analysis to selected categories of federal property, such as those listed above, and to size the opportunities

for a stream of benefits to the various stakeholders and value improvements to the assets. The Forum's preliminary observation is that the additional opportunities could run to hundreds of billions of dollars -- a finding that is compatible with asset re-structuring and operations improvements in global corporations with complex portfolios where focused strategies have yielded compelling results.

Despite the magnitude of possible savings and improvements, the stewards of federal property and policymakers for the many public services represented in these functions are understandably concerned about the potential for abuse and excess when private interests pursue public purposes. Yet the proven successes of RCI and other P^2 programs to date are too promising to ignore. Based on its review and the principles discussed earlier, the Forum believes that rigorous evaluation and selection of programs and projects should yield important opportunities to improve government services while reducing costs. The P^2 candidate functions will have to be carefully assessed on their risks and rewards for all parties. And lessons from both successes and failures should be incorporated in the ongoing program design.

* * * *

CONCLUDING NOTE

P^2 is a tool for harnessing and directing the creative capabilities of business to achieve public goals. RCI and similar P^2 programs prove that government and business can partner to achieve results that neither can achieve alone.

But success is not automatic. To lessen risk and sustain viability, government has a crucial role to play in every phase of a P^2 program -- providing leadership from initial program conceptualization and implementation, through ongoing oversight and monitoring, to final program dissolution. At each stage, government must engage proactively to ensure that the public interest is served. Competition, accountability, and transparency are key words in defining the government's concerns, but it must also be a proactive, contributing partner in the strategy and problem-solving.

The business partner has an equally important role as a capable and reliable partner in a joint public-private enterprise, contributing its expertise in understanding customer needs, skills in product design, and systems for large-scale program and project management. Its entrepreneurship and capital prowess complement government resources to improve efficiency and effectiveness while fulfilling community objectives.

P^2 often invites, but generally defies, "conservative" and "liberal" characterizations. RCI and its enabling legislation were launched during the Clinton Administration and accelerated during the Bush Administration. Ultimately, RCI became a bi-partisan program and enjoys broad support today.

The Forum's philosophy of P^2s as partnerships hinges more on the nature of the relationship than its legal or organizational form. Much as we now respect "partners" without formal contracts in many areas of our business and personal lives, so we should respect all forms of partnership between business and government, including strategic alliances, joint ventures, and others. This directly contrasts with "contracting-out" or "outsourcing" or "divesting" government responsibilities and functions, any of which may be effective but are not long-term strategies where the joint capabilities of business and government are essential.

P^2 is a model for selected government functions. It will not apply universally, but it has the characteristics of a movement, reflecting discontent with current government solutions to public problems and recognizing that private enterprise has substantial capabilities to help government carry out its inherent responsibilities and leverage its resources for public benefit. P^2 models demonstrate new forms of governance that, while rooted in our legal and economic systems, profoundly alter the boundaries between government and business.

The principles and proposals in this report are inherently controversial. We present them to help frame debate and shape public policy as well as promote new thinking about business initiatives. We recognize that policy, like politics, is the art of the possible, but we have seen views of what is possible change. Specifics aside, we should welcome a new, robust concept of the government-business relationship. The promise of public-private partnership is the promise of democratic capitalism itself -- the fusion of public purpose and private enterprise, sharing resources of money, talent, and property for community benefit, and rewarding those who put in the effort and take the risks.

PERSPECTIVE: REFORMING FEDERAL BUDGETARY SCORING

Through the federal budget system, the President proposes and Congress approves how much money to spend, what to spend it on, and how to raise it. Congress has enacted several laws, including the Budget Enforcement Act of 1990, to make sure government agencies do not spend or obligate more than Congress has appropriated, as required by the Constitution. The Antideficiency Act prohibits agencies from spending or obligating the government to spend before Congress appropriates the funding, unless specific authority to do so has been provided in law. These and other laws, including the Congressional Budget Act of 1974 and the Gramm-Rudman-Hollings Balanced Budget Act, have led to the process of budget scorekeeping, commonly known as "scoring."

Scoring allows the federal government to measure the budget effects of its actions. Scoring guidelines are used by the House and Senate budget committees, the Congressional Budget Office, and the Office of Management and Budget (the "scorekeepers") to ensure that the government measures the effects of all federal spending and revenues consistently.

Scoring guidelines for capital asset acquisitions (delineated in OMB Circular A-11) require agencies to account for the value of long-term projects or obligations in the year they are committed. When the government builds or purchases a capital asset, such as a building or land, the total cost of the asset is scored in the first year. Under current scoring interpretations, when an agency enters into a lease-purchase or capital lease contract, its budget authority is scored in the first year of the obligation ("upfront") in the amount of the net present value of the government's total estimated obligations over the life of the contract. This requires the government agency undertaking the project to secure an appropriation for the entire scored amount in year one of a project that may have a 50-year project life. This rule is also applied to long-term partnership obligations. If the transaction is structured as an "operating lease," however, the scored amount is one single year's lease payment, plus lease cancellation costs.

One effect of the scorekeepers' interpretation is that the large budgetary requirements effectively preclude agencies from entering into long-term obligations. An agency entering into a capital lease or lease-purchase contract must have budget authority available for an amount that often equals or exceeds the cost to purchase the asset outright. As a result, the current scoring interpretation often creates unintended effects and additional costs for taxpayers. For example, a short-term lease may appear "cheaper" as part of an agency's annual budget, but the terms, conditions, and rent amounts on short-term leases are generally less favorable than longer leases or outright purchases. When scoring leads an agency to choose the former, higher costs result over time.

Three examples illustrate this problem. The National Oceanographic and Atmospheric Administration limited the term of its lease for a new building to 15 years to avoid the OMB's scoring requirement of forward funding $14 million in lease payments, even though the owner had offered favorable set rates for two five-year extensions. Leasing a building for the Patent and Trademark Office was estimated to cost $48 million more than construction and $38 million more than lease-purchase. Leasing the Department of Transportation's headquarters building was estimated to cost $190 million more than construction. In addition to higher costs, the scoring rules can encourage agencies to occupy lower-quality space -- a common complaint by

both government employees and the taxpayers who visit them -- potentially hindering accomplishment of their missions.

Just as important, current scoring practices can impede government from enjoying the benefits of partnership with the private sector. Scoring applies even when the private sector provides the financing, if the government can be seen as responsible for payments used to cover private debt. Thus, while privatization and public-private partnerships provide a sound way of doing business, and have proven to be successful for many state, local, and foreign governments, scoring as practiced today in the federal government effectively halts P^2 transactions.

In fact, scoring changes have clouded the future of RCI and its P^2 successors. In 1997, after the MHPI was enacted, then-OMB Director Franklin Raines issued guidelines that allowed DoD to convey property to private developers in exchange for housing or investment in a limited liability corporation (LLC) with no scoring impact. These guidelines effectively allowed RCI to go forward, as they enabled the private partners in RCI LLC "partnerships" to borrow without the long-term project being scored. In 2005, however, OMB changed its position. Although there was no change in the law, Director Joshua Bolten issued a memo stipulating that after 2010, if the LLCs provided for under MHPI were to borrow any more funds, these obligations would be scored by "traditional methods." This has been interpreted to mean an amount equal to the total borrowing. When the Privatization of Army Lodging (PAL) program was designed to build on RCI's success, the Army would have preferred to use the RCI-type LLC structure but OMB would not allow this. PAL avoids scoring because there is no government investment, and government is not a member of the ownership entity. However, neither the government nor the taxpayer enjoys the benefits that would have been conferred by the "partnership" structure.

While private financiers and investors are ready to actively participate in repairing and rebuilding the nation's infrastructure and government facilities of all types, the new scoring interpretations may make it impossible for them to do so jointly with government. Agencies have voiced concerns regarding the application of scoring rules to federal real estate and have asked that these rules be reexamined, and potentially revised, to recognize the federal government's dilemma: the need for substantial capital investment facing heavy budget deficits and the lack of federal appropriations. Some of the proposals include:

- Retaining current scoring rules, but providing a large pool of budget authority for capital expenditures that is "fenced off" from other discretionary expenditures.
- Allowing agencies to borrow from the Treasury (or, potentially, the Federal Financing Bank) and scoring this borrowing for real estate and infrastructure projects in the same manner as operating leases on an annual basis, with Congressional oversight over the use of funds equal to today's oversight over the GSA Federal Buildings Fund.
- Changing budgetary scoring practices to allow sale / leaseback and EUL / leaseback arrangements to be scored as operating leases.
- Establishing capital acquisition funds specific to individual agencies with capital-intensive operations, to allow for additional ownership opportunities.

PERSPECTIVE: THE POTENTIAL IN BARRACKS

Barracks exemplify the potential for P^2 and the problems of achieving it. These buildings not only shelter soldiers, but also provide their haven from the rigors of intense military training and operations. When properly equipped and supported by essential maintenance, repair, and operational services, barracks ground the communities of single soldiers that have defined military life for millennia.

In today's Army, barracks are as important for recruiting and retaining soldiers as family housing was a decade ago when RCI was launched. The military is in a hotly contested market for the 18-to-25-year-old "Gen D-ers" (D for digital) who have many non-military choices competing for their commitments. Though their lifestyles are wide-ranging, their civilian habitats typically are comfortable, whether they bunk with buddies or live at home. Drawing them into the military requires not only financial inducements, which are now substantial, but attractive accommodation that compares with, and may have to exceed, what they leave behind. This is not a call for "soft" military living but a policy to sustain an all-volunteer force in a competitive economy.

Today, however, too many of the Army's barracks (officially, Unaccompanied Personnel Housing or UPH) are substandard. The maintenance backlog is $2.3 billion. Approximately 80 percent of the current inventory (560,000 bedspaces -- the basic unit in barracks) is more than 30 years old, and over 90,000 single soldiers live in conditions the Army calls "inadequate." Some permanent party soldiers still live eight to a room with gang latrines; others are assigned to tiny rooms and share a bath with three other soldiers. Soldiers who would prefer to live on post with their units live off post due to severe shortages of single soldier housing. Where the off-post community cannot supply sufficient housing, overcrowded barracks result. The Army's 2007 Barracks Strategy states the requirement for 240,000 adequate, modernized bedspaces. Many of the existing spaces are in the wrong places: the Army's "transformation" strategy, which will relocate many battalion-sized units, is creating the need for about 80,000 bedspaces. The size of inventory awaiting upgrades and the number of major relocations make this an exceptionally difficult housing challenge.

Beyond providing bedspaces, barracks are communities of single soldiers who share a common purpose and ethos. In order to compete in the marketplace, they must not only provide clean, safe sleeping and living quarters, but they should be clustered around dining, fitness, recreation, entertainment and convenience shopping, all within easy walking distance of the main workplace. This is a time-tested military design. But in recent years, these elements often have been physically separated. Their integration is impeded by organizational, budgetary, and statutory boundaries. Army planners are aware of the clustering concept, but they face formidable odds in bringing it to life. "Silos" (vertical channels for planning, budgeting, and decision-making) and "rice bowls" (an organization's allocated resources) conspire to limit integration of the very functions that comprise a barracks military community.

The traditional, decentralized model of barracks management has led to imbalances and inefficiencies. For example, one unit may have extra barracks space which it uses for offices while another is crowded and short of space. To improve space utilization, some installations are transitioning to centralized barracks control and management, and at Fort Hood, barracks

management has been consolidated with the RCI office, ensuring more effective overall management of space and property.

Enter the private developer. As RCI and other MHPI programs have shown, business partners bring crucial capabilities to government programs: fresh, independent, user-based thinking; zealous attention to efficiencies in planning, building, and operations; ongoing innovation in building products and processes; and a lifecycle view in decision-making. The developer-manager, concerned with sustaining value, proactively invests in the property to maintain its functionality and attractiveness, not in reaction to crises.

The MHPI legislation authorizes DoD to enlist the real estate industry to revitalize barracks and transient lodging as well as family housing. Through RCI, the Army has vigorously pursued family housing P^2s and produced extraordinary results (see *Army RCI: A P^2 For Military Housing*). But the application of P^2s in the Army's barracks program has been sporadic and much slower. Ten years after RCI's launch, barracks P^2 is still in the pilot stage. Five pilots -- at Forts Bliss, Bragg, Drum, Irwin, and Stewart -- are limited to Senior NCOs and address less than one percent (about 1,200 bedspaces) of the total US barracks inventory. A sixth pilot now under consideration for Fort Polk would encompass that post's entire barracks portfolio, adding 3,600 spaces to the P^2 inventory.

Between 2009 and 2013, the Army plans to spend $10 billion in military construction funds to build about 63,000 bedspaces for single soldiers. This equates to roughly $160,000 per bedspace (including the costs of ancillary infrastructure and facilities) and fulfills about one-quarter of the stated need. Yet private developers estimate they could build barracks at one-third to one-half less than the government's cost and operate them at 15 percent lower ongoing cost. In addition, P^2 would ensure that the barracks were properly maintained and operated over their life -- a significant improvement on the current system whereby operations and maintenance funds do not fully cover the projected costs and can be diverted for other military needs, resulting in facilities that deteriorate faster and need replacement sooner.

The current barracks strategy contrasts sharply with the Army's commitment to privatized family housing. If the Army matched its RCI achievement and included its entire barracks inventory in P^2s, the taxpayer would save billions of dollars over the barracks' lives, the Army would clear its maintenance backlog, and soldiers would have measurably better facilities and living environments. Involving proven RCI developers and private homebuilders with strong track records would also provide an opportunity to redefine the product, incorporating new designs and practices that have been tested in the modern marketplace, and would substantially contribute to the Army's mission by strengthening its ability to attract and retain soldiers.

The barracks situation illustrates the "virtuous circle" that marks P^2 candidates: policymakers and the public recognize the acute need for improvement in barracks conditions; the current system has not produced cost-effective, high-quality results and is unlikely to do so within a satisfactory time frame; the authorities for P^2 are in place; and the industry has substantial capacity to deliver superior barracks products. Consequently, the Forum considered an alternative, RCI-inspired strategy for barracks. A preliminary 50-year lifecycle analysis shows that a barracks program similar to RCI could eliminate the government's obligations for construction, operations, and maintenance costs and could generate upwards of $5 billion in present value advantage to the federal government, including payments required for the BAH.

This P^2 advantage would buy 50,000 new bedspaces -- a substantial proportion of the Army's total barracks need.

Despite the clear benefits, barracks P^2 has been blocked from more extensive application by three serious, but not insurmountable, obstacles. The first is cultural. Many NCOs believe that private management will restrict them from entering soldiers' quarters to keep order and discipline, and will undermine unit cohesion. As exemplars of Army leadership, these senior NCOs are respected at all levels. This is one reason the barracks P^2 pilots have been limited to grades E6 and above.

Developers have every reason to allow Army authorities in soldiers' quarters because they can help protect facilities from disorder and damage. As for the cohesion concern, a Command Sergeant Major who strongly supports RCI and barracks P^2 said this: "The 'Army Ethos,' unit cohesion, esprit de corps, and development of unit leadership are not formed or fostered in the barracks. They are honed on duty at the small-unit level with the first-line supervisor and the unit chain of command. Training is where we as an Army teach these traits. If you use that line of argument, then a newly married soldier living in an RCI house does not have the Army Ethos, does not feel part of the team, has no pride in his unit or organization, and will never develop into a leader. But in fact, we are giving him a new RCI house, the best this nation can provide, while his single team leader lives in the barracks. And that kind of inequity poses the greater threat to cohesion." As an RCI developer also observed, "basic equity and fairness would suggest that marital status should not be a determinant in the quality of soldier housing. Good housing for all soldiers should form the bedrock of the compact soldiers make with society."

The Bush Administration, acknowledging this issue in the 2007 National Defense Authorization Act, proposed using "off-the-shelf private sector designs and industry construction practices and techniques" to lower construction costs and remove the inequity. The Administration indicated that DoD's experience "in applying local standards, designs, and construction practices and techniques for military housing" has resulted in "larger and more livable dwellings at costs comparable to MILCON standards -- all to the benefit of our personnel."

The second obstacle to barracks P^2 is creating and sustaining an income stream for the private partner. Unlike married soldiers, single soldiers living on post receive no BAH; they are simply assigned to quarters. Barracks P^2 would require adding a BAH payment for single soldiers. While the dollars required for a new BAH would be significant, the investment would be paid for many times over with the construction and operating savings available through the private partner. For example, at one post, the Army plans to spend about $166 million to upgrade existing barracks and building systems, not including operations and maintenance costs. The post's RCI partner has offered to provide market-standard apartments for all barracks by 2011, requiring the funding of a $26 million BAH bill to proceed. The developer would invest approximately $186 million during the first five years to build and renovate the barracks, and would reinvest an estimated $1.5 billion into the program over the life of a 50-year operations and maintenance contract. The new barracks could be delivered in half the time it would under MILCON, a difference that could keep many young soldiers from leaving the Army.

Under the RCI model, married soldiers continue to receive BAH while they are deployed (provided the spouse remains in the on-post housing). If single soldiers also received the BAH

while deployed, the private partners could afford to maintain empty space to accommodate returning battalions. Battalions might not occupy the same space they left, but they could move into equivalent, contiguous, well-maintained quarters, much as they reserve and rotate vehicles and other equipment. This is a large-scale form of "hoteling," and is effectively the strategy that global companies use with hotel chains in housing personnel for their training programs. It also mirrors the individual strategy that civilian singles follow when they are reassigned by their employers or take new jobs.

The third obstacle is the current 1+1 barracks standard (a private room for each soldier in a two-room configuration with a shared bath and kitchenette) that was adopted in 1995. This space standard is higher than competitive market factors suggest a young single soldier requires or expects. Civilian peers of E1s through E4s generally live in less space or have more roommates. However, applied to senior NCOs, the 1+1 standard does not provide the quality and amenities offered in the surrounding community, causing many to live off post and taking their role-model standing and leadership qualities with them.

Private sector space and buildout standards offer savings on capital costs for equivalent -- and often better -- quality. For junior enlisted soldiers, the lifecycle cost of government construction exceeds private sector comparables by 30 percent or more. The difference is due in part to the building standard, which is over-designed and over-engineered compared to civilian housing. Building to soldiers' needs and market standards -- for example, using wood instead of concrete, fitting out one kitchen and common area per eight soldiers versus two (like a college dorm suite) -- could, by one developer's estimate, save 15 percent on capital costs. The five approved pilot projects, and single apartment community housing products generally offered by private partners, create attractive, efficiently-built housing that will attract the important senior NCO cohort back on post.

A barracks P^2 program could also meet the urgent need for special facilities and services to accommodate "Wounded Warriors" as they transition to civilian life. The integration of living, healthcare, rehabilitation, recreation, and visiting family facilities is especially intricate and would benefit greatly from the ingenuity and expertise of three specialist private market segments: healthcare, assisted living, and community development. The market leaders in these segments have succeeded in producing well-designed products with customized services and operating efficiencies. With Congressional and Administration leadership, integrated care for Wounded Warriors under a P^2 model could be a far-reaching pilot program crossing DoD, VA, and HUD program boundaries, bringing immense potential benefit to our returning veterans.

The Army should strongly consider adopting a full-scale barracks P^2 program. Such a program would establish equitable standards between single and married soldiers while improving recruiting and retention. It would also produce substantial financial benefits to the Army and the taxpayer over government-built and operated barracks. Using existing authorities, policies and practices, the Army headquarters and major commands, with the close involvement of NCO leaders, could work with leading private developers and homebuilders to overcome the hurdles and launch an aggressive campaign covering the entire barracks inventory and targeting 95 percent completion by 2015. The Army has the need, the industry has the capacity, and the capital markets are open for creditworthy projects. Soldiers and taxpayers would benefit for years to come.

PERSPECTIVE: PROGRESS ON SUSTAINABILITY

Sustainability is a complex concept, difficult to grasp, counter-culture in solutions, and costly to execute. But from climate change and high energy costs to conservation and eco-development, "green" issues are on everyone's mind and at the top of public agendas.

The data related to US real estate compel attention. Buildings use 40 percent of the total energy and 68 percent of the total electricity, produce 38 percent of the total carbon dioxide emissions, and account for 12 percent of the total daily water consumption.

Rising to our sustainability challenge requires a wholly new strategy for the nation's infrastructure and physical development, holistic thinking about our everyday lives, and the blending of science, economics, and politics to achieve real results. Numerous techniques and technologies are available to help cut carbon emissions, reduce energy usage, and clean up or avoid degrading our land, air, and water. Less prevalent are examples of how such methods can be brought to bear in a strategic and economic way. This is where P^2 steps in.

The federal government, specifically though not solely through DoD, can create a "sustainability market" as it has for military housing, lodging, barracks, warehousing, retail, and other support functions. The US military has proven its effectiveness in achieving specific policy goals, not only in its core warfighting mission but also in its disaster relief, domestic support, and peacekeeping operations. Its unique combination of a "can do" ethos, leadership, organization, discipline, and processes has been harnessed during the past decade in P^2 projects that demonstrate what can be achieved.

In this vision, DoD becomes a catalyst for change. Because of its global scale and reach, 24/7 operations, and heavy resource consumption, reforms in planning and management of military installations can set examples for new ways of doing business in civilian organizations, both within and outside of government. DoD has the world's largest managed infrastructure portfolio -- nearly 2 billion square feet of space with plant valued at over $500 billion on a landmass totaling 40,000 square miles. Over $2.3 billion is spent annually on energy for buildings and facilities alone.

Military transformation has opened opportunities for DoD to rethink its approach to managing resources. While private investment is unlikely to fully replace traditional military construction and infrastructure appropriations, it can create a substantial funding stream to expand and improve military facilities while allowing DoD to focus its spending on military modernization and readiness. The P^2 housing programs have yielded an 11:1 "funding multiplier" of private to public capital over the past decade. P^2 can help build an enterprise-wide sustainability strategy by articulating a vision, defining a mission and objectives, setting performance measures, and planning actions that will achieve the desired outcomes.

Already the conversion of military bases throughout the US as part of the BRAC process, creates an opportunity to infuse social, economic, and environmental vitality into the affected regions. For example, Fort Ord, a former Army post in Monterrey, California, is being transformed into a magnet campus of the California State University system. The plan incorporates concepts of mixed-use development, alternative transportation, environmental

conservation, sustainability, and affordability. It requires that "portions of the former base . . . be developed into a mixed-use community which provides housing and employment opportunities, reducing the need for long distance commuting throughout the region."

Existing P^2 tools for housing and utilities EULs have been successful in leveraging Army resources. RCI has shown that P^2 can bring new sustainability concepts to fruition ahead of their mainstream use. In creating sustainability programs, Clark Realty Capital, LLC, the RCI developer at Fort Belvoir, communicated with tenants to clarify tradeoffs among conflicting objectives (e.g., focus groups met to discuss low-energy appliances to reduce utility costs and durable finishes to reduce service calls). At the planning and design stages, dozens of real estate professionals and building tradespeople collaborated. Fort Belvoir's next RCI neighborhood will be the greenest to date; all new homes will be "EnergyStar" certified and the development team intends to achieve LEED (Leadership in Energy and Environmental Design) Platinum certification for the neighborhood center. New Urbanism master planning has reduced automobile usage and the development footprint. A tree preservation / replacement program improves air quality and reduces energy usage. In addition to a neighborhood program for household recyclables, more than 75 percent of all construction waste is recycled, diverting it from landfills and reducing the demand for new construction materials, while metal, consumer goods, and oil from the entire installation are recycled. These sustainability features are replicated in varying degrees on RCI posts across the country.

The Army aims to be a national leader in sustainability. Adapting the corporate model known as "triple bottom line" -- how processes affect profits, the environment, and social well being -- the Army is examining its actions for its own "triple bottom line plus" -- its impact on mission, environment, and community, plus the economic benefits of sustainability. Using its size, energy requirements, and program capabilities, it plans to launch an array of new P^2 initiatives as real-time test-beds for sustainability applications and integrate these with existing RCI, PAL, utilities P^2s, and other programs.

For example, the Army plans to become the largest purchaser of renewable energy in the country. In Hawaii, the RCI partner, Actus Lend Lease, is developing the world's largest solar powered community, with a 6 mega-watt photovoltaic system and solar domestic hot water systems. These measures are expected to save 1.5 million gallons of oil and reduce CO_2 emissions by 10,000 tons annually. Projects in RCI and related programs show that project scope and building quality can be improved while construction time and lifecycle costs can be reduced. These results reset the bar for all residential and much commercial development.

The Army is also striving to improve awareness of sustainability and to couple sustainability with accountability. Each RCI home is metered and is benchmarked for energy consumption. If soldiers use more than the benchmark, they will pay the difference; if they use less, they will receive a refund. Such small steps will pay large dividends in both institutional and individual consumption

In a broader, proactive energy initiative, DoD plans to fully integrate its energy and utilities management program, exploiting the synergies in P^2 for utilities, energy procurement, and water/energy conservation. It has been steadily divesting utility systems as a means of recapitalizing aging infrastructure, but its main thrust has been reducing energy consumption. In 2005, DoD set a goal of reaching 25 percent renewable energy procured or produced by

2025. By 2007, it was saving $80 million annually in energy costs. DoD's "facility energy consumption intensity" is down more than 10 percent from the 2003 baseline.

DoD's strategy for reducing energy and water consumption includes new design techniques and energy efficient materials. The Army, for example, is using its significant buying power to require that all suppliers meet similar sustainability-based standards. The standards will create a level playing field, allowing competition to reduce the price. The Air Force energy strategy highlights opportunities for energy generation projects at bases throughout the US, including potential commercial-grade, utility-scale solar energy projects.

Partnerships are playing a major role in these efforts. DoD and GSA have similar strategies to conserve energy and water resources, using private capital to finance energy saving investments through vehicles such as Energy Saving Performance Contracts (ESPC), Utility Energy Savings Contracts (UESC), and EULs. ESPCs enable agencies to accomplish energy projects without upfront capital costs and Congressional appropriations. UESCs engage local utilities to propose energy savings initiatives and arrange financing to pay for them.

In DoD, Fort Carson recently completed a solar array on a brownfields landfill through a P^2 lease arrangement. Nellis AFB used EUL for a third party to create the largest photovoltaic array in the Americas. All the power from this array, 14.2 megawatts, will be put on the grid. Tyndall AFB in Florida reduced potable water consumption by 75 million gallons per year through an ESPC and water awareness program. In GSA, more than 60 ESPC and UESC contracts have been awarded for nearly $200 million, with energy savings of over one trillion BTUs per year.

Federal policy recognizes the critical importance of public-private cooperation in promoting and achieving sustainability. As the National Environmental Policy Act (NEPA) states, "It is the continuing policy of the Federal government, in cooperating with State and local governments, and other concerned public and private organizations, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic and other requirements of present and future generations of Americans." Executive Orders set goals in the areas of energy efficiency, acquisition, renewable energy, toxics reductions, recycling, renewable energy, sustainable buildings, electronics stewardship, fleets, and water conservation; and require more widespread use of Environmental Management Systems as the framework in which to manage and continually improve these sustainable practices. GSA has a comprehensive sustainable design program through which all GSA new construction projects and substantial renovations must be certified through the LEED system. Utilizing a sustainable design philosophy encourages decisions at each phase of the design process that will reduce negative impacts on the environment and the health of the occupants, without compromising the bottom line. This integrated, holistic approach encourages compromise and tradeoffs in all phases of a building's lifecycle, from design, and construction through operations and decommissioning.

Sustainability is a work in progress, moving rapidly from environmental activism to mainstream programs. Some of the most popular measures are easy to decide on and implement -- e.g., buying carbon reduction credits -- but they may not achieve the overarching objective of reducing greenhouse gas emissions. The more difficult and costly actions -- e.g., replacing air handling systems and installing solar panels -- require fundamental tradeoffs between current operating budgets and long-term capital investment. As RCI and related P^2

programs have shown, the private partner is more likely than the government partner to be able to justify the tradeoffs and restructure the financing to make such innovations work quickly and effectively. Business has made tremendous investments in sustainability -- government has only to seek its knowledge and experience to make a substantial energy and environmental difference. The potential for an immediate return on investment that reduces energy consumption and CO2 emissions is available today. Sustainability is the ultimate application of P^2 principles, as it defines whether the vision for P^2 will stand the test of time and evolution in both military and civilian communities.

THE URBAN LAND INSTITUTE (ULI) / THE WOODROW WILSON INTERNATIONAL CENTER FOR SCHOLARS (WWICS) FORUM ON PRIVATIZATION - 29-30 APRIL 2008 - WASHINGTON, DC

FORUM PROGRAM

TUESDAY, 29 APRIL — ARMY-NAVY CLUB

1800-1900	Reception: Arnold Room
1900-1910	Welcome: Washington Room
1910-1925	Remarks: General John M. "Jack" Keane, USA (Retired)
1930-2100	Dinner and Conversation
2100-?	After-Dinner Drinks: Lounge

WEDNESDAY, 30 APRIL — URBAN LAND INSTITUTE

0700-0800	Registration / Continental Breakfast
0800-0815	Welcome / Agenda for the Day: James M. DeFrancia
0815-0845	Perspective on Privatization: Mahlon Apgar, IV / Jean S. Friedberg
0845-1015	Plenary Discussion
1015-1030	Break
1030-1200	Discussion Groups / Break-out Session 1
1200-1300	Lunch
1300-1400	Discussion Groups / Break-out Session 2
1400-1415	Break / Discussion Leaders-Rapporteurs Meet
1415-1445	Discussion Leaders-Rapporteurs Feedback
1445-1545	Plenary Discussion
1545-1600	Closing Remarks: James M. DeFrancia / Mahlon Apgar, IV
1600-1700	Reception

URBAN LAND INSTITUTE SPRING COUNCIL FORUM PROGRAM

DALLAS -- MAY 9, 2008

"The Promise of Privatization: Lessons from Military Housing"

The US military has pioneered innovative privatization and public-private partnership programs to develop and manage critical elements of its infrastructure and real estate. As our Nation looks for ways to meet housing, community development and infrastructure needs, the military's experience offers lessons for public policymakers, private developers and other stakeholders. ULI and Army leaders will look at what has and has not worked, and discuss policies and practices that could be applied to meet other housing, infrastructure and community development needs through private enterprise.

Moderator: **Mahlon (Sandy) Apgar, IV**
Senior Scholar, Woodrow Wilson International Center for Scholars

Welcome: **Richard M. Rosan**
President Worldwide, ULI

Keynotes: **The Honorable Chet Edwards, Member of Congress (D-Texas)**
Chairman, Military Construction and Veterans Affairs Appropriations Subcommittee

Geoffrey Prosch
Principal Deputy Assistant Secretary of the Army (Installations and Environment)

Panelists: **James M. DeFrancia**
President, Lowe Enterprises Community Development
ULI Advisor to Army RCI - 1998-99

Major General John A. Macdonald, USA
Deputy Commanding General, US Army Installation Management Command
Senior Military Commander for Army Housing / Real Estate

Dr. Richard B. Peiser
Spear Professor of Real Estate, Harvard Graduate School of Design
Community Development Consultant to Army RCI - 1998-99

Jeffrey A. Simon
President, Actus Lend Lease
Development Partner for Army RCI in Fort Hood, Texas, Other RCI Projects;
Development Partner for Privatization of Army Lodging (PAL) program

PARTICIPANTS AND EXPERT RESOURCES

Honorable Mahlon Apgar, IV. Mr. Apgar, an international consultant on housing, infrastructure, and real estate, is a Senior Scholar at WWICS and a Senior Advisor to the Boston Consulting Group, and teaches in the Oxford and Yale MBA programs. He is a former partner of McKinsey and Company. He was Assistant Secretary of the Army (I&E), 1998-2001, and launched the Residential Communities Initiative (RCI). He received a BA from Dartmouth College and a MBA from the Harvard Business School.

Honorable Valerie L. Baldwin. Ms. Baldwin is an independent consultant to the defense industry. She was Assistant Secretary of the Army for Financial Management and CFO, 2004-2007, overseeing finance policies, budgeting, and planning. Prior to that, she was Staff Director, House Appropriations Committee Subcommittee on Military Construction. Ms. Baldwin received a BA from Wichita State University, MA from the London School of Economics, and JD from the University of Kansas School of Law.

Honorable Michael J. Bayer. Mr. Bayer is Chairman of the Defense Business Board and a member of the Defense Science Board. He is also President and CEO of Dumbarton Strategies, providing strategic planning and merger and acquisition counsel in the energy and national security sectors. He is also a Director of Dyncorp International, Inc. (NYSE), Willbros, Group Inc. (NYSE), Vangent, Inc., and Stratos Global Corp. He received a BS and MBA from Ohio State University and JD from Capital University School of Law.

Ivan G. Bolden. Mr. Bolden is Chief, Public-Private Partnership Initiatives, Department of the Army. He oversees Army RCI, Privatization of Army Lodging, Utilities Privatization, Enhanced Use Leasing, Municipal Services/Partnerships and Competitive Sourcing. Previously, he was a senior staff officer in the Office of the ASAI&E, and retired as a Colonel after a 27-year Army career. Mr. Bolden received a BS from Southern University and a MA in Public Administration from Pepperdine University.

Kim H. Burke. Ms. Burke is a Managing Director specializing in Public Institutions at Jones Lang LaSalle. She is an expert on Enhanced Use Leasing and the federal budget system. Prior to JLL, she was a Principal in Ernst & Young's Real Estate group, supporting government agencies, including the Army and VA, in real estate strategy and privatization. She was also chief analyst for credit policy at OMB. Ms. Burke received a BA from the University of Virginia and a MBA from the University of Texas.

Dr. Craig E. College. Dr. College is Deputy Assistant Chief of Staff of the Army for Installation Management, responsible for providing resources for policies, programs, and budgets for Army installations worldwide and for the well-being of the force who live, work, and train on Army installations. Formerly, he was the Deputy Assistant Secretary of the Army for Infrastructure Analysis. He holds a BSc from the US Military Academy and MA and PhD degrees in Economics from Stanford University.

James M. DeFrancia. Mr. DeFrancia is President of Lowe Enterprises Community Development, responsible for development management and advisory services on planned communities in the US and abroad. He is a Life Trustee and former Vice Chairman of the ULI, a former Director of the National Association of Homebuilders and the Metropolitan Washington Airports Authority, and a Director of Wynne/Jackson, Inc. Mr. DeFrancia received a BS from the US Naval Academy and served in the Navy.

Robert W. Dove. Mr. Dove is Managing Director and Co-Head of Infrastructure Financing, The Carlyle Group. Prior to joining Carlyle, Mr. Dove spent 10 years with Bechtel Enterprises, the financing, development, and investment unit of Bechtel Group, the engineering and construction company. He focused on providing capital for infrastructure, services, and operations in Europe and Asia, including Tube Lines Limited, a UK PPP for the London Underground, and JVs for water, airports, and power.

Michael G. Ensch. Mr. Ensch is Chief, Operations and Regulatory, US Army Corps of Engineers. He oversees the national program for Operations and Maintenance of Navigation, Hydropower, Environmental Stewardship, and Regulatory, including dams, land and water, harbors, and channels. He is also Regional Integration Team Leader for the Great Lakes and Ohio River Division. Mr. Ensch received his BS from Kansas State University and did graduate work at KSU and Slippery Rock University.

Jean S. Friedberg, Jr. Mr. Friedberg advises clients on issues involving regional growth, community and real estate development, and public-private partnerships. Previously, he was with The Rouse Company in community development and was a consultant with McKinsey & Company. He played a key role in developing the RCI program and is engaged in implementation of BRAC 2005 in Maryland. He has a BS from Washington and Lee University and a MBA in Finance from New York University.

Daniel Glasson. Mr. Glasson is a Project Manager in the Office of Economic Adjustment, Department of Defense, responsible for providing assistance to communities impacted by defense program changes, including BRAC. He was also a Fulbright Scholar and Peace Corps Volunteer. Mr. Glasson received his Master of Urban Planning from the University of Michigan and BA degrees in Economics and Environmental Studies from Case Western Reserve University.

Philip W. Grone. Mr. Grone was Deputy Under Secretary of Defense for Installations and Environment, 2004-2007, and Principal Assistant DUSD(I&E), 2001-2004. He had global management and oversight responsibility for DoD's military installations. He previously served 16 years on staff in the House of Representatives, including 8 years with the Armed Services Committee. Mr. Grone holds a BA *summa cum laude* from Northern Kentucky University and a MA from the University of Virginia.

Honorable Robert J. Henke. Mr. Henke is Assistant Secretary for Management, Veterans Administration, responsible for the VA's budget, financial policy and operations, real estate asset management, acquisition and materiel management, and business oversight. Prior to this, he was Principal Deputy Under Secretary of Defense (Comptroller) at DoD and served on the Senate Appropriations Committee staff. He has a BA from the University of Notre Dame and a MPA from Syracuse University.

