**ATHABASCA UNIVERSITY**

# PUBLIC PRIVATE PARTNERSHIPS IN ALBERTA'S TRANSPORTATION INFRASTRUCTURE

## A study of the Evolution of the Institutional Environment

**BY**

**MICHAEL EGWUATU OPARA**

**A DISSERTATION**
**SUBMITTED TO THE THE FACULTY OF GRADUATE STUDIES**
**IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE**
**DEGREE OF DOCTOR OF BUSINESS ADMINISTRATION**

**FACULTY OF BUSINESS**

**ATHABASCA UMIVERSITY**
**MAY 20014**

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## Approval of Dissertation

The undersigned certify that they have read the dissertation entitled

**"Public Private Partnerships in Alberta's Transportation Infrastructure: A Study of the Evolution of the Institutional Environment"**

Submitted by

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In partial fulfillment of the requirements for the degree of

**Doctor of Business Administration**

The dissertation examination committee certifies that the dissertation (and the oral examination) is approved.

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## DEDICATION

In honour and memory of my father, ***Isaac Chukwuzitere Opara,*** for planting in me the seeds of scholarship.

## ACKNOWLEDGEMENTS

My sincere thanks, respect and appreciation goes to my doctoral committee for their tireless effort in reviewing my material several times, and providing guidance and thoughtful feedback. I am especially grateful to Professors Fathi Elloumi, and Garry Spraakman, who worked very hard and provided me the benefits of their professional experience as researchers. I am truly honoured by the valuable guidance you provided me through all the stages of my research. My special gratitude goes to Professor Paul Rouse. Thank you for your very thoughtful and supportive comments that substantially advanced my work towards successful completion. I wish to extend my gratitude to Professor Jacob Musila, for his input into developing the initial outlines of this study.

I remain deeply grateful to Gerry Devine at Stantec. Gerry was not only an interviewee, but most importantly facilitated my early access to all senior industry executives who participated in my interviews. His extensive network was instrumental to the timely completion of my field work. I cannot thank you enough for the generous time you spent mobilizing your professional and personal network for me. Thank you sir!

I am sincerely grateful and appreciate all my research participants/interviewees who willingly gave me of their time, knowledge and experience during and after the interview stage.

I am thankful to the Center for Innovative Management at Athabasca University, especially the Director, Professor Kay Devine and staff of the doctoral program for their assistance and support over many years as a student.

Finally, I could never have completed my doctoral program without the support of my family and friends, in Canada and around the world. Thank you for your numerous sacrifices for me when I needed to study, conduct research, and finally write my dissertation. Maria, Anthony and Alexis, I just want you to know that I love you beyond what words can express.

## ABSTRACT

Governments are increasingly turning to public private partnerships (P3s) to develop and deliver long-term infrastructure and services. Thus, the procurement of major capital projects as P3s is growing. The institutional environment for P3s influences project performance, program permanence and continuity. Institutional deficiencies can mean project failure, especially when political legitimacy, organizational capacity and partnership building arenas are lacking; conflict is rampant and a satisfactory conflict resolution mechanism is non-existent or does not work well as a formal structural feature of the institutional environment. Given that different institutional environments leads to different outcomes, this research analyzed the Alberta institutional environment using Edmonton's Anthony Henday Highway. Adopting a longitudinal case study methodology, this study traced the emergence of P3s in Alberta, examined the institutional environment beginning with the pre-existing institutional settings, and analyzed the impact of the institutional environment on P3 projects between 2002 and 2012.

The key findings are: a) P3s emerged due to a convergence of dissatisfaction with the existing model, the storm of fiscal pressures the government faced and political support for the introduction of P3s; b) the business (project) environment evolves for both public and private sectors based on a mutual commitment to P3 success; c) organizational capacity grows from learning, leading to greater confidence in executing P3 projects.

The key contributions are: 1) P3 policy measures and political support require new actors. While policy measures and political support are complementary in the emergence and development of the institutional environment for P3s, such policy measures need new actors with the authority and drive to implement institutionalizable change; 2) There is a *path-dependent* response at the institutional level to project outcomes. Evidence suggests that path dependency is

a factor in play, as later developments depend on earlier events at the political, policy/project and organizational levels. **3)** There is a *co-evolution* of organizational field structures. As policy intervention clears the path for P3 emergence, supporting organizational field structures also emerge. **4)** Institutional environment elements are *mutually re-inforcing creating synergy*. Thus, institutional environment elements affect, react and interact with other institutional environment elements in return and in diverse ways creating synergy.

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## List of Abbreviations

| | |
|---|---|
| **BBO** | Build Buy Operate |
| **BOT** | Build Operate Transfer |
| **CBC** | Conference Board of Canada |
| **CCPPP** | Canadian Council on Public Private Partnerships |
| **DB/DBB** | Design Build/Design Bid Build |
| **DBFM** | Design Build finance Maintain |
| **DBFO/T** | Design Build Finance Operate/Transfer |
| **ETR** | Electronic Toll Route |
| **GoA** | Government of Alberta |
| **IMF** | International Monetary Fund |
| **JV** | Joint Venture |
| **LTIC** | Long Term Infrastructure Contracts |
| **NIE** | New Institutional Economics |
| **NIS** | New Institutional Sociology |
| **NPV/C** | Net Present Value/Cost |
| **OECD** | Organization for Economic Cooperation and Development |
| **OIE** | Old Institutional Economics |
| **PFI** | Private Finance Initiative |
| **PPP** | Public Private Partnerships |
| **PSC/A** | Public Sector Comparator/Alternative |
| **SHTC** | Swan Hills Treatment Center |
| **SPV** | Special Purpose Vehicle |
| **UNDP** | United Nations Development Program |
| **US DOT** | United States Department of Transportation |
| **VfM** | Value for Money |

# CHAPTER I: INTRODUCTION

## 1.1 Research Setting

### *Alberta's Infrastructure (1987-2012)*

Canada's infrastructure assets declined relative to gross domestic product (GDP) from 1975 to 2005, and have lagged behind the U.S. throughout the decade 1999 to 2009 (Parkland Institute, 2011, citing Scotia Bank Report). Alberta is no exception. When the Klein Conservative government was elected in 1993, it inherited C$23 billion in accumulated debt (GoA, *Annual Report*, 2010-11, p.20). Premier Klein won the election on the promise to eliminate this debt. Thus, slaying the debt dragon was the single-minded focus of the government. Beginning immediately, the government cutbacks to reduce accumulated debt created a massive "infrastructure deficit." The Parkland Institute (2011) further cites a July 2005, *Calgary Herald* columnist, Don Braid, who estimated that infrastructure requirements in Alberta exceeded C$20 billion.

As part of the 2004 budget, spending reductions to restore fiscal balance included cuts to capital spending and projects, reduced to around C$1 billion per year. This funding level proved inadequate to meet Alberta's growing infrastructure needs. In three years from 1999 to 2001, high resource revenue allowed the government to more than double its infrastructure spending. When revenue fell unexpectedly in 2001, many planned projects were deferred. Typically, in Alberta, stop-and-go funding makes it very difficult for the government and local authorities to plan effectively and get the best value for their dollars (GoA, *Fiscal Plan,* 2004, p. 65).

By 1999, after 6 years of sustained budget cuts, especially targeting infrastructure spending, the Klein government realized that a combination of changing demographics (increased

population growth, fueled by both, natural birth and internal migration) and faster paced economic growth were exerting enormous pressure on the existing fragile infrastructure. The government felt it was time to accelerate the development of infrastructure to meet growing demand. However, the government also realized that the rate at which this could be done via the conventional model was limited, given the model's pedigree for delayed delivery and going over budget.

In *Unpacking Alberta's Infrastructure Spending*, the Parkland Institute estimates that Alberta's population has grown by almost a third since 1993, adding more than a million new Albertans. Alberta's economy has also grown significantly. Not surprisingly, this growth has led to significant demands for new and expanded infrastructure, from the twinning of the highway to Fort McMurray to new hospitals and schools. Also, with inflation and construction cost escalation, the province has been buying considerably less infrastructure than it seems (Parkland Institute, February 23, 2011).

In 2006, the Department of Infrastructure and Transportation estimated that infrastructure deficit at over C$7 billion. According to the Department, "Although a significant increase in capital funding has been provided to build necessary highways, schools and health facilities related to new capital projects, clearing infrastructure deficiencies will take time."

By 2007, there was a steady cost escalation for the construction of buildings, roads, bridges and other infrastructure. Alberta's hot economy meant some public infrastructure projects had few or no tenders bid due to the demand on construction companies. According to government figures, these factors were "adding 10 to 25 percent per year to project costs." Effectively, during the boom years from 2006-2008, increased construction costs meant something approaching C$3 billion and

possibly as much as C$4.8 billion was lost to more-expensive infrastructure instead of more infrastructure. (Parkland Institute, February 23, 2011).

Alberta needs not only new investment, but maintenance spending is required to keep capital assets in acceptable operating condition. If maintenance is delayed instead of being done when necessary or scheduled, it is called deferred maintenance. As of February 2003, Alberta's backlog of deferred maintenance for existing building infrastructure was C$2.4 billion. At the end of the Klein era in 2006, the deferred maintenance backlog for buildings had nearly doubled to C$4.5 billion. Based on current funding levels, the Auditor General noted in 2007, "the deferred maintenance totals are still expected to grow." An additional C$1.7 billion in deferred maintenance had accumulated for the province's roads by 2006, but funding levels meant that was expected to more than double to C$3.8 billion within five years.

In 2010, the Auditor General found that the Department of Infrastructure, "still has not made any meaningful progress in developing objectives, timelines and targets for reducing deferred maintenance" and noted that deferred maintenance was still not being publicly reported.

Attempts to narrow the gap between Alberta's infrastructure needs and public investment have so far fallen short. Instead, much of the recent increase in investment has been eaten up by increased construction costs and has proven insufficient to overcome a legacy of underfunding. Put in its proper context, recent increases in infrastructure spending cannot be considered out of control and any reduction would only worsen Alberta's infrastructure deficit and maintenance backlog.

***Institutional Environment for Project Development***

Institutions are the humanly devised enablers and constraints, or set of relational contracts that guide actions and behaviour (Scott, 2008). They are made up of formal constraints (e.g. rules, laws, constitutions), informal constraints (e.g., norms of behavior, conventions, codes of conduct), and their enforcement characteristics. For instance, for public officials, formal rules are laid down in code of conduct and operation manuals, in budget documents, and in many regulations, directives and instructions through which policy is conveyed. The informal rules are what the officials collectively understand as appropriate behavior, 'how we do things around here'. For example, not vigorously implementing the minister's newly announced policy might result in transfer to another department or to an area with less influence or visibility.

Institutions provide the incentives that provoke or prohibit certain actions. Rules and regulations, formal and informal, together define the incentive structure of actions or behaviour within an organization, or across the public sector as a whole. Fundamentally, this institutional environment shapes the expectations of public officials and all actors involved in public infrastructure delivery. The willingness to gear actions to support ministerial policies is somewhat greater if, officials believe that policies will remain in force for a period of time (institutionalized), and will not be undermined by other policies of equal force. Expectations that policies are likely to be soon reversed lead at best, to second guessing of what the next ones might look like. At worst, they lead to cynical disregard for any new policy.

For the purpose of this study, *the institutional environment is defined as the mix of formal and informal rules and regulations that enable or constrain the behaviour of actors within the Alberta infrastructure delivery environment. The three dimensions of the Alberta P3 institutional environment are political environment; rule/policy environment (business/project); and organizational environment.* Collectively, these three dimensions make up the *overall* institutional environment. Examples from the Alberta institutional environment include, the stipulation of formal rules guiding the adoption and implementation of P3 as a policy for capital asset financing, regulations for project identification, appraisal and contract awards, the informal ways contractors and ministry officials engage each other and communicate around project execution.

***Institutional Environment Changes***

Elements of Alberta's institutional environment have not been previously documented. Therefore, Alberta's overall institutional environment remains unknown or forgotten. This study is an attempt to capture this unknown or forgotten institutional environment and document its influence in the emergence and sustenance of Alberta's P3 program. As defined above, the elements of the environment include political, policy or project (business) and organizational. These elements of the environment started to experience changes from around 2000. These changes are captured below identifying the pre-existing environment and how that environment began to change, when and why. One thing to note is the inter-relatedness of elements of the Alberta institutional environment.

***The political environment:*** Alberta's political environment is fairly well known. For instance, it has had a single party in government for more than 40 years. The ruling Conservatives were first

elected in 1971. Political actors in Alberta are known to be directly involved in getting things done by engaging with the relevant actors or agents who are close to the issues at hand. In this way, it is an accepted practice in Alberta that use of government agents must be complemented by a liaison with other individuals or organizations where the issues are located. Closely related to this is the involvement or embeddedness of the government within the economy. The nature of Alberta's economy especially its ties to the global energy market, makes it prone to substantial volatility. This compels Alberta governments to frequently design and amend fiscal rules. Kneebone (2006), argues that the institutional design of its fiscal rule is part of a governing arrangement. He notes that, the "evolution of its fiscal rules has been guided by a single government, the Progressive Conservative government of Premier Ralph Klein. Further, he suggests that, "The evolutionary process of the fiscal rules has not been affected by changes in the governing political party or changes in political or economic ideology" (p. 659).

Around 2000, there were signs that the citizens were exhibiting signs of fiscal fatigue arising from 8 years of public sector layoffs, budget cuts, restrained spending and failing or inadequate infrastructure in the middle of what appeared to be improving economic climate. Furthermore, as pointed out earlier, evidence of demographic changes and accelerating economic growth was starting to emerge. The government admitted as much in the 2003 throne speech that preceded the P3 program initiation. "As Alberta has grown, so has its need for health facilities, schools and roads. The province's unprecedented economic growth has surpassed its investment in capital projects, and Albertans aren't willing to wait until tomorrow for the infrastructure they need today" (Throne Speech, 2003). This was the backdrop to the need to find creative ways to accelerate infrastructure delivery. With the forecast drop of C$4 billion in revenue as the tipping

point, the government could not resist the dual promise of faster infrastructure delivery and using private finance to accomplish that.

***The policy or project (business) environment:*** This institutional environment has not been studied extensively or formally documented. However, spotty documentation exists in various ministry manuals and guides. Prior to P3s, the private sector was already involved in many capital projects and services delivered to citizens. The province already uses private contractors for a variety of purposes, such as building hospitals, schools and road construction and maintenance. The difference from P3 projects is generally increased scope and complexity of the private sector involvement in a project, the long-term nature of its involvement, and potential involvement of the private parties in financing, operating, and maintaining the asset.

If a government does not have the cash to pay for capital assets immediately, it can choose to borrow and pay off the cost of the capital asset over a portion of the life of the asset, much like a mortgage on a house. Another option is to enter into a P3 arrangement and pay for the services over the life of the agreement. In both cases, the number of capital projects that the government can undertake increases in exchange for its commitment to pay future amounts. Therefore, from a funding perspective, a P3 with a financing component is similar to government borrowing.

To understand why the province now considers P3s a service delivery alternative, it is useful to visit the Capital Planning Initiative, which prioritizes the province's major public capital asset acquisitions. The two Ministries that lead the Initiative are Infrastructure and Transportation. These two Ministries are responsible for the majority of Alberta's public capital investment. The Ministry of Finance is responsible for helping to assess costs and risks of alternative financing

vehicles, including P3s, and making recommendations to mitigate provincial financial risk and achieve optimal value for money (VfM).

As stated, Alberta's revenues can fluctuate substantially from year to year, due to fluctuating resource revenue. Fluctuating revenue and the pay-as-you-go model have led to large expenditures on capital assets in some years and deferring of projects in others, resulting in difficulty in properly planning to provide capital assets in the most cost effective manner.

In 2001, the business institutional environment began to change with the convergence of fiscal fatigue, emerging demographic trend, and a sudden revenue collapse. With this change occurring, the government moved quickly to establish the Financial Management Commission (FMC), accepted its recommendations regarding the deployment of private finance and consequently amended the Fiscal Responsibility Act, to enact the new policy allowing the engagement of private financing in public infrastructure delivery.

***The organizational environment:*** Not much is known or documented about the organizational environment of Alberta's infrastructure delivery. Circumstantial or indirect evidence comes from one key source, the 2003-04 auditor general's report.

In 2003-04, the auditor stated that, "Steep challenges meant steep learning curve for the ministries of transportation and infrastructure. Given the complexity of P3 arrangements, it is reasonable that there is a learning curve. Our recommendation focuses on how ministries can benefit on future projects from lessons from the Centre and Ring Road." Documenting evidence of lack of capacity, the auditor cited examples of inability to calculate VfM and use of objectionable basis for VfM calculation where it was done, inability to properly calculate a PSC

and also objectionable basis of calculating PSC. The auditor also recommended that information about these calculations be made public as part of project approval process.

Here is another reference to the lack of capacity within the organization by the auditor in the 2003-04 report:

> *"The Ministry could have better explained the difference between its initial calculation of the value of the risk transfer and total costs of the final P3 agreement that included financing. When the Ministry completed its risk assessment in October 2003, it estimated the value of the risk transfer to be approximately C$34 million. Once costs were known with greater certainty, the P3 alternative with private financing had an additional cost of approximately C$84 million as compared to the same alternative without private financing. The C$84 million would be offset by the risk transfer and other benefits associated with private financing. The Ministry could have provided a better analysis by comparing the C$34 million to the C$84 million and clearly noting what other private financing benefits exist, to justify the C$50 million difference."*

Continuing the report stated that,

> *"The overall analysis of the different alternatives could also have been improved. For example, the Ministry could have improved the analysis of the financing component of the project. The business case showed the interest rate implicit in the P3 arrangement and compared it to the government borrowing rate. The Ministry could have improved the analysis by showing the total dollar value of interest and the net amount of interest once the time value of money is considered, and then clearly explaining the expected benefits of the private financing, again, as described in greater detail above."*

Furthermore, the report identified capacity problems with the organization's ability to undertake P3s:

> "The Ministry of Infrastructure could have improved both the analysis of the risk transfer and the overall analysis of the different alternatives. The quantitative analysis of the risk transfer and overall analysis of costs of the alternatives could have used estimates of a range of costs rather than a single estimate.
>
> *Results from the audit of the Ring Road - as noted in the Ring Road's timeline, the Ministry of Transportation completed the Ring Road's business case in July 2003. The business case could have included the detailed analysis of the public sector comparator, which is an analysis of what it would cost the government to produce comparable outputs to the P3. The Ministry retained an accounting firm to help prepare the public sector comparator based on assumptions, cost estimates, and risk ranges that the Ministry provided. This analysis was completed in the spring of 2004.*

> *Both ministries found it difficult to produce an accurate business case without formally going to the market through the request for qualification and proposal processes for information on costs, benefits, and risk transfers."(pp. 58-72)*

Changes in the organizational environment were initiated by the decision to implement P3s that created the need to recruit competent staff to implement P3s. The auditor's report a year after the decision to implement P3s simply accelerated the process and justification to make massive changes to enhance the capacity for P3s in Alberta.

## 1.2 Statement of Problem

In the last 20 years, public private partnerships ("P3s") have become a widely used method for major infrastructure delivery worldwide (Boardman & Vining, 2010; Forrer, et al., 2010; Loxley & Loxley, 2010; Hodge, Greve & Boardman, 2010, Hodge & Greve 2007; Kwak, et al., 2009; Yescombe, 2007; Grimsey & Lewis, 2004; Poschmann, 2003; Vining, Boardman & Poschmann, 2004). In 2003, the Government of Alberta ("GoA") officially implemented a policy of public private partnerships, involving stronger collaboration with the private sector for the delivery of critical infrastructure in the province. This policy requires the engagement of the private sector in the design, financing, operation and maintenance of critical infrastructure like roads, schools, water treatment and waste management.

Since the initiation of this policy, Alberta has completed several infrastructure projects in the transportation and education sectors. With the near completion of Edmonton's Anthony Henday Drive, Calgary's Stoney Trail, the delivery of approximately 40 schools and almost C$8 billion in financial commitments over the next 30 years for principal repayments, interest charges and maintenance (GoA, *Fiscal Plan*, 2013). This research is being undertaken to trace the emergence of P3s, and evaluate the evolution of the institutional environment on P3 project

outcomes. In otherwords, there is a gap in our understanding of the nature of the institutional context surrounding the emergence and sustenance of P3s, given the ways P3s are undertaken in various jurisdictions. This is the gap that this research intends to fill. The approach is to undertake a longitudinal qualitative study on the emergence and establishment of P3s as a policy of the Alberta government in organizing the construction and delivery of major road infrastructure projects, using the Anthony Henday Highway. Institutional theory will be used as an organizing framework. A key assumption behind this research is that the construction of major projects by governments such as the Alberta government is *institutionalized*. Accepted practices (rules and routines) are followed without question until with significant justification they are changed. P3s occurred because prior practices surrounding major capital projects were no longer considered acceptable, thus necessitating a change in logic.

Barley and Tolbert (1997, p. 96) define institutions as "the shared taken-for-granted assumptions which identify categories of human actors and their appropriate activities and relationships." Institutional theory (or neo-institutionalism) has been applied in a wide variety of areas including organization research, management accounting, political sociology, and education. A dominant feature of institutional research is that they focus on the *external environment* within which *social actors* are embedded.

Emerging research streams are starting to focus on the institutional impacts surrounding the implementation of P3 policies in different contexts, specifically the role that the institutional and political contexts play in the process of developing P3-enabling fields (Delhi et al., 2010; Jooste et al., 2011; Mu et al., 2010). A recent study by Jooste, Levitt and Scott (2011) emphasizes the importance of an *enabling environment* for the successful development of P3 programs. Their

study notes that P3s are implemented differently in different regions and that P3 programs are shaped by the institutional and political frameworks where P3 development takes place.

Delhi et al. (2010) presents a framework which provides an understanding of the kinds of governance issues arising on projects which includes the influence of the institutional setting. They define an institutional environment as a context where governments understand roles and responsibilities of P3s, leading parties to enter into sustainable P3 arrangements where institutional structures serve as a guideline to achieve a coherent P3 policy, supportive risk sharing, transparency, sustainable development and a clear legal framework. Mu et al. (2010) state that the occurrence of undesirable parties' performance is a sign of institutional deficiencies, capturing the need to improve the institutional setting where projects take place. Other authors focus on how project outcomes influence the successful development of P3 programs. Garvin and Bosso (2008), for instance, present a *normative* framework to establish the necessary conditions for profitable P3s which heavily depend on establishing a balance between the interests of state, society, industry, and market.

Few studies have analyzed the link between institutions and P3 projects, and limited research has been done on the evolution of the institutional environment on P3 project outcomes (Aziz, 2007; Jooste et al., 2011; Petersen, 2011). Therefore, this research attempts to answer the question of how the institutional environment affects project outcomes in P3 development in Alberta's transportation sector. In order to analyze the impact of the institutional environment, this study starts by considering the institutional environment model proposed by Mahalingam (2011). The model has three elements: *legitimization, trust,* and *capacity.* Adopting this model to analyze the influence of the institutional environment on P3 projects provides a useful starting point, with the intention of refining and proposing it for further research to study the relationship

between the institutional environment and project outcomes. This research considers it essential to evaluate how institutional environment and project structure are related, by tracing or establishing the link between *action* and *institution*. In order to improve the P3 environment, it is important to understand how institutions influence projects and vice versa. While drawing on *structuration theory*, this research intends to adopt an *institutional theory perspective* as a prism for the study of P3s in Alberta. Gaining an understanding about the unique or specific attributes of P3 deployment in Alberta deepens our knowledge about the relationship between the institutional environment and project outcomes.

## 1.3 Research Question and Objectives

This study investigates, from an institutional theory perspective, a new method of infrastructure provision, public private partnerships, using the Anthony Henday Highway in the province of Alberta as a case study (See **Appendix F** and **G** for a map of Edmonton and Alberta respectively). The central research question is: *How does the institutional environment affect project outcomes in P3 development in the transportation sector in Alberta, Canada?*

The following objectives will help in addressing the research question:

*1) Reconstruct and analyze the emergence of P3s in Alberta;*

*2) Analyze how the political, policy or project and organizational elements of the institutional environment interact to affect P3 outcomes and vice versa; and*

*3) Analyze how the evolution of the institutional environment has impacted P3 project outcomes in Alberta.*

**Methodology**

The methodology is based on a detailed literature review, in-depth, semi-structured interviews with the main stakeholders and actors in the P3 program, a review of the Alberta Government and Auditor General's reports and other public documents (including media sources) in the field. Conclusions are then drawn that will be of value for future P3s in Canada and to the research stream.

**Research Perspective**

This research adopts an interpretive perspective to public sector infrastructure delivery. It considers infrastructure delivery practices as *institutionalized* in Alberta, and similar to, for instance, accounting practices that have become institutionalized in the public sector. Rather than viewing infrastructure delivery practices as a strictly rational exercise, it is considered within the broader social context it resides in, in which it is both reflective of, and influences its context. This is broadly applicable to the Alberta public sector setting for infrastructure asset delivery.

## 1.4 Significance of the Study

This study will enhance our knowledge and understanding of the factors that impact the performance of P3s and how it compares with conventional delivery, given Alberta's approach to the implementation of this policy. As the first of its kind in Alberta, this study will trace the emergence of Alberta's P3 program, identify and add the essential elements of Alberta's P3 policy framework and its project impacts to the evolving literature on P3s in Canada. This study, therefore, will seek to understand and expand the current knowledge base by identifying key policy initiatives, timelines and describe relationships among these elements that contribute to, or serve as barriers, to the success of P3s given the diverse and sometimes conflicting interests of the actors.

By understanding *why* and *how* Alberta transitioned from a conventional to a P3 environment, it furnishes insights as to what motivates and sustains a P3 program.

Potential benefits of this research include, contributing to an evidence-based discourse on P3s in Canada with material facts and data evidence that would add to the P3 literature and inform future P3 policy developments. Since this research is taking place post the financial crisis of 2008-2009, it will add to our knowledge of how the financial crisis affected P3s by reviewing how financial risk was handled by the Alberta P3 managers. This knowledge will help future contract arrangements by considering or anticipating a sudden credit squeeze as a potential risk factor for all P3 actors.

## 1.5 Summary of this Research

This longitudinal study examines the influence of the *institutional environment* on P3 projects in the road sector in Alberta. It traced the emergence of P3s from 2002 to 2012, against the context of its political, organizational and business environment. Adopting a case study approach, it used a combination of primary and secondary data sources to ground its findings.

This study finds that the *institutional environment* plays a role in the emergence and establishment of P3s. Following dissatisfaction with the existing infrastructure delivery model, P3s were introduced in Alberta when there was visible *political support* for its emergence and institutionalization, with the prevailing tough economic circumstance in 2002 as a tipping point. Furthermore, the elements of the institutional environment (political, business and organizational) interact with each other in ways that are *mutually re-inforcing* creating *synergy* that enables successful project outcomes. The learning from one project is applied as improvements in the next. The study supports the finding that P3s are implemented differently in different jurisdictions.

Evidence indicates that Alberta's P3 followed an organized path focused on value creation, risk minimization and limited innovation. This study suggests that while political support is a critical first requirement, *motivated* and *empowered new actors* are needed, in alignment with supporting *organizational capacity*, to drive P3 implementation to survive challenges, gain *legitimacy* and become *institutionalized* in the environment.

## 1.6 Limitations of the Study

As a qualitative study, this research draws from publicly available secondary data, and primary data and materials obtained from interviewees. And so to the extent that any data is withheld by a participant, due to reasons of competition or privacy concerns, then that data may not be accessible for review or documentation, study and analysis. The decision to draw data from a select group of actors while a practical decision to advance the project may limit the value or quality of some of the conclusions, as potential data or data sources may be unintentionally excluded, and could be subject to the biases of interviewees. The applicability of this study is also limited by jurisdictional differences across Canada and around the world. Although aspects of this study could benefit other jurisdictions, a substantial part of the design is influenced by fiscal, economic, social, political and other attributes that are unique to Alberta and Canada. Furthermore, the applicability of this study is also limited by the potential for sudden policy changes that tends to affect public sector entities more than private sector entities. More often policies are colored by the politics of the moment, as political actors position for near term electoral success.

## 1.7 Dissertation Structure

This dissertation is divided into seven chapters. After the first chapter, a review of relevant literature on P3s is undertaken in chapter 2. Chapter 3 presents an overview of the organizing theoretical framework. It explores the central tenets of new (neo) institutional theory

(organizational institutionalism) used to examine the evolution of the institutional environment for P3s in Alberta, and its impact on project outcomes. Chapter 4 details the methodology employed in the study and explains the choice of a qualitative research design. Furthermore, the project setting is described, including the rationale behind the case study approach and the detailed data collection and analysis approach adopted. Chapter 5 outlines the findings of this study. Chapter 6 presents a discussion and synthesis of the findings with a view to generating higher order analysis. Furthermore, these discussions satisfy the research objectives. Here the discussions are presented and compared to the initializing framework that kicked off the study around the legitimacy, capacity and trust elements of the institutional environment. Importantly, this includes a new (neo) institutional theory perspective on P3s in Alberta. Chapter 7 presents the key contributions based on the findings, discusses the overall influence and interactions of elements of the institutional environment on project performance, and followed by reflections on Alberta's P3 evolutionary and implementation processes. This chapter concludes by outlining some of the limitations of this research and potential opportunities for future research. An outline of the dissertation is presented in Figure 1.

**Figure 1 Dissertation outline**

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- Statement of Problem
- Research Question and Objectives

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- From Swan Hills to NEAHD: The impact of one project on the next

**Chapter 6 Discussion and Analysis**
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- Interaction of Elements of the Institutional Environment
- Alberta's P3 from an Institutional Theory Lens

**Chapter 7 Conclusion**
- Contributions to Research and Practice
- Implications for Research and Practice
- Limitations and Future Research

# CHAPTER II: PUBLIC PRIVATE PARTNERSHIPS

*This chapter reviews the various definitions of P3s, and adopts an operational definition to meet the purposes of this research. Furthermore, it outlines the various models of P3s that are used in various jurisdictions, while detailing the rationales for adopting P3s and the features of both conventional and P3 models of infrastructure delivery. Trends in P3 adoption and performance, and the general implementation approach are discussed and a critique of that approach offered. This chapter concludes with a review of the challenges facing P3 evaluation.*

## 2.1 What are Public Private Partnerships?

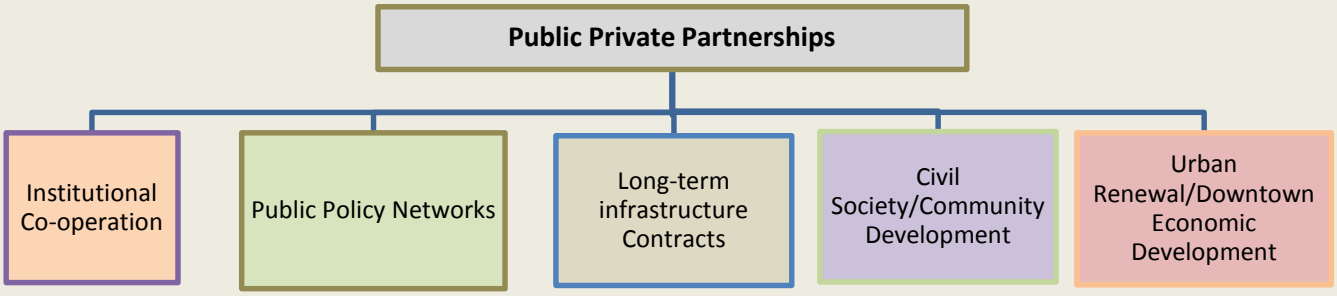
There is no agreement yet on the definition of P3s. Many approach it from the various models that are used in practice, others see it more as a governance or management tool, yet others as a development process and some others as a language game based on "vested interests" (Hodge, Greve & Boardman, 2010). One of the most widely adopted definitions was put forward by Savas (2000, p. 4), who defined P3s, "as any arrangement between the government and the private sector in which partially or traditionally public activities are performed by the private sector." A working definition offered by Garvin & Bosso (2008) suggests that a P3 "is a long term contractual arrangement between the public and private sectors where mutual benefits are sought and ultimately (a) the private sector provides management and operating services and/or (b) puts private finance at risk" (p. 163). Another definition by the IMF (2009) sees P3s "as a contractual arrangement covering a long period" (Palma, Leruth & Prunier, 2009, citing IMF, 2009) between a public entity or authority and a private entity whereby construction and/or operational and/or financing risks are fully or partially transferred to the private entity' (World Bank, 2012; Loxley & Loxley, 2010). Through this agreement, the resources (skills and assets) of each sector are shared in delivering a service or facility for the use of the general public. In addition to the sharing of

resources, each party shares in the risks and rewards potential in the delivery of the service and/or facility.

Most recently in an effort to set a new direction for future P3 research, Hodge and Greve (2008) argues for a reclassification of P3s into families as they cover a wide array of different governance types, and would rather see what is now known as P3s segmented into five governance arrangements (See Figure 2). They suggest that LTICs (Long-term infrastructure contracts) or "institutionalized partnerships" as suggested by the European Commission, (Commission of the European Communities, 2005, p. 9) could be a substitute for what is now known as regular P3s. Their justification for the re-classification is that P3s are made up of a large family or clusters that would need better structure to facilitate evaluation, and re-position P3 research to be forward looking. This research approaches P3s as a financial and governance arrangement. Even though some writers have focused on the use of P3s as a development tool (World Bank, 1996, 2006; Latham, 2009), or point to its misuse as a language game (Linder, 1999; Hodge & Greve, 2007; Savas, 2000), no discussion of its use as a development strategy or as a language game will be explored further.

Over the years, the definition of P3s used around the world has evolved, and even in Alberta the definition has changed many times. Alberta now defines its P3 as, "an infrastructure project in which a private contractor provides some or all of the financing for the project; designs and builds the project, often providing operations and maintenance for the project, and receives payments from government over an extended period of time, subject to deductions for failing to meet contractually defined performance standards." (Alberta P3 *Framework and Guide*, 2011, pg. 9).

**Figure 2 Five families of P3s as governance arrangements**




*Source: Hodge and Greve, 2008.*

While there is no universally accepted definition of P3s, this study will adopt a widely quoted definition from the Canadian Council on P3s (CCPPP, 2012) as a guide. CCPPP defines P3s as, "*a cooperative venture between the public and private sectors, built on the expertise of each partner that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards*." Overall, two key attributes of this definition are worth reinforcing as critical aspects of P3s. Firstly, *sharing*: including, risk sharing, profit sharing, information sharing. Secondly, *collaboration or joint responsibility* in the outcomes of P3s.

To conclude, it is equally important to mention that the *developmental* aspects of P3s are relevant in developing countries as a way to generate economic growth and raise living standards. In both developing and developed countries, *messaging* is very crucial in communicating acceptance of a complex policy to citizens.

## 2.2 Models for public private partnerships

There are several models or options available that could be adopted when the decision to proceed as a P3 has been made. These models or combinations of models present different roles, financing options and responsibilities to the partners (See Box 1). Some authors and policy makers conceive of this as a continuum of service starting from full public sector provision all the way to

outright privatization (Grimsey & Lewis, 2004). Others adopt a two-dimensional framework called the ‘’Quadrant Framework’’ (See Figure 3) (Mu, 2008, citing Miller, 2000).

**Box 1: Different types of public private partnerships**

There are several models or variations of public-private partnerships. The following indicates the various models typically found in a P3 arrangement.

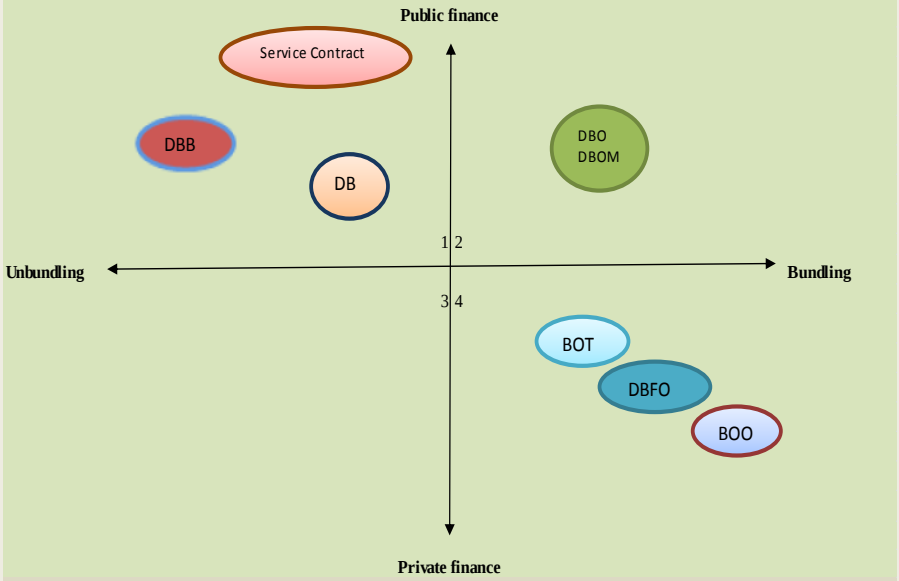
- Operations and Maintenance (O & M)
- Design-Build (DB)
- Design-Bid-Build (DBB)
- Design-Build-Maintain (DBM)
- Design-Build-Operate (DBO)
- Design-Build-Operate-Maintain (DBOM)
- Design-Build-Finance-Operate-Maintain (DBFOM)
- Build-Operate-Transfer (BOT)
- Build-Own-Operate (BOO)
- Build-Own-Operate-transfer (BOOT)
- Build-Lease-Operate-transfer (BLOT)
- Build-Transfer-Operate (BTO)

*Source:* Author’s compilation from various sources.

This framework describes the extent of bundling and unbundling of the various P3 options (horizontal axis) and the continuum of financing methods based on the degree of responsibility assumed by the public sector (vertical axis).

In this thesis, the term public private partnerships (P3s), refers to any type of contractual arrangement that involves a long-term agreement between a private sector party and a government in which the private sector party designs, builds, finances, and operates public infrastructure and/or service in exchange for some form of financial payment.

**Figure 3 Two-dimensional framework of P3 options**



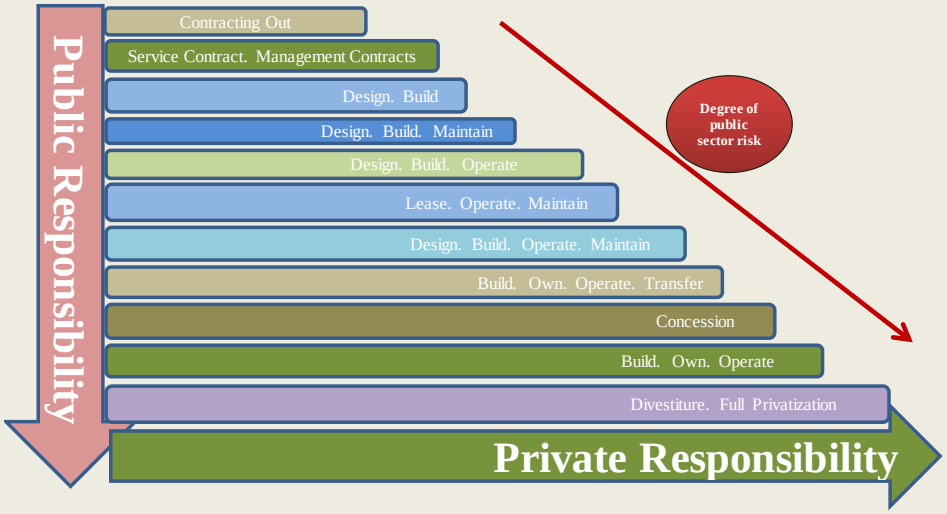

*Source: Mu, 2008*

## Continuum of types of P3s

One of the most cited, and considerably the most straightforward, classification of P3s situates different partnership variants on a continuum that reflects the extent to which *risk* is transferred from the public to the private partner. The continuum runs from a contribution contract with minimal risk transfer to Buy-Build-Operate (BBO) partnerships with maximum or complete risk transfer. In between the two are several possible combinations of functions the private sector can undertake: design, build, finance, operate, maintain, own, transfer, lease, develop, and buy. Although there is no single classification that can be said to be the most useful, the continuum classification has received more attention than the others, and has been used quite extensively by the World Bank, the European Commission and the United Nations Development Program, especially for infrastructure projects as an indicator of risk transfer. Figure 4 illustrates the P3 continuum, also demonstrating the diverging correlation of responsibility for the public and private sectors according to various P3 approaches. Alberta P3 models are the DBFM for roads, and

DBFO for schools. These models are practically similar, and situate in the middle of the continuum. This suggests a balanced allocation of risks between partners. In Alberta's P3s, an attribute of the DBFM/O is the use of asset availability date for the commencement of post-construction payment arrangements.

**Figure 4 Continuum of types of P3s**




Source: Adapted from Palmer, G. (2009)

### *Availability-Based P3s*

In availability-based P3s, the private sector partners derive their income from government payments. Here, the public authority makes payments to the private company based on previously arranged contractual conditions relating to when, how, and to what extent a public service is provided or made available. This may be found, for example, in the provision of power, where the public sector will make payments according to the plant's output capacity, regardless of whether that output is utilized or not. Similarly, it could apply to the availability of a road network, where payments are made based on road *availability* and not on road *utilization*. Availability-based P3s are also more common in soft infrastructure such as education or health that has no clear user fee or self-funding ability. A further limited application of availability payments are the so-called

"shadow tolls," where the private sector does not collect real tolls but receives payment from the government on infrastructure usage.

In Alberta's P3s, asset availability is used extensively, as it forms the basis of the *availability payment* made to the contractor. For instance, the agreement for each of the P3 segments has firm availability dates. On those dates or sooner, the asset must be delivered to the government or penalties will be incurred at a specified daily rate by deducting payments due to the contractor.

### *Privatization*

P3s are not to be confused with privatization, where a service or facility is fully transferred to the private sector by sale or disposal, including all the associated assets and liabilities, for operation according to market forces. In a P3, there is a temporary transfer of a service or facility to the care and responsibility of the private sector through a long-term lease agreement, with the service or infrastructure potentially returned to government control at the completion of the contract term. The extent to which the government regains ownership at the completion of a P3 depends on whether the facility or service was, in fact, originally owned by the public sector and the terms of the P3 agreement. P3 agreements may see the private partner operate services according to market forces, but it is generally within a protected framework of minimum incomes and thresholds guaranteed by the public sector, and minimum services or supply demanded of the private partner. P3s are therefore, according to individual project choices, positioned at various points along the continuum that sees total public sector provision at one end and privatization at the other.

*The difference between P3 and privatization*

Critics of P3 argue that it is simply privatization (suggesting a pejorative connotation) "by the back door" and, some definitions place privatization at one end of a range with conventional procurement at the other end and PFI-type P3 in the middle. It is important to realize that there are, however, fundamental differences between the two approaches. Privatization is about taking an existing state owned business, ideally re-organizing it to make it attractive for sale, and then dropping it, some would say dumping it, into the private sector. Done properly, with an accurate assessment of the size of the assets concerned, a clear objective as to the purpose of the privatization (hopefully efficiency gains rather than just revenue-raising for the government) and sensible pricing to develop competition, this process can produce positive results for the government, the taxpayer and the consumer.

However, many governments, particularly in the developing world, understandably are concerned about the loss of national assets to a (probably) foreign owned private sector. Essentially, the public sector loses control of the asset to the private sector except for a certain amount of regulatory control over items such as customer tariffs. A P3 is an entirely different approach to providing an asset or delivering services to or on behalf of the public sector. The effect of a typical P3 structure is usually to create a single stand-alone business, financed and operated by the private sector. The purpose is to create the asset and then deliver a service to the public sector client, in return for payment commensurate with the service levels provided. Rather than taking the existing delivery mechanism and transplanting it into a wholly different operating environment as in privatization, the P3 process takes the service delivery back to basics and begins by defining the service(s) to be delivered specified in terms of the outputs to be achieved. The key is to specify the *output* of the service required and to allow the private sector to determine which

*inputs* are required, including infrastructure, skills and other resources, to achieve that specified output. The public sector in specifying the required output for the private sector entity retains a great deal of control over the standards and type of service to be delivered in a way that a privatization arrangement does not. In addition, a privatization is, to all intents and purposes, a permanent arrangement whereas a P3 contract is for an agreed and finite time period. Full operational control and "ownership" reverts to the public sector at the end of the contract term. *It is this temporary nature of the agreement and the degree of control enjoyed by the public sector, which fundamentally differentiates P3 from privatization*. It is also important to note that there is no need to transfer title of the asset to the private sector. The state owns the asset throughout the process; there is no "loss" of national assets. It is generally true; therefore, that a P3 is more likely to be suitable for stand-alone projects whilst privatization is more likely to be suitable for large utilities. However, it is important to remember that roles formerly carried out by state employees are now likely to be carried out by private sector employees (although, they may be public employees seconded to the private sector operator) and sometimes, there may be job losses. In the UK one of the original drivers for P3 was, after all, to reduce the size of the public sector. This factor alone causes some to see the process as a "soft privatization" and these are criticisms, which governments seeking to begin a P3 program must consider.

**Comparison of P3 and Conventional Procurement**

How are P3s and conventional procurements different? To answer this question, a useful guide is provided by the Conference Board of Canada's (CBC, 2010) report, *Dispelling the Myths: A Pan-Canadian Assessment of Public-Private Partnerships for Infrastructure Investments*. The CBC suggests that a key distinguishing feature between the two is the role both two sectors play in *stewardship* of the project. Arguing that in a P3, the private sector takes ultimate responsibility

for the successful execution of the project and thus assumes most of the risks associated with the project. While in a conventional procurement, the public sector retains stewardship, and is therefore ultimately accountable and responsible for a successful project execution.

A conventional (traditional) project is defined as a project that is 'financed by government through a short-term design and construct contract' (Duffield, 2008). The long-term operation and maintenance of such a project is the responsibility of the government. The attributes of conventional procurement include: lump sum fixed price contracts, guaranteed maximum price contracts, Design and Build (DB) contracts. Table 1 details the essential aspects of both asset delivery models.

**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 separaely** 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, or construction management contracts, where an engineering firm is hired to manage the successive contract phases, including the procurement for each phase. |
| **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 contract (i.e., after the facility opens for public use), but they are also used for the design and construction phases, where the public sector onwer specifies the functional requirements for the facilities to be procured. | **Input-based contracts**, in which the public sector onwer 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. 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 percent 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, with the equity provided by the consortium partners making up less than 20 percent of the project financing. Third-party debt, bank loans, and contributions from governments provide the remaining finance requirements. In otherwords, 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 fianancing is limited to a modest amount of working capital. |
| **Private sector 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 projet in a way that best meet 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 terminate the P3 arrangement. | **Project stewardship by the public sector or a contract management firm**. Overall control of the 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, 2010.

## 2.3 The Infrastructure Question

In many regions of the world, including Canada, governments face investment and productivity challenges in the development and modernization of public infrastructure (Davies & Eustace, 2005). In Canada, evidence of an ageing infrastructure is well documented. For instance, a 2004 study by TD Bank Economics Report, *Mind the Gap*, estimates that between C$50 and

C$125 billion would be needed to fix Canada's 'infrastructure deficit'. This report identifies three key strategies for bridging the infrastructure gap. It suggests that, a) the federal government grant lower levels of government an enhanced tax room to meet their growing infrastructure needs, b) governments adopt a "user pay" model to fund infrastructure assets; c) governments invite the private sector to become part of the infrastructure solution. It challenged the federal government to lead the charge in Canada's infrastructure renewal. A 2003 CanadaWest Foundation report, *A Capital Question: Infrastructure in Western Canada's Big Six*, notes that "urban infrastructure in Canada has become a serious issue" (Casey, 2003, p. 3). The report argues that for the six western Canadian cities (Vancouver, Calgary, Edmonton, Winnipeg, Saskatoon and Regina), the largest area of infrastructure deficit is in transportation, mainly roads, traffic control, bridges, interchanges and public transit.

**What is infrastructure?** But, what is the term *infrastructure*? One definition offered by the City of Edmonton in its *2006 Infrastructure Strategy* report states that, "Infrastructure is the physical assets developed and used by a municipality to support the community's social and economic activities" (p. 15). Duffield (2001), considers infrastructure as consisting of three aspects, 'economic, engineering and social', with the engineering and economic infrastructure being closely related (See figure 5). Grimsey and Lewis (2004), classifies infrastructure into hard or soft economic and social aspects (see Table 2). They argue that economic infrastructure "is considered to provide key intermediate services to business and industry and its principal function is to enhance productivity and innovation initiatives" (p. 21). While these definitions are correct in their technical aspects, this thesis takes a broader or macro view of infrastructure. Therefore, this study adopts Yescombe's (2007) perspective, who defines infrastructure as, "facilities which are necessary for the functioning of the economy and society" (p. 1). Broadly, infrastructure is

classified as either economic or social. Economic infrastructure includes transportation facilities (roads, bridges, and ports), water, sewage, electricity, and utility networks that are required for daily economic activity. Social infrastructure includes schools, hospitals, libraries, prisons etc. considered essential for the structure of society.

**Figure 5 The categorization of infrastructure. Source: Duffield (2001), Industry Commission (1993)**

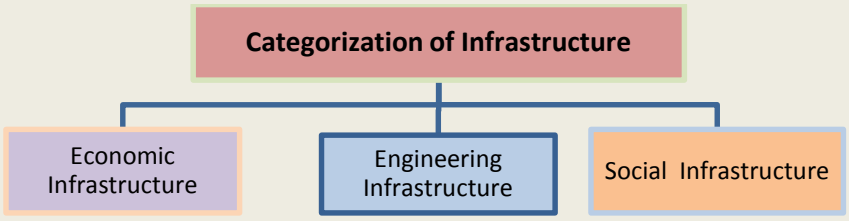



**Table 2 Classification of infrastructure by type**

| | Hard | Soft |
|---|---|---|
| **Economic** | roads<br>motoways<br>bridges<br>ports<br>railways<br>airports<br>telecommunications<br>power | vocational training<br>financial institutions<br>R & D facilitation<br>technology transfer<br>export assitance |
| **Social** | hospitals<br>schools<br>water supply<br>housing<br>sewerage<br>child care<br>prisons<br>aged care homes | social security<br>community services<br>environmental agencies (EPAs) |

Source: Grimsey and Lewis (2004).

## 2.4 Rationale for P3s

Many jurisdictions advance various reasons for implementing P3s. For the most part, the main motivations for adopting P3s revolve around efficiency, value creation, budget constraints and risk management.

*Efficiency* – A major justification for P3s is that it is able to deliver 'increased efficiencies' over services provided by the public sector (Grimsey & Lewis, 2004; Vining, Boardman & Poschmann, 2004; Vining & Boardman 2008; Loxley 7 Loxley, 2010; Flinders, 2005).

Some authors argue that this is partly due to the private sector's approach to and focus on maximizing profits and minimizing costs, due to the competitive spirit imposed on them by market forces. However, what is not generally established or accepted is how to objectively measure efficiencies delivered or to be delivered under P3. There are inconsistencies in methodology from one project to another and from one country to another. A general indicator of efficiency is the *value for money* measure (VfM) compared against a conventional project equivalent, called the public sector comparator (PSC). In most jurisdictions, especially in the UK, it is mandatory for P3s to employ the PSC, which is an estimate of the cost profile under conventional procurement, to assess efficiency and therefore demonstrate VfM. There are suggestions that, this comparative measure of efficiency is prone to manipulation to skew decisions in favour of the P3 model of delivery (Hodge & Greve, 2007). This calls into question the validity of this widely adopted measure as a reliable measure of efficiency and value for taxpayers. Overall, it is believed that P3s can increase the value for money spent for infrastructure services by providing more efficient, lower cost, and reliable services than the conventional model.

*Public sector budgets and deficit levels* – Concern about growing debt levels and the risk posed to governments from unrestricted borrowing led many jurisdictions to impose limits on public borrowing. This is exemplified by the enactment of the public sector borrowing rate (PSBR) in the UK, and balanced budget legislations in several Canadian provinces. Therefore, the attraction of a P3 is that it remains a way to continue with infrastructure-related spending in the economy while keeping governments out of debt (Boardman & Vining, 2007). This rationale for P3 adoption has

been challenged by various writers and groups, especially labour, who consider this an indirect borrowing and argue strongly that the market is not "deceived" when governments borrow under any guise and that the cost of borrowing directly by the government is still lower than the rates at which private corporations can do so either by themselves, or on behalf of governments (Loxley & Loxley, 2010; Boardman & Vining, 2007)

*Risk Transfer advantage* – Risk is at the heart of project pricing under P3s. The conventional understanding is that risk must first be identified and assessed, and then allocated to the party with the best financial, managerial and technical capacities to manage that risk (Grimsey & Lewis, 2004; Ward & Chapman, 1991; Edwards, 1995; Flanagan & Norman, 1993). A proper identification and classification of all risks starts the risk allocation process (See Table 3 for a list of risks typically associated with P3 projects). Merna and Smith (1996), proposed a classification of P3 project risks into two broad categories: global and elemental. Risk factors in the first group are generally those outside the control of the project participants, including political, legal, commercial, and environmental factors. The latter group contains mostly the project-level risks, such as construction, design, operation, finance, and revenue risks. P3 critics have long argued that expected risk allocation to the private sector never materialize as the public sector ultimately assume all risks either directly (e.g., in the event of project failure) or indirectly through other means, e.g. provision of guarantees to the private partner (Loxley & Loxley, 2010, Boardman & Vining, 2007, Hodge & Greve, 2007). A summary of the central arguments for and against P3s is provided in Table 4 in the form of advantages and disadvantages.

According to Dewatripont and Legros (2005), classical agency theory focuses on the trade-off between risk sharing and incentives, by suggesting how to think about the relationship between risk sharing and incentives in optimal contracting. They contend that from a pure risk-sharing

perspective, a risk-neutral government should bear all the risk. This is the solution that maximizes efficiency, but also the one that gives the government the highest payoff. If the consortium can be limited to its competitive (i.e., 'individually rational') payoff, the government will end up paying the risk premium to the consortium for his risk assumption. It is thus in the best interest of the government to insulate the consortium against exogenous risk. There is a practical problem of distinguishing between exogenous and endogenous risk, i.e., what the contractor can influence via his actions and what he cannot. In conclusion, governments claim that P3 projects are generating value for taxpayers based on their own calculations of efficiency and value for money. Some studies show that P3s are able to deliver projects on- budget and on- time, while keeping their debt levels relatively low and limiting the political unpleasantness of imposing new taxes or increasing existing ones. There is also the "supposed" added benefit of transferring risk to the private partner. All these have made P3s very attractive to governments around the world, but highly controversial at the same time. In the end, what is important is that a realistic and credible rationale be established to guide P3 implementation. The absence of a clear rationale could mean lack of focus and possible project failure. A properly articulated rationale will serve as an organizing framework for P3 success.

