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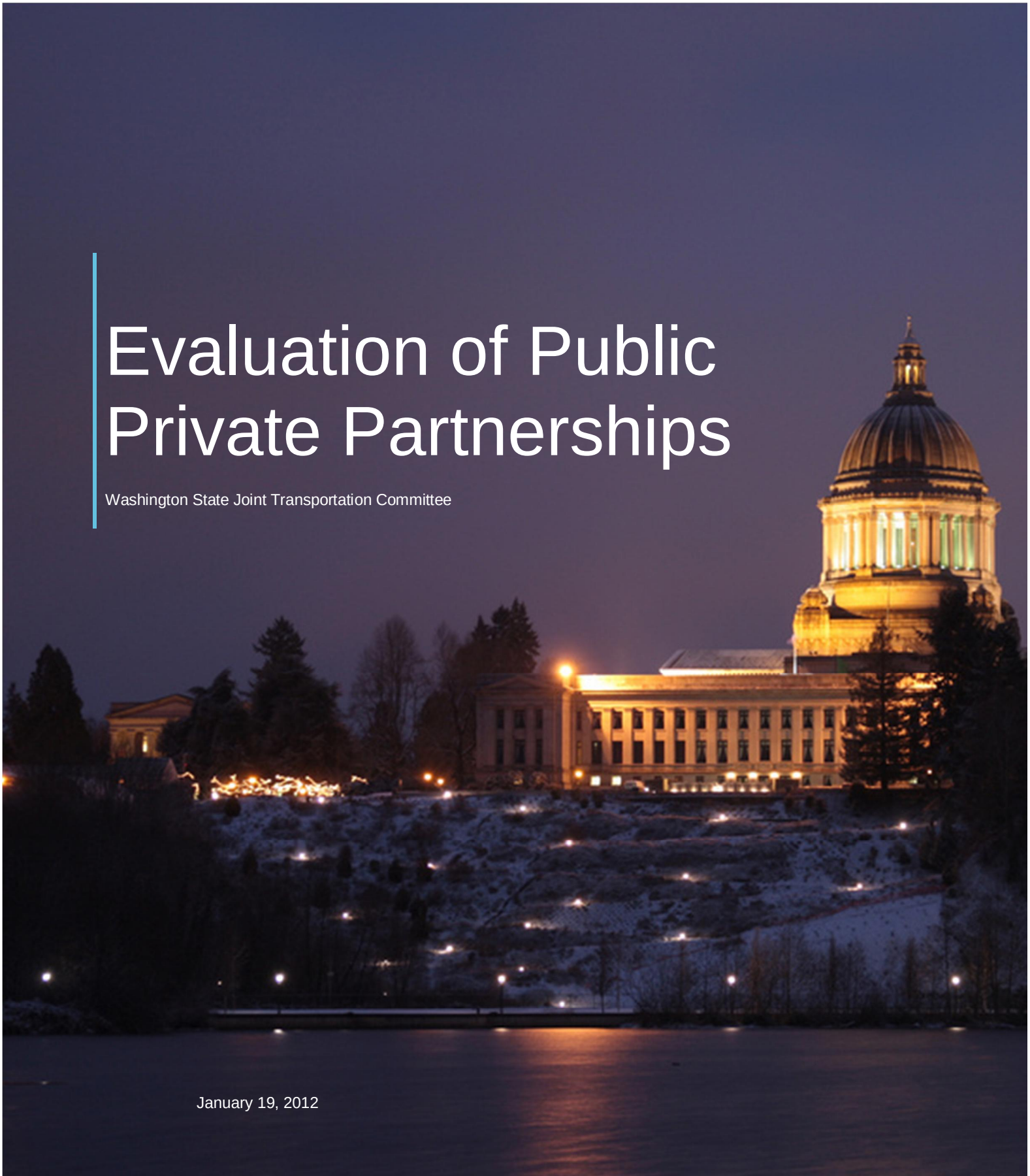
Evaluation of Public Private Partnerships

Washington State Joint Transportation Committee



January 19, 2012

Evaluation of Public Private Partnerships

For State Transportation Projects

Prepared for

Washington State Joint Transportation Committee

Prepared by

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Executive Summary

This Study has been commissioned by the Washington State Legislature's Joint Transportation Committee (JTC) in order to assess if, why and how public-private partnerships (P3s) can potentially benefit the State in relation to the delivery and operation of its transportation infrastructure. Its focus has been both general, providing tools and strategic guidelines for the State in relation to the potential use, benefits and barriers to P3; and specific, through the assessment of five candidate projects that are currently in the State's Transportation Plan.

Throughout the Study, the Consultant Team has facilitated a two-way educational process with Legislators and other stakeholders, in order to broaden understanding of P3s and solicit the level of input required for this Study to be relevant and useful to the State and its taxpayers. Our sincere intent is that this report will accurately document the conduct, lessons learned and objectivity of the Study and its key findings. While there must always be debate about if, how and when to utilize P3 delivery it is the intent of this Study to afford its participants and the readers of this report with a more finely tuned way of doing so in the future.

As directed in ESHB 1175 and the Study Request for Proposals, the candidate projects are:

1. I-405/SR 167 Express Toll Lanes
2. I-5/SR 509 Extension
3. SR 167 Extension
4. US 2 Monroe Bypass
5. I-5 Columbia River Crossing (CRC)

Part I: P3 Overview

Rationale – Why Consider P3?

While Washington State has recently made significant investments in transportation—including the funding of more than 420 projects though new revenue sources—it has been reported that additional investment is needed. For example, the Washington Transportation Plan estimates that at least $175 billion to $200 billion is required to meet state-wide needs over the next 20 years, including a backlog of critical projects and the mounting need to preserve and maintain key parts of the transportation system. In the face of the global economic recession and shrinking transportation revenue sources, the funds for these projects will be challenging to obtain. Revenues from fuel taxes, the primary source of transportation funding in Washington State, have slowed due to reductions in driving and

increased vehicle fuel efficiency. Increasing budgetary pressures on the State may limit its ability to issue public debt for transportation projects, and constraints on federal spending may limit federal transportation funds in the years to come.

The convergence of these issues suggests a need to identify new ways by which Washington State finances, delivers and maintains its infrastructure. This is an economic imperative as well as a public interest imperative. Without flexible project delivery methods, Washington State is constrained in its approach to procuring infrastructure. As an innovative form of project delivery, P3s have the potential to attract new sources of capital, accelerate or enable new construction where public funds are not available, and refocus the approach to long-term planning and programming of capital maintenance expenditures – all of which can lead to positive Value for Money for the State.

What is a P3?

A P3 is a performance-based contract between the public sector (any level of government) and the private sector (usually a consortium of private sector companies working together) to arrange financing, delivery and typically long term operations and maintenance (O&M) of public infrastructure for citizens. P3 Contracts, referred to as project agreements, are typically awarded through a competitive bidding process. The private partner is contractually obligated to fulfill the project agreement (at the risk of losing its investment), which binds its obligations as defined by the State.

A P3 should not be viewed as the panacea to the State's budget woes. Nor should a P3 be viewed of as a means to close a budget gap by selling off assets.

While P3 delivery can be a useful tool in the State's toolbox, it is not a delivery approach that is suitable for all infrastructure projects. For major technically-complex projects, that are part of a capital plan, that adhere to the State's public interest protections, that need to be delivered faster to realize economic development and/or quality of life benefits, that could realize an upfront cost savings through alternative delivery, that could enjoy cost savings through operations and maintenance efficiencies, and/or that may lack financing; a P3 approach should be explored. Many projects that fit these criteria, however, may still not be suitable due to a lack of private sector interest. Consequently, it is important while determining suitability for P3 to look at both the public sector's goals and the potential for private sector interest.

A P3 model is not a one size fits all structure; it is a delivery approach that includes a range of potential structures. The right structure selected for a P3 depends on many factors, such as project complexity, public policy goals, private sector interest, and Value for Money (as defined in this report). The desire and ability to transfer various risks to the private sector from the public sector is also key in determining the most appropriate structure. P3 structures include the following options (arranged from least risk transfer to most risk transfer):

1. **Design-Build-Finance (DBF)** combines the innovations of design-build with some amount of private sector capital (debt or equity). Often, this model will combine private sector funds with existing public sources, allowing private capital to fill any gaps in funding and enabling projects to be built faster.
2. **Design-Build-Operate-Maintain (DBOM)** is similar to the design-build approach but also includes a short to medium term operational and maintenance responsibility for the private partner.
3. **Design-Build-Finance-Maintain (DBFM)** is similar to the DBF approach but also includes a short to medium term operational responsibility for the private partner. Unlike DBOM, however, the public sector retains the responsibility for operations.
4. **Design-Build-Finance-Operate-Maintain - Availability Payment P3 (DBFOM)** is similar to the DBOM approach, but the private partner is also responsible for financing and operations and maintenance is covered over the long-term. In this approach the public sector maintains control over tolls (if any) and makes periodic, pre-established payments to a private consortium in return for project delivery and performance commitments.
5. **Design-Build-Finance-Operate-Maintain - Revenue Concession (DBFOM)** is a DBFOM model where the private partner assumes revenue risk, or the risk that project revenues will be sufficient to cover project costs. Under a revenue concession model, the private partner develops the asset – which is typically a toll road, managed lanes, or a transit facility – and enters into a long-term lease with the public sector that allows it to collect some or all project revenues over the contract term.
6. **Monetization** transfers substantial risk and control to the private partner, normally occurring in relation to an existing tolled asset and typically involving a long-term lease of the asset. Assets are often monetized in order to reduce the burden of long term operating, maintenance and major capital maintenance costs on the public sponsor, in addition to the opportunity to generate proceeds from a competitive procurement process.

7. **Build-Own-Operate (BOO)** model represents the greatest transfer of responsibilities to the private partner. In this instance, the private partner develops and operates a new asset on land that it owns or controls.

Which type of P3 Structure should be used?

Before advancing a P3 procurement, the State should undertake a Value for Money analysis to determine which, if any, of the possible P3 structures might provide the greatest value versus a traditional publicly-financed and delivered approach. The P3 structures that are often considered in this analysis include: design-build-finance, design-build-finance-operate-maintain (without toll/traffic risk[1]), and design-build-finance-operate-maintain (with toll/traffic risk).

A Value for Money analysis compares the total estimated lifecycle costs of traditional public procurement to the total estimated lifecycle costs of a P3 procurement. The estimated lifecycle cost for traditional procurement becomes a "public sector comparator" (PSC) against which to compare the total lifecycle cost of a P3 procurement. If the estimated costs of the P3 procurement are less than the estimated costs of the traditional public sector procurement, then there may be positive Value for Money, and the potential P3 project would warrant further consideration.

Part II: Overarching Themes of the Study

The Public Interest

The first question to answer in considering P3s is whether and how a P3 serves and protects the public interest. That question was paramount throughout this Study. Protection of the public interest is reflected in the tools developed as part of this Study, and public interest protections are identified in the Study's findings and recommendations.

The screening tool developed for this Study is designed to be used by the Legislature and WSDOT to help discern whether a project is suitable, from a qualitative public interest and private sector perspective, to move forward as a P3. In addition, the financial model created for this Study is intended to aid the Legislature and WSDOT in assessing whether a P3 approach generates greater Value for Money than a traditionally financed approach. Further, the legislative recommendations and best practices documented in this report are based on lessons learned from other jurisdictions and

[1] When the public sector assumes toll/traffic risk, payments to the private partner are made regardless of the use of the roadway. When the private sector assumes this risk, its payments are determined by the use of the roadway.

are intended to provide a clear, legal framework for the use of P3s delivery in the State, ensuring that public interest concerns will always be protected.

Value for Money (VfM)

This Study introduces the concept of Value for Money analysis as a method of ensuring that the public interest is consistently calculated and weighed in all decisions regarding project delivery, by P3 or any other model, using an objective analysis. VfM analysis is a widely accepted tool in several US states and Canadian provinces with mature P3 programs and is conducted under similar principles as outlined in this report. VfM also forms the basis of the two stage screening process that has been developed for the State as part of this Study.

How Might P3s Add Value – Isn't Tax-Exempt Financing Cheaper?

Yes, municipal tax exempt interest rates are generally lower than corporate taxable interest rates, but looking at P3 from just a financing perspective – without taking into mind the interplay with project delivery – does not provide a clear picture. Private financing that can be accessed under a P3 structure can act as a catalyst to motivate innovative and efficient performance on both the upfront design and construction as well as on the long-term operations and maintenance aspects of a project, thereby potentially reducing its overall lifecycle cost.

Four main elements must be considered in evaluating the costs of P3 delivery as compared to traditional delivery:

- Financing costs;
- Construction costs;
- Operating and maintenance costs over the lifetime of the concession; and
- Cost of preservation of the facility over the lifetime of the concession.

Despite the apparent lower cost of tax-exempt financing, experience has shown that the benefits of transferring project delivery and long-term maintenance risks to the private sector can sometimes result in significant cost savings to the public. In a traditional design-bid-build approach, most upfront and long-term project delivery risks remain with the public sector. However, in a P3 approach, many risks are transferred to the private sector such that the private party is incentivized to innovate and value engineer to drive down costs and mitigate risks.

Separately, private finance can expand the pool of available capital and provide significantly higher levels of overall investment. In certain instances, P3 projects have closed public sector funding gaps. In the case of the Texas SH 130 highway P3, for example, private financing was able to close a $425 million funding gap which otherwise would have prevented the project from being built. Funding gaps can be closed as a result of private finance (both debt and equity) being able to take a different view of a project's risks as compared to traditional financing sources. While tax-exempt public debt can be advantageous because of its attractive borrowing rate, this relative advantage is lessened on a P3 project where a private investor has the ability to depreciate various capital costs over the long term – a tax benefit available to private investors but not to public entities.

The following considerations are important concerning the use of private financing versus traditional tax-exempt financing:

- Private capital can help fast track projects when public funding and/or financing is not available or insufficient;
- Through the use of private financing, a P3 may allow some projects to be delivered with no effect on the State's debt capacity;
- Although the cost of private capital (particularly private equity) is generally higher than traditional public debt, it is only one of many factors that define the Value for Money equation. Federal financing tools, such as TIFIA loans and Private Activity Bonds have helped to level the playing field for private investors. More importantly, lifecycle cost savings encouraged through P3 structures can generate value that offsets the capital cost differential; and
- Through a competitive procurement and risk sharing (particularly revenue risk) approach, the access to equity investment allows a P3 structure to potentially leverage a significantly greater amount of up front capital than a publicly-financed approach under equivalent or comparable project scope and assumptions.

Will Private Operators Cut Corners?

It is sometimes suggested that in order to make a profit, private facility operators[2] may cut corners in the operations, maintenance and preservation of a P3 project. A well-structured P3 contract, however, will contractually obligate a private operator to meet operating standards that define limits

[2] For the purposes of this discussion, a "private operator" includes any private entity contractually bound to uphold minimum performance standards under a project agreement. This includes "Concessionaires" (companies that specialize in direct investment AND self performing O&M activities), Project Sponsors (investors that typically sub contract out the performance of O&M services along with a contractual pass through of performance standards), and Private Operators, that perform O&M services but do not actively invest.

of asset condition and design; and operating standards for cleanliness, safety and issues such as incident detection and response. The private operator must abide by these requirements at all times at the risk of financial penalties, or in the case of a persistent uncured default, the potential for termination of the project agreement and a resulting loss of investment.