Honorable William Hudnut, III. Mr. Hudnut is a Senior Resident Fellow of ULI. He spent 24 years as a Congressman, Mayor of Indianapolis, and Council Member/Mayor of Chevy Chase, MD. He spearheaded the formation of a public-private sector partnership that led to Indianapolis's emergence during the 1980s as a major American city. He holds a BA from Princeton University with high honors and Phi Beta Kappa, and a MDiv degree *summa cum laude* from Union Theological Seminary in New York.

W. Cleve Johnson. Mr. Johnson is Managing Director, Clark Realty Capital, LLC, and oversees Clark Realty's $6 billion investment and development portfolio. His experience in numerous residential, commercial, and mixed-use projects includes seven military family housing projects, the pioneering Fort Belvoir RCI program, and the first Navy single-sailor housing initiative in San Diego. Mr. Johnson received a BSc in Civil Engineering from Stanford University and a MBA from the University of Virginia.

General John M. Keane, USA (Retired). General Keane is a Member of the Defense Policy Board; Senior Advisor to Kohlberg, Kravis, Roberts; advisor to the Chairman, URS Corporation; and a director of METLIFE, Inc. and General Dynamics Corporation. As Vice Chief of Staff of the Army from 1999-2003, he managed global operations, and helped to launch RCI and other transformational programs. He holds a BS and honorary PhD from Fordham University and a MA from Western Kentucky University.

Honorable Kenneth J. Krieg. Mr. Krieg was Under Secretary of Defense for Acquisitions, Technology and Logistics, 2005-2007. From 2001 on, he held various DoD roles including Director, Program Analysis and Evaluation, and Special Assistant to the Secretary of Defense. Earlier, he was a marketing and sales executive of International Paper. Mr. Krieg received a BA from Davidson College and a Masters in Public Policy from Harvard University's Kennedy School of Government.

Colonel Brian W. Lauritzen, USA (Retired). Colonel Lauritzen was Garrison Commander, Fort Belvoir, VA, 2005-2008, responsible for planning, budgeting, construction, base operations, and partnership liaison with the Army RCI developer. Earlier, he was Executive Officer to the Army's Military Deputy for Budget in the OASAFM/CFO, artillery battalion commander, and OSD staff officer. He holds a BS from the US Military Academy and a MS from the Colorado School of Mines.

Amber Levofsky. Ms. Levofsky is Program Lead for Environment and Sustainability and advisor in the Office of Economic Adjustment, DoD. She also acts as a liaison between communities and the military. Previously, she founded and led the Levofsky Group, was Special Projects Coordinator for the Chapel Hill Downtown Partnership, and was Development and Entitlement Manager for New Urban Communities. Ms. Levofsky received MBA and MRP degrees from the University of North Carolina.

Maureen McAvey. Ms. McAvey is Executive Vice President-Initiatives at ULI, responsible for the Infrastructure Initiative, Climate, Land Use and Energy, and special projects in housing. She has more than 25 years of experience in real estate development, consulting, and public / private financial structures. Previously, she was director of business development for the Federal Realty Investment Trust. She holds Master's degrees from Harvard University and the University of Minnesota.

John K. McIlwain. Mr. McIlwain is a Senior Resident Fellow at ULI and J. Ronald Terwilliger Chair for Housing. He also oversees ULI's workforce housing initiative. He is Chairman of the Center for Housing Policy. Previously, he established and ran the American Communities Fund (ACF) for Fannie Mae, investing in affordable housing, and was President and CEO of the Fannie Mae Foundation. He holds a BA from Princeton University and a JD from the New York University School of Law.

Robert A. Peck. Mr. Peck is Senior Vice President of Jones Lang LaSalle. He advises major organizations on real estate issues. From 1996-2001, he was Commissioner of Public Buildings, General Services Administration, responsible for nationwide asset management, design / construction, leasing, building management, and disposals. Earlier, he was at OMB and was chief of staff to the late Senator Daniel P. Moynihan. He holds a BA from the University of Pennsylvania and a JD from Yale Law School.

Honorable Bernard D. Rostker. Dr. Rostker is a Senior Fellow at The RAND Corporation. As Under Secretary of the Army, 1998-2000, he was an early sponsor of RCI. He has also been Under Secretary of Defense for Personnel and Readiness, Assistant Secretary of the Navy for Manpower and Reserve Affairs, and Director of Selective Service. He is an elected fellow of the National Academy of Public Administration. Dr. Rostker received his MA and PhD from Syracuse University.

Allison R. Sands. Ms. Sands is Deputy in the Office of the Deputy Assistant Secretary of the Army for Privatization and Partnerships, responsible for policy oversight and direction of RCI, PAL, utilities privatization, and other initiatives. Previously, she was Program Director for PAL, Chief of Plans and Policy for the Army Lodging Program at the Army Community and Family Support Center, and an Army Air Defense officer for 12 years. Ms. Sands received a BS in Political Science from Santa Clara University.

Dr. Barry Scribner. Dr. Scribner is an International Director and Co-President, Public Institutions Group, Jones Lang LaSalle. He has been lead real estate consultant to Army RCI since its inception and leads teams on privatization programs in DoD, VA, GSA, and other agencies. He has over 20 years of military experience and 4 years of business experience in design / build projects and facilities management for Tenneco. He holds a BS from the US Military Academy and a PhD from Harvard University.

Joseph K. Sikes. Mr. Sikes is Director, Housing and Competitive Sourcing, Office of the Secretary of Defense. He is responsible for policy and guidance in support of Commercial Activities programs in DoD. Earlier, he helped implement the Military Housing Privatization Initiative while Deputy Director of the Housing Revitalization Support Office and held other installation management positions. Mr. Sikes received his BS from the US Naval Academy and attended the National War College.

Jeffrey A. Simon. Mr. Simon is Executive Chairman of Actus Lend Lease, the largest developer in military privatization programs, covering 40,000 homes on 21 DoD installations, including 7 in RCI, and 4,400 rooms on 12 PAL sites. Previously, he headed redevelopment of Fort Devens, MA, and Naval Air Station Bermuda; negotiated Navy sites in Boston and Annapolis; and was involved in Westover Air Force Base. He holds a BA from Case Western University and a MA from Harvard University.

Stephen M. Sorett. Mr. Sorett is a Partner of McKenna Long & Aldridge LLP. A founder of the National Council for Public Private Partnerships, Mr. Sorett is a recognized leader in the field of public private partnerships. He is Chair of the American Bar Association's Outsourcing, Privatization and Related Transactions Committee, which is preparing a white paper on federal budgetary scoring. Mr. Sorett received a BA from Yale University and a JD from George Washington University.

Honorable William Winkenwerder, Jr. Dr. Winkenwerder is Chairman of The Winkenwerder Company LLC. A recognized leader in American health care, he served as Assistant Secretary of Defense for Health Affairs, 2001-2007, managing a $40 billion budget and 130,000 personnel. He is also a senior advisor to Deloitte Consulting and company board member. He received a BS from Davidson College, a MD from the University of North Carolina, and a MBA from the Wharton School of Business.

Honorable David L. Winstead. Mr. Winstead is Commissioner of Public Buildings, General Services Administration, responsible for the asset management and design, construction, leasing, operations, and disposal of the federal government's public and private buildings. Formerly, he was Maryland Secretary of Transportation and an attorney in private practice. He holds a BA from Denison University, a MBA from Columbia University, and a JD from Catholic University's Columbus School of Law.

Monica L. Andrews. Ms. Andrews is a Research Assistant to the Project on Privatization at the Woodrow Wilson International Center for Scholars. Previously, she interned at GreenShape LLC, a green building consulting firm in Washington, DC, and was an undergraduate in Economics. As the daughter of two Army officers, she has first-hand experience in Army family housing. She received her BA from American University and will be pursuing graduate studies in urban planning.

Leslie I. Bell. Ms. Bell is an independent writer-editor with some 25 years experience helping business and government create high-quality written products. She has worked with the Army, Jones Lang LaSalle, and Sandy Apgar since 1998 to help craft a variety of communications during RCI's development. She has also consulted to The Boston Consulting Group and was a Communication Specialist with McKinsey and Company. She received a MA in English from The University of Chicago.

GLOSSARY OF SELECTED TERMS IN PRIVATIZATION AND PARTNERSHIPS

The following terms are used in policies, programs, projects, and practices concerning privatization and public-private partnerships. These definitions combine standard dictionary references with specific business, government, and professional usage. Certain "obvious" terms are included because they are defined or used differently in business and government. The federal government and real estate contexts are summarized for selected terms. Entries for federal government offices and programs begin with their acronyms.

ACSIM -- Assistant Chief of Staff of the Army for Installation Management provides guidance on policy, program, and resource management for Army installations worldwide, including oversight of RCI, PAL, and other military privatization programs.

Agency -- A unit of government which performs specified functions and activities, either as part of a cabinet department or as an independent entity with its own Congressional mandate and reporting relationship.

ASAFM/C -- Assistant Secretary of the Army for Financial Management and Comptroller is responsible for formulating and defending the Army budget, reporting on the use of resources and achieved objectives, and providing financial information to commanders and managers for their decision-making.

ASAI&E -- Assistant Secretary of the Army for Installations and Environment is responsible for policy development; oversight of Army installation planning, construction, operations, and maintenance; BRAC; redevelopment, acquisitions, and dispositions; RCI, PAL, EUL, barracks privatization, and utilities privatization; energy development policies and programs; and environmental activities.

BAH -- Basic Allowance for Housing, appropriated by Congress, is used to offset the cost of housing when soldiers do not receive government-provided housing, depending on location, pay grade, and number of dependents; it is revised periodically based on local market conditions.

BRAC -- Base Realignment and Closure is the process used by the federal government to reorganize the US military installation infrastructure to achieve national security objectives and improve efficiency. An independent, non-partisan commission is convened for each BRAC round to evaluate DoD's analysis and present recommendations to Congress for final approval.

Capital asset -- In the federal context, capital assets are land, structures, equipment (including vehicle and aircraft fleets), and intellectual property (including software),

which are used by the federal government and have an estimated useful life of two years or more (*OMB Circular A-11*).

Capital budget -- Plan to make and finance long-term investments in land, buildings, infrastructure, plant, and equipment.

Capital fund -- Money set aside for spending on land, buildings, infrastructure, plant, and equipment in accord with a capital budget.

Capital improvement -- The addition of a permanent structural improvement or the restoration of some aspect of a property that either enhances the property's value or increases its useful life.

Capital stack -- Technique used to portray a project's funding structure. When shown visually, sources of funds are stacked vertically: various types of equity make up the base layers of the stack and different types of debt make up the top layers.

CBO -- Congressional Budget Office provides Congress with nonpartisan, objective, and timely analyses in all aspects of the federal budget to aid in economic and budgetary decisions, including estimates and information used in the federal budgetary scoring process.

CDMP -- Community Development and Management Plan serves as the business plan for each RCI project, defining the proposed scope of work and the developer's long-term relationship with the Army; contains plans for development; financing; operations and maintenance, and property management. The CDMP is subject to Army, OSD, and Congressional approval.

Competitive sourcing -- The use of a bidding process to determine which suppliers or contractors should be awarded a contract based on evaluative criteria such as cost, schedule, technical merit, and contractor qualifications. In the federal context, this process specifically determines whether a private sector contractor can provide a service more cost effectively than the agency currently providing the service.

Core competency -- A defined field or task at which an organization excels and which is difficult for others to replicate. In the federal context, this represents an agency's essential areas of expertise and skills required for achieving its Congressionally chartered mission.

Cost of capital -- A weighted average cost of debt and equity financing for a project. This measure is often used to approximate the return required to justify investment in a capital project such as a new facility.

Debt service -- Cash required over a given period for the repayment of interest and principal on a mortgage or other type of debt.

DoD -- Department of Defense, including the Army, Navy, Marine Corps, Air Force, Reserve components, and National Guard. DoD's projected 2009 budget is $515 billion. It is responsible for about 5 million active and retired military and civilian personnel, and it manages facilities at more than 5,000 sites with 30 million acres of land worldwide.

Economy of scale -- The relative gain in output or cost savings derived from an increase in the size of a plant, firm, or activity.

Equity -- A stock or any other security representing an ownership interest. In the context of real estate, the difference between the current market value of a property and the amount the owner still owes on the mortgage.

EUL -- Enhanced Use Leasing allows certain government agencies to leverage underutilized land, buildings, or other assets by entering into long-term leases, with rent paid by the developer in the form of cash or in-kind services for facilities construction, improvement, and repair and payments for utilities and maintenance services.

FAR -- Federal Acquisition Regulations govern the process through which the government purchases goods and services, including recognition of needs and requirements, acquisition planning, contract formation, and contract administration.

Government asset -- Any item of economic value owned by a constitutionally and/or legally established public entity. See also "Capital asset."

Government function -- A program, service, or activity for which a unit of government is responsible and/or which is owned or provided by a unit of government. The determination of "responsibility" is often the key issue in deciding which functions could be incorporated in government-business partnerships. See also "Inherently governmental."

GSA -- General Services Administration provides real estate services for federal agencies, including acquisition and disposal, property management, construction and repairs, security services, information and communications technologies, and overall portfolio management. The Washington, DC area portfolio consists of 95 million rentable square feet in owned and leased space. See also "PBS."

Inherently governmental -- Functions performed by public agencies that are defined as precluding them from being performed by private sector organizations. In the context of property owned by the federal government, assets that specifically support agency missions may be constructed or construed to have limited or no private sector use.

IPT -- Integrated Process Team, a vehicle for decision-making in RCI and other programs, whose membership includes high-ranking officials responsible for policy and program oversight and implementation. Members are drawn from a cross-section of functions and are empowered to speed issue resolution.

JV -- Joint venture, a contractual agreement joining together two or more parties for the purpose of executing a particular business undertaking. All parties agree to share in the profits and losses of the enterprise.

LEED -- Leadership in Energy and Environmental Design, a rating and certification program created by the US Green Building Council, that measures performance in sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality. It is widely adopted for public and private sector projects.

Leverage -- The use of borrowed capital to increase the amount of funding available for investment. Investors may employ leverage to increase a project's return on equity.

Market -- A geographic area or demographic sector of commercial activity; may also refer to the potential demand for a commodity or service in such an area.

MHPI -- Military Housing Privatization Initiative, enacted by Congress in 1996 (National Defense Authorization Act, Section 2801), authorizes DoD to use innovative real estate, construction, financial, and operational tools to attract business in financing, building, and operating housing on and near military bases; it includes market-based building specifications, equity, and debt instruments, and guarantees. RCI, PAL, barracks privatization, and similar military partnership programs are based on this legislation.

MILCON -- Military Construction budgets and funding cover planning, design, construction, restoration, modernization, and related activities in DoD housing, barracks, transient lodging, training facilities, schools, hospitals, day care centers, airfields, office buildings, warehouses, ranges, and other military-specific structures; they can be used for existing and "new footprint" projects.

Net income -- A company's earnings, calculated by taking revenues and deducting the costs of doing business, depreciation, interest, taxes, and other expenses.

Net operating income (NOI) -- The difference between a real estate project's revenues and costs of doing business. The costs do not include a project's unique financial structure (e.g., debt service, taxes, depreciation) and other non-operating expenses (e.g., capital reserve, tenant improvements, leasing commissions). NOI is similar to Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA), a corporate finance measure that projects a company's financial condition in the absence of financial structuring.

Net present value (NPV) -- The present value of an investment's future http://www.investorwords.com/5926/net_cash_flow.htmlnet cash flows less the initial investment. Present value is defined as the current value of future cash payments, discounted at some appropriate interest rate.

O&M -- Operations and Maintenance funds are authorized in DoD for facilities sustainment (maintenance and repair necessary to sustain facilities in good working order), restoration (restoring degraded facilities to working condition), and modernization (upgrading facilities to new or higher standards). O&M funds also pay for the costs to operate facilities, e.g., utilities payments, trash removal, and facility management services. See also "Sustainment."

OMB -- Office of Management and Budget assists the President in overseeing preparation of the federal budget by evaluating the effectiveness of agency programs, policies, and procedures; assessing competing funding demands among agencies; and setting funding priorities. OMB ensures that agency reports, rules, and proposed legislation are consistent with Budget and Administration policies; it promulgates scoring guidelines for long-term real property and other investments.

Operating budget -- An estimate of revenues and expenses over a specified future period of time.

Operating margin -- A ratio used to measure a company's operating efficiency and pricing strategy, calculated by dividing operating income by revenue.

Operating income -- The profit earned from a firm's normal core business operations. This value does not include profit earned from the firm's investments (such as earnings from firms in which the company has partial interests) or the effects of interest and taxes.

OSD -- Office of the Secretary of Defense includes the immediate offices of the Secretary, Deputy Secretary, Under Secretaries, and Assistant Secretaries of Defense; offices for test and evaluation, administration and management; and advisory positions for finance, policy, force readiness, and purchasing.

Outsourcing -- The process of contracting with one or more third-party vendor(s) to meet an organization's requirements and performance measures by providing services, staff, facilities, and/or goods according to prescribed conditions; outsourcing is often used to replace or substitute for the organization's own staff and facilities.

P^2 -- Denotes joint public-private efforts whether they are called partnerships or privatization.

PAL -- Privatization of Army Lodging provides for the construction, revitalization, and sustainment of transient lodging accommodations on Army posts. An extension of MHPI authorities and RCI operational concepts, the PAL program leverages on-post government land and lodging assets to obtain private capital and expertise for building, renovating, operating, and maintaining transient lodging for the Army over the long term.

PAM -- Portfolio Asset Management is a long-term oversight program that allows the Army to identify and mitigate its risks in RCI by measuring the portfolio's and related projects' success in meeting and sustaining financial and operational goals, as well as subjective goals for improving the quality of life of service members and their families.

PBS -- Public Buildings Service, an organization within the GSA, is the builder, developer, lessor, and manager of federally owned and leased properties totaling 347 million square feet throughout the US. See also "GSA."

Privatization -- Originally, the transfer of a property from government to a privately owned entity. More broadly, and as used in this report, privatization may describe many forms of shared ownership and management between government and business.

Public-private partnership (PPP) -- In the federal context, a public-private partnership is a legal agreement between an agency and a private sector entity, through which the skills and assets of each are shared in delivering a service or facility for a public purpose. In addition to sharing resources, the agreement defines how each party shares in the risks and rewards of performing the function and delivering the service or facility.

RCI -- Residential Communities Initiative is the Army's military family housing privatization program that complements traditional military construction by leveraging the resources of private-sector partners to provide new and improved homes and family communities on Army installations. RCI's objectives are to eliminate inadequate Army family housing in the US, improve quality of life, and save time and cost.

RFP -- Request for Proposal is a traditional procurement method used by both government and business buyers to specify products and services they seek from third-party contractors, vendors and suppliers. In the federal context, RFPs are often long, complex documents with extensive technical details and legal language.

RFQ -- Request for Qualifications is a less common procurement method adapted for RCI and related privatization and partnership programs that asks vendors and suppliers to present their vision for a project, document their experience and performance record in comparable projects, financial and management capabilities, and other information, against prescribed evaluation criteria.

Return on investment (ROI) -- The interest, dividends, distributions, and capital gains realized from the use and/or operation of an asset, or an investment in real property, over a given period of time, in comparison to the cost of the asset or property.

Scoring -- A method used by the federal government to measure the cost of a government activity or an obligation for future expenditure. Scoring determines what cost should be recorded as an obligation when a contract is signed, and how much of an agency's appropriations it must use to meet that obligation. See also Perspective: *Reforming Federal Budgetary Scoring.*

Stewardship -- The responsible use of human, financial, and natural resources. In the federal government context, the responsibility to properly utilize and develop federal assets, including people, property, and financial assets.

Sustainability -- The capability to achieve continuity and performance over time without depleting the physical, human, and natural resources associated with assets and activities beyond their design lifecycles.

Sustainable growth rate -- The rate of increase in size or scale that can be achieved over time without failing to meet required performance criteria.

Sustainment -- In the federal context, provision of budgets and other resources to maintain and repair facilities, in accordance with government and industry standards, through their economic and/or physical lives, including preventive maintenance checks and emergency repairs and activities to complement restoration and modernization of related projects.

VA -- Department of Veterans Affairs is a government-run military veteran benefit system with Cabinet-level status; it is responsible for administering benefits programs for veterans, their families, and survivors, including medical care, disability compensation, pension, education, home loan, life insurance, vocational rehabilitation, and survivors' and burial benefits.

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Mahlon Apgar, IV

APPENDIX "B2"

The Conference Board of Canada
"Dispelling The Myth – Pan-Canadian Assessment of Public-Private Partnerships for Infrastructure Investment"

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The Conference Board of Canada
Insights You Can Count On

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Dispelling the Myths

A Pan-Canadian Assessment of Public-Private Partnerships for Infrastructure Investments

ENERGY, ENVIRONMENT AND TRANSPORTATION POLICY

The Conference Board of Canada
Insights You Can Count On

Dispelling the Myths: A Pan-Canadian Assessment of Public-Private Partnerships for Infrastructure Investments
by *Mario Iacobacci*

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Preface

Public-private partnerships (P3s) have become an increasingly important means of procuring public infrastructure in Canada. Yet they remain controversial. In light of continued opposition to P3s, several P3 agencies and procurement authorities asked The Conference Board of Canada to carry out an assessment of the benefits and drawbacks of P3s. This report presents the results of that assessment, which tracks the performance of P3 projects that reached financial close in 2004 or later under the auspices of provincial P3 agencies or offices. The report concludes that, relative to conventional procurement, these P3s have delivered efficiency gains as well as a high degree of cost and time certainty from financial close through to completion of construction.

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The author alone is responsible for any errors and omissions.

EXECUTIVE SUMMARY

Dispelling the Myths
A Pan-Canadian Assessment of Public-Private Partnerships for Infrastructure Investments

At a Glance

- Public-private partnerships (P3s), while controversial, are an increasingly important procurement vehicle for Canadian governments seeking to build or upgrade infrastructure assets.
- Value-for-money studies comparing the projected costs of P3s and conventional contracts show that the Canadian P3s initiated from 2004 onwards have so far delivered important efficiency gains for the public sector (i.e., taxpayers), ranging from a few million dollars to over $750 million per project.
- In addition, Canadian evidence on the performance of P3s shows a high degree of cost and time certainty over the period from the financial close of projects through to completion of construction.
- Factors driving P3 efficiency gains include optimal risk allocation between the public and private partners, upfront assessment of project costs, output-based contracts, and private financing.

Public-private partnerships (P3s) have become an increasingly important procurement vehicle for Canadian governments seeking to build new or to upgrade infrastructure assets ranging from hospitals, bridges, and highways through to courthouses, water treatment facilities, and concert halls. Although P3s account for only 10 per cent to 20 per cent of total infrastructure spending, governments have come to rely on this type of procurement to help address the long-standing infrastructure deficit. But are P3s clearly superior to conventional procurement methods for Canadian infrastructure projects? This report provides an impartial assessment of the benefits and drawbacks of using P3s, examining arguments that they have higher financing and transaction costs, are less transparent, and lead to lower service standards than traditional procurement processes.

P3 projects tend to feature characteristics such as the integration of two or more project phases, output-based contract specifications, payment upon delivery, private financing, and private sector project stewardship. In contrast, conventional projects are characterized by separate procurements for each project phase, input-based contract specifications, monthly payments to contractors, public financing, and public sector project stewardship.

This report assesses Canadian P3 projects executed under the direction or guidance of the P3 agencies established in the early part of this decade, starting with Partnerships BC and followed by Infrastructure Ontario, the Alternative

Capital Financing Office of the Alberta Treasury Board, the Agence des partenariats public-privé Québec (recently renamed Infrastructure Québec), and PPP Canada. The period under review begins when Partnerships BC began advising on the procurement process for P3 projects such as the Sierra Yoyo Desan Resource Road Upgrade Project, the agreement for which was signed in June 2004. These P3 projects are referred to as the second wave of Canadian P3s. The report focuses on the P3 projects initiated by British Columbia, Alberta, Ontario, and Quebec, because these jurisdictions have specialized infrastructure agencies (or equivalent offices within the central agencies of the respective provincial governments) and because their projects are relatively similar in structure and thereby provide a meaningful basis for evaluation. The first wave of P3s has already been reviewed extensively.

P3 procurements can provide private sector contractors with strong incentives to deliver the infrastructure outcomes valued by the public sector owner.

Chapter 2 presents a framework for assessing whether (and under what conditions) the procurement of public infrastructure assets using P3s can generate efficiency gains relative to conventional forms of infrastructure procurement by the public sector. The overall proposition is that P3 procurements can provide private sector contractors with strong incentives to deliver the infrastructure outcomes valued by the public sector owner. This results in efficiency gains in the form of lower financial costs, faster delivery schedules, higher-quality outcomes, or a combination thereof relative to conventional procurement methods. The efficiency gains from P3 procurements are achieved through one or more of the following mechanisms:

- **performance-based contracts**, which specify deliverables in terms of the outputs (e.g., lane availability and skid resistance in the case of roads) rather than prescribing specific materials to be used;
- **optimal risk allocation** between the public sector owner and the private sector partner, which means that many of the risks are transferred from the public sector to the private partner if the partner can manage them more cost-effectively;
- **integrating the design, construction, operation, and maintenance phases** of a project in order to minimize total life-cycle costs; and
- **private financing**, which includes primarily project-specific debt and a small tranche of equity, to ensure that the risks transferred to the private partner are borne and managed by that partner. Under conventional construction contracts, such as "stipulated sum contracts," private contractors are paid monthly based on the percentage of work completed.

The relative benefits of this procurement model take the form of:

- **cost savings** or quality enhancements in the design or construction of a new facility, as well as in its operation and maintenance (i.e., in the service provision phase); and
- **time savings** in the delivery of a public infrastructure facility fit and available for use.

It is also important to recognize that these benefits come at a cost. Specifically, compared with conventional procurements, P3s entail the following additional costs for a project of similar scope:

- **The cost of transferring selected risks to the private partner.** This is also known as the risk premium, which is used to compensate the private partner for assuming risks additional to those associated with a conventional contract. The risk premium usually represents the largest part of the additional costs involved in P3 procurements.
- **Higher financing costs.** The private financing used for P3 projects is more expensive than the public financing (i.e., government bonds) used for conventional procurements.
- **Higher transaction costs.** P3 contracts cost more to develop and monitor than conventional infrastructure contracts.

If these three categories of costs are offset by the cost savings from transferring selected risks to the private partner, the overall costs of the project will be lower under a P3 approach than under traditional project delivery.

The Canadian evidence on the cost and time performance of P3s comes from two sources: value-for-money (VfM) studies, which compare the total costs of P3 and

conventional procurement methods for each P3 project; and studies comparing the performance of projects against their own time and budget targets, which are set either when a project is first announced or when the project agreement is signed. The VfM study results indicate that the second wave of Canadian P3 projects is delivering important efficiency gains for the public sector (i.e., taxpayers) relative to conventional procurement approaches. The estimated value of these gains varies from just a few million dollars per project to over $750 million in the case of the Autoroute 30 project south of the Montréal area. When these savings are expressed as a proportion of what it would have cost the public sector to procure the projects through conventional contracting methods, the savings range from 0.8 per cent through to 61.2 per cent per project.

The second wave of Canadian P3 projects is delivering important efficiency gains for the public sector.

VfM savings are necessarily prospective when estimated during the procurement period. Whether the actual savings match the expected savings by the end of the P3 project depends on the degree of cost and time certainty of P3 projects. However, the savings can also be verified on an ex post basis—after project completion—as in the case of the construction of the southeast and southwest legs of the Edmonton Ring Road. The two projects were broadly comparable, but the P3-procured project took two years less to deliver than the conventionally procured project.

The Canadian evidence on the cost and time certainty of P3 projects is incomplete, because only 19 of the 55 second-wave P3 projects have reached substantial completion. However, these early results point to a very strong performance. Most of the 19 projects have been delivered either early or on schedule, with only two projects delivered up to two months late. (The financial penalties resulting from these delays were borne by the private sector partner or by the public sector partner in the case where delays were due to risks retained by the public sector.) Moreover, the interim results for the P3 projects that remain in the construction phase provide little reason to expect substantial cost or time overruns, based on the information regarding contract variations and claims against the public sector. Therefore, the preliminary evidence indicates that the second wave of Canadian P3 projects is providing a high degree of cost and time certainty for the period from financial close through to completion of construction.

It is important to emphasize that cost certainty in a project is not just about saving a few dollars or improving the predictability of public sector budgeting. Cost certainty is vital from a public interest perspective, because it enables public decision makers to allocate public funds to the right projects. Without cost certainty, the public sector is often compelled to allocate relatively large amounts of additional funds midway through a project, regardless of whether the additional funding would have been justified on a VfM basis. This occurred in the Vancouver Convention Centre Extension Project, the Sudbury Regional Hospital (Phase I) project, and the Montréal subway extension to Laval, all of which were conventional procurements.

We also wish to dispel a few myths about P3s in Canada. First, P3s in Canada are not about the privatization of public assets. Ownership of the new infrastructure facilities either remains with the public sector or is transferred back to the public sector at the end of the contract term. Second, long-term P3 projects (i.e., those with a maintenance phase) help ensure a satisfactory level of maintenance and upgrade work during the life of the facility. The anecdotal evidence collected in this report suggests that there is little basis for the criticism that service standards suffer under a P3 relative to a conventional maintenance contract or even relative to in-house provision.

Chapter 3 reviews the main drivers of efficiency gains in P3s relative to conventional procurements. The most important is arguably the optimal risk allocation process, which is at the heart of the P3 procurement process adopted by P3 agencies and offices across Canada. This involves identifying and valuing project risks upfront and transferring to the private partner those risks that these firms have the expertise and experience to handle. This risk transfer process also has the considerable advantage of forcing an upfront consideration (i.e., before or during procurement) of all the project requirements

and associated costs. Without such upfront assessments, there is a much higher risk of cost overruns, as evidenced in several of the case studies of conventional infrastructure procurement reviewed in this report.

Performance-based contracts, which specify deliverables in terms of desired outputs rather than inputs, are another driver of efficiencies in P3 contracts. These contract provisions encourage private partners to consider the most cost-effective delivery practices. The integration of the design, construction, operation, and maintenance phases of a project is yet another potential driver of efficiencies, because it enables private firms to adopt innovations that can reduce life-cycle costs, even if they involve greater investment in the design or construction stages. However, there is little empirical evidence of the relative importance of these two efficiency drivers. As well, both these efficiency drivers can be adopted in conventional forms of contracting, provided that care is taken to specify the desired outputs and to design an appropriate contract covering a substantial part of the expected useful life of the infrastructure asset.

Private finance is the fourth efficiency driver in P3 projects. Thanks to this feature of P3s, the public sector pays the private partner only upon delivery of the facility (although some milestone payments are sometimes made before construction is complete). Consequently, the private partner has a powerful incentive to build the facility in a timely manner and in a way that meets the contractual requirements. Such payment by results forces the private partner to take on most of the financing requirements for the project, which include sizable debt obligations. Without these financing requirements, private firms would have little incentive to complete their contractual obligations should they encounter significant cost overruns that cannot be passed on to the public sector. Therefore, private financing can be considered the glue that binds together the other efficiency drivers mentioned above, particularly the optimal risk allocation process and the performance-based contract provisions.

However, these efficiency drivers do not guarantee that all P3 infrastructure projects will generate net efficiency gains. In some cases, the gains can be more than offset by a combination of the incremental cost of private financing, any additional costs due to the risks transferred to the private consortium (i.e., the risk premium), and the incremental transaction costs. This is why each infrastructure project requires a rigorous VfM assessment to ensure that a P3 procurement option delivers value relative to a conventional procurement method, as was standard practice for all second-wave P3s. Chapter 4 of the report reviews VfM tests and other aspects of P3 procurement processes, such as the guidelines used to screen infrastructure projects for their suitability as P3 procurements and the transparency of P3 procurements compared with conventional delivery of infrastructure projects.

VfM tests are designed to ensure that the right projects are selected as P3s and that the risk transfer effected in a P3 agreement is cost-effective for the public sector owner. Our review of the available VfM studies and guidance documents suggests that each of the four jurisdictions under consideration—British Columbia, Alberta, Ontario, and Quebec—has developed a rigorous VfM methodology for comparing the costs of P3s and traditional procurements. (VfM studies are not published for the Alberta P3 transactions, but the VfM methodology is available through Alberta Infrastructure and Transportation.) VfM tests are not undertaken as an afterthought: A first pass at the test is done before the start of the procurement process (i.e., before the request-for-proposal stage), and the test is finalized after the financial close. This report also suggests that there is value in updating the VfM studies ex post at key milestones, such as at completion of construction, and periodically thereafter. In contrast, conventional infrastructure procurements are normally not subject to any VfM-type tests to inform procurement strategy.

In addition, this report notes that the procurement process for the second wave of P3s is considerably more transparent than that for conventional infrastructure projects of equivalent scale. This is because the key procurement documentation, including a redacted form of the partnership contract, is publicly available and a fairness commissioner assesses the fairness and transparency of the process for all bidders. Neither of these features is typical of conventional public infrastructure procurements.

CHAPTER 1

Introduction

Chapter Summary

- Canadian governments are increasingly turning to public-private partnerships (P3s) to build or upgrade infrastructure assets, with over 100 P3 transactions concluded since the early 1990s.
- Despite this activity, there remains some opposition to P3s, which have been criticized for higher financing costs, less transparency, and lower service standards than conventional procurement methods.
- This report reviews the performance of the second wave of Canadian P3 projects—those that reached financial close under the auspices of the P3 agencies (or offices) set up in the early 2000s.
- P3s are characterized by the integration of two or more phases of a project, output-based contracts, payment upon delivery, private financing, and private-sector project stewardship.
- P3s in Canada are not about the privatization of public assets, nor do they typically involve replacing public provision of assets or services with private provision on a large scale.

Public-private partnerships (P3s) have become an increasingly important procurement vehicle for Canadian governments seeking to build or upgrade infrastructure assets ranging from hospitals, bridges, and highways through to courthouses, wastewater facilities, and concert halls. This is partly the result of a long-standing infrastructure deficit.[1] The growing importance of P3s is reflected in the fact that three provincial governments—British Columbia, Ontario, and Quebec—have set up specialized infrastructure agencies to handle P3 procurements and to support the development of P3 markets. Other provinces—such as Alberta and New Brunswick—either have set up equivalent offices within their central government agencies or have at least put in place guidelines for P3 procurements. And the federal government recently set up a Crown corporation (PPP Canada), whose responsibilities include managing a $1.2-billion fund to support innovative P3 projects. As a result of these and other Canadian government initiatives, over 100 P3 transactions have been concluded with private sector consortia in Canada since the early 1990s.

Yet, despite all this activity and the major efforts by provincial governments to use innovative procurement methods for building and maintaining infrastructure, there remains some opposition to P3 procurement methods.

1 This has been documented by several sources, including Mirza in *Danger Ahead*, a report prepared for the Federation of Canadian Municipalities.

The criticisms have been wide-ranging. They include arguments that, compared with traditional procurements, P3s have higher financing costs, are less transparent, and lead to lower standards of service provision.

P3s are also facing new market conditions and possibly further changes in policy. The global credit crisis led to a major contraction in the availability of private financing, which is a key element of P3 projects. And the financing that remains available is also more costly relative to government bonds. However, the global economic downturn has also led governments in Canada and worldwide to look to infrastructure projects as a source of economic stimulus.

In light of these changing conditions and continued opposition from certain quarters, several P3 agencies and procurement authorities asked The Conference Board of Canada to undertake an assessment of the benefits and drawbacks of P3s for Canadian infrastructure investments.[2] The remainder of this chapter describes what we mean by P3s and conventional infrastructure procurements, and the methodology used for this study. Chapter 2 provides an assessment of the benefits and drawbacks of P3s, while Chapter 3 discusses the key drivers of potential efficiencies in P3 projects.

P3s account for only a fraction of total spending on public infrastructure. In most of the provincial jurisdictions in Canada that are active in this type of procurement, public spending on P3s is usually between 10 per cent and 20 per cent of total spending on public infrastructure.[3] This means that there can be considerable discretion in determining which infrastructure projects are procured using a P3 approach. But as we will see later in the report, P3 procurements are not suitable for all infrastructure projects. The issue of how projects are selected to be procured as P3s is therefore important. Chapter 4 reviews this and other key issues in the P3 procurement process, such as transparency. Chapter 5 presents eight case studies, consisting of four P3 projects and four conventional infrastructure projects. Chapter 6 presents the conclusions of the report.

P3s: DEFINITIONS, SCOPE, AND METHODOLOGY

In this report, we define P3 and conventional procurement methods for public infrastructure projects based on the features presented in Table 1. However, there are a number of qualifications to these definitions of P3s and conventional approaches. First, the distinction between P3s and conventional procurements is not as clear-cut as implied in the table: Some procurement approaches lie somewhere between the two models. These include design-build (DB) projects, which have P3 characteristics such as more than one project phase and output-based performance specifications. However, because such projects are publicly financed, we categorize them under the conventional approach.