**Table 3 Types of Risks**

| Risks | Explanation |
|---|---|
| Project Risk | The project will be more costly to develop than originally planned through factors such as: construction delays, environmental or technological difficulties and costing errors. |
| Operating Risk | The project will not operate as planned, with consequent cost over-runs. |
| Market or Appropriations Risk | Revenues to support the project(s) will be less than planned. The nature of the revenue stream plays a role in determining the level of such risk. |
| Technical Risk | Ranges from nominal to material depending on the nature and location of the project and the service levels and technology required. |
| Financing Risk | Financiers assign a risk premium to the project, which can contribute significant additional financing costs. If the risks identified by financiers cannot be mitigated, the transaction may not proceed. Mitigating interest rate or debt service cost risk over the life of the financing for the project is particularly critical. In addition, if the term of initial financing is shorter than the cotract/concession term, refinancing risk will have to be addressed. |
| Regulatory Risk | Changes in regulation may result in additional costs or reduced benefits to the user, which may represent a serious risk for road projects that require environmental impact assessments, or for projects where current or future regulations can affect the stated mandate. |
| Public Policy Risk | The nature of public services provided is not in accordance with the public's wishes. Development of specific public policy objectives will be critical in assisting private sector partners to design partnering options that address the achievement of these objectives. |
| Environmental Risk | The risk of environmental damage from the project, including risks to occupational health and safety. |
| Legal/Political Risk | This arises from the fact that projects typically require some level of legislative support, creating an embedded political risk for the project. |
| Force Majure | Risk associated with, or arising from, what might be be described as "Acts of God." |
| Residual Value Risk | Relates to the market price of the asset at the end of the lease. |

**Source: Adapted from Loxley, 2010, citing Akkawi, 2001.**

**Table 4 Advantages and Disadvantages of P3s**

| Advantages | Disadvantages |
|---|---|
| **Price certainty** can be greater. The government and contractor agree on the annual unitary payment for the services to be provided. This should usually only change as a result of agreed upon circumstances. | The government is tied into a long-term contract (often between 20-35 years). Needs change over time, so the contract may become **unsuitable for changing needs** during the contract life. Public sector flexibility may be impaired. |
| P3s **transfer responsibility for assets to the contractor**. The government is not involved in providing services that may not be part of its core business. | The government's need may change. Management of these **variations may require re-negotiation of contract** terms and prices at an unfavourable cost. |
| P3s expand **the scope for innovation in service delivery**. The contractor has incentives to introduce innovative ways to meet the service delivery needs. | **Drawbacks may arise** if, for example, innovative methods of service quality lead to a decrease in the level or quality of service. |
| Often the **unitary payment will not start until the contractor meets a specified benchmark**, for example, when a building is operational. This gives the contractor an incentive to encourage timely delivery of quality | The **unitary payment will include charges for the contractor's acceptance of risks**, such as for construction and service delivery, which may not materialize. |
| A P3 contract **provides greater incentives to manage risks** over the life of the contract than under conventional procurement. A reduced quality of service would require compensation to be paid to the government. | The contractor **may not manage transferred risks well**, or government may believe thay have transferred core business risks that actually remain with them. |
| A long-term P3 contract **encourages the contractor and the government to consider costs over the entire life of the contract**, rather than considering the construction and operational periods separately. This can lead to efficiencies through synergies between design and construction and the project's later operation and maintenance. The contractor bears the risk of getting the design and the construction wrong. | The **whole-life costs will be paid through the unitary payment**, which will be based on the contractor arranging financing at commercial rates that tend to be higher than public sector borrowing rates. |

**Source: Public-Private Partnerships - Understanding the Challenge, 2009.**

## 2.5 Trends in P3 Adoption and Performance

This section reviews recent global P3 trends, performances and some of the challenges confronting policy makers in managing a successful P3 project. This analysis will conclude with a review of the specific policy issues in the transportation area.

**Trend of P3 adoption and performance -** P3s are enjoying what Hodge and Greve (2007) calls 'resurgence in popularity', post the privatization era. In addition, there is evidence suggesting a growing number of P3 deals in many countries, increasing adoption in countries with previously low levels of P3 activity, and a growing interest in the project model across several countries (Grimsey & Lewis, 2004). However, P3s are currently the subject of intense policy debate in Canada and elsewhere. Europe (especially the UK) has led the way in the implementation of P3s projects globally. This is based on the total value of deals concluded so far, called a 'financial close'. Between 1985 and 2004, a total of 2,096 projects valued at USD 887 billion were closed (US DOT [1], 2005).

Several countries now have some experience with P3s, and this includes the UK, Germany, Hungary, Italy, Japan, Korea, Spain, the US and Canada (Gómez-Ibáñez & Meyer, 1993). Since the mid-1990s, the private sector has invested funds totaling about €220 billion into P3s around the world, mainly in the UK, Australia and Canada. Between 1994 and 2005, P3 deals valued at about €100 billion closed across Europe. Of these deals, two thirds closed in the UK. And just between 2004 and 2005, about 206 P3 deals worth approximately €42 billion were closed globally, of which 152 projects valued at €21 billion were in Europe. Evidence suggests P3 activity is set to increase across Europe in the future (Davies & Eustace, 2005).

[1] United States Department of Transportation

There are indications that the P3 market in the UK is starting to show early signs of maturity, with approximately 600 PFI facilities in operation, and over 450 deals with a value of more than €50 billion. In spite of this activity, PFIs represent only about 6%, of a total of €72 billion of annual public sector investment in public services (HM Treasury, 2003 & 2004). The Australian P3 market is also considered "sophisticated and mature." (Regan, Smith & Love, 2011, p. 363).

In Canada and elsewhere, there appears to be a favourable shift in public opinion, and confidence is building in P3s, suggesting that the adoption of P3s as a public policy may now be on a firm footing and the challenge now is to provide sufficient evidence to prove superior performance. Another school seems to suggest that, the policy needs greater public debate and scrutiny to determine its validity as a viable tool for public infrastructure procurement. On a global and regional basis, the number of deals closed and the number of countries adopting a P3 policy for public assets continues to trend upwards (Grimsey & Lewis, 2004; Loxley & Loxley, 2010; Hodge & Greve, 2007).

The performance of P3s around the world is contested, and remains the subject of ongoing debate. This debate seems to run along the academic and practitioner divide. Whereas researchers are suggesting more policy reviews and more debate, and evidenced-based research to prove superior performance, practitioners suggest that we are now past that stage, insisting that, what is needed is solid evidence that P3s are delivering on their promises (Loxley & Loxley, 2010; Hodge & Greve, 2007; Kwak et al., 2009).

But an important question remains: what are P3s expected to deliver? And again there is no consensus on what the deliverables are. Projects in the UK indicate an average of 17% cost

savings based on an analysis of 29 business cases, done by Arthur Andersen and Enterprise LSE (2000); and a 10-20 percent figure based on seven cases from the National Audit Office (2000), and Shephard (2000) suggests cost savings in the range of 10-30 percent. Typical cost savings arise from efficiencies created from *bundling* the project construction and maintenance. Further, efficiencies arise from *innovation* in the design and construction, as well as *economies of scale* attributable to procurement. (Yescombe, 2007; Grimsey & Lewis, 2004). What is interesting is that these studies assume a "substantial risk transfer" to the private sector. Critics argue that these calculations are based on a generous assumption of risk transfer that never materialized (Loxley & Loxley, 2010). Further claims that even the sample base may be too narrow to be extrapolated into the general project population based on the existing UK P3 project base. Hodge and Greve (2007) describe the evidence from Australasia as "patchy". They cite several reports that suggest the practical difficulty in making estimates around 'VFM, case-mix funding model, and ineligibility of additional top-up funding'. The Canadian performance record is rather limited at the moment. The Conference Board of Canada report (CBC 2010), indicates that, "19 of the 55 second-wave P3 projects have reached substantial completion, and interim results suggests a strong performance" (p. 8). It goes to say that most of the 19 projects were delivered either early or on schedule, and none of the 55 projects has exceeded its public sector budget as yet.

What has been largely missing from this debate is the absence of a consideration of the institutional context in P3 project performance. Essentially, only few studies to date consider the impact of the institutional environment on the performance of P3 projects (Matos-Castano, Dewulf, & Mahalingam, 2011; Scott, Levitt & Orr, 2011).

In conclusion, while it appears that the adoption of P3s may be trending up, and its performance remains contested, it is important that citizens as key stakeholders are aware of and

understand the implications, so as to protect the public interest and place this debate in a proper intellectual and policy context. Importantly, consideration must be given to the institutional context surrounding P3s. Governments owe their citizens a duty to be sufficiently transparent and proactively consultative while making periodic disclosures that are focused on carrying the citizens along in this very important policy choice that has long term implications.

**P3s in Alberta and Canada**

Since the early 1990s, Canadian governments have embraced the P3 model as a way to upgrade existing, and build new infrastructure to serve a growing population and meet the *infrastructure deficit*. The Conference Board of Canada report (CBC 2010), indicates that while P3s currently account for between 10-20 percent of total infrastructure spending in Canada, Canadian jurisdictions are becoming increasingly reliant on this model to meet long standing infrastructure challenges.

Meanwhile, the question that has been debated for many years in Canada is the notion of infrastructure deficit. In 2004, a TD Bank Economics report suggested that a gap of about C$50-125 billion in infrastructure deficit not only exists in Canada, but is growing and that closing this gap would require governments to adopt a smarter strategy and more efficient ways of doing business (Burleton & Beata, 2004; Burleton, 2006). However, while many challenge the notion of *infrastructure deficit* in Canada (Boardman and Vining, 2007; Gillen, 2001; Swimmer, 2001), there is agreement that Canada needs continuing investment to maintain or replace ageing infrastructure. One of the earliest large scale transportation P3s in Canada was the 407 ETR in Toronto. Designed to ease traffic in the greater Toronto area (GTA), this Build-Operate-Transfer (BOT) project was completed in 1998, at a fixed price of C$929.8 million, and sold in 1999 to a private consortium for C$3.1 billion. Given the experience of this mega facility and the associated

negotiations and re-negotiations, it became a learning experience for the management of P3 transportation infrastructure in Canada.

The first known project involving a P3 in Alberta was the Swan Hills Treatment Center (SHTC). Originally conceived as a P3 project in the mid-1980s, it did go through a series of changes that ultimately returned it to the government of Alberta. The experience of SHTC in Alberta led to some of the improvements made as part of the processes around the adoption of P3s for transportation infrastructure in Alberta.

## 2.6 General P3 Implementation Approach

This section reviews the general model of P3 implementation based on extant literature. It suggests that this model while successful in some respects has been narrow in its reach. It was designed for government and industry, while alienating other stakeholders (such as labour, users) and their interests. Hitherto, the P3 research arena has been dominated by practitioners who are focused on demonstrating the efficiency and other benefits of P3 as a public policy tool, and thereby justify its adoption or continuance by governments. Meanwhile, it is important to emphasize that P3s are implemented differently in different regions based on their unique circumstances. This is the *context-specificity* of P3s (Jooste, et al., 2011). This is because P3s as currently practiced represent a continuum as already discussed. Adopters are able to pick and choose a combination that best meets their needs. However, there are a few key components that most P3s tend to have. These are governmental involvement, a private partner (concessionaire), risk management component and a comparator that shows value creation. Furthermore, practitioners and/or adopters tend to identify these elements as critical success factors (CSFs) as part of the effort to appraise P3 projects. These attributes have led researchers to focus attention

on four main areas of P3 analysis. These are: 1) the roles and responsibilities of government; 2) the concession selection; 3) P3 risks; 4) PSC (Kwak et al., 2009).

**But what are CSFs in the P3 arena?** Rockart (1982) defined critical success factors as, "the limited number of areas, the result of which, if they are satisfactory, will ensure successful competitive performance for the organization. They are the few key areas where 'things must go right' for the business to flourish" (p. 5). The identification of such factors has been viewed as the first important step toward the development of a workable and efficient P3 procurement protocol (Zhang, 2005). The identification of these CSFs brings objective criteria into the evaluation of P3 projects, and especially helps private sector supporters to assess their performance and contribution. A brief review of these CSFs is presented next.

**Government Roles and Responsibilities –** Government is key to the design and implementation of a P3 policy and its overall success. The five main roles of governments include: 1) to create a favourable investment environment, 2) to establish adequate legal or regulatory frameworks, 3) to establish a co-ordinating and supportive authority, 4) to select a suitable concessionaire, and 5) to be actively involved in project life-cycle phases. Governments face several challenges in implementing a successful P3 policy. There are issues with potential voter backlash, the communication of potential benefits to citizens, in the face of no or limited reliable data for decision making. There is the risk of financial projections that may never materialize. But most importantly, governments would have to pick the pieces in the event that the project fails. That said, governments have in many cases been rewarded with a successful P3 program. These include: early project completion, projects that are on or under budget, and the availability of innovative assets. Murphy (2008) suggests that "to make an accurate comparison, it is not the

cost, but the net benefit, taking into account all factors, that is the most relevant benchmark" (p.103).

**Concessionaire Selection -** A concessionaire is a consortium formed specifically for a P3 project. The principal participant in a P3 project, has responsibilities consisting of the financing, design, construction, operation, and maintenance of the infrastructure facilities and the transfer of such facilities to the client in full operational condition at the end of the concession period. The success of a P3 project appears to depend to a large measure on the selection of the most suitable private concessionaire, which requires a well-structured tendering process, an appropriate concessionaire evaluation method, and a set of evaluation criteria. Zhang (2005) while agreeing that concessionaire selection is crucial, emphasizes that a reliable concessionaire consortium with strong technical strength is a major success consideration. Technical and financial strength of the concessionaire are important success factors in competitive tendering for a P3 project (Tiong, 1996).

**P3 Risks -** A major characteristic of P3s is its high level of risks, due mainly to the long concession period, (typically 20-30 years) and the range of participants involved in the partnership. Research on risks associated with P3 projects and risk allocation strategies is on-going. It is important to add that risk factors identified in various literatures are based on studies focusing on a particular type of P3 project (e.g., power plants or transportation) and/or in a particular area (e.g., the UK or China). Therefore, risk factors that are project and/or region specific are excluded and different P3 projects may have different risk profiles. In addition, the importance of a particular risk factor may also vary from one country to another. For example, political risks are thought to be more crucial in developing than in developed markets. Although risk allocation strategies may vary from project to project and from country to country; in general, risks that are related to the environment

within which the project is implemented should be retained by the government, while the risks that are directly related to the project are mostly allocated to the private sector (Arndt & Maguire, 1999; Abednego & Ogunlana, 2006). Some risks that are beyond the control of both the public and private sectors should be shared by both parties. The implementation of these principles in reality, however, is very difficult. And this leads to the idea of who is better placed to bear which risks.

**Appropriate risk allocation** – Effective risk management requires that all risks be identified and allocated. Various risks can be effectively managed by allocating them to parties best able to manage them through appropriate contractual arrangements, including a concession agreement between the government and the concessionaire, and shareholder agreement, design and build contract, loan agreement, insurance agreement, supply agreement, operation agreement, and takeoff agreement between the concessionaire and relevant contracting parties (Grimsey & Lewis, 2004; Delmon, 2000).

**Public sector comparator (PSC)** – The idea of a public sector comparator has been widely used since the early 1990s. But its true meaning and decision role is not clear. The idea of value for money (VfM) has been used extensively especially in the UK. (Ball, Heafey & King, 2001). Grimsey and Lewis (2004) seems to suggest that the idea of a PSC and VfM are related in some way by insisting that they are part of making the business case for P3s. Citing Partnership Victoria (2003) technical notes, they argue that the PSC is a 'hypothetical-risk adjusted costing' model. However, the meaning may also include a way of assessing what the cost of the project may be if it had been procured under the conventional model of delivery. This appears to be the dominant usage in Canada and the US (GOA, *Budget 2009*). In recent literature, this has become a dominant and practical way of undertaking an *ex-ante* evaluation to assess project VfM. The next section will further review the relationship between PSC and VfM.

To conclude, the above review shows the initial narrow focus of earlier P3 projects that focused on getting the job done, as efficiently as possible. This model was designed to show that P3s could deliver as promised. Later sections will argue that this model fails to consider the overall interests of all key stakeholders. For instance, it ignores the participation of citizens and fails to engage stakeholders transparently, as users and taxpayers.

***A critical evaluation –*** Understanding the components of P3s ensures an appreciation of how P3s could potentially be structured for implementation and as such anticipate its emergence. Given the multiplicity of P3s, this concise approach also provides crucial insights to how existing P3s work, while serving as a framework for making policy and management recommendations for desired organizational outcomes by use of the CSFs – which is one of the reasons for its popularity. However, it is also open to criticism. First, as previously stated, it has been very narrow in its focus. It was designed for government and industry, and does not consider the interests of other stakeholders. Second, the emphasis on government as a central actor in formulating and driving implementation strategies, top-down, reduces middle and operational management tasks to efficient implementation. While this may be true in some cases, the Alberta experience shows that in a democratic setting, a hands-on political figure who has managerial skills is equally important in driving the changes needed for successful implementation at the organizational level. Third, this model ignores the impact of the institutional context which is equally important in shaping the performance outcomes in a certain location. Jooste et al. (2011) has shown that P3 implementation approach is context-specific, differing from one location to another. This calls for sensitivity to the peculiarities of the local environment seeking to implement a P3 model. Finally, the model assumes a sequential logic which implies that actions always follow decisions, however, it ignores

the fact that action can be realized without explicit decision or policy intervention and can be rationalized *ex post* via sensemaking (Wieck, 2001). The next section will discuss how P3s could be evaluated and the challenges associated with that.

## 2.7 How should P3s be evaluated?

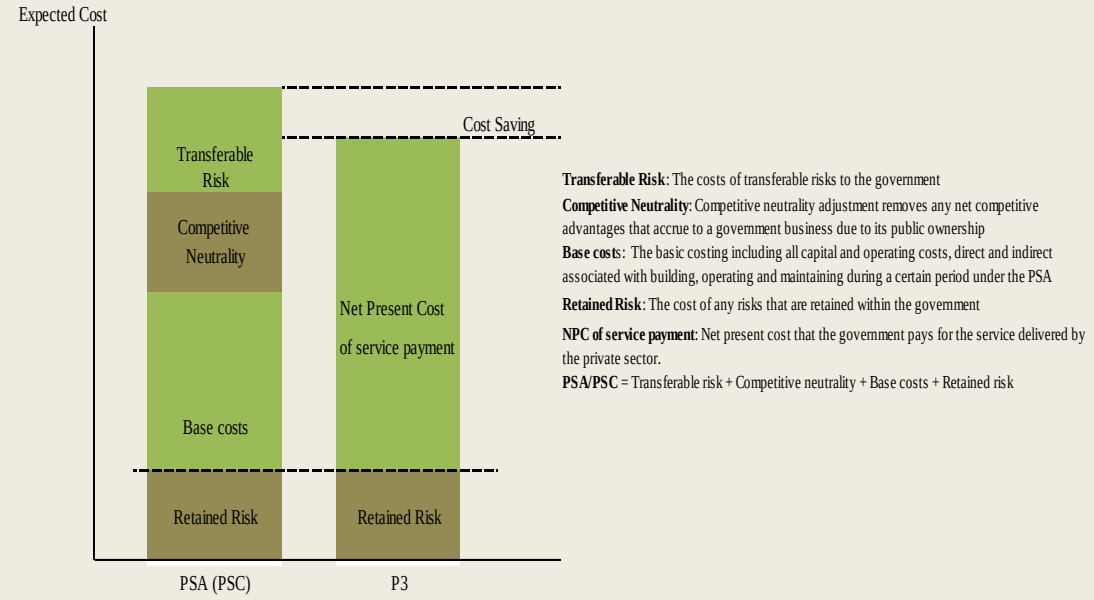
Drawing on the preceding discussion on the central pillars most P3s have in common, what does that mean for P3 project success? Would this be a uniform basis to evaluate P3s, or would it also consider the project's institutional context? How and when does a P3 project be considered successful or not? Evaluating a P3 project has always presented a challenge for evaluators. There are several reasons why this is the case. First, there is the problem of what is the *evaluand* (Hodge, 2010). The multiple definitions and characteristics of P3s make a clear identification of what needs to be evaluated difficult. Furthermore, is the issue of the *independence* of the evaluators. It is not ideal that sometimes the public agency responsible for promoting P3s is the same one responsible for making decisions about the winning bidder, deciding whether a project is to be executed as a conventional or P3 project. Should an evaluation of P3s be from the perspective of the government, industry or citizens given its institutional context? Whose interests should be overriding in the event of this evaluation. What factors should drive the evaluation process? Hodge and Greve (2007), identify a number of issues to consider when evaluating P3s:

> *a lack of independent evaluators; poor evaluation rigor; poor definition of the "counterfactual" against which the P3 is judged; evaluations by auditors general who in most jurisdictions, cannot question government policy; the use of inaccurate discount rates for time value-of-money estimates of net benefit; inaccurate estimates of risk transfers from the public to the private sector; and predicted benefits being estimated at an early stage of a long-term contract, so that optimism and political sensitivity are both high. As well as the debatable value for money, critics have also charged that transaction costs have been high and competition weak despite being more reliable in terms of on-time delivery for major projects (p. 9).*

Major parts of the literature on P3s adopts two key measures in assessing P3 success. One is the 'on-time, on-budget' criterion, and another is the 'value-for-money' criterion. **On-time and On-budget:** It has become a widely used performance measure. Now, it appears that several key stakeholders are very receptive of the use of this evaluation measure for P3s. **Value for Money (VfM):** VfM is demonstrated when the total present value cost of private sector supply is less than the net present value of the base cost of the asset or service, adjusted for: the cost of risks to be retained by the government; cost adjustments for transferable risks; and competitive neutrality effects. The VfM appears to be the most widely used government measure for assessing the viability of a P3 *ex ante*. It is a measure that is commonly used in the UK, Australia, Canada, Japan, the Netherlands and South Africa and many parts of the world. This method even though in wide use has been criticized for its inaccuracy, lack of a valid discount rate, and its subjectivity in some of the assumptions underlying the calculation (Grimsey and Lewis, 2004).

Under the VfM measure, the rule is that the total costs of a project delivered as a P3 must be lower than that implemented by the conventional method, typically designated as a public sector alternative or comparator (PSA/C). The PSA is a hypothetical project estimate that consists of a transferable risk, competitive neutrality, raw costs, and retained risk elements. It estimates the hypothetical risk-adjusted cost if a project were financed, owned and implemented by the public sector. With the PSA as a benchmark, the government can assess the 'potential' *costs savings* (Figure 6) arising from deploying the project as a P3 after factoring in the net present cost of service payments and retained risks. Note that it is possible to improve the favourability and ultimate viability of the P3 option by adjusting the nature and amount of risks transferred, thus, affecting the combined net present cost of service payments and retained risks.

**Figure 6 Composition of Public Sector Alternative/Comparator**




**Source: Grimsey and Lewis, 2004**

**Conclusion** – This chapter reviewed the various P3 definitions, and adopted one that meets the purposes of this research. Furthermore, it outlined the various models of P3s now in use, detailing the rationales for adopting P3s and the features of both infrastructure delivery models. P3 performance trends, and the current P3 delivery model were discussed and critiqued. Finally, the chapter concluded with a review of the challenges facing P3 evaluation. The next chapter discusses institutional theory, the organizing framework for this research.

# CHAPTER III: INSTITUTIONAL THEORY

*This chapter justifies the choice of, and undertakes a detailed discussion of institutional theory. Importantly, it reviews the various institutional mechanisms relevant to the study of public infrastructure asset management, including, isomorphism, institutional change, the institutional environment/context with emphasis on organizational fields. It also outlines other important aspects such as institutional logics. Furthermore, it provides an institutional theory inspired review of forms of partnership and collaboration, given that P3s are partnerships that involve collaboration to succeed and thrive. Finally, this chapter concludes by assembling the current literature-inspired building blocks of the institutional environment – Legitimacy, Capacity and Trust.*

## 3.1 Choice of Theoretical Framework

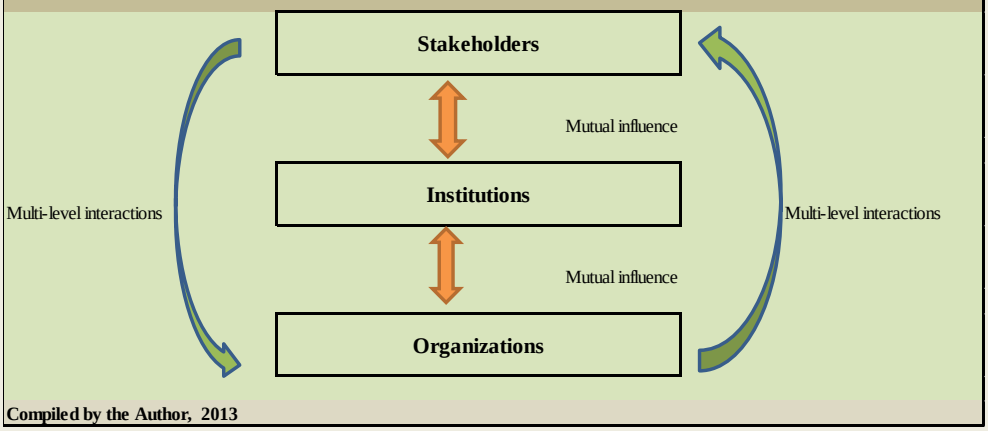
The importance of an organizing theoretical framework cannot be over emphasized in a research study. Identifying a theory that would support the research question is thus crucial. To accomplish this task, it was necessary to outline relevant selection or decision criteria in order to do so objectively. Given the nature of the research question that focuses on the impact of the institutional environment on P3 project developments in the transportation sector, the following criteria were considered in selecting the choice of theory. One, a theory must ensure conceptualization and operationalization of the external environment. Two, a theory must ensure consideration of or account for key actors or stakeholders. Three, an established theory that accounts for the nature of the entity under consideration, the public sector. Finally, a consideration of an analytical, social, cultural and political orientation. In the end, it was considered that institutional theory best meets these criteria.

***External environment***. Proponents of institutional theory (Meyer & Rowan, 1977; Meyer et al., 1981) distinguish between two different types of environments: (1) technical/task environment, and (2) institutional environment. The former is characterized by organizational rewards for an effective and efficient co-ordination and control of work processes, the latter by rewards for conformity to the existing institutionalized rules, norms and culture resulting in the legitimacy of the organization. Organizations were supposed to be situated at a specific point on the continuum between purely institutional and purely technical, with highly institutionalized organizations in the health or education sector on the one extreme and highly technical production-based organizations with strong output controls on the other end (Meyer & Rowan, 1977, p. 354).

Further theoretical developments replaced this dichotomous view with a two-dimensional perspective that perceives organizations as a combination of technical and institutional environment, high-high, high-low and low-low (Scott, 1987a). While the usefulness of the distinction for analytical purposes has been acknowledged, organizational scholars have pointed to the practical difficulties in separating the two (Scott, 1992, p. 160). Once they are established as state-of-the-art practices, institutionalized structural elements are adopted or appropriated by organizations for their external legitimacy (Tolbert & Zucker, 1983; Zucker, 1987). Meanwhile, there are three main aspects that can help to conceptualize the influence of institutional environments on the organization. These are *regulative, normative, and cultural-cognitive* structures or pillars that orient the actions of organizations and are meant to result in stability (Scott, 2008). These structures represent the mechanisms through which environments affect an organization. Regulatory structures are mainly laws, rules and regulations set by governments and regulatory (national and international) bodies that exercise influence on organizations. Normative structures are generally accepted norms and values that legitimize certain behaviors, while

prohibiting or constraining others. And, finally, cultural-cognitive structures are "the shared conceptions that constitute the nature of social reality and the frames through which meaning is made" (Scott, 2008, p 57). These structures represent universal convictions and beliefs that guide behaviours. Figure 7 provides a framework for analysis of the interactions between external actors and the focal organization and for the mechanisms of the mutual influences between the environment and the organization.

**Figure 7: Institutions as interactive and regulatory structures**




**Compiled by the Author, 2013**

***Consideration of external actors***. Another essential attribute of institutional theory is the embeddedness of a population and its members in the institutional environment. It focuses on the formal relations between the members of a population and key institutional actors, for example, government agencies or community organizations (Baum & Oliver, 1996). For Hoffman (1999), the *organizational field* forms through those organizations that contribute significantly to the forming of institutions, e.g., exchange partners, sources of funding, regulatory groups, professional associations, and the general public. A core aspect of institutional theory is that organizations must not be analyzed apart from their environments or external stakeholders, and that the interactions between the different constituents of an organizational field are most important. Commonly accepted rules, standards, and norms are considered to be the product of interaction between

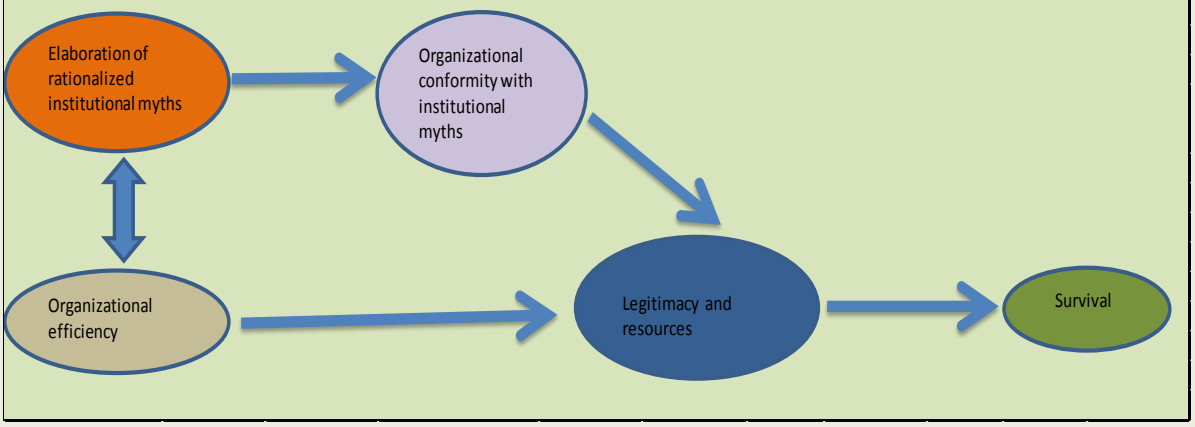
humans and their organizations (Scott, 1987b). The legitimacy of those rules and practices is further dependent on their continual reproduction in social action (Lawrence, 1999). However, as institutions evolved, there was a shift in focus on the different elements of the environment, away from the traditional actors of the task environment – markets, customers and competitors – and towards other types of actors – such as the state and professional associations (Meyer & Rowan, 1977; Zucker, 1987; Scott, 1987b; Greenwood, Hinings & Suddaby, 2002).

***Analytical vs. social, cultural and political perspective.*** Institutional organization theory offers a sociological perspective for studying organizations. While economic theory has traditionally focused on efficiency considerations – primarily based on a technological conception of a firm as a production function – sociology has tended to emphasize social, political, and cultural factors (Fligstein & Freeland, 1995). The efficiency criterion, [defined as the best possible adaptation to the requirements of the prevailing task environment and the exploitation of existing technologies], was replaced by a legitimacy criterion, [defined as the best possible adaptation to the prevailing institutional environment and the conformity to existing rules, norms and standards]. Consequently, organizations' formal structures reflect the "*myths of their institutional environments instead of the demands of their work activities*" (Meyer & Rowan, 1977, p. 341); suggesting that efficient work organization steps back in favor of effective, legitimate organization.

An organization's legitimacy further depends on the consistency with regard to its existing myths or norms of rationality, which are based on a shared understanding rather than an objective evaluation of its rational character (Scott, 1987a). Increased conformity to the institutional environment simultaneously increases legitimacy which, in turn, increases access to critical resources and therefore, survival chances (Zucker, 1987). Institutional theorists largely agree on

the survival advantage bestowed on legitimate organizations through social support and (approval of) or [approbation from] external constituents (Meyer and Rowan, 1977; DiMaggio & Powell, 1983; Meyer & Scott, 1983; DiMaggio, 1988). This external legitimization elevates the organization's status in the community of stakeholders and deflects questions about its actual competence in delivering specific products or services (Oliver, 1991). Although legitimacy is at the core of arguments for access to resources and survival, it is not completely removed or decoupled from efficiency considerations. "*Institutional arguments need not be formulated in opposition to rational or efficiency arguments, but are better seen as complementing and contextualizing them*" (Scott, 1987b, p. 509). This shows that institutional argumentation does not aim at replacing economic argumentation; rather it calls for a balanced consideration of the analytical, social, cultural and political elements. Figure 8 visualizes the logic of institutional thinking.

**Figure 8 Organizational survival**




***Source: Meyer and Rowan, 1977***

On the path to choosing institutional theory for this study, other theories such as Agency theory, Transactions cost theory, New Institutional Economics, and the Evolutionary perspective were considered. In the end, only institutional theory best matched the criteria outlined above.

Furthermore, these other theories lacked the ability to capture the non-economic, subtle cultural perspectives or invisible forces that sometimes shape outcomes in the public sector, especially in the way change is implemented and/or perceived.

The selection of neo-institutional theory as a theoretical lens for the dissertation rests on several arguments. First, the diversity of the theory bears significant potential to generate fresh insights into issues around change management in the public sector (Greenwood, Hinings & Suddaby, 2002). Second, it better conceptualizes the environment, its actors, its creation, and its internal functioning (Scott, 2008). Third, it allows for an explicit integration of external, regulatory actors who receive particular attention due to their "potentially profound influence in shaping an organization's legitimacy and performance" (Oliver, 1997a:99). Fourth, it combines a rational and analytical perspective with a social and political one (Scott, 1987b), which best reflects our understanding of reality.

In conclusion, it appears that the central tenets of institutional theory, especially the NIS (New Institutional Sociology), best serves the interests of this research based on the criteria outlined above. In addition, and to further strengthen its arguments, this study will also draw on elements of S*tructuration theory* where and when necessary to provide further analytical insights in resolving the central research question or in meeting the research objectives.

## 3.2 Institutional theory

Governments, her agencies and entities operate in an institutional environment which influences their actions. It is in this institutional environment that P3 programs are conceived and implemented. In this environment, the main goal of organizations is to survive not only economically, but also to establish acceptability (legitimacy) within the world they operate. This

is the central tenet of institutional theory. Institutional theory (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Scott, 2008) analyzes how structures including procedures, rules, schemas, and routines, become established as guiding principles for social behavior through processes. Scott (2008) defines institutions as the *symbolic frameworks that create shared meanings and controls that provide order to social action.* Institutions determine how different elements are developed, diffused, adopted, and adapted over space and time (Scott, 2008).

An important element of institutional theory is *conformity* or *rational myths* (Meyer & Rowan, 1977; Zucker, 1987).These *rational myths* determine what is coherent to an organization, incorporating rules, procedures, and norms through which the organization pursues its mission and goals. These institutional environments are created by agents like national or state governments that are sufficiently powerful to impose structural practices such as regulations or formal procedures because of the authority they possess (Scott, 1987b). The existing norms, regulations, and procedures are the means through which governments attempt to pursue their goals. These elements are the result of three types of institutional systems: regulative, normative and cultural-cognitive (Scott, 2008; Henisz et al., 2012). Regulative systems include established understandings of public policy, procedures, laws and formal mechanisms. Normative systems prescribe values and norms which determine what is acceptable in a given environment. Cultural-cognitive elements determine the extent to which broader belief systems and cultural frames are imposed or adopted by organizations. Therefore, institutional theory embraces both the formal and informal elements prevalent at a given environment. While formal institutions are conscious guiding principles which prescribe or proscribe parties' behaviour (Eggertsson, 1996), it is also important to include informal rules or trust patterns as part of the institutional framework since behavioural patterns become institutionalized and informal rules become seen as given (Winch, 2010), or, as

Ring and Van de Ven (1994) state, informal commitments become institutionalized over time due to the repetitive execution of acts by individuals involved. Moreover, organizations make choices not only based on the coercive power of punishment exerted by laws and rules, or some sort of social obligation. They do so because organizations are embedded in certain institutions and follow routines that are taken-for-granted as *the way we do these things* (Scott, 2008, p. 57).

More specifically, there is a reciprocal relationship between policy actions and the way institutions are shaped. This is grounded in Giddens' *structuration theory which recognizes that actors affect structure through their practices, and that structure affects the practices of actors* (Giddens, 1984). The institutional environment shapes political actions and the rules of the political game (Spiller et al., 2003) and vice versa. There is a link between how political institutions shape political incentives, how political behaviour influences policy making processes and their capabilities. In the case of P3s, governments, as political actors, are responsible to establish programs and develop the necessary capacity to ensure project success. The way a government shapes the environment for P3 development will depend on the nature of the overall institutional environment where projects take place. Given this institutional context, policy interventions will have an impact on the institutional environment to foster P3 development and determine the overall nature of the *enabling environment* (Jooste et al., 2011).

## 3.3 A brief History of Institutional Theory

Institutional thinking has been around for well over a century. Its historical roots could be traced to amongst others Karl Marx, Emile Durkheim, Max Weber, Alfred Schutz and Talcott Parsons. They all helped shape early understandings about institutions in a sociological context, from normative elements like folkways, mores, rules and norms to cognitive elements such as, shared knowledge and belief systems (Scott, 2008). Berger and Luckmann (1967) provided a link

from this earlier work and later work of organizational scholars (Scott, 2008) with their conceptual framework for analyzing the social construction of everyday life habits, routines and institutionalization. However, most of the early work on institutions between 1880 and the mid-twentieth century paid little attention to organizations (Scott, 2008); including Berger and Luckmann's work (1967).

Institutional arguments began to be connected with organizational studies in the 1950s by Robert K. Merton and his students, particularly Philip Selznick. Selznick draws on Merton's work that some consequences of actions are planned and others are unanticipated, as social action is not context-free, but is constrained and shaped by the context. Particularly significant are the constraints on action that arise from commitments enforced by institutionalization (Scott 2008, pp. 20-23; Selznick 1949; 1957). Talcott Parson argued that wider normative structures in the society legitimate organizations, and Herbert Simon put forward that value assumptions, cognitive frames and rules impact on individuals' behavior (Scott, 2008, pp. 23-26). Silverman (1971) attacked Parson's and Selznick's structural-functional frameworks and focused on meaning systems, arguing that meanings do not operate only in minds but also as objective facts residing in social institutions – the environment is the "source of meanings for the members of organizations" (Scott, 2008, p. 42). Two seminal papers were released in 1977 that introduced the modern organizational institutionalism (Greenwood et al., 2008) and appeared to be very influential (Scott, 2008). Papers by Meyer and Rowan (1977) and Zucker (1987) built on Berger and Luckmann's work on institutions and institutionalization. Meyer and Rowan (1977) embraced views of institutions as complexes of cultural roles from a macro perspective, while Zucker studied the micro foundations of institutions with the power of cognitive belief guiding the behavior of individuals (Scott, 2008,

pp. 42-44). The two seminal papers were followed by other influential articles such as those by DiMaggio and Powell (1983) and Meyer & Scott (1983) focusing on the macro (environmental) perspective, where the former discussed isomorphism (structural similarity), and the latter took the stance that all organizations are shaped by both technical and institutional forces. The literature in this condensed historical presentation has made a substantial contribution to our conception of modern organizational institutionalism.

This introduction has so far deliberately avoided using the term "new institutional theory" because it is often understood as opposite of old institutional theory (DiMaggio & Powell, 1991) and as implicit replacement of the old with the new. Greenwood and Hinings (1996, p. 1048) argue that old and new institutional theory have to be combined in order to understand radical changes in organizations (see also Hirsch & Lounsbury, 1997; Selznick, 1996), and P3 implementations are about radical or major changes (e.g., Grimsey & Lewis, 2004; Yescombe, 2007; Hodge & Greve, 2007; 2010). P3s represent *change* in the way capital projects are delivered, which is a fundamental element of old institutional theory, but can be extended to persistence (stability), environment (field, sector or society) and unreflective activity, which are the core of new institutional theory (DiMaggio & Powell, 1991), all relevant to P3s as well. This underlines the relevance of combining elements of old and new institutional theory. This combined view is referred to as *institutional theory* in this thesis. The following sections will describe the essential institutional theory concepts considered relevant to this research. It follows the stream of institutional theory based on sociology, variously known as *new (neo) institutionalism, new institutional sociology* (NIS) or *organizational institutionalism.* This discussion begins with an understanding of some of the central constructs in institutional theory. These constructs are discussed because they capture essential elements that characterize Alberta's institutional

circumstances as it made the change from a conventional delivery to a P3 model. The first is isomorphism and change.

### 3.4 Institutional Mechanisms: Isomorphism and Change

***Isomorphism:*** Organizational isomorphism is defined as *the resemblance of a focal organization to other organizations in its environment* (DiMaggio and Powell, 1983). In their original paper, DiMaggio and Powell considered isomorphism as both a state and a process. In this dissertation, isomorphism is considered as a *state*. Furthermore, this study leans in the direction of isomorphism as "*the similarity among a set of organizations at any given point in time* (Deephouse, 1996).

Organizational theorists have been preoccupied as to why organizations tend to look alike and to copy each other. The processes by which organizations come to resemble each other have been studied extensively as part of neo-institutional theory research. DiMaggio and Powell (1983) suggested a way to identify this process as *institutional isomorphism*; organizations face similar institutional pressures that force them to conform to specific organizational forms, in order to obtain legitimacy, obtain critical resources and ultimately succeed. Specifically, three mechanisms of institutional isomorphic change were identified. These are: *coercive processes* by which organizations face regulative or political pressures, *mimetic processes* by which organizations experience uncertainty and unclear goals facilitating mimetic behavior and finally, *normative processes* by which organizations are influenced normatively by professional expectations. While it is instructive that Alberta was unique in some ways as it implemented its P3, there were certain areas of convergence with other jurisdictions in Canada. One area is the inclusion of external private sector funding in its P3 arrangement. The reason given for this is that it ensures that the private party has sufficient interest in the arrangement. Second, is the establishment of a P3 agency

as the co-ordinating office for P3 implementation. Section 6.9 briefly undertakes a comparison of P3 structures across Canada.

***Change:*** While early institutional theorists were pre-occupied with isomorphism, they have recently been engaged on the subject of change. How does change come about? Scott (2008) discusses three underlying mechanisms for the process of institutionalization of social systems based on increasing returns, increasing commitments and increasing objectification. The latter will be taken up in this context as an expanded version of Berger and Luckmann's (1967) concept of *objectification*. Some researchers have developed models of change that more explicitly include the creation of meaning as a stage in the institutionalization of a new organizational form. These models accentuate that the cognitive beliefs of actors influence institutionalization. Tolbert and Zucker (1996) propose a multistage model of institutional processes consisting of innovation, habitualization, objectification and sedimentation. The institutional processes happen both intra- and inter-organizationally. Tolbert and Zucker (1996) suggest that institutionalization begins with 'habitualization', which is the generation of innovations and new structural arrangements in response to a specific organizational problem. 'Objectification' follows and involves the emergence of a social consensus concerning the value of a structure and the increased adoption of this model by organizations. This stage also involves the actors' creation of meaning or 'theorization'. Theorization is a means to justify new ideas and innovations; as Strang and Meyer write: "By theorization is meant both, the development and specification of abstract categories and the formulation of patterned relationships such as chains of cause and effect" (1993, p. 492). However, Tolbert and Zucker constrain theorization to a particular stage in institutionalization instead of acknowledging that it is an on-going social process of linking problems and solutions.

They argue that theorization is conditioning the process of diffusion through a linguistic simplification and generalization of an organizational form presented as a necessary solution to a problem. The last stage is "sedimentation", which is defined by the complete spread of a particular organizational form in a field and a decline in organizational variance.

Greenwood, Suddaby and Hidings (2002) elaborate upon this model by accentuating that theorization is a process in which new ideas become justified and legitimated as part of the institutionalization process. Theorization in this model involves actor-specification of general organizational failings, the justification of an abstract possible new solution, and the construction of the moral or pragmatic legitimacy of this solution. Still, theorization only occurs at a certain stage in the institutionalization process.

However, innovations are not only created but also changed and dissolved, for instance when a new project model (i.e. P3s) is complementing an existing (conventional) model. This is addressed by Greenwood et al.'s (2002) multistage model for institutional change. Change can be theorized as consisting of several institutional processes (stages) starting with precipitating jolts initiating the change followed by deinstitutionalization, pre-institutionalization, theorization, diffusion and (re)institutionalization. Most of the phases mirror the work by Tolbert and Zucker, but the deinstitutionalization phase is additional and indicates that the incumbent practices (innovations, enterprise systems etc.) have to be deinstitutionalized in order for new practices to be institutionalized. Section 6.7 builds on the Greenwood, Suddaby and Hinings (2002) model of change, and presents an analysis of the change measures that characterize Alberta's P3 program and what this means for the institutionalization of P3 practices in Alberta.

### 3.5 Institutional Environment: Organizational Field for all Actors

The process of institutionalization takes place within an institutional context. In institutional theory, the most dominant conceptualization of context has become the *institutional field*. Scott (2004) emphasizes that field actors share common cognitive understandings. Accordingly, an institutional field "connotes a community of organizations that partakes of a common meaning system and whose participants interact more frequently and fatefully with one another than with actors outside of the field" (Scott, 2008, p. 86, citing Scott, 1994a, pp. 207-208). However, this review agrees with Meyer's suggestion to distinguish the organizational field from the institutional field (Meyer, 2008, p. 525). This distinction draws attention to the heterogeneity of institutionalized patterns and the co-existence of multiple interpretation frames.

But the term *organizational field* (Scott, 1991) has become the generally accepted term for this constellation of actors that comprise this organizing unit. Accordingly, this review conceptualizes the field as an organizational field of interacting actors defined by multiple, potentially competing institutional orders or logics. As the organizational field does not necessarily anticipate shared meaning, it builds upon the more functional definition by DiMaggio and Powell which considers a field as "those organizations that, in the aggregate, constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce services or products" (DiMaggio & Powell, 1983, p. 148).

Further, DiMaggio and Powell acknowledge not only that contention, but also that struggling to write the rules and control the resources are part of the construction of an organizational field (Scott, 2004). Likewise, Hoffman stresses that "fields become centres of debates in which competing interests negotiate over issue interpretation" (1999, p. 351). This

research adopts the more functional definition of organizational field by DiMaggio and Powell as an operational definition.

A more focused term relevant to this research was proposed by Jooste, et al. (2011, p. 1) who suggest that "P3-enabling field" is a more appropriate term regarding P3 supporting organizations. He defines it as "the collection of organizations, public, private and not-for-profit, who together attempt to enable the development and continued operation of P3s in a region." They contend that the concept of *field* is more helpful as "it draws attention to both the organizational and institutional aspects of P3 implementation, and allows consideration of the broader political and societal environment affecting the conception and design of P3 programs." This study defines the organizational field to include the following actors: political, organizational (bureaucracy), civil society organizations, the auditor general, and labour.

### 3.6 Institutionalization Process

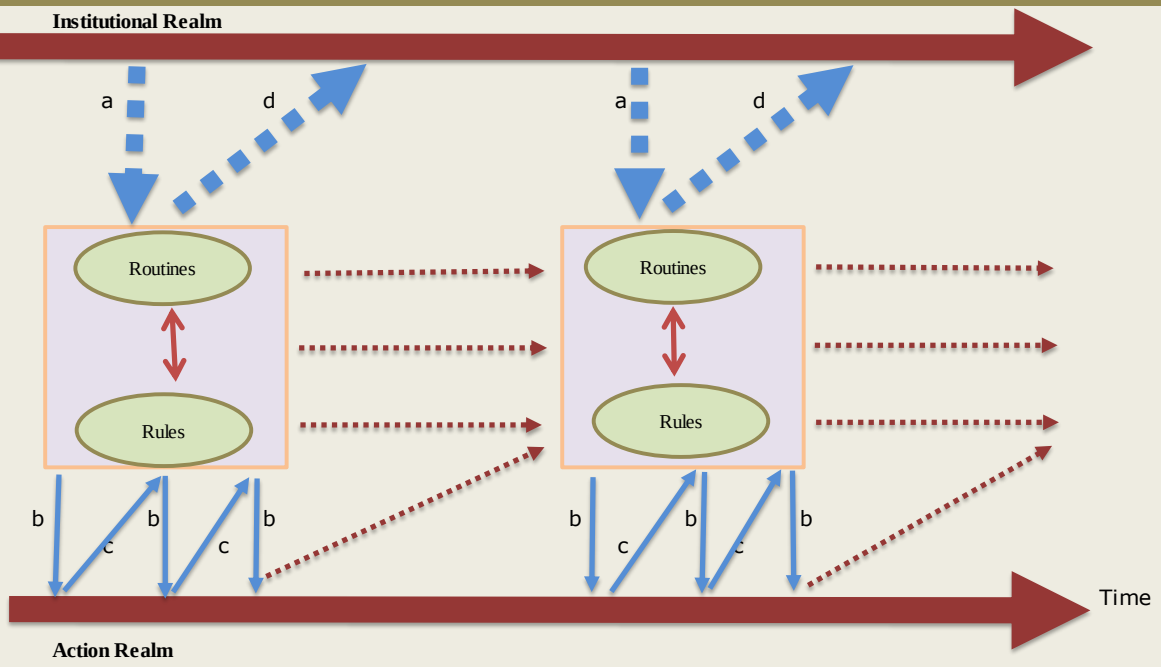
This discussion started by making the assumption that capital project delivery in Alberta is institutionalized. Therefore, rules and routines are followed without question until with sufficient justification are changed. This section draws from Burns and Scapens (2000) conceptualizations of change, as they considered management accounting practices (just like capital project delivery practices) as constituting organizational rules and routines.

Incorporating both institutional and structuration theories, Barley and Tolbert (1997) develop a model of institutionalization as a structuration process. Subsequently, Burns and Scapens (2000) modified Barley and Tolbert's framework to develop their own framework for studying management accounting processes. In this regard, Burns and Scapens justify how to use their framework as follows:

> It should be emphasized that this framework is not intended to provide operational constructs for empirical research and hypothesis testing. Rather, its purpose is to describe and explain analytical concepts which can be used for interpretive case studies of management accounting change. These concepts will be useful in so far as they focus the attention of researchers (and also possibly practitioners) on the fundamental characteristics of change processes (2000, p. 9).

Burns and Scapens (2000) framework illustrates the institutionalization process shown in Figure 9, which combines both synchronic and diachronic elements: while institutions confine and form action synchronically, actions produce and reproduce institutions diachronically through their collective effect. However, change procedures in the institutional realm occur over longer periods of time than change in the realm of action (Burns & Scapens, 2000). They add that the top of the figure represents the institutional realm, whereas, the bottom represents the realm of action. They also mention that both realms are continuing in a collective procedure of change during time. They illustrate that the central component of the figure shows the way in which rules and routines proceed as the modalities which link the institutional realm and the realm of action. Burns and Scapens (2000) provide more explanation for rules and routines, which are also in a collective procedure of change, as will be described below. The processes of these interactions are: encoding, enacting, reproduction and institutionalisation (Scapens, 1994; Burns, 2000; Burns & Scapens, 2000; Scapens & Burns, 2000; Burns *et al.*, 2003; Scapens, 2006).

**Figure 9 The Process of institutionalization**




Key: a = encoding; b = enacting; c = reproduction; d =d institutionalization

**Source:** ***Burns and Scapens (2000) Conceptualizing management accounting change: an insttutional framework, Management Accouting Research, 11, p.9***

So Burns and Scapens (2000) explain the four processes of change in the following steps using arrows. In Figure 9, the first process (arrow a) involves encoding of the institutional principles, taken for granted assumptions, into rules and routines. Overall, the current routines reflect (i.e. encode) the prevailing institutional principles and form new rules, which in turn lead to the construction or reconstruction of the ongoing routines. This encoding procedure illustrates taken-for-granted assumptions, including the institutional standards, through their instantiation in existing meanings, values and power. The second process (arrow b) involves the actors enacting the routines (and rules), which encode the institutional principles. This procedure of enactment might comprise conscious selection but, will more typically be a consequence of reflexive monitoring and the submission of tacit knowledge about how things are done. This is an enactment of rules and routines, particularly if the rules and routines confront existing meanings and values and actors have sufficient resources of authority and power to intervene in this procedure.

However, in the lack of external 'changes, such as advances in technology or a take-over crisis, there is unlikely to be a reopening of earlier agreed arrangements and therefore, routines may become somewhat resistant to change. Nevertheless, change can take place.

The third process (arrow c) takes place as repeated behaviour guides to a reproduction of the routines. This reproduction might contain either intended (conscious) or unintended (unconscious) change. Conscious change is likely to take place merely if actors can collect the resources and rationales necessary to question collectively the accessible rules and routines. On the other hand, unconscious change might take place in the lack of systems to monitor the execution of the routines and where the rules and routines are adequately misunderstood or unaccepted by the actors. The fourth and final process (arrow d) is the institutionalization of routines and rules that have been reproduced through the behaviour of the individual actors. This entails a separation of the patterns of behaviour from their historical conditions, so that the rules and routines capture a normative and truthful quality, which obscures their relationship with the interests of the diverse actors. In other words, the rules and routines become simply the way things are, i.e. institutions. These institutions will then be encoded into the ongoing rules and routines and will shape new rules and so on.

### 3.7 Actions and Institutions

According to Scapens (1994), management accounting has been seen as organizational rules and routines. Thus, this section will expand this perspective by exploring the role of routines and rules in the relationship between actions and institutions. The relationship between actions and institutions is basically an agency-structure relationship that the social sciences have embraced. Scapens and Burns (2000) state that structuration theory is concerned with the relationship between activities of human actors and the structure of social systems (see also, Giddens, 1984). Giddens

(1984) differentiates between the systems, which include social practices which are reproduced across time and space through the actions of human beings, and structures, linking those social practices in systems. Therefore, systems and structures are not the same but systems have structures.

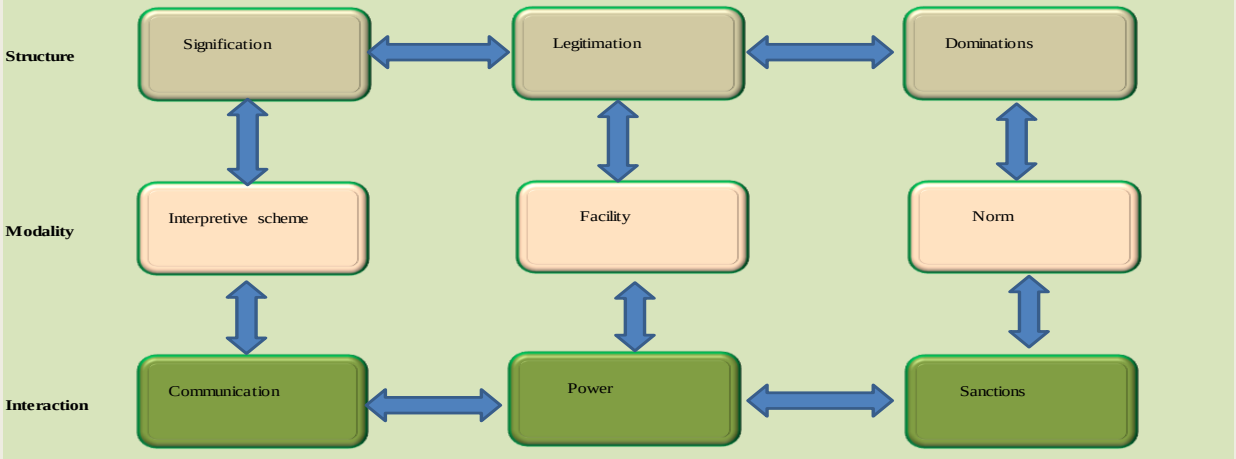
As mentioned above, Burns and Scapens (2000) prefer to use the second definition of institution. This definition of institution *is a way of thought or action of some prevalence and permanence, which is embedded in the habits of a group or the customs of a people*. Burns and Scapens (2000) state that this is the first part of the definition (thought or action of some prevalence and permanence) and comprises the concept of systems, whereas structure is contained (embedded in the habits of a group or the customs). In order to analyze the relationship between actions and institutions, Burns and Scapens (2000) modify Barley and Tolbert's (1997) definition of institutions. So institutions definition after modification is, "*as the shared taken-for-granted assumptions which identify categories of human actors and their appropriate activities and Relationships"* (Barley & Tolbert, 1997, p. 96; Scapens & Burns, 2000). Scapens and Burns (2000) conclude the relationship that ―institutions comprise the *taken-for-granted* assumptions which inform and shape the actions of individual actors. However, simultaneously, these taken-for-granted assumptions are themselves the outcome of social actions, i.e. they are socially constructed. (Burns & Scapens, 2008).