Most private operators are national or global entities with existing portfolios of toll roads under operation. An important aspect of their business model is the ability to attract customers willing to pay for a high-quality product – in this case a more reliable and convenient journey. By extension, the provision of a high level of customer service and associated public perception is important to these entities on a local and global basis.

A further alignment of interests in the provision of high operating standards comes from project lenders, who require certainty that the project is maintained in a state of good repair in order to ensure debt repayment.

Even with their commitment to providing high service levels, private operators have a demonstrated ability to reduce operating costs. An example of the way the private sector can achieve these savings is by leveraging their global portfolio of assets and relationships with suppliers and vendors in relation to the supply, installation, O&M and replacement of specialty equipment such as that related to electronic toll collection (ETC). In essence, many private operators are able to harness economies of scale where most States cannot.

Have P3s Been Successful in the US?

Generally yes. However, unlike Canada and the UK, where P3s are employed for approximately 10% of all infrastructure projects, P3s have been much slower to develop in the US. The slower US P3 market can be attributed to many factors, one being the availability of tax exempt financing which has deterred public agencies from exploring alternative delivery methods. In addition, there has been negative publicity associated with several P3 projects that suffered from some of the fundamental challenges and lessons learned identified in this report[3].

[3] Including post procurement approval failures; poorly aligned policy and political structures resulting in a negative perception of the use of up-front payment proceeds; projects that have resulted in default by the private partner; projects where the public interest was not adequately factored into project agreements, tolling regimes and private party obligations; etc.

With the challenges faced by the US economy over the past three years, states have begun looking more closely at P3 delivery as a means of saving money and delivering projects on time and on budget. Over 30 US States have passed legislation authorizing the use of P3 project delivery. Throughout the US, P3 is being used readily as a tool in the toolbox to accelerate the delivery of infrastructure projects through the fusion of public and private capital. Virginia, for instance, has delivered over $9 billion in transportation projects since its P3 law was passed in 1995 and has two more projects in the latter stages of procurement. In 2009, Florida undertook two major P3 projects totaling nearly $3 billion, including the expansion of I-595 and the development of the Port of Miami Tunnel. Texas has delivered $6.2 billion in P3 projects to date, and more than $4 billion in projects are expected to be procured in the next few years. A summary of modern P3 projects undertaken in the US is provided in Table 2.1 on page 12.

When might traditional delivery provide better Value for Money than P3 delivery?
Different types of P3 structures can provide Value for Money in different situations. Where there is a funding shortfall, for example, P3 structures with private finance may be able to help fill the gap, and for complex projects, combining project phases can utilize economies of scale and reduce lifecycle costs. P3s create Value for Money in these instances because the private partner can bring additional resources to the table and can handle some risks more effectively.

But in other instances, a project may already have sufficient funding, or it may not be sufficiently complex to generate savings by transferring risks. In these cases, a traditional delivery approach will often be the better option for the State. At the other end of the spectrum, a project may contain too many risks for a P3 to be viable, particularly if a project faces substantial regulatory hurdles or strong political opposition. These risks may discourage private sector participation and leave the traditional delivery model as the only viable option.

Part III: Tailoring the Study to Washington State

The scope and nature of this Study has been designed specifically to solicit input from a wide stakeholder base. A Policy Workgroup (PWG), comprising 18 members, provided input and policy guidance for the Study. It included representation from the House and Senate, Office of the Governor, Office of the State Treasurer, the Transportation Commission, WSDOT, the Office of Financial Management, and the building trades and construction industry. All participants voiced unique needs, objectives and concerns that have been incorporated into this Study. A 15 member Staff Workgroup (SWG) with similar public sector composition provided technical support and

guidance that has been incorporated into this Study. The continual solicitation of input has resulted in a Study that documents and reflects the input, policy guidance, objectives, concerns, and recommendations of a wide stakeholder base in combination with the experience and market understanding of the Consultant Team.

Special consideration has also been given to the State's history of innovative highway infrastructure development including its record as one of the leading design-build markets in the country; its use of publicly financed high occupancy toll (HOT) lanes; its advanced project risk assessment measures; and its early P3 efforts during the mid-1990s. Lessons learned from these experiences and those of other states have helped to provide context for the Study.

Part IV: Scope and Deliverables

Study deliverables and milestones are summarized in E.S. Figure I. Key deliverables include the educational process described above; the development of a project screening tool and comparative financial model (collectively the project screening process); the subsequent development of inputs to and application of these tools to assess the candidate projects; a description of statutory requirements to support a successful program and the organizational structure to guide and support it; and the preparation of this report.

E.S. Figure I Project Milestones and Schedule

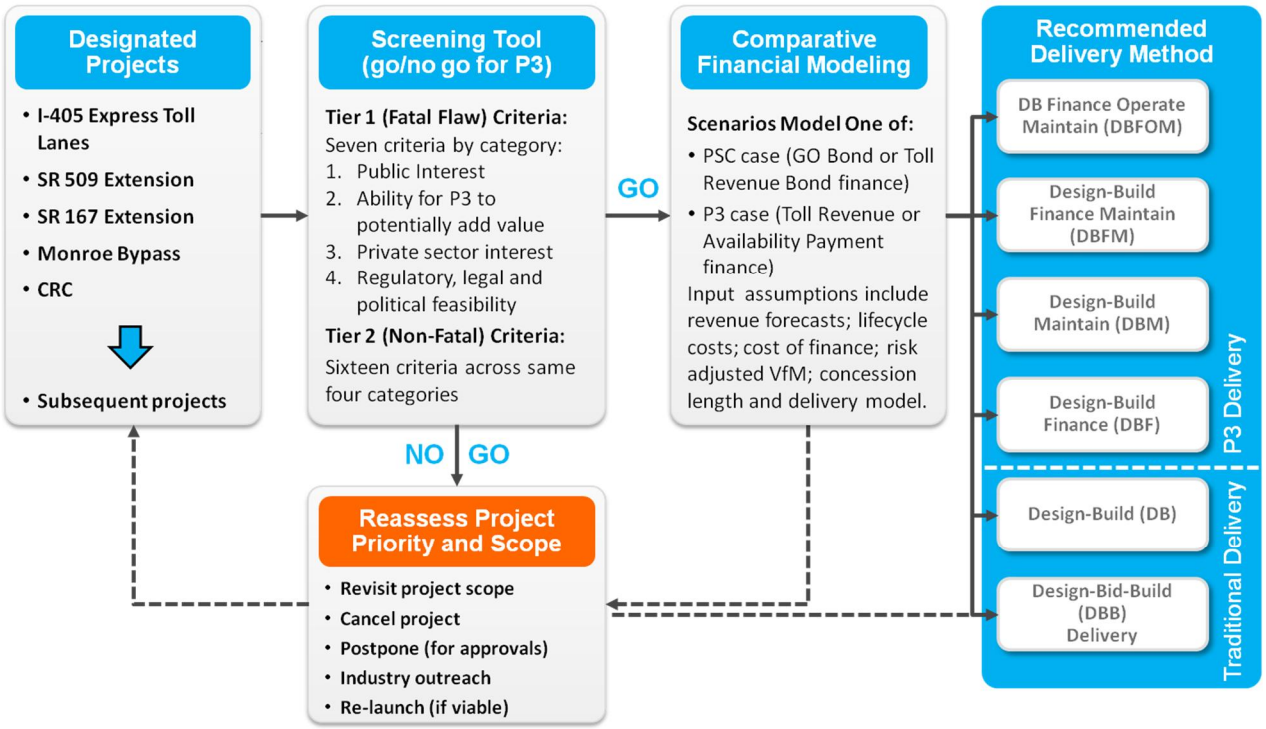
		Educational Process	Screening Tool		Financial Model			Report
Date (2011)	Presentations and Public Meetings		Develop Tool	Assess Projects	Develop Inputs	Develop Models	Run Model Scenarios	Draft and Final
July	- July 12 Staff Workgroup kickoff meeting - July 13 presentation to JTC							
August	- August 2-3 2-day educational workshop with Policy Workgroup							
September	- Sep 15 SWG meeting - Sep 29 PWG meeting and table top dry run							
October	- Oct 13 SWG meeting - Oct 24 Table Top exercise with PWG							
November	- Nov 9 SWG Meeting - Draft Report due Nov 28							
December	- Dec 6 PWG meeting and presentation of findings - Dec 7 Final presentation to JTC							
January	- Presentation of findings to House and Senate							

Notes: "Table Top" refers to an interactive workshop between the Consultants and meeting participants where deliverables under development are presented and worked through (either reviewed in detail or completed in real time) by all participants. This enables two-way learning and the opportunity for all participants to comment on and contribute to the development of deliverables.

Screening Process Summary

The project screening tool and financial model form sequential steps in an overall screening process shown in E.S. Figure II. This process is both a deliverable and recommendation of the Study.

E.S. Figure II Screening Process Summary[4]



What is The Project Screening Tool?

The Project Screening Tool has been developed to perform a simple pass or fail check of a project's potential suitability for delivery under a P3 model. The Project Screening Tool considers the public interest; Value for Money; private sector interest; and regulatory, legal and political feasibility criteria. Further distinction is given to "fatal flaw" issues that are so significant they will cause a project to automatically fail the screening process. The project screening tool has been developed in collaboration with Study participants in the context of Washington's policy goals. The Project Screening Tool was applied by WSDOT project managers, with assistance from the Consultant

[4] PSC = Public Sector Comparator, or traditional delivery method; GO Bond = General Obligation Bond.

Team, and was reviewed by the Policy and Staff Workgroups. Projects that pass the Project Screening Tool progress to a secondary phase of assessment.

What is The Comparative Financial Model?

This secondary phase of assessment involves applying the Financial Model, which is designed to facilitate the comparison of P3 delivery models and traditional delivery models on a like-for-like basis[5]. In order to perform this assessment, project inputs were developed for both P3 and traditional delivery models, including detailed cost and revenue forecasts, financing and cost of capital assumptions, and risk apportionment matrices. The Comparative Financial Model and its results were then presented to and reviewed by the Policy and Staff Workgroups.

Part V: Assessment of Candidate Projects

During the Study, five candidate projects were considered and assessed under the screening process. Each project other than the US 2 Monroe Bypass has been the subject of recent tolling studies, and in each case a single design option was agreed upon for analysis, as indicated in E.S. Table I.

E.S. Table I Project Definition by Reference Document

Project	Source Study	Option Assessed*
I-405/SR 167 Express Toll Lanes	Tolling Study (January 2010): www.wsdot.wa.gov/Tolling/EastsideCorridor/Report I-405/SR 167 Corridor Express Toll Lanes Project Information Summary July 21, 2011	4.2
I-5/SR 509 Extension	SR 509 Tolling Feasibility Study (September 2010) SR 509 Project Information Summary July 25, 2011	3a
SR 167 Extension	SR 167 Tolling Feasibility Study (September 2010) SR 167 Extension, Puyallup to SR 509 Project Information Summary July 25, 2011 http://www.wsdot.wa.gov/Projects/SR167/TacomaToEdgewood/default.htm	2
US 2 Monroe Bypass	US 2 Monroe Bypass Project Information Summary prepared by WSDOT; July 25, 2011	NA
I-5 Columbia River Crossing (CRC)	Columbia River Crossing Tolling Study Committee Report to the Washington and Oregon Legislatures (January 2010); Columbia River Crossing May 2010 CEVP Workshop Final Report	1A

Note: * Each Tolling Study presents numerous design options with different project scopes and boundaries. The “Option Assessed” for each project has been selected by WSDOT, which defines its construction, operation and maintenance requirements.

[5] In that identical standards apply in delivering an asset of known quality, scope and functionality; and to the operation, up-keep and maintenance of that asset over the same number of years.

The following pages summarize the Study's findings in relation to each project as well as the input assumptions leading to these conclusions. The development of input assumptions has required extensive collaboration with WSDOT and Study participants whereby:

- the Project Screening Tool assessment of each project has been completed by WSDOT project managers with assistance from the Consultant Team, and review by the Policy and Staff Workgroups; and
- the various inputs to the comparative financial model have been developed as follows
  - definition of the eleven scenarios under assessment, including the duration of assessment, has been agreed upon by the Consultant Team in consultation with the Staff Workgroup
  - toll revenue forecasts have been sourced and adapted from relevant source studies
  - PSC capital and lifecycle costs have been developed by WSDOT project staff and modified for P3 cases by the Consultant Team as seen fit based on P3 industry norms
  - the same approach has been adopted for the development of risk weighted cost assumptions
  - cost of finance assumptions have been developed by the Consultant Team, the State Treasurer's Office, and WSDOT based on current market conditions for the various forms of finance being analyzed and are defined in E.S. Table IV on page xxvi (for brevity and due constancy of assumptions these are not discussed below on a project by project basis)
- the Comparative Financial Model and its results were then presented to and reviewed by the Policy and Staff Workgroups.

I-405/SR 167 Express Toll Lanes

This project would construct up to two new express toll lanes in each direction along Interstate 405 and SR 167, the primary bypass route for Interstate 5 in Snohomish, King, and Pierce Counties. The project has been defined, for the purposes of this Study, to include construction of the remaining unfunded portions of the I-405 Express Toll Lanes corridor (segment 2), and the long term O&M of the entire I-405 HOT lanes project (segments 1, 2 and 3) starting on day one of construction until 2070, and including toll collection on all segments.

Findings and Recommendation

Type of Financing / Delivery Model	PSC (Public Sector Comparator)		P3 Delivery (Shadow Bid)
	GO Bond	Toll Revenue Bond	Toll Revenue P3 Concession
Net Project Value	+ $510 Million	+ $340 to + $470 Million	**+ $910 Million**
Value for Money	-	-	Highest

Under the assumed toll collection regime, it is estimated that the I-405/SR 167 Express Toll Lanes project is revenue positive and is capable of generating an upfront positive value in the range of $910 million to the State. It is estimated that a P3 toll concession model provides the greatest Value for Money, is the recommended delivery model, and should be evaluated further.

Screening Tool Assessment

The project did not register any fatal flaws and passed overall assessment.

Financial Model Inputs

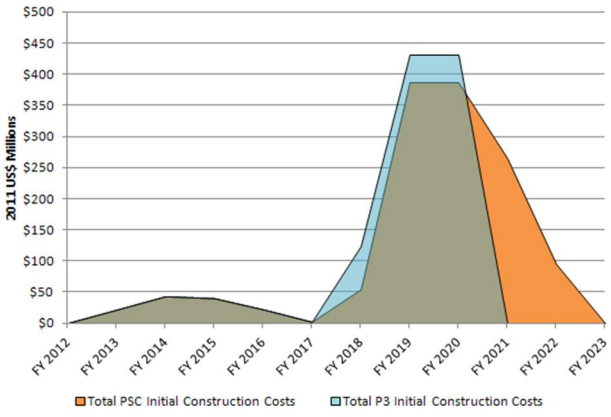
Three scenarios have been analyzed for this project: public sector comparator design-build delivery with cases for both Toll Revenue and GO Bond Finance; and a P3 DBFOM delivery, toll revenue concession.

Revenue Forecasts. Other than an adjustment to reflect early completion of the project's construction under the P3 case (refer below) and associated earlier opening to traffic, the toll rates and revenue inputs to this project's P3 and PSC cases are identical. Forecasts for all three segments of the project were drawn from the relevant documents outlined in E.S. Table I which run from 2015 to 2055. In order to extend the forecast to meet the agreed project term, the Consultant Team assumed no traffic growth from 2055 to 2070 along with a continuing toll escalation of 2.5% per year to match CPI.