The distinction between P3s and conventional procurements is not clear-cut; some approaches lie between the two.

Second, we recognize that the definition of P3s differs somewhat across the Canadian jurisdictions that are actively engaged in this type of procurement. For example, some jurisdictions do not require more than one project phase for a P3. This is the case for Ontario's build-finance (BF) hospital projects, which are procured as alternative financing and procurement (AFP) projects—a term for P3s used by the Ontario government. As another example, Quebec's definition of P3s does not necessarily entail private financing, although private financing has been used in all the projects that have reached financial close[4] and have been managed or co-managed by PPP Québec

2 The project funders consist of the Alberta Treasury Board, Infrastructure Ontario, Infrastructure Québec (formerly the Agence des partenariats public-privé Québec or "PPP Québec"), Partnerships British Columbia (henceforth "Partnerships BC"), PPP Canada, and The Canadian Council for Public Private Partnerships.

3 For example, according to the Chair of the Conseil du Trésor, Monique Gagnon-Tremblay, "only about 10 per cent of the $42 billion the [Quebec] government is currently spending on infrastructure projects is for P3 projects." See Dougherty, "Quebec Renames Agency."

4 Financial close refers to the point in time when the contractual agreements, including all terms and conditions as well as the funding arrangements, between the winning consortium and the procurement authority are agreed to and signed.

Table 1
Key Features of P3 and Conventional Procurement Methods

P3 projects	Conventional projects
Integration of two or more phases of a project from design and build through to a concession period, which can include providing the facilities maintenance services or even the core services that rely on the use of the newly built facility. This feature means that P3 contracts are usually long-term contracts covering a large part of the economic useful life of the asset, which may exceed 30 years.	**Each phase procured separately** through a succession of separate contracts. Facility design is completed before tendering of the construction phase, which is often accomplished through multiple contracts awarded to multiple contractors for separate pieces of work. This conventional approach is also known as "design-bid-build." Once the new facility has been built, facilities maintenance services and other aspects of operations are delivered through contracts that are separate from the design and build contracts. Conventional construction contracts usually take the form of stipulated price contracts,[3] or construction management contracts, where an engineering firm is hired to manage the successive contract phases, including the procurement for each phase.[4]
Output-based contracts, in which the deliverables are specified in terms of the outputs required, leaving the private sector partner to put forward the best solution for meeting the output specifications. Output-based specifications are particularly important for the operational phase of the contracts (i.e., after the facility opens for public use), but they are also used for the design and construction phases, where the public sector owner specifies the functional requirements for the facilities to be procured.	**Input-based contracts**, in which the public sector owner specifies the exact inputs required for the facility. In some cases, input-based contract provisions may be appropriate either because it is not possible to specify outputs that capture the contractor's performance in a satisfactory manner, or because the potential benefits from specifying such outputs may not justify the effort required to develop, monitor, and enforce them.
Payment upon delivery, whereby the private firm is paid only for defined assets or services once construction has been completed.[1] When this feature is combined with output-based specifications, the result is a performance-based contract.	**Monthly payments** to contractors based on the percentage of the contract work completed. Up to 90 per cent of the stipulated contract price may be paid in monthly payments. Note: Payment on a percentage completion basis is not the same as payment initiated upon final delivery of the project.
Private financing, in which a substantial share of the project is financed through project-specific equity and debt. The private financing is usually provided on a non-recourse basis,[2] with the equity provided by the consortium partners making up less than 20 per cent of the project financing. Third-party debt, bank loans, and contributions from governments provide the remaining finance requirements. In other words, private working capital is not enough to qualify a project as privately financed; it must have project-specific equity and debt. This kind of private financing is usually available only to projects that are at least $40 million in size, and often much larger.	**Private financing limited to relatively modest levels of working capital.** Because conventional contracts involve regular payments to the contractors, private financing is limited to a modest amount of working capital.

1 In some cases, partial payments have been arranged at key milestones during the construction phase.
2 Financing is provided on a non-recourse basis when recourse to the equity investor for any claims resulting from the project is limited to the investor's equity contribution.
3 Stipulated price contracts, which are also known as Canadian Construction Documents Committee (CCDC) 2, "require the contractor "to perform the required work for a single, pre-determined fixed price or lump sum, regardless of the contractor's actual costs." See www.ccdc.org/documents/index.html#CCDC2.
4 Construction management is sometimes referred to as an "engineering-procurement-construction-management" approach. In this case, the firm managing the contracts is the "managing contractor." See Grimsey and Lewis, "Public Private Partnerships," for a comparison of the advantages and disadvantages of traditional fixed-price contracts, managing contracts, and P3s. In addition, a matrix developed by the Canadian Design-Build Institute compares the performance criteria found in the design-bid-build approach with those in the construction management and the design-build approaches. See www.cdbi.org/documents/guides/matrix.pdf.

(cont'd on next page)

Table 1 *(cont'd)*
Key Features of P3 and Conventional Procurement Methods

P3 projects	Conventional projects
Private sector project stewardship, whereby overall control of project execution is transferred to the private sector partner. The completion of milestones is determined by an independent certifier and overseen by the private sector partner. The public sector owner must step back and allow the P3 consortium and its contractors the freedom to manage each phase of the project in a way that best meets the contractual obligations. However, the public sector owner ultimately retains ownership of the asset, including the right to make changes to the requirements or even to terminate the P3 agreement.	**Project stewardship by the public sector or a contract management firm.** Overall control of project execution rests with the public sector owner (or a contract management firm acting on behalf of the public sector owner). The public sector owner (or its contract management firm) would typically have engineers on site to supervise and direct the project and to inspect and approve the work at key completion milestones.

Source: The Conference Board of Canada

to date. Since our objective in this report is to include in our assessment of P3s all of the transactions undertaken by P3 agencies or P3 offices within government departments in Canada, we have allowed for some ambiguity in the P3 definition.

One misconception that must be dispelled is that P3s in Canada are about the privatization of public assets.

We have also allowed for some ambiguity in our definition of the conventional procurement approach, which covers different types of contracts and procurement methods, ranging from multiple, small-value fixed-price contracts that are part of design-bid-build procurements through to contract management and even design-build contracts. In principle, conventional contracts could include some of the features of P3 contracts, such as integration of the design and construction phases and even some output-based performance requirements. However, they would not include private financing and the associated features of payment upon delivery and private sector project stewardship. This definition is consistent with the argument that effective risk transfer to the private sector consortium is much more difficult to achieve without private financing. According to this view, private financing is the glue that binds the key elements of a P3 approach to procurement, including output-based performance specifications, payment upon delivery, and private sector project stewardship.

WHAT P3s ARE NOT

Now that we have discussed conventional and P3 procurement methods, it is worth dispelling some of the misconceptions that have crept into the public discourse on P3s. First, P3s in Canada are not about the privatization of public assets. Ownership of new infrastructure facilities either remains with the public sector or is transferred back to the public sector at the end of the contract term. Moreover, the public sector retains full control of the infrastructure and the outcomes of the project. The public sector owner also retains the right to make changes to the project requirements (i.e., change orders), including terminating the P3 agreement, and it retains full accountability to taxpayers for the project.

The second point is that most of the Canadian P3s do not involve replacing public provision of assets or services with private provision. Conventional public infrastructure projects already rely almost exclusively on private sector firms for construction services. Design services for conventional projects are also obtained primarily from private firms, although in some cases governments also retain some in-house design capabilities. Facilities management and operation and maintenance of public infrastructure, such as roads and bridges, have also been increasingly outsourced to private sector firms in recent years. In areas where the private sector is already providing design, construction, and facilities maintenance services, the only differences between conventional and P3 procurement methods are the private financing and contractual provisions discussed above.

Despite this, some P3 projects that include an operation and maintenance phase have seen publicly provided services replaced by privately provided services, such as catering and laundry services in the health sector ("soft facilities management" services) and building maintenance services such as elevator repairs ("hard facilities management" services). However, very few P3 projects have included soft facilities management services, especially the most recent wave of P3 projects undertaken by P3 agencies since 2005.[5] Moreover, some jurisdictions, such as Ontario, have explicitly avoided including soft facilities management services in the hospital P3 contracts with a maintenance phase (e.g., Sault Area Hospital, North Bay Regional Hospital, Woodstock General Hospital, and the Niagara Health System P3s included only hard facilities management services). As for the long-term P3 projects with hard facilities management services, the affected staff have typically been transferred to the private sector. However, their union representation, collective bargaining rights, and existing contract terms have not been affected.

SCOPE OF P3s ASSESSED IN THIS REPORT

This report focuses on assessing Canadian P3 projects that reached financial close under the direction or guidance of the P3 agencies or the P3 offices located within central agencies or line departments of provincial governments.[6] These projects, which we refer to as the second wave of P3 projects, began with the Sierra Yoyo Desan Resource Road, the Gordon & Leslie Diamond Health Care Centre, and the Abbotsford Regional Hospital and Cancer Centre projects, all of which reached financial close in 2004 under the guidance of Partnerships BC. We refer to the P3 projects that reached financial close before the establishment of the P3 agencies as the first wave of P3 projects, as shown in Exhibit 1.

We excluded the first wave of Canadian P3 projects—such as Confederation Bridge, Highway 407 ETR, and the Brampton Civic Hospital—for several reasons. First, many of the P3 procurements chosen in the first wave were initiated at least in part by governments seeking to achieve off-balance-sheet accounting treatment for their infrastructure investments (e.g., Confederation Bridge, Highway 104 Western Alignment), although these accounting treatments have been largely discredited and are now no longer feasible.

The first-wave P3 projects did not always succeed in transferring the financing risk to the consortia.

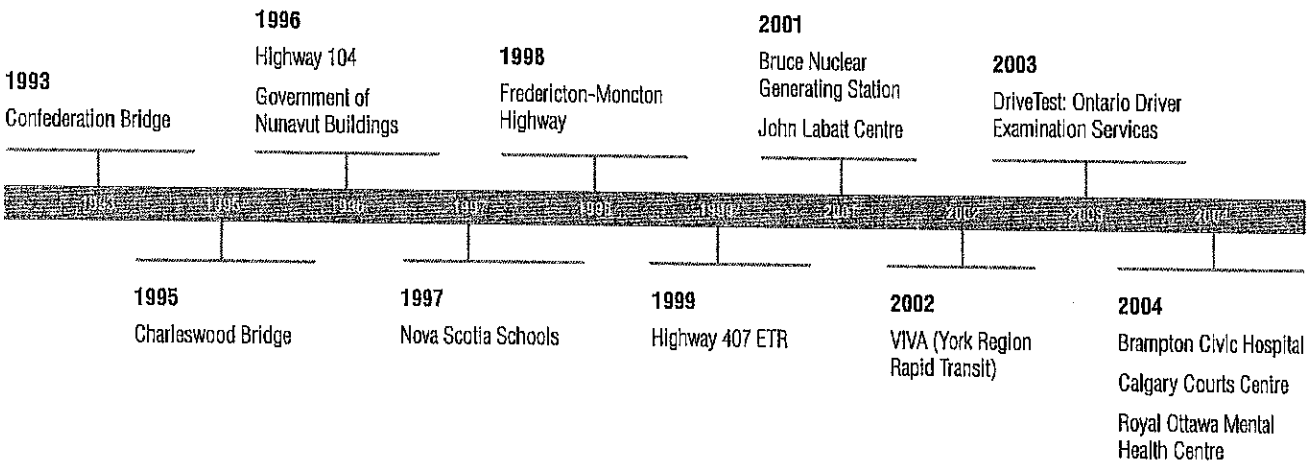
Second, the P3 transactions concluded during the first wave were quite different from those undertaken during the second wave of P3s. For example, the first-wave P3s usually attempted to transfer revenue risk to the private consortia, while in most second-wave P3 projects the consortia are compensated based on availability payments. Moreover, the first-wave P3 projects did not always succeed in transferring the financing risk to the consortia, while this is standard practice in second-wave P3s. (See box "Lessons Learned From the First Wave of P3 Projects.")

Third, the procurement process for the first wave of Canadian P3s was relatively ad hoc compared with that for the P3 procurements undertaken in the second wave. This is not surprising, since the first wave of projects was undertaken in a period when P3s were a relatively new phenomenon in both Canada and worldwide. Thus, many of the early first-wave P3 projects never had a value-for-money (VfM) assessment comparing the P3 option with a conventional procurement. Even where a VfM assessment was carried out on some of the subsequent first-wave P3s, it was not always done early enough in the process to inform changes in the procurement

5 In such cases, the affected public sector employees have usually been transferred at equivalent wage rates and working conditions to the private firms providing these services. In Quebec, this is required by the Quebec Government's *Public Private Partnerships Framework Policy* of June 2004, p. 3.

6 This is not to suggest that these are the only P3s in Canada. All three levels of government are engaged in P3s of one form or another, such as Windsor Bridge (Transport Canada), Disraeli Bridge (City of Winnipeg), and the courthouse in Saint John (City of Saint John). However, we have focused on the P3 projects initiated by the four provincial jurisdictions, British Columbia, Alberta, Ontario, and Quebec, because these have set up specialized infrastructure agencies (or equivalent offices within central agencies) and because the projects in question are relatively similar in structure, enabling meaningful evaluation.

Exhibit 1
Timeline of P3 Projects Reaching Financial Close—The First Wave of Major P3 Projects



Note: The project year is based on the date of financial close of the project. These projects were drawn from the Canadian PPP Project Directory, but they exclude corporatizations, such as Nav Canada, and projects less than $50 million in value at the time of closing. Note that the three projects listed under 2004 reached financial close prior to the establishment of Infrastructure Ontario and the Alternative Capital Financing Office of the Alberta Treasury Board.
Sources: The Canadian Council for Public-Private Partnerships, *Canadian PPP Project Directory;* The Conference Board of Canada.

process. (For example, see the Ontario Auditor General's discussion of the VfM assessment in the Brampton Civic Hospital P3.[7])

In retrospect, these lapses occurred in an environment where many public sector owners—from hospitals to cities and even provincial departments—were required to act as their own P3 procurement authorities for the first time (and sometimes their only time). The procurement environment for the second wave of P3s has been markedly different: Most of these P3 projects have been managed, co-managed, or guided through the procurement process by a dedicated public sector P3 agency that has experience with multiple P3 transactions and the benefit of a relatively standardized procurement process, both within jurisdictions and increasingly across jurisdictions as well.

The first wave of Canadian P3 projects has already been reviewed in the literature. In contrast, the second wave of P3 projects has received much less attention. Moreover, while the first wave of P3s continues to provide valuable lessons for public sector owners and private sector participants, a review of the second wave of P3s is likely to provide more timely guidance for P3 procurements going forward.

METHODOLOGY

The objective of this report is to present a state-of-the-art assessment of P3s in Canada based on a critical review of the available evidence, combined with the latest thinking from practitioners, policy makers, and academic experts on the topic. The methodology supporting the results of this research project consisted of the following four elements:

- a review of the Canadian literature and publicly available documentation on P3s, as well as notable studies from other jurisdictions with extensive experience with this type of procurement, such as the United Kingdom and Australia;

7 Auditor General of Ontario, "Brampton Civic Hospital."

- approximately 20 interviews with P3 practitioners from the private and public sectors, as well as with academic experts in the field;
- the compilation of a database identifying key points in the procurement process and outcomes for the second wave of P3 projects that reached financial close by November 2009; and
- four case study pairs, with each pair consisting of a P3 project and a conventional project from each of the four provincial jurisdictions that have been most active in the second wave of P3s in Canada. The intent of the case studies is to enable comparison of the P3 and traditional approaches to procurement in each of these jurisdictions.

Lessons Learned From the First Wave of P3 Projects

The first wave of P3s in Canada reached financial close between the early 1990s and 2004, as indicated in Exhibit 1. These projects have already been reviewed by several authors,[1] based on information that was publicly available at the time. These case study reviews produced several findings:

First, the off-balance-sheet treatment of public sector liabilities was a widespread practice in the first-wave P3 projects. The Confederation Bridge and Highway 104 projects are two prominent examples of such public sector accounting treatment. However, this practice reduces the transparency of public sector accounts and provides no economic value. Further, the extra effort required to structure an off-balance-sheet transaction arguably leads to higher transaction costs and thereby destroys value. Fortunately, this accounting practice has been abandoned in the second wave of P3 transactions.

Second, many first-wave P3 transactions were also characterized by an attempt to transfer all the revenue risk inherent in a project (also known as "demand risk" or "use risk") to the private consortia. Typically, this would mean that a private sector consortium was responsible for all the risk associated with any variation in revenues arising from the use of the facility, as was the case for toll revenues in the Confederation Bridge and Highway 104 projects. Vining and Boardman have argued that these attempts to transfer revenue risk were largely unsuccessful, because private sector consortia usually have only limited influence over traffic levels or infrastructure use levels.[2] As a result, the effective transfer of revenue risk was seldom achieved in the first-wave P3 transactions, because other features of these transactions were usually adjusted to lower the likelihood of reductions in traffic levels or to mitigate the commercial consequences thereof. For example, in the Highway 104 project, the Nova Scotia Auditor General noted that "the final agreement required the Province to compel large trucks to use the road [and] to maintain a 30 km per hour speed differential between the old and new road."[3]

The difficulty of transferring revenue risk arises in situations where the key variables determining traffic or demand levels remain largely under public sector influence, such as the management of network-wide traffic levels and economic activity levels in the regions surrounding the tolled facility. Since risks are managed most cost-effectively when they are allocated to the party best able to manage them, revenue risks in these situations are best allocated to the public sector, as has generally been done in second-wave P3 projects.[4] The latter have been characterized by availability-based performance payments.

A third finding worth noting is that some first-wave P3 deals did not succeed in fully transferring financing risk to the private consortium, although the projects in question relied on private financing (e.g., Confederation Bridge). In such cases, the public sector owners incurred the higher costs of private financing (relative to public sector debt financing) without arguably enjoying its full benefits, because the financing was not at risk for the consortium.

1 See Allan, Public-Private Partnerships; Vining and Boardman, "Public-Private Partnerships"; Auditor General of Ontario, "Brampton Civic Hospital"; Murphy, "The Case for Public-Private Partnerships"; Vining et al., "Public-Private Partnerships in the US and Canada"; Iacobacci, Steering a Tricky Course.

2 Vining and Boardman, "Public-Private Partnerships."

3 Auditor General of Nova Scotia, "Highway 104 Western Alignment Project," p. 127, cited in Vining and Boardman, "Public-Private Partnerships," p. 27. Non-compete clauses are also common risk-mitigating features in projects that attempt to transfer revenue risk (e.g., limitations on expanding the capacity of adjacent roadways, as in the case of State Route 91 in California). The limited success in transferring financing risk to the private consortium is another feature of P3 deals with substantial revenue risk, as was the case in the Confederation Bridge project and the construction of Highway 407 ETR.

4 Some second-wave P3s did transfer revenue risk to the private consortium; however, these projects involved either a limited transfer of revenue risk (e.g., sharing of toll revenues in the A25 and A30 highway projects) designed to provide the consortium with incentives to keep the facility open for service, or transferred revenue risks that tended to lie largely within the control of the consortium (e.g., the Sierra Yoyo Desan Resource Road).

Sources: Vining and Boardman, "Public-Private Partnerships"; Iacobacci, *Steering a Tricky Course*.

CHAPTER 2

Assessing the Benefits and Drawbacks of P3s in Procuring Public Infrastructure

Chapter Summary

- Empirical evidence indicates that large infrastructure projects procured by governments are often over budget and behind schedule, but P3s are not always a solution to these problems.
- VfM studies constitute the key public interest test as to whether an infrastructure procurement should proceed as a P3 or as a conventional project.
- Nineteen of the 55 second-wave P3 projects have reached substantial completion, and interim results suggest a strong performance.
- Most of the 19 P3 projects were delivered either early or on schedule (two were delivered up to two months late), and none of the 55 projects have to date exceeded their respective public sector budgets.
- P3 procurement comes at a cost—the incremental cost of private financing, any additional costs of risks transferred to the P3 partner (i.e., the risk premium), and the incremental transaction costs—but these costs can be more than offset by the gains from transferring selected risks to the private partner.

In this chapter, we investigate whether (and under what conditions) procuring public infrastructure assets using P3s can generate efficiency gains relative to conventional forms of infrastructure procurement by the public sector.[1] Efficiency gains take the form of cost savings or time savings achieved in procuring a given quantity and quality of infrastructure. They can also take the form of any quantity or quality improvements in infrastructure for any given cost. The overall proposition is that P3 procurements provide private sector firms with strong incentives to deliver the infrastructure outcomes valued by the public sector owner, resulting in efficiency gains relative to conventional procurement methods. The efficiency gains from P3 procurements are achieved through one or more of the following mechanisms:

1. **Performance-based contracts,** which specify deliverables in terms of outputs (e.g., lane availability, skid resistance, smoothness, and snow-clearing requirements in the case of roads) rather than prescribing specific materials to be used. These types of contracts also encourage innovation, since private contractors have greater discretion over how to deliver the outcomes cost-effectively.
2. **Optimal risk allocation** between the public sector owner and the private sector partner, which means that many of the risks are transferred from the public sector to the private consortium if it can manage these risks more cost-effectively.

1 The terms "benefits," "efficiency gains," and "savings" are used interchangeably in this report.

3. **Integrating the design, construction, and operation and maintenance phases** of a project to minimize total life-cycle costs for the infrastructure. For example, it can be more cost-effective to build a facility with features that are more expensive at the outset but will result in reduced maintenance costs over the whole life-cycle of the facility.[2] A private firm that is responsible for only one phase of the project does not have an incentive to incur these additional costs, even if those costs would be more than offset on a present-value basis by the savings achieved in a subsequent phase.
4. **Private financing,** which includes project-specific debt and equity, is one of the key mechanisms for ensuring that the risks transferred to the private partner are effectively assumed and managed by that partner. By requiring the private consortium to finance most of the development costs through to completion of the construction phase, the public sector owner ensures that the consortium has a compelling incentive to deliver on its contractual commitments and do so on a timely basis. This is because any delays in meeting the project commitments lead to higher debt-servicing costs, as the consortium must carry its debt load for a longer period. This incentive ensures that the private debt providers, which are usually banks or bond holders, exercise active project oversight over and above that provided by the equity holders. In contrast, under conventional construction contracts, private firms require only limited working capital, because they tend to be paid monthly and usually according to the percentage of the contract that is completed at the time. As a result, under conventional contracts, firms do not face as strong an incentive to meet schedule commitments on a timely basis, because they have more limited financial exposure in the event of any contractual delays.

The benefits of this procurement model are expressed through a combination of:

- **cost savings** or quality enhancements in the design or construction of a new facility, and in the operation and maintenance of the facility (i.e., in the service provision phase); and
- **time savings** in the delivery of a public infrastructure facility fit and available for use.

It is also important to recognize that these benefits come at the expense of additional costs relative to conventional procurements. Specifically, P3s entail the following additional costs:

- **The costs of transferring selected risks to the private partner.** A P3 contract usually entails additional risks to the private partner compared with the risks that the partner would usually accept for the same infrastructure project under a conventional contract (e.g., risks of escalating construction costs and other such risks that are retained by the public sector under conventional contracts—see box "Risk Allocation Between Public and Private Partners"). The cost to the public sector of transferring these risks to the private partner is known as the "risk premium." If the private partner has better control over the transferred risks than the public sector, which is often the case for design and construction costs, it can either avoid certain risks or mitigate their impact. As a result, the risk premium will be lower than the public sector's risk exposure under a conventional approach, where it retains responsibility for the risks.[3]
- **The higher costs of private financing** used in P3s (primarily debt and usually a small tranche of equity) relative to the public financing (i.e., government bonds) of conventional procurements.[4]
- **The higher transaction costs** incurred in developing, monitoring, and managing P3 contractual agreements compared with those incurred in developing,

2 The terms "infrastructure" and "facility" are used interchangeably throughout this report.

3 Note that this discussion of risk is from an ex ante perspective, which refers to the estimated value or cost of exposure to a certain risk in advance of the project. During the project execution, some of the contingencies that drive the risks (e.g., design errors, construction cost escalation) may turn out to be either better or worse than expected. If the risk in question is held by the private partner, a contingency that doesn't arise or turns out better than expected will benefit the private partner's bottom line (since the risk is already priced into the bid); however, a risk that turns out worse than expected has a negative impact on the private partner's bottom line.

4 Some P3 practitioners consider the risk premium to be part of the private financing cost, perhaps because private financing is seen as the only way of effectively transferring risks to the private partner. However, we maintain the distinction between the risk premium and the incremental cost of private financing in this report, because the risk premium can take the form of a higher design-build price or higher operating costs. Infrastructure Ontario maintains a similar distinction in *Assessing Value for Money*, pp. 6–9.

monitoring, and managing a succession of contracts over the same period using a conventional approach to infrastructure procurement. These higher costs are the incremental transaction costs borne by the public sector, such as the additional due diligence and advisory costs incurred during the procurement process. However, it can be a tricky process to identify the incremental transaction costs, because many of the planning and management costs that occur at later stages under a conventional procurement approach are necessarily incurred upfront in a long-term P3 agreement. Thus, to accurately identify any incremental transaction costs in P3 approaches relative to conventional procurement approaches, we have to compare transaction costs incurred during the full P3 contract period with those incurred during an equivalent period characterized by a succession of conventional contracts. It should also be noted that the transaction costs of private sector bidders tend to be higher than they would be under a conventional approach and that one would expect these costs to be passed on to the public sector through the cost of the winning bid.

Risk Allocation Between Public and Private Partners

Risk exposure in an infrastructure project is allocated in one of the following ways:

- **Transferred risks.** Risks can be transferred fully to the private sector partner. For example, the risk of latent defects in a newly built asset is usually transferred to the private partner in a P3, whereas in a conventional project this risk can be borne by the public sector owner if it emerges after the warranty period, which usually lasts one year from the time of completion of the asset.
- **Retained risks.** Risks can be retained entirely by the public sector owner, such as the risks of a delay in obtaining environmental assessments, as often happens in P3 projects.
- **Shared risks.** Risks can also be shared between the public sector owner and the private consortium. For example, earthquake risk is often shared in a P3 project, because the private sector may be only partly responsible for repairing the infrastructure, depending on the extent of the damage.

This kind of risk allocation is considered explicitly in the context of a P3 procurement process. However, it also applies to a conventional procurement process, even though risk allocation may not be considered explicitly by the relevant public sector procurement authorities.

Source: Partnerships BC, "Draft Discussion Paper," p. 22.

If the three categories of costs described above are offset by the value associated with transferring selected risks to the private partner, the overall costs of the project will be lower under a P3 approach than under traditional project delivery.

Many costs that occur at later stages under a conventional approach are incurred upfront in a P3 agreement.

The benefits of a P3 procurement do not always outweigh the costs, which is why it is standard practice for public sector procurement bodies to undertake early screening of projects to determine the suitability of a project for a P3 procurement process. If the project is deemed suitable, a VfM assessment is done to compare the total costs of procurement (for construction, operation, and maintenance) under the P3 approach with those under a conventional approach.[5] In principle, a P3 procurement should be used only if there is a positive VfM result, that is, a net benefit is expected from proceeding with a P3 procurement.

In the remainder of this chapter, we examine each of the benefits and costs discussed above: the cost and time savings resulting from P3 procurements and the additional or incremental costs of adopting a P3 procurement approach. (The four explanatory factors responsible for driving efficiency gains under P3 procurements are discussed in Chapter 3.) We also discuss additional factors that have been raised as potential benefits and costs of P3 procurements, such as debt reduction benefits and the potential costs resulting from reduced flexibility during the term of a P3 contract. These costs could be triggered by any change in infrastructure or service requirements due to changes in public requirements, changes in policy, or changes in technology. For each benefit or cost discussed below, we conduct a review of the relevant literature and summarize the available evidence, focusing on evidence from the second wave of P3s initiated by P3 procurement agencies since 2004.

5 Some VfM studies, such as those undertaken for Partnerships BC, also take into account qualitative factors, such as the ability of the procurement approach to support the achievement of the project objectives.

A SAMPLE VfM ASSESSMENT: THE DURHAM CONSOLIDATED COURTHOUSE

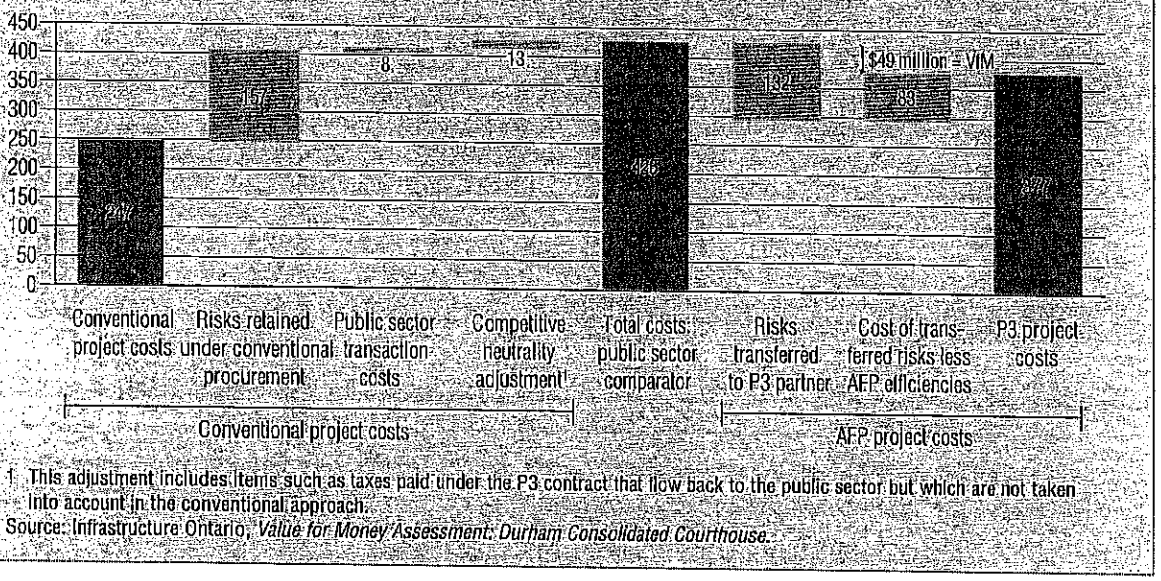
Before addressing the specific factors discussed above, it is worth reviewing an example of a VfM assessment. These assessments, which are usually undertaken for each P3 project as part of the procurement process, involve a detailed comparison of the total costs of both the P3 and conventional procurement options on an ex ante basis. VfM studies constitute the key public interest test as to whether the infrastructure procurement should proceed as a P3 (or be modified or proceed as a conventional project). The role of VfM studies in the procurement process for the second wave of P3s is discussed in Chapter 4.

VfM studies constitute the key public interest test as to whether the procurement should proceed as a P3.

The Durham Consolidated Courthouse (DCC) was one of the first second-wave projects procured by Infrastructure Ontario as an alternative financing and procurement (AFP) project. The left-hand side of Chart 1 shows the estimated cost of undertaking the design, construction, financing, and maintenance of the DCC over a 30-year period using a conventional procurement process—that is, a succession of conventional design, construction, and service contracts. These costs were estimated at $247 million in 2007 dollars, but the VfM methodology—discussed in Chapter 4—also involves quantifying the risk exposure retained by the public sector under this conventional approach. These are the risks that typically lead to cost and budget overruns in public infrastructure projects, and this risk exposure was estimated at $157 million. In addition, the total costs of implementing the DCC project using a conventional procurement included the transaction costs incurred by the public sector—that is, $8 million in project management and advisory costs—as well as a "competitive neutrality" adjustment of $13 million that took into account public sector revenue that would arise under the P3 but not under conventional procurement (e.g., tax revenues). These four cost components are the inputs into what is called the public sector comparator (PSC), that is, the total costs of procuring the DCC facility and maintenance services through a conventional procurement over the 30-year life of the facility.

The right-hand side of Chart 1 shows the total project costs under the AFP approach, based on the agreement signed with the private sector consortium, Access Justice Durham. It also shows how the AFP project costs compare with those of the PSC. First, we note that the AFP

Chart 1
Comparing Conventional and AFP Procurements—The Durham Consolidated Courthouse
(2007 $ millions)



1 This adjustment includes items such as taxes paid under the P3 contract that flow back to the public sector but which are not taken into account in the conventional approach.
Source: Infrastructure Ontario, *Value for Money Assessment: Durham Consolidated Courthouse*.

project involves a transfer of risks estimated at $132 million in 2007 dollars to the private consortium. In other words, most of the risk exposure that would have been retained by the public sector under a conventional procurement approach is transferred to the private consortium. The public sector retains exposure to project risks estimated at $25 million. Chart 1 also shows that the cost of transferring the risk exposure to the private consortium less the value of any efficiencies resulting from the AFP procurement approach is $83 million. Specifically, the $83 million captures the following components:

- the risk premium, which is the cost to the public sector of the additional risks assumed by the private consortium;
- the incremental cost of the private financing under the AFP approach;
- the incremental transaction costs borne by the private consortium, including any provisions for covering its bid costs on losing bids;
- the incremental transaction costs borne by the public sector, which include due diligence and other advisory costs; and
- the value of any other efficiencies resulting from the AFP procurement approach (e.g., efficiencies arising from combining the design, construction, and maintenance phases).[6]

The VfM estimate captures both the savings arising from the transfer of risks and any other efficiencies arising from the AFP procurement.

The total cost of the DCC project under the AFP approach is $377 million, including the risk exposure retained by the public sector. This represents a VfM savings of $49 million relative to the total cost of the DCC under a conventional procurement approach (i.e., the PSC at $426 million). The VfM estimate captures not only the savings or efficiencies arising from the transfer of risks to the private partner but also any other efficiencies resulting from the AFP procurement. The total cost of the DCC project under the AFP approach can also be calculated from the PSC by removing the risk exposure transferred to the private consortium ($132 million) and adding the cost to the public sector of transferring these risks ($83 million).[7]

COST SAVINGS AND TIME PERFORMANCE OF P3s

There is a substantial body of empirical evidence indicating that large infrastructure projects procured by governments tend to result in cost overruns and significant delays in delivery schedules. This problem, which is not unique to Canada, has become so widely recognized and documented that it has become known in the literature as the problem of "optimism bias" in major infrastructure projects. For example, one of the original papers on this topic, by Flyvbjerg et al., found that 90 per cent of the 258 transportation infrastructure projects examined in over 20 countries had underestimated project costs by an average of 39 per cent.[8] These cost overruns and time delays have also occurred in Canada in both social and transportation infrastructure procurement, and it is likely that these problems were important factors motivating governments to look for more effective ways of procuring large infrastructure projects.

There are several ways to measure the benefits or costs of P3s in Canada. Earlier in this chapter, we discussed the cost and time performance of P3s relative to comparable or equivalent conventional procurements. The best source for this comparison is the VfM studies, which capture the cost and time savings between P3 and conventional modes of procurement for an infrastructure project.

An alternative approach to evaluating the performance of infrastructure projects is to measure their cost and time performance against their own milestones. This performance measure is evaluated relative to the budgets and delivery targets set at different points in the infrastructure planning and procurement process—for example, the targets set when the budget is approved by the level of government responsible for the project, or the targets

6 The VfM assessment of the DCC project enables us to identify the *incremental* transaction costs borne by the public sector as $9 million in 2007 dollars, or 2.1 per cent of the PSC budget. The four other components of the $83-million figure amount to $74 million, but cannot be broken down further.

7 Calculations are subject to rounding errors.

8 Flyvbjerg et al., "Underestimating Costs in Public Works Projects."

set when the project reaches financial close. This type of project performance measure is the time and cost certainty with which projects are delivered, and is what we mean when we say that a project is "on time and on budget." We examine the evidence regarding the cost and time certainty of P3s and conventional infrastructure projects below.

Although Canada has been among the most active jurisdictions in initiating P3 projects, it is still rather early to evaluate the operational or service phase outcomes of the second wave of P3 projects in Canada.

THE EVIDENCE BASE FOR CANADIAN P3s

The infrastructure projects that provide the evidence base for this report are listed in Table 2.[9] They are in the four Canadian jurisdictions that have been most active in using a P3 procurement model for the delivery of infrastructure facilities and subsequent maintenance services—Alberta, British Columbia, Ontario, and Quebec. Only projects that had reached financial close as of the end of November 2009 are included.[10] The earliest of the 55 projects listed reached financial close in 2004 under the guidance of Partnerships BC, the first of the P3 agencies. Most of these projects (32) provide facilities for the health and long-term care sector, 14 are in the transportation sector, 8 relate to other social infrastructure (such as schools, data centres, a courthouse, a sports centre, and a concert hall), and 1 is for a water treatment plant. The projects include three fixed-price design-build projects, which share many of the attributes of P3s but do not include private project-specific debt and equity financing.