Change processes have been advanced by the theoretical work of Anthony Giddens (1984) who developed "structuration theory": a conception of social structure and its relation to social actors. In this formulation, social structure is comprised of two elements: symbolic systems

(institutional elements) and material systems, including both human and nonhuman resources. Symbolic structures give meaning to resources while resources are required to build - both to reinforce and change symbolic structures. Social structures are both the context for and the product of the activities of social actors. If social structures are to persist, they must be enacted by social actors; if they are to change, actors are the agents of change.

In outlining his structuration theory, Giddens (1984) uses the concept of modalities to link knowledgeable capabilities of human actors with the structural characteristics of institutions (see also, Burns & Scapens, 2000; Burns *et al.*, 2003). Giddens (1984) identifies three inter-related dimensions of *signification, legitimation and domination* and each has its own modality, which is relied upon in the reproduction of systems interaction and thus, re-forms the structural characteristics (see also, Burns & Scapens, 2000; Burns *et al.*, 2003), as represented in Figure 10.

**Figure 10 Giddens' Structuration Theory**




**Source: Giddens, A. (1984). The Constitution of Society: Outline of the Theory of Structuration. Cambridge, Polity, p. 29.**

Structuration theory has been deployed extensively as a helpful framework for management [accounting] research, by some scholars (Giddens, 1984; Macintosh & Scapens,

1990). According to Macintosh and Scapens, structuration theory is a more focused, informative, integrative, yet efficient, way to analyze how systems are implicated in the construction, maintenance, and changes of the social order of an organization, than many frameworks used in previous studies (Macintosh & Scapens, 1990, p. 455). However, Archer argues that historical events are excluded by the structuration theory (Archer, 1995); while Burns and Scapens (2000) suggest that structuration theory may not be useful for investigating processes of change.

In conclusion, Burns and Scapens offers a model of change that may be relevant to the changes observed in Alberta's P3 implementation change process. Chapters 6 and 7 will further analyze and apply these ideas.

### 3.8 Rationalized Myths

*Rationalized myths* are rationalized and impersonal rules that bind the various different organizations through the belief in its legitimacy (Meyer & Rowan, 1977). They are a key theme related to institutional isomorphism where organizations have to conform to these rationalized myths in order to be "proper" organizations (Boxenbaum & Jonsson, 2008). Institutionalized products, services, techniques, regulatory systems, public opinions, professional standards, etc. act as powerful rationalized myths exerting institutional pressures on organizations in multiple and complex ways. Rationalized myths may develop in organizations, where organizational actors *believe* that their responses to these multiple pressures are aimed at organizational efficiency, but they are more aimed at achieving legitimacy for the organization (Meyer & Rowan, 1977).

There are no known studies of P3s from an institutional perspective that looks at the role of *rationalized myths* in the transition from a conventional to a P3 model of infrastructure delivery.

There are lessons learned from studies that look at similar change processes. For instance, Alvarez (2002) examined the role of *myths* in an Enterprise Resource Planning (ERP) implementation. The old legacy system was deinstitutionalized by creating a story of "performance crisis" and a myth-making process took place "constructing the new ERP system as an integrated system," which was aligned with the overall goals of the organization, but the benefit(s) of the integration was not supported by objectively testable facts. The rationalized myth thus legitimized the ERP implementation, "and the story-making process served to align the technology with ideal organizational values" (Alvarez, 2002, p. 82). The case study by Alvarez also shows the deinstitutionalization process of the old legacy system followed by the institutionalization of the new integrated ERP system (Greenwood et al., 2002; Scott, 2008; Tolbert & Zucker, 1996), and that narratives can support the institutionalization process (see also Hedman & Borell, 2004), which can be a relevant "technique" in ERP implementations.

There are similarities with the introduction of the P3 model within the public sector. The persistent cost overruns (Flyvbjerg, 2009) associated with conventional delivery suggests the potential for deinstitutionalization and delegitimization of that model exists. The P3 model has been promoted as a solution to the performance crisis of the conventional model, and as better aligned with the taxpayer position of better service at a reasonable cost. This efficiency picture or logic is the anchor on which a new institutional story is being built to give P3s the cover of legitimacy. This suggests support for the "deinstitutionalization followed by institutionalization" cycle put forward by Greenwood et al. (2002), and Greenwood and Hinings (1996).

## 3.9 Institutional Logics

There has been a strong focus on isomorphism within institutional theory (Greenwood et al. 2008), but this focus has changed nowadays and it is no longer so much on isomorphism, whether in society or within the organizational field, but more on the effects or processes of different, often conflicting, institutional logics on individuals and organizations. "Institutional logics shape rational, mindful behavior, and individual and organizational actors have some hand in shaping and changing institutional logics" (Thornton & Ocasio, 2008, p. 100), where institutional logics can be defined as "the way a particular social world works" (Thornton & Ocasio, 2008, p. 101). Institutional logics link institution and action (see also Barley & Tolbert, 1997) and provide a bridge between macro-structural perspectives (DiMaggio & Powell, 1983; Meyer & Rowan, 1977) and micro-process approaches (Zucker, 1991). Multiple institutional logics are "available" for organizations and individuals (Scott, 2008), and the embedded agency in institutional logics presupposes partial autonomy for individuals and organizations (Thornton & Ocasio, 2008), so actions, decisions and outcomes are a result of the interaction between an individual agency and an institutional structure (Friedland & Alford, 1991; Thornton & Ocasio 2008, pp. 103-104).

Organizational fields include, institutionalized belief systems that motivate and guide the behavior of the interacting actors. A recent development allowing for a heterogeneous approach in neo-institutional theory (Scott et al., 2000; Kitchener, 2002; Reay & Hinings, 2005, 2009; Lounsbury, 2007) is the concept of an *institutional logic*. Friedland and Alford define an institutional logic as "a set of material practices and symbolic constructions – which constitutes its organizing principles and which is available to organizations and individuals to elaborate" (1991,

p. 248). As such, logics provide the ground rules for social behavior and the criteria by which options and possibilities are to be assessed. Later, Thornton and Ocasio elaborate on this definition, arguing that logics are "the socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality" (1999, p. 804). This study is in agreement with this definition of logic as it emphasizes the socially constructed patterns actors use in the creation of social meaning. Thornton later developed six ideal types, the market, the corporation, the professions, the state, the family, and religions, which are characteristic for several different institutional sectors and useful for studying multiple logics in conflict or consensus (Thornton, 2004). Further, Scott highlights that in order to be active, logics require carriers such as individuals and organizations that affirm, embody, transmit, and act in accordance with the principles (2004, p. 16).

An illustration of institutional logics was provided by Scott et al. (2000), who identify three institutional logics that emerged in U.S. health care between 1945 and 1995 in the San Francisco Bay Area. Scott and his colleagues showed that after decades of domination by the medical professions' logic of quality of care, the state emphasized democracy and the logic of equity of access as part of a transformation of the health care delivery system. This further paved the way for a managerial logic of efficiency in the form of managed care and new organizational forms such as health management organizations (HMOs). The change resulted in the destructuration of the field, implying that consensus on the institutional logics was reduced.

Although Scott et al. (2000) employ the theoretical conceptualization of the three institutional logics existing within health care, and focused on U.S. health care, there are parallels in the transformation of institutional logics taking place in capital asset delivery in the public sector. For many years, taxpayers have not cared about the overall efficiency of infrastructure delivery. But escalating project costs and increased pressure on the public treasury have made citizens unreceptive of higher taxes. The introduction of P3s points to a change due to "competing logics" (Thornton & Ocasio, 2008) suggesting that even where infrastructure is provided by the government, it must be done efficiently to protect the interests of the taxpayer. This is exemplified by aspects of the new public management (NPM) that seeks to introduce private sector or market driven models into public sector business approach. Whether this is justifiable or not remains to be seen.

Stated differently, the introduction of P3s suggests the arrival of a "competing logics" (Thornton & Ocasio, 2008) in direct challenge to two existing logics. One is the logic that governments alone should provide public infrastructure. Two is that consideration need not be on efficient provision, but on the basis that no stakeholder group be seen to be dominant in public infrastructure delivery as a way of protecting the public interest. These logics are being vigorously challenged by the P3 logic on two grounds. First, that the existing basis of infrastructure delivery is clearly inefficient as demonstrated by persistent cost over runs. Second, the resistance by taxpayers to accept escalating tax increases to cover conventional model inefficiencies.

Table 5 summarises some of the aspects of institutional theory that are relevant for capital asset delivery model research. Two elements relevant to this research are explained further.

*Institutional logics* could be deployed to challenge the existing logic that governments are responsible for infrastructure provision. By examining and gaining an understanding of how things work now, it forms the basis for arguing that things could work differently under a different set of circumstances. Thus, institutional argumentation becomes the basis for proposing change. Another relevant instance derived from this perspective and closely related to logics is *institutional processes and change*. By understanding the process of institutional change, as involving deinstitutionalization and reinstitutionalization, the public sector can better communicate the introduction and establishment of an alternative infrastructure delivery model. These are practical and tangible instances where insights gained from institutional theory can be effectively deployed to implement and manage change in infrastructure delivery in the public sector.

**Table 5 Key features of institutional theory and implications for capital asset delivery**

| | Key features of institutional theory | Implications for capital asset delivery research |
|---|---|---|
| **Institutional and competitive presures leading to isomorphism** | Organizations face both competitive and institutional pressures leading to isomorphism (structural similarity) | Researchers should look beyond rational explanations to institutional explanations with regard to understanding the processes governing the management, implementation and use of capital asset delivery models. |
| | Institutional pressures could be coercive, normative and cultural-cognitive. Social situations consists of interdependent non-rational and rational elements | Institutional pressures shape the evolution, implementation and management of capital asset delivery models. For instance the decision to adopt a P3 in a given political, economic and social environment. |
| **Rationalized myths** | Rationalized myths related to technology are technical procedures, accounting, personnel selection or data processing. Such institutionalized techniques establish an organization as appropriate, rational and modern, quite apart from its possible efficiency (Meyer and Rowan, 1977) | We are surrounded by rationalized myths in capital asset delivery research. We are made to believe that there is a "traditional" or "conventional" model. |
| **Institutional logics** | Institutional logics are a set of material practices and symbolic constructions linking institution and action, and they provide a bridge between macro-structural perspectives and micro processes. | Capital asset delivery models embed specific and tangible institutional logics. Institutional logics can be used to understand existing arguments around traditional delivery models and deploy it to challenge and explain P3 models and the motivation or rationale behind them. |
| | Institutional logic is the way a particular social world works. | |
| **Institutional processes and change** | Institutional processes and change can be explained by multistage models: | The detailed processes for institutionalization and deinstitutionalization are relevant for studying the emergence and implementation of a new capital asset delivery model (e.g. from an old to a new system) and how both may co-habit. |
| | a) Innovation, habituation, objectification and sedimentation | The stabilization and routinization of the new P3 model could also be studied as an institutionalization process. |
| | b) Precipitating jolts initiating the change, de-institutionalization, pre-institutionalization, theorization, diffusion and (re)institutionlization. | |

***Source: Author's compilation, June 2013***

Table 5 highlights key features of institutional theory, which offers a distinctive perspective on organizations, capital asset delivery (public infrastructure asset management) and their interplay considered relevant for capital asset research. However, this chapter shows the complexity, ambiguity and diversity inherent in institutional theory. This it is both, an opportunity and a challenge to adopt institutional theory as a lens and framework to provide conceptual clarity.

Conclusion – Sections 3.4 to 3.8 presents key features of institutional theory related to public infrastructure asset management research (OECD, 2011). These sections argue that these features are important for understanding the institutional structures and processes shaping public asset management. Institutional logics appear to be particularly relevant because it integrates macro/micro and structure/agency models. [Note: public infrastructure asset management (OECD, 2011) is defined as an organized process that involves the development, maintenance and replacement of public infrastructure in an efficient manner that optimizes their benefits to taxpayers].

## 3.10 Institutional Theory in Partnerships

Partnerships represent one form of inter-organizational relationships. Other forms of inter-organizational relationships are: alliances, strategic alliances, inter-firm networks, collaborations, co-operative agreements, co-alignments, business groups, and joint ventures. This section explores how institutional theory, and more specifically NIS, has been used to study inter-organizational relationships. It starts by exploring how *collaborations* have been studied from an institutional perspective. The term *collaborations* cover a broad range of inter-organizational relationships and their study from an institutional perspective emphasizes the diversity of influences which shape such relationships. As stated earlier, NIS highlights the importance, for

organizations operating in an institutional environment, of securing legitimacy by conforming to environmental pressures. Next, it looks at the importance of legitimacy in inter-organizational relationships and also explores the role of trust and power. In so doing it draws out the implications of this research for studies of inter-organizational arrangements such as P3s.

### *Collaborations and Partnerships*

Philips et al. (2000, p. 24) defined collaboration as "a co-operative relationship among organizations that relies on neither market nor hierarchical mechanisms of control." It is instructive to note that P3s are known to emphasize the same "co-operative relationship" between the public and private sectors. Furthermore, Philips et al. argued that institutions supply the rules and resources upon which collaboration is built, while the collaboration itself provides the context for the ongoing procedures of structuration that maintain the institutional (or organizational) field. Thus, to fully understand and explore the dynamics of collaborations and partnerships (or inter-organizational relationships in general), it is crucial to examine the institutionalized patterns of *rules* and *routines* that are shaped by the institutional environment(s) of the partners. Extant studies applying an institutional perspective to study collaborations, emphasized the objective, external aspects of the institutional environment, and viewed institutional forces [as] another group of pressures that can either promote or impede collaboration (Sharfman et al., 1991, p. 185). However, the later research has been more concerned with the way in which institutions can shape collaborations and their structuration.

Philips et al. (2000) argued that institutional rules and resources can be critical elements in the negotiations that constitute collaboration. Although their paper was analytical, and lacked empirical examples, it provided a structured theoretical framework that highlighted the importance of institutions in studying collaborations. Building on this framework, Lawrence et al. (2002)

explored how the characteristics of collaboration can transform existing institutional fields. Through a longitudinal case study of a small Palestinian non-governmental organization, they demonstrated that collaboration can play a critical role in promoting change in the institutional field through the creation of *proto-institutions*. Proto-institutions are new practices and rules which stem from a specific collaboration, but can come to constitute new institutions which shape subsequent collaborations provided they diffuse appropriately. Lawrence et al. (2002) emphasized that the interaction, structuration and information flow of each collaboration can have significant effects on the degree to which collaboration can initiate the creation of proto-institutions and thereby lead to the formation of new institutions. Similarly, Imperial (2005) argued that the shared policies, social norms and rules that govern collaborations can become institutionalized and then reproduced in new collaborations. If the participants in every new collaboration had to determine new forms of governance, it would be a very complex and problematic matter, and so the institutionalized practices are likely to be reproduced.

Through their analysis of the formation of a new collaboration in the garment industry, Sharfman et al. (1991) observed that institutional forces can be more important, than any explicit cost-benefit incentive that TCE tends to promote. They concluded that the institutional field of a specific inter-organizational relationship comprises not only competitive pressures, but also institutional forces, either of which can promote or prevent the creation of new relationships.

In a study of international alliances, Parkhe (2003) adopted an institutional perspective to explore how relationships can be integrated even when the partners are drawn from widely dispersed institutional fields. In such relationships, he argued, the more diverse the institutional fields from which the partners are drawn, the greater the challenges that the inter-organizational relationship has to face and overcome. In his paper, Parkhe (2003) distinguished between social

(meta), national (macro), corporate-level (meso) and operating level (micro) influences to categorize the exogenous and endogenous institutional influences that can shape inter-organizational relationships. This emphasizes the complexity of the process of institutionalization, and also the diversity of the institutional influences which need to be recognized when studying inter-organizational relationships.

***Learning Points:*** This institutional research into collaborations and partnerships shows how important institutions are in shaping the nature of collaborations. The institutionalized patterns of rules and routines provide the context in which collaboration becomes possible. However, this is not a one-way process. The practices and norms of existing collaborations can become institutionalized and thereby create the institutions which shape new collaborations. Thus, institutions should not be seen simply as the objective external aspects of the institutional field, but instead, recognize their structuration through the interactions which take place in ongoing collaborations. However, this can be a very complex process, with the interaction of meta, macro, meso and micro level influences. As such, studies of inter-organizational relationships need to look beyond the economic context, and explore the complexity and diversity of the institutions which shape, and which are shaped by those relationships. Lawrence et al. (2002) emphasized the importance of information flows in the shaping and structuration of the inter-organizational relationships. However, in the institutional theory literature rather more attention has been given to the *legitimacy* of the relationship. This probably reflects the legacy of the early research in NIS (discussed elsewhere) which focused on the search for legitimacy in institutional environments. Nevertheless, this work emphasizes the importance of legitimacy for inter-organizational relationships.

***Legitimacy***

Institutional research into the various types of inter-organizational relationships is concerned with the issue of legitimacy. This suggests recognition that the legitimacy of a relationship is critical to its success and can be a source of competitive advantage. For example, Human and Provan (2000) explored how legitimacy is created through the evolution of inter-organizational relationships and argued that it is crucial to their success. They studied multilateral networks which involve direct interactions among many member organizations which may have never interacted with one another before. These networks also often involve an administrative entity that coordinates the interactions between the member organizations. In two case studies of the formation and evolution of networks in the same industry, Human and Provan (2000) found that networks can achieve legitimacy either through internal (inside-out) legitimacy building – i.e., within the network (the more successful case) or through external (outside-in) legitimacy building – i.e., in the institutional field (the less successful case). They argued that legitimacy building is critical to network success.

Kumar and Andersen (2000) also argued that legitimacy is important for the success of inter-organizational relationships. They explored the connections between legitimacy and meanings. By meanings they refer to the *interpretative significance* of the relationship to each partner. They identified three types of meanings (pragmatic, moral and cognitive), and related each of these to three types of legitimacy (also pragmatic, moral and cognitive). Pragmatic legitimacy refers to the recognition that the relationship is in the interests of the partners; moral legitimacy refers to the recognition that the relationship is the right thing to do; and cognitive legitimacy refers to the recognition that the relationship is both natural and necessary. Defining inter-partner legitimacy as, the *mutual acknowledgement* by the alliance partners that their actions are proper in

the developmental processes of the alliance, they argued that different types of inter-organizational relationships require different types of legitimacy and different levels of effort to attain legitimacy.

Dacin et al. (2007) also studied the importance of securing legitimacy in an inter-organizational relationship; but they identified five different types of legitimacy: market legitimacy, relational legitimacy, social legitimacy, investment legitimacy and alliance legitimacy. Market legitimacy relates to the rights and qualifications to conduct business in a particular market; relational legitimacy to the worthiness to be a partner; social legitimacy to conformity to social rules and expectations; investment legitimacy to the worthiness of the business activity; and alliance legitimacy to the validity or appropriateness of the relationship. They argued that without legitimacy in all these five respects partners are likely to be denied access to crucial markets, and consequently the competitive advantage of the relationship is likely to be jeopardized.

These studies highlight: (1) the importance of the legitimacy of the inter-organizational relationship for both the partners within the relationship and the other actors within the wider institutional field, and (2) the different types of legitimacy that are needed for a successful inter-organizational relationship. The interesting questions for P3s are whether inter-organizational management can enhance legitimacy within and/or outside the network, and whether inter-organizational management can particularly enhance specific types of legitimacy. For example, is inter-organizational management more likely to enhance pragmatic legitimacy within the network, or its moral legitimacy outside the network (Kumar & Andersen, 2000), or is it more likely to enhance market and investment legitimacy (Dacin et al. 2007)? However, as Kumar and Das (2007) have pointed out, it is important to distinguish between legitimacy and trust. The fundamental distinction is that, while legitimacy implies a sharing of values and norms, trust implies the predictability of behaviour. Thus, legitimacy, unlike trust, provides a more durable

foundation for success, as a relationship founded on legitimacy is embedded in a shared view that the relationship is a proper one (Kumar & Das, 2007, p. 1432). Nevertheless, trust remains an important concept in the study of inter-organizational relationships.

***Trust and power***

Social mechanisms, including trust, are generally regarded as important elements in business relationships (Zucker 1986); as they determine the balance between cooperation and competition. Some writers link the concept of trust with power, as both can promote or limit the potential for cooperation (Lane & Bachmann 1997). However, the existing literature provides few theoretical analyses that combine trust and power, and even fewer that provide empirical evidence in the context of inter-organizational relationships. An exception is the work of Lane and Bachmann (1997, which highlights the role of institutions and trade associations in the creation and shaping of inter-organizational relationships. Building on the work of Luckmann (1979), they considered *trust* to be a code of social interaction, and *power*, the functional equivalent of trust. Drawing on data from the British and German kitchen furniture and mining machinery industries, they argued that in cases where 'strong' institutions exist (e.g., industrial associations and legal regulations) trust can become a social mechanism for coordination. In contrast, in environments where there are only 'weak' institutions, power may substitute for trust, since system-power is a precondition for system-trust, rather than a different mode of regulation of interaction.

At the institutional level, Marchington and Vincent (2004) drew on NIS to explore the influences that trade associations and government regulations have on inter-organizational relationships. In addition, they recognized that inter-organizational relationships can be influenced by institutions at the industry level. However, they stressed that these (external) institutions may

be modified *within* organizations (i.e., by organizational level forces). The final level of forces, which influence the shape of inter-organizational relationships, stem from backstage interpersonal dynamics, where boundary-spanning agents deal with day-to-day issues of management. This, again, emphasizes the importance of recognizing the influence of the diverse institutional forces (both internal and external) when studying inter-organizational relationships.

In conclusion, for P3s, it is essential to understand the role of inter-organizational management in enhancing the legitimacy of the partnership relationships; both to the partners in that relationship and to the other actors in the organizational field, and in securing and maintaining the trust and power needed to enable the relationship to emerge, survive and thrive. In addressing such questions, it is important that the complexity and diversity of the institutional setting, which has been revealed in the studies outlined above, is fully recognized.

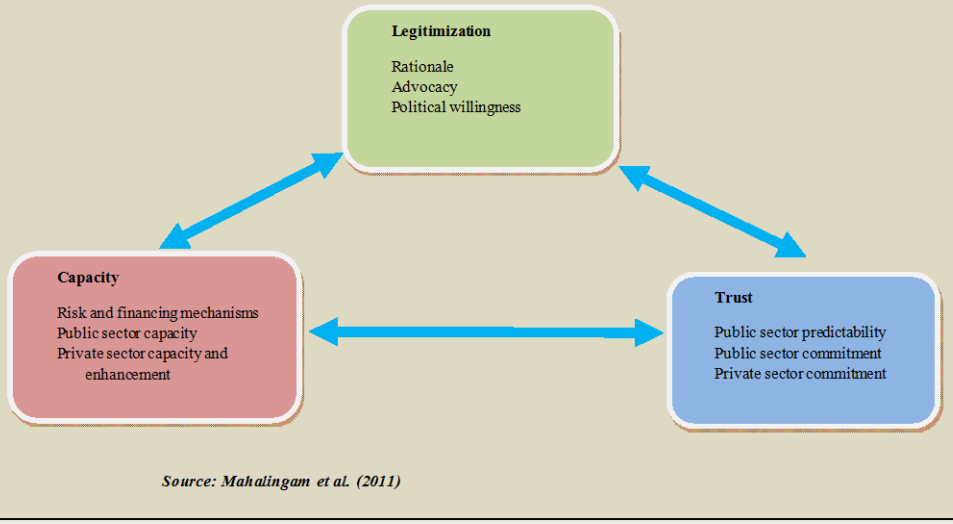
Next is a review of the concept of P3s and their surrounding institutional environment.

### 3.11 P3s and the Institutional Environment

Recent research suggests that the institutional environment has an impact on the outcomes of P3 projects (Jooste et al., 2011; Delhi et al., 2010). The study by Jooste et al., claim that rather than overcoming institutional capacity constraints, P3s require a variety of new types of institutional capacity (Jooste et al., 2011). In order to analyze the impact of the institutional environment, existing regulative instruments is categorized into three "institutional capabilities" (Mahalingam, 2011). These are: *legitimization, trust,* and *capacity* which serve as a starting point for this research. Ultimately, this model will be compared to the findings from the Alberta AHD regarding the influence of the institutional environment on P3 projects with the intention of refining it and proposing it for further research to study the relationship between the institutional

environment and project outcomes. The categorization proposed by Mahalingam (2011) serves to characterize the institutional environment needed for successful P3 development (See Figure 11).

**Figure 11 Institutional Environment Model (Mahalingam Model)**




*Source: Mahalingam et al. (2011)*

**Legitimacy** is *a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs and definitions* (Suchman, 1995). Legitimization concerns P3s because these projects introduce private operators into services that were traditionally provided by governments, and require large financial commitments from private parties who expect long term returns for their investments (Jooste et al., 2011). Strategies to build legitimization include guaranteeing transparency, giving strategic information, and providing a stable political environment. Legitimization refers to the formal actions that promote the willingness of public and private actors to engage in P3s. Mahalingam (2011) state that governments can ensure legitimization through: 1) a clear rationale for P3s, 2) political willingness to promote a proactive attitude towards P3s, and 3) advocacy to ensure that all stakeholders are informed and governments make effective communication strategies available to accomplish this purpose.

**Trust** is a *disposition and attitude relating to the willingness to rely on the actions of other actors, under the condition of contractual and social obligations with a prospective for collaboration* (Smyth & Pryke, 2008). In this research, trust is analyzed across P3 interfaces, specifically the formal mechanisms that foster trust between public and private actors by means of standards and mechanisms implemented by the government. This study agrees with Sitkin (1995) and Zucker (1986) who state that trust and formal mechanisms are mutually reinforcing and contribute to the level of cooperation needed in a relationship. Formal mechanisms can influence trust since standard rules and procedures allow them to establish a pattern of behavior to base their assessments and evaluations on others (Bijlsma-Frankema & Costa, 2005; Sitkin, 1995) making the relationships more predictable. According to Mahalingam (2011), the key capabilities to foster trust for P3 development are: 1) public sector predictability, and 2) ensuring public and private sectors commitment. Furthermore, the ***Capacity*** to undertake P3s will strengthen the ability to structure and govern P3 projects, essential for P3 development. Launching a P3 project requires public agencies to adopt new roles and acquire specific expertise at several levels. Accordingly, governments can improve capacity to develop P3s by: 1) building the necessary capacities within the public sector; 2) providing appropriate risk and financing mechanisms to effectively award and govern P3 projects; and 3) enhancing private sector capacity.

## 3.12 Components of Institutional Environments

In the study of policy, and from a sociological perspective, institutional theory is about the search for *legitimization* in organizations and tends to focus on processes of policy imitation and diffusion and especially on surprising convergences in forms of institutions and policies.

Contextualizing this discussion, recall that the emergence of P3s as an alternative infrastructure delivery mechanism has been driven by two broad public sector challenges - a) limited public

sector funds; and b) lack of public sector capacity (Bovaird, 2004). In otherwords, public agencies lack the resources, expertise and incentive to professionally and efficiently manage huge infrastructure developmental needs. Additional to the development of internal capacity by the public sector, it must also address the need for legitimacy and find and maintain the trust of key stakeholders.

**Legitimization** – This study adopts the definition of legitimacy proposed by Suchman (1995, p. 574, see page 82). Building legitimacy is important and a practical matter, because as Milward & Provan (2000) suggest, the legitimacy of P3s is a concern because P3 projects typically introduce private entities into services historically provided by government. Therefore, legitimacy is needed in both the public and private sectors. It will help the labour union deal with the potential loss of their services and it will help the general public internalize and accept the new reality of private provision. Furthermore, legitimacy is needed to justify the large and long term financial commitment required in moving from established public provision to an untested private provision. And more, to attract the needed financial commitment from industry, government must take actions to build goodwill, confidence and trust with the private providers (OECD, 2008).

*Legitimization*, according to Mahalingam, (2011) must entail the articulation of a clear rationale for the adoption of P3s. This rationale could also be embedded in agencies' standard operating procedures (for example, as a requirement that risk allocation and management gains from P3s as well as actual cost of capital be evaluated) or organizational forms (for example, as project identification committees with a mandate to consider the management, technical, and financial pros and cons of a project). *Legitimization* of P3s can be brought about in several ways including drafting laws or policy guidelines that protect against private or public sector abuse of

partnerships (for example, guidelines for selection and compensation of private sector participants, for awarding asset contributions (such as land development rights) to the private sector, rules regarding government investments and shareholding). Further Mahalingam (2011) argues that belief in the potential benefits of partnership can be strengthened by *advocacy* measures (examples highlighting success stories of P3s, developing a history of projects with private sector involvement, or networking events between the two sectors) or organizational forms (including setting up an independent auditor for regulation and oversight). Legitimization would be enhanced where there is a recognizable *political willingness* in form and a champion for the new vision of partnership with the private sector. The political support is also supported by Zhang (2005) who identifies political support as a critical success factor in the implementation of P3s.

**Capacity** – The establishment of centralized P3 Units has become a predominant institutional tool for building P3 capacity (Dutz et al., 2006; Farrugia et al., 2008; PPIAF, 2007) and ultimately success within the public sector. Other public sector capacity building measures include, standardizing operating procedures including, creating templates for evaluating PPP opportunities, public sector comparators, checklists for approvals and guidelines for project structuring and bid process management, conducting frequent training programs for public officials, and empowering consultants and other firms to assist the public sector in project preparation.

Although the majority of P3 program development work has focused on building the capacity of the government, it can also be argued that successful P3s require the building up of capacity within the other stakeholder groups. A successful P3 program requires a strong and vibrant market of infrastructure providers that will ensure competitive procurement and quality

work (UNECE, 2007). During the 2008/08 financial crisis, the shortage of private capital on attractive terms can also be viewed as a lack of private sector capacity—something that governments have tried to address by "building capacity" through providing various forms of support (such as governmental guarantees or even direct financial support like subsidies and grants). The need to address the capacity of the civic sector has received much less attention in the literature. Where mentioned, capacity building has referred to: (i) the capacity of users and the general public to engage in the P3s process (CCPPP, 2006), by informing users of their rights to participation, and helping them understand how they can be involved (UNECE, 2007); and (ii) training users in the use and ongoing first-line maintenance of new infrastructure say water supply facility. The building of civic capacity for P3s can additionally include improving the objectivity and independence of the media, cultivation of voluntary associations, building up infrastructure for non-profit organizations, and developing norms of information sharing and participation in decision-making processes.

*Risk allocation and mitigation mechanisms* can be strengthened by improving operational practices including strengthening model concession agreements, and incorporating a defined risk allocation framework that is rooted in legislation. *Financing and funding mechanisms* can improve the bankability of projects and can encourage the private sector to participate in infrastructure service delivery. This capability can be enhanced by improving the institutional environment in the form of well-developed capital markets, financial institutions that can invest in infrastructure and easily accessible project development funds.

**Trust** – Predictability *of public sector decision-making* is largely embedded in a transparent, reliable and consistent set of standard operating procedures (such as standardized norms and

procedures for project identification, approval, bidding and award, project design and management, etc.). This is also present in stable and transparent organizational forms (example, regulatory bodies that provide project oversight). Ensuring *public sector commitment to decisions* can take place via legislation or policies that ensure strong bureaucratic oversight and also via setting up institutional forms such as: independent regulatory mechanisms, effective dispute resolution mechanisms. *Ensuring private sector commitment to decisions* can happen via institutional forms such as: independent regulatory agencies or standard operating practices such as: blacklisting of private contractors reneging on contract terms, publicizing private sector failures, stringent contract terms with built in financial commitments.

**Justification of the Mahalingam Model**

First, the Mahalingam model draws on current P3 literature to organize pertinent issues into a framework for operationalization and testing. Institutional environment elements such as: governmental political leadership, risk management, public sector capacity and trust have been well documented in several studies (UNECE, 2007; Grimsey & Lewis, 2004; Kwak et al., 2009; Yescombe, 2007). Second, with limited studies conducted on the implementation approach or emergence of P3s in many jurisdictions, this is possibly the only model that has been directly tested on two continents – Asia and Europe (Matos-Catano, et al. 2012). Third, as a model developed for P3 field managers, it has been of practical relevance in evaluating the mode of P3 operation where measurable progress or lack of it can be objectively determined. Fourth, by adopting an institutional approach in P3 implementation, it is robust in the sense that it is adaptable to the nuances of each location, given the diverse nature of different institutional environments that implement P3s. Finally, it is elastic and scalable enough to capture all the major issues that have

been debated within P3 literature over the past two decades and distilling or presenting them as operational constructs. And also it seems to have the capacity to transition from a project-based to a programmatic P3 approach, thereby further enhancing its overall utility.

This model is not without some limitations. It is mainly focused on the regulative aspects of institutional theory, and therefore, it is not able to capture some of the normative and cognitive elements of institutional theory as testable constructs. In addition, it does not make a judgement as to what constitutes a successful P3 implementation. It merely identifies what could be considered indicators for creating an ambient environment for P3s. Furthermore, it considers *advocacy* as sufficient in turning opponents into supporters. The current *episodic* advocacy done on a project basis is an insufficient approach to creating awareness and support for P3 aimed at securing legitimacy and acceptance. This thesis makes the case that a formal communication strategy that targets all major actors, including ordinary citizens, is an important part of not just creating legitimacy and acceptance, but ensuring the institutionalization of the P3 model.

**Conclusion** – This chapter while justifying the adoption, offered a detailed review, of institutional theory. Importantly, it discussed the various institutional mechanisms relevant to the study of public infrastructure asset management, including, isomorphism, institutional change, institutional context with emphasis on organizational fields. In addition, it outlined other institutional mechanisms such as logics. Furthermore, it provided an institutional theory based review of forms of partnership and collaboration, given the importance of collaboration in P3s. Finally, this chapter outlined the strengths and limitation of the Mahalingam model. The next chapter outlines the methodology used in this research study.

## CHAPTER IV: METHODOLOGY

*This chapter provides an exposition of the overall research philosophy, explains the choice of case study as the most appropriate research strategy, and details the research methodology while setting out the accomplished four stages of the research study. In addition, it discloses the details of data collection and analysis approach that serves to evidence and support the overall study, and ensures validity and reliability of the research outcomes.*

An exploratory qualitative research method is employed in this study that seeks to identify the nature of the interactions between the variables that affect infrastructure acquisition in Alberta, Canada. This study is exploratory because very little is known about Alberta's implementation of the P3 program since the commencement of this new policy around 2002. Applying the central elements of institutional theory, it will offer an opportunity to review the emergence of the institutional arrangements supporting P3s, and how this has affected P3 outcomes in Alberta.

Creswell (2005) suggests that qualitative methods are suited for research problems where the variables are unknown and need to be explored. Furthermore, Patton (2002) argues that qualitative methods allow the researcher to approach 'fieldwork without the constraints of predetermined categories of analysis, and permits the researcher to study the issue in-depth, which contributes to the depth, openness, and detail of the inquiry' (p.14). Qualitative methods appear to be the most appropriate choice, as it enables the researcher to listen to the views of the major players and stakeholders, while focusing on the natural setting or context, which is the 'public sector'.

How research is approached and undertaken could be determined by factors such as: the underlying research philosophy, and the research strategy employed which then drives the type of

instruments employed to meet specified goals or objectives. With the outlined research question and objectives in Chapter 1, the purpose of this chapter is to:

(a) discuss the research philosophy; (b) outline my research strategy, and methodologies; and (c) introduce the research method and instruments that were deployed as most applicable to meet the research objectives.

## 4.1 Research Philosophy and Strategy

The form and nature of the research question has driven the choice of my research strategy. The research question outlined earlier (in Chapter 1) identifies what is being investigated and provide the basis for the adoption of an applicable research strategy. The research question and objectives require answers to the '*how* and *why*' form of inquiry. Yin (2009) provides a guide of relevant situations for the various research methods available. There are three major strategies that answer the 'how and why' questions. These are the experiment, history and case study.

In this investigation, two of the strategies - history and case study are applicable for qualitative research and does not require control of behavioural events. While history and case study have different foci on contemporary events, case studies as a research strategy can be partly reflective of historical events, but mainly concentrating on contemporary events. Merriam (1998) suggests that elements of historical research and case study often converge. Yin (2009, p.11) also suggests that "each case study relies on many of the same techniques as history, but adds two sources of evidence not typically found in the historian's repertoire: direct observation and systematic interviewing". Therefore, the chosen strategy in researching "Alberta's P3 policy evolution" is the case study approach. The decision to adopt the case study approach is further justified by Boardman and Vining (2010, p.165), who notes the difficulty in the use of a statistical approach due to the non-availability of data from the P3 partners. Given the absence of public

information disclosure for competitiveness reasons, the case study approach remains the most practical way to study P3 outcomes.

## 4.2 Overall Methodology Approach

The central goal of this study is to analyze the impact of the institutional environment on project outcomes focusing on the Anthony Henday highway in Edmonton, Alberta. Therefore, this study traces or reconstructs the emergence of P3s and analyzes the evolution of the institutional environment in Alberta overtime using the various segments of the highway project. The Anthony Henday consists of four different projects governed by four separate contracts, involving different private sector entities. The 80-kilometer highway development has spanned 10 years. Consistent with institutional theory, the retrospective longitudinal approach enabled a study of the complex interplay between institutional structures and actions in the several segments of the project over this time period. The role played by key actors, mainly the government and contractors, is discussed and how the overall environment changed along the project path is analyzed and relevant lessons outlined for each project.

This thesis follows an inductive research strategy consistent with grounded theory, supplemented with an existing framework adopted for simplicity of analysis. The findings describe and analyze the influence of the institutional environment on project development. The research findings result in contributions to P3 literature, enhancements to theory, and recommendations for future research and suggestions for management practice benefiting policymakers. Observations made are twofold: a) observations about the institutional environment in Alberta; b) observations about how P3 project development takes place within the Alberta institutional environment.

The research was undertaken in **four stages**. *First*, gathered data about policy interventions in the transport infrastructure sector in Alberta. At this stage, publicly available data and reports, journal articles, media reports, and policy documents authored by the government and public agencies and researchers from diverse backgrounds e.g., CanadaWest Foundation, Parkland Institute and the Center for Public Economics at the University of Alberta, were collected and reviewed. This review enabled a reconstruction of the historical emergence of the institutional environment for P3 policy in Alberta. *Second*, analyzed the influence of these policy interventions on the institutional environment. For this the Mahalingam et al (2011) framework was applied as shown in Figure 12. *Third*, analyzed the four cases that make up the Anthony Henday highway to evaluate the project outcomes. This highway was selected because of its strategic significance in advancing the Alberta Transport Utility Corridor and especially the substantial financial commitment (C$4.3 billion in capital cost, interest and maintenance payments over 30 years) by the province of Alberta. Table 6 summarizes the key elements of the Anthony Henday projects. A cross case analysis is attempted to compare these cases that seem to suggest a "natural experiment." **Appendix J** outlines the details of the four cases studied as part of this research. Table 10 (see page 212) summarizes the key performance outcomes of these cases.

**Table 6 Overview of case study projects**

| Project name | Project title | Distance (km) | Project start* | Delivery model | Contract term | Project value (Can $) |
|---|---|---|---|---|---|---|
| Anthony Henday Drive South East | 216 South East Henday Drive Segment | 11 | 2003 | DBFM | 30 years | 493M |
| Anthony Henday Drive South West | 216 South West Henday Drive Segment | 19 | 1999 | Conventional | N/A | 600M |
| Anthony Henday Drive North West | 216 Noth West Henday Drive Segment | 21 | 2007 | DBFM | 30 years | 1.42B |
| Anthony Henday Drive North East | 216 North East Henday Drive Segment | 27 | 2011 | DBFM | 30 years | 1.81B |

**Source: Alberta Transportation Department** * RFP Date

The Henday characteristics enabled an evaluation and analysis of the impact of the evolution of the institutional environment elements over its 10 year implementation period. To evaluate the Anthony Henday ring road, exploratory interviews of major stakeholders in Canada were undertaken. In-depth, semi-structured interviews with a question approach that was both exploratory and descriptive in nature was conducted. Data was gathered from interviewees about the institutional situation during their involvement in P3 development, the description and structure of the projects they participated in, and the influence of the institutional environment on project-related issues, including how these issues were handled. This data were then transcribed, coded and summarized using the Mahalingam (2011) model. Components and operational constructs of this model are discussed in Sections 3.10 and 3.11. See Table 6 for a summary of these components and **Appendix E** for how it was mapped from the interview protocol and secondary data sources.

Overall, 35 key project participants were interviewed, ranging from government officials, private sector contractors (main and sub-contractors), consultants to both the private and public sectors, labour groups, journalists, public policy experts, the Alberta based taxpayers federation and a retired Alberta premier. *Finally*, data triangulation was done by corroborating primary data with secondary data sources, using materials located in professional journals, government reports, industry reports and articles in the Canadian media. Interviews were recorded, transcribed, and then coded in a systematic iterative manner with the use of the excel software. Interview data were supplemented with other data sources, including documents and secondary data that were either publicly available or provided by our informants, to increase the validity of the findings (Eisenhardt, 1989). Further, triangulation of interview data was done alongside a review of existing literature on P3s in Alberta, and Canada-wide. This included academic articles,

government media releases, Ministry periodic reports, newspaper articles, auditor-general's reports, and online data sources.

### 4.3 Project Background

Private sector participation in infrastructure delivery in Alberta has been influenced by the policy of involving private capital in infrastructure provision, and in some ways appears similar to the principles of New Public Management (NPM). The key features of this approach are decentralization, separating of responsibilities of strategic planning and implementation, and output oriented performance measurements (Yescombe, 2007). Widespread criticism of the public sector's ability to provide services to the public in a fast growing economy and demographic pressure from both, inward migration and an ageing population have helped further entrench private sector-type policies in the Canadian context. The public sector in Alberta, first attempted to 'get out of the way' by privatizing the provision of waste management starting with the SWAN Hills treatment facility in 1987 (Vining, Boardman & Poschmann, 2004). However, this strategy was soon revised and repackaged as P3s; and touted as a preferred model for infrastructure development. In 1996 it started Road Maintenance contracting with private road contractors. Official attempts to reform infrastructure delivery started in 2001 with the setting up of a Financial Management Commission. The transportation and the education sectors were the first to proceed with this reform. Dissatisfaction with the conventional model, the need to pay down existing debt dating back to the 1980s and become debt-free by the centenary of the province in 2005, the successes of similar programs in these sectors in other Canadian jurisdictions, and the acute scarcity of budgetary resources forced the Alberta government to advocate and implement P3s at the provincial level.

**Incumbent Actors**

Infrastructure has traditionally been delivered by and through public agencies – mainly by the Departments of Infrastructure and Transportation, together with municipal governments. These agencies contracted out the construction of major infrastructure projects to private contractors in piece-meal stages, consistent with the traditional or conventional delivery model. These government departments are ultimately responsible for the provision of the infrastructure services to the public. The public sector has also maintained relatively a good rapport with the private sector. The private sector companies in Alberta are very active. It must be noted that Alberta has a vibrant private sector and has traditionally leaned pro-business more than any other Canadian jurisdiction.

Around 2000, the GoA after more than seven budget cuts wanted to close the 'infrastructure deficit' and create an 'infrastructure surplus' in the province. While the government can support the 'normal' infrastructure requirements of the province, creating infrastructure that will enable them to realize their vision of competing with the top high growth destinations in North America, required resources that could not be completely met by the government, given their fiscal circumstances. The province, purposely looked at P3s to augment public resources for investments in infrastructure.

**Emergent Actors**

In 2001-2002, Alberta faced a storm of economic and fiscal challenges. Its revenue dropped by C$4 billion, threatening to derail its plans to repay its debts as it approached its centenary year and provide critical infrastructure. The province needed to respond quickly to a slumping world

economy, weaker equity markets, a downturn in the price of oil and gas, and emerging uncertainties in world markets in the aftermath of September 11, 2001. Following these events, the government set up a fiscal review commission, called the Financial Management Commission (FMC) to review the fiscal structure of the province. The FMC recommended that the Government of Alberta (the "GoA") and Supported Infrastructure Organizations (SIOs) should be allowed to enter into alternative funding arrangements for capital projects, under specific conditions and with appropriate guidelines in place. The GoA accepted this recommendation and amended the *Fiscal Responsibility Act* to allow alternative financing for government-owned capital projects. Previously, all capital spending was funded on a pay-as-you-go basis. The *Fiscal Responsibility Act* was further amended in 2008 to clarify that alternative financing may be used both for GOA-owned capital projects and for GOA-supported projects owned by school boards, Alberta Health Services and post-secondary institutions. On February 11, 2003 Cabinet established a process for approving capital projects and alternative financing of capital projects (P3s). Alternative financing can take different forms and could include P3s, capital leases, capital bonds and other borrowing. Under the process approved by Cabinet, an Advisory Commission on Alternative Capital Financing (the "Commission") was established and announced on May 21, 2003. The Commission's primary role is to provide recommendations to the Treasury Board Committee (a Cabinet Committee responsible for government's financial decisions) on proposals for alternative financing for capital projects. The Commission consists of private sector individuals with expertise in areas such as finance and investment management, real estate development and commercial law. The Alternative Capital Financing Office (ACFO) was established in June 2007. The role of ACFO is to: a) Collaborate with stakeholders and other ministries and jurisdictions to develop opportunities to pursue alternative financing options such as P3s and implement where cost

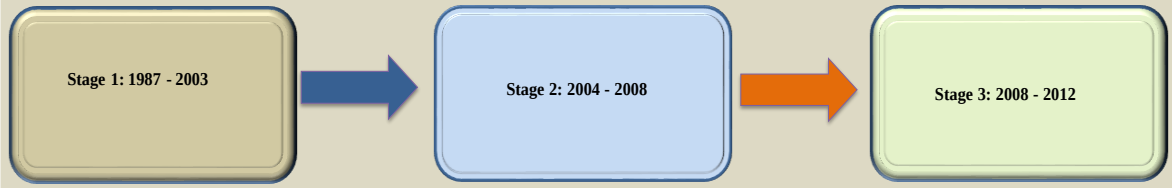
effective and feasible; and b) Lead the development of P3 guidelines to provide consistent standards, policies and accountabilities across capital projects and ministries.

**Project site -** The Transportation Utility Corridor (TUC) was originally planned around Alberta's two major cities in the late 1970s. During the 1980s and 1990s, the Province of Alberta purchased most of the lands required for the TUC. Within the corridor, the Province planned for freeway standard roadways to alleviate the heavy goods and services traffic from the city's highway network. In Edmonton, this is the Anthony Henday Drive (Highway 216); and in Calgary, this is the Stoney Trail (Highway 201). The southwest, southeast, and northwest portions of Anthony Henday Drive are now completed. A mix of conventional (SW) and public-private partnership (P3) delivery (SE/NW) were used, while the final Northeast leg is under construction also as a P3 model. This project will focus on the Anthony Henday highway. See Table 6 (page 92) for an overview of project components.

The Anthony Henday Drive project (under provincial jurisdiction) began around 2000 with the construction of the South West segment as a traditional (DB) project model. P3 project development has expanded in Alberta since 2003 when the first P3 project, the SEAHD, was initiated. The evolution of the institutional environment has reflected the type of issues that emerged during project development. During the case study, it was noted that the various segments of the Anthony Henday Drive (AHD) even though initiated under a different set of circumstances entailed comparable degree of complexity, risks and uncertainties. These by themselves provided a balanced comparison given their different time frame, prevailing circumstances, project assumptions, and lessons learned which formed part of the evolutionary process in Alberta’s P3s.

There are three identifiable project stages that coincide with the three P3 projects done as part of the Edmonton ring road (Figure 12). These are: Stage 1: 1987-2003 (SHTF and RFP on SEAHD); Stage 2: 2004-2008 (SEAHD and NWAHD); Stage 3: 2008 – 2012 (NEAHD). These project generations are categorized in a specific context to better understand how changes in project development were affected by changes in the institutional environment. Table 7 (page 141) shows the key policy measures and project stages since 1987 in Alberta.

**Figure 12 P3 projects and stages**




* Swan Hills Treatment Facility

* South East Anthony Henday Drive
* North West Anthony Henday Drive

* North East Anthony Henday Drive

To properly evaluate the selected projects, a classical case study methodology was followed. A semi-structured interview approach was adopted and asked interviewees questions that were both descriptive and exploratory in nature. The aim was to identify and isolate trends and patterns around the:

a) political institutional environment, based on the P3 experience in Alberta,

b) structure of the project arrangements in Alberta (business/project environment),

c) influence of the organizational institutional environment, and

d) influence of the *overall* institutional environment on project development

**Appendix C** shows a detailed list of interviewees. The interviewees were project participants and community or opinion leaders in selected organizations representing various stakeholders.

**Appendix D** shows the detailed protocol deployed during the interviews that served as a guide for the data collection.

### 4.4 Data Collection

Case study data was collected from a variety of sources. Yin (2009) identified six sources from which qualitative research data are collected for case studies. These are: a) documentation, b) archival records, c) interviews, d) physical artifacts, e) direct observations, and f) participant-observation. In this study sources of data collection came from in-depth interviews, archival records and document analysis. Furthermore, methodological rigor was added via data triangulation by crosschecking with the various sources. It also ensured the availability of a rich, thick qualitative data that addresses the complexities of policy development and implementation in a large complex organization like the public sector entity. Even though the literature suggests *observation* as an essential element of qualitative enquiry, it could not be adopted as data collection method because it was simply impossible to obtain access to the negotiation meetings between the public and private sector entities even while these negotiations were progressing. They are conducted confidentially. Data discrepancy or inconsistency was further investigated for valid explanations. Because the social unit being studied is a public sector program, it was considered that there is substantial evidence to assume the study will be sufficiently bounded.

There are huge financial stakes in many P3 projects (Grimsey & Lewis, 2004). The same is true of the P3 projects in Alberta. Due to commercial sensitivity and competitiveness factors, selected methods of data collection were given careful consideration. There are two reasons for the sensitivity around corporate information. First, the P3 market is competitive and it is important that it remains so. Private companies bidding on P3 projects are typically unwilling to reveal information to researchers because of the concern that it could impact their competitiveness in the

market. The second reason is related to the one above. There is a prevailing perception that private companies should not make excess profits from the provision of a service that has traditionally been provided by the public sector. Therefore, the rejection of observation due to its impracticality, led to the decision to use interviews and archival documentation as the main sources of data in these case studies.

Data collection started in the fall of 2012 with a pre-test of the interview protocol or instrument. This pilot-tested the interview protocol and led to some modifications in the protocol. Following approval, I collected data consistent with the guidelines set by the Ethics Review Board (ERB) on the use of human participant in research projects.

The Capital Planning Unit (Ministry of Finance and Treasury Board) and the Ministry of Transportation and Infrastructure provided rationale for the deployment of this policy, discussed how this has differed from conventional procurement, and implementation approach and challenges. Contractors like, Bilfinger identified the business impact and how the deployment process has changed from conventional procurement. The Unions (e.g., AUPE) provided their views on the policy impact on ordinary citizens and public sector employees affected by P3 deployment and governance issues. Consultants, like PriceWaterhouse reviewed risk alignment and distribution vis-à-vis the conventional procurement, how the cost structure differs in both cases, and the optimal financing strategy given risk associated with long term contracting, warranty and maintenance. Civil society groups like, the taxpayers federation, journalists and public policy experts provided their views on possible long term impact of the debt profile and other tangible and in-tangible costs and benefits of P3s. See **Appendix D** for the interview protocol.

Two notable changes were introduced during data collection. One was the realization that Alberta's P3 program may have started with the experiences from the failed Swan Hills Treatment

Plant. Therefore, the starting point of the project timeline was modified to 1987. The second modification was the inclusion of the process and learning associated with the Road Maintenance Agreements for road repairs and snow clearing that the Alberta government started in 1996. These were considered significant milestones or material precursors in P3 evolution in Alberta and were thus included as part of program profile. However, actors associated with the Swan Hills project or Road Maintenance Agreements were not interviewed as part of this research.

**Interview** As stated, interviews were the main source of data for this project. Yin (2009) indicates two important tasks that an interview must accomplish. One, it must follow a line of inquiry (appreciative inquiry), and two, it must ask the actual questions in a way that is unbiased and serves the needs of the chosen line of inquiry. A mix of open-ended and semi-structured interview questions were adopted and allowed the conversation to evolve in some cases. Interactive personal one-on-one in-depth interviews were the most important and valuable source of data for this thesis. The interviewees were chosen for their direct participation and involvement with the P3 policy development and project implementation rather than their representativeness. Initial participants were asked to suggest names (snowballing technique) of other key players involved with the P3 policy in Alberta. This helped to focus on key participants and advance the data collection much faster.

The sample selection focused on those who were directly involved in any segment of the AHD from the stakeholder groups identified, at the senior level. Even at that, there were sub-contractors or minor participants who could not be reached. An example is the Consulting Architects and Engineers of Alberta. This however, does not present a problem, as a majority of the stakeholders who were directly involved in these projects were interviewed. What struck this researcher was the absence of a major stakeholder group that advocates for infrastructure assets

across the country or within the province. Interest in infrastructure is highly localized, lacks a coherent voice in the face of deterioration, but needs advocacy for its creation and maintenance when faced with budget cuts or other threats.

Interviews included but not limited to Capital Spending Unit in the Ministry of Finance and Treasury Board, Ministry of Infrastructure and Transportation officials, other actors like the AUPE, Financial Advisors to P3 partners (PriceWaterhouse, Grant Thornton), Project partners and contractors e.g., Bilfinger, Consultants/Engineers e.g., Stantec, Building contractors, e.g., Flatiron, PCL Builders and Lafarge, and civil society groups such as the Taxpayers Federation of Alberta. Interviews were used as they tend to focus directly on the case study questions. In all, 35 interviews were conducted averaging about one and half hours each. Interviews were audio recorded and transcribed using digital media and provided to selected participants for review and member checking. Member checking is generally considered an important method for verifying and validating information observed and transcribed by the researcher (Merriam, 1998; Stake, 1995) and is meant as a quality check and critique of the data. Member checking also provides material for further investigation and triangulation, "They [the participants] also help triangulate the researcher's observations and interpretations....The actor [participant] is asked to review the material for accuracy and palatability" (Stake, 1995, p. 115). Handwritten notes were taken during the interviews for the purposes of extending questions or as the researcher's personal notes for further investigation. All the interviews were conducted during work hours in the offices or work sites of the participants while respecting the participant's schedules. Interviews were conducted at a time and location suitable for the participants. The final distribution of interviewees by category is as follows: Public sector [including a former Premier and GoA Assistant Deputy Ministers/Executive Directors] – 9; Construction industry executives – 12; AUPE – 2; Taxpayers

Federation – 1; Financial Advisors – 4; Engineering Advisors – 3; Journalists – 2 and Public policy analysts – 2. The interviewees were key actors in the development of various segments of the Anthony Henday Drive between 2002 and 2012. The interview protocol was designed to further investigate the central research question and objectives, as well as issues identified during literature review, and ultimately facilitate data analysis.