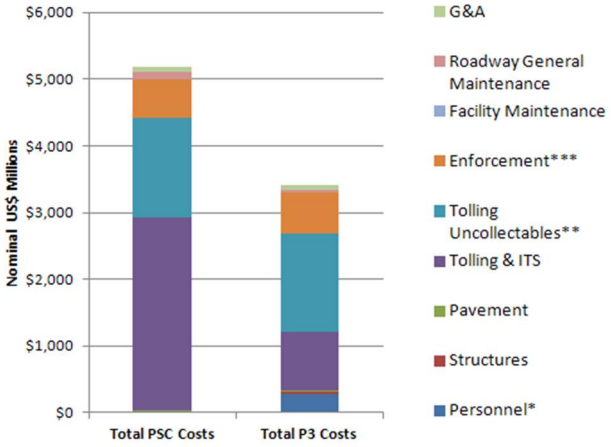
Initial Construction Cost Forecasts. The primary differences in the PSC and P3 scenarios stem from an assumed accelerated delivery under the P3 case, resulting in time and cost savings as per E.S. Figure III and discussed in Section 3.6.2.1. No differences have been assumed as a result of economies of scale or procurement efficiencies. Under these assumptions the P3 case assumes a 15% initial CAPEX saving.

Preservation Cost Forecasts were developed for the PSC case by WSDOT project staff in line with forecast quantities and typical unit costs and frequencies of major preservation (CAPEX) activities undertaken by WSDOT in relation to similar existing assets. This included a full assessment of tolling and ITS costs along with other categories as discussed in Section 3.6.2.2. P3 costs were developed by the Consultant Team using identical quantities but different unit rate and intervention assumptions (both type and frequency) based on P3 industry experience and practices. The Consultant Team has forecast a total ongoing CAPEX saving of 10% under the P3 case over the project's life.

O&M Cost Forecasts were developed in the same way as preservation cost forecasts, with the Consultant Team applying metrics such as tolling cost per transaction and credit card fees as a percentage of revenue, from an extensive database of US P3 projects to O&M costs from the PSC case. Unique costs such as winter maintenance, enforcement and uncollectable tolls were assumed identical for both the P3 and PSC cases. E.S. Figure IV[6] presents P3 and PSC case findings. A total O&M saving of 34% has been identified under the P3 case.



E.S. Figure III I-405/SR 167 Express Toll Lanes Initial CAPEX Comparison



E.S. Figure IV I-405 Express Toll Lanes O&M Total Cost Comparison

Risk Apportionment has been assessed for PSC and P3 cases in relation to project risks retained by the public sector, assessed at $168M and $27M respectively. This result has contributed to the finding that P3 delivery has the potential to provide better Value for Money than PSC delivery for the project.

[6] *WSDOT personnel costs are incorporated by category (eg structures, pavements etc); **For both delivery methods assumed 4.5% of Revenue; ***Assumed identical for both cases. Costs show the sum of all future years. Total P3 case savings equate to 34%.

I-5/SR 509 Extension

The SR 509 extension would construct a new limited access freeway from south Seattle to Interstate 5 in the Kent/Des Moines area, including a new access road to SeaTac airport from the south. The project has been defined, for the purposes of this Study, to include construction of the entire project, followed by its operation and maintenance until 2070 including toll collection on all new segments.

Findings and Recommendation

Type of Financing/Delivery Model	PSC (Public Sector Comparator)	P3 Delivery (Shadow Bid)
	Toll Revenue Bond	Toll Revenue P3 Concession
Net Project Value	- $210 to - $250 Million	**- $80 to + $40 Million**
Value for Money	-	Highest

The SR 509 Extension project is estimated to generate greater Value for Money under a P3 delivery model than under a traditional delivery model. Under the traditional delivery model, it is estimated that a funding gap will remain; however, the P3 delivery model has the potential to fully fund the project under an optimistic scenario. This revenue positive outcome indicates the potential for this project to be self financing under such conditions. Therefore, a P3 toll concession approach is the recommended delivery approach and should be evaluated further.

Screening Tool Assessment

The project did not register any fatal flaws and passed the overall assessment.

Financial Model Inputs

Two scenarios have been analyzed for this project: a public sector comparator design-build delivery with Toll Revenue Bond Finance; and a P3 DBFOM delivery, toll revenue concession.

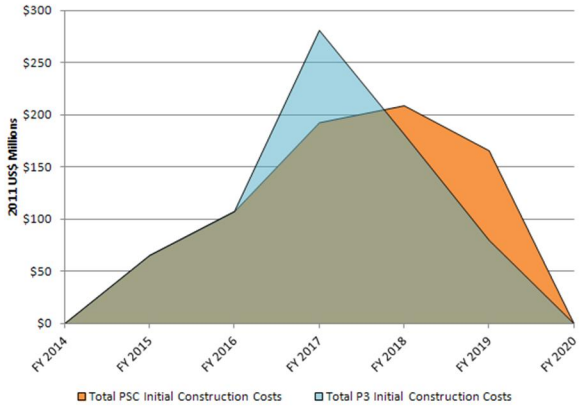
Revenue Forecasts were drawn from the relevant documents outlined in E.S. Table I which run from 2020 to 2055. In order to extend the revenue forecast to the agreed project term, a no traffic growth assumption was applied and a 2.5% annual toll escalation (to match CPI) was applied from 2055 to 2070. Other than an adjustment to reflect early completion of the project's construction under the P3 case (refer below) and associated earlier opening to traffic, the revenue inputs for this project's P3 and PSC cases are identical. High and low sensitivities were also tested to provide a range of results for both cases.

Initial Construction Cost Forecasts. The primary differences in the PSC and P3 scenarios were that the private sector is assumed to deliver the project more rapidly, resulting in time and cost savings as shown in E.S. Figure V and discussed in Section 3.6.2.1. No differences have been assumed as a result of

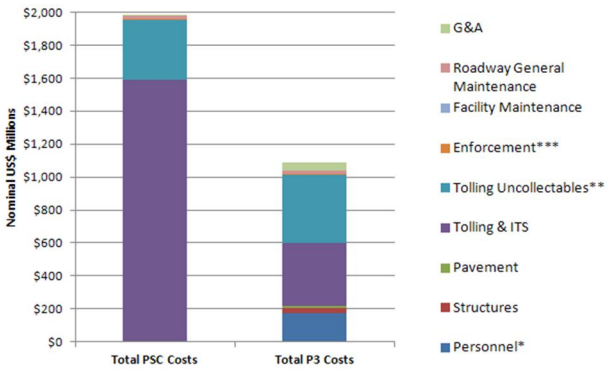
economies of scale or procurement efficiencies. Based on these assumptions, it is estimated that the P3 delivery model generates approximately 4% in total savings.

Preservation Cost Forecasts were developed for the PSC case by WSDOT project staff in line with forecast quantities and typical unit costs and frequencies of preservation (CAPEX) activities undertaken by WSDOT in relation to similar existing assets. This included a full assessment of tolling and ITS costs along with other categories as discussed in Section 3.6.2.2. P3 costs were developed by the Consultant Team using identical quantities but different unit rate and intervention assumptions (both type and frequency) based on P3 industry experience and practices. Approximately 25% of ongoing CAPEX savings have been estimated under the P3 case.

O&M Cost Forecasts were developed in the same way as preservation cost forecasts, with the Consultant Team applying metrics, such as tolling cost per transaction and credit card fees as a percent of revenue, from an extensive database of US P3 projects to O&M costs from the PSC case. Unique costs such as winter maintenance, uncollectable tolls and the cost of enforcement were assumed identical for all cases as shown in E.S. Figure VI[7]. A total O&M savings of 45% has been identified under the P3 case.



E.S. Figure V I-509 Extension Initial CAPEX Comparison



E.S. Figure VI I-509 Extension O&M Cost Comparison

Risk Apportionment has been assessed for PSC and P3 cases in relation to project risks retained by the public sector, assessed at $67M and $18M respectively. This result has contributed to the finding that P3 delivery provides better Value for Money than PSC delivery for the project.

[7] *WSDOT personnel costs are incorporated by category (eg structures, pavements etc); **For both delivery methods assumed 4.5% of Revenue; ***Assumed identical for both cases. Costs show the sum of all future years. Total P3 case savings equate to 45%.

SR 167 Extension

The SR 167 extension would build a new 6-mile freeway connecting the City of Edgewood with Interstate 5 and SR 509 in Tacoma. The project has been defined, for the purposes of this Study, to include construction of the entire project, followed by its operation and maintenance until 2070 including toll collection on all new segments. Approximately $157 million has been allocated to this project by the State, although its initial CAPEX estimates are close to $1 billion.

Findings and Recommendation

Type of Financing / Delivery Model	PSC (Public Sector Comparator)	P3 Delivery (Shadow Bid)
	Toll Revenue Bond	Availability Payment
Net Project Value	- $740 Million	**- $370 Million**
Value for Money	-	Highest

Despite considerable savings through P3 delivery, the SR 167 project has a significant funding gap under all scenarios tested and would require significant new funds in order to become financially viable. It is therefore recommended that the project be put on hold until the State can secure such funds or redefine the project to be less costly or more financeable. At such time, the project should be reassessed under the screening process.

Screening Tool Assessment

The project did not register any fatal flaws but did come close to failing due to its significant funding gaps.

Financial Model Inputs

Two scenarios have been analyzed for this project: a public sector comparator design-bid-build delivery with toll revenue bond finance; and a P3 DBFOM delivery, availability payment concession.

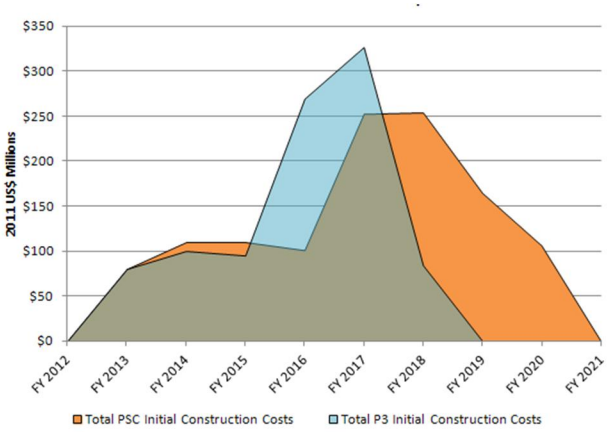
Revenue Forecasts for the PSC case were drawn from the relevant documents outlined in E.S. Table I, which runs from 2020 to 2050. The P3 case does not rely on revenue forecasts to raise financing; instead, the availability payment revenue stream that is paid by the state is pledged as security for the private financing. It is assumed that the toll revenue generated by the project will be used to pay availability payments. For both cases an operating period of 35 years is assumed. Note that under the P3 case, the private party is required to collect tolls on behalf of the State.

Initial Construction Cost Forecasts were considered using existing construction cost and schedule estimates for the project. Due to the nature of the project's construction and differences in delivery models, it is estimated that the proposed P3 case results in time and cost savings as shown in E.S. Figure VII and discussed in Section 3.6.2.1. Further savings have been assumed as a result of economies of

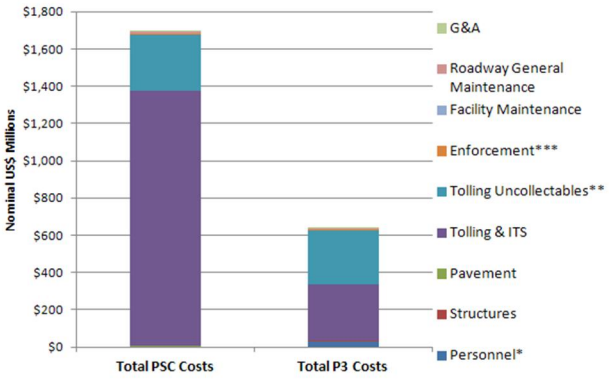
scale and procurement efficiencies. Based on these assumptions, it is estimated that the P3delivery model generates a 19% cost savings.

Preservation Cost Forecasts were developed for the PSC case by WSDOT project staff in line with forecast quantities and typical unit costs and frequencies of preservation (CAPEX) activities undertaken by WSDOT in relation to similar existing assets. This included a full assessment of tolling and ITS costs along with other categories as discussed in Section 3.6.2.2. P3 costs were developed by the Consultant Team using identical quantities but different unit rate and intervention assumptions (both type and frequency) based on P3 industry experience and practices. On this basis the Consultant Team has forecast cumulative savings of 22% on ongoing CAPEX under the P3 case.

O&M Cost Forecasts were developed in the same way as preservation cost forecasts, with the Consultant Team applying metrics, such as tolling cost per transaction and credit card fees as a percent of revenue, from an extensive database of US P3 projects to O&M costs from the PSC case. Unique costs such as the cost of enforcement, winter maintenance and uncollectable tolls were assumed identical for all cases as shown in E.S. Figure VIII[8]. A total O&M savings of 62% has been identified under the P3 case.



E.S. Figure VII SR-167 Extension Initial CAPEX Comparison



E.S. Figure VIII SR-167 Extension O&M Cost Comparison

Risk Apportionment has been assessed for PSC and P3 cases in relation to project risks retained by the public sector, assessed at $116M and $41M respectively. This result has contributed to the finding that P3 delivery has the potential to provide better Value for Money than PSC delivery for the project.

[8] *WSDOT personnel costs are incorporated by category (eg structures, pavements etc); **For both delivery methods assumed 4.5% of Revenue; ***Assumed identical for both cases. Costs show the sum of all future years. Total P3 case savings equate to 62%.

US 2 Monroe Bypass

This project would construct a new 5.5 mile, 2-lane limited-access highway along US 2 to bypass the city of Monroe. Initial plans for a 4-lane bypass of Monroe were developed in 1968. In 1996, a design analysis was conducted to identify elements of the 1968 plan in need of updating, including an updated cost estimate. Approximately 90% of the ROW needed for the project has been acquired. The initial EIS for the US 2 corridor was completed in 1976, making it too dated to be updated in a compliant manner; based on recent precedent, a new EIS could take up to eleven years to complete.

Findings and Recommendations

Based on the outcome of the screening process, it is recommended that the US 2 Monroe Bypass project not be advanced as a candidate project for P3 delivery until the State has reviewed the causes for its failure under the screening tool assessment and moved to address these in line with its broader transportation policy goals. If at such time it can be demonstrated that the project would likely pass the fatal flaw criteria, then it should be reassessed under the screening process. Administrative guidelines for the selection or reselection of projects for assessment under the Screening Process in this manner are contained in Section 3.2 of this report.

This project failed the screening tool assessment due to lack of a viable revenue stream and an out-of-date Environmental Impact Statement. For projects that fail the screening process, this failure should not be perceived as a final decision, but rather indicative of the list of issues that must be addressed in order for the project to be considered for P3 delivery in the future. In the case of US 2 Monroe Bypass this would mean addressing the various concerns outlined below. A set of general considerations for projects that fail the screening tool based on fatal flaw responses is given in E.S. Table II.

Screening Tool Assessment

The Project Screening Tool was applied to the US 2 Monroe Bypass by WSDOT project managers, with assistance from the Consultant Team, and was reviewed by the Policy and Staff Workgroups. It was agreed that this project failed the application of the Project Screening Tool due to two fatal flaw criteria:

- **Financial Feasibility** – Due to the lack of a viable revenue stream, the project is not financially self supporting and no additional sources of funding have been identified.
- **Environmental approvals expected within three years** – This will not be possible until the project EIS is recompleted, submitted and nearing approval, which generally takes longer than three years.