The projects are at various stages of completion. About one-third of the projects (19) have reached their respective substantial completion date, that is, the date by which the new facility should be built and soon available to be put in service as stipulated in the P3 partnership agreement. One other project—the Ottawa Hospital Regional Cancer Centre (Queensway Carleton Hospital)—is expected to reach substantial completion by the end of 2009. Only 12 of the projects have already entered their operational phase, where the private consortium is responsible for maintaining the infrastructure.[11] This suggests that although Canada has been among the most active jurisdictions in initiating P3 projects, it is still rather early to evaluate the operational or service phase outcomes of the second wave of P3 projects in Canada; such an evaluation is more easily carried out in pioneering jurisdictions such as the United Kingdom and Australia.[12]

The cost savings arising from P3 procurements are estimated in the first instance in the VfM studies that compare the total costs of P3 versus conventional procurement methods before the start of each P3 project. Table 2 shows that these savings can vary from just a few million dollars per project, as in the case of Edmonton's Anthony Henday Drive Southeast Leg Ring Road or Vancouver's Golden Ears Bridge, through to $751 million in the case of the Autoroute 30 project just south of the Montréal area. When expressed as a proportion of the potential costs for procuring the projects through conventional contracting methods (i.e., in terms of the PSC), the savings range from 0.8 per cent through to 61.2 per cent of the PSC for each project.

These VfM estimates are a gauge of the cost savings expected at the outset of a project. For both procurement approaches, the total costs are estimated ex ante (i.e., before the costs are incurred by the government and private sector partners). The estimates are based on high-level comparisons with projects delivered through similar procurement methods as well as detailed cost analysis undertaken by the procurement authority and its advisors. Whether the actual savings match the expected savings by the end of the P3 project depends on the degree of cost and time certainty of P3 projects, as discussed below.

9 In Table 2, the Trillium Health Care Centre in Ontario counts as one project, although it has two components.

10 This refers to the date when the partnership agreement with the private sector consortium is signed and takes effect.

11 In a few cases, the consortium is also responsible for the operation of the facility, as in the case of the Britannia Mine Water Treatment Plant.

12 Over 900 P3 projects or "private finance initiatives" were initiated in the United Kingdom between 1987 and 2007, according to IFSL Research, "PFI in the UK."

Table 2
Cost and Time Performance of P3s in Canada

Project name	Type	P3 public sector budget $ millions (date)	Expected VfM savings $ millions (date)	Financial close	Substantial completion date (project agreement)
Alberta					
Anthony Henday Drive Southeast Leg Ring Road (Edmonton)	DBFO	493 (2004)	4 (2004)	Jan. 2005	Oct. 22, 2007
Northeast Stoney Trail Ring Road (Calgary)	DBFO	650 (2007)	350–450 (2007)	Feb. 2007	Autumn 2009
Anthony Henday Drive Northwest Leg Ring Road (Edmonton)	DBFO	1,420 (2008)	240 (2008)	Jul. 2008	Autumn 2011
Alberta Schools Alternative Procurement Phase I (Calgary & Edmonton)	DBFM	634 (2008)	118 (2008)	Sep. 2008	Jun. 2010
British Columbia					
Abbotsford Regional Hospital and Cancer Centre	DBFOM	424 (2004)	39 (2004)	Dec. 7, 2004	May 6, 2008
Britannia Mine Water Treatment Plant	DBFO	27.2 (2005)	12.5 (2005)	Jan. 12, 2005	Jan. 1, 2006
Sierra Yoyo Desan Resource Road (SYD)	DBFO	n.a.	n.a.	Jun. 21, 2004	Bypass and bridge Nov. 30, 2004; SYD upgrade Nov. 30, 2005
Gordon & Leslie Diamond Health Care Centre	DBFM	64 (2004)	17 (2004)	Sep. 29, 2004	Aug. 18, 2006
Kicking Horse Canyon Phase 2 (Highway Improvement)	DBFO	166.3 (2005)	18.1 (2005)	Oct. 28, 2005	Aug. 30, 2007
William R. Bennett Bridge	DBFO	170 (2005)	25 (2005)	Jun. 30, 2005	Sep. 15, 2008
Charles Jago Northern Sport Centre	DB	n.a.	n.a.	Apr. 25, 2006	Aug. 11, 2007
Sea-to-Sky Highway Improvement	DBFO	789.9 (2005)	–46	Jun. 3, 2005	Aug. 31, 2009
Canada Line	DBFO	1,658 (2005)	92 (2005)	Jul. 29, 2005	Nov. 30, 2009
Golden Ears Bridge	DBFO	1,126.6 (2006)	6–10 (2006)	Mar. 3, 2006	Jul. 1, 2009
Pitt River Bridge and Mary Hill Interchange (Gateway)	DB	n.a.	n.a.	Feb. 9, 2007	Oct. 2009

Actual substantial completion date	Contract variations to date (Y/N)	Successful claims against the public sector (Y/N)	End of contract term	Results/comments
Oct. 22, 2007	N	N	2037	
Nov. 2, 2009	Y	N	2039	
n.a.	Y	N	2041	
n.a.	Y	N	2040	
May 6, 2008	Y	N	May 2038	On budget; net zero scope changes; P3 public sector budget excludes $75-million capital contribution from local health authorities
Jan. 1, 2006	Y	N	Jan. 2026	On budget; Interim operating period began 50 days earlier
Bypass and bridge Oct. 27, 2004; SYD upgrade Nov. 30, 2005	N	N	Jun. 2020	On budget; one component delivered 34 days ahead of schedule, remainder of project on time
Aug. 18, 2006	N	N	Aug. 2036	On budget
Jun. 16, 2007	Y	N	2032	On budget; delivered 77 days ahead of schedule
May 30, 2008	Y	N	2035	On budget; delivered 108 days ahead of schedule
Aug. 11, 2007	n.a.	n.a.	n.a.	On budget; VfM studies not undertaken for DB contracts
Aug. 31, 2009	Y	N	2030	B.C. Ministry of Transport asserts that the qualitative benefits demonstrate VfM
Sep. 2009	n.a.	n.a.	2040	On time, on budget
Jun. 16, 2009	n.a.	n.a.	2041	Operational Jun. 16, 2009, two weeks ahead of schedule
Oct. 25, 2009	Y	Y	n.a.	VfM studies not undertaken for DB contracts

(cont'd on next page)

Table 2 *(cont'd)*
Cost and Time Performance of P3s in Canada

Project name	Type	P3 public sector budget $ millions (date)	Expected VfM savings $ millions (date)	Financial close	Substantial completion date (project agreement)
Port Mann/Highway 1 (Gateway)	DB	n.a.	n.a.	Feb. 2009	Dec. 2010
Kelowna and Vernon Hospitals	DBFM	442.7 (2008)	25.4 (2008)	Aug. 20, 2008	UBCO Clinical Academic Campus and parkade: Dec. 2009; VJH Patient Care Tower: May 2011; KGH Patient Care Tower: Aug. 2012
Royal Jubilee Hospital Patient Care Centre	DBFM	340.8 (2008)	22.2 (2008)	Jul. 18, 2008	Dec. 2010
Surrey Outpatient Hospital	DBFM	234.2 (2008)	22.5 (2008)	Aug. 28, 2008	Apr. 2011
Fort St. John Hospital and Residential Care Facility	DBFM	n.a.	n.a.	Jul. 16, 2009	n.a.
Quebec					
Autoroute 25	DBFOM	143.1 (2007)	226.1 (2007)	Sep. 13, 2007	Oct. 2011
Autoroute 30	DBFOM	1,539 (2008)	751 (2008)	Sep. 25, 2008	Dec. 2012
Motorway Service Areas (Phase I)	DBFOM	–4 (2008)	17 (2008)	Sep. 30, 2008	Sep. 2010
Champlain Residential and Long-Term Care Centre (RLCC)	DBFOM	222 (2009)	98 (2009)	Apr. 3, 2009	Oct. 2010
Montréal Symphony Orchestra Hall	DBFOM	267 (2009)	47 (2009)	Apr. 22, 2009	May 2011
Ontario					
Hôpital Montfort	BF	220 (nominal)	19 (nominal)	Jun. 2006	May 2010
Durham Consolidated Courthouse	DBFM	377 (Mar. 2007)	49 (Mar. 2007)	Mar. 2007	Nov. 2009
North Bay Regional Hospital	BFM	592 (Mar. 2007)	57 (Mar. 2007)	Mar. 2007	Jun. 2010
Quinte Health Care	BF	86 (nominal)	9 (nominal)	Feb. 2007	Jan. 2010
Trillium Health Centre—Mississauga	BF	115 (nominal)	13 (nominal)	May 2007	Aug. 2009

Actual substantial completion date	Contract variations to date (Y/N)	Successful claims against the public sector (Y/N)	End of contract term	Results/comments
n.a.	N	N	n.a.	VfM studies not undertaken for DB contracts
n.a.	Y	Y	Dates range depending on the project: UBCO Clinical Academic Campus and parkade: 2039 VJH Patient Care Tower: 2041 KGH Patient Care Tower: 2042	
n.a.	N	N	2040	
n.a.	Y	N	2041	
n.a.	N	N	n.a.	VfM report under development
n.a.	Y	Y	2042	On budget; P3 budgets are net of $198 million of estimated toll revenues
n.a.	N	N	2043	P3 budgets are net of $21 million of estimated toll revenues
n.a.	N	N	2038	
n.a.	N	N	2034	
n.a.	N	N	2038	
n.a.	Y (see comments)	Y	Jul. 2010	All variations are within approved project budget; financial risk not transferred to private partner
Nov. 24, 2009	Y (see comments)	N	2039	All variations are within approved project budget
n.a.	Y (see comments)	N	2040	All variations are within approved project budget
n.a.	Y (see comments)	Y	May 2010	All variations are within approved project budget; claim against public sector due to a construction sector strike in summer 2007
Oct. 2009	Y (see comments)	Y	Oct. 2009	All variations are within approved project budget; the financial impact of the delay was shared between the public and private sector parties.

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Table 2 *(cont'd)*
Cost and Time Performance of P3s in Canada

Project name	Type	P3 public sector budget $ millions (date)	Expected VfM savings $ millions (date)	Financial close	Substantial completion date (project agreement)
Trillium Health Centre—Queensway	BF	Results presented with Mississauga above		May 2007	Nov. 2008
Hôpital régional de Sudbury Regional Hospital	BF	153 (nominal)	17 (nominal)	May 2007	Dec. 2009
St. Joseph's Health Care—London	BF	38 (nominal)	3 (nominal)	May 2007	Sep. 2009
Roy McMurtry Youth Centre	BF	103 (nominal)	9 (nominal)	Apr. 2007	Apr. 2009
Sunnybrook—M-Wing/P&G Fit-Out	BF	154 (nominal)	14 (nominal)	Jun. 2007	Jun. 2010
Sault Area Hospital	BFM	458 (Aug. 2007)	102 (Aug. 2007)	Aug. 2007	Oct. 2010
Bluewater Health (Sarnia)	BF	248 (nominal)	16 (nominal)	Oct. 2007	Oct. 2011
Rouge Valley Health System—Ajax and Pickering Hospital	BF	77 (nominal)	11 (nominal)	Oct. 2007	Jul. 2010
Hamilton Health Sciences—Gen. Redevelopment	BF	54 (nominal)	7 (nominal)	Oct. 2007	Jul. 2009
Runnymede Healthcare Centre	BF	78 (nominal)	11 (nominal)	Oct. 2007	Jun. 2010
Hamilton Health Sciences—Henderson Hospital	BF	249 (nominal)	30 (nominal)	Dec. 2007	Mar. 2012
Ottawa Hospital Cancer Centre—Queensway Carleton Hospital	BF	81 (nominal)	11 (nominal)	Dec. 2007	Oct. 2009
Ottawa Hospital Cancer Centre—The Ottawa Hospital	BF	59 (nominal)	8 (nominal)	Dec. 2007	May 2011
MGS Data Centre	DBFM	386 (Apr. 2008)	64 (Apr. 2008)	Apr. 2008	Mar. 2010
Mississauga Credit Valley Hospital	BF	198 (nominal)	26 (nominal)	May 2008	May 2011
LHSC/SJHC London—M2P2—St. Joseph's Health Care (BP5)	BF	59 (nominal)	9 (nominal)	Jun. 2008	Aug. 2010
LHSC/SJHC London—M2P2—Victoria Campus Hospital (VC3)	BF	256 (nominal)	41 (nominal)	Jun. 2008	Mar. 2011
Kingston General Hospital	BF	173 (nominal)	20 (nominal)	Jul. 2008	May 2012

Actual substantial completion date	Contract variations to date (Y/N)	Successful claims against the public sector (Y/N)	End of contract term	Results/comments
Nov. 2008	Y (see comments)	N	Dec. 2008	All variations are within approved project budget
Oct. 2009	Y (see comments)	N	Mar. 2010	Project reached substantial completion 33 days ahead of schedule; all variations are within approved project budget
Sep. 2009	Y (see comments)	N	Jan. 2010	Project reached substantial completion 18 days ahead of schedule; all variations are within approved project budget
Jun. 2009	Y (see comments)	N	May 2009	Financial impact of late completion borne entirely by private partner; all variations are within approved project budget
n.a.	Y (see comments)	N	Oct. 2010	All variations are within approved project budget
n.a.	Y (see comments)	N	2040	All variations are within approved project budget
n.a.	Y (see comments)	N	Jan. 2012	All variations are within approved project budget
n.a.	Y (see comments)	N	Oct. 2010	All variations are within approved project budget
Jul. 2009	Y (see comments)	N	Aug. 2009	All variations are within approved project budget
n.a.	Y (see comments)	N	Aug. 2010	All variations are within approved project budget
n.a.	Y (see comments)	N	Jun. 2009	All variations are within approved project budget
n.a.	Y (see comments)	N	Oct. 2009	All variations are within approved project budget
n.a.	Y (see comments)	N	May 2011	All variations are within approved project budget
n.a.	N	N	2040	
n.a.	Y (see comments)	N	Sep. 2011	All variations are within approved project budget
n.a.	Y (see comments)	N	Sep. 2010	All variations are within approved project budget
n.a.	Y (see comments)	N	May 2011	All variations are within approved project budget
n.a.	Y (see comments)	N	May 2012	All variations are within approved project budget

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Table 2 ***(cont'd)***
Cost and Time Performance of P3s in Canada

Project name	Type	P3 public sector budget $ millions (date)	Expected VfM savings $ millions (date)	Financial close	Substantial completion date (project agreement)
Toronto Rehabilitation Centre—University	BF	140 (nominal)	19 (nominal)	Aug. 2008	Sep. 2011
Woodstock General Hospital	BFM	337 (Oct. 2008)	71 (Oct. 2008)	Oct. 2008	Jun. 2011
Lakeridge Health Corp.	BF	112 (nominal)	11 (nominal)	Feb. 2009	May 2011
Royal Victoria Hospital	BF	317 (nominal)	44 (nominal)	Feb. 2009	Feb. 2013
Niagara Health System	DBFM	1,065 (Mar. 2009)	96 (Mar. 2009)	Mar. 2009	Nov. 2012
Windsor Regional Hospital	BF	n.a.	n.a.	Jun. 2009	May 2012
Bridgepoint Health	DBFM	820 (Aug. 2009)	95 (Aug. 2009)	Aug. 2009	Mar. 2012
Toronto South Detention Centre	DBFM	n.a.	n.a.	Oct. 2009	Sep. 2012

Notes:
Data correct as of November 2009.
Value-for-money estimates may not be strictly comparable across jurisdictions because of differences in methodology.
n.a. = Not available or not applicable.
Abbreviations:
BF: Build-finance
BFM: Build-finance-maintain
DB: Design-build
DBFM: Design-build-finance-maintain
DBFO: Design-build-finance-operate
DBFOM: Design-build-finance-operate-maintain
Sources: The Conference Board of Canada; Alberta Treasury Board; Infrastructure Ontario; Infrastructure Québec; Partnerships BC. Most of the data presented above are available fro

We now examine the cost and time performance of the above transactions on an ex post basis. This performance is assessed by identifying whether projects have had contract variations after financial close (i.e., any changes to contract deliverables, such as the specifications of the facility) and by determining whether the projects have remained within their approved P3 budgets. Contract variations are relatively common in both P3s and conventional contracts, and can be initiated either by the private partner or by the public sector owner. The cost is usually incurred by the party that requests the change, subject to the terms of the contract. However, the main point here is to identify whether the cost impact of the contract variations on the public sector owner's P3 project budget exceeds the provisions for retained risks in the budget. Another indicator of whether the ex ante VfM cost savings are achieved is whether there are any successful claims by the P3 partner (or by any third parties) and whether the impact of such claims exceeds the public sector's P3 budget. With regard to time performance, or time certainty, we identify whether the P3 partner has met the substantial completion date target stipulated by the project agreement.

Of the four Alberta P3 projects, two were completed on schedule and are now in the service phase, and the two other projects are under construction. Three of the four projects have had contract variations either for changes requested by the public sector or in order to address items for which the public sector retained the risks under the project agreement. The fourth project—the Anthony Henday Drive Southeast Leg Ring Road, which was Alberta's first project in the second wave of P3s in Canada—had no contract variations or successful claims against the public sector owner. All four projects remain within their public sector P3 budgets.

Actual substantial completion date	Contract variations to date (Y/N)	Successful claims against the public sector (Y/N)	End of contract term	Results/comments
n.a.	Y (see comments)	N	Oct. 2011	All variations are within approved project budget
n.a.	Y (see comments)	N	2041	All variations are within approved project budget
n.a.	N	N	Sep. 2011	
n.a.	N	N	Apr. 2013	
n.a.	N	N	2042	
n.a.	N	N	Jun. 2012	
n.a.	N	N	2043	
n.a.	N	N	2042	

ne websites of the respective P3 agencies or public sector departments.

British Columbia initiated the second wave of P3 projects in Canada. It has the most completed P3 projects and a very strong record to date in the time and cost certainty of its P3 projects. Of the 16 projects listed in Table 2, 11 have reached substantial completion, and in 6 cases the project (or a component thereof) reached substantial completion earlier than the date specified in the project agreement (the other 5 projects were delivered on time).[13] Of the nine P3 projects where construction is complete (i.e., excluding the Charles Jago Northern Sport Centre and the Pitt River Bridge and Mary Hill Interchange), five experienced contract variations; however, we are not aware of any case where the financial impact of the variations resulted in additional costs in excess of the public sector's approved P3 capital budget.[14] There have also been contract variations in two of the five P3 projects where construction is not yet complete, but these are apparently minor changes, with no impact on costs. Finally, two of the projects have experienced a successful claim against the public sector owner.

In the case of Ontario, 30 AFP projects have reached financial close under the auspices of Infrastructure Ontario as the procurement authority. Most of these are build-finance hospital projects, and many are currently under construction. Six projects had reached substantial completion as of the end of November 2009. The Trillium Health Centre (Mississauga only) was delivered two months late due to a

13 Two of the projects—the Charles Jago Northern Sport Centre and the Port Mann / Highway 1 Project—were originally intended as P3 procurements but were executed as a fixed-price design build projects.

14 In one of the five cases, the Abbotsford Regional Hospital and Cancer Centre, the variations had no impact on public sector capital costs.

one-month province-wide labour dispute and a one-month schedule adjustment by the public sector owner allowed for within the contract. The financial impact of the delay was shared between the public and private sector parties. The Roy McMurtry Youth Centre was also completed approximately two months behind schedule, but the financial impact of the delays was borne by the respective private sector partner. The four other projects reached substantial completion either early or on schedule. All six projects were completed within the approved public sector budgets. One other project—the Ottawa Hospital Regional Cancer Program (Queensway Carleton Hospital)—is expected to reach substantial completion by the end of 2009, approximately two months behind schedule. Twenty-three of the 30 AFP projects have experienced contract variations to date, but any cost impact from these variations has remained within the approved AFP capital budgets. Three of the 30 projects have resulted in a successful claim against the public sector owner, with all the claims arising in relation to risks retained by the public sector in the respective project agreements.

Quebec is the most recent province to have set up a specialized infrastructure agency. The five P3 projects listed for Quebec in Table 2 are expected to reach substantial completion beginning in 2010. One of them—the Autoroute 25 project—has experienced contract variations and claims against the public sector. The variations were due to soil contamination levels greater than those the private partner had agreed to cover in the project agreement and to changes requested by the City of Montréal (i.e., all the variations related to risks retained by the public sector). However, the cost impact of these variations remains within the limits of the approved P3 budget.

INTERNATIONAL EVIDENCE

One of the early studies of the cost and time performance of large conventional infrastructure projects was undertaken by the engineering firm Mott MacDonald on a sample of 39 U.K. projects. The study found that the actual duration of project construction exceeded the original targets by 17 per cent on average and that construction budgets exceeded approved capital budgets by 47 per cent on average.[15] As for P3 projects, a study by the U.K. National Audit Office indicated that 29 of the 37 projects surveyed did not experience any increase in construction budgets after the start of the contract and that the cost increases in the remaining eight projects were due mainly to additional work requested by the public sector owners.[16] In other words, any cost increases on the work specified in the original contracts were not passed on from the contractors to the public sector owners. However, both these studies were criticized in a report commissioned by UNISON, a public sector trade union in the United Kingdom, which pointed to problems with sampling methodology and measurement bias.[17]

A more recent study commissioned by the National PPP Forum in Australia attempted to address most of the criticisms in the UNISON report in its analysis of the cost and time performance of 67 Australian infrastructure projects. These projects consisted of 25 P3 projects and 42 conventionally procured projects delivering transportation and social infrastructure. The study generated the following findings:[18]

- P3 projects demonstrate greater cost certainty, with average cost increases of 4.3 per cent after contract award compared with 18 per cent for conventional projects. Comparative results are directionally similar for the period from original announcement of a project through to project commissioning, with a 24-per-cent cost escalation on average for P3 projects and a 52-per-cent cost escalation for conventional projects.
- The overall time performance of P3s and traditional contracts is similar over the whole period from initial announcement to project commissioning, with P3s and conventional projects delayed on average by 15 per cent and 17 per cent, respectively.[19]

15 MacDonald, *Review of Large Public Procurement.*

16 United Kingdom, National Audit Office, *Construction Performance.*

17 For example, it has been argued that "cost and time overruns are measured at a much later stage in the procurement process" for P3 projects relative to non-P3 projects, thereby leading to cost and time performance results biased in favour of P3 projects. See Pollock et al., *The Private Finance Initiative*, p. 3.

18 Duffield, *National PPP Forum.*

19 The percentage delay is the amount of time a project overruns its initially scheduled commissioning date expressed as a ratio of the amount of time between the initial announcement and the scheduled commissioning date. For example, if a project was scheduled to be completed in 10 months at the initial announcement date, but it was actually completed in 11 months, it would have experienced a 10-per-cent delay.

- In the period preceding financial close, P3 projects are delayed by about 15 per cent on average, with a further delay of 2.6 per cent on these projects from financial close through to commissioning. In contrast, conventional projects reached contract award 4 per cent early, but they were delayed by just over 19 per cent from contract award through to commissioning.

It is impossible to know whether the Australian results are also valid for infrastructure projects in Canada.

We are not aware of any comparative analyses of P3 and conventional infrastructure projects in Canada that are similar to the Australian one. Thus, it is impossible to know whether the Australian results are also valid for infrastructure projects in Canada. Translating such results to other jurisdictions is a highly speculative exercise, due to differences in procurement processes, market conditions, and regulations, to mention just three of the myriad potential factors that could yield different results.

SUMMARY AND OBSERVATIONS

The results of VfM studies of the second wave of Canadian P3 projects suggest that the public sector (i.e., taxpayers) can expect significant savings from having these major infrastructure projects procured using a P3 approach rather than a conventional approach. These savings can vary from just a few million dollars to over $750 million in the case of the Autoroute 30 project south of the Montréal area. When the savings are expressed as a proportion of the cost of procurement through conventional contracting methods, they range from 0.8 per cent through to 61.2 per cent of the PSC. However, these savings are necessarily prospective in nature and represent a considered view of the savings at the outset of a project (i.e., at financial close). Whether the actual savings match the expected savings by the end of the P3 project depends on the degree of cost and time certainty of P3 projects.

The Canadian evidence on the cost and time certainty of P3 projects is limited—only 19 of the 55 second-wave P3 projects have reached substantial completion—but these early results point to a strong performance. Seventeen of the 19 projects have been delivered either early or according to schedule. The other two projects were delivered no more than two months behind schedule. The interim results for the P3 projects that remain in the construction phase provide little reason to expect significant cost or time overruns, based on the information available regarding contract variations and claims against the public sector. Therefore, the preliminary evidence indicates that the second wave of Canadian P3 projects is providing a high degree of cost and time certainty for the period from financial close through to completion of construction.

These results are also consistent with the international evidence, which indicates that P3 projects have provided greater cost certainty than conventionally delivered projects over the entire period from project announcement through to commissioning. The time performance of P3s over the same period is not significantly different from that for conventional projects, but the P3s outperform for the period from financial close through to commissioning.

The reasons why P3s tend to outperform conventional procurements have much to do with the greater upfront effort required with P3s in the period before the financial close. This work includes detailed consideration of performance-based metrics and associated penalties and bonuses; of the potential risks and how these risks are allocated between the public and private sector parties (and in turn between the consortium and its contractor, designer, and operator); of life-cycle costs; and of the funding agreements that need to be put in place. However, P3 procurements can also be subject to procurement delays or even to aborted procurements, particularly where the procurement process is not clearly set out in advance or where the appropriate procurement expertise is not available.[20] These problems underline the

20 Perhaps the most notable recent delays and failures in P3 procurements have occurred in U.S.-based P3 projects, such as the Port of Miami Tunnel, which finally reached financial close on October 15, 2009, after several years in the making, and the Bay Area Rapid Transit (BART) Oakland Airport Connector project, where the competitive procurement process was aborted in 2008 after some of the private consortia dropped out of the bidding process. However, these delays are not unique to the United States. The Australian benchmarking study discussed above found that P3s are delayed by about 15 per cent on average prior to financial close and that conventional projects reach contract award 4 per cent early.

importance of an efficient procurement process to ensure that the benefits of a P3 project delivery are not squandered through an extended procurement process. We examine this issue further in Chapter 3.

Penalties for non-compliance—not meeting minimum service levels—motivate P3 partners to deliver quality maintenance service to the facility.

WHOLE LIFE-CYCLE MAINTENANCE BENEFITS

One of the benefits of a P3 project that incorporates a service or operating phase is that the P3 partner is required to provide a specified level of service and to maintaining the facility in a satisfactory condition. In conventional procurement, maintenance and rehabilitation budgets have historically been subject to the vagaries of annual budget allocations and perennial budget constraints. However, by incorporating the maintenance and rehabilitation work within the P3 agreement, the public sector owner is essentially pre-committing future governments to providing the resources (through service payments to the P3 partner) for a specified level of maintenance and rehabilitation work on the facility over the term of the contract. If the P3 partner does not meet the minimum service levels, P3 contracts generally provide for penalties to be imposed on the P3 partner. At the end of the concession period, the P3 partner is contractually obliged to "hand back" the facility in satisfactory condition. Penalties for non-compliance serve as a powerful motivator to deliver quality maintenance services for the facility.

Delayed maintenance and rehabilitation have affected many types of infrastructure, including health facilities, transportation infrastructure, and social infrastructure. The benefit of providing for maintenance and rehabilitation services in long-term P3 agreements is sometimes quantified in VfM reports. This was done in the VfM reports carried out for British Columbia's P3s and in some of the VfM reports for more recent projects in other jurisdictions, such as the concert hall for the Montréal Symphony Orchestra. Otherwise, it is mentioned in qualitative terms, as in the VfM reports for the Autoroute 25 and Autoroute 30 projects.[21] It is well known that roads and bridges in many parts of Canada have, historically, suffered from delayed maintenance and rehabilitation spending, which in turn has reduced the useful life of certain structures and led to higher capital spending. (See box "Delayed Bridge Maintenance.") The poor condition of the road network in many parts of Canada (until recently) suggests that the maintenance and upgrade standards stipulated in P3 agreements, such as those for the A25 and A30 projects, are at least as high as and probably significantly higher than the quality standards delivered over the last decade. The observation of high P3 service standards relative to prevailing standards

Delayed Bridge Maintenance

The Commission of Inquiry into the Collapse of a Portion of the de la Concorde Overpass (the Johnson Commission) reported that between 46 per cent and 49 per cent of bridges in Quebec were considered structurally deficient in 2005. "Structural deficiency" is a standard indicator meaning that the bridge structure has deteriorated to the point where it needs to be rehabilitated or replaced within five years. In the case of Ontario, about 32 per cent of the province's bridges were considered structurally deficient according to a 2004 report by the Ontario Auditor General. By comparison, the Johnson Commission reported that several northeastern U.S. states had far lower proportions of bridges classified as structurally deficient (New Jersey 11 per cent, New York 12 per cent, and Pennsylvania 25 per cent—all data for 2006). Interestingly, the average age of bridge structures in these three U.S. states was 50 years at the time, compared with 36 years in Quebec. Hence, the average age of the bridge structures did not explain the differences in condition observed between Quebec and the northeastern U.S. states.

Source: Commission of Inquiry into the Collapse of a Portion of the de la Concorde Overpass, *Report of the Commission of Inquiry*, p. 190.

21 Transports Québec and Partenariats public-privé Québec, *Value for Money Report for the Design, Construction, Financing, Operation and Maintenance of the Completion of Autoroute 25*, p. 20; *Value for Money Report: The Completion of Autoroute 30*, p. 20.

for similar facilities is not unique to road networks.[22] Anecdotal evidence suggests that there is little basis to the criticism that service standards suffer under a P3 relative to conventional maintenance contracts or even in-house provision.

A related benefit of having maintenance standards incorporated in a long-term P3 agreement is that the P3 partner responsible for the maintenance work on a facility operates at arm's length from the government department responsible for monitoring the facility. This means that the department is better able to identify lapses in service quality and impose penalties on the P3 partner when service levels fall below the thresholds specified in the maintenance contracts. When the same department of government is responsible for undertaking the maintenance and upholding the maintenance guidelines, lapses in service standards can more easily go unnoticed.

By way of example, it is worth noting that in 5 of the 12 P3 projects that have entered the service phase, the P3 partner has already incurred penalties for instances of substandard performance.[23] This occurred with the Abbotsford Regional Hospital and Cancer Centre (for a housekeeping and portering issue), with Phase 2 of the Kicking Horse Canyon Project (once for an unscheduled traffic stoppage during construction and once for lack of lane availability), with the Britannia Mine Water Treatment Plant Project (for failure to meet certain environmental criteria—the zinc concentration in the treated water exceeded permissible levels), and with the Anthony Henday Drive Southeast Leg Ring Road and the Sea-to-Sky Highway (for some aspect of the operational phase of the two projects). These episodes do not suggest persistent or endemic service problems, but they do provide some confidence that the contractual performance standards are being enforced. In principle, it is certainly possible to enforce similar performance standards in conventional facilities maintenance contracts; however, it is unclear to what extent this happens in practice when the public sector outsources facilities maintenance. In cases of in-house provision by the public sector, we are not aware of any documented lapses in service standards. This does not mean that there are no such lapses in service standards with in-house provision.

22 We have learned about one other instance—an Ontario P3 hospital from the first wave of P3s—in which the performance standards for the facility maintenance period were set very high relative to standards prevailing in hospitals at the time. The public and private sector partners are now considering adjusting the standards to be closer to levels prevailing elsewhere in the hospital sector.

23 These are the only performance penalties we are aware of among all the P3 projects in our evidence base.

OTHER FEATURES OF P3 PROCUREMENTS

In this section, we review two other features of P3 procurement methods, notably the economies of scale in procurement and the benefits of private financing for the public sector debt. It has been argued that these features represent benefits of P3s relative to conventional procurements. We explain below why these features should not be construed as benefits.

It is not essential to undertake a P3 procurement as defined in this report to capture these economies of scale.

ECONOMIES OF SCALE

Some observers have noted that economies of scale are one of the benefits of P3 procurements, because contractors are able to organize their work more efficiently.[24] For example, if a contractor is responsible for multiple bridges or overpasses in a section of highway, such as the Anthony Henday Drive Southeast Leg Ring Road, the contractor can have one crew install all the girders, moving from one structure to the next, with a second crew following with a different task, and so on.

There are indeed economies of scale from organizing construction work in large projects as opposed to undertaking the same work under multiple contracts awarded to different contractors. However, these economies of scale can be achieved in a single turnkey construction project or in a design-build project. It is not essential to undertake a P3 procurement as defined in this report in order to capture these economies of scale.

24 For example, see Vining and Boardman, "Public-Private Partnerships," pp. 12–13. At least one of the interviewees for this report also mentioned economies of scale as one of the benefits of P3s. (See Appendix D for the full list of interviewees.)

P3s DO NOT LEAD TO LOWER PUBLIC DEBT

One of the arguments sometimes advanced to explain why governments use P3 procurement is that it enables them to avoid increasing public sector deficits. The first wave of P3 projects in Canada and in Europe were often motivated in part by governments seeking off-balance-sheet treatment for their capital spending (e.g., Confederation Bridge). However, this type of accounting treatment provides no economic or fiscal benefits, and most governments in Canada have now recognized this. In fact, all the public sector capital obligations incurred under the second wave of P3s examined here are on balance sheet.

In this situation, governments are deferring the cost of borrowing by effectively borrowing through the P3 partner, which relies on private financing charged at higher interest rates than government-issued bonds.

This leaves the issue of whether governments derive any fiscal benefits from relying on private financing in P3s to fund some of their public infrastructure spending.[25] We explain here why there are no such benefits. For Canadian P3 projects based on availability payments, governments usually start paying for access to the facility only once it is open and fit for use.[26] This means that governments face lower disbursements during the construction phase than they would under a conventional procurement. In this situation, governments are deferring the cost of borrowing by effectively borrowing through the P3 partner, which relies on private financing charged at higher interest rates than government-issued bonds. When governments do pay the P3 partner for the use of the infrastructure through service payments over the term of the contract, these payments must reflect the cost of private financing. So it is misleading to suggest that P3s reduce the public debt by the end of the useful life of the asset.

Any efficiency gains or net benefits resulting from P3 procurements can contribute to a lower debt burden if they lead to lower public spending (e.g., through cost savings). However, the potential reductions in public spending (and in public debt levels) are modest compared with the public debt levels required to fund a P3 project.

POTENTIAL DRAWBACKS OF P3 PROJECTS

The benefits of procuring public infrastructure through P3 methods come at a cost. These drawbacks of undertaking a P3 procurement approach rather than a conventional procurement consist of three elements:

- the incremental cost of private financing;
- any additional costs of risks transferred to the P3 partner (i.e., the risk premium); and
- the incremental transaction costs.

If these costs are offset by the value associated with transferring selected risks to the private partner, the overall costs of the project will be lower under a P3 approach than under traditional project delivery.

INCREMENTAL COST OF PRIVATE FINANCING

The project financing used in P3 transactions consists primarily of privately sourced debt, which usually makes up over 80 per cent of the overall financing requirements, and a small equity tranche. Equity is the most expensive part, since it requires a return that exceeds the cost of private debt. This is why it is used sparingly in infrastructure investments that generate steady revenue streams for investors. It is widely accepted that equity financing plays a positive role by placing private investors at risk and providing a strong commercial motivation for effective project management. Some have argued that there is not enough equity in P3 transactions.[27] However, more

25 In one variation of this argument, former U.K. Prime Minister Tony Blair said in 2002: "The reason that we are engaged in this public-private investment [for the London Underground] is so that the infrastructure work, which is urgently needed in the Tube, can be done ... there is no way Government through the general taxpayer can do it all." Cited in Glaister, "Transport," p. 220. Glaister goes on to write that "this view that PFI and PPP somehow entice the private sector to provide resources that the taxpayer will not provide, is plainly nonsense."

26 Some projects allow for milestone payments to the consortium prior to the completion of construction.

27 Glaister argued that "there simply wasn't enough equity at risk to give incentives for Metronet to perform." See Glaister, "Mind the Money Gap."

equity would make private financing even more expensive and thereby reduce the scope for applying P3s to public infrastructure projects. Private debt financing can also be an important driver of efficiencies in a P3 transaction if the debt is not government-guaranteed.[28]

The real controversy is about private debt financing and the incremental cost of this type of private financing relative to government bond issues of a similar term (i.e., the "spread").

For example, the cost of bank debt is usually at least 100 basis points higher than equivalent-term Canadian Treasury bills, although the spread rose as high as 200 to 300 basis points during the financial crisis in 2008. When the public sector relies on financing obtained by the P3 partner, it pays for the higher cost of private financing through service payments to the P3 partner. This has led some authors to argue for P3s with debt financing from the public sector.[29] We discuss the role of private financing and private debt financing as drivers of efficiency gains for P3 projects in the next chapter.