**Documentation and archival records** A review of historical records is ideal where data may not be accessible through interviews, focus groups, or observation. However, it is prone to the biases of the author(s). Published documents that were reviewed include but not limited to government and stakeholder annual reports, business plans, GoA 25 year Capital Planning Strategy Report, GoA budget documents, media publications, newsletters, bulletins. These historical sources furnished information on the original justification and basis for engaging P3s at the start of the policy. It also helped to trace the evolution of P3s in Alberta, assess institutional structures around P3s, the role of key actors, and benchmarked planned targets, achievements and shortfalls of the policy. A review of secondary sources such as Ministry of Infrastructure and Transportation's internal reports on P3 policy and implementation was analyzed. Alberta Auditor general's reports were used to supplement and triangulate information gathered from other sources.

### 4.5 Data Analysis

Miles and Huberman (1994) suggest that qualitative analysis tends to follow three major steps: first, data reduction (which includes selecting, focusing, simplifying, abstracting, transforming), second, data display (which includes organizing, compressing), third, conclusion drawing/verification (which includes identifying irregularities, patterns, explanations, possible configurations, propositions). This research benefitted from the use of excel software for data

reduction, display, verification and consolidation. This helped organize and establish the relationships between themes to form a conceptual profile.

Yin (2009) outlines four general *strategies* for analyzing qualitative data. These are, a) theoretical propositions, b) developing case descriptions, c) using both qualitative and quantitative data, and d) examining rival explanations. The theoretical propositions rely on the initial theories that informed the research initially. Developing a case description sets out to provide a holistic view of the process under study, based on the view of participants closely associated with the project. The deployment of both qualitative and quantitative methods tends to benefit bigger projects with multi-site location. Finally, the idea of examining rival explanations works well with any of the above strategies and seeks to enhance the confidence in the findings by eliminating the possibility of external influences besides the intervention. This research adopted a descriptive approach in analyzing the data collected. Furthermore, Yin recommends and describes five techniques for analysis: pattern matching, linking data to propositions, explanation building, time-series analysis, logic models, and cross-case synthesis. In contrast, Stake (1995) describes categorical aggregation and direct interpretation as types of analysis.

Data analysis started with storage of all data collected in word and excel software and password protected to ensure confidentiality and security of data. Next step was data transcription. This ensured that all interview materials, journal entries, field notes and documents were properly transcribed. This allowed the researcher to become familiar with the data and its attributes.

According to Yin (2009, p.160), a high quality analysis must: a) attend to all the evidence; b) address all major rival interpretations; c) address the most significant aspect of the case study; and d) utilize the researcher's prior expert knowledge. This research closely followed a multi-

case study design (3 P3s and 1 conventional case study projects), and data was analyzed case by case through thematic analysis and then cross-case analysis (Stake, 2005). Therefore, each case was analyzed on its own merit and then a cross-analysis was made. For the thematic analysis, this project followed the guidelines put forward by Braun and Clarke (2006). These are (1) familiarizing yourself with your data, (2) generating initial codes, (3) the researcher read throughout each transcript to be immersed in the data, (4) reviewing themes, (5) defining and naming themes, (6) producing the report.

Data analysis was an ongoing exercise starting with the transcription and coding of interviews, and consumed a large portion of research resources. Interim analysis commenced as data collection began. Undertaking data collection and preliminary data analysis simultaneously, which according to Merriam (1998, p. 162) is "the right way" in qualitative research, is helpful because it enables the researcher to "focus and shape the study as it proceeds, through consistent reflection on the data and attention to what the data are saying" (Glesne, 1999, p. 130). Meanwhile, to ensure consistency of the coding process, a coding structure template was developed and deployed for this purpose.

Contrary to the data analysis approach advocated by Corbin and Strauss (2008), this research project identified a core category before entering the field, via literature review and by adopting the Mahalingam (2011) model as a starting reference. This helped to preserve research resources and restrict the research scope to a manageable size. A core category represents the central theme in the data. The dissertation defined the institutional environment concept as the central theme of the research and therefore, set the boundaries of the research scope in advance. The institutional environment was initially operationalized as *Legitimacy*, *Capacity* and *Trust*. The propositions derived from the literature review also guided the data analysis. As a result, the coding

procedures were limited to those pieces of data that related to the institutional capabilities as the core category. The task of the data analysis was to specify and enrich the concept of the institutional capabilities. Hence, the concepts that are built around the core category needed to be identified. This was done by labeling pieces of data. A piece of data could be a word, a sentence or a section of a document. Coding (labeling) proceeded line by line when rich parts of a document were analyzed. This detailed examination opened up the conceptual possibilities hidden in the data. After concepts had been discovered, links between the different concepts were searched. The constant comparison worked out the dimensions and relationships between the concepts that formed the core category (institutional capabilities).

The coding structure was initially made consistent with the Mahalingam (2011) model to aggregate along the key institutional elements of Legitimacy, Capacity and Trust. (See **Appendix E**). The same coding structure was adopted for both the primary and secondary data sources, and thus making for coding consistency in the entire data set. From a practical point, the coding was pre-established from top-down, and after completion of the coding process was aggregated from the ground up and summarized to the three key environment elements stated above.

A ***stakeholder analysis*** - was undertaken to gain an understanding of the major stakeholders, their interests, and potential supportive or disruptive capacities in the P3 implementation. The results of the stakeholder analysis identified primary P3 key actors or stakeholders as the public sector, the construction industry, taxpayers, community organizations, consultants and the media. Secondary P3 actors or stakeholders were identified to include groups such as: Engineers, Architects, public policy analysts, researchers, and financial institutions, e.g., banks (see **Appendix A)**.

***Content analysis*** **-** a type of secondary data analysis, was used to analyze text, including, interview transcripts, newspapers, books, manuscripts, and websites to determine the frequency of specific words or ideas. The results of content analysis allow researchers to identify, as well as quantify, specific ideas, concepts, and their associated patterns, and trends of ideas that occur within a specific group or over time. Content analysis was deployed, to analyze the secondary documentation reviewed as part of this project. Out of the 66 articles and materials reviewed, a majority (55 percent) were about risk of P3s, 40 percent about the benefits, and the rest (5 percent) about a variety of other issues such as environment, community life and social impacts of P3s. Excel software was used to collate, summarize and analyze the secondary data consistent with the approach used for the primary data. A review of the secondary data was done and analyzed across several dimensions (content, author, timing, type of stakeholder, aspects of P3 discussed, and demonstrated knowledge of the Alberta environment).

Furthermore, *a* ***logic model*** *was* adopted as a tool for program development and outcomes, given the semi-evaluative nature of this investigation. A logic model was considered more appropriate as the policy intervention nature of P3s was mapped based on resources assigned vs. results achieved and lessons learned in the process. In addition, it considered the nature and extent of stakeholder engagement and involvement with key aspects of the project and overall governance approach. Yin (2009) justifies logic models as applicable to case study analysis and addresses their application at the individual, organizational (firm) and program levels (See **Appendix B**). This analysis was adopted at the program level data analysis as appropriate.

**Unit of analysis** – One of the important elements in a case study research is to identify the unit(s) of analysis. The unit of analysis is the central organizing frame of the research adopted in the analysis of the research. According to Yin (2009), in the classic case study, a ‘case’ may be an

individual person in the case being studied, and thus the individual is the primary unit of analysis. The main factor in choosing and making decisions about a suitable unit of analysis is to decide what the researcher wants to be able to say something about at the end of the evaluation (Patton, 2002). On the other hand, institutions can constitute the unit of analysis (Wisman and Rozansky, 1991). For this research, the unit of analysis is the *P3 policy or program* of the government of Alberta.

**Validity and Reliability** – Numerous frameworks have been developed to evaluate the rigor or assess the trustworthiness of qualitative data (e.g. Guba, 1981; Lincoln & Guba, 1985). There is an in-built design that includes validity and reliability attributes. On construct validity, the project was designed to and adopted the use of multiple sources of data/evidence (from policy makers, AUPE/CUPE, Industry and Taxpayers Federation and publicly available historic data sources). Member checks were employed to validate and confirm the accuracy and interpretations captured in interview documents. External validity was enhanced through careful attention to the research question, research objectives and criteria for selecting cases. There was also extensive documentation of data, including reflective commentary, in word and excel software, of all aspects of the study via the maintenance of a database of interviews, historic data collected and personal notes of thoughts and observations. All these contributed to an enhancement of the reliability and trustworthiness of the research process and outcome.

## 4.6 Summary and Conclusion

The overall methodology of this dissertation is a longitudinal retrospective case study. Due to the complex nature of the research undertaking, an exploratory multi-case research design was selected. The central research question is *to understand how the institutional environment affects*

*project outcomes in the transportation sector*. To answer this question, first, this thesis set out to reconstruct and elaborate on the emergence of P3s in Alberta. Second, analyze how policy measures and the institutional environment interact and affect each other within the projects. And third, analyze how the evolution of the institutional environment impacts Alberta P3 projects.

Based on publicly available secondary data, this study reconstructs the emergence of P3s in Alberta to meet the first research objective. With an understanding of this emergence, primary data was used to explore the overall institutional environment, the nature and structure of P3s in Alberta, and the influence of the institutional environment on project-related issues, which ultimately impact project outcomes. This study uses case study narration methodology and employs two types of data sources. First, at the core of this dissertation, 35 in-depth interviews with P3 stakeholders were conducted. These were transcribed, coded and categorized with the help of Excel software according to the Mahalingam (2011) model. The interview data were analyzed supporting classical methods of logical argumentation and evidence through quotations.

A second source of data (secondary data) used came from: media sources, web publications, auditor's reports, and government publications going back to 2002-2003. Altogether, 66 written material and articles on Alberta's P3s were extracted. These were systematically structured and analyzed across several dimensions (content, actors, timing, and overall utility) using Microsoft Excel, and general word counts. This helped confirm (or challenge), while complementing, findings from the analysis of interview (primary) data.

Linking findings to the existing literature and interpreting them in the light of neo-institutional theory, helped formulate propositions for all three specific research objectives. This

was important for advancing theory on institutional change and public infrastructure asset management. Among other benefits, it resulted in the introduction of a neo-institutional theoretical framework that integrates aspects of how regulatory actors impact public infrastructure asset management, and of how the organization in turn influences its environment (organizational field). It also helped to enrich institutional change strategy and process models with newer trends of neo-institutional theory (e.g. institutional logics) and to better understand the importance of market and non-market actors in the evolution of organizational fields.

**Conclusion** – This chapter provides an exposition of the overall research philosophy, justified the choice of case study as the most appropriate research strategy, and detailed the research methodology while setting out the four stages of this study. In addition, it discussed the details of data collection and analysis approach that serve to evidence and support the overall study, while ensuring validity and reliability of the research outcomes. The next chapter details the findings of the four case studies making up the Anthony Henday highway.

# CHAPTER V: FINDINGS

*Chapter two reviewed and analyzed current literature, policies and practices documented on P3 projects from around the world. Chapter three reviewed and established institutional theory as the appropriate theoretical framework for this study. In chapter four the detailed methodology used for this study was outlined. This chapter presents the findings of this study. These findings are based on the two sources of data (secondary and primary) that informed this research. Data validation was done to ensure consistency of both sources. This presentation begins with a review of the institutional environment, describes the nature of project structure in Alberta, traces the emergence of P3s, outlines the influence of the institutional environment on project outcomes and concludes with insights on how previous project outcomes influence subsequent ones.*

Given the case study approach adopted, data analysis advanced in a way that extracted major themes, trends and patterns from the questions that were posed and the issues brought up by the interviewees. In this context, given the nature of the emergence of P3s in the road sector, it identifies how Alberta's institutional environment evolved, since the first partnership arrangement in 1987 involving the SWAN Hills project.

## 5.1 Political Environment

***Political leadership*** **-** Political support for P3s was noted as strong in Alberta. Interviewees confirmed that this is one area they did not have to worry about and were very comfortable with. Political stability given more than 40 years of one-party government has established Alberta as a jurisdiction of political stability in its own way. As part of this study, it was noted that Alberta appears to be the only jurisdiction where a line minister responsible for Infrastructure and Transportation that initiated the first P3 road project (SEAHD) went on to become the Premier,

the highest political office in the province. Based on interview responses, political leadership has not been lacking in Alberta's P3s.

*"I think it has to be long term given the life of P3s. Alberta has done that. Political commitment has been very good. Premiers Klein and Stelmach were strongly committed. I hope Redford is as committed as her predecessors on P3s. Prominent politicians e.g., Lyle Oberg etc. were very supportive and committed to P3s too."*- Senior construction industry executive.

*"Government is supportive of P3s in Alberta. There is no question about that. But we say its use must be selective and when appropriate."* - Director, Civil society organization based in Alberta.

*"Alberta government has been very supportive, but not much is known about P3s by the citizens."*- Edmonton-based journalist.

*"Definitely Alberta is pro-P3 for sure. The Alberta environment is very attractive to investment. The folks who get here from overseas are very happy with Alberta. The margins are very high and attractive."* - Construction industry manager.

*"By having the government show their commitment, it sends a message to the market. The last thing a business entity wants is to know that one of the risks they have to deal with is the government itself. So to that extent, we are very happy they are fully committed to P3s."* - Construction industry executive.

*"I would share the fact that they are happy with Alberta's process. Our process is fair, transparent and clear. And our partners have told us that. Our Premier is very supportive of P3s, while some of our opposition political leaders may not be so supportive. Stelmach was the minister for transportation and Infrastructure, and later went on to be Premier, that helped push P3s in Alberta. Stelmach had that vision that it will work. He pushed P3s to a successful end. We could not have done anything without it."* – Senior government executive.

***Justification/rationale*** - The establishment of a clear rationale was mainly articulated via government media releases and orchestrated by a motivated political leadership determined to drive the process in Alberta. One of the findings of this study indicates that there was clear

justification or rationale for P3s provided at the start of the SEAHD P3 project and subsequent P3s. But this was an outcome of the unsuccessful Swan Hill partnership, where it was acknowledged that the government did not articulate a clear rationale going in. Interview data below suggests that the government provided justification or rationale for the AHD P3s. The main rationales were to generate value for money (VfM), ensure time and cost certainty, and derive the benefits of coverage offered by a long warranty period. What is equally important is the recognition that P3s may not be appropriate for all projects, as stated in the FMC report and the 2003 Throne Speech, as these rationales viewed as the organizing objectives may not be realizable in every project.

The articulation of a rationale for P3s is evidenced by some of the comments captured in the research interviews.

*"Markets were hot when they started these P3s, Alberta was clear on certainty of delivery; high quality etc. They were very clear on their objectives."* - Senior construction industry executive.

*"We set out to achieve cost certainty. We set out to ensure high quality, but reasonable standards. We set out to ensure open, transparent and fair processes with our bids. And these we have achieved so far and industry confirms that to us each time."* - Senior government executive.

*"Justifications were advanced. The main one was to implement necessary infrastructure without incurring immediate capital cost. That is ok for me as an Albertan."* - Design consultant, SEAHD

There were indications of a strong motivation to move in this direction. This motivation had a strong political undertone.

*"At the time we under-estimated migration into Alberta, and so we needed infrastructure among other things. When we looked at the money available, there was little left for infrastructure, as more money went to social spending. It*

*was a question of how do we package this on-budget and on-time. By presenting it as a P3, we will not only have a consistent amount available yearly. So in comparison to the DB, it was better to use P3s for all these. We had a very good team, which was crucial. The ADM at the time assembled an excellent team to get this policy implemented. So that was the start of all these. Frankly, we did the first component and later the second component. And because of the success of the road program, we went to school P3s."* - Retired Premier.

Not everyone agrees with nature of political support or the savings rationale provided by the government. Here is Brian Mason, NDP Leader: (*http://www.albertaviews.ab.ca/wp-content/uploads/2012/02/fergcrawmar2006.pdf*)

*"According to PricewaterhouseCoopers, building the Southeast Edmonton ring road using public dollars would have saved taxpayers, most likely, about C$41 million," said Brian Mason, leader of the Alberta NDP. "Under the worst case scenario, Albertans would have saved C$6 million, best case scenario would have seen a C$71 million savings. Either way, building this road as a P3 is a gift to the Tories' friends in the construction industry."*

***How things get done*** **–** Part of the political institutional environment is the way of getting things done, or how things are done, an approach that appears unique to Alberta. It is a way of getting major tasks accomplished, the old fashioned way. My data suggests that rather than the conventional approach of using established methods of engaging bureaucrats, there was in addition, a reliance on a trusted network of industry partners who helped midwife the push to implement P3s. For instance, the Alberta Road Builders and Heavy Construction Association and the Consulting Engineers of Alberta were engaged as part of this network of collaborators very early on. This group has been collaborating with the government since the privatization of the road maintenance contracting arrangements of the mid-1990s. Therefore, at the inception of P3s, it was fairly easy to co-opt them as supporters of P3s (See Table 8).

***Collective understanding of and commitment to P3s***

**Collective understanding:** This study found that there was collective understanding of P3s by both the public and private sectors. Importantly, the P3 partners were aware of the benefits and obstacles involved in P3s. Moreover, the government did not want a repeat of the Swan Hills experience. That collective understanding was articulated by the interviewees (my paraphrase): as awareness that P3s are risky by their nature, that P3s have advantages and disadvantages, that P3s are prone to uncertainties given the long duration of the projects (a typical P3 could last for about 30 years), that P3s are controversial, and could be targeted by both labour and opposition political parties, a potential for rejection by taxpayers, with its unpleasant political costs for government. They also recognized that given the experiences of other jurisdictions, there was need to ensure that the government was committed to the program for the long haul.

**Public sector commitment:** A standard DBFM contract provides a mechanism for dispute resolution, and this tends to demonstrate the strength of public sector commitment to implement P3s transparently. This commitment translates into among others, an agreement by the parties to mutually resolve any issues that may arise during project execution. Importantly, built into this mechanism is the role of a fairness auditor and an arbitration process. Arbitration use has been minimal in Alberta due to the good relationships and mutual understanding that seems to exist between the parties. The court is the option of last resort when every available mechanism is exhausted. So far, no legal action or litigation involving the Alberta government and any P3 partners has been reported.

**Private sector commitment:** A senior construction industry manager has this to say about the commitment from both parties. *"Both parties are very much committed to the*

*advancement of P3s in Alberta. The records speak for themselves.* The government follows up with its project monitoring teams to certify performance and authorize periodic cash payments. "*The government makes sure that the private partners have their skin-in-the-game, by the use of availability fee payments. These payments tie periodic cash payments to project availability and performance. Due to this very strict availability requirement, there is strong oversight from other interested parties, e.g., banks and other loan providers and guarantors."*

***Stakeholder engagement***

Transportation infrastructure is complex by nature. Every project is visible to the public and thus there is always much at stake. Thus, the government tends to be proactive and typically takes a long view when it comes to road infrastructure. For instance, the acquisition of land required for the AHD was made over 30 years ago beginning in the early 1970s. Regardless, roads have local implications as most people tend to not want them close to their property, the "not-in-my- backyard" mentality.

Issues about roads tend to involve private citizens and several levels of government. For example, obtaining permits and rights of way over several years and buying private land for the purpose of the AHD. Furthermore, the GoA needs permits and access from other levels of governments and private owners to relocate what is on the surface and beneath the surface to make way for road infrastructure. For instance, utility lines and pipelines transverse this province and properly relocating them to make way for highways has been a major undertaking. This required many years of careful consultations, advocacy and negotiations with all stakeholders in order to advance the highway construction. In a democratic setting, it is important to seek and obtain necessary permits to access private property or land belonging to another level of government.

Since expropriation is never an option in Alberta, several open houses and public consultations took place to sensitize local communities about the highway project and get their views and support as part of the consultation process.

While the GoA made some effort in engaging the communities near the P3 projects, it appears that these consultations were a mere formality as their views of the citizens were not considered as part of the input, but rather as an information or in-house session only. Here is what the AUPE says about the consultation process:

*"This government has mastered the art of meaningless consultation. This was perfected during the Klein years and we have gone through the same motion, without any substance. There is no clear definition of choices outside the ones they bring to the table. The consultations are set up to get us to a predetermined conclusion. These are conclusions that have been reached by the government. Their engagement with stakeholders is simply to go through the motions".*

Other interviewees were a bit more diplomatic in their responses. According to the public sector senior managers, "*There is still a public perception that we are not doing enough to tell the public about what we are doing and how we are doing it. Maybe we need to do more public enlightenment, maybe because they don't understand NPV*."

This is what a PriceWaterhouse consultant calls the education effect. In his words, *"Education is key to building long term support. Recognize that we are going into unknown territory given our provincial fiscal situation."*

## 5.2 Structure of Alberta's P3 projects (Business/Project Environment)

### *Structure of Alberta's P3s*

The type of contracts found in Alberta's P3 road projects is the DBFM model. This model of contracts is in the middle of the P3 continuum previously identified in chapter 2. This type of P3 arrangements suggests a balance between the partners in the sharing of risks and benefits arising from the partnership structure. This suggests that there is a clear demarcation of the roles and responsibilities of each partner. For instance, the Alberta P3 contract makes it clear that the projects belong to the GoA. This is important because in some P3s, it is understood or implied that the contractor owns the project. Part of this structuring of roles and responsibilities include the nature and bearer of each type of risk associated with the projects.

### *Risk management*

In Alberta's P3s, project risk is structured so that the government bears those risks classified as environmental and archeological in nature, while the contractor bears risks that are associated with the construction, weather, defects and warranty

The GoA has developed and implemented standardized contract templates. Costs remain a central plank for optimal risk allocation, in that the party that is in the best position bears certain risks and this ensures that such risks are borne in the most cost efficient manner.

Under the DBFM, private finance is required. But Alberta makes a contribution to the capital financing required, thus, limiting the amount of borrowing the private sector needs to make from the capital market. This has been a major advantage as the risk exposure for both parties is limited with the attendant project pricing advantage that accrues to Alberta.

An outcome of the P3 expansion in Alberta was a consideration of the potential risk of a sudden credit freeze on P3 projects. Public sector interviewees confirmed that an evaluation of financial viability of a potential proponent is now part of the pre-assessment criteria, and a shorter window is allowed for a successful bidder to sign the financial close document and lock in the financing arrangement that has been approved. These steps, taken to deal with the recent financial crisis, have helped minimize the exposure and risk associated with P3 projects in Alberta.

Alberta is fortunate to have a AAA rating, especially from Standard and Poor's (Standard and Poor's, 2012) which is a major confidence booster for both the government and private entities doing or intending to do business with the government of Alberta.

Interviewee comments on risk allocation in Alberta's P3s suggest a fair and balanced approach that tends to enhance P3 project success.

*"The risk profile that AT has is reasonable and fair. The DBFM agreement - On the construction side is a drop-down from the concessionaire. The risks are adequately distributed. In some ways they are fair and in some ways they are punitive, especially in dealing with Utility companies. The province has done a good job of helping out with utility costs (say a pipeline that is underground). For all third party costs, the bidder has to carry a portion of it."* - Senior construction industry executive.

*"Yes, it is fair. There is always a bit of tension about some of them. But overall, it has been a realistic allocation. They have a very reasonable expectation about risk and responsibilities. We don't have any real problems with the risk allocations among the parties."* - Senior construction industry executive.

*"I agree with the fact that we are not in a position to fully and properly evaluate all the risks and assess the risks. And this is a major challenge for ordinary people to do. It is very difficult to assess if these projects are in the best interest of the public. It is certainly difficult for me."*
Journalist, Edmonton.

*"From the first P3 we have evolved. We've spent a lot of time on risks - measuring, ranking, allocating etc. Industry pushes back too. They want to be fair and willing to pay to pass that risk and they always tend to push back. And we say no."* – Senior government executive.

*"Alberta transfers all the risks to the private industry, but provides a significant amount of data about what is out there. No one has run into a huge surprise as to what is out there. Generally, those risks have been transferred to parties who are in the best position to bear them and make decisions about them. The risk process has worked fairly well, yes there are environmental concerns, utility lines buried, but they have been properly distributed."* - Senior design consultant.

However, not everyone is satisfied with the risk sharing approach at AT.

*"The government can do more in sharing risks. As contractors we like fewer risks. But the process in AT was during the bidding process, they key milestones where we were allowed to submit questions. These related to some type of risks. They responded at certain time frames. Some they did not answer. The risk team will then assume that there is a risk when we don't get a response."* Local construction executive

While there is some consensus on the fairness of the risk allocation, not everyone agrees with the incentives and penalties scheme now in place. This respondent suggests that AT's penalties are severe. AT is of the view that this works to motivate some contractors, but it may have the opposite effect on others, as they (contractors) devise ways to avoid them.

*"We take full risks associated with maintenance of the road. They (AT) are able to mitigate their risks by passing it to the contractor. And the contractor takes steps to insure against their risks. This way the government's budget is preserved. For incentive/disincentive: The P3 contracts have adequate incentives/penalties that make us deliver higher quality roads. The penalties are severe. We do try to avoid them at all cost, by doing whatever it takes to avoid them."* - Construction industry manager.

Another respondent suggests that it is not just the incentive and penalty structure that works against local contractors, but the entire requirements to participate in P3s, and suggests a provision to take care of local contractors may be needed.

*"To rise into the global market place, you need deep pockets. You need to be very knowledgeable in commercial terms. You need to be knowledgeable in finance issues, latent defects etc. From a securities point of view, you are asked for bonds, letters of credit, etc. From a contractor's point, we are on the hook for 14 yrs. Will it stop us from bidding, yes! The requirements are onerous for a local contractor. The security deposit locks up a lot of money during the construction period of the project. For global players like Flatiron etc., it wasn't a huge requirement to meet and stay in business. But for local contractors it is a huge amount of money. From a taxpayer/government perspective, that eliminates the risks and enables them manage the projects successfully."* Local construction executive.

Continuing, in reference to another project they were part of, he said, *"There are substantial penalties. There are some incentives as well. In the end we signed the contract, because we were comfortable with the overall contract."*

Other respondents consider that a protective clause may defeat the intended benefits that may accrue from P3s as a competitive arrangement. The government interviewees acknowledged the challenge and noted they are working with local groups such as the Alberta Consulting Engineers and Architects, to link them with P3 players, as a better way to preserve local jobs. They insist that writing a protective clause into the contract will limit Alberta's competitiveness given the global nature of the P3 market.

***Conflict management***

Conflicts could derail a P3 program. Therefore, conflict prevention and conflict resolution mechanisms must be made structural features of a P3 program. Alberta appears to have worked hard in this direction, again coming from the Swan Hills experience where several disagreements were a feature of the partnership and no clear conflict prevention and management was in place to

sufficiently address the issues in play. The conflict prevention tools in place with the partnership arrangements of the AHD include the Fairness auditor, use of experts to determine whether bids are competitive, the arbitration process and the establishment of a clear set of criteria that determines a successful bidder, e.g., one of them is that the bidder must present the lowest NPV. That said, one of the strongest conflict management tools that was adopted was the rapid fire" communication adopted by the AT and the bidders. Several meetings are held with the RFQ responders even before the real negotiations are done. These meetings were to iron out all the kinks around specifications, risk identification and allocation, project management and organization among others.

The absence of litigation and limited use of the arbitration process so far is evidenced from the comments made by interviewees.

"*That goes without saying. These are complex and sophisticated projects. We take the time and energy to work it through. Some of them take a lot of money to get these resolved. Conflicts or misunderstandings have been successfully resolved each and every time. The resolution process works well."* – Construction industry senior executive.

*"I don't know there have been any major conflicts. AT has been emphatic about sticking with their plan and makes it clear that every party stays within that plan. This strategy removes most of the conflicts. The process is really good and works well. The downside is it limits innovation capacity."* – Senior design consultant.

*"One, industry pushes back on everything because they don't like to bear risks, and we give it back to them. Everything that is unclear is taken up before the contract is finalized: from girders to surface quality to environmental concerns and regulatory or municipal approvals. Everything is extensively discussed and resolved before a contract is signed."* – Senior government executive.

*"We have not had any major conflicts. There is the occasional protest about a special item. The fairness auditor is always there to observe and keep everyone on the appropriate path. That ensures a level of fairness."* – Senior government executive.

*"On conflict resolution process - We had some significant project related conflicts. The public does not know this. The girders were put and then went down. Someone damaged our girders. However, these issues were successfully resolved. For me there was a successful resolution of all conflict situations so far."* – Senior construction manager.

## 5.3 Influence of the Organizational Environment on P3 projects

### *Nature and impact of the institutional environment on P3s*

A visible element of the overall institutional environment is the generally supportive nature of the Alberta P3 program. Interviewees and secondary data suggest that the political environment was supportive of P3s, the business environment was supportive of P3s, and organizational environment was supportive of P3s from the current quality of the P3 managers in Alberta.

*"I think it has to be long term given the life of P3s. Alberta has done that. Political commitment has been very good. Klein and Stelmach were strongly committed. I hope Redford is as committed as her predecessors on P3s. Prominent politicians e.g., Lyle Oberg etc. were very supportive and committed to P3s too."*- Senior construction industry executive.

*"Government is supportive of P3s in Alberta. There is no question about that. But we say its use must be selective and when appropriate."* - Director, Civil society organization based in Alberta.

*"Definitely Alberta is pro-P3 for sure. The Alberta environment is very attractive to investment. The folks who get here from overseas are very happy with Alberta. The margins are very high and attractive."* - Construction industry manager.

*"By having the government show their commitment, it sends a message to the market. The last thing a business entity wants is to know that one of the risks they have to deal with is the government itself. So to that extent, we are very happy they are fully committed to P3s."* - Construction industry executive.

Another noted supportive aspect of the environment was the absence of a viable opposition and a critical media and disengaged citizenry created a quiet work space for the government to

undertake the pilot and eventually roll out P3s across other sectors, such as education and water and waste water management. *"Alberta government has been very supportive, because not much is known about P3s by the citizens."*- Edmonton-based journalist.

All of these together, positively set the tone for a favourable outcome in Alberta's P3s as it helped to attract global bidders to Alberta, conscious that the P3 program will not be easily derailed.

***Public sector capacity to implement P3s***

Prior to and during the first P3 road project, (the SEAHD), public sector capacity was practically non-existent. During that phase, consultants were hired for most of the evaluation and assessment procedures required. This included engineering, and legal consultants and financial advisors. These were part of a knowledge transfer arrangement that ultimately trained public sector staff. At the moment, the ACFO is responsible for in-house training and knowledge retention for P3s. And provides training for all ministries and municipalities working on P3 projects upon request.

According to Ministry officials, the GoA is committed to continuous knowledge acquisition by its staff, and the deepening of this knowledge. Furthermore, government has enhanced its capacity by publishing relevant guides for project initiation, assessment and a more comprehensive business case template. These guides and templates have evolved consistently with the evolution and learning from various projects in the province and beyond. For instance, these templates, manuals and guides detail how to use financial indicators to assess VfM, perform risk identification and allocation, undertake P3 procurements, and develop standard contract documents. It also details the various steps needed to obtain approval from the initiating ministry and the relevant cabinet committee (Treasury Board Committee).

Besides, these guides, manual and templates are now consolidated as one document under the responsibility of the ACFO who maintains and updates them regularly. The first Alberta comprehensive P3 guide was published in 2011.

That said, capacity development is now constrained by the absence of a P3 project portfolio or pipeline. This was confirmed by some of Ministry interviewees (see their comments below) who stated that capacity enhancement is now a challenge given that retaining experienced hands is a factor of getting them work to do. If there are no P3 projects going on, they will go to jurisdictions where there are P3 projects. This complicates future capacity, as there is no opportunity to groom and develop the P3 managers of tomorrow. Interview comments indicate both, progress and challenges.

"*We are trying to create depth and breadth via ongoing P3 projects. The challenge in raising a new crop of skilled and experience public sector managers is the fact we have a limited pipeline at the moment."* – Senior government executive.

*"AT and the folks over there have learned a lot over these many years and continue to learn and upgrade their processes and improve on their project delivery infrastructure overall."* - Construction industry manager

*"Excellent transition plan has been in place and practised over the last couple of years. We had really good succession. On the technical side, we have had younger newer staff. We've excellent training and in-house arrangements to ensure knowledge internalization. Teams are formed for this purpose."* – Senior government executive

*"1. We need to do a good job of educating the whole team about the costs involved. We need to have more money for the P3 equivalent, honorarium, pursuit costs, financing costs etc. These costs don't occur in a DB model. The costs structure in a P3 and the DB are different and should become part of our culture. 2. Widen our capacity for cross-learning between DB and P3. Every project manager should be able to do both a P3 and a DB at the same time. Cross training and cross-learning needs to occur in our department. A project manager should be able to do both models. That will increase our capacity. At the moment the hand-offs worries me as we are still cross-learning."* – Senior government executive

***Learning to learn***

This study found that a newly institutionalized practice is that "we must quickly learn to do things ourselves." The initial operational decision to engage outside consultants was largely limited to short-term highly specialized areas, or to areas that must be occupied by an outsider, e.g., Fairness Advisor, (acts as an independent observer in all negotiations and reports on the fairness and transparency of the process to the parties involved). Extensive knowledge about P3s has been internalized and routinized within a short time, as confirmed by several of my interviewees. As previously noted by a construction industry executive, *"AT knows what they are doing, what they want and where and how to get it".* It appears that AT is not content with just creating or internalizing knowledge, they are committed organizationally to growing it and retaining the knowledge base they have created already while adding to it. AT managers expressed concern with "cross-training" and "transitions" from one team to another, as projects move from procurement to construction and into the operation phase. Therefore, an important aspect of the learning was found to be the capacity to adapt processes very quickly to position successfully for the next phase of P3 projects.

***Change to the basis for decision-making*** - While a lot has been learned, one of the key learning points has come from changing the way we 'do and measure things' This was a key message apparent in the initial meetings with Alberta Transportation, Infrastructure and ACFO officials. "VfM is at the heart of everything we do", they insisted. If we cannot show the tangible difference a project makes by way of solid VfM, then, the project is a "no-go." Nothing can change that until a tangible VfM is demonstrated by a clear and objectively verifiable difference with a public sector comparator (PSC). Therefore, the VfM has become a proxy for decision making.

A number of interviewees were of the view that part of what has been learned is what needs to be done differently. They suggest that communicating with the average taxpayer remains a challenge and this is one area that they would like to see change. There was also suggestion that trying to optimize efficiency arising from increased innovation needs improvement.

***The role of the auditor general***

The auditor general has been a central figure in Alberta's P3 evolutionary landscape. Alberta at the time of the P3 emergence had an independent, outspoken and respected auditor (Fred Dunn retired in Feb, 2010). The 2003-04 audit report was detailed and touched on virtually all aspects of P3 initiation and implementation at the time. The many teething challenges that the auditor identified in the 2003-04 report formed the basis for many of the changes that determined the ultimate trajectory of the P3 program in Alberta. For instance, the finding about the confusion caused by the absence of a clear guideline and standard templates for P3s. It said: "Guidelines and Template can be improved." Further, the auditor recommended that, "Guidelines could require better risk discussion." Continuing, it said, "Templates could give examples of better cost-benefit analysis of alternatives." (Auditor's Annual Report, 2003-04, pp. 68-69). These recommendations led to the creation of a comprehensive P3 guide rather than the fragmented guides that existed prior.

The audit report also addressed the transparency and accountability of Alberta P3s.

> *"P3s, due to their complexity and high public profile, have unique transparency and accountability issues. For example, the private sector has confidentiality concerns over proprietary information in their proposals and contracts. At the same time, often the public expectation is for more information, due to the profile of P3 projects. Our expectation is that the province would have assessed the differences in transparency and accountability issues up front and developed guidelines to show that it has properly dealt with issues."* (Audit Report, 2003-04, p. 72)

It also set out clearer selection guidelines including the use of the lowest cost NPV. The lowest NPV is the key decision criterion for selection of the successful bidder, as the GoA compares the NPV of the PSC and the bid proposal in order to arrive at an objective opinion of the bid winner. The role played by the auditor enhanced the openness and transparency of the process. As a result, bidders have come to view the Alberta bid selection approach as open, transparent, objective and fair. One construction industry interviewee said, *"You pretty much know where you stand and your chances of success going into the bid process based on your submission."*

### 5.4 Emergence of P3s in Alberta – A phased approach

This section focuses on the findings on P3 emergence in Alberta. Through secondary data review and analysis, this study traces the emergence of P3-enabling policy interventions in Alberta and their influence on the *overall* institutional environment enabling P3 development in three different time frames. These stages roughly coincide with commencement and RFQ stage of the selected case studies (Figure 12, page 98). But to properly understand the full and contextual evolution of P3s in Alberta, it is relevant to start from the first rudimentary partnership arrangement that occurred in Alberta. Even though this was outside the transportation sector, this was the true beginning of Alberta's partnership experience and the lessons from that era were determined to have influenced subsequent policy measures and the trajectory of Alberta's P3 evolution. Data sourced data from government reports, published academic papers, articles in the media, and the auditor general's reports, corroborated interview data for this exercise. Tracing Alberta's P3 emergence meets the first objective of this research in resolving the overall research question.

### 5.4.1. Stage 1 - P3s introduced into Alberta (1987-2003)

In the late 1980s, the Alberta government initiated what appeared to be its first partnership arrangements. Thus, the Alberta Special Waste Management System (ASWMS) was created in 1987 to build an integrated hazardous waste-treatment facility at Swan Hills, Alberta. It was 40 percent owned by a provincial crown corporation and 60 percent by a private firm (Bovar Inc.). Bovar invested C$30 million (60 percent of the plant's C$50 million cost) and was to collect 60 percent of the profits and all of the net earnings of the operator, Chem-Security. Under the agreement, Bovar received a guaranteed minimum return on capital of 3 percent over the current prime rate, depreciated at 10 percent per year for 10 years (Sherbaniuk, 1998), regardless of the profitability of the venture (Mintz, 1995). The province provided debt guarantees for Bovar, as well as indemnity against future remediation or insurance liabilities in excess of C$1 million. It also agreed to assume liability for clean up at Swan Hills, which was estimated at C$30 - C$57 million (Sherbaniuk, 1998).

The Alberta government, via cabinet decision, adopted a partnership arrangement because it believed that the private sector could build and operate the plant more efficiently than the public sector, although, it recognized that the plant would not be commercially viable without subsidies. The parties later modified the agreement to permit a large capacity expansion. Partly as a result of this expansion, the subsidy turned out to be considerably larger than expected—approximately C$445 million in total between 1986 and 1995 (Mintz, 1995). However, the plant has operated at about only 50 percent of its capacity through most of its life and the additional capacity turned out to be excessive. In 1996, the Alberta government and Bovar agreed to end the joint venture by paying C$140 million for full ownership of the facility (Sherbaniuk, 1998). Under the termination

agreement, Bovar had the option to operate the plant until 2000 or to walk away by 1998. It continued to operate the plant until 2000.

Bovar's contract provisions included, a strong incentive for overcapitalization because profits were calculated as a function of its capital investment rather than its cost-efficiency. As a result, Bovar received a guaranteed rate of return higher than prime, and its risk exposure was minimal (Mintz, 1995). Furthermore, it was acknowledged that in the partnership arrangement with Bovar, there was no effective transfer of risk; the contract was poorly designed in terms of incentives, with enormous contracting costs. All these ultimately led to the partnership being eventually terminated. Swan Hills cannot be considered a partnership success (Poschmann, 2003).

After the setback and the adverse experiences of the ASWMS, the GoA was determined to learn from its experiences, and introduced relevant changes. Facing a severe infrastructure gap from the cuts in the 1990s and a significantly diminished fiscal room due to the recession following the September 2011 terrorist attacks in the US, the GoA was set to reconsider P3s again in 2002. As previously mentioned, the GoA set up a fiscal review commission, called the Financial Management Commission (FMC). The FMC was given a broad mandate to explore the province's finances and recommend possible improvements. The Commission could also review and provide advice on areas where the government may be able to improve its effectiveness and efficiencies in relation to the cost of providing services. The FMC recommended that the Government of Alberta (the "GoA") and Supported Infrastructure Organizations (SIOs) should be allowed to enter into alternative funding arrangements for capital projects, under specific conditions and with appropriate guidelines in place. The GoA accepted this recommendation and amended the *Fiscal Responsibility Act* to allow alternative financing for government-owned capital projects. Previously, all capital spending was funded on a *pay-as-you-go* basis.

### 5.4.2. Stage 2 - Formal P3 policies and structures (2004-2008)

Between 2000 and 2007, the Ministries of Infrastructure and Transportation were the responsible ministries for the initiation and development of P3s in Alberta. In this time period, this previously one ministry had undergone mandatory reorganization into two separate ministries. The attendant challenges of these structural changes and the intending migration of P3s into other sectors made it necessary to establish a central dedicated office to co-ordinate all P3s matters across government. The Alternative Capital Financing Office (ACFO) was formally established via a cabinet decision in June 2007. The role of ACFO is to:

- Collaborate with stakeholders and other ministries and jurisdictions to develop opportunities to pursue alternative financing options such as, P3s and implement where cost effective and feasible; and
- Lead the development of P3 guidelines to provide consistent standards, policies and accountabilities across capital projects and ministries.

In tracing the emergence of P3s in Alberta, the first formal, organized and co-ordinated P3 policy intervention was via the Cabinet acceptance and approval of the recommendations of the FMC. The FMC recommended that the Government of Alberta (the "GoA") and Supported Infrastructure Organizations (SIOs) be allowed to enter into alternative funding arrangements for capital projects, under specific conditions and with appropriate guidelines in place. This new policy position marked the official beginning of P3s in Alberta. With the acceptance and announcement of this policy shift, the next policy measure was GoA's legislative amendment of the *Fiscal Responsibility Act* to allow alternative financing for government-owned capital projects. Previously, all capital spending was funded on a *pay-as-you-go* basis. Amending the *Fiscal Responsibility Act* was the

second major policy intervention in creating the enabling environment for P3s in Alberta. This was significant because it provided the legal basis for the government to enter into contracts with the private sector and implement the new policy with the full confidence of stakeholders. It allowed the private sector to mobilize resources assured that the GoA was now committed and serious about moving in the P3 direction, now that all legal and policy obstacles had been cleared.

Significantly, government agencies were now able to initiate and deploy P3s in Alberta. With the new policy and legal cover in place, the Ministries of Infrastructure and Transportation emerged as the lead ministries for P3s, with the Education Ministry closely behind them. The ACFO, in collaboration with these ministries, inherited and consolidated the existing P3 guides and manuals, previously in 2 parts, into one expanded and comprehensive guide. This new guide outlines: contract procedures, actions for market engagement and consultation, and the methodology to compare P3 to the traditional delivery methods, to justify the deployment of P3 in any circumstance. The main goal of the government at this stage (2004-2008), was to create an environment that will attract reputable industry partners from around the world to consider Alberta's P3 as a viable business undertaking. This seems consistent with the Dutch approach that set out to improve the incentive structure at a similar stage in the Dutch program (van Marken, 2001). The GoA was keen to identify tangible VfM that will improve infrastructure delivery efficiency. The VfM was also emphasized as a value attribute in the Dutch experience as noted by Bult-Spiering and Dewulf (2006).

*Budget 2003* was a major policy revamp for the GoA. In that document, the government set out on major effort to make provision for and expand the use of P3s going forward. In the *Throne Speech* of that year, the Lt. Governor had this to say about the impending deployment of P3s:

> "…the government will develop a new capital plan to address infrastructure needs. The capital plan will include a plan for public private partnerships that will pull together the best resources and skills from both the public and private sectors. The government recognizes that the partnership approach will not be the right solution of every project, nor will it replace conventional pay-as-you-go capital financing. However, there are some situations where such an approach may work well. The government will carefully consider partnerships and all other options so that Alberta can meet its infrastructure needs at an affordable price."

Later in 2003, the GOA formed an Advisory Commission on Alternative Capital Financing. The role of the commission was to: a) Provide recommendations to Treasury Board regarding guidelines for alternative funding of capital projects; b) Evaluate capital projects and supporting business cases and make recommendations to Treasury Board; c) Provide support to Ministries on the advantages and limitations of alternative funding and the relationship to the delivery of the government's multi-year capital plan; d) Maintain an ongoing overview of public policy developments both nationally and internationally concerning the various funding approaches supporting public infrastructure development. The Commission had representatives from both the public and private sectors.

Furthermore, the Ministry of Infrastructure and Transportation published the *Alberta Infrastructure Guidance Document* (in August, 2003). This was the first guidance document that brought together all the discrete government policies over the years in one place. It set out the guiding objectives and principles of Alberta's emerging P3 program.

In August 2006, the Ministry of Infrastructure and Transportation[2] published the *Management Framework: Assessment Process* and the *Management Framework: Procurement Process*. Collectively, these two guidance documents outlined the Alberta Infrastructure protocol around P3s and expanded on the mechanics, procedures and approval processes required to advance P3 projects in Alberta. The two documents complemented each other and were to be used together for a complete understanding of the Alberta P3 process.

The assessment framework provided for policy, roles and responsibilities, approval and implementation, feasibility analysis, risk identification, business case and procurement related disclosures and the relevant templates where necessary.

The procurement framework outlined the full procurement process. Its objective was, "To ensure that the procurement process is fair and consistent." It outlined the following principles that will guide its application: a) all interested parties, respondents have the same opportunity made available to access information; b) the information made available to interested parties, respondents and proponents is sufficient to ensure that they have the opportunity to fully understand the opportunity; c) all interested parties, respondents and proponents have reasonable access to the opportunity; d) the criteria established in the invitation documents truly reflect the needs and objectives in respect of the project; e) the evaluation criteria and the evaluation process are established prior to the evaluation of submissions; f) the evaluation of criteria, RFQ/RFP, and evaluation processes are internally consistent; g) the pre-established evaluation criteria and evaluation processes are followed; h) the evaluation criteria and process are consistently applied to all submissions. In conclusion, it was in this period that the SEAHD was initiated and

[2] In December 2006, this ministry was split into Alberta Transportation and Alberta Infrastructure.

commissioned (AG Report, 2010). Ministry officials interviewed (Tom, Faye, Kip) suggested that this period marked the most intense learning phase in Alberta's P3 evolution.

### 5.4.3 Stage 3 - P3 deployment expands (2008-2012)

In Stage 2, the GoA successfully delivered its first P3 road project (the SEAHD). P3 policies and structures emerged and were consolidated with the knowledge and experience of the public and private sectors. In Stage 3, the government was confident that it could reasonably expand the scope and size of P3 projects in Alberta. Therefore, in 2008, it signed what was then the biggest P3 contract in Alberta with the award of the NWAHD to Bilfinger International (Bilfinger formed and registered a fully-owned local corporation, Northwest Connect) as the lead consortium. It must be noted that while Alberta's P3 office has served as a central coordinating unit for the government, it was not conceived or served as an advocacy outfit for the purpose of promoting the extensive deployment of P3s in Alberta. In other Canadian jurisdictions, the P3 office (ACFO in Alberta) has been an advocacy office, or in some cases a Crown corporation as in BC; the Alberta office was not assigned that role and has also not taken it on. This could be considered the reason why it was located inside the Ministry of Finance and Treasury Board from the very start. What is noteworthy, is that the ACFO has worked collaboratively with relevant GoA ministries and agencies and successfully brought together the resources around the GoA in shepherding all P3s since its inception to undertake business case development, seek and obtain approval from all applicable committees, the Treasury Board and Cabinet, as required by law. Another achievement was the publication in 2011 of a comprehensive document that details Alberta's P3 processes and procedures called *Alberta's Public-Private Partnership Framework and Guide*.

In 2008, as a further sign of expansion, the GoA awarded the first P3 contracts, to BBPP Alberta Schools Limited (the contractor), for the construction of 18 new schools (K-9) in Edmonton and Calgary for delivery in the fall of 2010. The GoA announced that, "Government is looking at innovative ways to address school infrastructure needs and the P3 approach has proven successful," said Minister of Infrastructure and Transportation Luke Ouellette. Continuing, the GoA said, "The recently opened southeast leg of Edmonton's Anthony Henday Drive is one example of a P3 project that provided savings for taxpayers and reduced delivery time by two years." "This is an efficient and innovative way to build schools," said Associate Minister of Capital Planning Gene Zwozdesky.

Government communiqué stated that, "Under this process, a private sector partner is responsible for the design, construction, finance and maintenance of schools for 30 years. Government is guaranteed a fixed price and delivery date." Continuing, it confirmed that, "Risks such as construction-cost inflation and weather-related delays are assumed by the private contractor. Once the schools are open, government makes regular payments to the partner for 30 years. Government also receives a 30-year warranty on the schools. Under traditional delivery, warranties are usually only one year."

The change in leadership of the governing Progressive Conservatives at the end of 2011 did not appear to alter the direction of government policy towards P3s. Rather there was a reaffirmation of political support for P3s. Since becoming premier, Alison Redford has indicated that the GoA will press ahead with P3s, and has approved Highway 63 and the Calgary Hospital to proceed under the P3 delivery model. In late 2012, the CCPPP recognized Premier Redford at its annual awards ceremony in Toronto. CCPPP Chair, Dale Richmond, in a citation said, "We are delighted to have Premier Redford as our Honorary Chair. She is a strong supporter of using

public-private partnerships as a way to leverage the skills of government and the private sector to deliver key infrastructure faster and at a lower cost than traditional procurement."

In committing the GoA to a P3 model for Highway 63, the Minister for Transportation said: "By funding these projects through the capital markets, the twinning will be completed approximately seven years sooner than would be expected through pay-as-you-go funding methods. With the province's current AAA credit rating, taxpayers will also benefit from low interest rates and favourable economic timing."

### 5.5 From Swan Hills to the NEAHD: The impact of one project on the next

This section documents the findings on the influences exerted by the *overall* institutional environment on project outcomes. It draws on the lessons learned from each completed project and how those lessons affect the succeeding one. These were found to affect how the next project was planned and implemented by drawing on the knowledge gained from the previous one.

***Articulation of project rationale*** – As previously stated, an outcome of the Swan Hills experience was the need for a clear identification of the rationale for any partnership arrangement. Swan Hills was considered an unsuccessful arrangement partly because the notion of "getting out of business" that the government advanced was an insufficient rationale for engaging in P3s. There was no clear rationale that the government intended to pursue or achieve. It was simply considered a hasty arrangement to disinvest. Subsequent to Swan Hills and in all P3s projects, the communication has included the rationale for the P3 project. Media releases follow the pattern exemplified by the NEAHD announcement emphasizing benefits and value creation for various stakeholders:

*"This is an exciting step in moving toward the long-range vision of the Edmonton Ring Road that began in the 1970s. The ring road, once completed, will change the way residents in the Capital*

*Region connect with the people and services that matter to them – reducing commute times and traffic congestion. It will also dramatically benefit industry that uses the freeway as a vital route in all four directions, getting our products to market more quickly and efficiently."* GoA, News Bulletin, July 16, 2012.

***Establishment of a P3 office to coordinate P3s*** – As an outcome of the SEAHD pilot, it was now considered that a number of changes were necessary. One of those was the need for a coordinating office for the entire province. Thus, by 2007, it was clear that a P3 coordinating office was needed to harmonize P3 processes and requirements and put in place further structures to guide ministries and agencies that needed P3 evaluation and approval. A P3 office was established in June 2007. At this time, 18 new schools were being considered for construction in Edmonton and Calgary. The initial P3 team at AT could not handle the demand for P3 evaluations coming from various ministries, necessitating the creation of ACFO as a dedicated P3 office.

***Standardization of documentation*** – Another important outcome of the SEAHD pilot was the need to standardize documents used in the P3 process. This was an area that needed urgent attention given that available capacity going into P3s was rather limited, necessitating the use of consultants. These documents include: Agreements, Approval documents, Approval processes and selection criteria. All were standardized and streamlined. As part of that the Alberta P3 Guide was consolidated into one comprehensive document, rather than two which was previously the case. This standardization meant some order and clarity in the P3 processes going forward. The beneficiary of this standardization was the SWAHD and the NEAHD. Actors told this researcher that they were impressed with the clarity they found in the Alberta P3 with the new guide. By this they suggested that Alberta was serious about P3s and could explain the increased number of responses to the RFQs for the NWAHD and the NEAHD.

***Structural changes*** – Related to the above were some structural changes that enhanced the transparency and legitimacy of the program. Four of these are the establishment of the role of the fairness auditor, an arbitrational panel, a competitiveness assessor, and capital contribution as permanent features of the Alberta P3 program. These structural changes were to become part of the main contract, rather than an appendix. The first three changes were introduced after the pilot project, while the fourth change was introduced after the 2008 global financial crisis. The capital contribution by the GoA was designed to reduce the amount of financial risk assumed by the private sector as part of arranging the initial financing of the project. Typically, a winning consortium would source its capital contribution from the capital market and complement that with the equity contribution. This amount of capital borrowing was substantially reduced by the decision of the GoA to make a capital contribution as part of the initializing capital required for project take off.

***Enhancement of public sector capacity for P3 deployment*** – At the end of the pilot phase, the Ministry of Transportation (Alberta Transportation, AT) recognized that the manpower requirement was greater than initially anticipated. This led to the expansion of the manpower specifications that was needed by AT in its P3 project management. This necessitated the recruitment of additional staff to complement the initial core group that initiated and implemented the SEAHD pilot. This group worked collaboratively with the ACFO to streamline the entire P3 implementation and expansion process. At this time, many other ministries were asking for support to evaluate and obtain approval to start their projects as P3s.

Futhermore, there was the need for and the deployment of an enterprise system that enabled project evaluation starting from the RFQ stage, to the construction phase, and finally to the operations management phase.

***Enhanced public disclosure of VfM and selection process*** – At the end of the NWAHD project, the auditor general recommended that special purpose report be delivered to taxpayers to facilitate a full and fair disclosure of how the government arrived at VfM adopted for P3 projects, with the PSC calculation included. This enhanced disclosure was made public as part of the announcement of a winning bidder for the NEAHD. This practice was also made applicable to all P3s in other ministries. This is now an institutionalized practice that has become part of the Alberta P3 program. This report also includes: the report of the fairness auditor, who observed the selection process for the project.

***Recognition of the impact of externalities*** – The 2008 global financial crises was a wakeup call. It signaled to P3 managers in Alberta that risks could emerge from unlikely sources and that comprehensive risk identification remains a challenge. With the sudden freeze in credit, it was difficult for the winning consortium to mobilize their portion of the initializing capital contribution. Alberta government approached this in two ways. 1) It got creative in reducing the time for a firm lock-in in rates by successful bidders. 2) It initiated capital contribution by the GoA as part of bridging the capital gap that the credit crunch created for potential bidders. By doing so, it facilitated continuing interest in Alberta's P3s while minimizing financial risk exposure by the bidders. These new arrangement benefited the NEAHD project negotiation, the ASAP II school P3s and the Kananaskis Water Treatment P3 project.

***Shift in behaviour*** – Several interviewees stated that the biggest shift that has happened with P3s in Alberta is a shift in the behaviour of the various actors. The change from the typical adversarial stance of the contractors and public sector officials is a major change that is not visible to outsiders has been getting stronger as more and more P3s are executed in Alberta. They suggest that, with each successfully executed P3, this shift in behavior positively influences the next project by

confirming to the actors that a new dawn is here, and that affect going into the next P3 project. The full implication is that the lessons learned and the behaviours that made the previous project successful are considered the new way of doing business. This they suggest is significant.