Additionally, the project was deemed to pass with limitations[9] in response to the following criteria:

- **Affordability** – With no identified and prioritized funding source, the project is not currently affordable.
- **Support from elected officials and the public** – While the project would undoubtedly bring safety benefits to users and congestion relief for the town of Monroe, insufficient evidence is available to verify widespread public support for the project, and to confirm that no environmental, landowner or other groups would be fundamentally opposed to the project
- **Return justifies risk** – The project has not been studied in sufficient detail to determine the extent and nature of risks that would be involved with its delivery; however its alignment, which crosses relatively undeveloped rural areas and natural water bodies would indicate a reasonable likelihood of archaeological, environmental and potentially geotechnical risks. Financing risks are also significant without an identified source of project funds
- **Are land ownerships issues likely to stop the project?** – Insufficient information is available to adequately assess this criterion.

E.S. Table II General Actions Available for Failed Projects Seeking Reassessment

Criteria		Potential Course of Action
1.01.01	Affordability	The project is not likely to be affordable either because user fees would be too high or the project is not a priority for public funds. To address: a) Appropriate more State money for the project b) Identify additional revenues e.g. developer levies, special taxation zones, beneficiary contributions, advertising, etc (market study); and/or c) Advocate for prioritization of project based on needs
1.01.02	Support from elected officials and the public	Combination of political advocacy and public and stakeholder relations. Controversial projects require a proactive approach to garner public support
1.02.01	Financial Feasibility	Same as 1.01.01; AND, assess potential for innovative methods of public financial support; i.e. shadow toll or availability payment approaches
1.03.01	Return Justifies Risk	Reconsider State risk apportionment preferences and “must haves”
1.03.02	Suitable Deal Size	If too small, consider expanding or consolidating projects.
1.04.01	Environmental Approvals expected within 3 years	Accelerate approvals to the greatest extent possible, possibly including “sponsorship” of a designated employee within the relevant approval agencies
1.04.02	Are land ownership issues likely to stop the project?	Assess potential to re-design project around affected properties; viability for use of eminent domain or land swap deals

[9] Under Tier 2 (non-fatal flaw) of the screening tool, projects are scored on each criteria from a range of 0 (pass) to 4 (fail) – any result between these scores is termed a “pass with limitations.”

I-5 Columbia River Crossing (CRC)

This project would construct a new, multi-modal river crossing along Interstate 5 between Vancouver, WA and Portland, OR. The project has been studied extensively by both Washington and Oregon and is nearing procurement readiness. The project has been defined, for the purposes of this Study, to include construction followed by operation and maintenance until 2070 including toll collection on all segments.

Findings and Recommendation

Type of Financing/ Delivery Model	PSC (Public Sector Comparator)		P3 Delivery (Shadow Bid)	
	GO Bond	Toll Revenue Bond	Availability Payment	Toll Revenue
Net Project Value	- $1,570 Million	- $1,930 to - $2,000 Million	- $1,560 Million	**- $1,250 to - $1,480 Million**
Value for Money	-	-	-	Highest

The I-5 Columbia River Crossing project is estimated to have a funding gap under all the scenarios analyzed. Of all the scenarios, the P3 DBFOM toll concession is estimated to generate the greatest cost savings. However, when comparing the availability payment P3 delivery model to the GO bond PSC model, there is relatively little difference in Net Project Value, so it is too close to make a definitive call that P3 can or cannot provide superior Value for Money. It is therefore recommended that the project be reassessed in future as the various input assumptions are refined to a greater level of confidence.

Screening Tool Assessment

The project did not register any fatal flaws and passed the overall assessment; however, it also exhibits a substantial funding gap.

Financial Model Inputs

Four scenarios have been analyzed for this project: public sector comparator design-build delivery with cases for both Toll Revenue and GO Bond Finance; and P3 DBFOM delivery with toll revenue concession and availability payment cases.

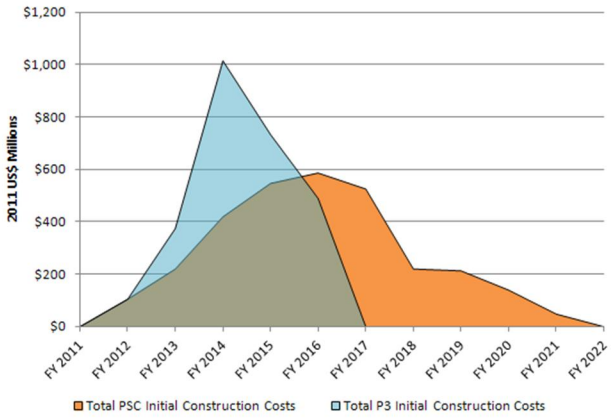
Revenue Forecasts were drawn from the relevant documents outlined in E.S. Table I which run from 2019 to 2059. In order to reach the agreed project term, a low case forecast was extended with no escalation past 2059 and 1% traffic growth. Other than an adjustment to reflect early completion of the project's construction under the P3 cases (refer below) and associated earlier opening to traffic, the toll rates and revenue inputs to this project's P3 and PSC cases are assumed identical.

Initial Construction Cost Forecasts. The primary differences in the PSC and P3 scenarios were that the private sector is assumed to deliver the project more rapidly, resulting in time and cost savings as shown

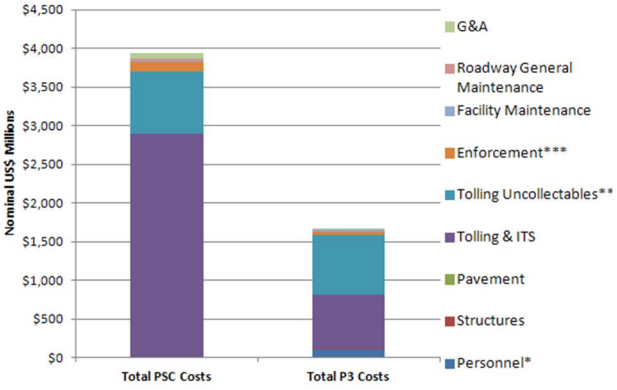
in E.S. Figure IX and discussed in Section 3.6.2.1. No differences have been assumed as a result of economies of scale or procurement efficiencies. Based on these assumptions the Consultant Team has forecast a 10% total saving under the P3 cases.

Preservation Cost Forecasts were developed for the PSC cases by WSDOT project staff in line with forecast quantities and typical unit costs and frequencies of preservation (CAPEX) activities undertaken by WSDOT in relation to similar existing assets. This included a full assessment of tolling and ITS costs along with other categories as discussed in Section 3.6.2.2. P3 costs were developed by the Consultant Team using identical quantities but different unit rate and intervention assumptions (both type and frequency) based on P3 industry experience and practices. On this basis the Consultant Team has forecast cumulative savings of 15% on ongoing CAPEX under the P3 case.

O&M Cost Forecasts were developed in the same way as preservation cost forecasts, with the Consultant Team applying metrics, such as tolling cost per transaction and credit card fees as a percent of revenue, from an extensive database of US P3 projects to O&M costs from the PSC case. Unique costs such as winter maintenance, uncollectable tolls and the cost of enforcement were assumed identical for all cases as shown in E.S. Figure X[10]. A total O&M saving of 58% has been identified under the P3 case.



E.S. Figure IX Columbia River Crossing Initial CAPEX Comparison



E.S. Figure X Columbia River Crossing O&M Cost Comparison

Risk Apportionment has been assessed for PSC and P3 cases in relation to project risks retained by the public sector, estimated at $124M and $47M respectively. This result has contributed to the finding that P3 delivery has the potential to provide better Value for Money than PSC delivery for the project.

[10] *WSDOT personnel costs are incorporated by category (eg structures, pavements etc); **For both delivery methods assumed 4.5% of Revenue; ***Assumed identical for both cases. Costs show the sum of all future years.

Summary of Project Findings

Screening Tool Assessment

The Project Screening Tool was applied to each project by WSDOT project managers, with assistance from the Consultant Team, and was reviewed by the Policy and Staff Workgroups. The results of the Project Screening Tool are summarized in E.S. Table III, with the completed screening tools attached as Appendix C to this report.

E.S. Table III Summary of Screening Tool Assessment

	Tier 1 (Fatal Flaw) Criteria			Tier 2 (Non-Fatal) Criteria		Overall Result
	Fatal Flaw Triggered?	Pass with limitations scores		Pass with limitations scores		
Project		Score Result	Failing Score	Score Result	Failing Score	Pass / Fail
I-405/SR 167 Express Toll Lanes	No	5	11	13	24	Pass
I-5/SR 509 Extension	No	0	11	10	24	Pass
SR 167 Extension	No	10	11	12	24	Pass
US 2 Monroe Bypass	Yes	17	11	20	24	Fail
I-5 Columbia River Crossing (CRC)	No	4	11	13	24	Pass

Financial Model Inputs

Through collaboration with WSDOT and the Study participants, Financial Model inputs have been developed and refined for the public sector comparator and P3 cases using available information. The approach to developing P3 cases has been relatively conservative – of the range of potential P3 benefits, only a handful have been incorporated through this process, as discussed below.

Revenue Forecasts were adapted for each case based on existing tolling studies. With the exception of early opening due to differing construction schedule, identical traffic and toll revenue forecasts have been adopted for both the PSC and P3 cases for each project. While this is prudent in consideration of the preliminary nature of these tolling studies (and the associated potential for some numbers to be over optimistic), it is common practice to model P3 cases with a more aggressive revenue forecast than PSC cases, reflecting the availability of additional equity investment and the private sector's traditionally higher tolerances for these risks under competitive bidding conditions.

Initial Construction Cost Forecasts have been developed based on WSDOT cost and schedule estimates for traditional delivery (PSC cases) and the Consultant Team's recommended changes to these forecasts under P3 delivery based on a selection of:

- the private sector's ability to engage in construction activities quickly and effectively, particularly relative to a PSC case that may be forced to constrain the pace of spending due to budgetary concerns or that requires more than one contract; and
- the private sector's ability to lower unit prices relative to some forms of traditional delivery (particularly design-bid-build) through economy of scale savings such as bulk purchasing or preferred supplier agreements.

The savings assumed to be possible range from 4% to 10% when comparing P3 to design build delivery under a PSC[11], with no benefits assumed to stem from economies of scale or procurement efficiencies. Only one project (SR 167) been selected for design-bid-build delivery under the PSC and with multiple contracts, resulting in an estimated construction cost savings of 19% under the P3 delivery model.

Preservation Cost Forecasts have been developed by the Consultant Team for P3 cases taking project requirements into account in addition to the major maintenance strategies typically employed by private partners. While the type and unit costs of major maintenance activities forecast under the PSC and P3 cases are relatively similar, P3 approaches plan investments and expenditures on a lifecycle optimized basis, often spending moderate investments more frequently in order to prevent asset degradation and inevitable major rehabilitation expenditures[12]. Estimated P3 savings range from 10% (I-405/SR 167 Express Toll Lanes) to 25% (SR 509 Extension) of total preservation costs.

O&M Cost Forecasts have resulted in a number of tangible findings in relation to the potential for P3 to benefit the State, particularly in relation to the cost and efficiency of tolling operations. This has stemmed from the analysis of PSC O&M forecasts developed using actual historic expenditures by the State; and P3 O&M forecasts developed on metrics that are commonplace for P3 operations across the US. For example:

- private partners will rarely pay credit card fees of more than 2.5% of transaction value; less than 2% is common in the US and as low as 0.5% overseas. Estimates for Washington State's current expenditure are between 2.5% and 4.5% of transaction value.
- while overall tolling cost per transaction varies depending on traffic levels and associated services (excluding credit card fees and uncollectables), typical basic service provision for the

[11] Less in Net Present Value (NPV) terms due expenditures happening sooner under an accelerated construction schedule.

[12] Many State DOTs have funding structures that focus on rehabilitation rather than preventative maintenance.

operation and maintenance of an Electronic Toll Collection system (incorporating equipment O&M, customer service centre and fixed back office support) under a P3 can range between 3 and 25 cents per transaction. Estimates for Washington State's equivalent existing rates range between 83 cents and $1.13. However, it is acknowledged that the Washington State estimates cover more services, some of which are deemed desirable by the toll paying public.

Private concessionaires can achieve these savings largely due to experience and economies of scale. Many private operators have dozens of similar P3 contracts around the world. This gives them bargaining power over a similarly global group of suppliers, which include credit card companies and tolling equipment manufacturers and/or turnkey operators. It is rare for state governments to achieve this, and even those with large public toll road networks are often bound by procurement rules and piecemeal contracting approaches.

The potential of O&M savings associated with tolling costs alone is material, particularly when looking at a 50 year term; a detailed breakout of the source of these assumed savings is presented in Appendix B Section 6.2.8. The Consultant Team estimates that overall O&M savings under P3 delivery could range from 34% (I-405/SR 167 Express Toll Lanes) to 45% (SR 509 Extension) of total costs.

Risk Apportionment assumptions under P3 and PSC cases form the basis of cost weighted contingencies (retained risk costs) that the public sector is assumed to pay for within each scenario. By transferring risks away from the public sector, each P3 case has been assumed to have the potential to deliver significant Value for Money over traditional (PSC) delivery ranging from 62% (CRC) to 83% (I-405).

Cost of Capital assumptions have been developed by the Consultant Team, the State Treasurer's Office, and WSDOT in relation to each source of capital available for financing projects under PSC and P3 cases as illustrated in E.S. Table IV. A detailed rationale for the selection of assumptions (based on current market conditions), supporting financial structures and limitations of the Study is contained in Section 3.6.4 of this report.

E.S. Table IV Cost of Capital Assumptions

Source of Capital	Cost of Capital Assumptions		References / Notes
General Obligation Bonds	5%		State of Washington Motor Vehicle Fuel Tax GO Bonds Issuance, Official Statement dated July 1, 2011, assumes AA+ rating.
Toll Revenue Bonds	6%		Based on discussion with WS JTC and WSDOT, assumes a stand-alone toll revenue bond.
	Toll Revenues	Availability Payment	
Commercial Bank Debt	7.5%	7.5%	BBB- project finance debt, long term USD LIBOR plus P3 industry margin benchmark. Conservative assumption.
Refinance Facility (Bonds)	6.5%	6%	BBB- project finance debt, long-term USD LIBRO plus P3 industry margin benchmark. Conservative assumption.
TIFIA (Government Loan	3.0%	3.0%	State and Local Government Series Rate, 35 Years, December 23, 2011, 0.01% margin
Equity	15%	13%	After tax equity internal rate of return based on P3 industry benchmarks. Conservative assumption.

Findings and Recommendations

The financial analyses produced in the course of this Study, while produced with the best data available from WSDOT and industry sources, are primarily educational in nature and not intended to be used for investment purposes. While these analyses do provide some guideposts for legislators to consider as they evaluate whether to pursue P3 development of any of these projects, considerable additional evaluation and analysis will be required to inform future procurement decisions.