COSTS OF RISKS TRANSFERRED TO P3 PARTNERS

One of the central features of a P3 procurement process is that both the public sector and the private sector partners conduct a detailed identification and assessment of all risk exposure for each stage of the project, from design and construction through to operations. The procurement authority then determines, after consultations with the three short-listed bidders, which risks are retained by the public sector, which risks are transferred, and which ones are shared between the private partner and the public sector owner and how they are shared.[30]

As an example of how the economics of risk transfer works in a P3 procurement, we can go back to the Durham Consolidated Courthouse project discussed earlier in this chapter. In that design-build-finance-maintain (DBFM) project, the total risk exposure retained by the public sector (i.e., taxpayers) under the conventional procurement approach was estimated at $157 million in 2007 dollars. The partnership agreement transferred 84 per cent of that risk exposure in value terms (i.e., $132 million) to the P3 partner. Based on the price of the winning bid, the transferred risks cost the public sector $74 million. This is the gross estimate of the cost to the public sector of the transferred risks (or risk premium), including the incremental cost of private financing, any incremental transaction costs borne by the private consortium, less the value of any other efficiencies resulting from the AFP procurement approach. The resulting gain is therefore $58 million ($132 million less $74 million) or 44 per cent of the original value of the retained risks.[31] This gain arises because the P3 partner is in a better position than the public sector to manage the transferred risks. In this case, the transferred risks consisted of:[32]

- construction price certainty;
- scheduling risk (e.g., delays);
- building design, including coordination with the construction phase;
- benchmarking and market testing of the cost of providing soft facilities management services (e.g., cleaning and food services) every five years against prevailing market costs for such services;
- energy and environmental design obligations; and
- facilities maintenance risks.

Given the magnitude of the efficiency gains—44 per cent of the retained risks—it is clear why the risk transfer process is at the heart of the P3 procurement process. Further examples of the positive effects of risk transfer may be seen in the case studies at the end of this report.

28 Ninety per cent of the debt was government-guaranteed in the Metronet P3, which covered the infrastructure requirements for two-thirds of the London Underground network. See Iacobacci, *Steering a Tricky Course*, for a case study of the three London Underground P3s.

29 Palmer, "Contract Issues and Financing in PPP/PFI."

30 The allocation of risks in a P3 procurement process starts with the allocation based on the standard language in the draft project agreement. This draft agreement is shared with the three proponents before they submit their final proposals. There are then collaborative discussions with all three bidders, under competitive pressure, in order to fine tune the risk allocation, after which the procurement authority issues the revised draft agreement. Final bids are based on the revised draft agreement.

31 Note that the net savings to the public purse (or the VfM savings) are obtained by subtracting the incremental transaction costs incurred by the public sector as a result of the P3 procurement method (i.e., $58 million less $9 million of incremental transaction costs borne by the public sector gives the VfM savings of $49 million).

32 Infrastructure Ontario, *Value for Money Assessment: Durham Consolidated Courthouse.*

TRANSACTION COSTS

Another controversial area of P3s is the higher transaction costs—relative to conventionally delivered projects—incurred by both the public sector and the private sector bidders to execute the transaction and to manage the project and monitor outcomes through to the end of the contract term. In principle, higher transaction costs in P3s result from the same factors that drive the efficiency gains:

- greater due diligence in risk assessment and allocation effort, which is reflected in the provisions of the partnership agreement; and
- the private financing that needs to be put in place, including the additional due diligence undertaken by the equity investors and lenders, each of which has its own set of legal, commercial, and technical advisors for the project.

In principle, higher transaction costs in P3s result from the same factors that drive the efficiency gains.

Even public sector client departments tend to exercise more due diligence in P3 projects, perhaps because they are making long-term commitments that are difficult to change. However, critics argue that these transaction costs are too high and tend to erode the benefits of P3 procurement methods.[33]

Transaction cost data on P3 projects are seldom available, particularly data on costs incurred by the bidders. However, a study by Dudkin and Valila based on 55 U.K. P3 projects from six different sectors (hospitals, schools, roads, prisons, government buildings, and information technology) found that the public sector's bidding and contract negotiation costs were on average 3.5 per cent of the capital value of projects. The winning bidders' costs averaged 3.8 per cent of the capital value of the projects while the failed bidders' costs averaged about 5 per cent.[34] These costs were limited to the procurement period and did not capture the expected costs of project management and monitoring during the contract term. Nor was there any attempt to compare these figures with transaction costs for conventional procurements. It is worth noting that the transaction costs for winning and losing bidders are not necessarily additive, as implied in Dudkin and Valila. This is because a steady-state scenario suggests that the winning bidders would factor in more than the transaction costs of their current bid: They would also include the transaction costs arising from the likely number of losing bids required to secure the winning bid, subject to the competitive pressures of each bid contest.

By comparison, the second wave of Canadian P3s appears to have a similar level of transaction costs, at least for the AFP projects undertaken in Ontario. However, Canadian data also indicate that the incremental portion of transaction costs, attributable to undertaking P3 transactions rather than conventional procurements, is relatively modest. It is also important to note that transaction costs under P3 procurements are not simply higher than those under conventional procurements: These costs, notably those related to due diligence, tend to be incurred much earlier than in a conventional procurement process characterized by a succession of procurement exercises.

According to the VfM studies issued by Infrastructure Ontario, the public sector transaction costs for 28 AFP projects (see Table 3) for which data are available vary from 1.5 per cent of the AFP budget in the case of the Niagara Health System project to 6.7 per cent of the AFP budget in the case of the Sudbury Regional Hospital (unweighted averages). On average, these transaction costs are 3.5 per cent of the AFP budget (unweighted average) and, unlike costs in the U.K. study, include the advisory fees and project management costs for the entire contract term.[35] The Infrastructure Ontario VfM studies also provide an estimate of what the public sector transaction costs would have been for the same AFP projects if these had been procured conventionally. The incremental transaction costs attributable to the AFP

33 For example, Vining and Boardman argue that "the ten case studies [reviewed in their article] indicate that the potential benefits of P3s are often outweighed by high contracting costs." See Vining and Boardman, "Public-Private Partnerships," p. 9.

34 Dudkin and Valila, "Transaction Costs." Note that the 5 per cent represents the costs not of one but all the failed bidders on an average project.

35 If seven of the projects that have an operating period are excluded, the transaction costs are 3.8 per cent of the AFP budget. The ratio of incremental transaction costs to the AFP budget rises slightly to 1.9 per cent when the same seven projects are excluded.

Table 3
Transaction Costs Reported on Infrastructure Ontario AFP Projects

	AFP public sector budget ($ millions)	Public sector transaction costs ($ millions)	Public sector transaction costs as share of AFP budget (per cent)	Incremental transaction costs ($ millions)	Incremental transaction costs as share of AFP budget (per cent)
Hôpital Montfort	219.9	6.6	3.0	3.6	1.6
Durham Consolidated Courthouse	377.0	17.0	4.5	9.0	2.4
North Bay Regional Hospital	591.9	18.0	3.0	12.4	2.1
Quinte Health Care	85.6	3.5	4.1	2.3	2.7
Trillium Health Centre	115.2	4.2	3.6	2.1	1.8
Hôpital régional de Sudbury Regional Hospital	153.3	10.3	6.7	2.5	1.6
St. Joseph's Health Care—London (BP4-6)	37.7	1.6	4.2	1.0	2.7
Roy McMurtry Youth Centre	102.8	1.9	1.8	1.8	1.8
Sunnybrook—M-Wing/P&G Fit-Out	154.1	5.4	3.5	2.7	1.8
Sault Area Hospital	458.1	11.5	2.5	6.8	1.5
Bluewater Health (Sarnia)	247.7	6.0	2.4	4.1	1.7
Rouge Valley Health System—Ajax and Pickering Hospital	77.0	3.0	3.9	1.5	1.9
Hamilton Health Sciences—Gen. Redevelopment	54.0	2.1	3.9	1.4	2.6
Runnymede Healthcare Centre	78.1	3.3	4.2	2.1	2.7
Hamilton Health Sciences—Henderson Hospital	249.4	5.9	2.4	3.9	1.6
Ottawa Hospital Cancer Centre—Queensway Carleton Hospital	80.8	3.8	4.7	1.5	1.9
Ottawa Hospital Cancer Centre—The Ottawa Hospital	59.4	2.8	4.7	1.3	2.2
MGS Data Centre	385.6	7.2	1.9	5.0	1.3
Mississauga Credit Valley Hospital	197.7	9.3	4.7	3.2	1.6
London Health Sciences Centre (St. Joseph's Health Care)	58.9	1.2	2.0	0.7	1.2
London Health Sciences Centre (Victoria Campus Hospital)	255.5	7.9	3.1	3.6	1.4
Kingston General Hospital	173.0	8.3	4.8	3.6	2.1
Toronto Rehabilitation Centre—University	139.6	5.2	3.7	3.2	2.3
Woodstock General Hospital	336.5	10.7	3.2	5.6	1.7
LakeridgeHealth Corp.	112.0	6.4	5.7	2.4	2.1
Royal Victoria Hospital	317.0	6.4	2.0	4.5	1.4
Niagara Health System	1,065.0	16.1	1.5	10.2	1.0
Bridgepoint Health	820.2	16.9	2.1	10.7	1.3
Average (unweighted)			3.5		1.8

Source: Infrastructure Ontario, Value for Money reports.

approach, which are calculated as the difference between the transaction costs incurred under the AFP approach and the (lower) transaction costs that would have been incurred under a conventional project delivery, are 1.8 per cent of the AFP budget (unweighted average). In other words, the incremental transaction costs attributable to the AFP procurement approach are relatively modest, at least when compared with the typical cost overruns in conventionally procured projects. Moreover, these incremental transaction costs have been declining over time because Infrastructure Ontario relies on standardized documentation and other savings from multiple transactions in similar asset classes.[36]

The incremental transaction costs for the British Columbia P3s in our evidence base appear to be of a similar order of magnitude. In the two projects for which the incremental transaction data were published—the Abbotsford Hospital project and the Kicking Horse Canyon Phase 2—the incremental transaction costs were 1.9 per cent and 3.5 per cent of the respective public sector P3 budgets.[37]

The transaction costs associated with the second wave of Canadian P3s appear quite reasonable relative to the U.K. levels, particularly since the United Kingdom has historically imposed a high degree of document standardization across its private finance initiative (PFI) project agreements (which would help keep down costs).[38] However, the United Kingdom does not have a specialized central agency to manage PFI procurements. (Partnerships UK does not manage PFI procurements.) Every line department has its own PFI unit and manages its own procurements.

In contrast, the second wave of Canadian P3s has benefited from the establishment of specialized provincial P3 agencies, including those within central agencies of provincial governments. This may have resulted in some standardization of P3 agreements, particularly within each province and within asset classes with many transactions, such as hospitals. More importantly, each of these agencies has introduced a standardized procurement process that is replicated for each transaction. Although any comparison with other jurisdictions such as the United Kingdom remains highly speculative, it is quite likely that the procurement processes for the second wave of Canadian P3 transactions have reduced transaction costs relative to those incurred by comparable first-wave Canadian P3s. Most of the first-wave procurements were managed as one-off processes, in some cases by local authorities for which the P3 deal represented the first and last procurement of its type.

OTHER COSTS OF P3 PROJECTS

There may also be additional costs associated with P3 projects that occur after project close because of unanticipated changes in public policy or public aspirations, as reflected in the electoral cycle, and that result in major changes to the requirements stipulated in the P3 agreements. These costs, which tend to arise in long-term P3 contracts rather than in the build-finance projects, can lead to contract renegotiations or even contract terminations.[39] The key point is that accommodating such major changes in long-term contracts can be more costly than doing so in a succession of shorter-term contracts.[40]

36 By grouping the AFP projects based on the year in which they reached financial close, we find that the 16 projects that reached financial close in 2007 had incremental transaction costs that amounted to 2 per cent of the AFP budget. The average incremental transaction costs dropped to 1.7 per cent for the seven projects that reached financial close in 2008, and to 1.5 per cent for the four projects that closed in 2009. (VfM results are not yet available for the Windsor Regional Hospital and the Toronto South Detention Centre projects, which also closed in 2009.) All averages are unweighted.

37 The VfM reports issued by Partnerships BC usually include transaction cost data for the P3 project under review. However, they do not usually include an estimate of the transaction costs under the public sector comparator. The latter are required in order to identify the incremental transaction costs for each project.

38 See HM Treasury, *Standardisation of PFI Contracts.*

39 For example, if a newly elected government decides to eliminate tolls on a new P3 highway where the P3 partner collects and shares in the toll revenues, this would require renegotiating or even terminating the P3 agreement.

40 As one example of the costs resulting from unforeseen policy changes, or the loss of policy flexibility, Murphy ("The Case for Public-Private Partnerships," pp. 112–14) recounts the story of the P3 to build and operate terminals 1 and 2 of Lester B. Pearson International Airport between the T1T2 Limited Partnership and the federal government in the early 1990s. A newly elected government cancelled the contract and eventually settled on a payment of $60 million to the consortium in 1997. This first-wave P3, a design-build-finance-operate-maintain project, was cancelled despite the lack of a voluntary termination clause. Second-wave P3s usually do include such clauses and are almost certainly in a better position to contain the costs of major unforeseen policy changes.

Modest changes in contractual requirements can usually be accommodated in both conventional and P3 contract settings in ways that maintain the cost discipline found in a competitive bidding process. For example, conventional contracts allow for change orders based on pre-set unit prices already incorporated in the contract. And in the P3 context, the facilities management components of the contract usually allow for market testing against prevailing rates for the same services, with the P3 partner taking the risk (or benefit) of any adjustment. P3 contracts also allow for any modifications to the facility under contract to be undertaken by third-party contractors (i.e., not by the P3 consortium).

Major changes in requirements, such as those arising from changes in the political cycle, are much more difficult to accommodate at a low cost in long-term P3 contracts. This is particularly the case in projects that exhibit a high degree of asset specificity, complexity, or uncertainty about the requirements. Vining and Boardman explain these costs as a form of unanticipated transaction costs:

> Transaction cost theory suggests that contracting costs are likely to be raised when projects exhibit high asset specificity, high complexity/uncertainty and low competitiveness. Public-sector infrastructure—such as roads, hospitals and schools—usually involves considerable asset specificity. Most design work for a particular project is not usable for any other project and is, therefore, sunk (although knowledge and expertise that can be used elsewhere is not sunk). The value of infrastructure in other uses is very low and often negative.[41]

Major changes in requirements are much more difficult to accommodate at a low cost in long-term P3 contracts.

These unanticipated transaction costs can be contained through contractual provisions that allow for voluntary termination, which are standard in P3 agreements. They can also be contained by designing P3 transactions in such a way as to exclude any part of the asset that is subject to relatively high uncertainty regarding future requirements.[42] Nevertheless, these unanticipated transaction costs can be significant relative to those in conventional contract settings. The second wave of Canadian P3s has not yet experienced any major changes in requirements leading to renegotiations or terminations. However, it is still early to judge how the second wave of Canadian P3s is likely to handle major unforeseen changes in requirements.

41 Vining and Boardman, "Public–Private Partnerships," pp. 18–19.

42 For example, road tolls are usually subject to more uncertainty regarding future requirements, including political and technological requirements, than the road or bridge structure itself.

CHAPTER 3

The Efficiency Drivers of P3 Procurements

Chapter Summary

- The efficiency gains in P3 procurements can come from up to four key sources.
- Performance-based contracts, which specify deliverables in terms of the outputs, can encourage innovation when contractors have discretion over how they deliver the outcomes.
- Most of the efficiency gains in a P3 procurement rest on a cost-effective allocation of risks between the public and private partners, if the private partner assumes the risks that it can manage at lower cost.
- A whole-life approach to the procurement of public infrastructure assets can also generate efficiency gains.
- Private financing in a P3 project is the glue that binds together the other efficiency drivers, notably the transfer of risks to private sector partners and performance-based contracts.

This chapter reviews the four key sources of efficiency gains that can arise in P3 procurements, depending on whether the transactions are designed to incorporate the relevant provisions.

PERFORMANCE-BASED CONTRACTS

Performance-based contracts specify deliverables in terms of the outputs (e.g., lane availability, availability of operating rooms) desired by end users rather than prescribing specific inputs or materials to be used in delivering the outputs. These types of contracts can encourage innovation where the tasks involved are sufficiently complex that contractors have discretion over how they deliver the outcomes. Performance-based contracts are feasible where the outputs are easily measurable using accepted metrics. In such cases, P3 contracts specify inspection requirements, and the service providers can be subject to penalties (i.e., deductions from their monthly service payments) or bonuses depending on the outcomes.

In practice, some participants in P3 markets believe that greater emphasis should be placed on moving away from prescriptive contracts toward those that specify deliverables in terms of desired outputs—a comment that applies to P3s and conventional contract settings. However, there are also projects where it is not possible to define performance requirements in ways that are easily verifiable (e.g., renovations or extensions to existing facilities, where it is not possible to distinguish the new work from any pre-existing or latent defects). In such cases, these projects are not appropriate for delivery as a P3.

Performance-based contract provisions are not unique to P3s and are already used in some conventional infrastructure procurement contracts. However, because these provisions can be more time-consuming to develop and calibrate for specific purposes, they may not be as common for certain types of conventional contracts (e.g., those for operation and maintenance services). More importantly, performance provisions tend to be more stringent in P3 contracts with a maintenance or service phase compared with those in conventional contracts, because they provide the equivalent of a long-term warranty on the infrastructure. Conventional infrastructure construction contracts usually provide a warranty of one year only.

Performance provisions tend to be more stringent in P3 contracts with a maintenance or service phase compared with those in conventional contracts, as they provide a "long-term warranty" on the infrastructure.

OPTIMAL RISK ALLOCATION

Most of the efficiency gains in a P3 procurement rest on a successful and cost-effective allocation of risks between the public and private partners. These gains (or benefits) arise from transferring selected project risks to the private partner, provided that the risks in question can be managed at a lower cost by the private partner, and part of this cost saving is transferred to the public sector owner in a competitive bid environment. Risks that may be worth transferring are those where the private partner has some control over how to achieve the desired outcomes, which puts it in a better position to manage the outcomes than the public sector partner. However, not all risks are worth transferring. For example, the risk of soil contamination that is undocumented and unknown prior to the start of the P3 project is sometimes retained by the public sector, because the private partner has no control over the outcome. Given that the private partner's discount rate is typically higher than that of the public sector, the cost to the private partner of dealing with such uncertain outcomes is higher than for the public sector partner and this would be reflected in the price of the bid.

The risks where value can be gained from transferring them to a private partner (in a competitive bidding process) include:

- financing risks;
- construction cost escalation risks;
- scheduling risks (e.g., delays);
- design coordination risks (i.e., the facility is not built according to the design—a risk that usually rests with the public sector in conventional procurements where the design is procured separately);
- commissioning and facility readiness risks; and
- operation, maintenance, and selected geotechnical and environmental risks.

A third category of risks consists of those that are best shared between the two parties to the extent that they both have significant influence over the outcomes. One such example is traffic risk. If a project includes a bridge or a roadway segment that is part of a larger network (as in the Autoroute 25 or Autoroute 30 projects), a private operator will certainly have some influence over traffic levels within a certain range, by virtue of the quality of maintenance work and lane availability. But traffic on the facility is also driven by the management of the overall road network and by economic activity levels in the region, both of which are outside the control of the private operator. This is the basis for sharing such traffic risk, but it can be a difficult balance to strike: The private operator needs to have the right operation and maintenance incentives without the public sector giving away too much of the benefit from higher traffic levels that would have occurred regardless of the private operator's behaviour.

In practice, there tend to be subjective elements in assessing the value of risks. However, several Canadian P3 procurement agencies have developed formal, quantitative risk assessment processes, which draw on past infrastructure procurement experience and on commercial cost evaluators to prepare risk templates for assessing which risks to transfer to the private partner. The very presence of a rigorous risk assessment process can also help both the public and private partners avoid certain risks altogether.

Private contractors always evaluate the relevant commercial, technical, and even political risks when bidding on a project, regardless of whether the project is a conventional one or a P3. What is unique to a P3 procurement process is the effort that the public sector owner (or procurement authority) devotes to identifying the wide range of possible risks and to assessing the value of such risks retained by the public sector under a conventional contract and under one or more potential P3-type contracts—such as a build-finance (BF) or a DBFM arrangement.[1]

Private contractors always evaluate the relevant commercial, technical, and even political risks when bidding on a project, regardless of the procurement type.

Infrastructure Ontario has had construction cost valuation experts develop a detailed set of risk templates identifying up to 80 categories of material risks for large infrastructure projects. These templates have been developed for different stages of the project life cycle, from the policy and planning stage through to design, procurement, construction, operation, and maintenance.[2] The risk templates include an assessment of the value of each of the specific risks retained by the public sector under a conventional contract and under a BF (or DBFM) approach.[3] For example, the cost consultant estimated that, in an average infrastructure project, the value of the risk exposure retained by the public sector under a Canadian Construction Documents Committee (CCDC) 2 construction contract amounts to 43.6 per cent of the base construction costs. The consultant further estimated that the value of these risks is reduced to 16.7 per cent on average under a BF contract. When the scope of the project includes the design, build, and maintenance work, 76.5 per cent of the construction cost base is retained as risk by the public sector in a conventional approach, as opposed to 16.2 per cent of the construction cost base in a DBFM project.

The full case for efficiency gains from transferring (or sharing) a risk is made only after factoring in the costs of transferring the risks (i.e., the risk premium) and any other associated costs, such as the incremental costs of private financing. However, the risk templates above provide a good starting point for determining which risks should be transferred to the private partner in each project. The P3 agencies or public sector procurement authorities also meet with each of the short-listed (or pre-qualified) bidders for a project to discuss what changes, if any, should be made to the draft project agreement between the public sector owner and the eventual P3 partner. The draft agreement is finalized by the procurement authority in advance of the final bids, based on the comments received from the short-listed bidders, and these bidders then submit their proposals based on the draft project agreement. This approach ensures that the project agreement is not subject to any negotiations between the procurement authority and the winning bidder, thereby minimizing a potentially important source of transaction costs.

INTEGRATING DESIGN, CONSTRUCTION, AND FACILITIES MAINTENANCE

A whole-life approach to the procurement of public infrastructure assets generates three potential efficiency gains. Each of these is discussed below.

The main argument for integrating the three phases of a project is that it creates incentives for the consortium to minimize the total capital and facilities maintenance costs over the economic useful life of the asset. This is a challenging task that requires bringing together different disciplines (notably architects, builders, facilities managers, and commercial experts) to decide which changes are likely to improve financial performance and which are not. In a conventional procurement process, the public sector owner manages the synergies between the requirements of each stage of the project with a view to minimizing the whole life-cycle costs. However, it is far from

1 The value of a specific risk can be expressed as the relevant cost base (e.g., a $100-million construction capital cost at time of planning) multiplied by the probability that the particular risk in question will occur (e.g., 10-per-cent probability of a cost escalation event), multiplied in turn by the impact of that event (e.g., a 20-per-cent cost increase), which in this case would value the risk at $2 million or 2 per cent of the cost base.

2 For example, see Altus Helyar Cost Consulting, "Infrastructure Ontario Build Risk Finance Risk Analysis and Risk Matrix."

3 Infrastructure Ontario has also developed risk templates for specific sectors, such as transportation.

clear that public sector managers are well equipped to deal with such a task, and in many cases it is not even part of the procurement strategy. But most importantly, public sector managers are not incented to take the risks that can lead to innovations. In other words, public sector managers are not incented to trade off higher costs in the design and/or construction stages for lower costs during the construction and operating period.

A procurement approach that introduces incentives to innovate could lead to significant efficiencies.

Operations, facilities maintenance, and rehabilitation spending over the lifetime of an asset can be as large as the original capital cost of the asset. Hence, a procurement approach that introduces incentives for the consortium to innovate could lead to significant efficiencies. If the consortium is already aware of some of these efficiencies, it is very likely to share them with the public sector partner through a lower bid price to increase its chances of winning the bid. After the start of the project, the consortium is strongly incented to identify and implement any potential innovations, to the extent that these reduce whole life-cycle costs, and the efficiency gains can be captured in the firm's bottom line. This is why it is important for the term of the P3 contract to include a substantial part of the economic useful life of the asset. Without this, the consortium cannot capture the benefits of innovation.

In practice, long-term P3 contracts tend to benchmark and market test facilities management services every five years, with the consortium taking the risk of any downward adjustment in service payments that is not fully offset by a reduction in the cost of providing the service.[4] This means that as facilities management innovations become more widely adopted in the marketplace, a consortium that was an early adopter of an innovation eventually loses some of the benefits from early adoption. And if a consortium has not already adopted the innovation, it is forced to do so as the benefits of the innovations become fully reflected in the going market rates for facilities management services.

A second benefit that comes with integrating construction and maintenance phases is that the public sector owner obtains the equivalent of a long-term warranty on the performance of the new asset, in contrast to the one- or two-year warranty typical under a conventional construction contract. This benefit is relevant to all build-finance-maintain (BFM) and DBFM projects such as the Anthony Henday Drive Southeast Leg Ring Road in Edmonton, the Durham Consolidated Courthouse just east of Toronto, or the Autoroute 25 project in the Montréal area. It depends, of course, on having the appropriate output-based performance measures in the partnership agreements.

The third benefit of whole life-cycle procurement is that future governments with responsibility for maintaining the new asset are essentially pre-committed to providing an appropriate level of maintenance and upgrade work, as discussed in Chapter 2. This ensures not only that the service levels stipulated in the partnership agreement are met by the P3 partner, but also that the asset is in good working order when it is returned to the public sector at the end of the term.

As a final observation, one could ask whether the benefits of a whole-life approach to procurement can be achieved through a conventional form of contracting. This is tantamount to asking about the role of private financing in P3s, since that is the main element—in addition to a design-build-maintain contract—required to form a P3 as defined in this report. We address this issue below.

PRIVATE FINANCING

A significant portion of the capital spending on a P3 infrastructure project is privately financed and at risk, since service payments begin only after construction. (The publicly financed portion of P3 infrastructure projects takes the form of government contributions paid to the

4 The consortium could also enjoy the benefit of an upward adjustment in service payments that is not fully offset by an increase in the cost of providing the service.

private partner at key milestones in the delivery of the project.) Based on our observations of both conventional and P3 procurements, private financing in P3 projects brings:

- discipline to the procurement process, forcing both parties to stipulate the project requirements and consider the full cost and risk allocation implications before the start of the project;
- additional commercial and technical due diligence before financial close, followed by monitoring of progress during the construction and operating term of the project agreement; and
- private sector stewardship of the project during the delivery stage, including strong incentives to build the facility as efficiently as possible within the specified delivery time frames while meeting the contractual requirements.

A DISCIPLINED PROCUREMENT PROCESS

With private financing at stake and most cost-escalation risks borne by the P3 partner, all bidders have an obvious interest in considering upfront all the costs and risks associated with delivering on each stage of the project. However, this also has the beneficial effect of forcing the public sector owner to do the same—that is, to consider upfront all its requirements for the facility and the associated services. This is because the public sector owner is committing to a long-term contract in which major changes in project requirements can be costly to implement.[5]

In contrast, in conventional procurements it is not uncommon for difficult parts of a project to be postponed for future consideration or for a project to kick off even before the full requirements have been specified. Nor is it uncommon for private firms to undertake projects where budgets have been underestimated by the public sector, as was the case with the extension of the Montréal metro to the City of Laval (reviewed as one of our case studies in Chapter 5). It is very unlikely that a private sector consortium would bid on, let alone commit to, a P3 project to deliver a facility at a grossly underestimated budget[6] if the consortium also bore the risk for the majority of project financing. In other words, it is the presence of substantial private financing, and the risk that entails, that forces both parties in a P3 procurement to take full account upfront of all the requirements and risks entailed by the project. By "upfront" we mean before going out to the market with a request for expressions of interest (RFEOI) or a request for qualifications (RFQ) and certainly no later than the proposal submission stage.

The establishment in the last five years of the P3 agencies (or equivalent units in a central government agency) that specialize in the procurement of infrastructure has also contributed to a disciplined procurement process. These agencies advise the public sector owner (e.g., the hospital authority or provincial ministry) as it prepares for a potential P3 procurement, and in some cases they are also responsible for managing the procurement process and construction. The agencies have also sought to ensure a clear, predictable procurement process beginning with the RFQ/RFEOI through to proposal stage (including workshops with short-listed bidders to discuss various aspects of the draft partnership agreements) and on to preferred bidder selection and financial close. This kind of disciplined procurement process is necessary to attract international bidders and to ensure that the P3 market remains competitive.[7]

5 Modest changes in contractual requirements can usually be accommodated in P3 contracts through the process for contract variations, as noted in Chapter 2. In fact, there is often a more stringent process for undertaking contract variations in P3s than in a conventional contract (e.g., not all changes require contract variations). As a result, some participants argue that there tend to be fewer contract variations in a P3 project than in a conventional project. However, it has not been possible to verify this argument using the evidence base collected for this report.

6 Or the equivalent, such as an incomplete functional specification for a facility.

7 There is reason to believe that Canadian jurisdictions active in P3s have had a better track record than their U.S. counterparts in achieving consistent and predictable procurement processes. This is because there have been a number of failed or extended procurements in the U.S., including the BART Oakland Airport Connector, Texas State Highway 121 (taken from Cintra and given to NTTA), Pennsylvania Turnpike Lease, Oregon Bridge Program, Jacksonville Outer Beltway, and Port of Miami Tunnel (which closed in October 2009 after a first failed attempt). According to Bob French of Flatiron Constructors Canada, the U.S. P3 market is characterized by "owners doing one-off projects (i.e. not a long-term P3 interest), a lack of knowledge and expertise, and procurement processes that are not well defined at the outset." See French, "Public-Private Partnerships." In contrast, the few failed procurements in Canada in recent years (e.g., the Union Station revitalization project in 2003) were projects where there was no specialized infrastructure procurement agency to advise the public sector clients.

Therefore, the question arises as to whether these P3 agencies could achieve the same discipline in the procurement process without the private financing. It is difficult to answer this question with certainty, but there is reason to believe that private financing—even before it is committed to a project—raises the stakes for all parties in a transaction. Potential bidders have more reason to concentrate their bid resources in jurisdictions that have a reputation for delivering on project procurements, in part because P3 procurements are more costly than conventional ones. Public sector owners are compelled to consider the full project requirements and costing upfront, because the projects are unlikely to reach the starting point otherwise. In this context, P3 agencies have stronger incentives to ensure a clear and predictable procurement process, but they also have greater leverage with the public sector infrastructure owners during the procurement process.

Potential bidders have more reason to concentrate their bid resources in jurisdictions that have a reputation for delivering on project procurements, as P3 procurements are more costly than conventional ones.

PROJECT DUE DILIGENCE

Private financing also brings greater commercial and technical due diligence to an infrastructure project during the procurement phase. This due diligence is carried out by the equity partners in the project consortium and also by the lenders, who sometimes provide over 80 per cent of the project financing requirements. Lenders receive a fixed rate of interest on their money, but they tend to have much more funding at stake than equity providers. In turn, this tends to result in more stringent due diligence standards on the part of lenders than on the part of equity investors.[8] Each lender usually has its own set of commercial, technical, and legal due diligence advisors on each project.

8 Lenders' claims to interest and capital repayments have priority over the claims of the equity providers (i.e., the private partner). The latter assume higher risks than lenders and therefore expect higher returns.

Lenders continue to monitor the progress of the project after financial close. Moreover, significant changes to the project after financial close usually require approval from the lenders. This is one of the factors that make it more costly to introduce major contract variations after the start of the project.

PRIVATE SECTOR PROJECT STEWARDSHIP

An often-neglected characteristic of P3 projects is the fact that the private sector partner is the project steward with overall responsibility for organizing the work and delivering on the project requirements. This project stewardship feature arises from the structure of the P3 agreement and the presence of private project financing. It is not about private sector versus public sector provision, since the same private sector firms are usually involved in carrying out the work, whether the project is a conventional one or a P3.

In a conventional procurement, the public sector owner has project architects and engineers on site to inspect and approve the work and to initiate payment for acceptable work completed. In a P3, it is the responsibility of an independent certifier to check that the work is delivered according to the contract specifications. This means that the public sector authority no longer has day-to-day responsibility for supervising project delivery, even though it retains overall responsibility and control over the delivery of the project. It is the responsibility of the private sector consortium and its contractors to organize and coordinate their work so as to deliver the project on schedule and in accordance with agreed-upon specifications. The role of private financing is to give the consortium powerful incentives to deliver an asset with long-term sustainability, to expedite the work, and even to complete construction early, in which case the service payments (and any milestone payments) can start ahead of schedule.

WHY NOT PENALTIES INSTEAD OF PRIVATE FINANCING?

In theory, it might be possible to conceive a contract with performance penalties and bonuses that provide equivalent incentives to those of private financing. In practice, there are several problems with this. For example, the

financial impact of a delivery delay measured in additional interest costs on a loan to a P3 consortium is several orders of magnitude higher than the kinds of penalties for delays found in conventional contracts. For example, a $50,000 interest charge for an extra day of carrying a $250-million loan is not unusual. Although it is possible to introduce penalties of an equivalent order of magnitude, it may be much more difficult to enforce these penalties in practice—that is, without litigation regarding the sources and responsibilities for the delays.

This suggests that it may not be possible to devise contracts for large infrastructure projects in which the private partners have the same powerful incentives as they do in P3 contracts. However, observers should monitor the results of large-scale design-build projects that are being procured without private financing—such as the Port Mann/Highway 1 project in British Columbia. These types of projects may prove to be interesting natural experiments in "DBFMs without the F," since both are being undertaken in jurisdictions with extensive P3 procurement experience.

P3s WITHOUT PRIVATE DEBT FINANCING?

Many observers recognize the positive incentives that arise from relying on private financing in the form of equity. This has led some to ask whether P3s can be executed without private debt financing, thereby presumably maintaining the same performance incentives but without the incremental cost of private debt financing relative to public debt financing. In practice, this would mean having public financing replace some or all of the private debt, since it would be much more expensive to have equity replace the private debt in its entirety.

In a limited way, this type of financing—known as the "wide equity" model[9]—has already started to happen. It began with the first signs of the credit crisis in 2007, when bond markets seized up, and continued with the full-blown credit crisis in 2008, when the cost of credit soared and credit availability collapsed. As a result, governments have in some cases made greater upfront contributions to the project financing—usually through payments at key delivery milestones—to reduce the private financing requirements to more manageable levels and thereby facilitate the financial close.[10]

These kinds of responses to the credit crisis have nevertheless retained a significant role for private debt financing, without which it would not be possible to have the kinds of penalty clauses for delays and non-performance issues that have characterized the second wave of P3s. Moreover, the prospect of totally replacing private debt with public debt financing, coupled with the continued participation of private equity, raises significant issues. In this case, the public sector would act both as an owner and as a debt provider on a project. In addition to the potential conflict between the two roles,[11] this kind of financial structure could also make it more difficult to attract equity providers, who may have concerns about potential opportunistic behaviour on the part of the public sector partner.

IMPLICATIONS OF THE CREDIT CRISIS

The paradox of the credit crisis is that debt financing for P3s became more difficult to secure at just the time governments were promoting infrastructure spending as an important tool for short-term stimulus. As we saw in Chapter 2, the second wave of P3 projects in Canada has a strong record to date in terms of cost certainty and time performance. Although these large infrastructure projects can take years to prepare for procurement, the infrastructure stimulus imperative suggests that the projects already in the pipeline should not be delayed. If anything, these projects should be accelerated, provided the quality of the project is not compromised and the spending is expected to occur during the current downturn.

9 Under this type of financing model, private equity provides a higher share of the total private financing required for the project, usually with the public sector owner making greater contributions during the early stages of the project.

10 In several Canadian jurisdictions, P3 projects included significant public sector funding contributions from both provincial and federal governments well before the first signs of the credit crisis in 2007. In some cases, public sector contributions make up a large share of the total P3 project funding (e.g., regional health district funding in British Columbia makes up 40 per cent of the total funding for hospital projects).

11 This alone would suggest that a public lender may behave quite differently from a private lender, because it would not have the same incentives to perform due diligence and monitor the delivery of the project. Additional contract provisions outlining the rights of each party could minimize this conflict.

There is little doubt that the increased cost and reduced availability of credit slowed the process of closing certain P3 deals from mid-2007 through to early 2009. Bond markets were closed from mid-2007 to mid-2009, and the number of bank lenders available to Canadian P3s dropped to a fraction of those available before the credit crisis. However, P3 projects have continued to reach financial close during the credit crisis in all four jurisdictions examined here.[12]

Credit market conditions have improved substantially over recent months, and bond markets have reopened for P3s and other types of corporate financing. However, there remain substantially fewer bank lenders to P3 projects compared with the number active in the Canadian market before August 2007.