**Table 7 Overview of the Alberta P3 policy interventions and project milestones**

| | Year | Policy Interventions/Frameworks | Projects |
|---|---|---|---|
| Stage 1 | 1987 | Alberta Special Waste Management System (ASWMS) | SWAN Hills Waste Treatment Plant (GoA/BOVAR Inc) |
| | 1996 | Alberta government reinvention process, which aimed to "do a lot more steering and a lot less rowing". | Round 1 - Alberta Highway Maintenance Agreement |
| | 2000 | | Round 2 - Alberta Highway Maintenance Agreement |
| Stage 2 | 2001 | Establishment of the Financial Management Commission | |
| | 2002 | Publication of the report of the Financial Management Commission | |
| | | Amendment of the *Fiscal Responsibility Act* to include use of P3s | |
| | 2003 | Creation of the Advisory Committee on Alternative Capital Financing | |
| | | Cabinet established a process for approving capital projects and alternative capital projects, including P3s | |
| | | Publication of the first P3 Guidelines | RFQ for the SEAHD put out |
| | 2004 | | RFP for the SEAHD put out |
| | 2005 | | Contract for the SEAHD signed |
| | 2006 | Publication of the second P3 Guidelines | Commissioning of the SWAHD (Conventional model) |
| | 2007 | Establishment of the Alternative Capital Financing Office | Commissioning of the SEAHD |
| | | | Award of the NE Stoney Trail, Calgary, as a P3 contract |
| | 2008 | | Award of the NWAHD contract |
| | | | Award of the first P3 contract for 18 schools |
| Stage 3 | 2009 | | Commissioning of the NE Stoney Trail, Calgary |
| | 2010 | | Commissioning of the first 18 P3 schools |
| | 2011 | Publication of the third and most comprehensive P3 Guidelines | Commissioning of the NWAHD |
| | | | NEAHD RFQ & RFP out to tender |
| | 2012 | | Award of the contract for the NEAHD |
| | | | Construction begins on the NEAHD |
| | 2013 | | Commissioning of the SE Stoney Trail, Calgary |
| | 2016 | | Commisioning of the NEAHD, Edmonton (Est.) |

**Source: Compiled by the Author, 2013**

***Conclusion*** - This chapter documents the findings of this study. Drawing from both primary and secondary data sources, this chapter outlines the findings on: a) nature of the overall institutional environment, b) the nature of project structure in Alberta, c) traces the path of P3 emergence, and d) how lessons learned from previous projects influence subsequent ones.

# CHAPTER VI: DISCUSSION AND ANALYSIS

*The central research question is to evaluate how the institutional environment influences project development in P3s in the transportation/road sector. Proceeding from here, this study discusses elements of the institutional environment in Alberta as it implemented a P3 program over the past 10+ years. While noting that the institutional environment has evolved with each project implemented, this study also suggests that Alberta's P3 implementation has followed a path that is risk averse, learning focused, strongly results driven with a minimal innovation component.*

*This chapter characterizes and discusses the institutional environment for P3s in Alberta, by proposing a scheme for its analysis based on the findings of this study. It analyzes the evolution of institutional practices and outlines the nature of the influence of the elements of the institutional environment on project performance. A conceptual framework based on this influence is set out that helps analyze the evolution of the institutional environment. Furthermore, this chapter takes a look at Alberta's P3 program evolution from an Institutional theory perspective and considers that this matches the process of institutional change as suggested by Greenwood, Suddaby, Greenwood and Hinings (2002). Analyzing the results meets the three objectives of this study, while rejecting some aspects of the model categorization of institutional environment proposed by Mahalingam (2011). This chapter concludes with a discussion of P3 success criteria, compares both delivery models and reviews P3 practices seen in other Canadian jurisdictions.*

## 6.1 Alberta's Institutional Environment for P3s

Based on the findings, the Alberta P3 institutional environment could be categorized into three key elements: political legitimacy, organizational capacity and partnership arenas.

*Political legitimacy* [building] recognizes the role of the political establishment in instituting the necessary political leadership and direction for P3s. These include, designating a political champion, providing needed visible political support, articulating a realistic rationale or justification for P3s and communicating such rationale clearly towards the citizenry, private industry, the public sector and other stakeholders.

*Organizational capacity* [construction] refers to the ability of the public sector to mobilize the talent, organizational skill, documentation, bid selection and award processes that are open, transparent and fair. This capacity must be similar to and consistent with global best practices.

*Partnership arenas (platforms)* refers to measures that are designed to engage the industry actors, labour and civil society in manner that is able to generate their interest, confidence and trust. Such measures included, creating the enabling legislation that cleared the path for inclusion of alternative or private finance into public infrastructure delivery, the creation and institutionalization of conflict building measures such as fairness auditor, arbitration panel, and the commitment to a transparent, competitive and fair selection of successful bidders. Partnership arenas were deliberate outreach to the Heavy Construction industry and the Architects' Association to enlist their partnership in building the capacity and legitimating the P3 effort. Partnership arena avoided some elements of the organizational field. Labour felt left out. And evidence from interviews suggests a token consultation via in-house and information sessions organized simply to relay decisions already made elsewhere.

This categorization contrasts with the model proposed by Mahalingam (2011). The model puts forward a three-dimensional arrangement around legitimacy, capacity and trust. While elements of the Mahalingam model share some aspects with these research findings, a more relevant

categorization, based on the Alberta experience, is – *political legitimacy*, *organizational capacity*, and *partnership arenas*. These findings are consistent with Jooste, et al. (2011) finding that P3s are implemented differently in different regions. While the findings from the Alberta experience seem consistent with the core aspects of P3s, it is the mode of introduction and details of the implementation approach that sets it apart. These differences and other unique aspects of Alberta's P3s will be discussed in subsequent sections, and a summary comparison is made at the end of this chapter. Therefore, a proposed scheme based on the findings from the Alberta P3 institutional environment is as follows:

***1.*** **Political Environment** – *Political legitimacy*

a. Political leadership
b. Justification or Rationale
c. How things get done

**2. Organizational Environment** – *Organizational Capacity/Practices*

a. Public sector capacity/practices
b. Private sector capacity/practices

**3. Business (Project) Environment** - *Project/Partnership Arenas*

a. Collective understanding of and commitment to P3s
b. Risk management
c. Conflict management
d. Stakeholder engagement

**Outlines of the Organizational Field**

Institutional theory has the organizational field as one of its central concepts. Therefore, it is important to define that within this study and not confuse that with the overall institutional environment. Alberta's P3 organizational field is made up of actors whose actions and interactions impact elements of the institutional environment. The main actors in this organizational field are: a) the government, b) private industry contractors, c) the auditor general, d) Labour Unions/Civil society, e) Advisors/Consultants. Based on this list of actors, the organizational field is much wider than the institutional environment, as it captures all actors/stakeholder outside what constitutes the institutional environment for the purposes of this study. Therefore, actors in the institutional environment could be conceived as a subset of the organizational field. Meanwhile, these actors were present in the field prior to the introduction of P3s, and remain active in the field since after the introduction of P3s. Their actions pre-P3 was consistent with the dominant and "legitimated" *culture of contracting* associated with conventional delivery. Put simply, they followed the rules and routines of the conventional model.

**Rules and Routines in Alberta's P3 environment**

Scapens (1994) considers management accounting change as organizational rules and routines. In Alberta's P3, there were parallels that sought to make this a change process that focuses on organizational rules and routines. The rudimentary guides, manuals and templates were efforts at detailing the basic rules of the games and therefore creating the atmosphere of a routine process.

However, these initial attempts at the start of P3s were partially successful, as there were many of these documents in existence and the lack of knowledge in the department of Transportation and Infrastructure was apparent to businesses that came from Europe and Australia,

where P3s are more established. Their suggestions for improvement were the motivation for further streamlining of the two guides into one comprehensive guide in 2011. By Phase 3, there were better standardized documents and templates for business feasibility and approvals needed for project initiation and deployment. This not only made the process more efficient, but created confidence among industry partners.

The essence of structuration is the explanation of the relationship between human activities and the structure of social systems (Giddens, 1984; Scapens & Burns, 2000). The nature and extent of these activities points to the mutual interactions between the institutions in Alberta and project outcomes. This first started with interactions of the kind where P3 partners played a role in proposing changes to the process of implementing P3 practices in Alberta. This was a dynamic situation as Alberta P3 managers were constantly making changes to their process based on input from their partners and more so adapting their practices in the light of new experiences and outcomes from other jurisdictions. Given the interconnectedness of the financial systems, events such as the global financial crisis also influenced P3s in Alberta. These changes were reflected in updated contract agreements, better template documents and real time communication and several meetings aimed at seeking input from partners and resolving frictions.

Structuration theory has been useful in understanding how systems are implicated in the construction, maintenance, and changes in the social order of an organization. Recent studies on P3 development (Jooste, et al., 2011) seems to point in this direction. Jooste in the study of P3 practices in Canada, Australia and South Africa draws attention to the interplay between the institutional context, material systems and the mechanisms of change. Similar interplay can be observed in Alberta, given the continuing interactions between the partners as described above.

An industry executive made the following comments in reference to the ongoing interactions designed to influence organizational actors at Alberta Transportation (AT):

"*Yes. They work hard. There is a lot of commitment from AT. They listen to the feedback from industry members. They have good people. They have a good system in place and understand the nuances involved in P3s."*

A senior government executive also weighed in on the nature of mutually influencing interactions between the partners:

*"Lessons learned: 1. Look outside the project first - the industry players, financial markets, etc. 2. Internal capacity is extremely important. It's a constant learning, but we developed sophistication in a matter of months. Because, we were dealing with sophisticated people. 3. Research other projects and especially learn from failed projects and that is what we did."*

Along the same lines, another senior design consultant has this to say about the nature of interactions between the parties:

*"Lessons Learned: 1. Folks that work on P3s need a different mindset from folks who do DBs. It requires a totally different mindset. 2. In a DB environment, there is often an adversarial relationship between the parties. P3s are totally different. In the P3, we have learned to work together in mutual trust and the capacity to transfer our learning from one project to another. 3. P3s are big enough with enough repetition of work that we learn how to make the project better and deliver it a lot quicker. We are embedded in the contractor's office. There is cross-learning and sharing of ideas and debating of ideas in real time."*

Consistent with the Burns and Scapens (2000) model, the *institutional realm* (institutional environment) has an influence on the events in *the realm of action* (project environment) and the outcomes of the *realm of action* changes the institutional environment in return. This mutually influencing interaction between the realm of action and the institutional environment is clearly on display in the Alberta P3 evolution. It appears that the Alberta P3 has elements of what Suchman (1995) describes as organizing institutional construction at the level where the problem is perceived i.e., at the project level. The next section looks at the elements of the project's environment before and after P3s were implemented.

## 6.2 From Swan Hills to NEAHD: Evolution in Institutionalized Practices

### Pre-P3 institutionalized Practices

As already noted, the Swan Hills experience was a turning point for Alberta's contracting practices. The following practices were institutionalized at the time of the Swan Hills project, and prior to implementing P3s in Alberta's transportation sector. Institutionalized practices are, the *taken-for-granted assumptions, actions and activities of human actors and their relationships* (Barley and Tolbert, 1997).

***Conventional contracting practices were well established and legitimated***. The practice of awarding contracts on a piece-meal approach to different contractors was well established and considered a legitimate way of delivering infrastructure. In fact, it was the only conceivable way of behavior (Scott, 2008). Conventional project contractors knew that they were required to deliver only a portion of the capital asset based on the "input" specifications in their contract. They were not accountable for the entire project since the responsibility for the maintenance lies with someone else. The *culture of contracting* entails that input materials into those capital assets only needs to survive the one or two year warranty period which is the minimum that guarantees the contractor full payment. Therefore, contractors focused on doing the bare minimum to get them over the warranty period, which was an easy target to achieve. These institutionalized practices were assumed to be the *norm* and not much was thought of them. They were seen as the "normal" way contractors behaved. "Bidding low" to win and later asking for upward contract revision was also the "way contracting is done." Furthermore, in the Swan Hills experience, the government's hurry to divest and rebuild its balance sheet in the build up to the next provincial election, created a certain urgency, and therefore, an opportunity for contractors to extract the most advantage from

the situation and maximize their returns. Swan Hills turned out to be the exemplar for how not to engage the private sector.

***Organizational capacity in structuring and managing a partnership arrangement with the private sector did not exist.*** The public sector did not have the in-house expertise to engage the private sector, and given the financial distress of the province at the time, did not constitute a good time to hire outside consultants, as this would exacerbate the financial situation. This knowledge gap created an opportunity for the contractors in the Swan Hills project to negotiate the best possible advantage. Given that relevant expertise did not exist, employees did not know what needed to be done, and not knowing how to go about them further complicated matters. Furthermore, as organizational capacity was lacking, there were no standardized operational procedures documented in guides and other operating manuals. Put simply, there was no institutional capacity to undertake what had not been attempted before. Moreover, there was no appetite to go in the direction of developing any form of capacity other than simply "doing what we have always done." Even though the problems with conventional practices were obvious, no one wanted to do anything about. These problems were accepted as part of the practice of conventional contracting. It was deeply embedded in the culture and was taken-for-granted.

***Political and organizational leadership was not focused on creating VfM***. While the idea of VfM has been known to the public sector for a long time, the struggle has been how to operationalize it in complex transactions. Therefore, it was taken-for-granted that VfM was such an impractical concept that attempting to apply it in practice is unrealistic. The inability to make value-creating choices meant the subsidy to Swan Hills turned out to be a further drain on scarce resources - approximately C$445 million in total between 1986 and 1995 (Mintz, 1995). These steps suggest a lack of capacity to create value given the opportunities that exists.

***The nature of the relationship between both sectors was opportunistic***. Evidence suggests that the nature of the relationship between the parties was adversarial, opportunistic and the partners distrusted each other. The Pre-P3 *culture of contracting* meant that the partners were interested in a short term approach to their relationships intending to maximize their benefits and unaffected by developing any business that appeared to be long term. This generated a toxic atmosphere with frequent bickering and little value created for taxpayers. The absence of a partnership arena meant that opportunities to initiate and engage in a mutually beneficial relations did not exist at this time.

***Cost overruns and delayed delivery were rampant.*** Substantial cost overruns and delayed delivery were accepted practices of conventional delivery. Flyvbjerg (2009), suggests that, in many jurisdictions, there has been a culture of *overselling* the project (by overstating benefits and understating costs), leading to eventual cost overruns and delays in targeted delivery dates. Cost overruns and missed delivery dates were observed in Alberta's conventional projects as well. The SWAHD as a conventional delivery was always behind schedule and exceeded its projected cost budget on all phases. And "it took too long to complete" according to an interviewee at Alberta Transportation. It took 12 years compared to the other comparable segments that took an average of 3 years as P3s.

**How change happened**

Before discussing the post-P3 environment, it is important to understand the determinants of change leading to the introduction of P3s. This section sets out the main drivers of that change and *how* Alberta made the transition in institutionalized practices from a pre- to a post-P3 environment.

***Challenging economic and fiscal position of the province*** After the setback and the adverse experiences of the Swan Hills project, the GoA was determined to learn from its experiences. Facing a severe infrastructure gap from the cuts in the 1990s and a significantly diminished fiscal room[3], due to the recession following the September 11, 2001 terrorist attacks in the US, the GoA was set to reconsider P3s again in 2002. The GoA set up a fiscal review commission, the Financial Management Commission (FMC). The FMC recommended that the GoA should be allowed to enter into alternative financing arrangements for capital projects, under specific conditions and with appropriate guidelines in place.

***P3 policy measures introduced - following the recommendation of the FMC*** The GoA accepted the recommendation to consider private finance in public infrastructure, and subsequently amended the *Fiscal Responsibility Act* to allow alternative financing for government-owned capital projects. Previously, all capital spending was funded on a *pay-as-you-go* basis. This new policy changed the nature of major capital asset procurement environment in Alberta.

***New political leadership and new organizational team at the ministry of Infrastructure and Transportation*** A new set of actors were instrumental to the implementation of the new P3 policy. These were made up of a new Minister Ed Stelmach, a new deputy Minister Jay Ramortar and a Capital Project unit lead by Neill McQuay and his deputy, Tom Loo. Together, this team put together the first and all the Edmonton P3 Anthony Henday projects. It appears that an important attribute of this team was their motivation to act and make decisions. They were not only *motivated actors*; they were empowered with the full backing of the cabinet to venture into uncharted waters.

[3] A C$4b revenue drop in 2001 created major concern within cabinet. This was the tipping point, where the government moved to add private funds into the capital asset financing mix. Source: *Government of Alberta, 2012-13 Annual Report, July 2013, p. 22.*

***Establishment of a P3 office to coordinate P3s*** By 2007, it was clear that a coordinating office was needed to harmonize P3 processes and requirements and put in place further structures to guide ministries and agencies that needed P3 evaluation and approval. A P3 office was established in June 2007. At this time, 18 new schools were being considered for construction in Edmonton and Calgary. The initial team mentioned above could not handle the demand for P3 evaluations coming from various ministries, necessitating the creation of this dedicated P3 office.

***Organizational capacity building – learning from failed projects, recruiting qualified people, developing standard guides/documents and learning by doing.*** Specific measures were taken to build capacity to undertake P3s. Skilled and experienced staff were hired. In-house training was regularly conducted to train staff and ensure they were up to date with current P3 developments from around the world. "Cross-training" now a priority and "transitions" or "hand-offs" is where the ministry is currently focused. Hand-offs refers to situations where a procurement team needs to hand over to the construction and monitoring team and eventually to the operation/maintenance team. There needs to be flawless continuity as the same contractor remains while ministry staff rotates.

Simultaneously, changes were taking place in the private sector and the way they interact and do business with the public sector. "*It is now a totally different game and arrangement*" says Wayne, a Senior Manager at AECOM who put things in context:

*"I move between offices at the Contractor's location (construction site), the Ministry and my office here. Moving between these locations enables a smooth, continuous and rapid communication and interaction between the parties involved. We discuss everything and anything with all parties. We are focused on finding solutions."*

Continuing, he said, *"Our role has changed, it is now mutually beneficial to find ways to make things work. You just have to keep searching for ways to resolve an issue. The old predatory and antagonistic relationship that existed previously does not work with P3s."*

***Partnership Arena.*** All of the preceding matters created the need to initiate and sustain a partnership arena. This arena meant that the parties were provided a platform to identify and agree on their common interests, engage in a mutually beneficial relationship that recognizes these interest and initiate structures to ensure they become firmly established in the institutional environment. These structures include, the idea of collocating in each other's offices, rapid 24 hour communication to resolve issues as soon as possible and access to all levels of authority in the ministry and proactive conflict resolution mechanisms such as the fairness auditor.

**Post-P3 institutionalized practices**

Following the introduction of P3s a number of practices are now *accepted* and *taken-for-granted* as part of "how we do business" in Alberta's major capital project environment.

***The P3 model is now legitimized as an alternative capital asset delivery model.*** Perhaps, the most important change is the *acceptance* of the P3 model itself as a valid and legitimate infrastructure delivery model; prior to 2002 this was not the case. Alberta is no longer solely dependent on a model that has substantial limitations at huge cost to taxpayers. Acceptance has come via a string of successful projects in both the road and education sectors. "*Politically, it has worked very well for the government. They can now sell it as a win-win. It is now so hard to argue against P3s in Alberta***.** Journalist, Edmonton.

***Contracting and maintenance is now considered a 'bundle.'*** One of the main concepts that have come to characterize the nature of P3 contracting today is the idea of *bundling*. Bundling is central

to P3s as it prevents contractors from extricating themselves from the liabilities associated with their material input into the projects. And one way of having their "skin-in-the-game" is by bundling both, the construction and maintenance as one contract. This makes the same contractor responsible for maintaining the project for 30 plus years. This helps foster care in selecting material input, creativity in designing projects that are weather and usage resistant to stand the rigor of safe deployment for 30 plus years. Bundling has also helped minimize the previously opportunistic relationship between both partners.

In describing how the role of the contractor has changed under P3s, interviewees had this to say:

"*The role of the contractor has changed from being an executor of instructions to a creative solution provider. The contractor has changed from an opportunist to a partner in the ultimate output. There is an interest in the longevity of the product as they are also responsible for its maintenance.*

Another interviewee said, *"The fact that they have their "skin in the game" makes a difference. It is a win-win mentality that seems to pervade the new environment. This collaborative environment is the key to our progress with P3s."* Retired Premier.

Here is Wayne again: "*There is a new realization that this situation has come to stay given the political push to make it deliver projects on-time and on-budget."*

Senior designer Harvey at Stantec was of the view that because the politicians wanted P3s, it was made to happen. *"The political support was such that the ministry officials had no choice but to find ways to make P3s work."* This view seems validated by the comments of the retired premier.

***Learning from our experience is now part of 'what we do'*** One of the newly institutionalized practices is that "we must quickly learn to do things ourselves." The initial operational decision to engage outside consultants has been largely limited to short-term highly specialized areas, or to areas that must be occupied by an outsider, e.g., Fairness Advisor. Knowledge of P3s has been internalized and routinized as confirmed by several of my interviewees. As previously noted by a

construction industry executive, *"AT knows what they are doing, what they want and where and how to get it"*. It appears that AT is not content with just creating or internalizing knowledge, they are committed organizationally to growing it and retaining the knowledge base they have created already while adding to it. AT managers expressed concern with "cross-training" and "transitions" from one team to another, as projects move from procurement to construction and into the operation phase.

***VfM has become a metaphor for how we 'do and measure things'*** This is a key message apparent in the initial meetings with Alberta Transportation, Infrastructure and ACFO officials. "VfM is at the heart of everything we do", they insisted. If they cannot show the tangible difference a project makes by way of solid VfM, then, the project is a "no-go." Nothing can change that state until a tangible VfM is demonstrated by a clear and objectively verifiable difference with a public sector comparator (PSC). Therefore, the VfM has become a proxy for decision making.

***Organizational capacity to implement P3s.*** With staff hired and trained, together with the knowledge and experience gained over the past 10 years of learning by doing, there is now a built-up capacity to undertake P3s in the public sector. The extent of capacity accumulation tends to suggest that at the organizational level, there is an anticipation that more P3s are coming. This is suggestive of where the province is heading with P3s and seems to have been confirmed by recent government pronouncements. For example, Highway 63 was approved as a P3; the Calgary Hospital is expected to be awarded as a P3 soon. Therefore, it is now taken-for-granted that the GoA has the capacity to do P3s as well as conventional contracts.

***Behavioural change.*** The biggest institutionalized, but intangible practice is the change in behaviour of both parties. Actors appear to be more collaborative, communicating to resolve issues

amicably and in a spirit of give and take. This seems to be a shared feeling from both, the public and private actors, as seen from earlier evidence. The change in attitude visible in the public sector has a different motivation. If they must deliver value they must be extremely focused on what they need to do to attract the best partners who will deliver best-in class projects at the best prices. These are practices that have now become part of the Alberta P3 experience. It does not suggest that these practices are now fully in place, but that they have sufficiently taken root. That said, these practices must be continuously nurtured to form part of an enduring network.

***On-time and on-budget.*** A notable aspect of Alberta's P3's is the on-time, on-budget delivery. This has happened consistently in all P3s to date. See Table 10 (page 212) for a comparison of target completion and actual commission dates. It appears that the on-time, on-budget concept has become institutionalized because of the substantial institutional and legal boundaries that the contractor cannot extricate itself from. The contractor's *skin-in-the-game* ensures that they are *surrounded* in such a way that relationships with the government, lenders, industry and reputation are at stake.

***Greenfield and greater than C$50 million.*** One of the routine and taken-for-granted practices in Alberta's P3s is that it will consider the P3 option if, the project is a greenfield and the contract value is at least C$50 million. This was one of the lessons of the Swan Hills project which did not work, where the GoA attempted to fit a partnership into an existing project. Therefore, on the project assessment checklist is a requirement that these two conditions must be met for the project to be considered for P3 delivery.

In summary, there are a number of reasons why the institutional environment changed. First, there was a slow building dissatisfaction with the rate of delivery of capital projects using

the conventional model, with its associated *culture of contracting*. Major capital asset development was plagued by cost and time overruns over a long period. Second, the recommendation of the FMC, that government consider private financing, was a critical trigger that initialized alternative financing in Alberta. Adopting this recommendation as policy changed the institutional environment to become *P3-friendly*. Third, it became apparent that facing an unfavourable external economic environment, following September 11, 2001, the circumstances were no longer conducive for business-as-usual regarding infrastructure financing. *Therefore, Alberta's government was motivated by a number of factors, mainly, perennially unacceptable cost and budget overruns, and especially, externally imposed fiscal challenges to adopt P3s. These factors were reinforced by the unpleasant consequences of a failed but, politically visible Swan Hills project. A formal, coordinated and organized attempt to initiate P3s was piloted with the SEAHD. The success of this pilot encouraged the eventual institutionalization of P3s as a viable and legitimate capital project delivery model.* As previously argued, a key assumption behind this research is that the construction of major projects by governments such as, the Alberta government is *institutionalized*. Accepted practices (rules and routines) are followed without question until, with significant justification, they are changed. P3s occurred because prior practices surrounding major capital projects were no longer acceptable, thus, necessitating a change in logic. This was the case with Alberta's P3 program.

**Conclusion** – In this section changes in the pre- and post-P3 institutional practices were analyzed, and a case was made that P3s were adopted in response to the unacceptability of the inherent deficiencies associated with conventional delivery such as, cost and time overrun, and unfavourable economic circumstances. Furthermore, a precarious fiscal position created by a projected C$4 billion drop in revenue in 2001, was the likely tipping point, that finally motivated

the Alberta government to formally adopt P3s. The next section discusses P3 emergence in the context of "how things are done" in this environment, peculiar with its unique approach to policy establishment.

### 6.3 Analysis of P3 Emergence in Alberta

It is important to note that while P3 emergence in some other jurisdictions like the UK followed formal policy pronouncements orchestrated in the media and debated by policy experts, the Alberta P3 evolution followed a quiet and learning-focused path without much debate and fanfare. This seemed consistent with the nature of political and policy discourse in the province that comes with limited policy debates. With the reading of the traditional *Throne Speech* and the Finance Minister's *Budget Speech*, there were no major policy documents that were debated in the legislature. Rather, Alberta's P3 policy emerged in small bits via cabinet policy decisions that were made public via routine ministry media releases. Whereas these major policy documents would attract a lot of attention in other jurisdictions, in Alberta, these documents do not attract substantial attention or discussion. And this may have been due to its "stable political environment" that has been dominated by a single party for more than 40 years. While, this may have abbreviated extensive policy debates around P3 adoption in the province, it allowed the government the quiet space to vigorously pursue its P3 policy plan away from intense public and media scrutiny. Thus, the GoA was now focused on what didn't work and what made for P3 successes in other jurisdictions while adapting them for the Alberta institutional environment.

Therefore, based on the analysis of both primary and secondary data, the following tentative propositions regarding the emergence of P3s in Alberta can are made:

***Proposition 1A:*** *Targeted policy intervention is critical in initiating and sustaining favourable institutional environment for a change in public infrastructure asset delivery practices.*

***Proposition 1B:*** *To drive the institutional environment, new actors are needed to champion unfamiliar policy initiatives. This would require a strong political champion who has both authority and power to bring about change at the organizational level even with the establishment of relevant policy changes.*

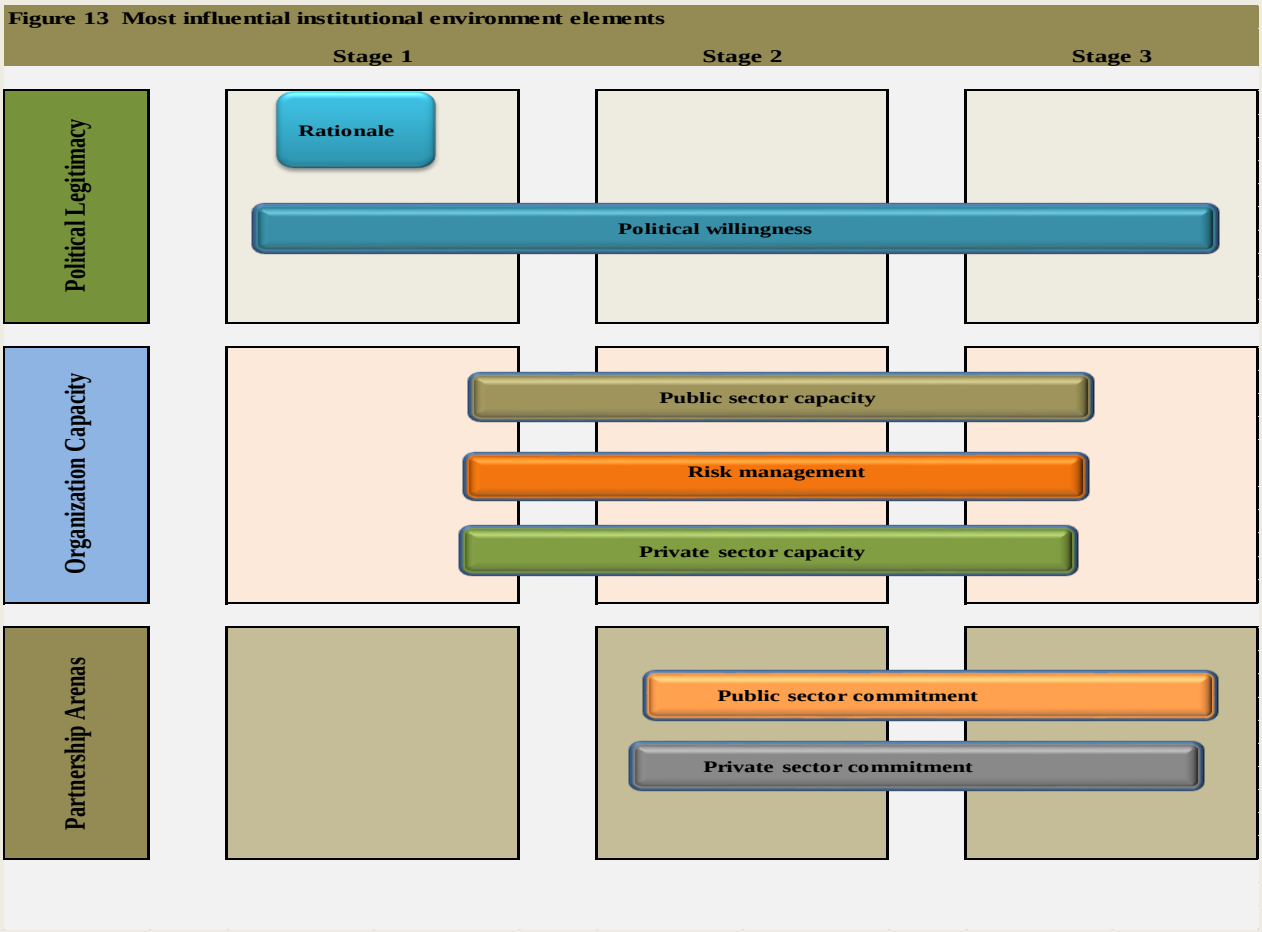
***Proposition 1C:*** *To sustain the institutional environment, appropriate organizational structures (staff, technology, etc.) must be resourced to complement the policy framework, with a continuing vigilance to ensure that organizational learning is internalized and operationalized as project level competency.*

Overall, the nature of P3 emergence appears consistent with Alberta's approach in enunciating and implementing policies. This approach while not necessarily unique to Alberta seems to get things done.

### 6.4 How elements of the institutional environment Interact

This section addresses the second research objective which is to analyze how policy measures and the institutional environment interact to affect P3 outcomes and vice versa. It discusses the findings on how the various institutional elements interact and affect one another. As already noted, the institutional environment elements influence project development in a different way from one stage to another.

Figure 13 shows the most significant institutional environment elements for each stage in Alberta, based on the previous discussion. It allows a focus on the key elements that drives project development in the different stages, and to draw conclusions and make recommendations.




At P3 program inception, and as P3s are starting to be implemented, the overall institutional environment could be considered as "weak." This is characterized by lack of a clear or well-articulated rationale for P3s, political leadership is uncertain, and the public sector does not have the knowledge, skill and expertise to make appropriate decisions about P3s. For instance, how to properly and objectively evaluate projects is unclear, and how to create VfM is largely unknown.

But with focused planning, supporting organizational structures, political leadership, and enhanced public sector capacity, a more organized P3 environment emerges. This could be considered a "mature" institutional environment. At this stage, there is learning that comes with experience and there is knowledge of how to create and sustain VfM consistently. However, this situation may mean long lead times, higher transactions cost and longer procurement timeframe.

In this situation, the influence of the institutional environment elements has a reciprocating impact on other institutional elements in return. This is characterized by a *cause-and-effect* relationship between the institutional elements once brought to bear on the project.

**Political Legitimacy**

Once the government took steps and applied specific measures to legitimate P3s, such as, visible political support, removal of legal obstacles, etc. project issues tended to become less severe. It does not mean issues do not arise, it only means that there is more confidence in the political support and improved capacity to deal with such issues and continues to deliver VfM for the citizens. As legitimacy is perceived to be steady and reliable, the actors change their behaviour to ensure fit with this new collaborative and co-operative environment focused on building long-term relationships.

*Political leadership* – There is a very strong link between political leadership, public sector capacity and project success. A visible and continuing political willingness positively affects public sector capacity by compelling the implementation of measures which improve public sector capacity to identify, assess and govern P3 projects. Furthermore, a strong political support ensures that a project portfolio is sustained in a way that grows public sector capacity given that P3s are strengthened through a learning process.

*Rationale* – The Alberta experience shows that a clearly articulated rationale for P3s remains a core organizing framework for a successful P3 program. In tracing P3 emergence in Alberta, it was observed that as a clearly articulated rationale emerged, so did the choice of contract model, standardized templates, a higher level of transparency, openness and competitiveness of the

process, and the quality of bids attracted. As VfM was emphasized, so did the efficiency and overall savings realized with each project.

**Organizational Capacity/Practices**

The results show the importance of developing public sector capacity in order to ensure a successful project development.

*Public sector capacity* – There is a very strong link between public sector capacity in terms of the right skill and knowledge set, ability to properly plan and procure projects, and VfM for taxpayers. This capacity is not static, but must be constantly renewed via continuous training and knowledge retention policies. Moreover, a pipeline of projects is crucial to ensure that relevant experience is acquired by, and motivation remains high among, public sector employees.

*Private sector capacity* – As the P3 environment grows from a weak to a mature state, the nature of the overall environment affects private sector capacity favourably. For instance, a change in mindset from an adversarial to a cooperative and collaborative stance. Improvements can be observed in the manpower quality that the private sector is able to bring to the project, some via hands-on experience, and others via new recruitments from around the world. There is also enhanced technical support they can mobilize from other affiliates and associates.

**Partnership (Project/Business) Arenas**

*P3 understanding and commitment* – A similar understanding of the role, operation and applicability of P3s by all sides is a useful starting point towards a better implementation of P3s. Knowing that P3s require a different mindset, a different way of behavior and communicating is essential to P3 success. And going from there is a commitment by both sides to do whatever it

takes to make this work. This is also related to the level of political willingness that is discernible in any jurisdiction that is heading into P3s. Results show that elements of public sector commitment include the nature of contract, including dispute resolution arrangements, fairness auditor, and the transparency of the bid process. In Alberta, there is a high level of commitment from both parties leading to project success.

The use of a DBFM contract model is one way to ensure continuous commitment by the private sector in P3s in Alberta. The mutually reinforcing oversight provided by financial institutions, public sector monitoring arrangements and availability stipulations built into the DBFM contracts keeps private sector commitment high and ongoing during project development and the maintenance phases. The fact that private companies have a "skin in the game" is an important consideration that ensures their continuing commitment.

*Risk management* – An environment which has detailed risk identification and allocation mechanism that is fair and transparent, builds and supports trust between the public and private sectors and reinforces legitimacy of the delivery model. This also supports private sector commitment to the P3 process.

*Conflict management* – Conflict management is a central aspect of arenas. How conflict is defined, managed and prevented must be institutionalized as part of the structural features of the P3 arrangements. With the commanding position of the government as both, a leader and participant, conflict resolution must be fair to all parties involved. As a confidence booster, it is essential in the level of resources they can deploy in getting things done sooner.

*Stakeholder engagement* – Active and continuous stakeholder engagement and consultation are part of a democratic process, and ensure public support and buy-in for such projects as large road

networks. The government undertook some public consultations and in-house information sessions during stage 2, but it could not be verified that these attempts were able to generate any form of substantial public input into the process. Rather, they appear to have been designed to acquaint the public on measures and processes already underway. It is no surprise that given Alberta's overall political setting as a one-party democracy, public consultation is more a formality rather than a genuine effort to seek public input or make changes.

Table 8 is a summary of the evolution of institutional environment elements in Alberta. It shows how elements of the institutional environment have evolved over the various phases as time passed and the different projects were implemented. A "+" means that an element evolved successfully from one stage to the next. A "-" means that an element did not evolve successfully from one stage to the next.

**Table 8 Summary evolution of the institutional environment in Alberta**

| INSTITUTIONAL ELEMENTS IN ALBERTA | Stage 1 | Stage 2 | Stage 3 | FINAL |
|---|---|---|---|---|
| **POLITICAL LEGITIMACY** | | | | |
| Political leadership | -/+ | + | + | ++ |
| Rationale | - | + | + | ++ |
| How things get done | - | + | + | + |
| **ORGANIZATIONAL CAPACITY** | | | | |
| Public sector capacity | - | + | + | ++ |
| Private sector capacity | - | + | + | ++ |
| **PARTNERSHIP ARENAS** | | | | |
| P3 understanding/commitment | - | -/+ | + | + |
| Risk management | - | -/+ | | |
| Conflict management | - | -/+ | + | + |
| Stakeholder engagement | - | -/+ | + | ++ |

Based on the detailed analysis of the primary and secondary data and the discussions that satisfy the second research objective, the following tentative propositions about the institutional environment can be made:

***Proposition 2A:*** *Political strength to initialize institutional change backed by a realistic rationale for P3 implementation are crucial to, and represent a major pillar of the institutional environment.*

***Proposition 2B:*** *The institutional environment is enhanced by public sector capacity to execute P3s demonstrated by officials with the right skill set to plan, procure and deliver projects that create value for taxpayers.*

***Proposition 2C:*** *P3 industry partners must be able to predict their chances for success in any partnership arrangement based on observable institutional environment structures, such as, conflict management tools that secure their overall interests.*

## 6.5 Influence of the Institutional Environment

In this evolutionary process, the institutional environment has impacted project development, captured in the different nature of project issues identified, confirming the importance of an enabling institutional environment for P3 implementation. To support this statement, the model proposed in Figure 14 is applied in this chapter. This model represents the evolution of the institutional environment and its influence on project performance. Project performance results in lessons learned. This model evaluates to what extent these lessons change the institutional environment for the next stage of projects, thus, there is a direct correlation between project and the institutional surroundings throughout the stages.

### Path Dependency

As previously noted, the surrounding institutional environment changed with each project leading to the evolution of the overall institutional environment from one stage to another. To

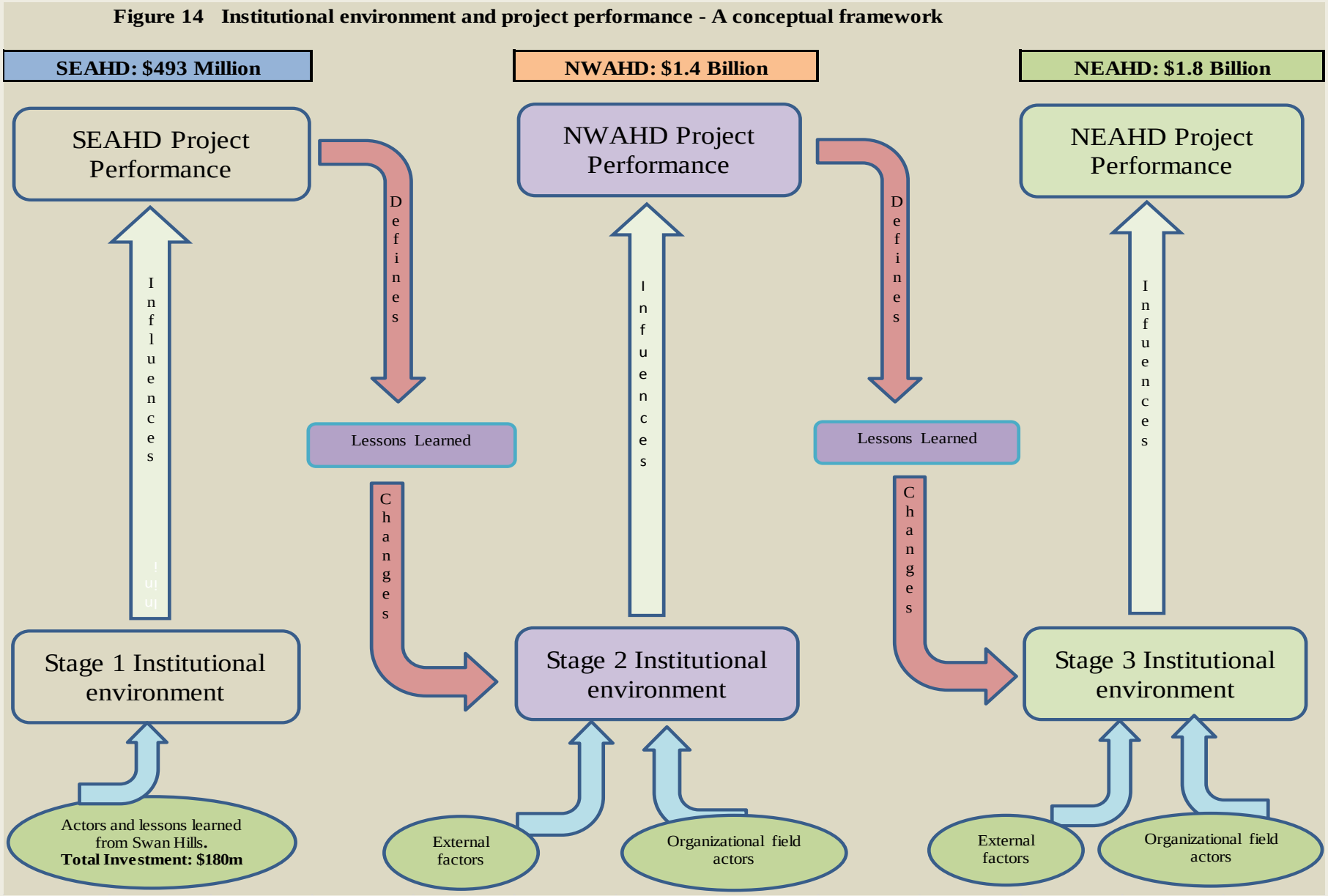
demonstrate this effectively, the conceptual framework proposed in Figure 14 is employed. This section, discusses how each Anthony Henday road project and the project outcomes are related to and affected by the institutional environment. It is important to note that the institutional environment elements apply to and fuse with each stage in an evolutionary trend in the Alberta's P3 development in the road sector. This is further explained by the sequential transformation of the institutional environment captured in the individual projects shown in the conceptual framework in Figure 14. The utility of this framework is that it captures the institutional contextual changes from one stage to another, due to the targeted policy interventions and organizational learning acquired from earlier projects. Note the increase in VfM realized as the projects grew in size with the added confidence that comes from the experience of prior P3 projects. Importantly, each stage reflects and sets the tone for the succeeding one, suggesting a form of *path dependency*. A process is path dependent if what has happened in the past has an impact on the choices that are available in the present.

Reflecting on path-dependency, there are similarities with the elements of institutional change put forward by Greenwood, Hinings and Suddaby (2002), on page 183. First, in the *pre-institutionalization* stage, there is a preparation of the grounds for the next stage in the way the SEAHD was implemented as a pilot project. It was designed to test the possibility of its further deployment. The success of this pilot was critical to the next P3 project and was the anchor to further legitimate the P3 model in Alberta. This could be seen from the subsequent orchestration of the success of the SEAHD P3 by elected officials. Talking up the success of the first P3 project was a clear pre-institutionalization effort.

Putnam (1993) notes that the political institutions that existed hundreds of years ago in Italy still effect traditions and the norms of the public and the government today. Along the same line, Pierson (2000) asserts that social processes are path dependent and grounded in the dynamic of resistance to change. This implies that we have to trace the root of a present social outcome, "a consequence", to understand its "causes". According to Pierson (2000) and Thelen (2003), path dependency explains the institution's emergence, persistence and resistance to change. Once organisations are institutionalised, they have a strong tendency to persist, despite substantial social, economic and political changes over time.

Second, is the *diffusion* of practices. A d***iffusion*** effect was observed as the success of the SEAHD pilot motivated efforts to expand P3s. The GoA started to deploy it further to rapidly deliver the remaining segments. It was also deployed to build 18 new schools in both Edmonton and Calgary. It is also being piloted for water and waste water infrastructure in Kannanaskis. What is instructive is that each level set the stage for the succeeding level of P3s in Alberta, and the consolidation of knowledge seems to accumulate with time. In path dependency, established practices sets the stage for the same practices to persist into subsequent levels or activities. As these become routine, they tend to determine the direction, nature and intensity of institutionalization, and thus, could be difficult to discontinue.

**Figure 14 Institutional environment and project performance - A conceptual framework**



**Stage 1: SWAN Hills and Pre-RFQ SEAHD**

During the initial period of P3 implementation in Alberta, the government's rationale or lack of rationale was aimed at divesting itself of government-owned enterprises and finding a capable private sector partner to "efficiently" run such entities. However, there was no visible political champion or willingness to go the entire distance and develop the capacity for a long term understanding of P3s. With this short term "divestiture" agenda, it was no surprise that the capacity to set up and deploy the appropriate structures for a successful P3 was lacking. In the Swan Hills arrangement, the main limitation was the lack of public sector capacity to deploy the appropriate structures for the project and to understand the importance of planning and procurement for project success.

The Alberta government poorly structured and planned the project leading to significant losses and eventual re-acquisition of the facility. This could have been avoided through an open, competitive and transparent bidding and selection process, but there was no capacity for any of those at the time. This phase did not probe for data about trust and the commitment of the partners.

It is instructive to note that there was no appetite to reconsider P3s in Alberta for many years, until after the 2001-2002 recession in North America, when Alberta was hit by declining resource revenue and was thus, compelled to revisit P3s as a way to finance infrastructure delivery. The pressure from the adverse external economic environment was intense and government needed to provide for a growing population and catch up following the severe public sector funding cuts of the past 8 years.

***Conclusion*** - Political leadership or willingness is crucial in pushing for a successful implementation of P3s. Futhermore, the Swan Hills experience shows the importance of a clear rationale, public capacity in properly planning and implementing a robust P3 program.

**Stage 2. South East Anthony Henday Drive**

Compelled by an increasingly hostile external macroeconomic environment and the urgent need to fill the infrastructure gap following the cuts of the last eight years, the Alberta government again revisited P3s as a way to deliver sorely needed public infrastructure. Given the experience of the failed Swan Hills facility, the Alberta government was now focused on identifying a political leader for its P3 program, developing a clear rationale for its P3 effort, and articulating an objective and realizable target (in terms of VfM) for its P3 program.

First, the decision to have one ministry (Infrastructure and Transportation) lead the charge made the responsible minister, the identifiable and visible political champion for P3s. This line minister with a bent for detail and proper planning set the tone for a more formalized and structured approach to P3s. Next was the decision to develop the public sector capacity for implementing P3s in AB. This involved acquiring appropriate personnel to lead the process in the ministry, train and develop the relevant resources that will eventually lead to a successful P3 program. Furthermore, the formation of the ACFO provided the needed additional expertise and coordinating point within government as a 'one-entry one-exit' point for all contacts within government agencies, and between the government and the private sector regarding project planning, review, approval and implementation.

The SEAHD took place after the failed Swan Hills project. That experience focused the government to invest in developing the public sector capacity before attempting another P3

exercise. At this point, a clear and concise rationale was articulated and made public. This included evidence of VfM, increased efficiency, project cost certainty and warranty. In Figure 14, the Stage 1 institutional environment was the initializing steps that influenced the SEAHD project performances.

The government adopted the DBFM model as the best contractual model and approach in its P3 program, as it emphasized a whole-of-life cycle mindset in asset delivery, and positively engaged the private sector to also become a major stakeholder.

The SEAHD P3 was a first of its kind in Alberta, and its success was fundamental to the continuity of P3s in Alberta. Its outcome was expected to have a direct impact on the future of P3s in Alberta and impact the political willingness and appetite for more or less P3s in the future. As the first P3, project planning and implementation took time to actualize (about 30 months). But this was time well spent considering the risk aversion on the part of both partners at this point in time. Limited internal government capacity was supplemented by external consultants who helped midwife this first P3 project and assisted with the development of internal resources to consolidate and continue the program.

With the SEAHD, a "small but tangible" VfM of C$4 million was generated over a comparable public sector comparator, and project delivery was achieved 2 years earlier than under a PSC.

***Conclusion*** - This project is another evidence of the strong link between political willingness, public sector capacity and appropriate organizational decision-making structures in P3s. In this case, the initial planning done and the availability of standard guidelines now in place reinforced

public sector predictability and shortened negotiations around processes and procedures, while focusing on more critical tasks such as risk allocation and contract details.

Appropriate risk profiling and allocation mechanisms favour transparency, objectivity and reduce transaction or pursuit costs during procurement. Mechanisms deployed to build and enhance public and private sector commitment in order to understand each partner's interests and goals in P3s encouraged cooperation and a collaborative mindset that is beneficial to the project.

**Stage 3: North West and North East Anthony Henday Drive**

The learning and experience gained from SEAHD (which includes, how to negotiate and structure P3s, the intricacies of selecting the best contractor, establishment of procurement standards, and how to identify, measure and allocate risks appropriately) were crucial in advancing to the biggest P3s in Alberta, the NWAHD and NEAHD. Both projects cost C$1.4 billion and C$1.8 billion respectively.

The strengthened political willingness and improved capacity by both, government and industry partners served as the basis for further growth of P3s in Alberta. Furthermore, two segments of the Calgary ring road have been completed as P3s, 40 new schools have been delivered as P3s since 2007, and several pilots are now in progress in the Water and Waste management sectors. The improved capacity and predictability developed after the SEAHD resulted in the institutionalization of positive measures such as the DBFM contract model as a standard for Alberta and the standardization of the risk identification and allocation model. In Figure 14, the lessons learned from SEAHD led to changes that influenced the Stage 2 institutional environment, which then influenced the outcomes observed in the NWAHD project performance. The lessons from the NWAHD project led to further changes in the Stage 3 institutional environment. This

environment set up the arrangements for the last leg in the NEAHD project. How the lessons of this final stage of the road project will influence further P3 development is a matter of time.

After the SEAHD was successfully implemented and the ACFO became fully operational, Alberta increased public sector predictability by publishing a comprehensive P3 guideline that standardized its procedures for project identification, procurement, award and development in one consolidated document. The role of ACFO became more prominent as the central coordinating office for all P3s in Alberta. As the one-stop shop for everything P3, ACFO raised Alberta's profile in the international market as a destination for big P3 companies and branded itself as a one-stop shop for P3s in Canada. This resulted in attracting even bigger companies who were now bidding for P3s in Alberta.

The success of AHD and other projects in the education (school) sector has not been matched by public advocacy on the part of government to engage the community and the several stakeholders as part of sustaining support for P3s.

One outcome of the nature of the evolution of the Alberta P3 is the extent of risk aversion. A key attribute of P3s is its ability to deliver an innovative approach (Grimsey & Lewis, 2004, Yescombe, 2007). The capacity for innovation is one way projects can generate efficiency and value for money for taxpayers. However, balancing the practical aspects of evaluating innovation and sticking with what works has been an on-going challenge for Alberta P3 managers. The P3 project managers are aware of the path they have come. They are anxious to ensure continuing success of the things that have worked well in the Alberta environment. But they are equally aware that they could be limiting their ability to deliver even greater value by the current narrow scope

for innovation. This is an ongoing challenge, and balancing these forces is a work in progress as confirmed by the leadership of Alberta's P3 program.

***Conclusion*** - As the institutional environment evolves, it seems to become more complex. Given this more complex institutional environment, the influence of the institutional environment on project development seems to affect other elements of the institutional environment. There seems to be a cause-effect relationship between elements of the institutional environment once applied in the project.

In this more advanced institutional environment there are more opportunities for improved advocacy, more predictability of both parties and evidence of commitment on both sides. However, this in turn may lead to greater transactions and pursuit costs, but helps to grow capacity of both partners. Both private and public sector capacity improves as opportunity for more projects and learning is undertaken and trust is built over time. Again, continuing political support must not just be available but must be demonstrated publicly for the private companies to remain on location. This is best done via a pipeline of projects extending years into the future.

Based on the detailed analysis of both primary and secondary data, three tentative propositions about the institutional environment can be made regarding the third research objective:

***Proposition 3A:*** *The institutional environment for P3s must be preceded by a demonstrated and legitimizing political champion willing to initiate, implement and sustain an on-going P3 program with a clearly articulated rationale for creating value as its organizing framework.*

***Proposition 3B:*** *A supporting institutional environment for P3s must exhibit very strong relationship between organizational capacity, decision-making structures and project-level learning.*

***Proposition 3C:*** *An element of the institutional environment for P3s is the ability to create an atmosphere of mutual trust and commitment from both the public and private parties. Such P3s stand a better chance of success than those that are founded on mutual suspicion and distrust.*

## 6.6 Alberta's P3 from an Institutional Theory lens

Institutional theory provides an opportunity to investigate the emergence and deployment of P3s in Alberta. Also, to see how elements of the institutional environment interact to influence one another and the overall institutional environment. There are various aspects of institutional theory that help to understand and gain insights into this evolutionary process. This section reviews these aspects of institutional theory and explores their relevance in Alberta's P3 emergence and consolidation. Effectively, it all comes down to how change occurred from one model, the conventional model, to a new P3 model. Therefore, change from an institutional theory perspective will be applied in gaining insights into Alberta's P3 implementation approach.

### Legitimacy at work

*Legitimacy* is a central part of institutional theory. Organizations seek legitimacy in order to survive, thrive and be seen or perceived to be successful in their environment. As observed in Alberta's P3 effort, the government set out to court and obtain legitimacy for a number of reasons. First, it wanted to attract reputable companies to Alberta, and thus, be able to deliver high quality infrastructure that will last about 30 years. Second, it wanted to be seen to be adopting legitimate means and processes in developing and deploying an alternative infrastructure model in Alberta and thus seek the mandate of the electorates on the basis of these measures. Third, the search for legitimacy necessitated the formation of an independent panel (the FMC), formation of the ACFO, and the adoption of open, transparent and fair bidder selection processes and the articulation of a clear rationale while demonstrating VfM. These measures seem to have enhanced the legitimacy of Alberta's P3s among major stakeholders. It appears that legitimacy leads to a willingness (politically and organizationally) to undertake P3s while trust between partners enable transparent

and competitive environment for P3s. Once these central attributes are in place, enhanced capacity building capability can result in the identification, structuring and governance of individual P3 projects. In conclusion, legitimating the change to another model of asset delivery was considered essential to its success or perception of success and ultimately its institutionalization as an accepted model of asset provision in Alberta.

**Co-evolution of the Organizational field**

Organizational field evolution and structuring is an emerging stream of P3 research. It adopts an organization field lens to gain insights into how Ps actors are organized to enable the success of P3 projects. Looked at from a formative angle, it is termed *P3-enabling field*. (Jooste et al., 2010). Institutionalization is said to occur at the organizational level when rules and routines become accepted as "taken-for-granted" and are no longer challenged by organizational actors (Scott, 2008). In some cases, they are disconnected from the initial purpose for which they were designed or introduced. In this situation, institutions assume the position advocated by Veblen, as settled habits of thought (Scott, 2008, citing Veblen, 1961); or as Burns and Scapens (2000) write, "a way of thought or action of some permanence."

Institutional theory suggests that there are levels of institutional influence on organizational behaviour. First, there are broad, society-wide institutions that could influence and constrain organizational and individual behavior (DiMaggio & Powell, 1991). These are broad norms, habits and values that could be considered macro-institutions. There is an overarching way of life in Alberta that could be considered as the macro-institutions. These include: institutions for law-making, political institutions, democratic principles, respect for private property and the rule of law. Second, there is the institutional influence arising from the *organizational field* (Scott, 2008).