The output of the financial analysis is summarized in E.S. Table V below by project and delivery model. The “Net Project Value” of each scenario indicates its relative “financeability” based on the associated input assumptions detailed in Section 3.5 of this report. A negative Net Project Value (in red) generally indicates a funding gap, while a positive value indicates a revenue surplus – i.e. the project is self financing and/or could generate an upfront fee under a competitive P3 tender. For each project, the scenario with the highest (absolute) Net Project Value (shaded blue) is deemed to offer the greatest Value for Money to the State, and is therefore also the recommendation of the Screening Process.

E.S. Table V Financial Analysis Results by Project

Delivery Model and Financial Assessment		I-405/SR 167 Express Toll Lanes	I-5/SR 509 Extension	SR 167 Extension	I-5 Columbia River Crossing
Traditional Toll Revenue Bond	Concession Payment*	-	(220) - (200)	(480)	(1,720) - (1,750)
	Excess Cash Flow	610 - 740	170 - 190	100	200 - 240
	Retained Risks	(170)	(70)	(120)	(120)
	Pre-Development Cost	(100)	(130)	(240)	(330)
	Net Project Value	**340 - 470**	**(250) - (210)**	**(740)**	**(1,930) - (2,000)**
Traditional GO Bond	Concession Payment*	-			(1,120)
	Excess Cash Flow	780			-
	Retained Risks	(170)			(120)
	Pre-Development Cost	(100)			(330)
	Net Project Value	**510**	Not Assessed	Not Assessed	**(1,570)**
P3 Toll Concession	Concession Payment*	1,040	70 - 190		(870) - (1,100)
	Excess Cash Flow	-	-		-
	Retained Risks	(30)	(20)		(50)
	Pre-Development Cost	(100)	(130)		(330)
	Net Project Value	**910**	**(80) - 40**	Not Assessed	**(1,250) - (1,480)**
P3 Availability Concession	Availability Payments			(630)	(2,370)
	Toll Revenue			520 (offset only)	1,190 (offset only)
	Retained Risks			(40)	(50)
	Pre-Development Cost			(220)	(330)
	Net Project Value	Not Assessed	Not Assessed	**(370)**	**(1,560)**

Notes: * Under a traditional delivery model, a negative concession payment value represents the estimated amount that the State may need to contribute upfront, in addition to any upfront public financing, in order to pay for the estimated upfront costs of the project (excluding pre-development costs). The excess cash flow value is the estimated amount of surplus cash flow that may be generated by the project after paying for operating expenditures and debt service payments. The net project value indicates the total value of the project, after taking into account any concession payment, excess cash flow, retained risks, and pre-development costs. All values are presented in 2011 USD millions in present value after being discounted and rounded.

Part VI: Index of Recommendations

E.S. Table V lists a complete summary of the recommendations the Consultant Team has developed for the State of Washington over the course of the Study. Recommendations are grouped according to four categories – project specific; policy; legislative and administrative – and are numbered for ease of reference. For each recommendation, cross references are provided to sections of this report that contain relevant supporting discussion and explain the Consultant Team's rationale in each

case. We strongly encourage readers to review these referenced sections for context and to gain a first principles understanding of why the Consultant Team believes they would benefit the State.

E.S. Table VI Index of Study Recommendations

Project Specific Recommendations		Reference
1	Under the assumed toll collection regime, it is estimated that the I-405/SR 167 Express Toll Lanes project is revenue positive and is capable of generating an upfront positive value in the range of $910 million to the State. It is estimated that a P3 toll concession model provides the greatest Value for Money, is the recommended delivery model, and should be evaluated further.	Section 3.1.1.4 page 61
2	The SR 509 Extension project is estimated to generate greater Value for Money under a P3 delivery model than under a traditional delivery model. Under the traditional delivery model, it is estimated that a funding gap will remain; however, the P3 delivery model has the potential to fully fund the project under an optimistic scenario. This revenue positive outcome indicates the potential for this project to be self financing under such conditions. Therefore, a P3 toll concession approach is the recommended delivery approach and should be evaluated further.	Section 3.1.2.4 page 64
3	Despite considerable savings through P3 delivery, the SR 167 project has a significant funding gap under all scenarios tested and would require significant new funds in order to become financially viable. It is therefore recommended that the project be put on hold until the State can secure such funds or redefine the project to be less costly or more financeable. At such time, the project should be reassessed under the screening process.	Section 3.1.3.4 page 67
4	Based on the outcome of the screening process, it is recommended that the US 2 Monroe Bypass project not be advanced as a candidate project for P3 delivery until the State has reviewed the causes for its failure under the screening tool assessment and moved to address these causes in line with its broader transportation policy goals. If at such time it can be demonstrated that the project would likely pass the fatal flaw criteria then it should be reassessed under the screening process. Administrative guidelines for the selection or reselection of projects for assessment under the Screening Process in this manner are	Section 3.1.4.4 page 70

	contained in Section 3.2 of this report.	
5	The I-5 Columbia River Crossing project is estimated to have a funding gap under all the scenarios analyzed. Of all the scenarios, the P3 DBFOM toll concession is estimated to generate the greatest cost savings. However, when comparing the availability payment P3 delivery model to the GO bond PSC model, there is relatively little difference in Net Project Value, so it is too close to make a definitive call that P3 can or cannot provide superior Value for Money. It is therefore recommended that the project be reassessed in future as the various input assumptions are refined to a greater level of confidence.	Section 3.1.5.4 page 73
Policy Specific Recommendations		**Reference**
6	It is recommended that Washington State adopt a policy framework that identifies a number of public interest protections as binding requirements of all future P3 projects. Such public interest protections are implementable and enforceable through statutes and/or as part of any P3 contract.	Section 4.2 page 127
7	It is recommended that the State utilize the two-step screening tool developed in this Study to determine if a project is suitable, from an initial qualitative perspective, to be considered as a potential P3.	Section 4.2
8	It is recommended that the State employ the financial model developed in this Study to determine whether Value for Money is greater in a P3 approach than in a traditional delivery method.	Section 4.2
9	It is recommended that the State of Washington take relevant considerations into account in setting the duration of project agreements on a project specific (rather than statutory) basis. It is also recommended that project terms should be targeted between 30 and 60 years in order to realize lifecycle cost savings.	Section 2.2.1 page 24
10	It is recommended that the State should maintain ultimate control and/or ownership of assets involved in P3 projects.	Section 2.3.1 page 32
11	It is recommended that Value for Money (VfM) must be assessed by the Office of Transportation P3 (OTP3) in relation to all candidate projects, and that only those projects demonstrating potential to achieve a positive value through P3 delivery be pursued as P3 projects. It is further recommended that VfM be periodically reassessed through pre-development and procurement in accordance with	Section 2.3.1

	Section 4.4.3.	
12	Upfront payments generated by P3 projects, which are paid to the State by the private partner should be used only to address transportation needs, and not diverted to pay for other government costs.	Section 2.3.1
13	The long-term quality of service delivered in a P3 project must be ensured through stringent contract provisions and ongoing oversight by the OTP3.	Section 2.3.1
14	P3 projects should conform to the State's toll setting policy, rather than allowing the private sector to change toll rates without contractually stipulated limits.	Section 2.3.1
15	The State must safeguard against private partners realizing excessive returns.	Section 2.3.1
16	P3 projects should meet relevant State laws as with any other public works project.	Section 2.3.1
17	Through contractual and statutory provisions, the State must ensure that the private partner selected will be solvent and able to deliver over the long-term.	Section 2.3.1
18	The State should maintain the ability to terminate a P3 contract, or project agreement, if the private partner is not able to deliver according to the performance specifications of the contract.	Section 2.3.1
19	The State should ensure that P3 contracts clearly specify the condition the asset must be in when the project agreement expires or is terminated.	Section 2.3.1
20	It is recommended that the State keep the determination of project worthiness separate from the determination of whether to use P3 delivery.	Section 2.3.5.1 page 45
21	It is recommended that the State must protect the public interest through legislation.	Section 2.3.5.1
22	The State must de-politicize the approach to P3 development and control.	Section 2.3.5.1
23	The State must professionalize its P3 functions.	Section 2.3.5.1
24	The State must avoid requirements and limitations incompatible with private participation.	Section 2.3.5.1
25	The State must carefully weigh the potential impact of a legislative provision on	Section 2.3.5.1

	competition and the receipt of value.	
26	The State must provide flexible authority that supports the different types and scopes of P3 agreements the State wishes to pursue.	Section 2.3.5.1
27	It is recommended that the State should enable Availability Payment P3s.	Sections 2.3.5.1 and 4.3
Legislative Recommendations		**Reference**
28	It is recommended that the State should repeal its current P3 legislation. It should enact new P3 legislation to encompass public interest protections, ensuring that for every project advanced, key policy goals are upheld.	Section 4.3 page 129
29	It is recommended that the State should take a programmatic approach to P3 project delivery by authorizing the creation of a P3 oversight office within the Department of Transportation (the OTP3) that is responsible for upholding public interest concerns and facilitating projects in the best interest of the public and private sector. The Legislature should adequately fund this P3 office.	Section 4.3
30	It is recommended that the State should enact new P3 legislation to clearly authorize a full range of procurement structures and tolls, such as two-step procurements (Request for Qualifications (RFQ)/shortlisting and Request for Proposals (RFP)), and a period for dialogue with proposers.	Section 4.3
31	It is recommended that the State's current P3 statute should be replaced to remove the post-procurement discretionary action by the State Transportation Commission and other post-procurement, pre-execution processes. Such existing requirements will preclude the State from undertaking any major P3 projects.	Section 4.3
32	It is recommended that the State should enact new P3 legislation to enable the use of privately arranged or issued debt financing, and allow private partners to realize a return on equity.	Section 4.3
33	It is recommended that provisions directing toll revenues into the transportation innovative partnership account and making expenditures from toll revenues subject to appropriation should be replaced so that they do not adversely affect private sector financing of eligible projects and so that toll revenue expenditures are freed from legislative appropriation.	Section 4.3

34	It is recommended that if lawful, Washington State should enact new P3 legislation to enable the use of continuing appropriations that would allow for availability payment contracts to be advanced.	Sections 4.3 and 2.3.5.1
35	It is recommended that the State enact new P3 legislation to expand the scope of eligible transportation projects.	Section 4.3
36	It is recommended that the State enact new P3 legislation to enable conduit issuance of private activity bonds.	Section 4.3
37	It is recommended that the State institute a 4-year moratorium on unsolicited proposals, and enact new P3 legislation to improve control over unsolicited proposals after that time.	Section 4.3
38	It is recommended that if necessary, Washington State should rectify any insurmountable barrier to the use of P3s created by existing provisions concerning the State personnel system reform act.	Section 4.3
39	It is recommended that new P3 legislation should address its relationship to other State laws.	Section 4.3
Administrative Recommendations		**Reference**
40	It is anticipated that the State may wish to screen additional projects in the future; and in doing so should follow the detailed guidelines for the timing and identification of candidate projects outlined in Section 3.2.1 of this Study.	Section 3.2.1 page 76
41	It is recommended that detailed guidelines per Section 3.2.2 be followed by the OTP3 when dealing with projects that fail analysis under the screening tool.	Section 3.2.2 page 77
42	The State should make best use of its existing expertise and resources by channeling these through a single entity – the WSDOT Office of Transportation P3 (OTP3).	Section 4.4.2 page 146
43	The State should fill any gaps in its internal expertise and resources with third party support as would be required at various times – procured through the WSDOT OTP3.	Section 4.4.2
44	The State should consolidate all of its P3 approval and contracting functions	Section 4.4.2

	through the WSDOT OTP3 – while also streamlining the number and type of approvals to the greatest extent possible.	
45	The State should overcome any contradictions within current legislation.	Section 4.4.2
46	The State should uphold the public interest by ensuring that legislative oversight of P3 processes is informed, effective and clearly defined in line with the detailed administrative recommendations contained in Section 4.4.2 (and summarized within the Executive Summary) of this report.	Section 4.4.2 and Executive Summary Part VII (below)
47	Further to the discussion of Value for Money (VfM) concepts in Section 2.3.4 and framing the detailed recommendations in Section 4.4.3, it is recommended that all VfM assessment of candidate P3 projects be undertaken through the OTP3.	Section 4.4.3 page 151

Part VII: Detailed Administrative Recommendations

Findings and recommendations with regard to the State's administrative approach to P3 have been discussed with the PWG, WSDOT and other stakeholders, and provided in the context of:

- the current housing of the State's relevant resources throughout its departments, agencies and other organizational entities;
- the State's current approval mechanisms related to P3 projects, and the nature of each;
- the identification of any gaps, redundancies or conflicts in current organization and approval mechanisms, and proposed solutions;
- the State's dynamic needs across various "facets" of P3 as described in Section 4.4; and
- the legislative and policy considerations described in this report.

Findings in Relation to Resources

In reviewing the State's current resources relevant to P3, it is concluded that:

- the majority are housed within WSDOT, including those relevant to contract negotiation and support resources;
- supplemental expertise relevant to toll setting is housed within the Transportation Commission;
- expertise relevant to state finances (debt and revenue) are housed within the Office of the State Treasurer.

The State is accustomed to supplementing its internal resources with specialty service providers, consultants and contractors – and this would definitely be required if a P3 procurement were to be launched today. Study recommendations for filling these gaps are presented in E.S. Table VII.

Findings in Relation to Current P3 Administration

There are significant problems with the State's current approach to authorizing and overseeing P3 projects stemming from:

- an approach to approvals during the procurement process that discourages private sector interest due to
  - the Legislature's ability to cancel a P3 procurement that is in progress without regard to private sector costs incurred; and

  - the Transportation Commission's ability to cancel or significantly impede execution of a P3 contract after a preferred bidder has been identified through a competitive process that is bound by fixed project, financial and contractual assumptions;

- an approach to toll setting that is incompatible with standard procedures for revenue risk projects;
- contradictory P3 and tolling legislation;
- ambiguities in state agency roles, such as the role of the Office of the State Treasurer in enabling and supporting P3 projects that require state debt or that generate profits for the State; and
- dispersion of resources and decision making authority required to support the development of transportation P3 projects amongst various State entities.