Governments and P3 agencies have responded in several ways to move the P3 transactions already in the pipeline through to financial close and to ensure that other planned P3 projects can continue to benefit from this type of procurement tool. These initiatives included:

- reducing the level of private debt financing required in individual projects to more manageable levels, while ensuring that incentives and penalties remain to guarantee performance over the term of the project. As indicated earlier, this is being done through increased reliance on contributions by governments at key milestone dates at or before completion of construction;
- shortening the period between the selection of the preferred bidder and financial close, in order to reduce the period during which credit spreads need to be locked in (i.e., guaranteed) before financial close; and
- attracting new types of lenders to P3 markets, such as Canadian pension funds.[13]

Other potential solutions have been considered and even implemented in a few P3 projects, but many of these either compromise the incentive properties of P3s or create other problems and costs. For example, some analysts have suggested relying on semi-permanent debt financing based on five- to seven-year terms (instead of 20- to 30-year terms that match the P3 contract term). However, this could compromise the performance incentives inherent in debt financing, because under-performing P3s could have difficulty renewing their loans, thereby leading to a default by the project consortium.

Many potential solutions either compromise the incentive properties of P3s or create other problems and costs.

Some observers have suggested that governments could act as commercial lenders to P3 consortia. However, this is tantamount to governments lending to themselves indirectly (with the added cost of extra advisory fees for arranging the loans), rather than simply issuing sovereign bonds and making their contributions to projects as per the agreed milestones.

Other potential solutions include obtaining credit from federal institutions, such as the Export Development Corporation or the Business Development Bank of Canada, which have recently been mandated to provide credit to commercial entities that have been unable to obtain secure credit from banks. This could also be characterized as governments lending to other governments, even if some of these institutions have their own access to capital markets. However, these lending institutions tend to operate on a more commercial basis and hence are more likely to behave like private lenders and impose a similar discipline on project delivery.

In summary, it appears that the most viable interim solution to the problem of credit availability is for governments to increase their contributions to P3 funding while retaining sufficient private capital at stake to maintain the powerful performance incentives that appear to have worked well for the second wave of Canadian P3s.

12 For example, Infrastructure Ontario brought seven AFP projects worth approximately $2 billion to financial close between October 2008 and November 2009.

13 Pension funds have occasionally participated as equity providers to P3 projects (e.g., by buying into P3 projects after construction has been completed), but they have not generally provided debt financing at project inception.

CHAPTER 4

Assessing Key Elements of P3 Procurement Processes

Chapter Summary

- Most Canadian jurisdictions active in P3 procurements have an explicit framework in place for assessing procurement options for public infrastructure.
- The VfM test is the main tool used by all Canadian jurisdictions active in P3s to assess whether procurements are suitable for the P3 approach.
- Some observers question whether the VfM test is a genuine test or whether it can be arbitrarily managed to generate desired results.
- Procurement authorities should consider comparing the P3 procurement option with the next best available procurement option (which is not always the typical "design-bid-build" approach of conventional contracts), developing a pan-Canadian evidence base of conventional infrastructure projects covering key outcomes, and updating VfM studies after completion of major milestones.
- The procurement processes for the second wave of P3 projects have been far more transparent than the procurement processes for conventional public infrastructure projects.

In this chapter we examine three questions about the integrity of P3 procurement processes for the second wave of Canadian P3s:

- How do governments choose projects suitable for P3 procurement?
- Are VfM tests based on a rigorous methodology?
- How transparent are P3 procurement processes compared with conventional procurements?

It is widely recognized that P3 procurements are not appropriate for all infrastructure projects. For example, in many of the jurisdictions with active P3 procurement programs, these types of procurements account for 20 per cent or less of total capital spending on public infrastructure.[1] Thus our first two questions deal with the issue of whether a rigorous process is in place to select the right infrastructure projects for P3 procurements. The last question addresses the practices in place to ensure transparency of P3 procurement processes vis-à-vis those for conventional contracts.

1 According to Grimsey and Lewis, P3s account for between 10 per cent and 14 per cent of public sector investment in the United Kingdom and about 10 per cent of public sector capital investment in the State of Victoria, Australia's largest market for P3s. See Grimsey and Lewis, "Public Private Partnerships," p. 76. We are not aware of data showing the importance of P3s relative to total capital spending by governments across Canadian jurisdictions. One of the leading participants in the P3 market in Canada noted that he "couldn't imagine more than 10 or 20 percent of all the capital projects that the [B.C.] government does being done in a P3 way." See Blain, Partnerships BC. This is also consistent with a statement by the Chair of the Conseil du Trésor of Quebec, Monique Gagnon-Tremblay, who noted that only about 10 per cent of the province's infrastructure spending is for P3 projects, as mentioned in Chapter 1. See Dougherty, "Quebec Renames Agency."

SCREENING POTENTIAL P3 PROJECTS

The VfM test is the main evaluation tool used by all Canadian jurisdictions active in P3 project delivery to ensure that the appropriate infrastructure projects are chosen as P3s. These are the projects where there is value for money from executing a project as a P3 rather than a conventional project. First, we examine what kind of framework policies are being used to assess procurement options in general and P3s in particular. Second, we examine whether any specific guidelines exist to help public sector bodies determine whether a P3 is an appropriate delivery mechanism without having to conduct a full VfM analysis of the two procurement scenarios.

Most of the jurisdictions active in P3 procurements have an explicit framework in place for assessing procurement options for public infrastructure. The first and most elaborate of these is British Columbia's Capital Asset Management Framework (CAMF), which was issued in May 2002, at the same time as Partnerships BC was set up to facilitate implementing P3s at arm's length from the provincial government.[2] It prescribes in the first instance an analysis of whether there is a true need for the capital spending or whether that need can be met through better management or more efficient use of existing assets. If the need for a specific capital outlay is established, it prescribes a "strategic options analysis" of a full range of options for meeting the identified service need, including:

- alternative service delivery options;
- P3s;
- asset disposal or leveraging; and
- traditional procurement.

Capital procurement frameworks introduced by other jurisdictions active in P3s include Alberta's Capital Plan, which includes a role for P3s—a procurement option that is first evaluated by the provincial ministry responsible for the project.[3] The Plan also calls for an external, private sector Advisory Committee on Alternative Capital Financing, which provides advice on the projects referred by the Alberta Treasury Board Committee. The Government of Quebec introduced the Public Private Partnerships Framework Policy in 2004. This policy institutes a 10-step business case analysis to identify whether a P3 is an appropriate procurement tool for meeting an identified capital need.[4] It is worth noting that the policy does not interpret private financing as one of the essential requirements for P3s. Moreover, the Quebec government has recently instituted a business case analysis as a requirement for any other type of major capital procurement, including conventional procurements. In Ontario, the infrastructure planning, financing, and procurement framework is presented in *Building a Better Tomorrow*.[5]

SPECIFIC GUIDELINES FOR IDENTIFYING P3s

Most of the Canadian jurisdictions active in P3s have published specific guidelines to help public sector bodies determine whether a P3 is worth considering as an appropriate delivery mechanism.[6] These guidelines typically include:

- the feasibility of developing output specifications and performance requirements for the project, without which effective risk transfer to the private partner is unlikely;
- a deal size, including construction and operations and maintenance costs, that exceeds a minimum threshold, which varies between $40 million and $100 million, depending on the jurisdiction;
- sufficient project complexity in the design, construction, or operations and maintenance phases, which can allow for more cost-effective risk transfer to the private partner because of opportunities for innovation, including potential synergies from integrating the work across the different phases of the project; and
- a competitive market that is likely to produce at least three bids for the project.

2 Government of British Columbia, *Capital Asset Management Framework*.

3 Government of Alberta, *Building Tomorrow*.

4 See Government of Quebec, *Public-Private Partnerships Framework Policy*, p. 12. See also Gouvernement du Québec, Politique-cadre sur la gouvernance.

5 See Government of Ontario, *Building a Better Tomorrow*.

6 See the following documents for the specific guidelines: Partnerships BC, "Capital Project Public Private Partnership"; Government of Quebec, *Public-Private Partnerships Framework Policy*, p. 2; and Alberta Infrastructure and Transportation, Management Framework, p. 12. Ontario also has initial screening criteria that are shared directly with public sector entities.

If any one of these guidelines is not met, a P3 procurement is unlikely to generate any value for money and could indeed do the opposite. For example, the United Kingdom has ruled out PFI projects covering information technology (IT) assets because of the difficulty of specifying output-based performance requirements over long periods when technology is changing rapidly. The U.K. experience with P3 projects in the IT sector was characterized by relatively high transaction costs because of this performance measurement problem. Other infrastructure projects that are also typically rejected for P3 procurement are those where renovation work constitutes a substantial share of construction costs or where construction would interfere with existing operations. Performance measurement is also an issue in such projects because of the relatively high levels of latent risk associated with the existing structure and design.

The preliminary choice of P3 projects is neither arbitrary nor ad hoc. Early screening is supported by explicit criteria that are applied to potential projects.

However, one criterion that is seldom considered is whether there is project and policy certainty over the 20- to 30-year period of the contract term.[7] By this we mean that governments tend to change policies and the public at large can also change preferences. As discussed in Chapter 2, if the project requirement is particularly sensitive to a change in policy over the contract term, this can lead to substantial unanticipated costs under a P3 (but not necessarily under a conventional contract). An example would be the costs of early termination.

Our review of P3 screening practices by each of the Canadian jurisdictions active in this type of procurement has found several examples of projects that were initially considered for P3 treatment but were subsequently rejected because they failed to meet one of the above guidelines. This suggests that the preliminary choice of P3 projects is not an arbitrary or ad hoc process. Early screening is supported in most cases by explicit criteria that are applied to potential infrastructure projects.

7 This potential obstacle to P3s is raised by Murphy in "The Case for Public-Private Partnerships."

THE VALUE-FOR-MONEY METHODOLOGY

The value-for-money test that compares the cost of P3s with conventional procurements lies at the heart of the P3 procurement process. This is because it helps the public sector procurement authorities determine not only which projects should be pursued as P3s but also how a project should be structured (e.g., which risks should be retained, transferred to the private partner, or shared between the two parties) in order to deliver the most value to the public sector. However, there is some skepticism, including in the academic literature, as to whether the VfM test is a genuine test or whether it can be arbitrarily managed to generate desired results. This section reports the results of a high-level review of selected VfM studies in the four jurisdictions considered here, including any guidance documents regarding the methodology used for these studies.

First, we should note that VfM studies have been conducted for every Canadian P3 project undertaken as part of the second-wave of P3s. This is considered standard practice for P3s in most countries in Europe as well as in other pioneering jurisdictions in this area, such as Australia. However, it represents a significant achievement when viewed in the context of conventional infrastructure procurement, which is not usually subject to a VfM assessment that compares the chosen method of procurement with alternatives.

Second, we should note that the VfM test is a process that begins well before the request for proposal (RFP) is issued and culminates in a final report issued after the financial close. The first VfM test for a project is finalized before the RFP is issued in order to confirm the procurement decision before engaging the market in a competitive bid process. The VfM test is then finalized after financial close of the project, based on the financial information contained in the proposal of the winning bidder.

Our review of the available VfM studies and guidance documents suggests that each of the four jurisdictions under consideration has developed a rigorous methodology for comparing the costs of P3s and traditional procurements. (VfM studies are not published for P3 transactions in Alberta, but the VfM methodology is available through

Alberta Infrastructure and Transportation.)[8] This means that it is generally clear which data inputs have been used, what analysis was undertaken, especially regarding the assessment of risks, and what key assumptions were made (e.g., regarding the choice of discount rate for the two options). In addition, the choice of methodology and underlying assumptions are generally conservative.[9] Although there are some differences in methodology between jurisdictions (e.g., the method of determining the appropriate discount rates for the analysis), we have not undertaken a detailed assessment to determine whether the methodological differences have a material impact on the VfM results.

A recent review of P3s suggested that VfM studies should be based on a full cost-benefit analysis of the difference between the two procurement options.

The results of the VfM studies have in some cases been reviewed by the provincial auditor general, as in the case of British Columbia's P3s.[10] In Ontario, the internal audit division of the provincial Ministry of Finance reviewed the VfM methodology, which was "found to be sound."[11]

A recent review of P3s suggested that VfM studies should be based on a full cost-benefit analysis of the difference between the two procurement options, which we discuss in the box "The Role of Cost-Benefit Analysis in the Evaluation of P3 Projects."[12]

Our review of the VfM studies and the methodology leads us to the following observations:

- It would be worth comparing the P3 procurement option with the next best available procurement option.[13] In many cases, this is the conventional procurement option, which is the usual reference point for these studies (e.g., CCDC 2 contracts and conventional maintenance contracts when the P3 includes a maintenance phase). However, in some cases it may be a different type of conventional contract, such as a construction management contract. This modification of the methodology, when relevant, would be consistent with provincial capital management frameworks that indicate that all procurement options should be evaluated.
- The risk assessment process is at the heart of the VfM methodology and is necessarily based on historical outcomes regarding the cost and timing outcomes of both conventional and P3 infrastructure projects. We think it would be worthwhile developing and maintaining an evidence base of pan-Canadian infrastructure projects covering key outcomes such as public sector project costs and key milestones relative to their respective budgets and delivery timelines. This can already easily be done for the second wave of P3 projects. However, it is likely to be more challenging, but more valuable, to undertake for conventional infrastructure projects.
- As we noted earlier in this report, a VfM test is necessarily ex ante. It could therefore be valuable to update the VfM study after completion of the project or after a major milestone such as completion of the construction phase. The resulting data could provide some valuable lessons regarding best practices for infrastructure procurement.

8 See Alberta Infrastructure and Transportation, "Management Framework."

9 For example, Infrastructure Ontario's VfM methodology assumes the same base capital costs under the PSC and the shadow bid (with the exception of the risk premium under the shadow bid). In other words, it assumes that the private partner does not bring any innovations to the project, although in practice this would likely occur in a well-designed project. See Infrastructure Ontario, *Assessing Value for Money*; Partnerships BC, "Draft Discussion Paper"; and Alberta Infrastructure and Transportation, "Management Framework." A shadow bid refers to the financial model of the costs of undertaking the project in question as a P3 procurement. This model is developed by the P3 agency (or procurement authority) for the purpose of comparing the cost of a P3 against its PSC prior to receiving final bids from the private partners.

10 The B.C. Auditor General reviewed the VfM documents for the Abbotsford Regional Hospital and Cancer Centre Project, the Sea-to-Sky Highway Improvement Project, and the Canada Line Project. See Partnerships BC, *Project Report: Achieving Value for Money—Abbotsford Regional Hospital*; Partnerships BC, *Project Report: Achieving Value for Money—Sea-to-Sky Highway*; and Canada Line Rapid Transit, *Canada Line Final Project Report*.

11 Auditor General of Ontario, "Brampton Civic Hospital," p. 121.

12 Vining and Boardman, "Public-Private Partnerships," pp. 14–15.

13 This is already the standard in British Columbia, as set out in the CAMF.

The Role of Cost-Benefit Analysis in the Evaluation of P3 Projects

Several authors have argued that cost-benefit analysis should play a more important role in the evaluation of major infrastructure projects in Canada. For example, Steven Globerman and Aidan Vining suggest that

> ultimately the effectiveness and desirability of P3s and related instruments depend on their ability to meet the needs of society as a whole, that is, whether the net social benefits of P3s are likely to be higher (or are actually higher) than government provision. This criterion has a strong normative rationale and has been used to evaluate the privatization of state-owned enterprises.[1]

We fully agree that major infrastructure projects must be subject to a rigorous and comprehensive cost-benefit analysis and that the results of the analysis should be an important factor in deciding whether to proceed with the project (or what version of the project to proceed with). The analysis must include not only the financial costs and benefits but also other quantifiable social costs and benefits that fall in the public domain and are not captured in financial business cases (e.g., health, environmental, and safety impacts). However, this type of study must be undertaken at the project evaluation stage (i.e., well before the procurement stage) in order to contribute meaningfully to the decision about whether the project is in the public interest and worth undertaking. In the passage below, we explain what the role of cost-benefit analysis should be in transportation infrastructure projects. However, the same rationale applies to all publicly owned infrastructure projects, from hospitals to concert halls:

> . . . the planning process should favour those transportation projects with the highest benefits per unit of cost. The public sector is the only participant in a position to ensure that projects that generate significant net benefits in the public domain (e.g., environmental or even journey-time benefits, which are reflected in the benefit–cost analysis but not in the financial business case) are prioritized and realized. Private firms' investment decisions are based on the financial case, which necessarily ignores the costs and benefits that fall in the public domain. It is therefore the unique and sole responsibility of governments (and planning agencies) to identify and promote transportation projects with relatively high benefit–cost ratios.[2]

Once a project proceeds to the procurement stage, it is worth revisiting the cost-benefit analysis undertaken at the project planning stage to assess whether the social costs and benefits (i.e., the external impacts that fall in the public domain) would vary depending on the procurement option. But it is not clear to us whether the type of procurement tool materially alters the social costs and benefits resulting from a project.[3] Vining and Boardman argue that the procurement decision (i.e., P3 or conventional project) should be based on the following criterion:

> . . . recognizing the importance of externalities and quality differences, Anthony Boardman and Erica Hewitt argue that governments should minimize the sum of total social costs defined as production costs incurred by government or paid to third parties, plus transaction costs, plus (net) negative externalities, holding quality constant.[4]

We note that the VfM methodologies discussed above take into account all the factors in the quote above, with the exception of the externalities (i.e., the social costs and benefits in the public domain). But we have no evidence to suggest that externalities differ significantly between procurement options, as noted above. Nor do we believe it is the role of VfM studies to serve as a full cost-benefit analysis in any instance where a cost-benefit study may not have been undertaken at the planning stage.[5]

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1. Vining and Boardman, "Public-Private Partnerships," p. 14.
2. Iacobacci, *Steering a Tricky Course*, p. 9.
3. This is particularly true when comparing conventional procurement approaches with P3 approaches based on availability payments. Projects that transfer substantial use risk (or demand risk) to the private sector could affect the balance of social costs and benefits, but second-wave P3 projects do not typically do so.
4. Vining and Boardman, "Public-Private Partnerships," pp. 14–15.
5. Such a case would be considered a planning failure and should be corrected prior to completing a procurement process for the project in question.

TRANSPARENCY OF P3 AND CONVENTIONAL PROCUREMENT PROCESSES

The transparency of a procurement process helps determine whether the public sees the results as legitimate and is particularly critical for major public infrastructure projects. In this section, we provide a few observations on the transparency of P3 and conventional procurement processes.

Transparency has several dimensions. Here we focus on two: first, the availability of information to the public regarding the procurement process and outcomes—information that is sufficient to allow any third party to form an independent view of the process but which excludes commercially confidential data; and, second, the transparency of the process for all the bidders at every stage of the process.

P3 procurements typically include a fairness advisor who provides an opinion on the fairness and transparency of the process for all participants. However, we understand that this is not the norm for conventional infrastructure projects of equivalent scale in any of the four Canadian jurisdictions most active in the P3 market.

We have also found that there is little or no publicly available information on major conventional public infrastructure procurements, including information on any cost overruns (e.g., causes, amounts, recipients of any additional payments made by governments) unless the procurement in question has been reviewed by an auditor general or a commission of inquiry. We understand that some of this information would be available through access-to-information channels.[14] However, this type of availability does not come close to the standards of transparency employed in a P3 procurement process, where the RFQ, RFP, and a redacted form of the partnership agreement is always posted on the relevant public agency websites. In most cases, the VfM report is also made available to the public.

The second wave of P3s has been subject to greater scrutiny than that applied to similar conventional projects.

Therefore, we conclude that the procurement processes for the second wave of P3 projects have been considerably more transparent than the procurement processes for conventional public infrastructure projects. This has meant that this second wave of P3s has been subject to greater scrutiny than typically applies to conventional infrastructure projects of equivalent scale.

14 Access-to-Information legislation differs by province. For example, in British Columbia, the legislation is called the *Freedom of Information and Protection of Privacy Act.*

CHAPTER 5

Case Studies

Chapter Summary

- This chapter presents case studies of a pair of infrastructure projects—one a P3 and the other a conventional procurement—from each of the four Canadian jurisdictions most active in the second wave of P3s.
- Alberta's southeast and southwest Edmonton ring roads are the most comparable pair, with the P3 project being delivered two years earlier than the conventionally procured project.
- In British Columbia, the P3 procurement process forced a detailed up-front assessment of the full capital costs and associated risks for a regional hospital, thereby providing a solid basis for informed public sector decision-making.
- A key feature of Quinte Health Care, a P3 hospital project in Ontario, is a "change order protocol" addressing what is often an important source of cost overruns in conventional infrastructure projects.
- In Quebec, the conventionally procured Montreal metro extension to Laval cost over four times the original budget and was 16 months late.

INTRODUCTION

This chapter presents four case study pairs: a P3 project and a conventional project from each of the four provincial jurisdictions that have been most active in the second wave of P3s in Canada. The P3 case studies were selected based on the following criteria. They had to:

- be among the first of the second-wave P3 projects initiated by the provincial infrastructure agencies, thereby providing more time over which the results of the project could be observed;
- involve a type of asset that is broadly representative of the asset types for which most P3s have been undertaken in that jurisdiction (e.g., a hospital project in Ontario); and
- allow access to data and interviews with project managers.

The case studies are not strictly representative of their respective P3 or conventional procurement populations.

The case studies are intended only to be illustrative of both conventional and P3 procurement experiences. They are not strictly representative of their respective P3 or conventional procurement populations.

One could ask why we have not chosen some of the first-wave projects, which are all well into their operating phases and should provide more data and outcomes to evaluate. The reason is that the structure of the first wave of P3 transactions differs in many respects from that of the more recent P3 projects, as we explained in Chapter 1. Moreover, second-wave P3s are more relevant to the kinds of P3 projects that are likely to be undertaken in the near future, and they have received less attention in the policy literature than the first wave.

The well-documented conventional projects tend to be those that have been reviewed by auditors or external experts, and are often the ones that have gone wrong.

For each case study pair, we originally intended to choose a conventionally delivered infrastructure project that would provide a good comparison with the P3 project for the same jurisdiction. However, this was not possible in most cases, because of the limited information about conventional projects available in the public domain. (This paucity of information is also a by-product of the lower levels of public scrutiny and transparency for conventional projects.) In fact, the well-documented conventional projects tend to be those that have been reviewed by provincial auditors or external experts, which are often the ones that have gone wrong. Therefore, it should be no surprise that the conventional projects reviewed here are in many (but not all) cases poster-children for some glaring procurement failure. These are not necessarily representative of the overall population of large conventional infrastructure projects, but they do illustrate how procurement and project execution can differ from those in P3 projects. In instances where there are some elements of comparability, we point these out.

ALBERTA: THE SOUTHWEST AND SOUTHEAST EDMONTON RING ROADS

The large-scale infrastructure projects covering these two southern portions of the Edmonton Ring Road have recently been completed, the southwest leg of the ring road under a conventional approach and the southeast leg under a P3 project. These represent the two most comparable of the four case study pairs and have a substantial overlap in project time frames.

The Province of Alberta started planning for a transportation utility corridor around both Edmonton and Calgary beginning in the late 1970s and acquired the relevant lands over the next two decades. The Edmonton Ring Road was part of a long-standing provincial and city commitment to "create a highway trade corridor linking Alberta to the United States and Mexico."[1] The ring road was also expected to relieve congestion on the city centre's arterial roads, particularly by diverting heavy commercial vehicles from those roads.

Several points of comparison between the two projects are worth noting. First, according to the public sector owner, now that both the southwest and southeast legs of the ring road are open to traffic, it is very difficult to tell them apart or to determine which one was delivered conventionally and which one was procured as a DBFO.

The Anthony Henday Drive Southwest—A Construction Management Approach

The southwest leg was the first section of the Edmonton Ring Road to be completed and consists of 18 kilometres of freeway-standard roads from Highway 2 in the south to Highway 16 on the western outskirts of the city. The project also included:

- 12 bridges, including a major bridge across the North Saskatchewan River and bridges over three ravines;
- portions of a major systems interchange where the ring road meets Highway 2 (Calgary Trail), the main north–south highway that crosses Edmonton; and
- four other interchanges.

The functional planning study for this project was completed in July 2000, with two prime engineering consultants chosen to provide detailed design and construction management services. About 35 construction contracts were issued over the course of the project, and total project costs amounted to $310 million in nominal terms. The project was completed over a period of six years and five months and opened to traffic in October 2006.

Source: Alberta Infrastructure and Transportation.

1 "Ring Road, Air Service Constant Irritants."

The Anthony Henday Drive Southeast—Alberta's First DBFO Highway

The business plan for the southeast section of the Edmonton Ring Road was first developed by the Alberta Ministry of Transportation and presented to the Alberta Treasury Board in July 2003. The plan was then referred to the Advisory Committee on Alternative Capital Financing—composed of private sector members—which recommended proceeding with a P3. The request for qualifications was issued in September 2003, with six consortia responding. The request for proposal was issued to the three qualified candidates in April 2004, with the draft contract and related schedules issued shortly thereafter.[1] (Pre-qualification of the proponents avoids potentially protracted negotiations after the selection of the preferred bidder.)

The three proponents were asked for their input on the draft contract, including their views about which risks would be expensive for these firms to assume, after which a final contract was released. Thus, all proponents submitted bids on the same contract, and the lowest bidder was selected. In January 2005, the contract was awarded to Access Roads Edmonton Ltd. (AREL), which was headed by ABN AMRO Bank, PCL Construction Management Inc. and TSMI.[2]

The project consisted of 11 kilometres of roadway between Highway 2 and Highway 14, varying in width from four to six lanes. It also included 20 bridges, some of which were required for completion of the Calgary Trail Interchange, as well as five new interchanges and four new flyover crossings. The total budget for the project was $493 million, which provided a value-for-money saving of $4 million when compared with the cost of a conventionally procured project. However, the project also had a compressed design and construction schedule, which meant that the new roadway was expected to open by October 2007, or two years earlier than would have been the case under a conventional approach.

AREL assumed most of the design and construction risks, although the risks associated with unknown pre-existing pollution sources and latent defects of existing structures were assumed by Alberta Transportation. The private consortium also assumed most of the financing and operating risks. The type of private financing used was relatively new for Canadian P3s, because the debt portion relied on bond financing, with a $150-million bond issued in January 2005 and a second $140-million bond issued in November 2005. In addition, the federal government provided $75 million in funding through the Canada Strategic Infrastructure Fund, which was paid during the construction phase. The Government of Alberta's monthly payments to AREL were scheduled to begin only when the road opened, and these payments would depend on the availability of the road and not on traffic levels.

The roadway opened in October 2007 as scheduled. It also provided cost certainty to the Government of Alberta, which did not incur any costs above those already budgeted. To date, the project has experienced no contract variations or any successful claims against the public sector. However, the operator has faced some deductions for non-performance relative to targets stipulated in the contract.

1. The milestones noted in this paragraph are based on the 2003–04 annual report of the Alberta Auditor General, which reviewed the Calgary Courts Centre and the Anthony Henday Drive Southeast P3 procurements.
2. In December 2005, ABN AMRO sold 81 per cent of its equity stake in AREL to Macquarie Essential Assets Partnership, which took over responsibility for project management. TSMI, a division of Lafarge Canada, is responsible for operating and maintaining Anthony Henday Drive Southeast.

Sources: Auditor General of Alberta, *Annual Report*; Alberta Treasury Board (Alternative Capital and Financing Office); The Canadian Council for Public-Private Partnerships, "Anthony Henday Drive."

Second, the public sector has also argued that the DBFO project was delivered two years earlier than it would have been under a conventional approach: The Anthony Henday Drive Southwest (AHDSW) project, which was of similar scope to the DBFO project, took six years and five months to complete from the functional specification stage. By comparison, the Anthony Henday Drive Southeast (AHDSE) project took just over four years to complete from the same point. This time saving can be attributed to several aspects of the DBFO process:

- The design and build stages can proceed concurrently, which is not possible in a conventional project, where the design stage must be completed first.[2]

2 According to one project manager, "At the outset of the work . . . the design activity is always on the critical path. The key challenge . . . is for the design to get ahead of construction at the soonest possible date. [. . .] there is a simple need to design first what the contractor will build first. [. . .] As the work progresses, unforeseen circumstances will arise. Because of this, the design and the construction schedule needs to be fluid to fit available design resources, the contractor priorities and unexpected field circumstances." Cited in Gauer, "Design and Construction," p. 4. Gauer argues that these design and construction process efficiencies can be achieved only through effective coordination of design and construction tasks.

- A single project manager can coordinate all the work. In a conventional project, different contractors and consultants carry out different parts of the work, creating coordination issues that have to be resolved either by the public sector managers or by their construction management firm.
- The public sector owner cannot call back the funds already allocated to the project, as it can in a conventional project. This removes a potential source of delay.
- The private consortium is incented to actively manage the construction delay risks. In the case of the AHDSE project, Access Roads Edmonton Ltd. assumed the cost of the bond financing. Thus, if the project completion had been delayed, the consortium would have lost service payments. These payments started only when the roadway opened to traffic and will end at the fixed end-term date in 2037. By comparison, under the AHDSW procurement, the penalties imposed on the contractor appear to be less than 10 per cent of the AHDSE delay penalties.[3]

One time-saving measure of the DBFO process is that a single project manager can coordinate all the work.

Third, the DBFO project provided the public sector owner with time and cost certainty. The construction schedule was met at no additional cost to the public sector over and above what was in the original budget. It is not clear whether the same can be said for the conventional AHDSW project. We do not have information about the original budget and timelines for this project, but there are some indications that both of these original targets were exceeded.[4] For example, there were references in the press to a $245-million cost for the AHDSW project,[5] which would mean that the final cost of $310 million represents a 26.5-per-cent increase relative to the $245-million budget. However, this is likely to be an understatement of the actual cost increase for the AHDSW project over the period from 2000 through to 2006.[6]

Fourth, anecdotal evidence suggests that the quality of routine maintenance services provided under the DBFO contract is not lower and may well be higher than the standards observed under conventional maintenance contracts. The AHDSE DBFO project provides routine maintenance (but not rehabilitation work) for the southwest leg of the ring road.

BRITISH COLUMBIA: THE VANCOUVER CONVENTION CENTRE EXPANSION AND THE ABBOTSFORD REGIONAL HOSPITAL AND CANCER CENTRE

The Abbotsford Regional Hospital and Cancer Centre (ARHCC) Project was the first B.C. hospital procured as a P3. Managed by Partnerships BC, it was also one of the first of the second-wave P3 projects in Canada.[7] The Vancouver Convention Centre Expansion Project (VCCEP) was also chosen as a case study, because of the availability of a recent review by the B.C. Auditor General. Both projects are considered social infrastructure, but there are several factors that preclude a strict comparison of the outcomes, including public sector commitments to a potentially unrealistic time frame for completing the VCCEP. Nevertheless, several insights and lessons can be drawn from both projects.

There are several issues worth highlighting for the two projects. First, the P3 procurement process forces an upfront consideration of all the project requirements

3 According to a letter to the *Edmonton Journal*, "Anthony Henday Behind Schedule," the contractor on the AHDSW project was subject to a potential $1,500 per day "site occupancy charge . . . until the entire roadway is open" and a "$3000 per day liquidated damages charge for each calendar day after the final contract completion date." By comparison, if the AHDSE project had been late, the implied penalty would have been about $48,000 per day, assuming an interest rate of 6 per cent on the $290 million of AHDSE bonds.

4 According to the letter to *Edmonton Journal* cited above, "At the time the work was tendered, the southwest leg of Anthony Henday Drive had a completion date of Nov. 15, 2005. This was for the entire road from 45th Avenue to Calgary Trail. [. . .] I consider this project to be a year behind schedule." See "Anthony Henday Behind Schedule."

5 See "Ring Road Extension."

6 According to one presentation to the Van Horne Institute, construction costs on conventional projects were subject to increases in excess of 25 per cent during the period from 2004 to 2007. See slide 6 in McQuay, "Design Build Finance."

7 The Sierra Yoyo Desan Resource Road reached financial close before the ARHCC project, but it is not representative of the types of infrastructure assets that have been procured as P3s in British Columbia.

The Abbotsford Regional Hospital and Cancer Centre—The First P3 Hospital for British Columbia

The Abbotsford Regional Hospital and Cancer Centre (ARHCC) was designed to increase the local health authority's capacity to provide health-care services for a growing population, including certain health-care services that were not previously available. Four procurement options were evaluated for the hospital project, in line with the provincial Capital Asset Management Framework issued in 2002:

- A conventional project in which the public sector owns, finances, operates, and maintains the facility, with private partners carrying out design and construction under separate contracts.
- A design-build-maintain (DBM) project, where a private firm delivers the design, construction, and building maintenance, while the public sector retains ownership, financing, and operations tasks.
- A design-build-operate-maintain (DBOM) project, which is like the second option except that the private firm also provides selected facilities management services.
- A design-build-finance-operate-maintain (DBFOM) project, where the private firm is responsible for all the above tasks.

Total costs under the four options were reportedly similar, but the procurement authority concluded that the DBFOM model offered the best potential to deliver value for money through innovation, timely delivery and the most effective risk transfer to the private sector."[1]

Four respondents to the initial request for expressions of interest were qualified. Two of these agreed to submit proposals, but one subsequently withdrew. Partnerships BC decided to continue with the request for proposal, because it was able to place increased weighting on the public sector comparator (PSC) as a test of whether the single bid provided value for money.

The cost of the project if done conventionally would have been $463 million in 2004 dollars (excluding capital contributions of approximately $75 million from local hospital and health authorities), which was reportedly similar to the cost of the P3 project. Based on the final agreement with the consortium, Access Health Abbotsford, the cost of the P3 project to the public sector fell to $424 million in 2004 dollars (also excluding the $75 million in capital contributions). As a result, the P3 project provided value-for-money savings of 8 per cent relative to the PSC.

The partnership agreement transferred risks to the private consortium in several areas: financing, design (fit for purpose), construction cost and scheduling, facilities management services and building maintenance, and latent defects.[2] Some other risks—such as equipment procurement and installation—were shared, with the agreement specifying exactly how this would be done. The risk transfer was ensured through output-based performance specifications, performance payments to the consortia that began only at substantial completion (and varied depending on penalties and bonuses), and private financing. Thus, any delay in the actual substantial completion date would result in fewer performance payments to the consortium (since the end-of-term date is fixed) and higher debt-servicing charges.

During the procurement, the capital cost component of the project under the PSC rose from an estimate of $211 million in 2001 to $369 million at financial close in December 2004. The difference between the two figures was attributed to construction cost inflation (40 per cent), a more realistic estimate of risks (31 per cent), and changes in project scope (29 per cent).

The project reached substantial completion according to schedule and without any additional liabilities incurred by the public sector. The contract variations during the design and construction stage had no net impact on the project budget. Since the hospital has opened, the service payments have been subject to performance deductions related to housekeeping and portering.

1. Partnerships BC, *Project Report: Achieving Value for Money—Abbotsford Regional Hospital*, p. 6.

2. Interestingly, two facilities management services (biomedical engineering and medical record transcription) were removed from the services to be provided by the private partner during the proposal stage, because it was not deemed cost-effective to transfer risks for facilities management services where there is little private sector experience to date.

Source: Partnerships B.C., *Project Report: Achieving Value for Money—Abbotsford Regional Hospital*.

The Vancouver Convention Centre Expansion Project—A Conventional Project by Default

An expansion of the Vancouver Convention and Exhibition Centre was proposed in 2000 based on the findings of a task force. The project had an estimated capital cost of $495 million and involved a new waterfront facility integrated with the existing facility at Canada Place, which was also to be renovated. The initial procurement strategy chosen by the provincial government in early 2002 was to build and operate the project as a P3. However, the government cancelled the P3 procurement by the fall of 2002, because it could not reach an agreement with the preferred P3 bidder. In February 2003, a provincial Crown agency (VCCEP Ltd.) was set up to design, build, and own the new facility.

After Vancouver was chosen in mid-2003 to host the 2010 Olympic and Paralympic Winter Games, the provincial government decided to complete the expanded facility by July 2008 and use it to house the broadcast and press activities for the Games. The first budget for the project, $565 million, was approved by the provincial government in June 2004. This budget was based on a preliminary design but did not incorporate a full assessment of risks. This was followed by five additional provincial budget approvals for the project, the last of which was for $883 million in July 2007.