The organizational field could also influence and constrain organizational behaviour. These include the practice of post project review by the auditor-general of Alberta, emergence of vocal stakeholder groups such as community associations, respected journalists, consultants, Taxpayers Federations, community of policy analysts that have become more engaged in reviewing Alberta's P3s. Therefore, the norms, habits and values that dominate this territory are more specific and targeted than macro-institutions above. Third, at the *organizational level*, the norms, habits and values are even more targeted and specific. This is mainly the government departments and agencies currently involved with P3s. Specifically, the departments of Transportation, Infrastructure, and the Alternative Capital Financing Office. Collectively, they exact what is called an *institutional influence* that is captured in the Burns and Scapens (2000) framework as the institutional realm. There is also the level of analysis that focuses on the influence of micro-institutions, the interests and individuals who use their authority and influence to make change happen at the local level.

Alberta's P3 emergence suggests what this study terms *co-evolution* of the organizational field. Recall that in 2002, there was no P3 in Alberta. However, as policy intervention cleared the path for P3 emergence, a supporting range of organizational structures also emerged with it. Public sector interview participants confirmed that they placed reliance on external consultants in the SEAHD, but as projects were implemented, internal capacity slowly developed: staff was trained/recruited, applicable documentation was developed and standardized, and the development of the procurement process was streamlined. This public sector organizational capacity continued to evolve with the establishment of the ACFO in 2007. Another interviewee (a Principal) from the Auditor General's office disclosed that, "*as of 2002, we had no capacity to audit P3s, we did not know what they were, and we had to quickly acquire the skills and competencies to audit P3s."*

One of the journalists interviewed had this to say, *"I was clearly against P3s, simply because I did not understand them. I considered they would damage the natural landscape of Edmonton. But after I was taken on a tour of the SEAHD while under construction, my views changed."* The AUPE interviewee confirmed that AUPE had an *"unpleasant experience with privatization in Alberta, and no knowledge of P3s at all."* They were thus, initially debating P3s from the perspective of previous privatizations in Alberta which were not favourable to the Unions. In the case of road P3s, now we know more, *"because I started researching what was going on across many jurisdictions." "We have not been adversely impacted by it."* What this points to is a co-evolution of the institutional and organizational field elements that were previously non-existent in Alberta. Simply put, all the actors were *learning* and *acting* at the same time.

Co-evolution has been receiving attention in the literature lately (Porter, 2006). Co-evolution is an established research framework in the biological and evolutionary sciences, and though a new entrant to organization studies, it holds potential to transform the field (Lewin & Volberda, 2003). Its fundamental premise is that entities or organizations evolve in relation to their environments while at the same time these environments evolve in relation to them (See Figure 24). To summarize, in Alberta, there is an *emerging* organizational field that affects P3s. This is what Jooste et al (2011) calls *P3-enabling fields*. This is part of the organizational field structures that not only enables P3s, but supports their legitimacy, advancing the deployment of P3s in a way they would be perceived as successful and ultimately leads to their institutionalization. The elements of this field include end users, local stakeholders, private for-profit companies, governments and its P3 agencies, consulting firms and the auditor general's office in its oversight role of the government.

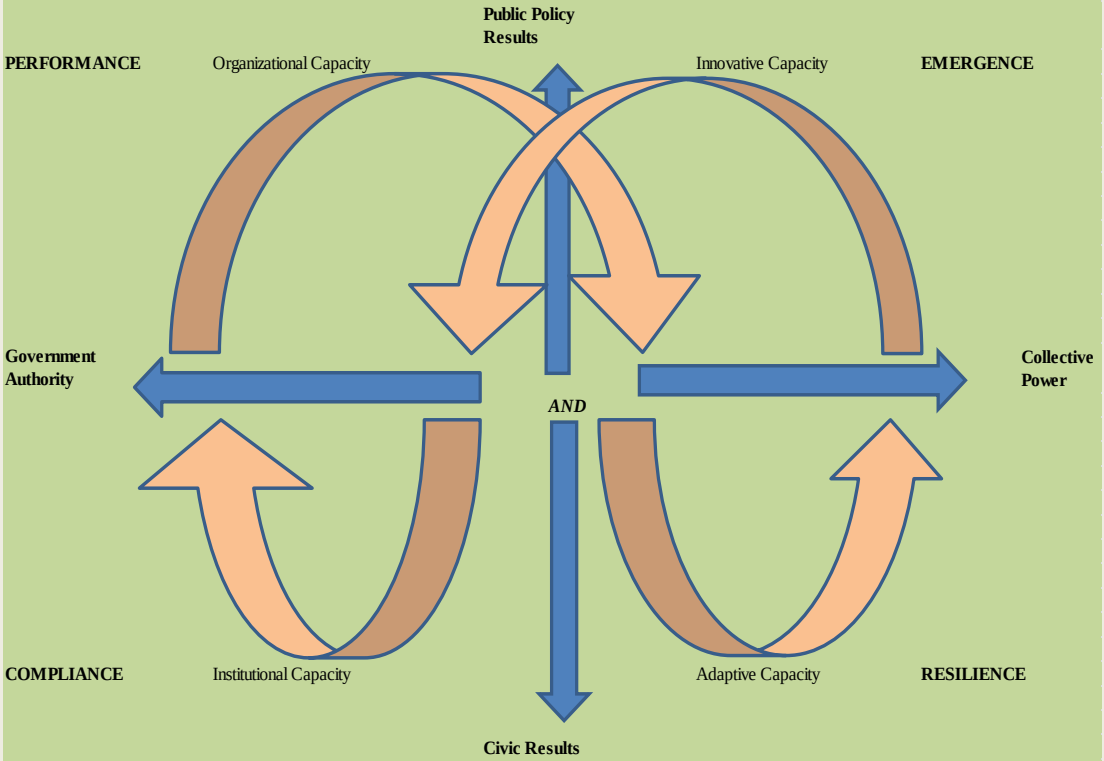
**Co-evolution matters**

It is meaningful to think of the co-evolution of P3-enabling events and developments in the organizational field that has enriched the P3 environment. In co-evolution, advances in one field (P3s) leads to progress in the other, nucleating further improvements in the original field, and so on (Bourjon, 2011). In characterizing the co-evolution observed, one way of doing so is to think of it as an *adaptive* and *dynamic* process as it progressed. The P3 emergence and evolution present as a dynamic system with the capacity to adapt to changing circumstances, and where the government has the capacity to co-evolve with society, and vice versa. Government transforms society and society transforms government. This vision represents a profound shift from a relatively closed concept of government where public organizations operate more or less on their own and act as the primary provider of public services, to a more open, dynamic concept of governance. It facilitates the exploration in practice of a broad range of possibilities open to government. It helps reveal the consequences that various choices entail and the potential for new types of relationships. There is no single solution and no approach fit for all seasons. There are choices and possibilities; both are important, as there in lay the potential for a better future. It signals a profound change in the relationship between government and citizens or society, and it will require complementary interactions of emergence, compliance, performance and resilience functions leading to institutionalization of accepted/established practices (Bourjon, 2011).

Such a system of governance would see economic, social, political, technical and environmental systems intertwined and interdependent; where public organizations constantly exchange with their environment and where government and public organizations are part-and-parcel of their environment. In such a case, the public, private, and civic spheres would display the capacity to co-evolve in a manner that supports the overall project performance. There is no

predetermined master plan; rather a convergence of views and a congruence in the actions of multiple actors emerge that would not otherwise be possible. The co-design and co-creation of public policies and services strengthen the potential for co-evolution. Figure 15 identifies the upper right quadrant where innovative ideas emerge and become institutionalized as "the way we do things." It is this continuous innovative capacity and flexibility that makes for progress.

**Figure 15 Model of Co-evolution**




**Adapted from: Bourgon, J. (20011) A new synthesis of public administration: serving in the 21st century.**

## P3 Logic – Institutionalizing a new logic

Institutional logic is an aspect of institutional theory that appears relevant to the emergence of P3s in general, and Alberta especially. The idea that governments are responsible for the provision of infrastructure has been well documented and accepted in liberal democracies. But, the persistent time and cost overruns ((Flevberg, 2009) that characterize capital asset delivery have

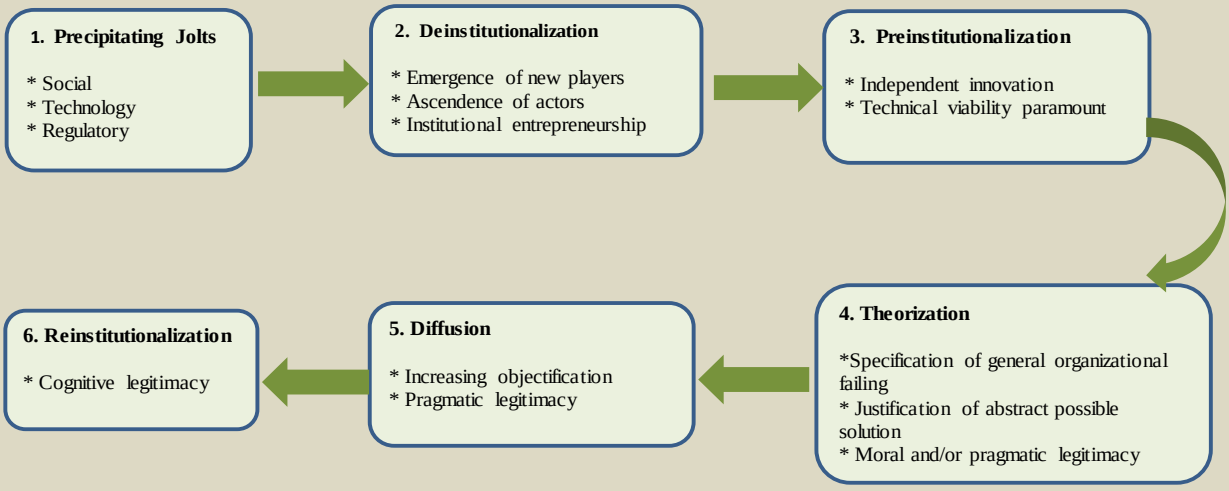
begun to shift the tide on the existing logic of infrastructure delivery solely by the public sector. Governments are starting to challenge that responsibility (Grimsey & Lewis, 2004). The trend where demands by citizens are ever increasing and tax revenue is not growing commensurably requires us to revisit the logic of full government responsibility for infrastructure provision. Governments in arguing for and implementing P3s are presenting the alternative logic of *shared responsibility* with the private sector. This is a competing logic that will continue to attract the attention of institutionalists and policy experts. The Alberta government in providing a clear rationale for its P3, wanted to provide a competing logic as an organizing frame for P3 deployment. While this competing argument has been largely successful, it is not so clear if it will be in another jurisdiction with a different set of attributes.

The notion of exiting government from business began with the election of Ralph Klein in 1993. With the provincial books in shambles, this marked the beginning of a new logic in Alberta. It was framed as the policy of "get-out-of-the-way." This logic of not involving government in what could best be done by the private sector seems to have begun the shift toward privatization and engagement of third parties in services previously the exclusive domain of the public sector. In Alberta, under this new logic, the liquor stores were sold, SWAN Hills was restructured to substantially involve the private sector for efficiency reasons, operations of senior's homes were privatized, road maintenance was privatized among other reforms. With this new logic in place, it was fairly easy to anticipate the transition to an intensified engagement of the private sector in many other areas in Alberta. Thus, the fiscal storm of 2001-2002 was the tipping point that forced the province into a full P3 mode.

**Institutional Change**

Closely related to institutional logic is the process of *deinstitutionalization* followed by *reinstitutionalization*, a cycle that recent institutional studies have found attractive (Figure 16). Greenwood and Hinings (1993, 1996) find support for the *cycle* (Greenwood & Hinings, 1996, 2002; Scott, 2008; Tolbert & Zucker, 1996). There are similarities with the introduction of the P3 model within the public sector. The persistent cost overruns (Flevberg, 2009) associated with conventional delivery suggests the potential for a gradual but, noticeable erosion or deinstitutionalization and delegitimization of that model. The P3 model seems to represent a solution to the performance crisis of the conventional model, and as better aligned with the taxpayer position of *better infrastructure and service at a reasonable cost*. This efficiency picture or logic is the anchor on which a new institutional story is being built to give P3s the cover of legitimacy and make the case for change. This suggests support for the "deinstitutionalization followed by institutionalization" cycle put forward by Greenwood and Hinings. The predisposing factors for erosion appear consistent with the factors proposed by Oliver (1991). Oliver suggests that political, social and economic factors predispose an established organizational practise to erode over time. In the Alberta situation, significant fiscal and economic events in 2001/02 converged and prepared the grounds for the erosion and a re-evaluation of existing infrastructure delivery model, given its poor performance record. It was clear that significant investments did not result in significant infrastructure delivery. This was visible from the failed SWAN Hills project. There was thus, dissatisfaction and a challenge to the status quo. With the loss of confidence in the conventional model, there was a gradual erosion of value in the previously taken-for-granted model.

**Figure 16 Stages of Institutional Change**




***Adapted from: Greenwood, Suddaby and Hinings, 2002***

## 6.7 A Model of Institutional Change: Does it fit?

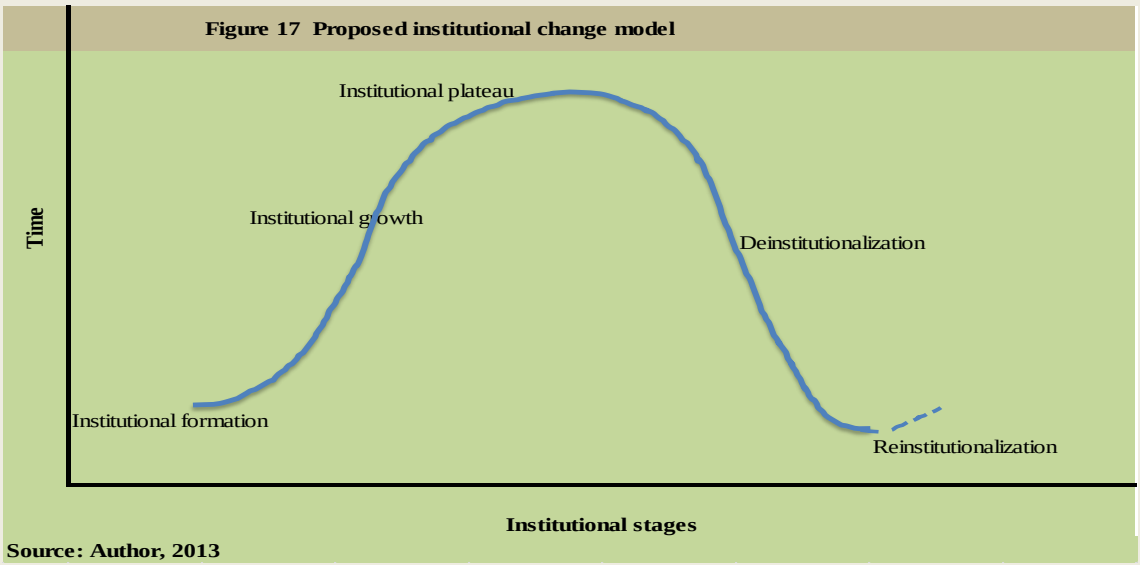
There are elements of the Greenwood, Suddaby and Hinings (2002) model of change observed in Alberta's P3. One, there was a ***precipitating jolt*** in the form of the sudden/ unexpected fiscal and economic situation facing the province. This was complicated by significant internal migration into Alberta, at a rate never seen before. There was also a sudden realization that citizens were no longer willing to accommodate persistent budget cuts and its impact on their lives, given 9 years of budget cuts. Two, ***deinstitutionalization*** set in. A case was made by the FMC in their report to consider and include P3s as an alternative model for capital asset delivery in Alberta. This set in motion some form of delegitimization of the existing model and presented an opportunity for a new/different logic for capital asset delivery. There was also the emergence and ascendance of new actors, given the appointment of a new minister for Infrastructure and Transportation (Ed Stelmach). Three, ***pre-institutionalization*** was observed in the way the SEAHD was implemented as a pilot project. It was designed to test the possibility of its further deployment in Alberta. It was done on a small scale and with mainly outside consultant support.

The success of this pilot was critical to the entire P3 program and served as the anchor to further legitimate the P3 model in Alberta. This could be seen from the subsequent orchestration of "the success of the SEAHD P3" by elected officials. Talking up the success of the first P3 project was a clear pre-institutionalization effort. Four, ***theorization*** of the Alberta P3. Theorization is considered as the itemization of organizational failing for which a "local innovation is a solution or treatment." In Alberta, this was conceptualized as a *Made-in-Alberta* solution. This suggested an Alberta solution for an Alberta problem, consistent with the theorization element in the model. Five, ***diffusion*** effect was observed. With the success of the SEAHD pilot, there were efforts to consolidate and expand P3s. The GoA started to deploy it further to rapidly deliver the remaining segments. It was also deployed to build 18 new schools in both Edmonton and Calgary. Now it is also being piloted in water and waste water sector, via the Kananaskis Water Treatment project. Furthermore, approval has been given to deploy P3s in dualizing Highway 63 to Fort MacMurray, and there are indications that P3s are being considered to build hospitals in Calgary. Finally, with the nature and extent of P3s in Alberta, it suggests a potential reinstitutionalization may be emerging. As the adoption becomes wide spread, it starts to take the look and feel of *taken-for-grantedness;* that this is *the way we do things* in Alberta. This case observed in Alberta lends credence to the Greenwood and Hinings model of institutional change. While this is not conclusive, it points to some validity of this model in the way change from an institutional perspective is understood and interpreted.

***Conclusion*** - First, P3s as a new model of asset delivery tend to happen in response to a *jolt*. This jolt converging with the dissatisfaction of a poorly performing pre-existing model is a perfect mix for the introduction or consideration of an alternative model. This is evidenced from both, the

Alberta fiscal situation and the difficult economic situation that faced the John Major government in the UK in the late 1980s. This is generally consistent with findings in the literature suggesting that governments facing an unfriendly economic future tend to embrace alternative models of asset delivery (Grimsey & Lewis, 2004; Yescombe, 2007; Loxley, 2010; Hodge, Greve & Boardman, 2010). Second, with the Alberta P3, it is proposed that the emergence of *new players* is a necessary first step in the encapsulation of a new logic in asset delivery. The emergence of new players must be complemented by their ascendance to positions of authority and influence. This was the case with the arrival of Ed Stelmach with his forward looking team of motivated players in Alberta Ministry of Infrastructure and Transportation. Notice also that in the UK, P3s gained momentum with the election of Tony Blair in 1992. Third, early success is needed to start a process of pre-institutionalization and diffusion of P3s in a locality. The initial success of the first P3 in Alberta was a spring board that sufficiently motivated and empowered the new players to press ahead with full implementation and legitimization of P3s in Alberta. By demonstrating value for money with the SEAHD, and the delivery of the project on-budget and even ahead of time compared to a conventional model, the new players were able to prove that the conventional model was the problem, and that the P3 model was the right solution. The current migration of P3 policy into other sectors like education and water treatment is evidence of *diffusion* in Alberta. Finally, the creation of standard documents and operational procedures is necessary for a process of reinstitutionalization. While this may be early days, this could be achieved via the publication and implementation of a comprehensive P3 guide, the establishment of a central P3 coordinating office and the auditors clean reports on all P3s reviewed so far. These are concrete learning points and theorizing emanating from Alberta P3s, and represent tangible contributions that this case study makes to current knowledge about P3s.

While the above analysis may suggest that Alberta's P3 has arrived at a suitable reinstitutionalization stage, this is not yet the case. Jepperson (1991), while agreeing with the process of institutional change insists that instutionalization occurs in degrees. Alberta's P3 is still at an early stage of institutionalization, and thus remains vulnerable to attack and possible discontinuity. According to Jepperson, institutions are vulnerable to intervention, except where they are located in a framework of institutions. He argues that they are more embedded where they have been around for a long time, are more centrally located in the network, and "is integrated within a framework by unifying accounts based on common principles and rules." While Alberta's P3 is at an early stage of institutionalization, it is still a marginal player as very few (though high value) projects have been successfully executed and thus, requires on-going political support to remain in place, become fully institutionalized, and taken-for-granted as the conventional model. Following the Alberta experience, the Greenwood, Suddaby and Hinings model can be extended as a rather simplified structure (See Figure 17) that integrates elements of the Jepperson's (1991) view of change. This would follow a path similar to that of a product life-cycle, namely – institutional formation, institutional development, institutional plateau, deinstitutionalization and reinstitutionalization. Institutional plateau is a state where a practice has lost the capacity to deliver satisfactory results (force of power over action), yet continue to be reproduced. This refers to the persistence of delegitimized, but not deinstitutionalized structures.




## 6.8 What makes for P3 Success?

A majority of the stakeholders who participated in this research were of the view that Alberta's P3 program could be considered a success. What has made the Alberta P3 program a success? Section 6.2 provided some responses to this, which suggest a number of factors that can be considered relevant to P3 outcomes.

First, *political support*. This is consistent with literature, that political leadership (Kwak et al., 2009; UNECE, 2007; Grimsey & Lewis, 2004; Yescombe, 2007) is crucial to the initial and ultimate success of any P3 program. The Alberta experience supports this position. From the Minister (and later) Premier Stelmach, P3 in Alberta was fortunate to have this type of support from the very beginning. This political support has continued with the current leadership under Premier Redford. P3s in Alberta are set for expansion as reports point to a continued political commitment to P3s. Furthermore, the fiscal pressures in Alberta appear similar to the sudden jolts of 2002, when economic forecast looked as unfriendly (See Alberta Government *Fiscal Plan 2013*). Furthermore, the articulation of a *realistic rationale* for P3s improves communication with

key stakeholders. This was an organizing frame in Alberta that every government news release was built around the rationale for P3s. Political official used this as talking points.

Second, *organizational capacity*. The overall public sector capacity built up from the SEAHD was done from the ground up, and included training and retention of skilled staff, development and implementation of operating standards and guides enabling the selection of the most competent bidder(s), identification and allocation of risks appropriately, and more importantly, the elimination of regulatory impediments against P3s as part of the capital asset management model in Alberta.

Third, *a relationship built on trust*. The unique role of the government as both, a *regulator* and a *player* in P3s makes the trust element a very important one for P3s. Trust ensures that government can be relied upon to play by the rules they establish and to take steps that not just builds confidence of the private sector but also commits it to a process of fair arbitration.

Fourth, *a balanced approach*. While many people consider the Alberta P3 a success on several fronts, not everyone is so sure. Some are rather cautious.

> *"I think P3s could be effective, but should not become the default model. I don't have an ideological rejection of P3s. We must allow ourselves the opportunity to use the right model for the right projects. I am concerned when oil hits say US$25/barrel. We have not faced the EU-style economy. We must ensure that when we use a P3, it must be a P3 in reality and so must apply the rigor of open validation if we migrate the policy in the appropriate direction. This is still a one party state - so entering into a 30 year contract works well when we have the same government for 40 years. What happens when we become a functional democracy? Stasis has set in in this environment - to assume that things will always stay the same. Notice, that the political environment has started to change a little with the advent of the Wildrose. Managing the public service could be another challenge if/when we eventually see a change in government. What happens when the magic money is gone - the money we found in the ground?"*Senior Journalist, Edmonton Journal.

The voices calling for caution also suggest checking to ensure that Alberta is actually receiving value.

> *"All these projects are based on VfM - we need to go back and check that we are actually receiving value for money. We are not able to say for sure whether the private sector is more efficient or not. We have seen in some provinces, the nature of the market makes it hard for new comers, given the nature and availability of sub-contracts. The big contractors dominate the market and make it hard for the sub-contractors and smaller builders. So, we see the same contractors win contracts again and again. The government still struggles to develop true output specs. It is a very hard thing to do in practice. They end up being overly prescriptive at the design phase. That way you prevent real value to be delivered via innovation."* Grant Thornton, Consultants.

In conclusion, the Alberta experience supports the P3 CSFs (See Kwak et al., 2009). It also extends the model from an institutional theory perspective, by recognizing the crucial role of the actors who as stakeholders establish relevant regulative institutions via legislations that initiate and support P3s. Furthermore, these actors become part of the *organizational field* that unifies stakeholders to stabilize the institutional structures via normative and cognitive institutions around P3s. Ultimately, by these series of actions that are mutually reinforcing, P3 processes become *taken for granted* and morph into *the way we do things here* (Scott, 2008). All these while the stakeholders and their appropriate (taken-for-granted) actions provide the P3 model with the *legitimacy* that come with repeated and routinized activities that deliver successful outcomes. Additional factors evidenced in the literature are detailed in **Appendix I**. While current AHD projects seem to validate and legitimate P3s in Alberta, some urge caution in its wholesale adoption. The government seems to recognize this fact as a minimum threshold of C$50 million must be met to advance a project as a P3.

### 6.9 Alberta's P3 compared in Canada

While the Alberta P3 has some differences with other Canadian jurisdictions, it shares some important attributes as well. For instance, most Canadian provinces have a P3 agency that oversees their P3 program. They tend to have a clear rationale for P3s and focus on generating VfM and associated efficiency from undertaking P3s. 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.

The definitional basis seems to differ among Canadian provinces, as some tend to emphasize some aspects of P3s while playing down other aspects. For instance, Quebec's definition of P3s plays down the role of private finance in P3s, while Alberta's definition emphasizes the role of private finance. That said, some do not involve private financing to the same extent and others tend to not have a supplemental government financing to support the private sector capital contribution.

Another major difference is the place of tolls for the use of public infrastructure in Canada. Ontario and British Columbia have used tolls extensively and to a greater extent than other Canadian provinces. It is not clear what role the presence or absence of tolls on infrastructure may have on the level of public support or acceptance of P3s in Canada. But suffice it to say that P3s are more debated and controversial in those locations where tolls have become part of the respective P3 project.

Finally, the emergence of P3s in Canadian jurisdictions appears to have followed different paths, but with several elements in common, it is indicative of the relative effectiveness of this model in delivering the assets and services needed by taxpayers. The second wave of P3s in Canada appear to have been more successful in delivering projects on time and within budget, while exhibiting more procurement transparency overall (CBC, 2010).

**P3s are context specific**

It is unlikely that identical P3 fields will be found across countries. Contextual factors and the persistence of existing institutions (Zucker, 1987) can be predicted to interact with the new P3 regimes to create a field that is unique to a particular country or state. Alberta's P3 while displaying certain core attributes of most P3s elsewhere, for instance, governmental involvement, private sector capital, etc., retains certain elements of uniqueness, like the high intensity of political support, restriction on the amount of private capital engaged, restrictive innovation scope and balanced allocation of risk between partners. Indeed, Jooste et al. (2011) shows how the P3 enabling fields in British Columbia, South Africa and Victoria have evolved and function in a variety of different ways, despite some amount of similarity with regards to form.

Context specificity is recognition of the unique attributes of a location where P3s are being implemented. What is important is that program managers consider the unique circumstances of their own environment as they move to organize for P3s, and continue to adapt their operational tactics in recognition of the context specificity attribute in P3s. The P3 managers in Alberta seem to have understood this fact, as they made changes around what they called "market engagement." They realized that Alberta was a very small market in Canada and would require more effort on their part to attract "substantial" bidders. Market engagement was not part of the initial P3s, but became relevant when they felt they needed to get early feedback from potential bidders in order to develop a P3 agreement that would be attractive. This became especially important after the recent global financial crisis when credit was tight and few bidders could participate in huge projects around the world.

Giddens' (1984) work on structuration and the interplay between actors and institutions is instructive here. According to this theory, actors, structures and interaction processes mutually re-enforce each other. The theory describes the dual function of social structure as both, the *medium* and the *outcome* of social action. Actors' knowledge of the structures in which they operate inform their action, which reproduces social structures, which in turn enforces and maintains the dynamics of action.

Giddens' theory has had a wide impact on today's understanding of social action. New institutional forms – the elements of a P3 enabling environment in this case – will compete with existing ones – institutions corresponding to traditional public procurement, and will attempt to modify the behavior of actors who procure infrastructure services. These actors will in turn influence the procurement processes and institutions so as to ensure that these new logics are now consistent with the cognitive frames of the actors involved. Over a period of time, actors and institutions evolve in a context-influenced manner towards a state that is unique, path-dependent, and different from the origin. Barley and Tolbert (1997) in their work on institutional change, also argue that institutional arrangements go through a process of encoding, enactment, re-enactment or revision and objectification, followed by further encoding and so on. This revision of institutions can be influenced by exogenous forces, which are situated in a particular context. In sum Giddens' (1984) and Barley and Tolbert (1997) provides us with the framework for understanding these interactions as they evolve via a dynamic that impacts project outcomes.

### 6.10 Conventional vs. P3 projects in the AHD

Alberta's P3 initially appeared to be a natural experiment where, 3 P3 projects were undertaken alongside a conventional project to assess the outcomes in real life, and almost simultaneously. Alberta Transportation officials interviewed confirmed that, "much as it appears

that way, it was never planned that way." They point to a combination of historical and economic factors that converged to paint this picture. These include the fact that the Anthony Henday Drive was originally owned by the City of Edmonton City, later acquired by the province (in 1999) and made part of the TUC. In addition, economic factors include the stronger fiscal position of the province relative to the City made possible the provincial takeover of the Henday. Regardless, it is an excellent opportunity to compare the outcomes of these projects that appears to suggest a conscious "natural experiment." The comparison here is made along the lines found in literature where debate about the relative advantages and disadvantages of both models has been most intense.

**Cost and time certainty** – While all three P3 projects in the AHD had a fixed cost attached to them at the outset of the contract, the SWAHD, (the only conventional project) had no cost certainty. The eventual cost of the project was confirmed from various sources via triangulation. Recall that the city of Edmonton owned and was initially responsible for this project and had made some progress on its construction. Even after provincial acquisition, it was continued and completed as a DB project. This meant that the project was executed in phases. It took almost 12 years to reach freeway status in 2011. This compares with the P3s segments of the highway, which took an average of 3-4 years to complete. Ministry of Transportation officials interviewed, confirmed that construction took place "in the years when there was a budget for it." They disclosed the frustration and cost associated with going to justify the capital allocation to continue with the project annually, and the attendant inflation impact of such practice. According to them, there were a lot of missed opportunities and inability to take advantage of scale. In the end the SWAHD took too long and cost too much to complete, compared to an equivalent P3 in current dollar terms. *These factors, the ministry officials argue, justify the adoption of P3s in Alberta.* It

is interesting to note that Labour and the Taxpayers Federation among entities that oppose P3s also cite the high cost of P3s as evidence that it is not a better model of infrastructure delivery. Ascertaining actual P3 and a conventional cost remains a subject of intense debate as both sides have different basis for accumulating cost for a comparative analysis of both models (Boardman & Vining, 2010; Loxley & Loxley, 2010; Hodge, Greve & Boardman, 2010, Hodge & Greve 2007).

**Extensive documentation and public disclosure -** Online, there is extensive public disclosure on the nature, processes, contract agreements and participants in Alberta's P3. No such disclosures could be found for the SWAHD on the Ministry of Transportation website. The reason for this remains unclear. It is possible that the discrete nature of these transactions and the nature of documentation stored over the 12 year period may have made full disclosure difficult. In addition, it may be consistent with the times, that information considered confidential 12 years ago is now demanded and reasonably available to the public. This has been made possible by enhanced information disclosure legislation that has come into existence since then, like the *Freedom of Information and Privacy Act (FOIP)*. Under *FOIP*, (although enacted in 1995, has been slow in its implementation regarding information accessibility), an individual or entity can seek and obtain information from a public agency on matters that are allowable under the Act. This was not the case prior to the enactment of *FOIP*. However, the challenge surrounding disclosures for the SWAHD is not an isolated one, as details on several conventional contracts in other sectors are not publicly available on the government website.

**Extended warranty** – The AHD P3 have a 30 years warranty attached to each of the contracts. On the contrary, there is only a maximum of 2 years warranty on the various contracts

involved in the SWAH project. This warranty stipulation ensures that taxpayers are protected from potential risks such as poor construction and use of inferior materials by the contractor

Related to the warranty is the amount of risk associated with the post construction phase that is unloaded to the public sector at the end of the construction period. The DB approach encourages short term decisions by contractors, who know that they are only liable for the project for a maximum of two years. There is the incentive to deploy materials that do not last beyond the warranty period. This leads to costly maintenance or expensive replacement of the asset even before the due date.

**Maintenance lock-in** – In most jurisdictions including Alberta, building an asset is fairly easy; the most difficult part is ensuring that the asset is in physical condition that allows safe use throughout its useful life. And when governments face economic crunch, the maintenance funds are usually the first to be targeted. Locking in the maintenance of Alberta assets via P3s ensures that these assets remain in proper condition and are safely maintained for use.

**Shift in behavior** – Several interviewees stated that the biggest shift that has happened with P3s in Alberta is a shift in the behaviour of all the actors. The change from the typical adversarial stance of the contractors and public sector officials is a major change that is not visible to outsiders. They suggest that the fact that they (contractors) will be responsible for maintaining an asset for 30+ years is enough incentive to make significant changes and decisions that are fundamentally different from what they typically would make in conventional delivery relationship. This they suggest is significant.

**Transaction costs** – With the observed advantages, some interviewees suggested that pursuit costs (transactions costs) associated with P3s in Alberta are high. The bid refund made to non-successful bidders was considered insufficient to cover the cost of bidding, design, etc.

**AHD Findings vs Mahalingam model**

***Legitimacy***. AHD findings suggest the need to deconstruct legitimacy into political and other aspects, e.g., historical legitimacy - defined as legitimacy conferred by a history of successful performance. While legitimacy remains an overriding consideration, AHD findings suggests that creating and sustaining political legitimacy is not only important, but crucial to the successful implementation of P3s, and also critical to its institutionalization or persistence. Full legitimacy seems to be preceded by *political legitimacy* created by a visible, motivated and empowered political champion. Political support must not be visible, but must be demonstrated by the enactment of relevant legislations and regulatory tools institutionally designed to ensure P3 success. Regardless, political support must precede and remains the first and most crucial aspect of legitimacy creation that leads to a successful P3 implementation and persistence.

***Organizational capacity.*** AHD findings and the Mahalingam model seem to agree that organization capacity is crucial to the success of P3s. However, public sector organizational capacity must be demonstrated to the intended private sector audience for it to be effective.

***Trust*** as elaborated by the Mahalingam model is not consistent with the AHD findings. What AHD shows is that *partnership arenas* are more appropriate, as they indicate a structural feature or platform for ongoing collaboration that sustains the partnership and leads to institutionalization of P3s.

***Advocacy***. Mahalingam model suggests that advocacy is part of creating legitimacy. But what it actually considers is advocacy on a project basis. Findings from the AHD suggest that this episodic approach to engaging stakeholders is clearly inadequate. Therefore, what AHD suggests is a holistic approach or strategy to develop targeted education and communication products for all key segments of actors, from taxpayers to Unions, to the public sectors and to industry.

**Conclusion -** Based on the AHD findings, this chapter proposes a framework that better characterizes the Alberta institutional environment. It analyzes the evolution of institutional practices and outlines the nature of the influence of the elements of the institutional environment on project performance from one stage to the next. In addition, a conceptual framework based on this influence is set out that captures the evolution of the institutional environment. Furthermore, this chapter takes a look at Alberta's P3 program evolution from an Institutional theory perspective and considers how this fits the process of institutional change as suggested by Greenwood, Suddaby, and Hinings (2002). This chapter concludes with a discussion of P3 success criteria, compares both, conventional and P3 delivery models, and reviews P3 practices seen in other Canadian jurisdictions. The next chapter concludes this research by articulating the key contributions of this study to both research and practice.

# CHAPTER VII: CONCLUSION

## 7.1 Contributions to Research and Practice

The central research question is: *How does the institutional environment affect project outcomes in P3 development in the transportation sector in Alberta*. Adopting an institutional theory framework, this study set out to: 1) Reconstruct and analyze the emergence of P3s in Alberta; 2) Analyze how policy interventions and the institutional environment interact to affect P3 outcomes and vice versa; and 3) Analyze how the evolution of the institutional environment has impacted P3 project outcomes in Alberta.

This research shows how P3s emerged in Alberta by tracing the path of evolution within Alberta's context. Following a focused path that prioritizes time and cost certainty, value for money and efficiency, the Alberta P3 evolution and institutional environment allows a formulation of the following conclusions and contributions to P3 research and by extension to public infrastructure asset management:

### *1. Policy measures and political support must align with new actors*

Appropriate policy measures contribute to the emergence and development of the institutional environment for P3s. Supportive policy interventions, enacted and implemented, favourably influence P3 project outcomes. A political champion is critical in driving the establishment and implementation of an attractive policy framework that will promote P3s. A new actor could be a new cabinet minister or a dedicated P3 office or agency. A *new actor*, as a political champion, must have the motivation and authority to institute and drive changes. Therefore, while policy and political support work well together, they need new actors to drive the process forward toward institutionalization. This was the case in Alberta, as Minister (and later Premier) Ed Stelmach and

his team of *new actors* initiated and implemented P3s in Alberta's Infrastructure and Transportation department. Furthermore, Alberta's new P3 office strengthened the capacity to implement P3s in Alberta.

A strong and continuing political leadership positively influences public sector capacity by enacting and implementing policy measures which improves public sector organizational capacity to identify, structure and govern P3 projects (UNECE, 2007; Grimsey & Lewis, 2004; Kwak, et al. 2009). A knowledgeable and experienced public sector is able to operationalize these policies by designing projects that yield positive VfM. This positions the public sector for greater success as learning is consolidated, internalized and institutionalized as "a way of doing things."

Kwak, et al. (2009) identifies governments as a CSF in the success of P3 implementation. As previously stated, how the institutional environment evolves plays a key role in project outcome, and political support remains a key factor in determining the nature and process of evolution of the institutional environment for P3s. This contribution therefore, adds to the literature on the centrality of political support for P3s.

Given strong political support, there is a determined drive to focus on a successful implementation of P3s and learn the lessons for even greater future successes, especially where project linkages exist. However, in the absence of a strong political support, the institutional environment remains stagnant preventing opportunities for learning and future improvements.

### *2. Project performance (and program evolution) are path-dependent*

There is a *path-dependent* response at the institutional level to project outcomes, linked to political willingness to implement enabling policy measures that are supportive of P3 development. There is evidence to suggest that *path dependency* is a factor in play, as later

developments depend on earlier events both at the policy and project levels, influenced by a strong and visible political support. As previously noted, the institutional environment changed with each project with the evolution of the overall institutional environment from one stage to another. This sequential transformation of the institutional environment captured in the individual projects is shown in the conceptual framework in Figure 14. The utility of this framework is that it captures the institutional contextual changes from one stage to another, due to the targeted policy interventions and organizational learning acquired from earlier projects. Note especially the increase in VfM realized as the projects grew in size with the added confidence that comes from the experience of prior P3 projects. Importantly, each stage set the tone for the succeeding one, suggestive of *path dependency*. A process is path dependent if what happened in the past has an impact on the choices that are available or made in the present.

***3. There is a co-evolution of organizational field structures***

As policy intervention cleared the path for P3 emergence, a supporting range of organizational field structures also emerged with it. Interviewees from the public sector, the auditor's office, labour unions and a journalist confirmed the evolution of their capacities as P3 projects and policies emerged in Alberta. This supports current literature suggesting that encouraging the emergence and growth of stakeholder capacities strengthens the overall performance of P3s (UNECE, 2007; Yescombe, 2007; CCPPP, 2006).

*Co-evolution* represents a shift from a relatively closed concept of government where public organizations operate more or less on their own and act as the primary provider of public services, to a more open, dynamic concept of governance. It facilitates the exploration in practice of a broad range of possibilities open to government. It helps reveal the consequences that various choices entail and the potential for new types of relationships. There is no single solution and no approach

fit for all seasons. There are choices and possibilities; both are important, as therein lay the potential for a better future. It signals a substantial change in the relationship between government and citizens or society, and it will require complementary interactions of *emergence, compliance, performance and resilience* functions leading to institutionalization of accepted or established practices (See Figure 15).

With co-evolution, the public, private, and civil society spheres display the capacity to co-evolve in a manner that supports the overall performance of society. There is no predetermined master plan; rather a convergence of views and a congruence in the actions of multiple actors emerge that would not otherwise be possible. The co-design and co-creation of public policies and services strengthen the potential for co-evolution.

***4. Elements of the institutional environment are mutually re-inforcing creating synergy***

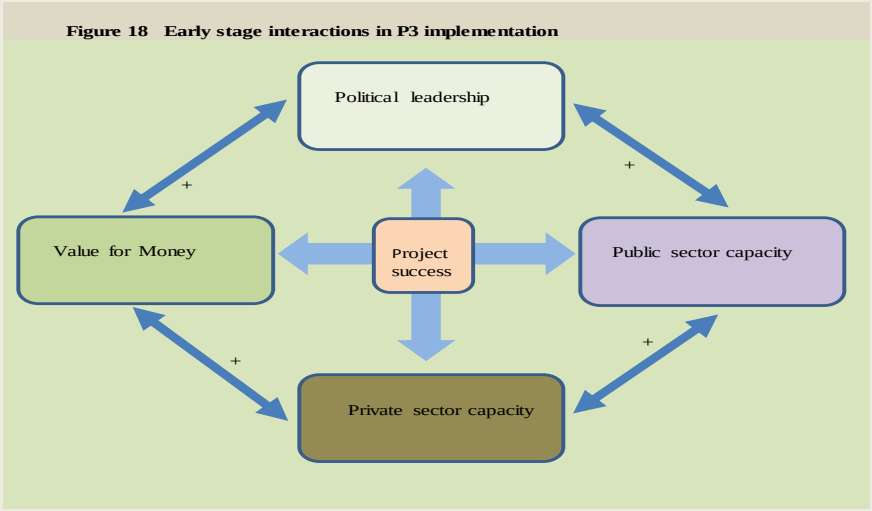
I find evidence that elements of the institutional environment react, affect and interact with other institutional environment elements in return, in diverse ways creating *synergy*. This suggests support for Jooste, Levitt and Scott's (2011) proposed link between *structuration theory* and *P3 development.* The institutional environment seems to evolve in two distinct stages – early and mature.

***Interactions of the institutional environment – Early stage:*** In early P3 environment, there is a link between political willingness, public sector capacity and project outcome. Political willingness to implement P3s results in focused policy measures aimed at developing public sector capacity to identify, structure and govern projects successfully. The capacity for project design, structure and governance by the public sector improves the chance that value will be created for taxpayers, which eventually reinforces and strengthens the political support for P3s. Figure 18

demonstrates how these several elements of the institutional environment support and interact with each other at an early stage.

In conclusion, a strong and continuing political support positively influences or drives public sector capacity by enacting and implementing policy measures which improves public sector capacity to identify, structure and govern P3 projects. A knowledgeable and experienced public sector is able to operationalize these policies by designing projects that yield positive VfM. This positions the public sector for greater success as learning is consolidated, internalized and institutionalized as a way of doing things. Figure 18 is a model that represents the *synergy* of these elements of the institutional environment.

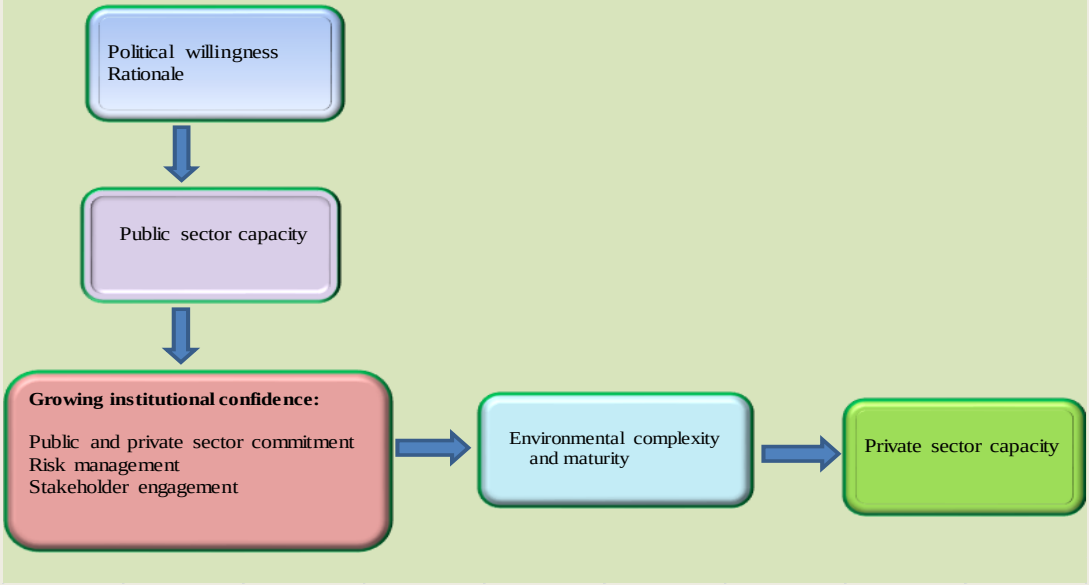
**Figure 18 Early stage interactions in P3 implementation**




***Interaction of the institutional environment – Mature stage:*** In a mature stage P3 environment (Figure 19), the institutional environment becomes more diverse – reacting with, influencing and interacting with each other in ways that are more complex than the early stage, and ultimately creates more *synergy* between the elements of the institutional environment. Building on the earlier political support and project success, public sector capacity is further enhanced by bigger and more sophisticated projects that are implemented drawing on the learning

and experience of the prior phase(s). This is the pattern observed in the Alberta P3 evolution; as bigger and more sophisticated projects were implemented with increasing VfM. Importantly, this feeds the private sector capacity by attracting bigger corporate outfits that bring deeper knowledge base and global experience to bear on the projects, thus, reinforcing the political commitment and predictability of the overall institutional environment. Sometimes this increased complexity may limit the amount of innovative space and openness to learning that could happen in the public sector. However, the key to unlocking further successes appears to be the capacity of the public sector to reinvent itself in ways that extend the learning opportunities that form the drivers of success in cross sector P3 implementation. The challenge is to channel private sector motivation at this stage without discouraging their capacity to innovate and create efficiencies that benefit taxpayers. Alberta seems to be struggling with finding the right balance between what has proved successful, and how to open the space for private sector-led innovation that could create greater efficiencies and VfM. Figure 19 shows elements and interactions of a mature stage P3 environment.

**Figure 19 Mature stage interactions in P3 implementation**



In conclusion, the result of the influence of institutional environment elements on project development depends on the degree of maturity or development of the overall institutional environment. Table 9, presents a summary of the influence of the institutional environment on project performance.

**Table 9 Influence of the institutional environment elements in project performance**

| | |
|---|---|
| POLITICAL LEGITIMACY | |
| **Rationale** | Government's stated rationale for embarking on P3s influences project identification, contract structure and post construction maintenance arrangements. |
| **Political willingness** | Findings reveal that political willingness is central to P3 performance. It influences overall project development by looking at the asset whole-life cycle. It is also linked to the effectiveness of the overall institutional environment. For instance, it determines the fairness of the bid selection, assures transparency, openness and competitiveness of the entire process, as a government's credibiity could depend on it. |
| **How things get done** | The general approach to get things done is such that coopting critical supporters and excluding suspected opponents creates an enclosed work space that avoids distrations. |
| ORGANIZATIONAL CAPACITY | |
| **Public sector capacity** | Public sector capacity has a major influence on project development. It affects project identification, project assessment, proponent selection and post construction maintenance arrangments and monitoring. This, in effect determines the nature of contract that is put in place, and the safeguards that are implemented to protect the taxpayers. |
| **Private sector capacity enhancement** | This capability is a feature of a more advanced institutional environment. It is affected by and reinforced by other capabilities such as, the availability of adequate financing mechanism. The existence of formal platforms that facilitate cooperation and improved communication lead to mutually beneficial solutions. |
| PARTNERSHIP ARENAS | |
| **P3 understanding and commitment** | Findings support the idea that a common understanding of the role of P3s in infrastructure delivery is important. And so is the commitment of both parties to work within that platform. This requires a new attitutide of cooperation, collaboration and constant communication. This helps to build public sector predictability and is fundamental to building trust and legitimacy around P3s. |
| **Risk management** | Findings support the idea that an adequate risk assessment and allocation model minimizes extended negotiations, and shorten planning and procurement time. This tends to mean lower pursuit cost/transaction cost for both partners. Thus, it builds private sector confidence in the competence and capacity of the public sector to deliver P3s. |
| **Conflict management** | A common understanding and commitment to P3s is a good start to managing conflicts. Establishing structures that mitigate frequent conflict is part of institutionalizing the P3 process leading to project success. It seems to be affected by the level of public sector commitment that is demonstrated by the political and organizational leadership. |
| **Stakeholder engagement** | Mechanisms that promote public consultation influence the nature and level of public support for P3s. A pre-emptory deployment could help starve off opposition and convince skeptics of the legitimacy of the delivery model. It builds on a trusting relationship between citizens and government. |

## 7.2 Implications for Research and Management Practice

### Research

This dissertation makes the following research contributions:

*Extending the literature on P3s* – It advances P3 knowledge by the contribution to literature, and by extension overall public infrastructure asset management research, by incorporating the concept of *new actors*. While policy measures and political support are documented in the literature (UNECE, 2007; Kwak, et al. 2009; Grimsey & Lewis, 2004), the idea that they are to be complemented by *new actors* is an outcome of studying the Anthony Henday Drive projects. New actors could be in form of an empowered cabinet level minister, a dedicated P3 office or agency (Jooste, et al. 2011). By approaching P3s from a theoretical platform, this study adds a theoretical lens to what has been hitherto dominantly a practitioner-led area of study. By adopting institutional theory, this study taps into the *taken-for-granted* assumptions and practices that are not typically visible to an ordinary observer.

*Enriching Institutional theory* – This study provides an institutional theory approach to the understanding of the emergence of mutually beneficial partnership arrangements between the private and public sectors. Presenting a modified institutional change process, demonstrates the validity of managing change from an institutional perspective that could be applied in future studies. Understanding the *co-evolutionary* nature of organizational fields demonstrates that evolutionary theory can enrich institutional theory as a supporting theoretical perspective for analytical purposes (Porter, 2006). Furthermore, this study contributes to strengthen organizational theory, specifically neo-institutional theory, by outlining how elements of the institutional environment interact to bring about both project- and organizational-level change.

This study also advances research on the role of political actors as *initiators* and *sustainers* of institutional reform as demonstrated by the Alberta P3 experience in public infrastructure asset delivery and the associated organizational alignment. Initializing a new logic, adds to the relevance of an organizing *institutional logic* (Thornton & Ocasio, 2008) as part of the mix of tools required in setting the broad outlines leading to institutionalizable change. This new logic must be led, articulated and communicated by *new actors* who are committed to and driven by the need to succeed.

**Management Practice**

This dissertation has shed light on some implications for management practice in infrastructure asset management.

*Interdependencies* – This dissertation project has focused on the interdependencies between political actors who are career politicians and organizational actors who are career civil servants. It also points to the *co-evolution* of organizational strategy and the organizational field. Using an institutional approach to public infrastructure management, opens a different perspective on how to think about organizational strategy and policies in relation to environmental mechanisms and stakeholders (Bourgon, 2011). Understanding the way these external forces function and are created, public sector management can better align internal organizational strategies comprising strategic adaptation (internal alignments) and participation strategies for institutional creation and optimization (external responses).

*Managing change* – Related to the above is the way policy change is conceptualized in the public sector. The current research is important for practitioners considering policy change implementation. It provides them with a more complete view of the processes of infrastructure

management change (that is not merely simplistic, rational, and technical). First, the research suggests that when implementing new infrastructure management systems, practitioners should be aware of the specific organizational context where the changes occur. Secondly, managers implementing a new infrastructure management policy system need to maintain an overview of the long term process of change in order to anticipate and overcome potential problems throughout the whole process of change. They must identify the most critical factors from the outset of a change program and in its different stages.

## 7.3 Concluding Reflections

Given the evolutionary pattern of P3s in Alberta, there seems to be support for the proposal by Jooste et al. (2011) that P3s develop differently in different regions. It suggests that the interactions between the institutional environment and project development are context-specific in the sense that the uniqueness of each location has attributes that underlie this evolutionary process. Based on this research, each evolutionary phase has particular attributes that needs attention by project managers. As a process that is path dependent and heavily based on learning and internalization of the lessons from a prior phase, it is crucial that a clear process of knowledge accumulation, (i.e., a learning orientation) with a view toward institutionalization become part of the organizational model for P3 success. This is especially so given that several factors, especially macroeconomic factors, could make prior learning obsolete due to the rapid rate of change in P3 environments globally.

During the ***early phase of P3*** implementation, it is very important that a clear, concise and achievable rationale be established and communicated to stakeholders. Furthermore, strong political support must not just be present, but be perceived as continuous and visible to all stakeholders. This in turn drives the development of public sector capabilities to ensure successful

project implementation. The capacity in place further drives project success via project identification, contract development and governance structures that deliver value to taxpayers. These are the foundational elements considered relevant in early stage P3 evolution.

In ***mature stage P3*** evolution, public sector capability in decision-making through transparent processes, standardized documentation, and selection processes are crucial. This stage is marked by standardized risk evaluation and financing mechanisms that have become institutionalized conferring credibility and enhancing the overall legitimacy of the P3 model. With the increased mobilization of support by the establishment of these measures, broader acceptance among stakeholders is generated leading to even deeper legitimization, as "the way we do things". The acceptance of P3s in Alberta appears to stem from the transparent and standardized processes implemented over the years, thereby conferring legitimacy on the P3 model.

***Private sector confidence*** is boosted by strong political support and public sector willingness to further deploy resources leading to even greater successful project outcomes. At this phase, there is a convergence in objectives between the public and private sectors leading to mutual benefits that generate even further value and greater measurable efficiencies.

***Communication strategy*** Episodic communication conducted on a project basis is inadequate in ensuring sufficient engagement and support for P3s by stakeholders. What is needed is a comprehensive, focused and sustained *communication strategy* that targets all major actors, including regular citizens, as an important part of legitimacy and acceptance. Many of the interviewees suggested that communication with citizens, major actors and other interest groups has been patchy and needs significant improvement. Therefore, a continuous and organized communication of about P3s, implementation approach and progress, before, during and after P3

implementation, is needed to ensure that actors and interest groups are made to perceive that they have been part of the implementation and legitimization process. Given the complex nature of P3s, it appears that the regular model of communication adopted by Alberta has not worked as evidenced from the interviews. Asked about what they will change or do differently, most insisted that change is needed in the way communication is currently done.

"*There is still a public perception that we are not doing enough to tell the public about what we are doing and how we are doing it. Maybe we need to do more public enlightenment, maybe because they don't understand NPV.*" Public sector senior managers

A PriceWaterhouse consultant calls it the education effect.

*"Education is key to building long term support. Recognize that we are going into unknown territory give our provincial fiscal situation."*

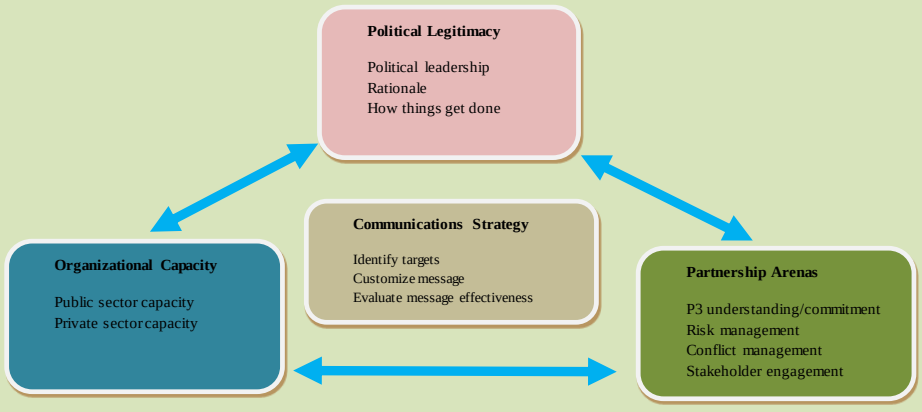
Another industry interviewee, while agreeing that an overall communications strategy is lacking even suggested adopting an insurance approach in explaining the idea of risk, as this is central to P3s.