General Recommendations

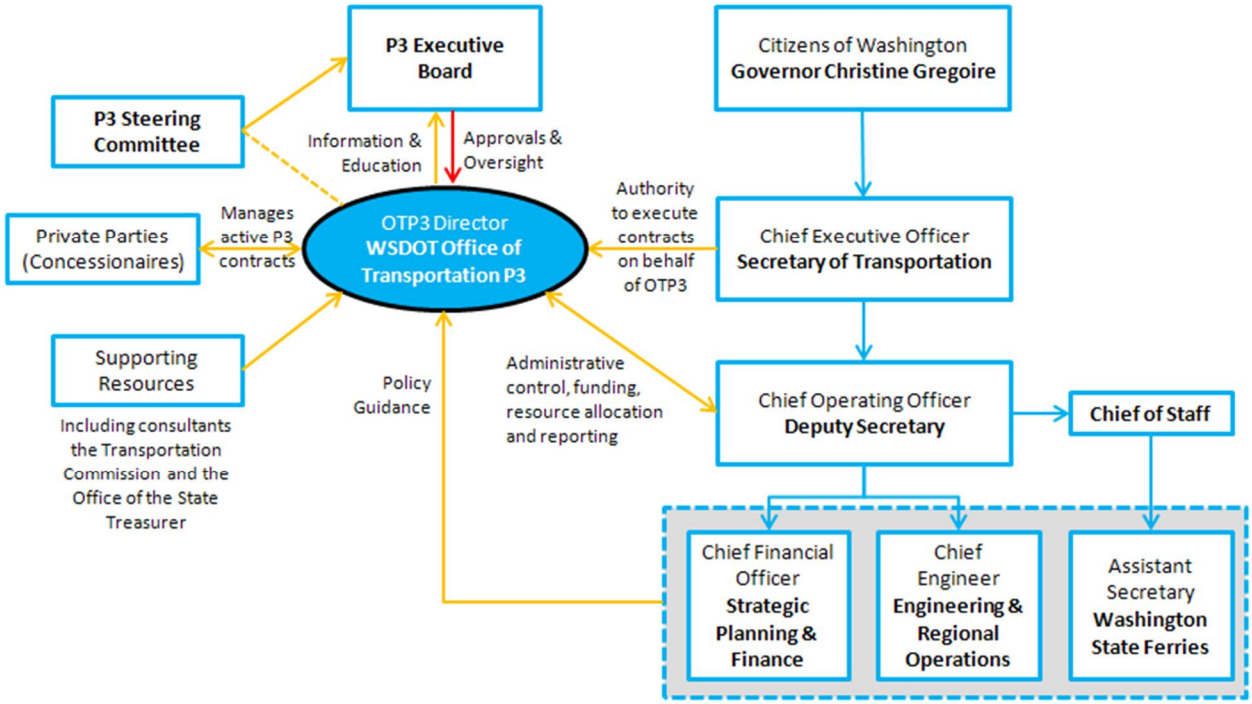
The Consultant Team's approach to facilitating the administrative recommendations outlined in E.S. Table VI has focused on redefining the OTP3, its resources, authority, reporting, and the way in which it relates to WSDOT, the State Legislature and other relevant entities (notably the Transportation Commission, Office of the State Treasurer and private parties that eventually qualify to enter into P3 contracts).

Particular focus has been given to balancing the OTP3s administrative needs (as a division within WSDOT), with its need for a direct report to the State Legislature via a P3 Executive Board appointed by the Legislature. A P3 steering committee is also recommended to provide the P3 Executive Board with independent expert opinion informing its oversight and approval roles. The proposed structure of the OTP3 and its connection to these various entities is illustrated in E.S. Figure XI.

The P3 Executive Board should be formed with the purpose of overseeing the OTP3 on behalf of the State Legislature and sole authority to:

- authorize a project delivery mandate to the OTP3 (in conjunction with WSDOT);
- authorize the OTP3 to release any P3 Project Request for Qualifications (RFQ), Request for Proposals (RFP) or draft project agreement subject to its review and approval; and
- if for a given procurement, no RFP response (bid) achieves predetermined minimum award criteria; guide and authorize the OTP3 in deciding to terminate, modify or award the project based on its revised VfM analysis.

E.S. Figure XI Recommended Administrative Structure



Based on discussion with the PWG and other stakeholders, it is recommended that the Board sit within WSDOT; and that its membership comprise:

- four (4) ex-officio (non-voting) Legislators
  - the House and Senate Transportation Committees Chairs
  - the Ranking Members of House and Senate Transportation Committees
- five (5) executive members with voting rights
  - a representative of the Governor's Office of Financial Management
  - a representative of the State Treasurer's office
  - the Chair of the Transportation Commission
  - Secretary of Transportation or his/her designee
  - An appointee of the Governor who will also serve as Chair of the Board

The Board's role in overseeing and approving actions of the OTP3 changes over the course of project development as outlined in E.S. Figure XII, which shows its various approval functions in red text in the context of P3 project development milestones overseen by the OTP3.

It is recommended that the OTP3 exercise its reporting requirements to the Board through regular summary level reports with detailed reporting on an exception basis in support of specific approval requirements. The Board should also have the right to commission audits of the OTP3 and its contracts including toll collection audits to be undertaken by the Transportation Commission and financial audits by the Office of the State Treasurer.

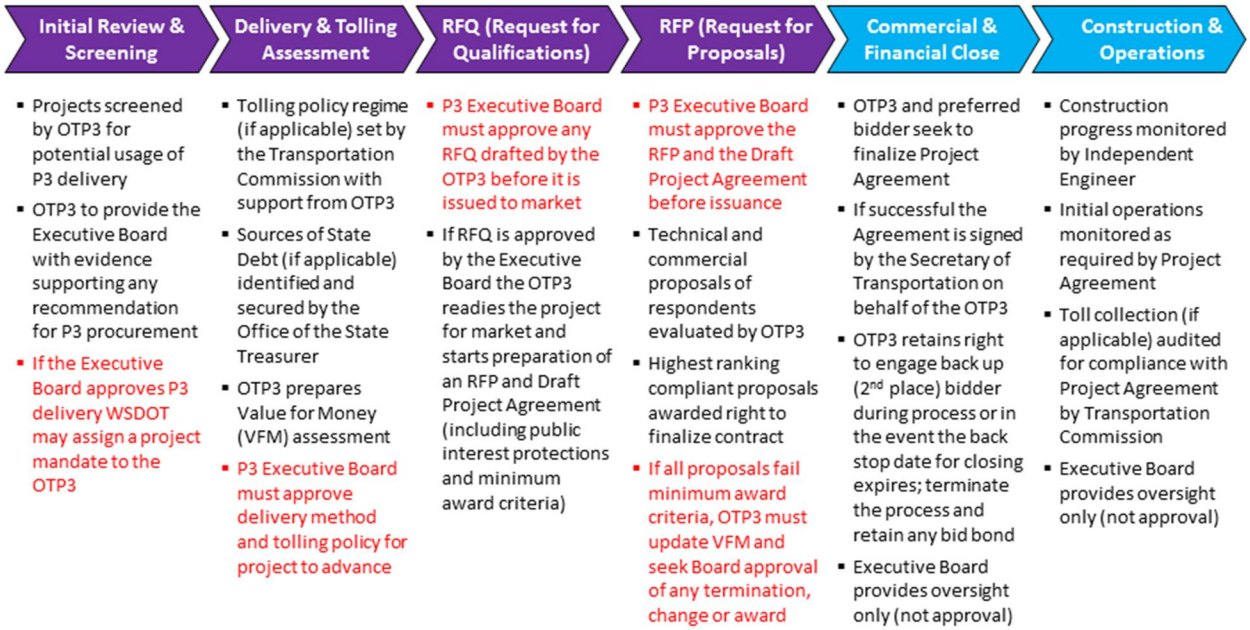
An intended consequence of this reporting process is that the OTP3 will have ample opportunity to inform the State Legislature of its program and project activities (via the Board) on a regular basis, so that this might benefit the Legislature's approach to budget approvals.

For P3 projects in which the private sector is asked to assume revenue risk – or the risk that project revenues will be sufficient to pay for project costs – toll rates should be established through a "tolling regime," which is a framework that governs the conditions under which tolls are set and adjusted over time. The Consultant Team recommends that the Transportation Commission, which currently has toll setting authority in the State, develop the tolling regime for each project during the pre-procurement and project screening process, in consultation with the OTP3 and state, regional, and local stakeholders.

This framework would replace the current discretionary process used to set toll rates in Washington, which presents a strong barrier to revenue risk P3s. The conditions under which tolls are set and adjusted in this framework will vary based on the specifics of the project, but they should always include strong public interest protections such as revenue sharing agreements with the public sector, limitations on excessive private sector returns, and "windfall" clauses that restrict or share any gains from project refinancing. At the same time, this framework will provide a level of revenue stability and certainty for the private partner, which can allow it take this risk from the public sector. A detailed discussion on tolling regimes is provided in Section 4.4.4.

A detailed account of the proposed roles and responsibilities of the other entities and individuals shown in E.S. Figure XI is provided in Section 4.4 of this report. A summary of the proposed involvement of internal and external resources over time is provided in E.S. Table VII.

E.S. Figure XII Authority of the P3 Executive Board and Other Entities



E.S. Table VII Internal and External Resource Requirements by Project Phase

Entity	Day-to-day Role (not project specific)	Screening and Pre-Procurement	Procurement	Construction	Operations
WSDOT	- P3 Office	- P3 Office - Project Staff	- P3 Office - Project Staff	- P3 Office - Project Staff	- P3 Office
Transportation Commission	- None	- Contribute to tolling concept	- Contribute to setting toll formula	- None	- Potential Toll Audit Role
Legislature	- Oversight via P3 Exec Board - Approval via WSDOT budget	- Approval via P3 Exec Board - Approval via WSDOT budget	- Approval via P3 Exec Board - Approval via WSDOT budget	- Oversight via P3 Exec Board	- Oversight via P3 Exec Board
Office of the State Treasurer	- None	- Identify & Secure State Debt	- Issue State Debt	- Oversight via P3 Exec Board	- Manages State Revenue - Audit Role
Financial Advisor	- Optional	- Recommended	- Required	- Recommended	- Recommended
Legal Advisor	- Optional	- Recommended	- Required	- Recommended	- Recommended
Technical Advisor	- Optional	- Recommended	- Required	- Required	- Required

1.0 Introduction

This chapter summarizes the Study as commissioned by Washington's Joint Transportation Committee, culminating in the production of this final report.

1.1 Study Objective

The Washington State Legislature's Joint Transportation Committee commissioned this Study to evaluate the potential of public-private partnerships (P3s) to deliver transportation projects throughout the State.

Washington State is not new to exploring P3 projects. In the early 1990's, the State passed legislation to enable the use of this novel form of project delivery, becoming one the first US States to do so. The JTC's goal in undertaking this Study has been to learn from the past and deliver a clearer picture of P3 issues to legislators, the Washington State Department of Transportation, and the public. Specifically, this report details if, how, and under what conditions public-private partnerships could aid in the delivery and operation of transportation infrastructure projects while ensuring that protection of the public's interests is paramount at all times. Therefore a key objective of this Study is to foster understanding of public-private partnerships in order to inform ensuing debate as to whether (and if so how) they can offer value to the State.

1.2 The Public Interest

Through this Study, the Joint Transportation Committee (JTC), with assistance and facilitation from the Consultant Team, has explored whether P3s are appropriate for Washington State, with the goal of generating jobs, economic development, safeguarding health and safety through improved infrastructure, and addressing the many concerns of stakeholders, including taxpayers, facility users, community and government leaders, labor representatives, and environmental advocates. The foremost concern of this Study has been to identify the critical policy goals that must always be protected if Washington State advances a P3 project.

In conjunction with the development of policy goals, a transparent framework must be established to ensure that projects are screened and available procurement options are appropriately assessed. Consequently, a Value for Money (VfM) analysis is being utilized to make certain that P3 delivery is advanced only in the event it can demonstrate greater value to the taxpaying public than a traditional, publicly-financed approach. The creation of a clear policy framework will protect the public interest while encouraging greater private sector participation and competition.

1.3 Rationale: Why Consider P3 Now?

While Washington State has recently made significant investments in transportation—including the funding of more than 420 projects through new revenue sources—additional investment is needed. The Washington Transportation Plan estimates that at least $175 billion to $200 billion is required to meet state-wide transportation needs over the next 20 years,[13] including a backlog of critical projects and the mounting need to preserve and steward key parts of the transportation system.

In the face of the global economic recession and a volatile oil market, the availability of public funding for these projects has diminished. Revenues from fuel taxes, the primary source of transportation funding in Washington State, have decreased due to reductions in vehicle miles traveled and increased vehicle fuel efficiency. Increasing budgetary pressures on the State will constrain its ability to issue public debt for transportation projects, and constraints on federal spending may limit federal transportation funds in the years to come. In addition, the State's ability to issue general obligation debt is diminishing as it grows closer to its constitutional debt limit. According to the Washington State Treasurer's Office, currently Washington State is viewed as a "high debt" state by credit rating agencies with a debt burden among the top 10 states in the nation as measured by key financial metrics.[14]

The convergence of these issues presents the need to identify new ways by which the State finances and delivers infrastructure projects. This is an economic and a public interest imperative. Infrastructure projects create jobs, generate economic development, and improve the State's long-term competitiveness by making the State a more attractive place to live, conduct business and visit.

Public-private partnerships are a tool that states and nations are utilizing to bring forth new sources of capital, accelerate the delivery of projects, and increase performance over the long-term. Virginia, for instance, has delivered over $9 billion in P3 transportation projects since its public-private partnerships law was passed in 1995 and has two more projects in the latter stages of procurement. In 2009, Florida approved two major transportation public-private partnerships totaling nearly $3 billion, including the expansion of I-595 and the development of the Port of Miami Tunnel. Texas has delivered $6.2 billion in P3 projects to date, and an additional $4 billion in projects are expected to be

[13] Washington Transportation Plan 2030, December 2010.

[14] State of Washington Debt Affordability Study, January 31, 2011.

procured in the next few years. Many other states are actively considering P3 as a delivery option for major projects.

While P3s can be a useful tool in the State's toolbox, they are not suitable for all infrastructure projects; rather, they are a tool for bringing innovation, risk transfer, and incremental capital and manpower to bear on projects that in the right circumstances can provide greater Value for Money to the State. Common project characteristics that warrant exploration of a P3 delivery approach include:

- technical complexity;
- part of a capital plan;
- need for faster project delivery;
- potential for cost savings;
- lack of available public funding and/or financing; and
- minimum capital size of approximately $200 million.

1.4 Study Scope and Process

The Consultant Team developed a number of deliverables in the course of the Study, including:

- public presentations to the Policy Workgroup and JTC;
- development of a Project Screening Tool and Comparative Financial Model for use by the State during and after the Study;
- application of these tools to assess five projects defined by the State;
- based on discussion with the PWG, WSDOT, and other stakeholders, the recommendation of policy, legislative, administrative and organizational goals commensurate with the State's preferences, that it may wish to pursue in the future; and, at all times
- facilitating dialogue and education in relation to the theory and practice of P3 and other delivery methods.

1.4.1 Scope and Deliverables

Table 1.1 illustrates the key deliverables that have been developed over the course of the Study in conjunction with the Staff Workgroup (SWG), Policy Workgroup (PWG) and Washington State Department of Transportation (WSDOT) project managers

Table 1.1 Development of Study Deliverables

	Educational Process	Screening Tool		Financial Model			Report
Date (2011)	Presentations and Public Meetings	Develop Tool	Assess Projects	Develop Inputs	Develop Models	Run Model Scenarios	Draft and Final
July	- July 12 Staff Workgroup kickoff meeting - July 13 presentation to JTC						
August	- August 2-3 2-day educational workshop with Policy Workgroup						
September	- Sep 15 SWG meeting - Sep 29 PWG meeting and table top dry run						
October	- Oct 13 SWG meeting - Oct 24 Table Top exercise with PWG						
November	- Nov 9 SWG Meeting - Draft Report due Nov 28						
December	- Dec 6 PWG meeting and presentation of findings - Dec 7 Final presentation to JTC						
January	- Presentation of findings to House and Senate						

Table 1.1 also distinguishes between the development and usage phases of the Screening Tool and Comparative Financial Model, showing where overlaps, meetings and presentations have allowed the Consultant Team to calibrate the tools and take feedback from Study participants into account.

1.4.2 Study Participants and Structure

The Study is being undertaken by a Consultant Team under the direction of the Joint Transportation Committee (JTC) and its delegates. The Consultant Team is led by AECOM P3 Advisory, with support from KPMG Corporate Finance LLC ("KPMG") as financial advisor and Nossaman, LLP. as legal advisor. The JTC has appointed two groups to oversee and provide feedback to the Consultant Team: a Policy Workgroup (PWG) to guide the Study and represent the State's position on key issues; and a Staff Workgroup (SWG) tasked with providing technical and administrative support throughout the Study. The tools and recommendations of this Study have been developed in close coordination with the PWG and SWG. The members of the PWG and SWG are outlined in Table 1.2.