It is worth quoting the B.C. Auditor General's review of the procurement process to show the interactions between the time constraints, the procurement strategy, and the failure to transfer construction risks to the private sector:

> [Due to the time constraints, the] VCCEP's choices regarding a procurement approach were somewhat limited. Instead of proceeding with a traditional staged procurement approach such as a design-bid-build, VCCEP felt obliged to proceed concurrently with construction of the marine and platform works while design of the building was being completed and retain a private sector construction management company to provide pre-construction services. Second, the procurement approach assumed that VCCEP would be able subsequently to negotiate a stipulated lump-sum contract with the construction management company. None of the early cost estimates reflected any risk premium that would be needed to compensate the construction manager for accepting the transfer of risk that would be the result of a stipulated lump-sum contract. The stipulated lump-sum contract was not completed until the first part of 2007, by which time most of the large contracts (specifically $360 million) had already been let by VCCEP. This has left the VCCEP to bear the originally unanticipated cost escalations.[1]

The expansion of the convention centre was completed in September 2009, and the final cost appears to have come in under the $883 million budget.[2]

1 Auditor General of British Columbia, *Review of the Vancouver Convention Centre*, p. 3.

2 Vancouver Convention Centre, *Convention Centre's Harbour Concourse*.

Source: Auditor General of British Columbia, *Review of the Vancouver Convention Centre*.

and associated costs and risks. This is partly due to the presence of a specialized procurement manager, such as Partnerships BC (which is able to impose this kind of discipline on the procurement process), and partly to the fact that private sector bidders will factor the cost of the risks they expect to bear in to the partnership agreement. As a result of this upfront consideration of comprehensive project requirements and costs, the ARHCC's capital cost estimates rose from $211 million in 2001 to $369 million in December 2004, with 60 per cent of the increase due to a combination of project scope changes and a more complete risk assessment. This cost increase is often cited as a drawback of P3s,[8] but in fact the reverse is true. By ensuring that policy makers have a full picture and a conservative view of the total costs of the project at the outset, it provides the basis for informed decision making, which can include modifying the project options to fit the original budget or even cancelling the project in advance of the formal procurement process.

In contrast, there was no comprehensive upfront consideration of all the costs and risks for the VCCEP project. Hence, as the project costs escalated during the design and construction, the government and procurement authority were no longer able to reconsider the full range of project options (including cancellation), because substantial portions of the capital budget were already spent and not recoverable. Sometimes some of the spending may

8 For example, see "Premier Shops Around for Expensive Theme," in the *Vancouver Sun*, for a recent reference to the capital cost increase of the ARHCC project.

be salvaged under an alternative project option, but the decision makers will almost invariably face a more restricted range of options in doing so.

Second, the process of risk transfer appears to have been effective in the ARHCC P3 project. Not only were the design and construction components of the project delivered within the public sector budget for the P3 (i.e., there were no additional successful claims on the public sector, despite some contract variations during the project), but the facility was also delivered on schedule. It is important to note that the construction phase for both the ARHCC and VCCEP projects overlapped during the 2005–08 period, and that in the first two years of this period the rate of construction cost inflation more than doubled.[9] This risk was effectively transferred to the private sector consortium that built the ARHCC. However, it was not transferred to the private builder of the VCCEP project in large part because the stipulated sum contract was not signed until 2007, when $360 million of the capital spending had already occurred. Moreover, by 2007, the escalation in the rate of construction cost inflation had already occurred and would have been fully factored into the private builder's bid, even if that builder could have managed the inflation risk more cost-effectively than the public sector.

A third issue worth highlighting is the competitive nature of the procurement process. This feature is one of the key drivers of efficient procurement outcomes for both P3s and conventional procurements.[10] However, the necessary competitive underpinnings of major infrastructure projects were compromised for both the ARHCC and VCCEP projects, albeit for different reasons and with different results. In the ARHCC case, the withdrawal of one of the two bidders at the proposal stage led Partnerships BC to emphasize the VfM element of the selection criteria in the procurement process.[11] This may have been the best response in the circumstances—a response that is not available in conventional procurements, since there is no VfM analysis comparing the cost of the project to that under the next-best procurement option. However, it did compromise the competitive part of the procurement process and this likely reduced the VfM savings achievable under the project. In the VCCEP project, the competitive nature of the procurement process was compromised, because a substantial part of the design and construction work was already completed by the time of the contract award and because of the hard deadline[12] noted by the Auditor General. Both of these factors likely increased the leverage of the incumbent contractor on the project.

A fourth issue relates specifically to the ARHCC project, where the facilities management services provided under the P3 project include some services that are being provided by public sector employees in other hospital contexts. In this case, it is worth asking whether the workers have suffered a drop in pay rates or working conditions and whether the patients have suffered a decline in the quality of the facilities management services. Our review of press reports since the opening of the hospital in August 2008 suggests that neither workers nor patients have been shortchanged in the area of facilities management services, despite considerable scrutiny from P3 critics such as the B.C. Health Coalition. The only issue to surface in the press is the shortage of discounted parking spaces for ARHCC staff, but it is not clear whether hospital management would have dealt with this issue differently if it had retained direct management responsibility for parking services.[13]

9 The B.C. Auditor General noted that the cost consultants for the initial VCCEP budget had projected 4-per-cent annual construction cost inflation and that "by 2006, the actual inflation rate was at 11 per cent per year, almost three times the expected rate." See Auditor General of British Columbia, *A Review of the Vancouver Convention Centre*, p. 2.

10 This efficiency driver was not discussed in Chapter 3, because it is applicable to all procurement approaches.

11 This is perhaps not entirely surprising, given that the P3 marketplace in Canada was still in its infancy in 2003 and the ARHCC was one of the first P3 projects managed by a specialized procurement agency or office within a central agency. It does, however, underscore the importance of nurturing the development of P3 markets, which has been one of the objectives pursued by the P3 agencies in recent years.

12 According to the Auditor General of British Columbia, "after the convention centre was named a venue [for the Vancouver 2010 Winter Olympic Games], the completion date in 2008 became a hard deadline." See Auditor General of British Columbia, *A Review of the Vancouver Convention Centre*, p. 36.

13 The private contractor managing the parking services issued a limited number of discounted monthly parking passes on a first-come, first-served basis.

ONTARIO: THE SUDBURY REGIONAL HOSPITAL (PHASE 1) AND THE QUINTE HEALTH CARE AFP

The Quinte Health Care (QHC) project was one of the first hospitals built in Ontario to be procured as an alternative financing and procurement project. It is also one of the first of 20 build-finance hospital projects to have been undertaken by Infrastructure Ontario, with substantial completion expected by January 2010. The Sudbury Regional Hospital project (Phase 1) was chosen as a case study of a conventional approach to hospital procurement in Ontario, because it was the only such project for which we could find publicly available third-party documentation.

According to the report of the Health Capital Planning Review conducted for Ontario in 2004, the problems with the Sudbury Regional Hospital redevelopment project were not unique.[14] The report suggested that the planning and procurement challenges were endemic to major hospital procurement projects across Ontario. Specifically, the report found that:

- there was inadequate attention to capital projects at the planning stage and a lack of standards and guidelines for the planning and procurement process;
- these problems occurred primarily with large capital projects (i.e., projects in excess of $1 million);[15] and
- capital planning for long-term care facilities was better managed:

> Financial risk is assessed early in the process and before any funding is provided to eligible operators, and managed by not providing funding until the facility is built and the Ministry is satisfied that it is ready to be occupied. The need to receive part of a facility's funds from the market provides market discipline.[16]

As a result, the report made several recommendations that included creating a separate capital planning agency and carrying out a business case and life-cycle costing analysis for all major hospital capital projects.[17]

The Sudbury Regional Hospital Capital Redevelopment Project (Phase 1)—Snapshot of a Conventional Hospital Procurement

The capital development plans for the Hôpital régional de Sudbury Regional Hospital (HRSRH) were a product of the Ontario-wide Health Services Restructuring Commission (HSRC), which recommended closing the three acute-care hospitals in the region in 1996 (Laurentian, Memorial, and Sudbury General) and amalgamating all acute in-patient, rehabilitation, and chronic-care services at a renovated and expanded facility on the site of the original Laurentian hospital. The HSRC estimated the capital cost of this project at $85 million.

The next few years were spent developing the proposal, functional program, preliminary designs, and procurement approach for the HRSRH redevelopment plans. By March 2000, the Ministry of Health and Long-Term Care (MoHLTC) had approved a budget of $143 million based on a construction management approach to the procurement. However, "with little experience of the construction management approach being sought by the hospital, [the MoHLTC] asked the [hospital] board to sign a waiver of liability [for cost overruns], which it did in February of 2000."[1] By the end of Phase 1 of the project two years later, the entire budget had already been spent, but the total cost of the project (i.e., phases 1 and 2) had risen to an estimated $363 million, or over four times the amount originally estimated by the HSRC. The operational review of the HRSRH concluded in November 2002 that these cost and time overruns were due to lack of project "oversight and adequate supervision at all levels,"[2] including:

- the lack of policies and procedures for capital planning and procurement;
- poorly specified tendering documents, which "resulted in unrealistic tenders being accepted";[3] and
- inadequate project management, with the hospital lacking the resources and expertise to track the project outcomes and critically review the decisions made by the construction management firm. This problem was partly due to a province-wide policy at the time, which limited project management resources to $65,000, regardless of project size.

1 Canadian Healthcare Management and THIINC IMI, *Operational Review*, p. 14.
2 Ibid., p. 15.
3 Ibid., p. 16.

Source: Canadian Healthcare Management and THIINC IMI, *Operational Review*.

14 Decter, *Health Capital Planning Review*.

15 According to the Health Capital Planning Review report, the MoHLTC had 760 requests for capital funding, but only a small number of these (17 projects over $50 million each) "account for a large proportion of outstanding funding pressures." See Decter, *Health Capital Planning Review*, p. 15.

16 Decter, *Health Capital Planning Review*, p. 39.

17 Ibid., p. 28.

The Quinte Health Care Project—A Build-Finance AFP Project

The Quinte Health Care (QHC) project had its roots in the amalgamation of the four Belleville-area hospitals proposed by the Health Services Restructuring Commission (HSRC). The capital project was approved for delivery as an alternative financing and procurement (AFP) project under the Ontario government's 2005–06 capital plan, which was part of the province's $30-billion infrastructure investment plan known as ReNew Ontario 2005-2010. The project involves adding a new wing to the Belleville General site (155,000 square feet) and renovating an additional 22,000 square feet. The total cost for this project under the AFP is $85.6 million, with the provincial government covering 90 per cent of the cost under the new hospital funding policy announced in June 2006.

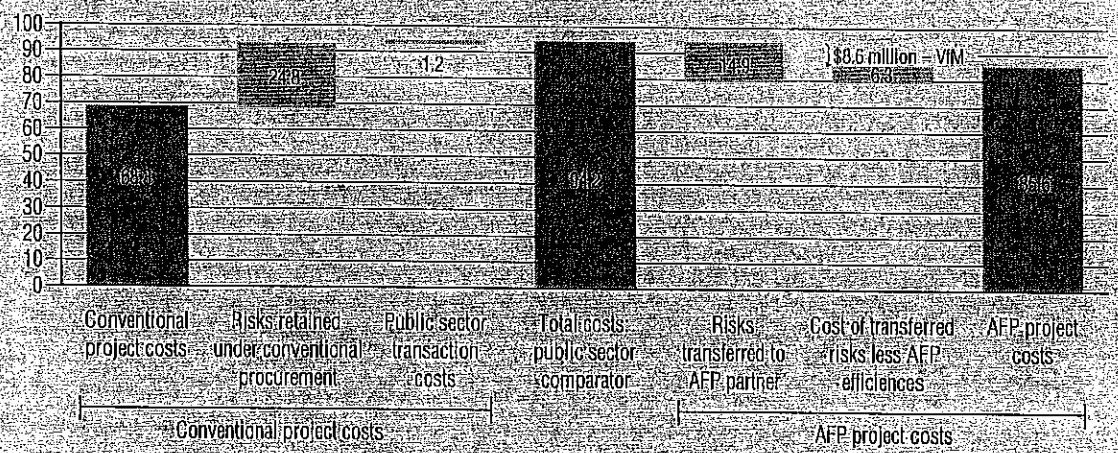
The risks transferred to the private sector contractor include:

- construction price certainty, based on a guaranteed maximum price of $72.2 million, including financing costs;
- project scheduling delays, based on QHC's payments to the contractor beginning at the point of substantial completion, which is expected in January 2010;
- design coordination risk, which refers to "the risk that change orders are required during construction due to design coordination/design completion/design gaps" that can be reasonably inferred.[1] This risk was transferred even though the private partner was not responsible for the design of the facility, which was undertaken prior to the AFP project;
- financing risk;
- a schedule contingency, which shields QHC from the costs arising from up to 30 days of delays attributable to QHC; and
- commissioning and facility readiness.

Some of the risks are shared between QHC and the contractor, including project scope changes by the owner and design errors and omissions.

One key aspect of the project is the "change order protocol" agreed between Infrastructure Ontario and QHC.[2] It sets out the principles governing any changes in project scope, including the "limited criteria under which change orders will be processed" and the conditions under which Infrastructure Ontario's approval is required.[3] This protocol addresses an important source of cost overruns in conventional infrastructure projects. In addition, it provides a good example of an area where the project risks are mitigated by improved public sector management of the procurement process rather than being transferred to the private sector.

The Quinte Health Care Project—Project Costs Under Conventional and AFP Approaches ($ millions)



Source: Infrastructure Ontario, *Value for Money Assessment: Quinte Health Care Belleville General*.

1 Altus Helyar Cost Consulting, "Infrastructure Ontario Build Finance Risk Analysis and Risk Matrix," p. 15.

2 This protocol is in addition to the provisions governing contract variations in the partnership agreement, some of which require lender approval (for changes greater than a pre-set threshold).

3 Infrastructure Ontario, *Value for Money Assessment: Quinte Health Care*, p. 13.

(cont'd on next page)

The Quinte Health Care Project—A Build-Finance AFP Project *(cont'd)*

The estimated VfM resulting from the AFP approach is $8.6 million or 9.2 per cent of the cost of the project using a conventional procurement approach. The chart summarizes how the VfM estimate is derived. Project costs under a conventional procurement approach consist of the conventional project costs (or the base project cost, which is the same under the AFP approach) of $68.3 million, the project risks retained by the public sector under a conventional procurement, which are valued at $24.8 million, and the transaction costs borne by the public sector ($1.2 million), for a total of $94.2 million. Under the AFP approach, 60 per cent of the risks retained by the public sector under a conventional procurement are transferred to the private contractor (i.e., $14.9 million). The cost of transferring these risks to the private contractor is $6.3 million. This sum is made up of the risk premium ($4 million) that the contractor requires for managing the additional risks and the incremental transaction costs incurred under the AFP approach ($2.3 million), which partly serve to carry out additional due diligence under the AFP approach. The result is an AFP project cost to the public sector of $85.6 million, which represents a savings of $8.6 million relative to the cost of the traditional approach. (Note that the difference between the $85.6 million figure and the $72.2 million capital cost paid to the contractor is the value of the risks retained by the private sector, $9.9 million, and the total transaction costs borne by the public sector, $3.5 million.[4])

As of December 10, 2009, the QHC project was 98-per-cent complete, with substantial completion scheduled for January 2010. The project has also been subject to contract variations and to claims against the public sector owner, but public sector spending has remained within the approved project budget of $85.6 million.

4 The $1.2 million in transaction costs referred to above are the estimated public sector transaction costs under conventional delivery. The public sector transaction costs under the AFP approach are $3.5 million.

Source: Infrastructure Ontario, *Value for Money Assessment: Quinte Health Care*.

QUEBEC: AUTOROUTE 25 AND THE MONTRÉAL SUBWAY EXTENSION TO LAVAL

The Autoroute 25 project was the first P3 project to reach financial close (September 2007) in Quebec, following the establishment of Partenariats public-privé Québec in 2005. We have selected the extension of the Montréal metro to the City of Laval as the case study of a project using a conventional approach to procurement, because it was the only recent major transportation infrastructure project in Quebec that has been the subject of third-party reviews in the public domain. Although outcomes of the two projects are not directly comparable, the two case studies have led to several valuable observations.

First, performance penalties and bonuses can be introduced in conventional contracts, but these will not necessarily force an upfront consideration of all the project requirements, costs, and risks. In this case, the contractor had communicated the under-budgeting to the procurement authority, but either it was willing to bear the penalties from exceeding the budget as a cost of securing the contract (e.g., if the penalties would be more than offset by the additional payments from increased project scope), or the penalties in question were not applicable or enforceable.

Cost certainty is an essential part of effective and transparent public sector planning when public funds are at stake.

The second point is about the importance of cost certainty in budgeting and public infrastructure planning. Cost certainty is not an end in itself. It is an essential part of effective and transparent public sector planning when public funds are at stake. In this case, one could legitimately ask whether the government of the day could have justified a decision to proceed with a budget four times the size of the original budget. In the absence of such a justification—which would usually require a cost-benefit analysis of the project—the government could have chosen to modify the project scope in order to fit a reduced budget or to cancel the project altogether.

The Montréal Subway Extension to Laval—A Construction Management Project

The extension of the Montréal subway to the City of Laval on the North Shore was first announced by the Québec government at a cost of $198 million just prior to the 1998 provincial election. A second order-in-council was passed by the government in June 2000 authorizing a new budget of $379 million for a modest expansion of the project scope (three subway stations instead of two and the addition of an underground maintenance depot). The delivery date for the expansion was set for January 2006. By July 2003, when 90 per cent of the revised $379-million budget had been spent, the government passed a third order-in-council extending the budget to $548 million. A fourth order-in-council was later passed for a budget of $804 million. The project was completed in April 2007 at a cost of $745 million, which was over four times the original budget and 16 months late.

This project relied on a construction management approach to procurement, or what is known more specifically as an engineering procurement construction management (EPCM) contract. The EPCM contract was awarded to a leading engineering firm for a fixed fee of $38 million although it also included a bonus/penalty structure if the project came in under/over budget. The two expert reports that reviewed the events surrounding this project both noted a lack of upfront planning and estimation of the full project costs, as well as a number of other project management and monitoring failures.[1] However, it is also worth noting that the bonus and penalty provisions in the EPCM contract did not stop the engineering firm from taking on the EPCM contract, even though it knew the project budget was unrealistically low.[2]

1 Québec, Vérificateur Général, "Rapport de vérification"; Comité des experts, *Rapport du comité d'experts*.

2 It was widely known that the original budgets for the project were grossly underestimated. Other comparable subway construction projects in North America had cost between $166 million and $207 million per kilometre according to Pierre Anctil in "Can P3s Effectively Address the Infrastructure Gap."

Source: Iacobacci, *Steering a Tricky Course*, pp. 28–31.

However, the failure to consider the full costs of the project upfront essentially precluded a rational and transparent approach to the choice of public infrastructure projects. Once a substantial portion of the budget had been spent (and the full financial costs were finally estimated), the money was a sunk cost and the government of the day was poorly positioned to modify or cancel the project. This finding underlines the importance for the public interest of a procurement process that forces an upfront consideration of all costs and risks associated with a project.

The additional cost from the discovery of soil contamination is within the range of risks to be rightly assumed by the public sector; it is not usually cost-effective to transfer such risks to the private partner.

The A25 project is currently under construction, and 40 per cent of the project was completed as of April 2009. However, there have been a number of significant contract variations to date. One of these relates to the cost of disposing of contaminated soil, which was not known at the time the partnership agreement was signed. This risk, which was assumed by the public sector, has turned out to cost $14.8 million. The other variation relates to several modifications requested by the City of Montréal in relation to bicycle paths and wider sidewalks and other cosmetic changes for a total cost of $8.7 million.[18]

The additional costs resulting from the discovery of soil contamination is within the range of risks that was rightly assumed by the public sector, since it is not usually cost-effective to transfer such risks to the private partner. However, it is less clear why the changes requested by the City of Montréal were agreed to at this late stage.[19] These kinds of requirements should

18 See Radio-Canada, "Dépassement des coûts."

19 According to one source, the City of Montréal was opposed to the A25 project and chose not to participate in the planning. Once the procurement process for the project had been completed, the City of Montréal requested further changes to the project, and these were agreed to by the Ministère des Transports du Québec.

be possible to identify in advance of the procurement process through appropriate consultation with the interested parties. Nevertheless, the A25 project remains on schedule and within the original approved budget for the P3 project.

One of the potential future challenges that could compromise the VfM savings from the A25 project on an ex post basis relates to the toll system for the A25 bridge, which has varying toll rates designed in part to manage traffic levels. Should a future provincial government decide to alter the toll policy (to make it more acceptable to the public or to enable coordination of tolling on adjacent roads), some of the toll-related provisions in the partnership agreement might have to be renegotiated. Such an eventuality would constitute an important test of whether the partnership agreement was structured in a way that minimizes future transaction costs related to unexpected negotiations. In general, it is advisable for the public sector to retain control of those aspects of a facility that are subject to a high degree of uncertainty regarding future requirements, because contractual changes can be more expensive to execute under a long-term agreement than under a conventional short-term contract.

Completion of Autoroute 25 in the Montréal Region—A First Major P3 Project for Quebec

The completion of the Autoroute 25 has been in the planning stages since the 1970s, and more recently it has been identified as a priority project under Transports Québec's Greater Montréal Area Traffic Management Plan. The project involves completing a 7.2-kilometre portion of the A25 from Henri-Bourassa Boulevard in Montréal to the interchange with the A440 in Laval, including a new 1.2-kilometre bridge and an electronic toll system with a collection point on the north side of the bridge. The completed link will provide for more efficient road access between the east end of Montréal and Laval as well as the Lanaudière region. It will also reduce congestion on the A40, which crosses Montréal and is currently used by cars and trucks that need to travel between the northeast of Montréal and the Laval/Lanaudière region. A socio-economic cost-benefit study conducted by Transports Québec indicated that the quantified benefits were estimated at more than three times the project costs. Specifically, the ratio was 3.4, which is a clear indication of the need for the project, even after taking into account environmental and road safety impacts.

The private sector partner selected through the competitive two-stage procurement was Concession A25 S.E.C., with Macquarie Infrastructure Partners as the equity provider. The contract term is 35 years, including 31 years for operation, maintenance, and rehabilitation of the facility. The partner has the following responsibilities and risks:

- design and construction of the facility, including construction cost and schedule risks, commissioning of the facility, selection of the tolling system, and geotechnical risks (the public sector retains responsibilities for any undocumented soil contamination and the acquisition and ownership of the rights-of-way);
- operation of the electronic tolling system, including setting the toll rates within the maximum and minimum toll rates prescribed by the agreement. It shares the toll revenue and collection risks with the public partner;[1]
- operation, maintenance, and rehabilitation of the facility and the tolling system; and
- financing.

The private partner is paid through an annual availability payment of $13.4 million (without any indexation) beginning at the date of commissioning, with deductions for non-availability of the facility or for other non-performance issues related to maintenance and rehabilitation requirements specified in the agreement. In addition, the private partner receives $80 million staggered across certain construction milestones. The latter payments reduce the financing requirements but do not materially affect the incentives to commission the facility by the scheduled date in the third quarter of 2011.

1 The toll system was designed to give the private partner the pricing tools needed to keep traffic levels within a maximum flow of 68,000 vehicles per day, which was a condition of the environmental assessment process. Thus, the private partner can set tolls in excess of the maximum level prescribed by the agreement if actual traffic levels—calculated as an annual moving average—exceed the 68,000 threshold in any month. See The Canadian Council for Public-Private Partnerships, "Autoroute 25 (Montréal)."

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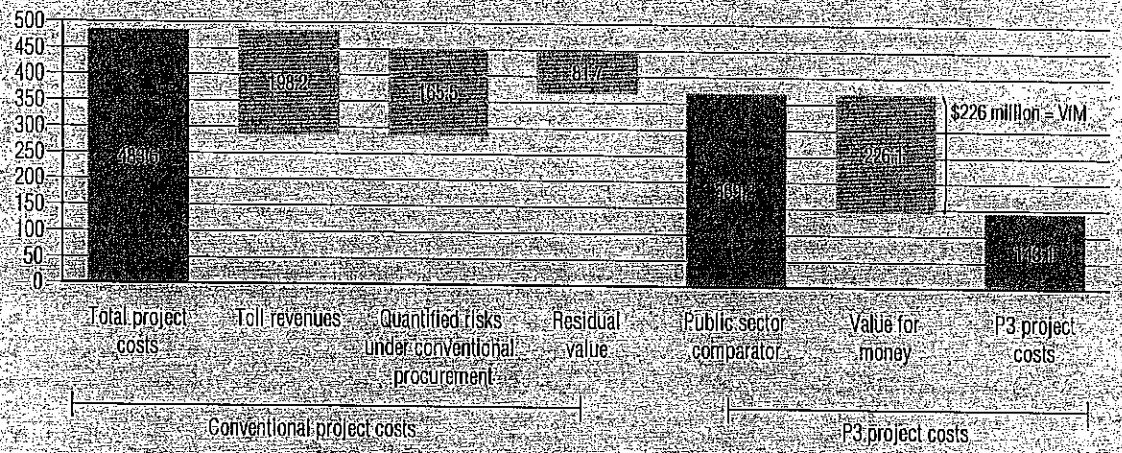
Completion of Autoroute 25 in the Montréal Region—A First Major P3 Project for Quebec *(cont'd)*

A comparison of the costs of the A25 project under a conventional procurement and a P3 procurement approach is shown in the chart. The public sector comparator (PSC) is calculated starting with the total cost of the project to the public sector over the 35-year term, which was estimated at $483.6 million in 2007 dollars. We then subtract the expected value of the toll revenues ($198.2 million) and add the value of the quantified risks retained by the public sector, which include $68.7 million for cost overruns and $85.7 million for risks related to toll revenues. We also add the residual value of the facility at the end of the contract term, when it is returned to the public sector, giving a PSC of $369.2 million. In contrast, the net cost of the project under the P3 option is $143.1 million, thereby giving VfM savings of $226.1 million, or 61 per cent of the net costs under the PSC. The magnitude of the VfM savings is due to the transfer of risks to the private partner and to the fact that the private partner estimated higher toll revenues than those estimated as part of the PSC (i.e., $198.2 million).

Autoroute 25—Project Costs Under Conventional and P3 Approaches
(2007 $ millions)



Source: Transports Québec and Partenariats public-privé Québec, *Value for Money Report for the Design, Construction, Financing Operation and Maintenance of the Completion of Autoroute 25.*

Sources: Transports Québec and Partenariats public-privé Québec, *Value for Money Report for the Design, Construction, Financing, Operation and Maintenance of the Completion of Autoroute 25*; The Canadian Council for Public-Private Partnerships, "Autoroute 25 (Montréal)."

CHAPTER 6

Conclusions

Chapter Summary

- The second wave of P3s initiated under the guidance of specialized infrastructure procurement agencies (or offices) has delivered important efficiency gains relative to conventional procurement approaches.
- The Canadian results are broadly consistent with international evidence from the United Kingdom and Australia.
- British Columbia, Alberta, Ontario, and Quebec have all developed a rigorous VfM methodology for comparing the costs of P3s and traditional procurements.
- Several factors drive the efficiency gains that arise from P3s, the most important of which is the optimal risk allocation process.
- The procurement process for the second wave of P3s has been considerably more transparent than that for conventional infrastructure projects of equivalent scale.

This pan-Canadian assessment of public-private partnerships for the procurement of public infrastructure has found that the second wave of P3s initiated under the guidance of specialized infrastructure procurement agencies (or offices within central government agencies) have to date delivered important efficiency gains relative to conventional procurement approaches. These efficiency gains take the form of cost savings and time savings. The expected value of these savings is well documented before the start of each project based on value-for-money assessments undertaken as part of the procurement process. They can also be verified on an ex post basis—that is, after project completion—as in the case of the construction of the southeast and southwest legs of the Edmonton Ring Road. These two projects were broadly comparable, but the P3-procured project took two years less to deliver than the conventionally procured project.

None of these19 projects has experienced construction cost overruns that were borne by the public sector.

The time and cost performance of P3 projects can also be evaluated against the targets set within each of the respective projects, that is, for their time and cost certainty. Although most of the second wave of Canadian P3 projects have not completed the construction phase, the 19 projects that have passed this milestone have mostly been delivered either early or on schedule, with only two projects delivered up to two months late (with financial penalties resulting from the delays borne by the private partner or by the public sector partner in the case where delays were due to risks retained by the public sector). With regard to cost certainty, none of these 19 projects (or others that are being completed) has experienced construction cost overruns that were

borne by the public sector (unless the cost overruns were related to items where the public sector retained the risks).

These Canadian results are also broadly consistent with international evidence from the United Kingdom and Australia—the jurisdictions that have the most experience with P3s. Finally, it is worth noting that cost certainty in a project is vital from a public interest perspective, because it enables public decision makers to allocate public funds to the right projects. Without cost certainty, the public sector is often compelled to channel additional funds midway through a project regardless of any value-for-money considerations. This occurred in the Vancouver Convention Centre Extension Project, the Sudbury Regional Hospital (Phase I) project, and the Montréal subway extension to Laval, all of which were conventional procurements.

Each infrastructure project requires a rigorous VfM assessment to ensure that a P3 procurement option delivers value relative to a conventional procurement method, as is standard practice for all second-wave P3s.

Despite the successes to date, not all P3 infrastructure projects generate efficiency gains, because in some cases the gains can be more than offset by a combination of the incremental cost of private financing, any additional costs arising from transferring the risks to the private consortium (i.e., the risk premium), and the incremental transaction costs. This is why each infrastructure project requires a rigorous VfM assessment to ensure that a P3 procurement option delivers value relative to a conventional procurement method, as is standard practice for all second-wave P3s.

VfM tests are designed to ensure that the risk transfer effected in a P3 agreement is cost-effective for the public sector owner of the infrastructure. Our review of the available VfM studies and guidance documents suggests that each of the four jurisdictions under consideration—British Columbia, Alberta, Ontario, and Quebec—has developed a rigorous VfM methodology for comparing the costs of P3s and traditional procurements. The VfM test is not undertaken as an afterthought. Rather, a first pass of the test is done before the start of the procurement process (i.e., before the RFQ stage), and the test is then finalized after the financial close. We also believe there is value in updating the VfM studies ex post at key milestones, such as at completion of construction and periodically thereafter. Interestingly, conventional infrastructure procurements are normally not subject to any VfM-type tests to inform procurement strategy.

Several factors drive the efficiency gains that arise from P3s. The first is the optimal risk allocation process, which is at the heart of the P3 procurement process adopted by the P3 agencies and offices across Canada. The optimal risk allocation process involves identifying and valuing project risk exposure upfront and transferring to private consortia those risks for which these firms have the requisite risk management and mitigation experience. This risk transfer process also has the considerable advantage of forcing an upfront consideration (i.e., before or during procurement) of all the project requirements and associated costs. Without such upfront assessments, there is a much higher risk of cost overruns, as evidenced in several of our case studies of conventional infrastructure procurement.

Performance-based contract provisions, which specify desired outputs rather than prescribed inputs, are another driver of efficiencies in P3 contracts. These contract provisions encourage private consortia to consider the most cost-effective delivery practices. The integration of the design, construction, operation, and maintenance phases of a project is yet another potential driver of efficiencies, because it allows private firms to adopt innovations that can reduce whole life-cycle costs, even if they involve more investment in the design or construction stages. However, there is little empirical evidence of the relative importance of these two efficiency drivers. Moreover, both these efficiency drivers can be adopted in conventional forms of contracting, provided that care is taken to specify the desired outputs and to design an appropriate contract over a substantial part of the expected useful life of the infrastructure asset.

Private finance is the fourth efficiency driver in P3 projects. By virtue of this feature of P3s, the public sector pays the private consortium only upon delivery of the facility (although some milestone payments are sometimes

made before completion of construction). This provides a powerful incentive to ensure that the facility is built in a timely manner and in a way that meets the contractual requirements. This payment by results forces consortia to carry most of the financing requirements for the project, which includes sizable debt obligations. Without these financing requirements, some private firms would have little incentive to complete their contractual obligations should they encounter significant cost overruns that they cannot pass on to the public sector. Therefore, private financing can be considered the glue that binds together the other efficiency drivers mentioned above, particularly the optimal risk allocation process and the performance-based contract provisions.

It is also worth noting that private financing provides some of the discipline that ensures that the public sector owners consider all the project requirements and associated costs upfront. Bidders already have an obvious interest in doing this, particularly with respect to the risks being transferred to them in the contract. However, it appears that private financing may also encourage public sector owners to do the same, because these contracts can be more difficult and expensive to modify than conventional contracts. Part of this procurement discipline is due to the fact that the process is managed by specialized infrastructure agencies that attempt to ensure that the public sector owners do all the required planning upfront. But the private financing provides these agencies with additional leverage to ensure a disciplined and efficient procurement process.

Competitive procurement is also an important driver of efficiency gains in P3s. However, we have not discussed this feature at length, because it is not specific to P3s and is arguably important in all types of procurement.

We also found that the procurement process for the second wave of P3s has been considerably more transparent than that for conventional infrastructure projects of equivalent scale. This is because the key procurement documentation, including a redacted form of the partnership contract, is publicly available and a fairness advisor provides an opinion on the fairness and transparency of the process for all bidders. Neither of these features are typically characteristic of conventional public infrastructure procurements.

The anecdotal evidence suggests that service standards do not suffer under a P3 as critics have claimed.

We also take this opportunity to dispel a few myths about P3s in Canada. First, P3s in Canada are not about the privatization of public assets. Ownership of the new infrastructure facilities either remains with the public sector or is transferred back to the public sector at the end of the contract term. Second, the anecdotal evidence in this report suggests that there is little basis to the criticism that service standards suffer under a P3 relative to conventional maintenance contracts or even relative to in-house provision.