*"We need to do a good job in explaining what risk is. They need to understand it from the idea of insurance. Folks understand risks. To make sure that the requirements are as clear as possible, sometimes we are in a rush. We need to clearly specify what we want - prescriptive and performance solution."*

Existing communication channel is cluttered making public sector news unattractive. The challenge is to devise new channels for reaching P3 actors, citizens and other interest groups. One of these measures could be in the adoption of new technologies that target specific audiences based on their interests. Social media may be exploited to target specific audiences in providing brief updates on what is happening in their locality. It may disclose what new projects that could improvement or transform the way residents commute or do business. The advantage of social media is the use of short message clips that are less overwhelming for time-pressed audiences. A

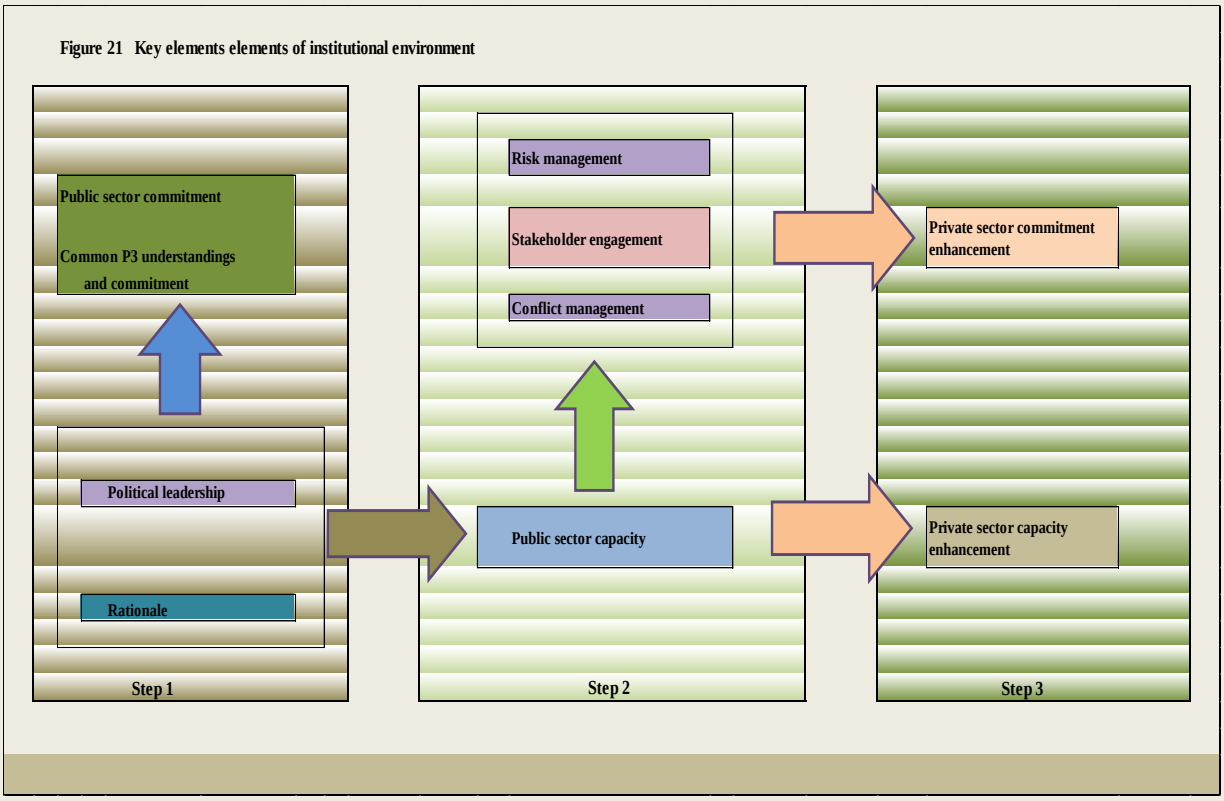
proposed institutional environment framework would situate communication strategy at the center of the model as shown in Figure 20.

**Figure 20 Proposed Institutional Environment Framework**




**Source: Author, (2013)**

**Conclusion** - Figure 21 presents a harmonized model that brings together the *two phases* of P3 implementation (early and mature) onto a single platform. This shows the key elements of the institutional environment that converge to facilitate P3 success set out in three sequential steps, as observed in the Alberta P3 experience. In **step 1**, the key elements of rationale, political willingness, public sector commitment and an understanding of P3s must be demonstrated by the government. These attributes then feed **step 2** to drive public sector capacity (represented as risk management, conflict management and stakeholder engagement capacities). These attributes feed **step 3** which is a strengthened private sector capacity and commitment. The organized convergence of these institutional environment elements ultimately translates into a successful P3 implementation as observed in Alberta's road sector.




## AHD Projects: A Cross-Case Review

A cross-case review seems appropriate at this point. Table 10 is an attempt to perform an inter-project comparison. It is instructive that the AHD projects appears to be a natural experiment that lays out both models side-by-side, and thus, it is difficult to resist some comparison. What this table shows is a validation of some of the issues that Alberta Infrastructure and Transportation set out to achieve with the P3 model, and what has been noted in the literature. First, there was cost and time certainty with regards to Alberta's P3 projects. However, cost certainty was not observed with the SWAHD. Cost certainty ensured that the P3 projects were locked-in at that cost and the province was protected from future inflationary pressures. In addition, the construction timeframe was certain and thus, there was proper planning around project completion date. Again, this was not the case with the SWAHD. The cost of construction was only known in a given fiscal year

when approval was given for more work. This exposed the citizens to inflationary pressures from one year to the next. Second, there was an incremental value delivery with each new P3 project. This suggests increasing efficiency with the overall approach to the P3 model as learning became institutionalized and relevant knowledge deepened for both the public and private sectors. Finally, what is not always acknowledged, which is here characterized as the "*unintended outcome*", is the new attitudinal change that occurred in the relationship between the public and private sectors. Working in partnership arenas created a sense of commitment and the trust generated and internalized remain and become part of future partnership arrangements; the skills that were developed on both sides is a payoff for both the individual and the employee organizations. These are what could be called intangible benefits that are hard to qualify, but are nevertheless present.

**Table 10 Summary of AHD Project segments**

| | **SEAHD** | **NWAHD** | **NEAHD** | **SWAHD** |
|---|---|---|---|---|
| PSC (C$ million) | $497 (2004) | $1,660 (2008) | $2,180 (2012) | N/A |
| Total costc(C$ million) | $493 (2004) | $1,420 (2008) | $1,810 (2012) | $600 (1999-2011) |
| Length | 11km | 21km | 27 km | 21km |
| Duration of construction * | 2 yrs. 10 Mths | 3 yrs. 3 Mths | 4 yrs. 5 Mths | 12 yrs. |
| Target completion date | October 2007 | November 2011 | October 2016 | N/A |
| Project commission date | October 22, 2007 | November 1, 2011 | October 2016 | In phases |
| VFM Savings (C$ million) | $3 (2004) | $240 (2008) | $370 | N/A |
| RFQ date | September 2003 | July 1, 2007 | March 2, 2011 | N/A |
| RFP date | April 2004 | October 1, 2007 | May 13, 2011 | N/A |
| Contractor selection date | December 2004 | May 30, 2008 | March 21, 2012 | N/A |
| Financial close | January 2005 | July 1, 2008 | May 8, 2012 | N/A |
| Contract model | DBFM | DBFM | DBFM | DB (conventional) |

**Source: Compiled by the Author** *From financial close to project commission date.

## 7.4 Limitations and Future Research

Scott (2008) identifies three categories (pillars) of institutional mechanisms that may be operating either individually or collectively in an organizational setting. These are the regulative, normative and cultural-cognitive mechanisms. The frameworks suggested as an outcome of this

study are essentially an illustration of the regulative pillar. Therefore, it is unclear how the other pillars of institutional mechanisms may operate and apply in Alberta's P3 and institutional environment and circumstances. There is an opportunity to study Alberta's P3 evolution from these other institutional perspectives and bring together a more holistic picture of the Alberta institutional environment and evolution.

While this study has only focused on Alberta's institutional environment, there are differences that may not make Alberta the typical Canadian jurisdiction, especially, its unique political and economic contexts. So, to the extent that Alberta is substantially different, the results of this study would need to be applied with caution to other jurisdictions.

Closely related to the above is the need to further validate Jooste, Levitt and Scott's (2011) claim that P3s are applied and operated differently in different locations. There needs to be a more detailed inter-provincial comparative study within Canada and also with other locations to validate the nature of the application of P3s from an institutional theory perspective. This will give a more grounded perspective into the institutional mechanisms at work.

This study has evaluated the interactions between the institutional environment and project outcomes. The results of this study suggest that institutional environment elements do interact with each other when applied to the project in diverse ways that are mutually re-inforcing. Institutional elements may act differently in an early stage P3 environment from a mature stage P3 environment. However, the full extent, pattern and nature of these interactions or their intensity remain unknown. While this is outside the scope of the current research, it constitutes an interesting area for future investigation.

As the P3 model of infrastructure delivery becomes dominant, this type of longitudinal study is needed to set the right tone given the prescriptions of *path dependency*, where earlier events tend to determine the nature of subsequent events. A study of this nature establishes the right practices *ab initio* that would direct future successful outcomes in infrastructure delivery with the objective of creating value for taxpayers.

Another area for future research is the urgent need to focus on the operational phase of P3 projects with an assessment of post implementation practices and outcomes. This need has been identified in several recent P3 literatures (for instance, see Hodge, Greve & Boardman, 2010). Data is needed to support some of the claims around P3 performance during the implementation phase given the long term nature of most P3 contracts, now averaging 30 years. The only way to determine the ultimate value creation is to objectively follow the project path from start to finish, not just the end of construction, it must extend to the end of the operational phase.

More work is also needed to investigate the extent to which the use of P3s has affected public sector behaviour. It would be interesting to investigate in detail how the planning rigor, development coordination, and asset management attitudes under conventional infrastructure delivery has been impacted both, by knowledge transfer, and by the requirement for traditional governance approaches and other agents to compete with those involved in P3 delivery model both, for their effectiveness and for their political legitimacy. Although some interview participants indicated the move towards cross-training, and pointed to the relevance of experience and skill diversity needed to ensure program longevity and success, this study did not explicitly consider these aspects.

Another suggestion for future work is a closer investigation into the way capacity is built up in the early days of a P3 program. From my exploratory work I have developed some initial ideas: Governments need to "push through" a number of pilot projects to overcome early opposition (specifically within line departments) to a new approach, and to develop initial capacity within the field. Thereafter the success of early projects serves as a sort of "proof of concept." This increased legitimacy and built-up capacity helps to greatly reduce the transaction cost of subsequent projects, thereby serving as a pull force to drive the P3 program along. It remains the intention of this researcher to fully pursue these initial ideas in a future research program.

# REFERENCES

**Abednego, M. P., & Ogunlana**, **S. O.** (2006). Good Project Governance for Proper Risk Allocation in Public-Private Partnerships in Indonesia. *International Journal of Project Management,* 24(7): 622-634.

**Alberta's Public Private Partnership** (2011). *P3 Framework and Guide,* Alberta Treasury Board.

**Alvarez, R.** (2002). It was a great system: Face-work and the Discursive Construction of Technology during Information Systems Development. *Information Technology & People* 14(4): 385-405.

**Archer, M. S.** (1995). *Realist Social Theory: The Morphogenetic Approach*. Cambridge, Cambridge University Press.

**Arthur Anderson, & LSE Enterprise**. (2000). *Value for Money Drivers in the Private Finance Initiative,* UK Treasury Task Force, London.

**Arndt, R., & Maguire, G.** (1999). *Risk Allocation and Identification Project-Survey Report,* The University of Melbourne, The Department of Treasury and Finance, Melbourne.

**Auditor General's Report** (2003/04; 2010/11). *Consolidated Financial Statement,* Government of Alberta, Canada.

**Aziz, A. M. A.** (2007). Successful Delivery of Public-Private Partnerships for Infrastructure Development. *Journal of Construction Engineering and Management*, 918-931.

**Ball, R., Heafey, M., & King, D.** (2001). Private Finance Initiative: A good deal for the public purse or a drain on future generations. *Policy and Politics* 29 (1), 95-108.

**Barley, S. R., & Tolbert, P. S.** (1997). Institutionalization and Structuration: Studying the Links between Action and Institution. *Organization Studies* 18(1): pp. 93-117.

**Baum, J. A. C., & Oliver, C.** (1996). Toward an Institutional Ecology of Organizational Founding. *Academy of Management Journal* **39**(5): 1378-1427.

**Berger, P. L., & Luckmann, T.** (1967). *The Social Construction of Reality. A Treatise in the Sociology of Knowledge*. New York: Doubleday.

**Bijlsma-Frankema, K., & Costa, A. C.** (2005). Understanding the Trust-Control Nexus. International Sociology, 20(3), 259-282.

**Boardman A. E., & Vining, A. R.** (2007). Can P3s Contribute to the Upgrade of Canada's Asia-Pacific

Trade Infrastructure? UBC P3 Project Working Paper. Infrastructure Canada.

**Boardman A. E., & Vining, A. R.,** (2010). P3s in North America: renting the money (in Canada), selling the roads (in the USA). In G.A. Hodge, C. Greve & A. Boardman (Eds) *International Handbook in Public-Private Partnerships*, Edward Elgar, UK, pp. 354-398.

**Bourgon, J.** (2011) *A new synthesis of public administration: serving in the 21st century.* The School of Public Policy, McGill-Queen's University Press.

**Bovaird, T.** (2004). Public-private partnerships: from contested concepts to prevalent practice. *International Review of Administrative Sciences*, 70(2), 199.

**Boxenbaum, E., & Jonsson, S.** (2008). Isomorphism, Diffusion and Decoupling. In R. Greenwood, C. Oliver, K. Sahlin and R. Suddaby (Eds.), *The SAGE Handbook of Organizational Institutionalism*. London: Sage Publications, 78-98.

**Braun, V., & Clarke, V.** (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3 (2). pp. 77-101.

**Bult-Spiering, M.,** & **Dewulf, G.** (2006). *Strategic issues in Public Private Partnerships. An international perspective.* Blackwell Publishing.

**Burleton, D., & Beata, C.** (2004). Mind the Gap: *Finding the Money to Upgrade Canada's Ageing Public Infrastructure.* Toronto, TD Bank Economics, Special Report.

**Burleton, D.** (2006). *Creating the Winning Conditions for PPP in Canada*. Toronto, TD Bank Economics, Special Report.

**Burns, J., & Scapens, R.** (2008). Organizational Routines in Accounting. In M. Becker (Ed.) *Handbook of Organizational Routines*. Cheltenham, Edward Elgar**:** 87-106.

**Burns, J., & Scapens, R. W.** (2000). Conceptualizing Management Accounting Change: An Institutional Framework. *Management Accounting Research*. 11(1): 3-25.

**Burns, J.** (2000). The Dynamics of Accounting Change Inter-Play between New Practices, Routines, Institutions, Power and Politics. *Accounting Auditing and Accountability Journal. 13:* 566-596.

**Burns, J., Ezzamel, M., & Scapens, R. W.** (2003). The Challenge of Management Accounting Change: Behavioural and Cultural Aspects of Change Management. Amsterdam, CIMA, Elsevier Ltd.

**Canadian Council on Public Private Partnerships** (2012). *Definitions*. Accessed: October 23, 2012. http://www.pppcouncil.ca/resources/about-ppp/definitions.html

**CCPPP. (2006).** Responsible PPP Procurement for British Columbia. The Canadian Council for Public-Private Partnerships, Available online at: http://www.pppcouncil.ca/publications.asp.

**Casey, V. P**. (2003). *A capital Question – Infrastructure in Western Canada's Big Six*. Canada West Foundation, October 2003.

**Corbin, J. M.,** & **Strauss, A. L.** (2008). *Basics of qualitative research: Techniques and Procedures for Developing Grounded theory.* Sage Publications.

**Commission of the European Communities** (2005). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on Public-Private Partnerships and Community Law on Public Procurement and Concessions, Brussels.

**Conference Board of Canada (CBC),** (2010). *Dispelling the Myths: A Pan- Canadian Assessment of Public-Private Partnerships for Infrastructure Investment*. The Conference Board of Canada, Ottawa, ON.

**Creswell, J. W.** (2005). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (*2nd Ed.).* Upper Saddle River, NJ: Pearson.

**Dacin, T. M., Oliver, C., & Roy, J. P.** (2007). The legitimacy of strategic alliances: An institutional perspective. *Strategic Management Journal* 28: 169-187.

**Davies, P., & Eustace, K.** (2005). *Delivering the PPP promise: A Review of PPP Issues and Activity.* PriceWaterhouseCoopers, London.

**Dawatripont, M. & Legros, P.** (2005). *Public-Private Partnerships: Contract Design and Risk Transfer*. European Investment Bank Papers, Vol. 10 (1), pp 120-45.

**Deephouse, D. L., & Suchman, M.** (2008). Legitimacy in Organizational Institutionalism. In Greenwood, R., Oliver, C., Sahlin, K. & Suddaby, R. (Eds.): *Handbook of Organizational Institutionalism*. London: SAGE Publications.

**Deephouse, D. L. (**1996). Does Isomorphism Legitimate? *Academy of Management Journal*, 39(4): 1024-1039

**Delhi, V. S. K., Palukuri, S., & Mahalingam, A.** (2010). Governance issues in Public Private Partnerships in infrastructure projects in India. Paper presented at the Engineering Project Organizations Conference, South Lake Tahoe, CA.

**Delmon, J**. (2000). BOO/BOT projects: a commercial and contractual guide, Sweet & Maxwell Limited, London.

**DiMaggio, P. J., & Powell, W.W.** (1991). The Iron Cage revisited: Institutional isomorphism and collective rationality in organizational fields. In *The New Institutionalism in Organizational Analysis*. Chicago: University of Chicago Press, 63-82.

**DiMaggio, P. J.** (1988). Interest and agency in institutional theory. In: Zucker, L. (Ed.): *Institutional patterns and organizations: Culture and environment*. Cambridge, MA: Ballinger, 3-21.

**DiMaggio, P., & Powell, W. W.** (1991). Introduction. In W. W. Powell and P. DiMaggio (Eds.), *The New Institutionalism in Organizational Analysis*. Chicago: The University of Chicago Press, 1-40.

**DiMaggio, P. J., & Powell, W. W.** (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review* 48(2): 147-160.

**Duffield, C.** (2001). *An Evaluation Framework for Privately Funded Infrastructure projects in Australia*. PhD Thesis. The University of Melbourne, Australia.

**Duffield, C.** (2008). *National PPP Forum – Benchmarking Study, Phase II Report*. University of Melbourne, Merit Melbourne Engineering Research Institute.

**Dutz, M., Harris, C., Dhingra, I., & Shugart, C.** (2006). Public Private Partnership Units: What Are They and What Do They Do. World Bank, Washington, D.C.

**Edmonton City.** (2006). *Infrastructure Strategy* Report, January, 2006.

**Edwards, L.** (1995). *Practical Risk Management in the Construction Industry, Engineering Management Services*, London: Thomas Telford.

**Eisenhardt, K. M.** (1989). Building theories from case study research. *Academy of Management Review*, 14, 488-511.

**Eggertsson, T.** (1996). *A note on the economics of institutions*. Cambridge: Cambridge University Press.

**Farrugia, C., Reynolds, T., & Orr, R. J. (2008).** Public-Private Partnership Coordination Agencies: A Global Perspective. In: *CRGP Working Paper*, Collaboratory for Research on Global Projects, Stanford.

**Flanagan, R., & Norman, G.** (1993). *Risk Management and Construction*, Oxford-Blackwell Scientific Publications.

**Fligstein, N., & Freeland, R.** (1995). Theoretical and Comparative Perspectives on Corporate Organization. *Annual review of Sociology* **21**: 21-43.

**Fligstein, N.** (2001). Social Skill and the Theory of Fields. *Sociological Theory* 19(2): 105-125.

**Fligstein, N.** (1990). Transformation of Corporate Control. Cambridge, M.A., Harvard University Press.

**Friedland, R., & Alford, R. R.** (1991). Bringing society back in: Symbols, practices, and institutional contradictions. In W.W. Powell & P.J. DiMaggio (Eds): *The New Institutionalism in Organizational Analysis*. Chicago: University of Chicago Press.

**Flinders, M.** (2005). The Politics of Public Private Partnerships. *British Journal of Politics and International Relations*, 7, 215-239.

**Flyvbjerg, B.** (2009). Survival of the unfittest: why the worst infrastructure gets built – and what we can do about it. *Oxford Review of Economic Policy*, Vol 25 (3), pp. 344-367.

**Forrer, J., Kee, J., Newcomer, K., & Boyer, E.** (2010). Public-private partnerships and the public accountability question. *Public Administration Review* (Washington, DC), *70*(3), 475-484.

**Garvin, M. J., & Doran, B. (2008)**. Assessing the Effectiveness of Infrastructure Public Private Partnership Programs and Projects. *Public Works Management & Policy*, 13 (2): 162-178.

**Giddens, A.** (1984). *The Constitution of Society: Outline of the Theory of Structuration*. Berkeley, California: University of California Press.

**Gillen, D.** (2001). Public Capital, Productivity, and the Linkages to the Economy: Transportation Infrastructure. In A. Vining & J. Richards (Eds.), *Building the Future: Issues in Public Infrastructure in Canada*. CD Howe Institute, Toronto, pp. 36-72.

**Glesne, C.** (1999). Becoming *qualitative researchers: An introduction* (2nd ed.). Don Mills, Ontario, Canada: Longman.

**Gómez-Ibáñez, J. A., & Meyer, J. R.** (1993). *Going Private: The International Experience with Transport Privatization* (Washington, D.C.: The Brookings Institution, November).

**Government of Alberta,** (2004). Fiscal Plan. *Budget 2004: On Route, On Course – Heading Toward Alberta's Second Century*. Delivered on the floor of the Alberta legislature on March 24, 2004.

**Government of Alberta.** (2009). Fiscal Plan. *Budget 2009: Building on our Strengths*. Delivered on the floor of the Alberta legislature on April 7, 2009.

**Government of Alberta.** (2010). Fiscal Plan. *Budget 2010: Striking the Right Balance*. Delivered on the floor of the Alberta legislature on February 9, 2010.

**Government of Alberta.** (2012). Fiscal Plan. *Budget 2012: Investing in People*. Delivered on the floor of the Alberta legislature on February 9, 2012.

**Greenwood, R., & Hinings, C. R.** (1996). Understanding Radical Organizational Change: Bringing together the Old and New Institutionalism. *Academy of Management Review* **21**(4): 1022-1054.

**Greenwood, R., & Hinings, C. R.** (1993). Understanding strategic change: The contribution of archetypes. *Academy of Management Journal*, 36: 1052- 1081.

**Greenwood, R., & Suddaby, R.** (2006). Institutional entrepreneurship in mature fields: The Big Five accounting firms. *Academy of Management Journal*, 49: 27-48.

**Greenwood, R., Suddaby, R., & Hinings, C. R.** (2002). Theorizing Change: The role of professional associations in the transformation of institutionalized fields. *Academy of Management Journal*, Vol. 45, (1): 58-80.

**Greenwood, R., Oliver, C., Sahlin, K., & Suddaby, R.** (2008). Introduction. In R. Greenwood, C. Oliver, K. Sahlin and R. Suddaby (Eds.), *The SAGE Handbook of Organizational Institutionalism*. London: Sage Publications, 1-46.

**Grimsey, D., & Lewis, M.** (2004). *Public Private Partnerships: The Worldwide Revolution in Infrastructure Provision and Project Finance*. Cheltenham, UK: Edward Elgar Publishing Limited.

**Guba, E.** (1981). Criteria for assessing the trustworthiness of naturalistic enquiries. *Educational Resources Information Centre Annual Review Paper*, 29, 75-91.

**Hedman, J., & Borell, A.** (2004). Narratives in ERP systems evaluation. *Journal of Enterprise Information Management* 17(4): 283-290.

**Henisz, W. J., Levitt, R. E., & Scott, W. R.** (2012). Toward a unified theory of project governance: economic, sociological, and psychological supports for relational contracting. *Engineering Project Organization Journal, 2*, 37-55.

**Hinings, C. R., Greenwood, R., Reay, T., & Suddaby, R.** (2004). Dynamics of Change in Organizational Fields. In M. S. Poole and A. H. V. d. Ven (Eds.), *Handbook of Organizational Change and Innovation*. New York: Oxford University Press Inc., 304-323.

**Hirsch, P., & Lounsbury, M.** (1997). Ending the Family Quarrel: Toward a Reconciliation of "Old" and "New" Institutionalisms. *American Behavioral Scientist* 40(4): 406.

**HM Treasury.** (2003). PFI: Meeting the Investment Challenge. July 2003; **HM Treasury.** (2004). Value for Money Assessment Guide. London, August 2004. **HM Treasury.** (1998). Partnerships for Prosperity: the Private Finance Initiative, London, 1998.

**Hodge, G., Greve, C., & Boardman, A.** (2010). Introduction: The PPP Phenomenon and its Evaluation. In G.A. Hodge, C. Greve & A. Boardman (Eds.), *International Handbook in Public-Private Partnerships*, Edward Elgar, UK, pp 3-16.

**Hodge, G.** (2010). Reviewing public-private partnerships: some thoughts on evaluation. In G.A. Hodge, C. Greve & A. Boardman (Eds), *International Handbook in Public-Private Partnerships*, Edward Elgar, UK, pp. 81-114.

**Hodge, G., & Greve, C.** (2007). Public-Private Partnerships: An International Review of Performance. *Public Administration Review*, 67(3), 545-558.

**Hodge, G., & Greve, C.** (2008). *The PPP Debate: Taking Stock of the Issues and Renewing the Research Agenda.* International Research Society for Public Management Annual Conference, Brisbane, Australia 26-28 March 2008.

**Hoffman, A. J.** (1999). Institutional Evolution and Change: Environmentalism and the U.S. Chemical Industry. *Academy of Management Journal* 42(4): 351-371.

**Human, S. E., & Provan, K. G.** (2000). Legitimacy building in the evolution of small firm multilateral networks: a comparative study of success and demise. *Administrative Science Quarterly* 45: 327-365.

**Imperial, M. T.** (2005). Using collaboration as a governance strategy: Lessons from six watershed management programs, *Administration and Society* 37: 281-320.

**Jepperson, R. L. (**1991). Institutions, institutional effects and institutionalization. In Powell, W. W., and DiMaggio, P. J. *(*Eds.), *The new institutionalism in organizational analysis,* 143-163. Chicago: University of Chicago Press.

**Jooste, S., & Scott, R.** (2009). *Organizations Enabling P3s: An Organization Filed Approach*. Working Paper #49, Collaboratory for Research on Global Projects.

**Jooste, S. F., Levitt, R. E., & Scott, W. R.** (2010a). *Beyond "One Size Fits All": How Local Conditions*

*Shape PPP-enabled Field Development.* Paper presented at the Engineering Project Organizations Conference, South Lake Tahoe, CA.

**Jooste, S. F., Levitt, R. E., & Scott, W. R.** (2010b). *Capacity, Legitimacy, and Interest: Toward a Framework for PPP Program Success.* Paper presented at the Proceedings of 2010 Engineering Project Organization Conference, Fallen Leaf Lake, CA.

**Jooste, S. F., Levitt, R. E., & Scott, W. R.** (2011). Beyond "one size fits all": how local conditions shape PPP enabled field development. *Engineering Project Organization Journal 1*(1), 11-25.

**Kitchener, M.** (2002). Mobilizing the logic of managerialism in professional fields: The case of academic health centre mergers. *Organization Studies*, 23 (3): 391-420.

**Kneebone, R.** (2006). From Feast to Famine: The Evolution of Budgeting Rules in Alberta. *Canadian Tax Journal*, Vol. 54 (3), pp. 657-673.

**Kumar, R., & Andersen, P. H.** (2000). Inter firm diversity and the management of meaning in international strategic alliances. *International Business Review* 9: 237-252.

**Kumar, R., & Das, T. K.** (2007). Interpartner legitimacy in the alliance development process. *Journal of Management Studies* 44: 1425-1453.

**Kwak, Y. H., Chik, Y., & Ibbs, C. W.** (2009). Towards a Comprehensive Understanding of Public Private Partnerships for Infrastructure Development. *California Management Review*, 51(2), 51-78.

**Lane, C., & Bachmann, R.** (1997). Co-operation in inter-firm relations in Britain and Germany: The role of social institutions. *The British Journal of Sociology* 48: 226-254.

**Latham, M.** (2009). *Public Private Partnerships in Education*. Washington, DC: EdInvest, IFC, CBFT.

**Lawrence, T. B.** (1999). Institutional Strategy. *Journal of Management* **25**(2): 161-188.

**Lawrence, T. B.** (2008). Power, Institutions and Organizations. In Greenwood, R, Oliver, C., Sahlin, K. & Suddaby, R. (Eds.): *Handbook of Organizational Institutionalism*. London: SAGE Publications.

**Lawrence, T.B., Hardy, C., & Phillips, N.** (2002). Institutional effects of inter-organizational collaboration: The emergence of proto-institutions. *Academy of Management Journal* 45: 281-290.

**Lee, A. S.** (1989). A Scientific Methodology for MIS Case Studies. *MIS Quarterly*, 13(1), 33-50.

**Lewin, A., & Volberda, H.** (2003). The future of organization studies: Beyond the selection- adaptation debate. In H. Tsoukas & C. Knudsen (Eds.), *The Oxford handbook of organization theory* (pp. 568-595). Oxford, England: Oxford University Press.

**Lincoln, Y. S., & Guba, E. A.** (1985). *Naturalistic inquiry*. Beverley Hills, CA: Sage.

**Linder, S.** (1999). Coming to Terms with the Public-Private Partnership: A Grammar of Multiple Meanings. *American Behavioral Scientist* 43(1): 35-51.

**Lounsbury, M.** (2007). A tale of two cities: Competing logics and practice Variation in the professionalizing of mutual funds. *Academy of Management Journal.* Vol. 50. No 2. 289-307.

**Lounsbury, M., Ventresca, M., & Hirsch, P. M.** (2003). Social movements, field frames and industry emergence: A cultural-political perspective on US recycling. *Socio-Economic Review*, 1, 71-104.

**Loxley, J., & Loxley, S.** (2010). *Public Service, Private Profits: The Political Economy of Public-Private Partnerships.* Black Point, NS: Fernwood Publishing Canada.

**Luckmann, N.** (1979). *Trust and power*. Chichester: Wiley.

**Macintosh, N., & Scapens, R.** (1990). Structuration Theory in Management Accounting. *Accounting, Organizations and Society*. **15**(5): 455-477.

**Mahalingam, A.** (2011). Creating an enabling environment for PPPs: Toolkit for Policymakers Engaged in Designing and Managing PPP Interventions in the Infrastructure Sector: IFMR Research.

**Marchington, M., & Vincent, S.** (2004). Analyzing the influence of institutional, organizational and interpersonal forces in shaping inter-organizational relations. *Journal of Management Studies* 41: 1029-1056.

**Matos-Castano, J., Dewulf, G., & Mahalingam, A. (**2012). *The complex interplay between the institutional context and PPP project outcomes.* Working Paper Proceedings - Engineering Project Organizations Conference. Rheden, The Netherlands, July 10-12, 2012.

**Merna, A., & Smith, N. J.** (1996). *Privately Financed Concession Contract*, 2nd Edition, Vols 1 & 2, Hong Kong: Asia Law and Practice.

**Merriam, S. B.** (1998). *Qualitative research and case study application in education*. San Franscisco: Jossey-Bass.

**Meyer, J., & Rowan, B.** (1977). Institutionalized Organizations: Formal Structure as Myth and Ceremony. *American Journal of Sociology, 87*, 340-363.

**Meyer, J. W., & Scott, W. R.** (1983). Centralization and the Legitimacy Problem of Local Government. *Organizational Environments: Ritual and Rationality*. J. W. Meyer and W. R. Scott. Beverly Hills, CA, Sage.

**Meyer, J. W., Scott, W. R. & Deal, T. E.** (1981). Institutional and Technical Sources of Organizational

Structure. *Organization and the Human Services*. H. D. Stein. Philadelphia, Temple University Press**:** 151-178.

**Meyer, R. E.** (2008). New Sociology of Knowledge: Historical legacy and contributions to current debates in institutional research. In R. Greenwood, C. Oliver, K. Sahlin, & R. Suddaby. (Eds.): *Handbook of Organizational Institutionalism*. London: SAGE Publications.

**Milward, H. B., & Provan, K. G.** (2000). Governing the Hollow State. J Public Adm. Res Theory, 10(2), 359-380.

**Miles, M., & Huberman, A.** (1994). *Qualitative data analysis*. Thousand Oaks: Sage.

**Mintz, J. M.** (1995, October). *An Evaluation of the Joint Venture Agreement Establishing the Alberta Special Waste Management System.* Toronto, Canada: University of Toronto Faculty of Management.

**Mu, R.** (2008). *PPPs and the Management of Expressways in China: An Agency Theory Approach.* Unpublished Doctoral Thesis, Delft University of Technology, Netherlands.

**Mu, R., de Jong, M., & Heuvelhof, E. T.** (2010). Public-private partnerships for expressways in China: An agency theory approach. *European Journal of Transport and Infrastructure Research, 10*(1), 42-62.

**Murphy, T. J.** (2008). Canadian Public Administration /Administration Publicques du Canada. Vol. 51, (1), March 2008, PP. 99–126.

**National Audit Office, UK.** (2000). *Examining the Value for Money of Deals under the Private Finance Initiative*. London: Her Majesty's Stationery Office.

**OECD.** (2008). *Public-Private Partnerships: In Pursuit of Risk Sharing and Value for Money*, OECD Publishing.

**OECD.** (2011). *Infrastructure Management: Public and private roles*. PERQ-OECD Workshop Enhancing Regulatory Quality: International Experience and Solutions for Vietnam Hanoi, October 2011.

**Oliver, C.** (1991). Strategic Responses to Institutional Processes. *Academy of Management Review* **16**(1): 145-179.

**Oliver, C.** (1997a). The Influence of Institutional and Task Environment Relationships on Organizational Performance: The Canadian Construction Industry. *Journal of Management Studies* 34(1): 99-124.

**Osborne, S. P.** (2000). Public–Private Partnerships: Theory and Practice in International Perspective, Routledge: London.

**Parkland Institute**, (2011). *Unpacking Alberta's infrastructure spending: Real increases have been moderate*. February 23, 2011.

**Parkhe, A.** (2003). Institutional environments, institutional change and international alliances. *Journal of International Management* 9: 305-316.

**Pakkala, P.** (2002). *Innovative Project Delivery Methods for Infrastructure – An International Perspective.* Finnish Road Enterprise, Helsinki.

**Palma A., Leruth, L., Prunier, G.** (2009). *Towards a Principal-Agent Based Typology of Risks in Public-Private Partnerships.* IMF Working Paper - WP/09/177.

**Palmer, G.** (2009). Public Private Partnership: A *Review*. *Aid Delivery Method Programme* (ADM).Retrieved:http://www.dpwglgd.org/cms/upload/pdf/PublicPrivatePartnership__Lit__Review.doc

**Patton, M. Q.** (2002). *Qualitative Research and Evaluation Methods*. Thousand Oaks, CA: Sage.

**Petersen, O. H.** (2011). *Public-Private Partnerships: Policy and Regulation – With Comparative and Multi-level Case Studies from Denmark and Ireland.* PhD, Copenhagen Business School Copenhagen.

**Phillips, N., Lawrence, T.B., & Hardy, C.** (2000). Inter-organizational collaboration and the dynamics of institutional fields. *Journal of Management Studies* 37: 23-43.

**Pierson, P.** (2000). Increasing Returns, Path Dependence, and the Study of Politics. *The American Political Science Review*, 94(2), 251-267.

**Porter, T. B.** (2006). Coevolution as a research framework for organizations and the natural environment. *Organization & Environment*, 19(4), 1-26.

**Poschmann, F.** (2003). *Private Means to Public Ends: The Future of Public-Private Partnerships*. C. D. Howe Institute, # 183. www.cdhowe.org Accessed: July 22, 2013.

**PPIAF.** (2007). Public-Private Partnership Units: Lessons for their Design and Use in Infrastructure. Public-Private Infrastructure Advisory Facility, Washington, D.C.

**Putnam, R.** (1993). *Making democracy work: civic traditions in modern Italy*.

**Reay, T., & Hinings, C. R.** (2009). Managing the Rivalry of Competing Institutional Logics. *Organization*

*Studies* 30 (06) : 629-652).

**Reay, T., & Hinings, C. R.** (2005). The Recomposition of an Organizational Field: Health care in Alberta. *Organization Studies* 26 (3): 351–384.

**Regan, M., Smith, J., & Love, P.** (2011). Infrastructure procurement: learning from private-public partnership experiences 'down under. *Environment and Planning C: Government and Policy*, 29, 363-378.

**Ring, P. S., & Van de Ven, A. H.** (1994). Developmental processes of cooperative interorganizational relationships. *Academy of Management Review*, 19, 1: 90-118.

**Rockart, J. F.** (1982). The Changing Role of the Information Systems Executive: A Critical Success Factors Perspective. Sloan Management Review, 24/1: 3-13.

**Rossi, P., Lipsey, M. W., & Freeman, H. E.** (2004). *Evaluation. A systematic approach* (7th ed.). Thousand Oaks, CA: Sage.

**Savas, E. S.** (2000). *Privatization and Public-Private Partnerships.* New York: Chatham House Publishers.

**Scapens, R., & Varoutsa, E.** (2010**)**. Accounting in Inter-Organisation Relationships: The Institutional Theory Perspective. In *Accounting in Networks*, (Eds.) Håkan Håkansson, Kalle Kraus, and Johnny Lind, 314-341. London: Routledge.

**Scapens, R., & Burns, J.** (2000). Accounting Routines and Institutional Change. In R. Scapens and J. Burns (Eds.) *Towards an Understanding of the Nature and Processes of Management Accounting Change*. Stockholm, Uppsala.**:** 47-62.

**Scapens, R. W.** (2006). Understanding Management Accounting Practices: A Personal Journey. *The British Accounting Review* **38**: 1-30.

**Scapens, R. W. (**1994). Never mind the gap: Towards an institutional perspective on management accounting practice. *Management Accounting Research* 5: 301-321.

**Scott, W. R.** (2008). *Institutions and Organizations: Ideas and Interests*. Thousand Oaks, California: Sage Publications.

**Scott, W. R.** (1987a). *Organizations: Rational, Natural and Open Systems*. Englewood Cliffs, NJ, Prentice Hall.

**Scott, W. R.** (1987b). The Adolescence of Institutional Theory. *Administrative Science Quarterly* **32**(4): 493-511.

**Scott, W. R.** (1991). From Barnard to the Institutionalists. *Organization Theory*. O. E. Williamson. New York.

**Scott, W. R.** (1992). The Organization of Environments. *Organizational Environments. Ritual and* Rationality. J. W. Meyer and W. R. Scott. Newbury Park, CA, Sage: 155-175.

**Scott, W. R.** (1992). *Organizations: Rational, Natural, and Open Systems*. 3rd ed. Englewood Cliffs, NJ: Prentice-Hall.

**Scott, W. R.** (2004). Competing logics in healthcare: Professional, state, and managerial. In Dobbin, F. (ed): The Sociology of the Economy. New York: Russel SAGE Foundation, 267-87.

**Scott, W. R., Ruef, M., Mendel, P. J., & Caronna, C.A.** (2000). *Institutional Change and Healthcare Organizations: From professional dominance to managed care*. Chicago: University of Chicago Press.

**Scott, W. R.** (2001). *Institutions and Organizations*: Thousand Oaks: Sage Publications.

**Scott, W. R., & Meyer, J. W.** (1991). The Organization of Societal Sectors: Propositions and Early Evidence. In W. W. Powell and P. DiMaggio (Eds.), *The New Institutionalism in Organizational* Analysis. Chicago: University of Chicago Press, 108-140.

**Scott, R. W., & Meyer, J. W.** (1992). The organization of societal sectors. In Meyer J.W., & Scott R.W. (Eds.) *Organizational environments: Ritual and rationality*, 129-144. Updated edition, Sage Publications.

**Scott, R.W., Levitt, R.E., & Orr, R.J.** (2011) Global Projects: Institutional and Political Challenges. Cambridge University Press, New York.

**Selznick, P.** (1949). TVA and the Grass Roots: A study in the Sociology of Formal Organization. Berkeley: University of California Press.

**Selznick, P.** (1957). Leadership in Administration: A Sociological Interpretation. New York: Harper & Row.

**Selznick, P**. (1996). Institutionalism "Old" and "New". Administrative Science Quarterly 41(2): 270-277.

**Sharfman, M. P., Gray, B., & Yan, A. (**1991). The context of inter-organizational collaboration in the garment industry: An institutional perspective, *Journal of Applied Behavioral Science* 27: 181-208.

**Shepherd, T.** (2000). A Practitioner's Perspective. Presentation to the Productivity Commission *Workshop on Private Sector Involvement in Provision of Public Infrastructure*, October 12-13, Melbourne, Australia.

**Sherbaniuk, R.** (1998). The Price of Protection. *Alberta Views*. Summer, 1998. p. 26.

**Silverman, D.** (1971). The Theory of Organisations: A Sociological Framework. London: Heinemann.

**Sitkin, S. B.** (1995). On the Positive Effect of Legalization on Trust. *Research on Negotiation in Organizations, 5*, 185–217.

**Smyth, D. H., & Pryke, S.** (2008). *Collaborative Relationships in Construction: Developing Frameworks and Networks*: Wiley-Blackwell.

**Spiller, P. T., Stein, E., & Tommasi, M.** (2003). Political institutions, policymaking processes and policy outcomes. An intertemporal transactions framework: Latin American Research Network.

**Stake, R.** (1995). Art of case study research. Thousand Oaks: Sage Publications.

**Standard and Poor's** (2012). *Province Of Alberta 'AAA' Ratings Affirmed On Continuing Strong Economy And Financial Management*. Outlook Stable. Accessed: December 12, 2013. http://www.standardandpoors.com/prot/ratings/articles/en/us/?articleType=HTML&assetID=1245362173230

**Strang, D., & Meyer, J. W**. (1993). Institutional conditions for diffusion. In *Theory and society*, 22:4, 487-511.

**Suchman, M. C.** (1995). Managing Legitimacy: Strategic and Institutional Approaches. Academy of Management Review, 20(3), 571-610.

**Suddaby, R., & Greenwood, R.** (2005). Rhetorical Strategies of Legitimacy. Administrative Science Quarterly, 50: 35-67.

**Swimmer, D.** (2001). The Current State of Canadian Infrastructure, In Aidan Vining and John Richards (eds.), *Building The Future: Issues in Public Infrastructure in Canada*. Toronto: CD Howe Institute, 18-35.

**Thelen, K.** (2003)**.** How Institutions Evolve: Insights from Comparative-Historical Analysis, in James Mahoney and Dietrich Rueschemeyer, eds., *Comparative Historical Analysis in the Social Sciences*. Cambridge University Press, New York.

**Thornton, P. H.** (2004). Markets from Culture: Institutional Logics and Organizational Decisions in Higher Education Publishing. Stanford, CA: Stanford University Press.

**Thornton, P. H., & Ocasio, W.** (1999). Institutional logics and the historical contingency of power in organizations: Executive succession in the higher education publishing industry, 1958-1990. *American Journal of Sociology*. 105 (3): 801-843.

**Thornton, P. H., & Ocasio, W.** (2008). Institutional logics. In Greenwood, R., Oliver, C., Sahlin, K. &

Suddaby, R. (Eds.): *Handbook of Organizational Institutionalism*. London: SAGE Publications.

**Tiong, R. L. K.** (1996). CSFs in competitive tendering and negotiation model for BOT projects. *Journal of Construction Engineering & Management*. 122(3), 205–211.

**Tolbert, P. S., & Zucker, L. G.** (1983). Institutional Sources of Change in the Formal Structure of Organizations: The Diffusion of Civil Service Reform, 1880-1935. *Administrative Science Quarterly* 28(1): 22-39.

**Tolbert, P. S., & Zucker, L. G.** (1996). Institutionalization of institutional theory. In S. Clegg, C. Hardy, & W. Nord (Eds.): *The handbook of organization studies*. London: SAGE Publications, 175-190.

**UNECE.** (2007). A Guide to Promoting Good Governance in Public Private Partnerships: United Nations Economic Commission for Europe.

**US Department of Transportation – USDoT.** (2007). *Case studies of transportation: PPP around the world*. Federal Highway Administration. Final report work order 05-002.

**van Marken, P.** (2001). PPP in the Netherlands. *Public Service Review*, 104-105.

**Vining, A. R., Boardman, A. E., & Poschmann, F.** (2004). Public-Private Partnerships in us and Canada: Case Studies and Lessons. *International Public Procurement Proceedings*, 3, 31-60.

**Vining, A. R., & Boardman, A. E.** (2006). *Public Private Partnerships in Canada: Theory and Evidence.* UBC P3 Project Working Paper. Infrastructure Canada,

**Vining, A. R., Boardman, A. E., & Poschmann, F**. (2005). Public-Private Partnerships in the US and Canada: There Are No Free Lunches. *Journal of Comparative Policy Analysis*, Vol.7, No.3, pp.199-220.

**Vining, A. R., & Boardman, A. E**. (2008). Public private partnerships in Canada: theory and evidence. *Canadian Public Administration*, 51 (1), 9-44.

**Ward, S.C., & Chapman, C.B.** (1991). On the Allocation of Risk in Construction Projects. *International Journal of Project Management*, 9/3.

**Wieck, K. E.** (2001). Making sense of the organization. Oxford: Blackwell.

**Williamson, O. E. (1987).** The economic institutions of capitalism. New York: The Free Press.

**Winch, G.** (2010). Managing construction projects: Wiley-Blackwell.

**Wisman, J., & Rozansky, J.** (1991). The Methodology of Institutionalism Revisited. *Journal of Economic Issues*. **25**(3).

**World Bank.** (2006). *Private participation in infrastructure: lessons learnt*. OECD Global Forum for International Investment. Published by World Bank. Washington DC.

**World Bank.** (1996). *Transaction costs in private infrastructure project – Are they too high?* Public policy for the private sector. Note # 95. Published by the World Bank. Washington, DC.

**World Bank.** (2012). *PPP in Infrastructure Resource Center* http://ppp.worldbank.org/public-private-partnership/overview. Accessed: June 1, 2012.

**W.K. Kellogg Foundation,** Evaluation Handbook (1998), *Logic Model Development Guide*.

**Yescombe, E. R.** (2007) *Public-Private Partnerships: Principles of Policy and Finance*, Butterworth-Heinemann, London.

**Yin, R. K.** (2009). *Case study research: Design and methods* (4th ed). Thousand Oaks: Sage Publications.

**Zhang, X.** (2005). Critical Success Factors for Public–Private Partnerships in Infrastructure Development. *Journal of Construction Engineering and Management*.

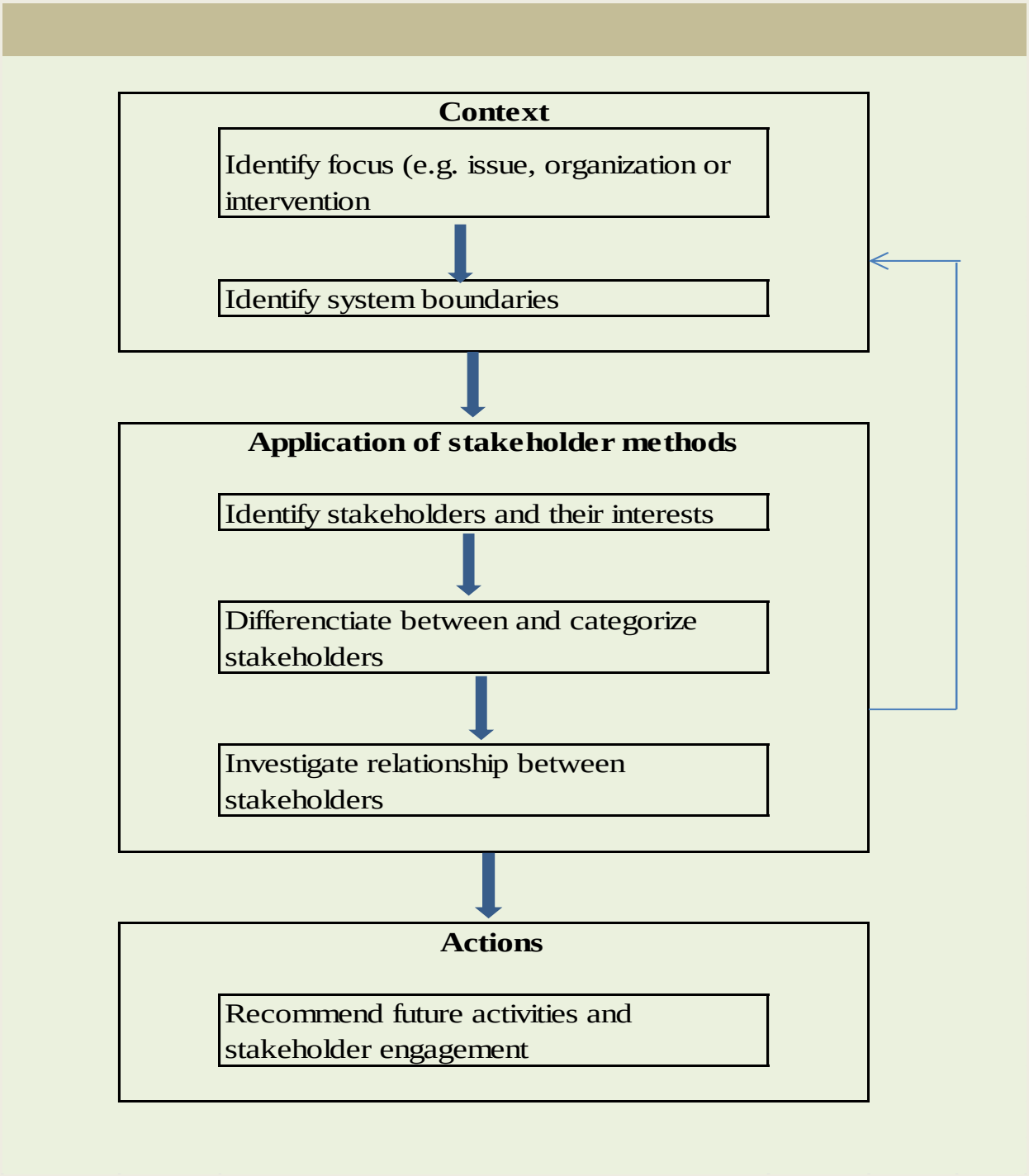
**Zucker, L. G.** (1986). Production of Trust: Institutional Sources of Economic Structure. Research in Organizational Behavior, 8, 53–112.

**Zucker, L. G.** (1987). Institutional Theories of Organizations. *Annual Review of Sociology*, 13: 443-464.

**Zucker, L. G**. (1983). Organizations as Institutions. *Perspectives in Organizational Sociology: Theory and Research.* S. B. Bacharach. Greenwich, CT, JAI Press.

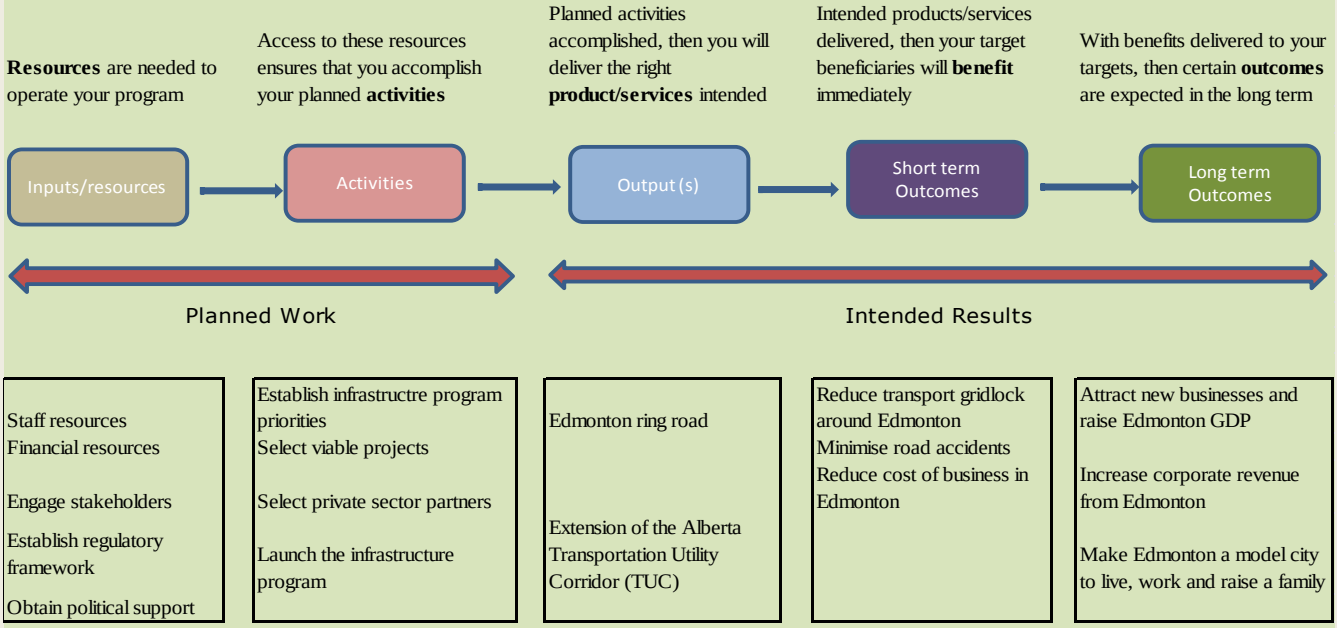
**Zucker, L. G.** (1991). The Role of Institutionalization in Cultural Persistence. In W. W. Powell & P. DiMaggio (Eds.), *The New Institutionalism in Organizational Analysis*. Chicago: University of Chicago Press, 83-107.