1.4.3 Use of This Report

This Final Report is intended to serve a number of purposes and to provide: a record of the educational process and discussions undertaken during the course of the Study; a reference for the State and other stakeholders in debating the application of P3 in Washington in the future; a detailed account of the methodology the Consultant Team, PWG and SWG employed in developing the screening process including its Screening Tool and Comparative Financial Model, and in calibrating these to meet the needs of the State; explanation of the methodology used to run the five candidate projects through the screening process, including the development of relevant input assumptions and findings; and strategic recommendations to the State of Washington as to why, when and how it should proceed towards the implementation of a P3 program for State Transportation Projects.

The financial analyses produced in the course of this Study, while produced with the best data available from WSDOT and the Consultant Team, are educational in nature and not intended to be used for investment purposes. While these analyses provide guideposts for legislators to consider as they evaluate whether to pursue P3 development of any of these projects, considerable additional evaluation and analysis will be required to inform future procurement decisions.

While significant effort has been invested in developing this report in a user friendly format, the nature of its content inherently requires the use of technical terms and concepts. For ease of

reference this report contains a glossary of commonly used terms is included under Appendix A: Glossary of Technical Terms.

Table 1.2 Members of the Policy and Staff Workgroups

Members of the Policy Workgroup

Name	Organization
House Members	
Rep. Mike Armstrong	JTC Executive Committee
Rep. Judy Clibborn	JTC Co-Chair
Rep. Chris Reykdal	House Transportation Committee
Rep. Ann Rivers	House Transportation Committee
Rep. Cindy Ryu	House Transportation Committee
Rep. Mark Hargrove	House Transportation Committee
Rep. Hans Zeiger	House Transportation Committee
Rep. Katrina Asay	House Transportation Committee
Senate Members	
Sen. Joe Fain	Senate Transportation Committee
Sen. Mary Margaret Haugen	JTC Co-Chair
Sen. Curtis King	JTC Executive Committee
Sen. Scott White	Senate Transportation Committee
Sen. Dan Swecker	Senate Transportation Committee
Other Members	
Wolfgang Opitz	Assistant Treasurer
Paula Hammond	Secretary of Transportation
Dick Ford	Transportation Commission Chair
Dave Myers	Executive Secretary
Terry Tilton	Washington State Building Trades
Bob Adams	VP and Region Manager
	Guy F. Atkinson Construction

Members of the Staff Workgroup

Name	Organization/Title
JTC Staff	
Mary Fleckenstein	JTC, Project Manager
Gene Baxstrom	JTC
Legislative Staff	
Beth Redfield	House Transportation Committee
Kelly Simpson	Senate Transportation Committee
Kim Johnson	Senate Transportation Committee
David Ward	Senate Transportation Committee
Mark Matteson	House Transportation Committee
OFM and Governor's Staff	
Teresa Berntsen	Governor's Executive Policy Office
Paul Ingiosi	Office of Financial Management
Robin Rettew	Office of Financial Management
State Treasurer's Staff	
Ellen Evans	Deputy Treasurer
Washington State Department of Transportation Staff	
Amy Arnis	Chief Financial Officer
Jeff Doyle	Director, P3 Office
Rick Smith	Capital Program
Washington State Transportation Commission Staff	
Paul Parker	Senior Policy Analyst
Noah Crocker	Senior Financial Analyst
Caucus Staff	
Jackson Maynard	Senate Republicans
Lyset Cadena	Senate Democrats
Samantha Gatto	House Republicans
Andrew Dziedzic	House Democrats

2.0 Public Private Partnership Fundamentals

A key objective of this Study is to foster understanding of public-private partnerships in order to inform the ensuing debate as to whether, and if so, how they can offer value to the State. The "building blocks" of this education are complex, combining elements of public interest, politics, finance, law, engineering, project delivery and government.

2.1 Overview of Public-Private Partnerships

While the concept of public-private partnerships (P3s) is broadly applied, they are loosely defined as ***a competitively bid performance-based contract between the public sector (any level of government) and the private sector (usually a consortium of private sector companies working together) to arrange financing, delivery and typically long term operation and maintenance (O&M) of public infrastructure for citizens***. The performance contract, also known as a project agreement or concession agreement, provides a mechanism for sharing risk and reward between the public and private sector, enabling each to do what it does well.

In modern US history, the "traditional" means of delivering infrastructure projects has been using a design-bid-build (DBB) model, under which the public sector, through an administering agency, stewards the project, defines contract obligations at an early stage, procures each phase of approvals, design and construction separately through discrete contracts, and uses public resources to make monthly payments to contactors as the contract is executed. Subsequent O&M of the infrastructure is typically managed and funded by the agency and may or may not be undertaken directly by agency staff. In this model, most project risks are borne by the public sector, including the need for upfront capital to pay for the project and budgeting for ongoing operations and maintenance.

While P3 structures vary, they often include the integration of multiple project phases into a single contract; the use of performance-based contracts and payment incentives; and the use of private debt and equity finance. In P3 procurement, for instance, the designer, contractor, long-term operator, and financing entity (typically an infrastructure fund or developer) all work in alignment to determine the most efficient means of risk transfer. Since the risks are shared among all the parties in the team, the incentives of both public and private partners are aligned to motivate on-time and on or under budget delivery. Through this risk transfer, firms have the ability to conduct value engineering and bring to bear design and construction innovations that might not be possible through a traditional means of delivery.

2.1.1 History of P3s

The first modern public-private partnerships were implemented in the 1990s as a result of a variety of challenges, including certain inefficiencies in public procurements with respect to managing time and cost overruns and public debt limitations, beginning with pilot applications in the United Kingdom and Australia. In 1992, the British Government introduced the Private Finance Initiative (PFI) as a means

to formalize P3s with an established programmatic framework, a step that was followed by Canada, Australia, and many other nations in the European Union. To date, more than 1,400 P3 transactions have been approved in the European Union, representing an estimated capital value of approximately $350 billion.[15] It is worth noting that most countries outside of the US do not have an equivalent tax-exempt municipal debt market, a factor that has encouraged the development of P3s and other creative financing tools.

2.1.2 P3s in the United States

Most modern P3s in the United States have been in transportation, with the first major projects being the SR 91 Express Lanes (California) and the Dulles Greenway Toll Road (Virginia) in 1993. A majority of US projects have involved the creation of new or expanded highway lanes or transit systems, while a smaller number of projects have involved asset leases of existing roadways.

A summary of linear transportation P3 projects in operation or currently under construction in the US is provided in Table 2.1.

As seen above, most P3 projects have been successful, although five have "failed" generally resulting in insolvency of the original project companies (SPVs); loss of investment for the private parties that owned the SPVs; and a reorganization of project structures and finances by either the lenders to the SPV or the government in accordance with the terms and protections of each project agreement.

It is noted that of these "failed" projects, all involved revenue risk where the projections of the original investors failed to materialize, and all are fully operational today by new owners. In one of these examples, the SR 125 in California, the project company ultimately filed for bankruptcy in 2010, resulting in a settlement with creditors, a write-off from the equity provider, and the State of California retaining ownership. Despite these developments, the highway continues to operate as usual, with no impact felt by the end users. This example demonstrates that long-term revenue projections are very important to project feasibility and must be properly vetted. This also demonstrates that properly-constructed P3 agreement will insulate government from liability - in the case of SR 125, it was the project's creditors and equity provider who were ultimately liable for the project default.

[15] European Investment Bank, July 2010.

Table 2.1 Historic and Current US P3 Transportation Projects

Status	NTP	Project Name	Public Sponsor	Delivery Method	Revenue Source	Project Cost (M $US)	Developer ($ Capital / Design-Builder)	TIFIA	Failed*
In Operation	Jul 1993	91 Express Lanes, CA	Caltrans	35-year DBFOM	Tolls	$130	Level 3/Cofiroute/Granite (sold to gov't. 1/03)		Y
	Sep 1993	Dulles Greenway, VA	Virginia DOT	43-year DBFO	Tolls	$350	TRIP II ($150m/Brown & Root)		
	May 1999	Foley Beach Express, AL	City of Foley, AL	DBFO/BOO	Tolls	$44	Baldwin County Bridge Co.		
	Jun 1999	Camino Colombia Bypass, TX	Texas DOT	BOO	Tolls	$85	Landowners (Granite) (TXDOT purchased 1/04) Sold to TxDOT in 2004		Y
	Oct 2000	Las Vegas Monorail, NV	Clark County, NV	50-year DBOM	Farebox / Ads	$650	Las Vegas hotels ($331 /Bombardier–Granite)		Y
	May 2003	SR 125 So. Bay Express, CA	Caltrans	35-year DBFOM	Tolls	$773	PB / Macquarie ($653m/Fluor_Washington)	Y	Y
	Jan 2005	Chicago Skyway, IL	City of Chicago	99-year lease	Tolls	$1,830	Cintra Concessions/Macquarie		
	Jun 2006	Indiana Toll Road, IN	Indiana Finance Auth.	75-year lease	Tolls	$3,850	Cintra Concessions / Macquarie		
	Jun 2006	Pocahontas Parkway Lease, VA	Virginia DOT	99-year lease	Tolls	$611	Transurban ($45m / Fluor–Washington)	Y	Y
	May 2007	Northwest Parkway Lease, CO	Northwest Parkway Auth	99-year lease	Tolls	$603	BRISA		
In Construction	June 2008	I-495 HOT Lanes, V A	Virginia DOT	85-year DBFOM	Tolls	$1,998	Transurban / Fluor ($1.4bn/Fluor–Lane)	Y	
	Mar 2008	SH 130 segments 5-6, TX	Texas DOT	50-year DBFOM	Tolls	$1,358	Cintra/Zachry ($968m/Ferrovial–Zachry)	Y	
	Feb 2009	I-595 Managed Lanes, FL	Florida DOT	35-year DBFOM	Availability Payments	$1,814	ACS Infrast. ($1.2bn/Dragados–EarthTech)	Y	
	Oct 2009	Port of Miami Tunnel, FL	Florida DOT	35-year DBFOM	Availability Payments	$914	Meridiam ($607m/Bouygues–Jacobs)	Y	
	Dec 2009	North Tarrant Express, TX	Texas DOT	52-year DBFOM	Tolls	$2,047	Cintra/Meridiam ($1.46bn/Ferrovial)	Y	
	Jun 2010	I-635 LBJ Managed Lanes, TX	Texas DOT	52-year DBFOM	Tolls	$2,800	Cintra/Meridiam ($2.1bn/Ferrovial Agroman)	Y	
	Aug 2010	Denver Eagle P3 Rail, CO	Denver RTD	34-year DBFOM	Availability Payments	$2,100	Fluor/Laing/Uberior ($1.27bn/Fluor–BB)		
	Jan 2011	Jordan Bridge, VA	Chesapeake, VA	BOO, Owned in Perp.	Tolls	$100	Figg/Amer. Infra. MLP/Lane ($100m/Lane)		
	Sep 2011	PR-22/PR-5 Lease, Puerto Rico	Gov't Development Bank	40-year lease	Tolls	$1,436	Abertis/Goldman Sachs Infra Partners II		

Source: PWFinancing October 2011, InfraAmericas, InfraDeals, FHWA, TollRoadNews

Notes: * Failed projects are those where the concession company has filed for bankruptcy; NTP = Notice to Proceed; BOO = Build Own Operate delivery; TIFIA column indicates projects where financing includes USDOT TIFIA loan; lease (bownfield) "project costs" refer to upfront payments received by the Public Sponsor in exchange for leasing rights of the asset; Owned in Perp. = Owned in Perpetuity.

This example highlights the fact that while P3 projects can "fail" for their private partners, they rarely if ever fail to deliver benefits to the public. In the case of the SR 125, while the project failed financially, this liability was restricted to losses for its investors and lenders. From the perspective of the public, the project was successful in constructing a publicly-owned highway with limited public funds that is still in service today.

2.1.2.1 Investment Landscape

A solid investor market exists for P3 projects in the United States, as evidenced by the number and diversity of equity investors and private lenders participating in active procurement processes and projects. Table 2.2 lists companies that are currently equity sponsors (full or part owner "concessionaires") to major transportation P3 projects in the US, along with a summary of their P3 portfolios elsewhere. It is noteworthy that Table 2.2 only shows those companies that have succeeded in reaching financial close in the US, and that at least 15 other major international and domestic infrastructure developers have bid for one or more P3 projects, but unsuccessfully so far.

Table 2.2 Active Concessionaires (P3 Private Partners) in the US

Company	Home Country	Major Transportation Concessions Under Construction or Operations*				
		US	Canada	Home Country	All Other	Total
Ferrovial / Cintra	Spain	5	1	8	21	35
Macquarie Group	Australia	3	3	2	26	34
Meridiam	France	3	0	0	5	8
Transurban	Australia	2	0	7	0	9
Fluor	US	2	1	-	5	8
Morgan Stanley	US	2	1	-	2	5
ACS Group / Hochtief	Spain	1	4	24	43	72
Abertis	Spain	1	1	16	24	42
John Laing	UK	1	0	8	10	19
Bouygues	France	1	0	5	12	18
BRISA	Portugal	1	0	6	8	15
Goldman Sachs	US	1	0	-	3	4

Source: PWFinancing October 2011, InfraDeals

Notes: * ranked by number of road, bridge, tunnel, rail, port, airport concessions over $50m investment value put under construction or operation as of Oct. 1, 2011 (excludes design-build).

Most P3 projects undertaken in the US to date or currently in development also include debt finance, either through direct loans from banks or the issuance of bonds. While recent market conditions have generally reduced the amount of debt banks are willing to lend to individual projects and also the tenure of these loans, the response has been a move towards “club deals”, where numerous banks team together in order to reach a threshold investment level. Most recently a club of ten lenders supported Abertis and Goldman Sachs in reaching financial close on the PR22 P3 project in Puerto Rico in September 2011.

2.1.2.2 US P3 Legislation

Currently, over half of the US States, in addition to Puerto Rico and the District of Columbia, have legislation in place allowing for various forms of P3s. The Federal Highway Administration (FHWA) Office of Innovative Project Delivery both tracks and provides guidance to states in relation to P3 legislation and procurement best practices, as can be seen at http://www.fhwa.dot.gov/ipd/. These laws have evolved over time in response to lessons learned, and many states vary on the specific components of their legislation. These components include possible procurement methods, the potential to accept unsolicited proposals, the ability to use private sector funding, the setting of tolls/user fees, the potential uses of project revenue, and geographic or numerical limits to P3 projects.

Two states that have enacted particularly successful legislation include Virginia and Florida. Virginia’s P3 legislation, which has delivered more than $9 billion in transportation projects since 1995, establishes an Office of Transportation Public-Private Partnerships that coordinates P3s across all five state transportation agencies. Florida’s P3 legislation provides a stable framework for private sector investment that guarantees protection of the public interest, allowing the state to deliver more than $3 billion in transportation projects at a significant savings to the public.

2.1.2.3 Lessons Learned

Within the US, each state has taken a unique approach towards P3. This is reflected in legislation as outlined above, and also in the variety of their successes, setbacks, and the way in which they have modified their behavior over time based on these outcomes. This report includes an ongoing account of “lessons learned” in relation to legislation, administration, policy and projects that the State of Washington can benefit from. A specific account of lessons learned from various recent projects is also provided as Appendix B: Supporting Material Section 6.1.