APPENDIX A

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APPENDIX B

Evidence Base for Second Wave of Canadian P3s

	Project Description				Bid Phase Milestones		
Project Name	Type	P3 public sector budget $ millions (date)	Public sector comparator $ millions (date)	Expected VfM savings $ millions (date)	RFQ/RFEOI issued	RFP issued	Preferred bidder announced
Alberta							
Anthony Henday Drive Southeast Leg Ring Road (Edmonton)	DBFO	493 (2004)	497 (2004)	4 (2004)	Sep. 2003	Apr. 2004	Dec. 2004
Northeast Stoney Trail Ring Road (Calgary)	DBFO	650 (2007)	1,000–1,100 (2007)	350–450 (2007)	Feb. 2006	May 2006	Dec. 2006
Anthony Henday Drive Northwest Leg Ring Road (Edmonton)	DBFO	1,420 (2008)	1,660 (2008)	240 (2008)	Jul. 2007	Oct. 2007	May 2008
Alberta Schools Alternative Procurement Phase I (Calgary & Edmonton)	DBFM	634 (2008)	752 (2008)	118 (2008)	Nov. 2007	Feb. 2008	Jul. 2008
British Columbia							
Abbotsford Regional Hospital and Cancer Centre	DBFOM	424 (2004)	463 (2004)	39 (2004)	Jan. 23, 2003	May 26, 2003	Jul. 22, 2004
Britannia Mine Water Treatment Plant	DBFO	27.2 (2005)	39.7 (2005)	12.5 (2005)	Jan. 21, 2004	May 6, 2004	Nov. 4, 2004

	Design, Construction, and Operating Phase Milestones						
Financial close	Substantial completion date (project agreement)	Actual completion	Contract variations to date (Y/N)	Non-performance penalties (Y/N)	Successful claims against public sector (Y/N)	End of contract term	Results/comments
Jan. 2005	Oct. 22, 2007	Oct. 22, 2007	N	Y	N	2037	Performance penalties related to the operational phase
Feb. 2007	Fall 2009	Nov. 2, 2009	Y	N	N	2039	
Jul. 2008	Fall 2011	n.a.	Y	N	N	2041	
Sep. 2008	Jun. 2010	n.a.	Y	N	N	2040	
Dec. 7, 2004	May 6, 2008	May 6, 2008	Y	Y	N	May 2038	On budget; net zero scope changes; P3 public sector budget excludes $75-million capital contribution from local health authorities
Jan. 12, 2005	Jan. 1, 2006	Jan. 1, 2006	Y	Y	N	Jan. 2026	On budget; interim operating period began 50 days earlier

(cont'd on next page)

	Project Description				Bid Phase Milestones		
Project Name	Type	P3 public sector budget $ millions (date)	Public sector comparator $ millions (date)	Expected VfM savings $ millions (date)	RFQ/RFEOI issued	RFP issued	Preferred bidder announced
Sierra Yoyo Desan Resource Road (SYD)	DBFO	n.a.	n.a.	n.a.	Jul. 18, 2003	Sep. 29, 2003	Dec. 15, 2003
Gordon & Leslie Diamond Health Care Centre	DBFM	64 (2004)	81 (2004)	17 (2004)	Oct. 1, 2002	Jun. 1, 2003	Jan. 1, 2004
Kicking Horse Canyon Phase 2 (Highway Improvement)	DBFO	166.3 (2005)	184.4 (2005)	18.1 (2005)	Jul. 21, 2004	Oct. 27, 2004	Sep. 23, 2005
William R. Bennett Bridge	DBFO	170 (2005)	195 (2005)	25 (2005)	Dec. 30, 2003	May 31, 2004	Jun. 1, 2005
Charles Jago Northern Sport Centre	DB	n.a.	n.a.	n.a.	Jun. 29, 2005	No RFP issued; early partnering process	Sep. 23, 2005
Sea-to-Sky Highway Improvement Project	DBFO	789.9 (2005)	744 (2004)	–45.9	Mar. 3, 2004	May 26, 2004	Mar. 2, 2005
Canada Line	DBFO	1,658 (2005)	1,750 (2005)	92 (2005)	Nov. 1, 2002	Aug. 25, 2003	Dec. 1, 2004
Golden Ears Bridge	DBFO	1,126.6 (2006)	1,132.9 (2006)	6.3 (2006)	Oct. 15, 2004	Jan. 1, 2005	Dec. 7, 2005
Pitt River Bridge and Mary Hill Interchange (Gateway)	DB	n.a.	n.a.	n.a.	Feb. 22, 2006	Jun. 15, 2006	Feb. 9, 2007
Port Mann/Highway 1 (Gateway)	DB	n.a.	n.a.	n.a.	May 22, 2007	Aug. 7, 2007	Aug. 19, 2008
Kelowna and Vernon Hospitals	DBFM	442.7 (2008)	468.1 (2008)	25.4 (2008)	May 7, 2007	Sep. 25, 2007	May 8, 2008

	Design, Construction, and Operating Phase Milestones						
Financial close	Substantial completion date (project agreement)	Actual completion	Contract variations to date (Y/N)	Non-performance penalties (Y/N)	Successful claims against public sector (Y/N)	End of contract term	Results/comments
Jun. 21, 2004	Bypass and bridge Nov. 30, 2004; SYD upgrade Nov. 30, 2005	Bypass and bridge Oct. 27, 2004; SYD upgrade Nov. 30, 2005	N	N	N	Jun. 2020	On budget; one component delivered 34 days ahead of schedule, remainder of project on time
Sep. 29, 2004	Aug. 18, 2006	Aug. 18, 2006	N	N	N	Aug. 2036	On budget
Oct. 28, 2005	Aug. 30, 2007	Jun. 16, 2007	Y	Y	N	2032	On budget; delivered 77 days ahead of schedule
Jun. 30, 2005	Sep. 15, 2008	May 30, 2008	Y	N	N	2035	On budget; delivered 108 days ahead of schedule
Apr. 25, 2006	Aug. 11, 2007	Aug. 11, 2007	n.a.	n.a.	n.a.	n.a.	On budget; on schedule; VfM studies not undertaken for DB contracts
Jun. 3, 2005	Aug. 31, 2009	Aug. 31, 2009	Y	Y	N	2030	B.C. Ministry of Transport asserts that the qualitative benefits demonstrate positive VfM
Jul. 29, 2005	Nov. 30, 2009	Sep. 2009	n.a.	n.a.	n.a.	2040	Operational three months ahead of schedule; on budget
Mar. 3, 2006	Jul. 1, 2009	Jun. 16, 2009	n.a.	n.a.	n.a.	2041	Operational Jun. 16, 2009, two weeks ahead of schedule
Feb. 9, 2007	Oct. 2009	Oct. 25, 2009	Y	n.a.	Y	n.a.	VfM studies not undertaken for DB contracts
Feb. 2009	Dec. 2010	n.a.	N	n.a.	N	n.a.	VfM studies not undertaken for DB contracts
Aug. 20, 2008	UBCO Clinical Academic Campus and parkade: Dec. 2009; VJH Patient Care Tower: May 2011; KGH Patient Care Tower: Aug. 2012	n.a.	Y	n.a.	Y	2042	

(cont'd on next page)

	Project Description				Bid Phase Milestones		
Project Name	Type	P3 public sector budget $ millions (date)	Public sector comparator $ millions (date)	Expected VfM savings $ millions (date)	RFQ/RFEOI issued	RFP issued	Preferred bidder announced
Royal Jubilee Hospital Patient Care Centre	DBFM	340.8 (2008)	363 (2008)	22.2 (2008)	May 11, 2007	Sep. 19, 2007	Apr. 7, 2008
Surrey Outpatient Hospital	DBFM	234.2 (2008)	256.7 (2008)	22.5 (2008)	Mar. 21, 2007	Sep. 17, 2007	May 23, 2008
Fort St. John Hospital and Residential Care Facility	DBFM	n.a.	n.a.	n.a.	May 6, 2008	Oct. 17, 2008	Mar. 31, 2009
Ontario							
Hôpital Montfort	BF	220 (nominal)	239.4 (nominal)	19 (nominal)	Mar. 2005	Sep. 2005	May 2006
Durham Consolidated Courthouse	DBFM	377 (Mar. 2007)	426 (Mar. 2007)	49 (Mar. 2007)	Mar. 2005	Feb. 2006	Dec. 2006
North Bay Regional Hospital	BFM	592 (Mar. 2007)	648.5 (Mar. 2007)	57 (Mar. 2007)	Sep. 2005	Mar. 2006	Dec. 2006
Quinte Health Care	BF	86 (nominal)	94.2 (nominal)	9 (nominal)	Mar. 2006	May 2006	Jan. 2007
Trillium Health Centre—Mississauga	BF	115 (nominal)	128 (nominal)	13 (nominal)	Mar. 2006	Jun. 2006	Mar. 2007
Trillium Health Centre—Queensway	BF	Results presented with Mississauga above			Mar. 2006	Jun. 2006	Mar. 2007
Hôpital régional de Sudbury Regional Hospital	BF	153 (nominal)	170.1 (nominal)	17 (nominal)	Mar. 2006	Jun. 2006	Feb. 2007

	Design, Construction, and Operating Phase Milestones						
Financial close	Substantial completion date (project agreement)	Actual completion	Contract variations to date (Y/N)	Non-performance penalties (Y/N)	Successful claims against public sector (Y/N)	End of contract term	Results/comments
Jul. 18, 2008	Dec. 2010	n.a.	N	n.a.	N	2040	
Aug. 28, 2008	Apr. 2011	n.a.	Y	n.a.	N	2041	
Jul. 16, 2009	n.a.	n.a.	N	n.a.	N	n.a.	VfM report under development
Jun. 2006	May 2010	n.a.	Y (see comments)	n.a.	Y	Jul. 2010	All variations are within approved project budget; financial risk not transferred to private partner
Mar. 2007	Nov. 2009	Nov. 24, 2009	Y (see comments)	N	N	2039	All variations are within approved project budget
Mar. 2007	Jun. 2010	n.a.	Y (see comments)	N	N	2040	All variations are within approved project budget
Feb. 2007	Jan. 2010	n.a.	Y (see comments)	n.a.	Y	May 2010	All variations are within approved project budget; claim against public sector due to a construction sector strike in summer 2007
May 2007	Aug. 2009	Oct. 2009	Y (see comments)	n.a.	Y	Oct. 2009	All variations are within approved project budget; the financial impact of the delay was shared between the public and private sector parties.
May 2007	Nov. 2008	Nov. 2008	Y (see comments)	n.a.	N	Dec. 2008	All variations are within approved project budget
May 2007	Dec. 2009	Oct. 2009	Y (see comments)	n.a.	N	Mar. 2010	Project reached substantial completion 33 days ahead of schedule; all variations are within approved project budget

(cont'd on next page)

	Project Description				Bid Phase Milestones		
Project Name	Type	P3 public sector budget $ millions (date)	Public sector comparator $ millions (date)	Expected VfM savings $ millions (date)	RFQ/RFEOI issued	RFP issued	Preferred bidder announced
St. Joseph's Health Care—London	BF	38 (nominal)	40.8 (nominal)	3 (nominal)	Mar. 2006	Aug. 2006	Feb. 2007
Roy McMurtry Youth Centre	BF	103 (nominal)	112.1 (nominal)	9 (nominal)	Mar. 2006	Aug. 2006	Feb. 2007
Sunnybrook—M-Wing/ P&G Fit-Out	BF	154 (nominal)	168.2 (nominal)	14 (nominal)	Nov. 2001	Feb. 2002	Apr. 2007
Sault Area Hospital	BFM	458 (Aug. 2007)	559.8 (Aug. 2007)	102 (Aug. 2007)	Apr. 2006	Nov. 2006	Aug. 2007
Bluewater Health (Sarnia)	BF	248 (nominal)	263.8 (nominal)	16 (nominal)	Mar. 2006	Oct. 2006	Aug. 2007
Rouge Valley Health System—Ajax and Pickering Hospital	BF	77 (nominal)	88.3 (nominal)	11 (nominal)	Nov. 2006	Feb. 2007	Aug. 2007
Hamilton Health Sciences—Gen. Redevelopment	BF	54 (nominal)	61.2 (nominal)	7 (nominal)	Nov. 2006	Mar. 2007	Sep. 2007
Runnymede Healthcare Centre	BF	78 (nominal)	89 (nominal)	11 (nominal)	Nov. 2006	Apr. 2007	Aug. 2007
Hamilton Health Sciences—Henderson Hospital	BF	249 (nominal)	279.2 (nominal)	30 (nominal)	Nov. 2006	Mar. 2007	Dec. 2007
Ottawa Hospital Regional Cancer Program—Queensway Carleton Hospital	BF	81 (nominal)	91.5 (nominal)	11 (nominal)	Nov. 2006	May 2007	Dec. 2007
Ottawa Hospital Regional Cancer Program—The Ottawa Hospital	BF	59 (nominal)	67.3 (nominal)	8 (nominal)	Nov. 2006	May 2007	Dec. 2007
MGS Data Centre	DBFM	386 (Apr. 2008)	449.8 (Apr. 2008)	64 (Apr. 2008)	Feb. 2007	Jul. 2007	Feb. 2008

	Design, Construction, and Operating Phase Milestones						
Financial close	Substantial completion date (project agreement)	Actual completion	Contract variations to date (Y/N)	Non-performance penalties (Y/N)	Successful claims against public sector (Y/N)	End of contract term	Results/comments
May 2007	Sep. 2009	Sep. 2009	Y (see comments)	n.a.	N	Jan. 2010	Project reached substantial completion 18 days ahead of schedule; all variations are within approved project budget
Apr. 2007	Apr. 2009	Jun. 2009	Y (see comments)	n.a.	N	May 2009	Financial impact of late completion borne entirely by private partner; all variations are within approved project budget
Jun. 2007	Jun. 2010	n.a.	Y (see comments)	n.a.	N	Oct. 2010	All variations are within approved project budget
Aug. 2007	Oct. 2010	n.a.	Y (see comments)	n.a.	N	2040	All variations are within approved project budget
Oct. 2007	Oct. 2011	n.a.	Y (see comments)	n.a.	N	Jan. 2012	All variations are within approved project budget
Oct. 2007	Jul. 2010	n.a.	Y (see comments)	n.a.	N	Oct. 2010	All variations are within approved project budget
Oct. 2007	Jul. 2009	Jul. 2009	Y (see comments)	n.a.	N	Aug. 2009	All variations are within approved project budget
Oct. 2007	Jun. 2010	n.a.	Y (see comments)	n.a.	N	Aug. 2010	All variations are within approved project budget
Dec. 2007	Mar. 2012	n.a.	Y (see comments)	n.a.	N	Jun. 2009	All variations are within approved project budget
Dec. 2007	Oct. 2009	n.a.	Y (see comments)	n.a.	N	Oct. 2009	All variations are within approved project budget
Dec. 2007	May 2011	n.a.	Y (see comments)	n.a.	N	May 2011	All variations are within approved project budget
Apr. 2008	Mar. 2010	n.a.	N	n.a.	N	2040	

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	Project Description				Bid Phase Milestones		
Project Name	Type	P3 public sector budget $ millions (date)	Public sector comparator $ millions (date)	Expected VfM savings $ millions (date)	RFQ/RFEOI issued	RFP issued	Preferred bidder announced
Mississauga Credit Valley Hospital	BF	198 (nominal)	223.8 (nominal)	26 (nominal)	Apr. 2007	Jul. 2007	Mar. 2008
LHSC/SJHC London—M2P2—St. Joseph's Health Care (BP5)	BF	59 (nominal)	68.1 (nominal)	9 (nominal)	Nov. 2006	Aug. 2007	Apr. 2008
LHSC/SJHC London—M2P2—Victoria Campus Hospital (VC3)	BF	256 (nominal)	296.7 (nominal)	41 (nominal)	Nov. 2006	Aug. 2007	Apr. 2008
Kingston General Hospital	BF	173 (nominal)	192.8 (nominal)	20 (nominal)	Apr. 2007	Oct. 2007	Jun. 2008
Toronto Rehabilitation Centre—University	BF	140 (nominal)	158.5 (nominal)	19 (nominal)	Apr. 2007	Oct. 2007	Jul. 2008
Woodstock General Hospital	BFM	337 (Oct. 2008)	407.5 (Oct. 2008)	71 (Oct. 2008)	Jun. 2007	Jan. 2008	Aug. 2008
Lakeridge Health Corp.	BF	112 (nominal)	123 (nominal)	11 (nominal)	Oct. 2007	May 2008	Feb. 2009
The Royal Victoria Hospital	BF	317 (nominal)	361 (nominal)	44 (nominal)	Oct. 2007	Jun. 2008	Feb. 2009
Niagara Health System	DBFM	1,065 (Mar. 2009)	1,161 (Mar. 2009)	96 (Mar. 2009)	Nov. 2006	Aug. 2007	Aug. 2008
Windsor Regional Hospital	BF	n.a.	n.a.	n.a.	Oct. 2007	Oct. 2008	May 2009
Bridgepoint Health	DBFM	820.2 (Aug. 2009)	915.2 (Aug. 2009)	95 (Aug. 2009)	Nov. 2007	Jul. 2008	Jun. 2009
Toronto South Detention Centre	DBFM	n.a.	n.a.	n.a.	Jun. 2008	Oct. 2008	Aug. 2009
Quebec							
Autoroute 25	DBFOM	143.1 (2007)	369.2 (2007)	226.1 (2007)	Dec. 22, 2005	Jul. 20, 2006	Jun. 9, 2007
Autoroute 30	DBFOM	1,539 (2008)	2,289.8 (2008)	751 (2008)	Nov. 5, 2006	Jun. 20, 2007	Jun. 19, 2008

	Design, Construction, and Operating Phase Milestones						
Financial close	Substantial completion date (project agreement)	Actual completion	Contract variations to date (Y/N)	Non-performance penalties (Y/N)	Successful claims against public sector (Y/N)	End of contract term	Results/comments
May 2008	May 2011	n.a.	Y (see comments)	n.a.	N	Sep. 2011	All variations are within approved project budget
Jun. 2008	Aug. 2010	n.a.	Y (see comments)	n.a.	N	Sep. 2010	All variations are within approved project budget
Jun. 2008	Mar. 2011	n.a.	Y (see comments)	n.a.	N	May 2011	All variations are within approved project budget
Jul. 2008	May 2012	n.a.	Y (see comments)	n.a.	N	May 2012	All variations are within approved project budget
Aug. 2008	Sep. 2011	n.a.	Y (see comments)	n.a.	N	Oct. 2011	All variations are within approved project budget
Oct. 2008	Jun. 2011	n.a.	Y (see comments)	n.a.	N	2041	All variations are within approved project budget
Feb. 2009	May 2011	n.a.	N	n.a.	N	Sep. 2011	
Feb. 2009	Feb. 2013	n.a.	N	n.a.	N	Apr. 2013	
Mar. 2009	Nov. 2012	n.a.	N	n.a.	N	2042	
Jun. 2009	May 2012	n.a.	N	n.a.	N	Jun. 2012	VfM report under development
Aug. 2009	Mar. 2013	n.a.	N	n.a.	N	2043	
Oct. 2009	Sep. 2012	n.a.	N	n.a.	N	2042	VfM report under development
Sep. 13, 2007	Oct. 2011	n.a.	Y	n.a.	Y	2042	On budget; P3 budgets are net of $198 million of estimated toll revenues
Sep. 25, 2008	Dec. 2012	n.a.	N	n.a.	N	2043	P3 budgets are net of $21 million of estimated toll revenues

(cont'd on next page)

	Project Description				Bid Phase Milestones		
Project Name	Type	P3 public sector budget $ millions (date)	Public sector comparator $ millions (date)	Expected VfM savings $ millions (date)	RFQ/RFEOI issued	RFP issued	Preferred bidder announced
Motorway Service Areas (Phase I)	DBFOM	–4 (2008)	13.1 (2008)	17 (2008)	Nov. 9, 2006	Mar. 23, 2007	Jan. 9, 2008
Champlain Residential and Long-Term Care Centre (RLCC)	DBFOM	222 (2009)	320 (2009)	98 (2009)	Jul. 6, 2007	Jun. 25, 2008	Feb. 13, 2009
Montréal Symphony Orchestra Hall	DBFOM	266.8 (2009)	313.6 (2009)	46.8 (2009)	Dec. 15, 2006	Dec. 21, 2007	Mar. 19, 2009

Notes:
Data correct as of November 2009.
Value-for-money estimates may not be strictly comparable across jurisdictions because of differences in methodology.
n.a. = Not available or not applicable.
Abbreviations:
BF: Build-finance
BFM: Build-finance-maintain
DB: Design-build
DBFM: Design-build-finance-maintain
DBFO: Design-build-finance-operate
DBFOM: Design-build-finance-operate-maintain
Sources: Alberta Treasury Board; Infrastructure Ontario; Partnerships BC; Infrastructure Québec. Most of the data presented above are available from the websites of the respective P

	Design, Construction, and Operating Phase Milestones						
Financial close	Substantial completion date (project agreement)	Actual completion	Contract variations to date (Y/N)	Non-performance penalties (Y/N)	Successful claims against public sector (Y/N)	End of contract term	Results/comments
Sep. 30, 2008	Sep. 2010	n.a.	N	n.a.	N	2038	
Apr. 3, 2009	Oct. 2010	n.a.	N	n.a.	N	2034	
Apr. 22, 2009	May 2011	n.a.	N	n.a.	N	2038	

gencies or public sector departments.

APPENDIX C

Interview Guide

Please answer the following questions and ignore those not relevant to your organization. For the purpose of this interview, public-private partnerships (P3s) are long-term contractual arrangements wherein a public sector entity procures the design, construction, operation, and/or maintenance of an asset, usually from a consortium of private sector firms, and privately financed over a time period approaching the useful economic life of the asset. P3s may not include all of the elements above, but they are likely to include a construction phase and private financing.

Question 1—Specifically, what is your organization's role, responsibility, involvement with or interest in P3s in Canada?

BENEFITS AND DRAWBACKS OF P3s

This section is intended to discuss the benefits and drawbacks of P3s, including criticisms voiced by various groups. The objective is to dispel any misconceptions about the PPP procurement process.

Question 2—Can the procurement of an asset (i.e., construction, maintenance) through a P3 provide **significant efficiencies (or net benefits)** for the public sector owner of the asset as compared to a conventional procurement of the same asset? If so, please explain why or under what conditions (e.g., cost-effective allocation of risks between the public and private sector; synergies between design, construction, and facilities management or operation private consortium is the project steward in a P3.)

Question 2a—Can you provide examples or evidence of efficiencies (or inefficiencies) specific to any P3 projects (compared with conventional projects)?

Question 3—One of the arguments made in favour of P3s is that these types of procurements are more likely to be **on time and on budget** and if budgets or milestones are not met, the private consortia bears the costs (or penalties). Can you provide any evidence—on a project-by-project basis—of whether or not major budget, scheduling, and delivery milestones were met?

Question 4—Have there been any P3 projects that have exceeded the original budgets or timelines (or where the assets were not delivered as specified in the contract) and where the associated **cost overruns were borne by the public sector?** If so, please explain the circumstances (e.g., post-closing revisions ordered by the public sector).

Question 5—Some critics claim that **service levels have suffered under P3s.** Is there any evidence that service levels stipulated in the operational or maintenance phases of P3 contracts have not been

met? Or that the service levels stipulated in the contracts are inferior to those observed through conventional delivery of services? If so, please explain.

Question 6—In contrast, some have argued that P3s are a way to ensure that the public sector pre-commits to **maintaining a minimum level of service** (e.g., facilities maintenance) during the whole life of the contract, as compared with conventional service delivery, which has been more erratic. Please comment and provide examples if you agree.

Question 7—One criticism of P3s is that the cost of the **private financing**, particularly debt financing, in these deals is greater than the cost of public sector borrowing. Please discuss the role of private financing in P3s; whether there are any benefits or savings that offset the higher financing costs; and what guarantees there are, if any (e.g., value-for-money tests), that the benefits exceed the costs.

Question 8—P3s are relatively complex, long-term contracts and it is often argued that the **transaction costs** of preparing, negotiating, finalizing, and possibly even managing these contracts are greater than the transaction costs for conventional procurements of equivalent assets and services. Do you agree? Are there any offsetting benefits (e.g., due diligence)? What are the implications (e.g., minimum deal size thresholds)? Please comment.

Question 9—Labour unions have argued that P3 efficiencies are achieved at the expense of **workers' pay and working conditions**, especially if the operational or service delivery phase involves non-union staff while comparable services are normally delivered by union staff. Is there any evidence of such sources of savings in Canadian P3s? Are there any safeguards in your jurisdiction requiring private sector P3 consortia to hire existing public-sector employees at the same terms and conditions stipulated in their respective employment contracts?

Question 10—If P3 savings during the operational or service delivery phase are achieved through **fewer hours worked**, has this materially affected service levels or were these savings achieved through smarter work practices and more flexible working arrangements? Please provide examples.

Question 11—Cost implications of contract revisions. P3s are long-term contracts, but public policy and governments are subject to change and this can entail changes in the public sector's requirements under P3 contracts. In principle, these changes can usually be achieved through contract revisions or, at the limit, through the termination of the P3 contract. Is there any evidence that revisions under P3 contracts are more (or less) costly to achieve than under conventional service delivery contracts? Or are contract revisions more (or less) likely to arise under P3 contracts, since these are longer-term contracts?

Question 12—Are P3s a procurement **device for reducing public sector deficits?** While some early Canadian P3 deals were off-balance-sheet transactions, please indicate when (i.e., what year?) P3 transactions in your jurisdiction became fully recognized in public accounts.

Question 13—Some opponents liken P3s to **privatization in disguise**, especially in the health sector. Does this claim have any merit? Discuss in terms asset ownership, service delivery, and public policy responsibilities.

COMPARING P3s AND CONVENTIONAL PROCUREMENT

PROCESSES

Question 14—What are the main **differences (and similarities) between a P3 and a conventional procurement** in your jurisdiction (or in your experience)? Please discuss contract length and risk allocation between the parties. Please provide examples and stipulate what you mean by a conventional procurement for goods or services (e.g., an engineering procurement construction management contract).

Question 15—P3 contracts in recent years have been subject to a **value for money (VfM) test** to ensure that the public sector can reasonably expect to achieve savings relative to a conventional procurement of the same assets and services. If you are familiar with the methodology for these VfM tests in your jurisdiction, are these tests carried out in a rigorous manner and based on conservative assumptions? Are conventional procurements in your jurisdiction subject to any similar tests (i.e., must they demonstrate value for money relative to other procurement options)?

Question 16—Are P3s subject to any other tests or requirements that are not typically imposed on conventional procurements? Are P3s exempt from any requirements that prevail under conventional procurements?

Question 17—Transparency of process—bid phase. What information is made available to the public (and what remains confidential) during the competitive phase of a P3 procurement, from expressions of interest through to financial close? How does this differ relative to conventional procurements?

Question 18—Transparency of process—construction and operational phases. What information is made available to the public (and what remains confidential) during the construction and operational phases of a P3 procurement? How does this differ relative to conventional procurements?

P3 SCREENING CRITERIA

Recent literature indicates that only a minority of infrastructure projects is delivered as P3s (usually less than 20 per cent) and that P3s can generate significant benefits only if the right project is selected for a P3 procurement. Some of the characteristics that describe the "right project" include:

- measurable outputs for the project;
- the feasibility of cost-effective risk transfer to the private sector;
- project and policy certainty over a 20- or 30-year period (i.e., during the contract term);
- a deal size of at least $75 million to $100 million in order to attract private sector bidders; and
- a competitive market that should produce at least three bids.

Question 19—Please comment on the validity of the above project selection criteria. Are these or any other criteria used in practice to select projects for P3 treatment in your jurisdiction?

Question 20—Do the screening criteria help identify whether any of the project risks (schedule risk, construction cost, revenue risk) can be transferred cost-effectively to the private consortium?

Question 21—Are you aware of whether a P3 agency (or government department) has ever rejected a potential P3 project because it was not deemed suitable? If so, please explain the circumstances.

P3s, THE CREDIT CRISIS AND INFRASTRUCTURE STIMULUS

Question 22—Is the higher cost and reduced availability of debt financing, which accounts for the bulk of financing in highly leveraged infrastructure deals, delaying some infrastructure projects or even leading to their indefinite postponement? Please provide examples.

Question 23—Is infrastructure financing for P3s likely to benefit from a "flight to quality" among investors, since such projects are often backed by availability payments from the public sector?

Question 24—Is there a role for the public sector to play in unlocking private sector financing for P3 infrastructure projects? Should the public sector provide interim or bridge financing for a limited period of time, up to a point where the deal is refinanced entirely on a private basis? Are there any other measures that should be taken by the public sector? Are any of these likely to compromise the efficiency benefits of P3s?

Question 25—Is there a role for P3s in delivering infrastructure and providing fiscal stimulus during the current downturn?

CASE STUDIES

This research project calls for four case studies, one each from the provinces of Quebec, Ontario, Alberta and British Columbia—with the objective of comparing the PPP process to the traditional procurement process in the respective jurisdictions.

Question 26—In view of the objectives of this research project, could you suggest one or more P3 projects for the case studies? These are likely to be project pairs (i.e., one P3 and a comparable conventional project) where both projects are in the same asset class and where data on procurement outcomes (e.g., budgets, time lines, service levels) are available for both projects.

APPENDIX D

List of Interviewees

The interviews for this project were conducted during March and April 2009. The following people were interviewed:

- Jane Bird, Canada Line Rapid Transit Inc.
- Larry Blain, Partnerships British Columbia
- Fred Blaney, New Brunswick Department of Transportation
- Anthony Boardman, Sauder School of Business, University of British Columbia
- Graham Brown, Carillion Canada Inc.
- Guy Choinière, L'Agence des partenariats public-privé du Québec
- Nicola Cox, Transport for London
- Richard Deslauriers, PricewaterhouseCoopers LLP
- Jim Dougan, Infrastructure Ontario
- Heather Douglas, Borden Ladner Gervais LLP
- Stephen Gash, EllisDon Corporation
- Vaz Georgiou, Infrastructure Ontario
- Russell Goodman, PricewaterhouseCoopers LLP
- Nicholas Hahn, Macquarie Capital Markets Canada
- Pierre Lefebvre, L'Agence des partenariats public-privé du Québec
- Bruce Laughton, Quinte Health Care Corporation
- David Livingston, Infrastructure Ontario
- Don Mackinnon, Power Workers' Union
- John McBride, PPP Canada
- Duncan McCallum, RBC Capital Markets
- David McFadden, Gowling Lafleur Henderson LLP
- John McKendrick, Infrastructure Ontario
- Tim Murphy, McMillan LLP
- Brad Nelson, PCL Constructors Canada
- Jane Peatch, The Canadian Council for Public Private Partnerships
- Tim Philpotts, Ernst & Young Orenda Corporate Finance
- Jay Ramotar, Alberta Treasury Board
- Steven Richards, Infrastructure Ontario
- Bob Shouldice, Borden Ladner Gervais LLP
- Gabriel Soudry, L'Agence des partenariats public-privé du Québec
- Sandra Sultana, Ministère des Transports du Québec
- Susan Tinker, Partnerships British Columbia
- Julian Ware, Transport for London

The Conference Board of Canada
255 Smyth Road
Ottawa ON K1H 8M7 Canada
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B-1000 Brussels, Belgium
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Fax +32 2 675 03 95

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Hong Kong SAR
Tel. +852 2511 1630
Fax +852 2869 1403

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APPENDIX "C"

RISK MATRIX

This Risk Matrix is based on a Risk Matrix available on the website of Partnerships Victoria

(http://www.partnerships.vic.gov.au

DESIGN BUILD RISK ALLOCATION MATRIX

	RISK	PARTY	
		DB	PUBLIC SECTOR
1.	Delivery on time		
2.	Delivery on budget		
3.	Quality		
4.	Design		
5.	Construction		
6.	Commissioning		
7.	Intellectual Property		
8.	Public Sector supplied information		
9.	Existing Site Conditions		
10.	Other Work Conditions		

	RISK	PARTY	
		DB	PUBLIC SECTOR
11.	Subsequent Changes to Reference Standards		
12.	Confidentiality		
13.	Quality Review		
14.	Compliance with Existing Laws		
15.	Interface with Operations		
16.	Work Compliance with Law		
17.	Timely review of Submittals and Construction Documents		
18.	Other Construction on Site		
19.	Third Party approvals including rights of way and utility relocation		
20.	Temporary Works		

	RISK	PARTY	
		DB	PUBLIC SECTOR
21.	Key Personnel		
22.	Layout of Work		
23.	Subcontractor and Supplier		
24.	Labour and Products		
25.	Risk after Turnover		
26.	Other Site Risks		
27.	Equipment Procurement		
28.	Equipment Cost increases		
29.	Testing		
30.	Defective Work		

	RISK	PARTY	
		DB	PUBLIC SECTOR
31.	Payment Risk		
32.	Substantial Performance		
33.	Total Performance of Work		
34.	Warranty Holdback		
35.	Handover		
36.	Non-Waiver of Rights		
37.	Continuing Audit Rights and "Open Book" Approach		
38.	Change Order		
39.	Concealed or Unknown Conditions		
40.	Force Majeure		

	RISK	PARTY	
		DB	PUBLIC SECTOR
41.	Financing of Project		
42.	Termination of Senior Government Funding		
43.	Dispute Resolution Negotiation, Mediation and Arbitration		
44.	Assignability		
45.	Damage to property on-site or off-site caused by Construction		
46.	Damage to property on-site or off-site caused by third parties		
47.	Damage to property due to Public Sector negligence		
48.	Taxes		
49.	Change in Taxes or Rates after GMP Date		
50.	Patents		

	RISK	PARTY	
		DB	PUBLIC SECTOR
51.	Workplace Safety		
52.	WSIB		
53.	Insurance		
54.	Bonds		
55.	Indemnification of Public Sector by DB		
56.	Public Sector Indemnification of DB		
57.	Waiver of claims by Public Sector		
58.	Waiver by DB		
59.	Warranty		
60.	Subcontract Warranty		

RISK		PARTY	
		DB	PUBLIC SECTOR
61.	Normal corrosion, erosion and wear and tear, faulty operation or maintenance or severe conditions		
62.	Warranty Holdback		
63.	Liens		
64.	Subcontract Default or Liens		
65.	Right of Set-Off		
66.	Cap on Liability		

EQUIPMENT PROCUREMENT RISK ALLOCATION MATRIX

	RISK	PARTY	
		SUPPLIER	PUBLIC SECTOR
1.	Manufacture		
2.	Conformance to Specifications and Design		
3.	Delivery on time		
4.	Delivery on budget		
5.	Timely order		
6.	Proper Specifications		
7.	Design based on Specifications		
8.	Change Order Regime		
9.	Commissioning		
10.	Risk of loss prior to Delivery		

RISK		PARTY	
		SUPPLIER	PUBLIC SECTOR
11.	Risk of loss after Delivery		
12.	Subcontractor Performance		
13.	Assignability		
14.	Authorized Agent		
15.	Initial Stock of Replacement Parts		
16.	Service Training		
17.	Technical Documents for Service		
18.	Freight		
19.	Customs Fees		
20.	Import Duties		

	RISK	PARTY	
		SUPPLIER	PUBLIC SECTOR
21.	Insurance		
22.	Transport Charges		
23.	GST and value added taxes on purchase price		
24.	Tests		
25.	Certificates		
26.	Documentation		
27.	Licensing		
28.	Plating and Licencing		
29	Options for additional Equipment at guaranteed price		

	RISK	PARTY	
		SUPPLIER	PUBLIC SECTOR
30.	Option for additional Equipment at price subject to price escalation formula		
31.	Unforeseen technical issues		
32.	Title		
33.	Force Majeure		
34.	Public Sector Default - Initial payment - Choice of options - Specification delivery - Public Sector supplied equipment - Failure to provide acceptance		
35.	Late Delivery		

	RISK	PARTY	
		SUPPLIER	PUBLIC SECTOR
36.	Payment - 10% deposit - 10% deposit on option vehicles - 90% on 7 days from delivery		
37.	Quality Control Review and Testing of various parts during the production process		
38.	Pre-Delivery Test and Inspection		
39.	Acceptance Test		
40.	Defects noted on Acceptance		

	RISK	PARTY	
		SUPPLIER	PUBLIC SECTOR
41.	Warranty		
42.	Conformance to all applicable laws in existance as of contract date		
43.	Change in law after contract date		
44.	Quality assurance Protocols		
45.	Limitation on liability		
46.	Detailed Warranty Protocol and Administration		
47.	After sales service		
48.	Technical Assistance		

	RISK	PARTY	
		SUPPLIER	PUBLIC SECTOR
49.	Replacement Parts		
50.	Replacement Parts commitment for 10 years		
51.	Training		
52.	Service Technical Documents		
53.	Choice of Law		
54.	Patent infringement, copyright, trademark, proprietary information		
55.	Open-book policy		
56.	Confidentiality		

O&M RISK ALLOCATION MATRIX

	RISK	PARTY	
		O	PUBLIC SECTOR
1.	Full commissioning and Start up of System		
2.	Commence Operation on Time		
3.	Commence Operation on Budget		
4.	Changes for Start Up Activities		
5.	Delays in Start Up		
6.	Public Sector Caused Delays		
7.	Operations		
8.	Human Resources, including: - Labour issues regarding existing Go route - Union issues and collective agreements - Workplace health and safety - Human rights issues - Anti-discrimination and harassment		

RISK		PARTY	
		O	PUBLIC SECTOR
9.	Maintenance		
10.	Facilities Work		
11.	Training		
12.	Customer Service		
13.	Intelligent Transportation System		
14.	Vehicles		
15.	Performance Standards and Monetary Disincentives General Conditions Per Incident measures Quarterly measures Annual Measures		

RISK	PARTY	
	O	PUBLIC SECTOR
Service and Performance Standards Per Incident - Running Hot - Missed trips or late trips - In Service Wheelchair ramp failure - In Service air conditioning/heating failure - Preventative maintenance inspections - Repairs required - Collision damage repairs - Vehicle cleaning - Vehicles removed from service for safety related deficiencies - Marketing materials - Vehicle operator dress and code of professional conduct Quarterly - Late running vehicles - Kilometres between road calls - CVOR record - Preventable collisions - Non-preventable collisions - Customer complaints on vehicle operator behaviour		

	RISK	PARTY	
		O	PUBLIC SECTOR
	Annual - Customer satisfaction survey - Customer service training - Ongoing vehicle operator training - Ongoing diesel technician training		
16.	Changes in Annual Revenue Service Hours		
17.	Material reconfiguration of project		
18.	Severe weather conditions causing cancellation or Substantial Delay in Service		
19.	Pandemic, disease, war, riots, terrorism, insurrection		
20.	Major changes to Service Hours		

	RISK	PARTY	
		O	PUBLIC SECTOR
21.	Fuel Price and Escalation during First Year of Term		
22.	Fuel Price Escalation after First Year		
23.	Fuel Price De-escalation after First Year		
24.	GST		
25.	Service Determinations		
26.	Fare/Rate Policy		
27.	Public Services		
28.	Infrastructure		
29.	Public Sector Default		
30.	Technology and Best in Class		

	RISK	PARTY	
		O	PUBLIC SECTOR
31.	Insurance		
32.	Worker Compensation and Occupational Safety		
33.	Performance Security		
34.	Directives		
35.	Assignment		
36.	Property Rights in intellectual property and patent protection		
37.	Accounting and Reporting		
38.	Confidentiality		

	RISK	PARTY	
		O	PUBLIC SECTOR
39.	Service and Work Standard		
40.	Subcontractor		
41.	Contractor default		
42.	Public Sector default		
43.	Termination for Convenience		
44.	Step-In Rights		
45.	Dispute Resolution		
46.	Operator Indemnity of Public Sector		
47.	Public Sector Indemnity of Operator		
48.	Limit on Liability		

	RISK	PARTY	
		O	PUBLIC SECTOR
49.	Force Majeure		
50.	Interface with Public Authorities		

Extras from ACC

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Click on the link to index above or visit http://www.acc.com/annualmeetingextras.

The resources listed are just the tip of the iceberg! We have many more, including ACC Docket articles, sample forms and policies, and webcasts at http://www.acc.com/LegalResources.