**Appendix A: P3 Stakeholder Analysis Model**



## Appendix B: Logic Model Application to P3s

**A P3 Logic Model**




Adapted from: W. K Kellog Foundation Evaluaton Handbook (1998)

## Appendix C: List of Interviewees

**Public Sector**

Ed Stelmach – Premier (2006-2011)

Ron Glenn – Chief of staff to Premier Ed Stelmach

Faye McCann – Executive Director (Alternative Capital Financing Office, Finance & TB)

Kip Hritzuk – Director Alternative (Capital Financial Services – Finance & TB)

Tom Loo – Executive Director (Major Capital Projects)

John Gibson – Director (Alternative Procurement, Ministry of Infrastructure)

Zyed Zaidi – Manager, Alternative Procurement (Ministry of Infrastructure)

Guy Smith – Executive Director, Learning Facilities and Alternative Procurement (Ministry of Infrastructure)

Kent Philips – Executive Director, Infrastructure Project Delivery (Ministry of Infrastructure)

**Private Sector**

Gerry Devine – Vice President, Stantec Consulting, Canada

Harvey Olsen – Manager, Stantec Consulting, Canada

Carl Clayton, Vice President – Stantec Consulting, Canada

Steve Small – Vice President, Flatiron Construction

Duncan Ball – CEO, Bilfinger Vancouver Canada

Hall Baulcair – Project Director, NorthWest Connect Edmonton Canada

Ross Nelson – Deputy Project Director, NorthWest Connect Edmonton Canada

Damian Joy – Vice President, Bilfinger Toronto Canada

Allan Kuysters – Vice President, PCL Construction

Reg Belyea – VP Business Development, SureWay Construction Canada

Mark Dubbelboer – Manager, Project Operations, SEAHD, LarFarge Construction

Wayne Tomlinson – Manager, Major Capital Projects – AECON Consulting and Construction

**Consultants/Advisors**

Bing Bing Wang – Grant Thornton

Sam Pickering – Grant Thornton

David Bryan – Managing Partner, PwC Edmonton

Greg Kauffman – Practice Manager PwC, Edmonton

**Public Policy Analysts/Journalists**

Prof Melvile Macmillan – Professor, Institute of Public Economics, University of Alberta

Casey Vander Ploeg – Senior Policy Analyst, CanadaWest Foundation, Calgary

Charley Berresford – Executive Director, Center for Civic Governance, Vancouver Canada

Shannon Bower – Research Director, Parkland Institute, Canada

Graham Thompson – Journalist, Edmonton Journal

Paula Simmons – Journalist, Edmonton Journal

**Labour Unions/ Civil Society Organizations**

Tom Fuller – AUPE, Senior Policy Analyst

Hugh Mackenzie – CUPE Policy Analyst

Derek Filderbrandt, Alberta Director – Taxpayers Federation

**Auditor General's Office**

Jane Staples – Assistant Auditor General, Alberta

## Appendix D: Guiding interview protocol

### A. Institutional environment

1. How would you evaluate the implementation of P3s in the road sector in Alberta?
2. What justification or rationale for change was provided at the start of the P3 program in Alberta?
3. How would you describe the environment for P3 development with respect to cooperation between the public and private companies? Is there a shared and collective understanding of P3s in Alberta?
4. In your view, what are the main benefits of cooperation in P3 development in Alberta?
5. In your view, what are the main obstacles to P3 development in Alberta?
6. What lessons have been learned by both the government and the private sector regarding P3 development in Alberta?
7. How would you describe the public and private parties' commitment to cooperate in P3 development here in Alberta?
8. Was there a political leadership to P3 development? If yes, who was it?
9. How were stakeholders (community, consortium, unions, etc.) been engaged in P3 development and implementation?
10. Was there any strategy to carrying all parties along in P3 project development to ensure success?

### B. Description and structure of P3 Projects

11. What types of P3 contracts or agreements are there in the Alberta road projects?
12. What is the degree of transfer of responsibility? What are the main roles and responsibilities of the government and the private sector in P3 the projects?
13. What are the main risks and how are these risks allocated in general?
14. Is there any procedure for the identification and allocation of these risks? What could be done to improve on this, if any?
15. How does the contract agreement provide incentives, obstacles or penalties to the private party consortium?
16. What would you suggest be done differently? How does this compare with other jurisdictions implementing P3 projects?

17. How do these arrangements shape parties' behavior? Is it planned to counteract undesired behaviors, i.e. opportunistic behavior?
18. Do parties hold informal meetings? What is the main reason? How do they take place?
19. What issues arise during project development and proposals for resolution with relevant stakeholders?
20. What are the main sources of conflicts during project development? How did these conflicts arise? What are the main causes?
21. How are these conflicts resolved? How quickly and at what cost if any? Are there any trades-offs?

**C. Influence of the institutional environment on Project-related Issues**

22. How do you perceive the institutional environment in Alberta as supportive or unsupportive of P3 development? Explain?
23. What are the main benefits that the institutional environment brings to P3 development in Alberta?
24. What are the main obstacles that the institutional environment need to overcome for the P3 development in Alberta?
25. How do you think this institutional environment affects contractual choices and parties' behaviour during project implementation?
26. What are the lessons learned by the government regarding the implementation of P3 projects in Alberta over the past 10+ years?
27. What are the lessons learned by the private entities regarding the implementation of P3 projects in Alberta over the past 10+ years?
28. What have been the main improvements over the past 10+ years in P3 implementations, with respect to competitive bidding, disclosures, and transparency, etc.?
29. How has public sector capacity evolved in terms of in-house skills base, training, knowledge acquisition and retention? What else needs to be done to deepen capacity and how?
30. In your view, has Alberta's P3 met its core objectives and why do you have this view?

# Appendix E: Data Source Mapping

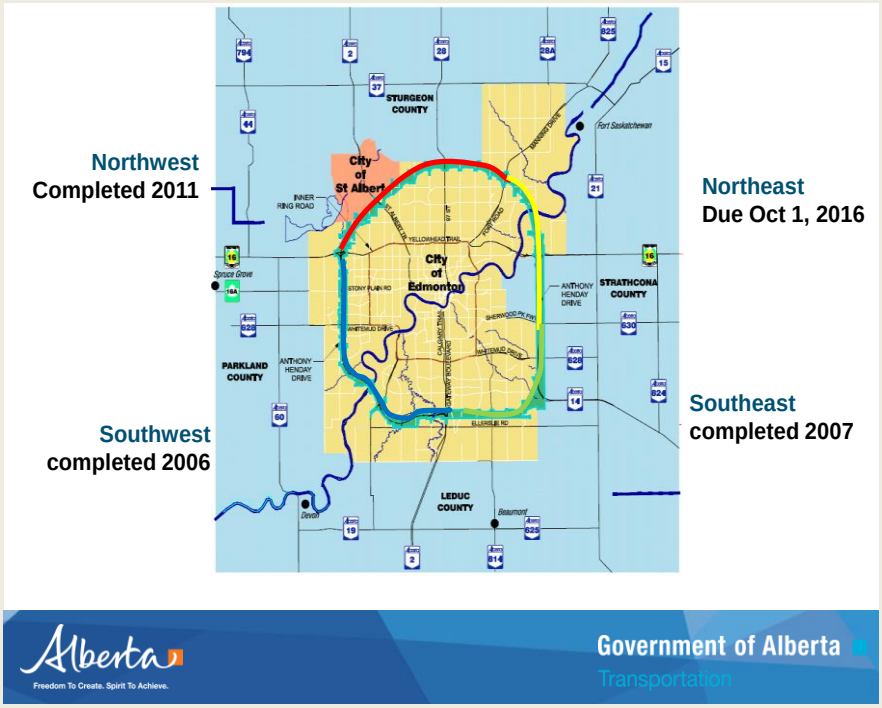
| Theory | Methodology (Variables) | Data Collection/Source | Results | | |
|---|---|---|---|---|---|
| | | | Stage 1<br>Pre-P3 phase | Stage 2<br>P3 Learning phase | Stage 3<br>P3 Growth phase |
| **Legitimization** | | | | | |
| Rationale | Clear rationale:<br>*Infrastructure deficict*<br>*Demographic pressure*<br>*Economic growth*<br>*Debt avoidance* | Government archives and media sources [1] | | | |
| Political willingness | Visible political leadership | Government archives - Department of Transportation and Infrastructure | | | |
| | Recognizable program/project champion | Media sources, interviews | | | |
| | Project portfolio | Government archives - Department of Transportation and Infrastructure | | | |
| | P3 policies | Government archives - Department of Transportation and Infrastructure, Auditor's report | | | |
| Advocacy | Public consultation with key stakeholders | Media sources, government archives, interviews, Stakeholder briefings | | | |
| **Trust** | | | | | |
| Public sector predictability | Decision making department(s) | Government archives - Department of Transportation and Infrastructure<br>Government archives - Department of Finance and Treasury Board | | | |
| Guidance documents | Project preparation and identification guidelines | Government archives, Auditor's report | | | |
| | Standard documents | Government archives, Auditor's report | | | |
| | Model/Sample contract agreement | Government archives, Auditor's report | | | |
| | Project development responsibility | Government archives, Auditor's report | | | |
| Public sector commitment | Established regulatory agency | Government archives, interviews, media sources | | | |
| | Standard dispute resolution mechanisms | Government archives, interviews, media sources, Sample & Active contract [2] | | | |
| | Cooperation platforms | Government archives, interviews, media sources | | | |
| Private sector commitment | Project monitoring | Interview, media sources, Annual report of major P3 partners (Consortium) | | | |
| | Cooperation platforms | Interview, media sources, Annual report of major P3 partners (Consortium) | | | |
| **Capacity** | | | | | |
| Public sector sector capacity | In-house P3 knowledge | Government archives, interviews, Auditor's report | | | |
| | Training programs and workshops | Government archives, interviews, Auditor's report | | | |
| | Cross project knowledge | Government archives, interviews, Auditor's report | | | |
| Risk and financing mechanisms | Standard risk allocation mechanisms | Active contract document, Government archives, interviews, Auditor's report | | | |
| | Type of contract | Active contract document, Government archives, interviews, Auditor's report | | | |
| | State support funding | Government archives, interviews and media sources, Auditor's report<br>Annual report of key P3 partners (Consortium) | | | |
| Private sector capacity enhancements | Competitive bidding | Interviews, media sources, government archives, Auditor's report | | | |
| | Cooperation | Interviews, media sources<br>Annual report of key P3 partners (Consortium) | | | |

[1] Government archives will focus on the minitries directly responsible for P3s in Alberta. These are the Departments of Transportation & Infrastructure; and Finance & Treasury Board

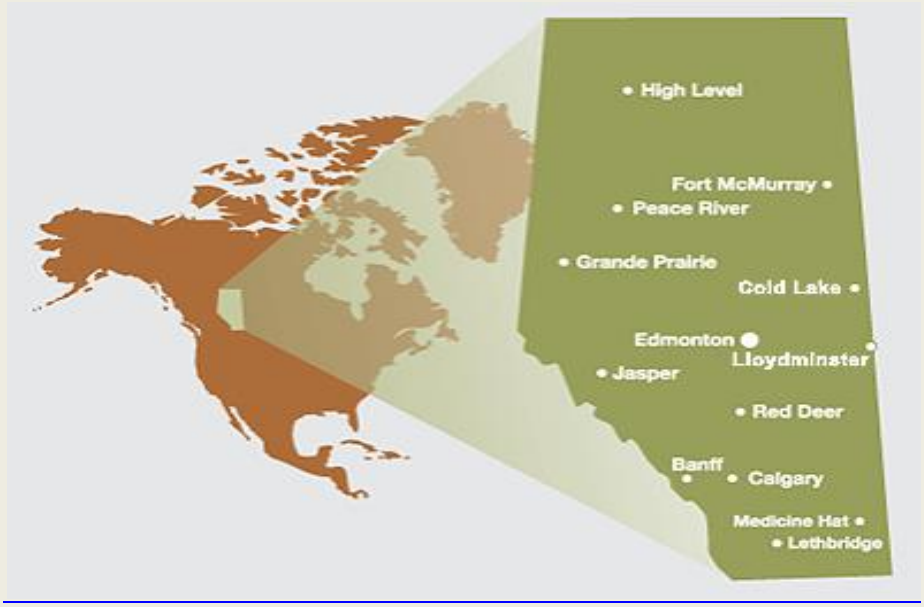
Media sources refer to print and electronic media outlets e.g. GoA Media Backgrounder, Globe and Mail, Edmonton Journal and Calgary Herald's sections on P3s

[2] Active contract for Calgary SE P3 is publicly available on the internet. I have a copy. My checks suggest that it is the standard for all P3s in Alberta, as all are DBFOs

## Appendix F: Map of the Edmonton Ring Road




## Appendix G: Map of Alberta, Canada



## Appendix H: Sample list of risks allocated to NEAHD contractor

| | Traditional | | P3* | |
|---|---|---|---|---|
| | **GoA** | **Contractor** | **GoA** | **Contractor** |
| **DEVELOPMENT, DESIGN AND CONSTRUCTION RISKS** | | | | |
| Concept approvals – environmental – Alberta Environmental Referral | ✓ | | ✓ | |
| Concept approvals – environmental – Federal CEAA (assumes CSIF funding) | ✓ | | ✓ | |
| **Bridge crossing and/or watercourse alteration** | | | | |
| Environmental permits | ✓ | | | ✓ |
| Environmental Contamination | | | | |
| Environmental Contamination (known) | ✓ | | | ✓ |
| Environmental Contamination (unknown) | ✓ | | | |
| Archaeological | | | | |
| Archaeological finds (known) | ✓ | | | ✓ |
| Archaeological finds (unknown) | ✓ | | ✓ | |
| Land acquisition | ✓ | | ✓ | ✓ |
| Delays by outside agencies (utilities and permitting) | ✓ | | ✓ | ✓ |
| Delays by the Province | ✓ | | ✓ | |
| Minimum insurance and bonding requirements | ✓ | | ✓ | |
| Adequacy of insurance and bonding requirements | ✓ | | | ✓ |
| Confirmation of insurance and bonding | | ✓ | | ✓ |
| Sub-contractor insolvency | | ✓ | | ✓ |
| Design error | ✓ | | | ✓ |
| Changes in standards | ✓ | | | |
| Alberta Transportation supplied data – accuracy | | ✓ | | ✓ |
| Alberta Transportation supplied data – sufficiency | ✓ | | | ✓ |
| Alberta Transportation supplied data – interpretation | | ✓ | | ✓ |
| Traffic volume and vehicle mix | ✓ | | | ✓ |
| Patent infringement | ✓ | ✓ | | ✓ |
| Weather | ✓ | | | ✓ |
| Labour disputes | ✓ | | | ✓ |
| Fire | | ✓ | | ✓ |
| Vandalism | | ✓ | | ✓ |
| Damage to works | | ✓ | | ✓ |
| Traffic accidents | | ✓ | | ✓ |
| Damage/injury to third parties | | ✓ | | ✓ |
| Damage/loss to utilities | | ✓ | | ✓ |
| Defective materials | | ✓ | | ✓ |
| Water/air/soil pollution – unknown pre-existing | ✓ | | ✓ | ✓ |
| Water/air/soil pollution – known pre-existing or arising from work | ✓ | ✓ | | ✓ |
| Quality assurance/quality control | ✓ | ✓ | | ✓ |
| Quality audits | n/a | n/a | ✓ | ✓ |
| Public interface | ✓ | ✓ | | ✓ |
| Workplace Health and Safety | | ✓ | | ✓ |
| Utilities | ✓ | ✓ | ✓ | ✓ |

| | | | | |
|---|---|---|---|---|
| **FACILITY EXPANSION RISK** | | | | |
| Traffic congestion due to signalization | ✓ | | | ✓ |
| Traffic growth | ✓ | | | ✓ |
| Future interchanges or additional lanes | ✓ | | ✓ | |
| | | | | |
| **OPERATION AND MAINTENANCE RISKS** | | | | |
| Changes in standards and legislation | ✓ | | ✓ | |
| Weather | ✓ | | | ✓ |
| Labour disputes | ✓ | | | ✓ |
| Traffic – volume and vehicle mix | ✓ | | | ✓ |
| Traffic – deterioration | ✓ | | | ✓ |
| Actual maintenance costs higher than anticipated | ✓ | | | ✓ |
| Damage/injury to third parties | | ✓ | | ✓ |
| Damage to works | ✓ | | ✓ | |
| Water/air/soil pollution | | ✓ | | ✓ |
| Vandalism | ✓ | | ✓ | |
| Condition after 30 years | ✓ | n/a | | ✓ |
| Performance | ✓ | | | ✓ |
| | | | | |
| **FINANCING RISKS** | | | | |
| Interest rates – before Agreement closure | ✓ | | ✓ | |
| Interest rates – after closure | ✓ | | | ✓ |
| Inflation on Construction Agreement | | ✓ | | ✓ |
| Inflation on operation, maintenance, rehabilitation | ✓ | | ✓ | ✓ |

* The project agreement contains a comprehensive allocation of risks between the parties. The final project agreement is available at http://www.transportation.alberta.ca/3787.htm. (Accessed June 12, 2013).

**Source**: Alberta Transportation, 2013.

# Appendix I: P3 Success Framework

| KSF | Supporting actions enabling success | Reference(s) |
|---|---|---|
| **Develop and implement supportive regulatory framework and apply consistently** | Establish a clear legal and regulatory framework | 1, 2, 3, 4, 6, 7,8,9 |
| | Apply framework and policies consistently | 1, 3 |
| | Standardize contracts and documents | 4, 5, 8 |
| | Ensure that policies are able to accommodate change | 1 |
| | Consult the public and the market in policy development | 1,5 |
| | Develop legal capacity to handle P3s (train lawyers and judges) | 1 |
| **Provide and communicate political commitment** | Provide high level political commitment to the P3 program | 1, 7, 8 |
| | Political risk management through advocacy within the | |
| | government | 2 |
| **Improve public sector knowledge of P3s** | Provide training to public sector staff | 1, 3 |
| | Communicate lessons learnt to governmental actors | 3 |
| | Publish guidance materials to help public sector organizations | 3 |
| | Ensure that governmental agents understand the objectives of | 4 |
| | private finance | 2, 3 |
| | Develop pilot projects | |
| **Increase public awareness and understanding of P3s** | Increase public awareness and understanding of P3s | 1, 2, 5, 8 |
| | Communicate lessons learnt to civic actors | 3 |
| | Inform citizens of their right to participate on project developments | 1 |
| | Gain buy-in from key constituents (e.g. unions) for P3s | 8 |
| **Develop amd grow private sector capacity** | Take actions that attract private investment, e.g developing domestic capital market | 1, 2, 6, 8 |
| | Take actions that sustain state credibility | 2, 6, 8 |
| | Ensure a stable political environment | 6, 8 |
| | Publish guidance materials for the benefit of private sector | 3 |
| | Involved private providers to influence project structure, size, scope | 5 |
| | Reduce cost and duration of procurement | 5 |
| | Provide support to private providers through loans, guarantees, etc. | 1, 6, 7, 8 |
| | Ensure “even-handed” regulation (i.e. avoid over regulation) | 1, 9 |
| **Coordinate deal flow** | Coordinating deal-flow to avoid a “bunching” of projects | 1, 3 |
| | Communicate upcoming projects to market | 5 |
| | Coordinating public-sector “buying power” | 3 |
| **Improve program transparency** | Have transparency in project development (e.g. options analysis) | 1, 7, 8 |
| | Increase procurement transparency (share information during/after the bidding phase | 1 |
| | Make sure the public are well informed regarding project details | 1 |
| **Increase program accountability** | Keep the PPP program accountable of its performance | 1 |
| | Incorporate user feedback in performance measures | 1 |
| | Make use of performance specifications on P3 projects | 2, 4 |
| **Independent oversight of project execution** | Have independent oversight of procurement | 1 |
| | Provide for independent oversight of performance monitoring (and publish results) | 1 |

| | | |
|---|---|---|
| **Ensure that P3 project improve the public interest** | Define how P3s can promote the "public interest" | 1 |
| | P3 Policy should have clear economic and social objectives | 1, 8 |
| | Ensure equity in access to all citizens (e.g. through subsidies) | 1 |
| | Allow for adequate stakeholder consultation | 1 |
| | Ensure that private provider complies with health and safety requirements | 1 |
| **Ensure fairness in P3 procurement** | Follow recognized procurement practices to avoid corruption | 1, 6, 7, 8 |
| | Use neutral and fair selection and award criteria | 1, 4 |
| | Ensure that P3 unit retains neutrality and independence from private sector | 1 |
| | Monitor behavior of private providers to prevent unfair competition, bribes, political influence, etc. | 9 |
| | Provide an avenue for complaint to an independent tribunal | 1 |
| **Improve environmental performance of projects** | Ensure that projects are delivered in an environmentally sensitive way | 1 |
| | Include specific (but realistic) "green" objectives in bid criteria | 1 |
| | Carefully review green claims made by bidders | 1 |
| | Include green performance in payment mechanisms | 1 |
| **Adapted from: Jooste, 2010.** | | |

1: UNECE (2007); 2: OECD (2008); 3: Yescombe (2007); 4: Aziz (2007); 5: CCPPP (2006); 6: Kumaraswamy and Zhang (2001); 7: Durchslag, et al. (1994); 8: Li, Akintoye, et al. (2005); 8: Pngsiri (2002)

## Appendix J: Case Studies

### Anthony Henday Drive Overview

The Anthony Henday Drive project began around 2000 with the construction of the South West segment as a traditional DB project model. Project development has progressed successfully in Alberta's P3 program since about 2004 when the first P3 project, the SEAHD was initiated. The evolution in the institutional environment has reflected the type of issues that emerged during project development. During the case study it was noted that the various segments of the Anthony Henday Drive (AHD) even though initiated under a different set of circumstances entailed comparable degree of complexity, risks and uncertainties. These by themselves provided an attractive case comparison given their different time frame, prevailing circumstances and project assumptions, which constituted the evolutionary process in Alberta's P3s.

Analyzing the evolution of the P3 environment in Alberta also provide an assessment of how the institutional elements have evolved over time, and evaluate how project outcomes differ from or conform to initial estimates depending on the institutional context.

There are three identifiable project stages that coincide with the three P3 projects done as part of the Edmonton ring road system. These are: Stage 1: 1987-2003 (SHTF and RFP on SEAHD); Stage 2: 2004-2008 (SEAHD and NWAHD); Stage 3: 2008 – 2012 (NEAHD). These project generations are categorized in a specific context to better understand how changes in project development were affected by changes in the institutional environment. Table 7 on page 141 shows the key policy and project stages since 1987 in Alberta.

### South East Anthony Henday Drive (SEAHD)

#### Project Description

The SEAHD was the first P3 project undertaken by the Government of Alberta (GoA) in the road sector. It was conceived as part of the Edmonton portion of the Transportation and Utility Corridor (TUC) in Alberta. The other portions are in Calgary, the commercial nerve center of the province. Edmonton is Alberta's administrative capital. The objectives of the SEAHD were to: a) Ensure safety of the travelling public; b) Ensure that the highway is developed, designed, constructed,

operated, maintained and rehabilitated in an environmentally responsible manner that meets or exceeds all Provincial and Federal standards; c) Share the appropriate risks between the public and private sectors; d) Obtain optimal value for money; e) Provide effective and efficient highway infrastructure. Alberta Transportation (AT) worked closely with the City of Edmonton during the Functional Planning Study (FPS). The Project was a partnership project under the Canada Strategic Infrastructure Fund program. Under this program, the Federal Government contributed C$75 million towards the total project cost.

**Bidding Process**

The bidding process for this project was competitive, open and transparent. Initially, a Request for Qualifications (RFQ) was issued internationally to identify which companies were capable and able to do the work. The province received six submissions, from which three companies were short-listed. The proposals received from these three companies had to meet standards established by the Province, after which, all three companies were invited to submit firm prices. The contract was awarded to the company that met all the standards and provided the lowest net present value (NPV) price.

**Public consultation**

The public, especially those residents and businesses near the SEAHD (future road), were asked for their input as part of a planning study that took place in 2003. All comments received were considered in determining the road alignment, the location of interchanges and other factors. In addition to some public consultation, Alberta Infrastructure and Transportation staff worked with representatives from the Alberta Road builders and Heavy Construction Association and the Consulting Engineers of Alberta, in developing this “made-in-Alberta” contract. As well, there was research undertaken to make sure that the P3 model used on this project learned all the necessary lessons from across the world, and provided the best fit for Alberta's needs.

**Project Scope**

• 11 kilometres in total length from Highway 2 to Highway 14/216

• Six lanes between Highway 2 and 50th Street and four lanes between 50th Street and Highway 216/14 (with grading provision for two additional future lanes)

• 24 separate bridge structures

• 124 lane kilometres of road
• Full freeway status (no traffic lights)
• Five interchanges offering access on or off the highway at Gateway Blvd/Calgary Trail (Highway 2), 91st Street, 50th Street, 17th Street and Highway 14/216
• Four flyovers (bridges over/under the highway with no on or off ramps) at 34 Street, 66th Avenue, 34th Avenue and Parsons Road

**Project Timeline**

• September 22, 2003 - Request for Qualifications (RFQ) issued
• March 3, 2004 - three teams selected to submit proposals
• November 26, 2004 - final proposal submission
• December 17 2004 - identification of successful (lowest) bidder
• January 25, 2005 - contract signed
• October 23, 2007 - project commissioned for public use

**Project Financing**

Construction costs amount to C$365 million, with C$75 million from the federal government's Canada Strategic Infrastructure Fund, as capital contribution. The balance of the capital costs were financed from equity (10%) and bond financing (90%). Two series of bonds were issued for C$149.5 million and C$136.1 million. During construction, the bonds were serviced from a portion of the bond proceeds. The lead consortium provided a C$50 million letter of credit at financial close, which was held in security until construction was completed. The Province makes a single monthly payment comprised of capital and operating/maintenance. A portion of the capital payment was withheld should the road not be ready in time.

**Agreement Highlights**

The 30-year DBFM deal is worth a total of C$493 million in 2005 dollars. The Province estimates it would cost up to C$497 million if it were delivered through conventional design-build means. All contract bidders were subjected to and had to satisfy rigorous standards set by the Province. A penalty clause kicked in if the project was not completed by October 26, 2007. The province made

this road a toll-free road. Therefore, tolls were not allowed on the road and the contractor was not allowed to put advertising up along the route to generate revenue. Payments from the Province to defray the capital and interest portions of the contract price kicked in when the road opened to traffic on October 1, 2007, and will continue over the 30 year period. Meantime, the C$75 million of federal capital funding was paid to the contractor in installments as work progressed. The 30-year warranty ensures the road will be in good condition for at least 30 years; typically, traditional design-build (DB) construction projects only come with a one to two-year warranty. As part of the agreement, the province is insulated from risks including cost overruns, construction delays, weather delays, design risk, and construction defects.

**North West Anthony Henday Drive (NWAHD)**

**Rationale and objectives**

The 2005 Throne Speech stated that one of the Alberta Government's goals is to complete the ring roads around Edmonton and Calgary by 2015. Edmonton is on track to complete this mandate, with the completion of the northwest portion in November 2011, and the awarding of the final leg of the Anthony Henday Ring Road in May 2012. As such, the Project has become a vital link in the transportation corridor for the movement of goods through Alberta and part of a key transportation link around the City of Edmonton. The Northwest Anthony Henday Project furthered the Province's objectives as articulated in the 2005-2008 Government of Alberta Business Plan by:

• Engaging a process that ensured best value for the taxpayers of Alberta;

• Reducing traffic, especially truck traffic, on key arterial roads within the City of Edmonton by making a major addition to the City of Edmonton road network that is a major connector for the North-South trade corridor;

• Improving air quality and reducing greenhouse gas emissions through reduced traffic congestion and reduced stop-go traffic; and

• Providing job opportunities and enhancing the movement of export goods and tourism, thereby contributing to growth in the Gross Domestic Product.

The Province structured the project's procurement process and DBFO Agreement to meet the following specific objectives:

• To expeditiously complete the procurement process;

• To complete construction of the project so that it is ready for traffic availability by November 1, 2011;

• To achieve "value for money" during the design-build phase and for a 30 year term thereafter;

• To ensure that the project is designed, built and operated in an environmentally sound manner and in a manner that ensures the safety of the traveling public; and

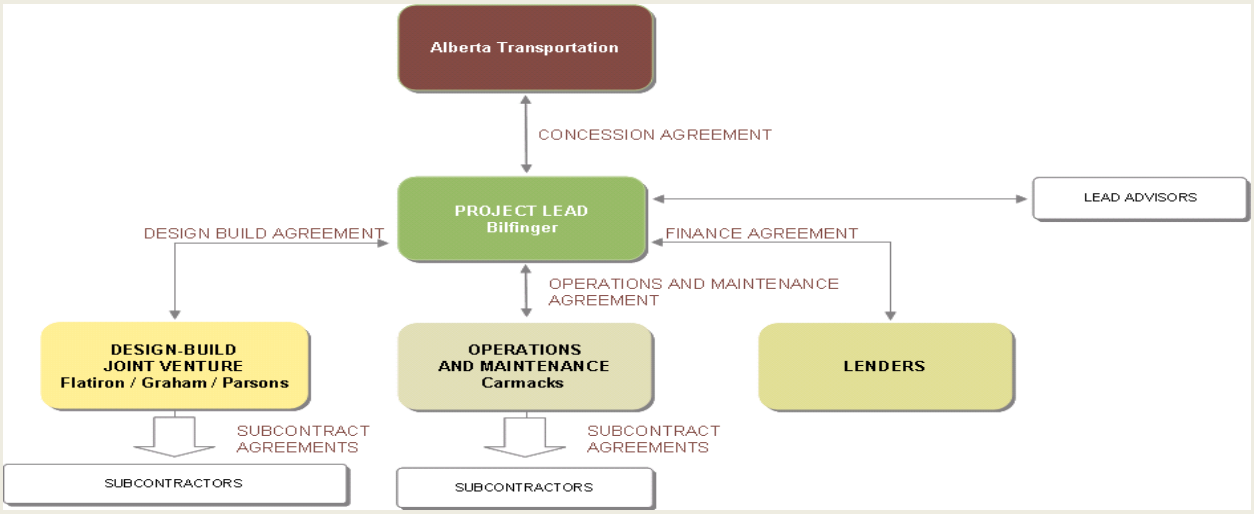
• To ensure that the highway infrastructure is "handed back" to AT in the required specified condition at the end of the 30 year term.

**Project Description**

The NWAHD was the second and longest P3 road project undertaken by the Alberta government. As a result, the NWAHD Project forms a vital part of the continuation of the transportation corridor for the movement of goods through Alberta and a key transportation link around the northwest side of the City of Edmonton.

This Project was delivered through a design, build, finance and operate (DBFO) model, repeating and improving upon the original DBFO delivery of the South East Henday Drive project in Edmonton, as well as the North East Stoney Trail project in Calgary. The Project forms a 21 kilometre segment of the Edmonton Ring Road which has become part of a key transportation route around the City of Edmonton and involved the design and construction of approximately 8 kilometres of new 6-lane divided roadway and 13 kilometres of new 4-lane divided roadway between Highway 16 (Yellowhead Trail) on the west and Manning Drive (Highway 15) on the east. The new road facility has eight interchanges, five flyovers, and two railroad crossings. Construction of the project was conducted by a design-build joint venture comprised of Flatiron Constructors Canada Limited, Parsons Overseas Company of Canada, Ltd., and Graham Infrastructure. Now open to traffic, BBPI, through NorthWestConnect (NWC), is responsible for managing the roadway over a 30-year term. During this time, Carmacks Maintenance Services Ltd., as subcontractor to NWC, will provide the operations and maintenance of the facility, while

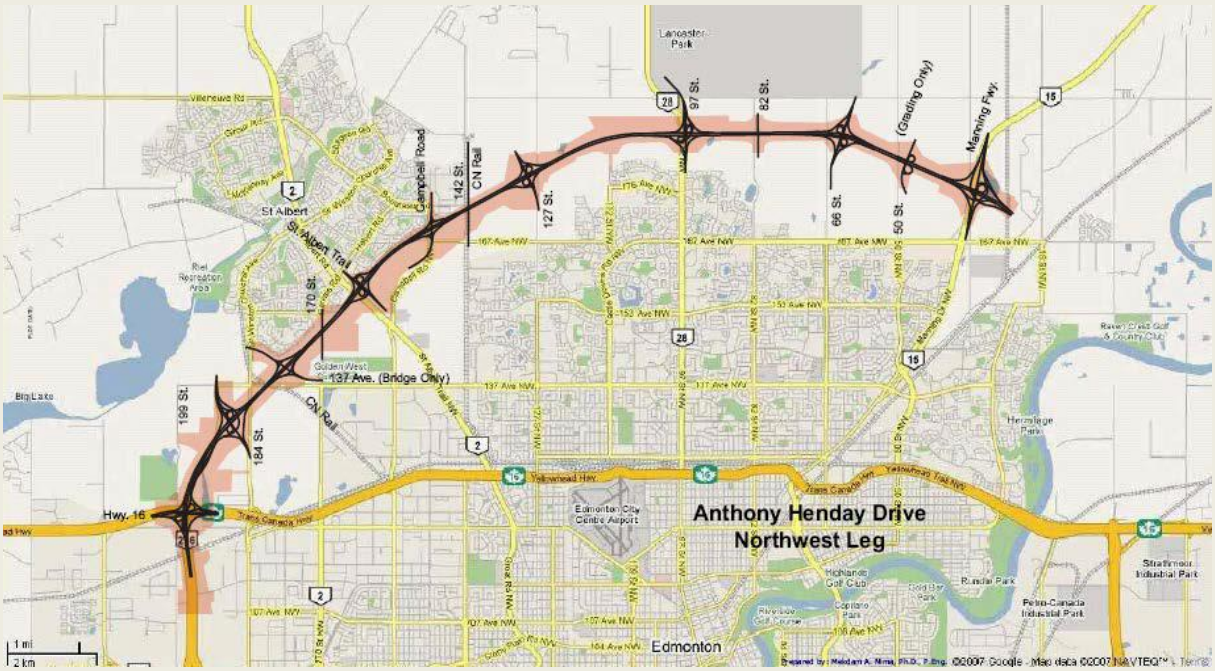
BBPI will assume responsibility for rehabilitation activities. The chart below shows the organizational and operational structure governing the project.




***NWC Organizational Structure and Contractual Relationships***

## Project Financing

The financing component of the DBFO involved the provision of the financing required for the development of the new infrastructure as well as the overall financial management of the DBFO over the term of the agreement (the "DBFO Agreement"). This Project, on award date, represented the largest single transaction entered into by AT, reaching financial and commercial close on July 29, 2008. Construction began in August 2008 and the road was opened to traffic on November 1, 2011. The NWAHD road map is displayed below.




**North West Anthony Henday Drive Road Map Display**

Delivering the Northwest Anthony Henday Drive Project as a P3 provided real savings for the Government of Alberta. If the project had been delivered through "traditional" procurement, it was estimated that the total cost to the Government of Alberta would have been approximately C$1.66 billion NPV. However, by delivering this project using a standardized P3 model the total cost of the project over the course of the 30-year contract has been reduced to C$1.42 billion NPV. The total cost covers capital costs as well as operation, maintenance and rehabilitation over the life of the contract.

The financing of the project includes public funds provided by the Province consisting of the following components:

- Progress Payments during the Construction Period of C$500 million;
- Capital Payments which are constant fixed monthly amounts during the Operating Period; and
- Major Rehabilitation Payments and O&M Payments during the Operating Period.

The Private financing structure utilized by BBPI is based on a unique Capital Markets platform, where the Senior Debt is comprised of two tranches as follows:

• a fully underwritten bond issue in the amount of approximately C$266 million, underwritten by RBC Dominion Securities Inc.; and

• a fully underwritten long-term bank loan in the amount of approximately C$353 million, collectively underwritten by DEPFA Bank plc, Dexia Credit Local S.A., and Fortis Bank S.A/N.V., New York. BBPI also contributed approximately C$57m of equity for the Project.


**Anthony Henday Drive at Ray Gibbon Drive and 184 Street (NWAHD segment)**


**Anthony Henday Drive at 97 Street (NWAHD segment)**

**Anthony Henday Drive at 91 Street (NWAHD segment)**


**Anthony Henday Drive at Yellow Head Trail (NWAHD segment)**

## Risk Allocation

A thorough risk assessment for the project was undertaken during the pre-procurement stage and incorporated into the DBFO Agreement. Ultimately, risks were distributed strategically to achieve

optimal allocation between the Province and NWC. Significant risks allocated exclusively or primarily to NWC include: all cost overruns; construction delays; weather delays; design risk; soil conditions and geotechnical risks; construction defects; and damage by third parties during the construction phase.

Risks allocated exclusively or primarily to the Province include: unknown environmental problems and heritage "finds"; aboriginal and treaty rights; damage by third parties during the operating phase; change orders initiated by the Province; and increases in general industry insurance costs (which are subject to annual benchmarking). Significant risks requiring some risk sharing or cooperation between NWC and the Province include: dealing with the myriad of utilities making use of the Transportation/Utility Corridor (a cost sharing formula was developed); municipal permits and Ministerial Consent TUC permissions; change in applicable laws; and force majeure (i.e., "Act of God", defined very narrowly as terrorist act, act of war and the like).

**Project Timeline**

- July 3, 2007 - Request for Qualifications (RFQ) issued
- October 3, 2007 - three teams selected to submit proposals
- June 2, 2008 – Request for Proposal (RFP) submission close
- July 29 2008 - identification of successful (lowest) bidder and signing of contract
- August 1, 2008 - commencement of construction
- November 1, 2011 - project commissioned for public use

**Summary of Agreement**

On July 29, 2008 the Province and NWC entered into the DBFO Agreement, which has a term of 30 years following traffic availability. Under the terms of the agreement the NWAHD opened to traffic on November 1, 2011. The payment structure is availability/performance based. The Province makes monthly payments to NWC from the time that the road opens. The monthly payments include capital costs, operations and maintenance fees, and at times rehabilitation costs. The monthly payments are subject to substantial deductions in the event that NWC fails to perform its obligations in accordance with the performance measures detailed in the DBFO Agreement.

**North East Anthony Henday Drive (NEAHD)**

**Project Description**

The NEAHD forms part of the Transportation Utility Corridor (TUC) originally planned by the Province of Alberta and the City of Edmonton in the late 1970s and is commonly referred to as Anthony Henday Drive. During the 1980s and 1990s, the Province of Alberta, who is responsible for the development of the ring road, purchased most of the land required for this TUC. The NEAHD is the last stretch that closes the loop on the 80 kilometer ring road around the city of Edmonton. Running from Manning Drive to just south of Whitemud Drive, the project includes 27 kilometres of six- and eight-lane divided roadway, nine interchanges, two road flyovers, eight rail crossings (flyovers), and two bridges across the North Saskatchewan River, for a total of 46 bridge structures.

**Project Financing**

The Alberta government signed a 34-year contract with Capital City Link General Partnership to design, build, operate, and partially finance NEAHD. The P3 contract is worth C$1.81 billion in 2012 dollars, to be paid over the term of the contract, and follows a P3 selection process which began in March 2011. This is a savings of C$370 million, compared to the estimated cost of C$2.18 billion using traditional delivery. The other two bids received were C$2.03 billion and C$2.22 billion. The design and construction of the project will be subcontracted to a construction joint venture made up of Flatiron Constructors Canada Limited, Dragados Canada, Inc., Aecon Construction Management Inc., and Lafarge Canada Inc. The operations and maintenance was subcontracted to Volker Stevin Highways Ltd. Using Alberta's P3 model for highways allows the NEAHD to be finished three years earlier than through conventional delivery. Including the Northeast section, the Alberta government has committed more than $4 billion toward the construction of the Edmonton Ring Road.

**Project Timeline**

• March 2, 2011 - Request for Qualifications (RFQ) issued
• May 9, 2011 - three teams selected to submit proposals
• March 2, 2012 - Request for Proposal (RFP) submission close

• May 18, 2012 - identification of successful (lowest) bidder and signing of contract
• July 16, 2012 - commencement of construction
• Fall 2016 - estimated project commissioning for public use

**Risk Allocation**

Allocating risks to the party best able to manage those means the contractor bears many of the costs that the government would have borne in the traditional approach and can manage them at a lower cost than government. For example, the contractor will pay for any changes needed during the construction period due to design changes and errors. The contractor will also bear any cost increases for labour and material during the construction period. In addition, for the 30-year operation and maintenance term, the contractor will pay to rehabilitate or replace any defective component of the infrastructure. For a sample of some of the major risks that the P3 contract allocated to the contractor, see Appendix H of this report. By entering into a fixed-price contract for the project, the contractor bears the risk for increases to project costs during construction. The government is protected from any anomalies in construction pricing and can effectively budget for the price of the project. As well, the operations and maintenance costs for the 30-year maintenance period are fixed with an index factor applied to adjust for inflation. The contractor's payments over the 30 years cannot be modified if the price of various maintenance materials or equipment increases.

**Major risks allocated in P3 contract -** An important factor in the delivery of P3 projects is an acceptable allocation of risks to the party or parties best able to manage them. In some cases, the contractor is the appropriate party to manage a risk; in others, the government can better manage the risk; in yet a third case, the risk may be best shared between the two parties.

While **Appendix H** shows a sample of the risk allocation between the government and the contractor in the NEAHD P3 contract, this list is not comprehensive. The P3 contract shows all the allocated risks.

**Schedule certainty** – The contractor agrees to have the road available for traffic by October 1, 2016 or receive reduced payments. The contractor has to manage the construction schedule to meet this date.

**Weather** – The contractor bears any costs of project delays caused by bad weather.

**Scope changes** – The government pays for any scope changes that it requests during construction. The government will pay for this work in accordance with the change order process set out in the P3 contract. During the operation and maintenance period the government may consider changes to the road. For example, continued residential growth in the area may require the government to add another interchange or more freeway lanes. The government will pay for this work as long as the contractor provides competitive pricing based on a tendering process as specified in the P3 contract.

**Interest rates and financing** – During the maximum two month period between notifying a preferred proponent (which becomes the contractor when it signs the P3 contract) and signing the contract, the government shares the risk of any changes in base borrowing rates with the preferred proponent. The contractor has to arrange for partial financing for the whole term of the contract and it is solely responsible for the impact of the financing arrangements. No matter how much rates increase during the contract, the contractor must pay any increased refinancing costs. Conversely, the contractor can benefit from any rate drops.

**Project Features:**

- 27 kilometres of six- and eight-lane divided roadway (9 kilometres of new highway construction and 18 kilometres of highway reconstruction)
- nine interchanges
- two road flyovers
- eight railway crossings (flyovers)
- two bridges across the North Saskatchewan River
- 47 total bridge structures

**Interchanges locations:**

- Manning Drive (partly completed with the NAHD project)
- 153 Avenue
- 130 Avenue
- Highway 16 (Yellowhead Trail)
- Broadmoor Boulevard at Highway 16
- Sherwood Drive at Highway 16
- Baseline Road

- Sherwood Park Freeway/Wye Road
- 17 Street at Sherwood Park Freeway

**Flyover locations:**

- Various CNR/CPR Rail Crossings
- Victoria Trail Flyover
- Petroleum Way Flyover

**Contract Summary**

**What the government must pay:** The sum of the payments for the 34.5-year contract is approximately C$1.809 billion in 2012 dollars. During the construction phase the Alberta government will pay C$924.9 million for construction costs while P3 Canada will provide up to C$36.8 million through the P3 Canada Fund. This funding covers only part of the overall construction (capital) cost. Once the road opens to traffic, the Alberta government will make monthly payments over the remaining 30 years of the contract. Of these monthly payments, the portion representing the remaining capital amount is fixed, while operation, maintenance and rehabilitation payments are indexed. This is the same index that is used for Alberta Transportation's traditionally delivered provincial highway maintenance contracts. If the contractor fails to achieve traffic availability by the October 1, 2016 target date, the contractor will incur severe penalties, achieved by reduction in the overall capital payments payable by the government. The penalty is loss of the full amount of the monthly capital payments or a portion thereof that the government would otherwise have paid the contractor, except that during December 2016 through May 2017 the penalty is one-third of the capital payment.

**What the contractor must do:** The 34.5-year contract between the government and the contractor has a four and a half year construction period and a 30-year operation, maintenance, and rehabilitation period. It requires the contractor to:

- complete the design and construction of the NEAHD by October 1, 2016;
- partially finance the construction over the contract term;
- operate, maintain, and rehabilitate the road to the performance standards specified

in the contract;

- operate and maintain (but not rehabilitate) a portion of existing bridge infrastructure already constructed by Alberta Transportation. The existing infrastructure includes two bridges at Whitemud Drive, two bridges carrying Sherwood Park Freeway over the Canadian National Railway and one bridge carrying 34 Street over Sherwood Park Freeway; and
- hand back the roadway to Alberta Transportation in September 2046 in a condition as prescribed in the contract.

**Payments reduced for non-performance:** The government can reduce all monthly payments (capital, operation and maintenance, and rehabilitation) if the contractor does not meet performance standards in the contract. For example, if pavement does not meet performance criteria and the contractor does not repair it within the allowed time, the government can reduce monthly payments to the contractor.

**South West Anthony Henday Drive (SWAHD)**

**Project Background**

The South West leg of Edmonton's Anthony Henday Drive is an integral component of the Edmonton region's transportation network and an important link in the Alberta Government's North-South Trade Corridor. Construction of the SWAHD from Calgary Trail to Whitemud Drive was designed with the expectation to relieve growing traffic congestion on Whitemud Drive and provide a necessary major roadway link in southwest Edmonton to support the anticipated significant land development activity in that section of the city. The proposed roadway's ability to efficiently move people, goods and through traffic is expected to provide significant economic development benefits which are vital to the economic wellbeing of Edmonton, the Capital Region and the Province of Alberta.

In light of growing traffic demands in the Edmonton region and the Province's desire to implement its North/South Trade Highway initiative, the City of Edmonton and The Province of Alberta commissioned a functional plan review of the SWAHD in early 1999. The functional plan (see next page) constitutes the end product of that review.

This functional planning study defines a long-term (60 year) roadway plan to accommodate the 1.4 million population horizon for Edmonton. As one leg of the North-South Trade Corridor through Edmonton, the SWAHD was ultimately envisioned to be a high standard, free flow facility eventually operating at a speed of 100 km/h. An operationally sound and flexible ultimate stage roadway plan, along with more detailed plans for the first stage was developed.

The SWAHD was constructed within the existing Transportation and Utility Corridor (TUC), which has been acquired and protected by the Province of Alberta since the mid 1970's. Due to the project's magnitude, complexity and uncertainties inherent in extremely long range planning, the longer term functional plans were periodically updated in whole or in part, as development occurred and new information became available.

**Project Description**

Construction of the SWAHD, from Whitemud Drive north to Highway 16A, began in 1992 and became the first new leg of the planned roadways within the TUC. The second leg of the SWAHD, from Highway 16A to the Yellowhead Trail, provided an important link from southwest to northwest Edmonton, and was opened in 1998. The procurement of this and subsequent upgrades to this TUC roadway was done under the conventional delivery model. This means that procurement was in stages and as resources (budget) became available. The last of the several stages was completed in 2011, with the elimination of all traffic lights and the installation of interchanges at 5 major locations. With this the SWAHD was fully integrated with the rest of the AHD as a free flowing highway.

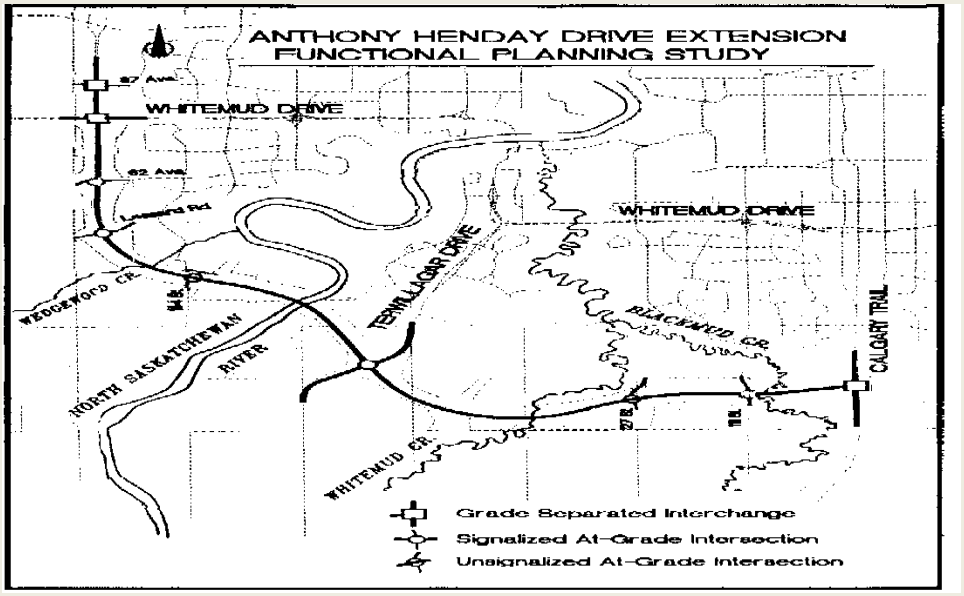
**Graduated Development**

Since the mid 1980's, significant residential development has occurred along the TUC, bringing new concerns with respect to the impacts of implementation of the southwest extension of Anthony Henday Drive

In light of growing traffic pressures within the City of Edmonton, the Capital Region as well as the Province's desire to implement its North/South Trade Highway initiative, a review and update of the previous planning was initiated in early 1999. In April 1999, Edmonton City Council approved a new Transportation Master Plan that identified construction of the southwest portion of AHD as a high priority for the City of Edmonton. In September 1999, the Alberta Government

announced that it would assume full responsibility for design, construction and operation of the North/South Trade Corridor route in Edmonton. The AHD southwest extension forms part of this route, which extends from Coutts, Montana to Grande Prairie, Alberta.

In January 2000, Alberta Infrastructure entered into a Memorandum Of Understanding (MOU) with the City of Edmonton, indicating that the SWAHD will be constructed by the Province in accordance with this Functional Plan. The MOU also established a completion schedule of 2005 or sooner for construction of a four-lane divided roadway link.



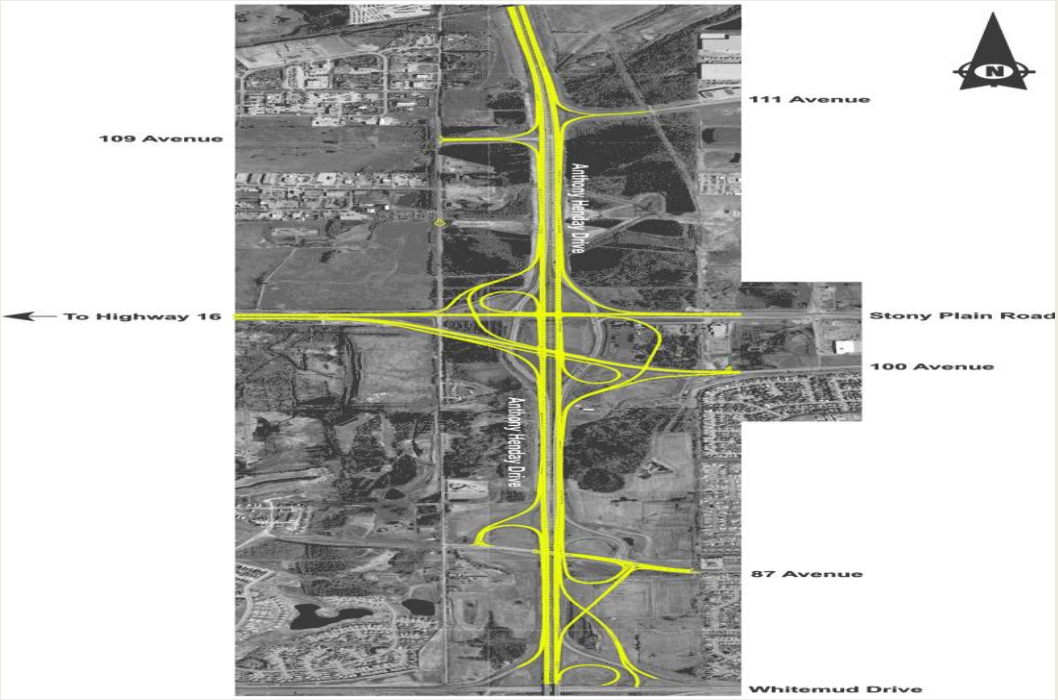

**AHD Functional Planning diagram in 1999**

***Intersections***

The freeway standard for this roadway mandates grade separated intersections (interchanges) at all planned cross-street locations. Specifically, interchanges are required at the following ten locations:

- 87 Avenue
- Whitemud Drive
- 62 Avenue
- Lessard Road
- 184 Street
- Terwillegar Drive
- 142 Street
- 127 Street
- 111 Street
- Calgary Trail

The interchange configurations developed at each of the above locations reflect a number of factors including traffic demands, intersection spacing, operational level of service, adjacent land development, environmental impacts, community impacts, staging capability and construction costs.




**Stony Plain Road and Anthony Henday Drive interchange (NWAHD segment)**

## Project timeline

The SWAHD took about 12 years to complete compared to the average of 3-4 years for the P3 delivered segments. This extended timeline reflects the limitations imposed by budget availability that must be secured via the regular capital planning process annually. The conventional model therefore does not take advantage of focused delivery with strict timelines, does not ensure cost certainty and more importantly does not provided an extended warranty that covers the project life. The exact project cost remains unclear as projects were delivered piecemeal and the final project cost could not be ascertained as these were not publicly available at the time of writing this report. The table below shows significant events in the construction of the SWAHD.

| | **Significant construction and project activity timeline** | |
|---|---|---|
| **Year** | **Project activity/Description of events** | **Cost (C$)** |
| 1992 | Construction of Anthony Henday Drive, from Whitemud Drive north to Highway 16A, began in 1992 and became the first new leg of the planned roadways within the TUC. | - |
| 1998 | The second leg of Anthony Henday Drive, from Highway 16A to the Yellowhead Trail, provided an important link from southwest to northwest Edmonton, and was opened in 1998. | - |
| 1999 | In September 1999, the Alberta Government announced that it would assume full responsibility for design, construction and operation of the North/South Trade Corridor route in Edmonton. | - |
| 2000 | The City agrees to cooperate with the province in the development of the Southwest Ring Road with a view to opening the road to traffic in 2005 or earlier. | - |
| | In January, 2000, Alberta Infrastructure entered into a Memorandum Of Understanding (MOU) with the City of Edmonton, indicating that the SW Leg of Anthony Henday Drive will be constructed by the Province in accordance with this Functional Plan. The MOU also establishes a completion schedule of 2005 or sooner for construction of a four-lane divided roadway link. | - |
| 2006 | The 19-kilometre south west leg opens to traffic from the west end of Whitemud Drive to Calgary Trail. | $320m |
| 2009 | Construction of the Rabbit Hill Road interchange commenced at a cost of $26m. | $26m |
| | First phase of the Rabbit Hill interchange completed by the City of Edmonton. | $15m |
| 2009 | Construction of the Stoney Plain interchange commenced at a cost of $168.6m. | $168.6m |
| 2009 | Construction of the Callingwood and Lessard road interchanges commenced at a cost of $44.6m. | $44.6m |
| 2010 | Construction of the Cameron Heights interchange commenced at a cost of $25m. | $25m |
| 2011 | All the 5 interchanges listed above were completed and commissioned. | - |
| | Total | $600m |

On November 2, 2011, the SWAHD became entirely free-flowing with the completion of the interchanges. The total distance of the southwestern leg from Yellowhead Trail to Gateway Boulevard is 19 kilometers (12 miles).

## Anthony Henday Timeline

**October 2006:**
The 19-kilometre Southwest leg opens from the west end of Whitemud Drive to Calgary Trail.

**October 2007:**
The 11-kilometre Southeast leg opens from Calgary Trail east to Highway 14.

**Fall 2008:**
Construction begins on the 21-kilometre Northwest leg, which includes a total of 27 bridge structures.

**Spring 2009:**
Work begins on the massive Stony Plain Road interchange.

**Fall 2011:**
Five new interchanges open on the Southwest leg, including the long-awaited Stony Plain Road Interchange.

**November 2011:**
The northwest leg opens from Highway 16 to the Manning Freeway.

**Summer 2012:**
Construction began on the final 27-kilometer NEAHD.

**Fall 2016:**
Estimated completion and commissioning of the final 27-kilometer northeast leg.