In summary, best practices can include the development of a policy framework before advancing a P3 process, the creation of comprehensive P3 legislation that both protects the public interest and will attract private sector interest, and the development of a programmatic approach to P3 through the creation of a unique entity for project development, screening, and procurement.

2.1.3 P3s in Washington State

Since the early 1990s, Washington State has experimented with public-private partnerships to enhance its transportation system. In 1993, the Legislature passed the Public-Private Initiatives in Transportation (PPI) Act to create a legal framework for transportation P3s. In 1994, WSDOT issued a Request for Proposals inviting private firms to propose potential projects. The State did not identify specific projects it would like to consider, but instead allowed the private sector to propose specific projects, so long as the proposed projects were capable of being funded through private means. Fourteen project proposals were received under this effort, and six were selected and approved for further consideration.

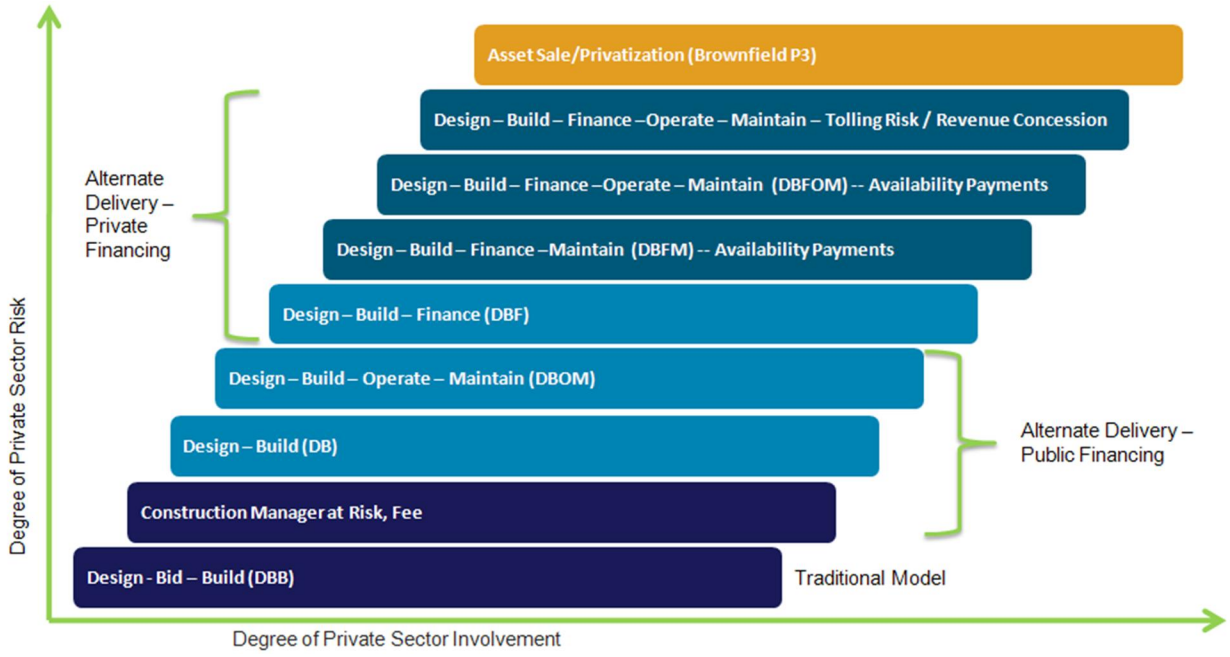
Over the next several years, five of these six projects were dropped from consideration due to funding concerns, legislative opposition, or lack of public support. Many of the projects were eliminated from further consideration by the Legislature through direct amendments to the PPI Act, or through restrictions contained in transportation budget bills. For instance, the PPI Act was amended once to require legislative funding for proposed P3 projects – a precondition that could not be met, resulting in certain projects being dropped from consideration. Another legislative amendment designed to further eliminate projects was a requirement that a public advisory vote be held on projects challenged by petition. By 1997, only one project appeared capable of development and was still under active consideration. In 1997, a private consortium led by Bechtel Infrastructure and Kiewit Pacific was selected to construct and operate the last remaining project, a new SR 16/Tacoma Narrows Bridge, through a P3. This project was approved by a public advisory vote, and a funding plan for construction was approved by the Legislature that included public appropriations and presumably, tolls on the existing bridge in addition to the proposed span. The project was unable to proceed as a P3, however, because the tolling provision was invalidated by the State Supreme Court, which ruled that WSDOT did not have statutory authority to impose tolls on the existing crossing. Without legal authority to toll the parallel existing bridge, the plan of finance was not bankable. For the next two years, legislation was proposed to change the law that prohibited tolling the existing bridge. However, no other changes were proposed to the original contract that had been signed back in 1997. Most notably, the interest rates that would be paid on construction financing under the original 1997

contract were well-above the rates available to the State in 2001 and 2002. The difference between the original 1997 financing that would have been issued by the P3 developer, versus what the State could finance itself in 2002, proved to be decisive. Finally, in 2002, the P3 developer and the Legislature agreed to amend the law to allow tolling of the existing (parallel) bridge span, so long as state-issued bonds were used as the source for construction financing for the bridge. The State also assumed operations and maintenance responsibilities from the private consortium under the revised 2002 agreement.

In 2005, Washington State phased out the PPI Act and replaced it with a new P3 law known as the Transportation Innovative Partnerships Act (TIPP). This law was intended to build upon the lessons learned from the PPI Act, including studies by the Legislature that identified barriers to P3s. This new law made transportation projects of all modes eligible for development as a P3, and it is administered by WSDOT and overseen by the Washington State Transportation Commission. However, it carried forward the requirement from the 2002 Tacoma Narrows bridge legislation that required state-issued debt for all P3 projects. As a result, no P3 projects for toll facilities have been undertaken since the TIPP law's enactment. Only small, non-tolled projects have advanced under the current program.

2.1.4 Contract Structures: P3 versus Traditional

Figure 2.1 Risk Apportionment by Project Delivery Option



This section provides an overview of how P3s differ from traditional delivery in terms of the contractual structures that bind each approach; or more accurately that have evolved to facilitate the risk sharing, commercial and financial needs of each approach in a legal framework.

2.1.4.1 Design-Bid-Build (DBB)

In the US, DBB is typically referred to as “Traditional Delivery” and generally involves a public agency contracting with separate entities for each stage of project development, including planning, design, construction, and operations. Under this model, many key risks are held by the public agency – including schedule, budget, usage (revenue) and financing risks. Separate contractors are hired to perform specific work on particular phases of the project. Contractors are often selected based on the lowest reasonable bid using 100% design documents, and change orders are used to compensate the contractor for changes from the initial design. The public agency retains the obligation to fund the project, as well as to provide long-term operations and maintenance services.

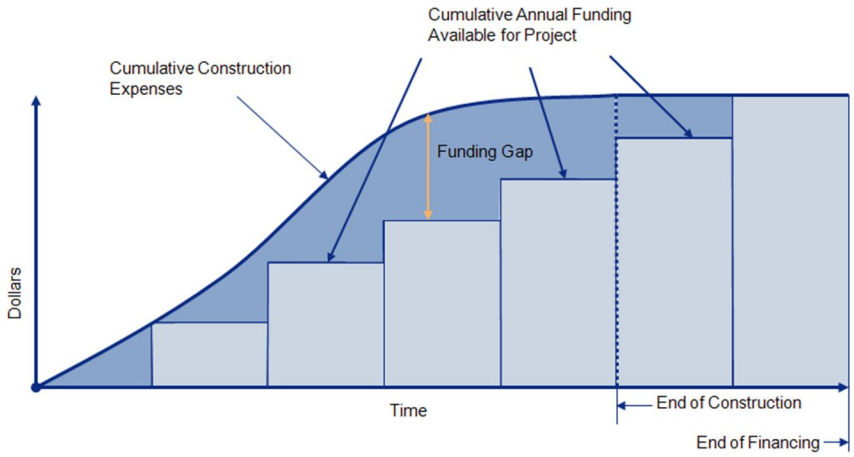
2.1.4.2 Design-Build (DB)

This model transfers a majority of the design and construction risk to the private sector by selecting one private entity to perform both functions, which can be a single firm or a joint venture company. Instead of relying exclusively on the lowest bid, design-build selections are usually based on the “best value” bid using preliminary design documents. Because payments to the contractor are based on outputs, the contractor is encouraged to innovate in ways that can limit delays and cost overruns. With a single point of contact among contractors, the oversight responsibility of the public partner is reduced, and construction and design disputes will often remain within the design-build entity. The public agency retains the obligation to fund the project, along with O&M. Based on WSDOT’s DB experience, this is also considered to be a form of Traditional Delivery in Washington.

2.1.4.3 Design-Build-Finance (DBF)

This model combines the innovations of design-build with some amount of private sector capital (debt or equity). Often, this model will combine private sector funds with existing public sources, allowing the private capital to fill any gaps in funding. This arrangement allows projects to be built faster, reduces the potential for funding gaps to delay construction and raise project costs, and provides security against reallocation risk for public funds. In addition, the DBF model can be used with smaller projects, which expands the pool of eligible P3 contractors. Federal tools such as TIFIA loan guarantees can reduce the cost of private financing and facilitate the DBF model. The ability of the DBF model to fill public funding gaps is illustrated in Figure 2.2.

Figure 2.2 The DBF Model and Public Funding Gaps



The DBF approach can be used to fill the gap between a preferred construction schedule and the available funds schedule

2.1.4.4 Design-Build-Operate-Maintain (DBOM)

This model is similar to the design-build approach but also includes a short to medium term operational and maintenance responsibility for the private partner. This structure promotes additional innovations during the construction and design process, as the private partner is motivated to produce a high quality asset that performs well over the initial life of the contract and has manageable maintenance costs. The public agency retains the obligation to fund the project. This model is particularly well-suited for assets with specialized operational or maintenance requirements.

2.1.4.5 Design-Build-Finance-Maintain (DBFM)

This model is similar to the DBF approach but also includes a short to medium term operational responsibility for the private partner. Unlike DBOM, however, the public sector retains the responsibility for operations. This model is well suited to expansions of public transportation systems, in which an existing transportation authority would be better suited to operate the service than a new private operator. This model can also apply to buildings such as highway maintenance facilities, in which the private sector would construct and maintain a garage or storage depot for DOT equipment.

2.1.4.6 Design-Build-Finance-Operate-Maintain (DBFOM) – Availability Payments

This model is similar to the DBOM approach, with the private partner also responsible for financing. Similar to the DBF model, the use of private financing can allow the project to be built faster. Under this model, the public sector is still responsible for the revenue stream to support the private financing, which can come from user fees or tolls (collected first by the public agency) or public sources (such

as annual appropriations or dedicated tax revenues). These revenues are then paid in annual installments (known as “availability payments”) to the private partner, on the condition that the transportation facility is “available” and meets agreed-upon performance specifications. The private partner then uses these payments to pay operating and maintenance costs, cover debt service, and provide returns to equity investors. This model may be more cost effective than a revenue concession (below) when there is considerable uncertainty over traffic and revenue forecasts.

2.1.4.7 Design-Build-Finance-Operate-Maintain (DBFOM) – Revenue Concession

In this model, the private partner assumes revenue risk, or the risk that project revenues will be sufficient to cover project costs. Under a revenue concession model, the private partner develops the asset – which is typically a toll road, managed lanes, or a transit facility – and enters into a long-term lease with the public sector that allows it to collect all project revenues over the contract term. In this scenario, the private partner takes responsibility for any new capacity improvements to the asset and manages the long-term operations and maintenance according to clear performance specifications in the project agreement. In addition, in some cases revenue concession models can be accompanied with an upfront payment to the public sector.

The ability to set revenue rates such as user fees (tolls) are generally governed by the agreement between the public and private partners, with the agreement generally stipulating a set of conditions upon which rates are to be set and adjusted (for example, setting initial rates and linking maximum increases to inflation). These agreements can also allow for revenue sharing agreements between the public and private sectors, both during normal operations and when revenues exceed initial expectations. Contract provisions will specify operating and performance standards to which the asset must be maintained, ensuring that the asset maintains its quality through the life of the lease and is returned to the public sector in good condition with a specified remaining useful life. In a revenue concession, ownership of the asset remains with the public sector.

2.1.4.8 Monetization

An asset monetization transfers substantial risk and control to the private partner. A monetization normally occurs in relation to an existing tolled asset, and it can involve a long-term lease of the asset or an outright sale to the private partner. Assets are typically monetized in order to reduce the burden of long term operating, maintenance and major capital maintenance costs on the State, in addition to the opportunity to generate proceeds from a competitive procurement process.

2.1.4.9 Build-Own-Operate (BOO)

This model represents the greatest transfer of risk and responsibilities to the private partner. In this instance, the private partner develops and operates a new asset on land that it owns. The private owner pays taxes on the land and is broadly governed by the laws and regulations affecting that type of asset, such as design standards and building codes.

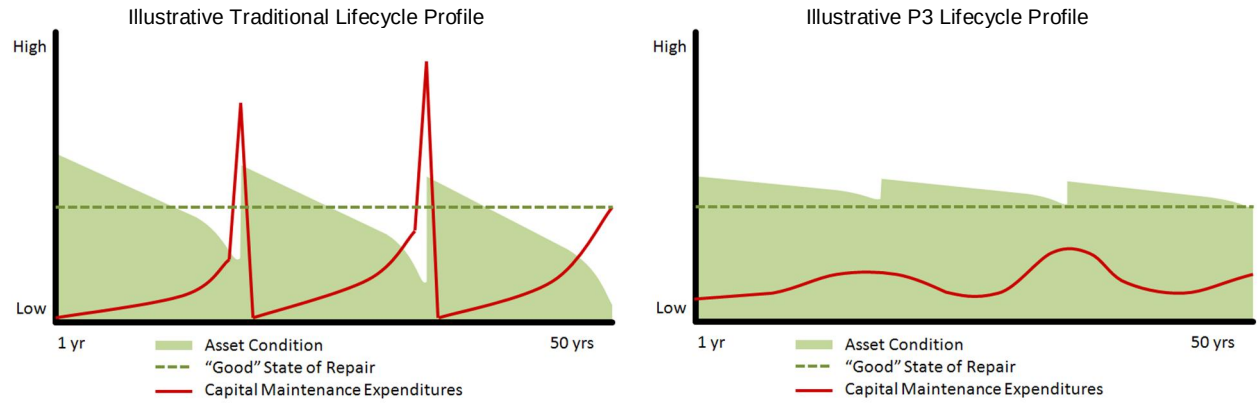
2.1.5 The Lifecycle Advantages of P3 Procurement

Since a P3 contract is structured to include design, construction, and typically long-term operations and maintenance, it can significantly decrease project costs over the life of the associated infrastructure. In a traditional procurement, the public sector is focused on procuring the asset with the lowest amount of upfront capital expenditure, sometimes without a focus on future capital expenditure requirements. With P3s, the procurement is structured to focus on the best value to the public sector over the life of the asset. Consequently, a P3 motivates the private sector to design, construct, and maintain projects with a view to their long-term cost to the public rather than the initial capital expenditure. In order to garner these long-term savings, the private parties typically apply inputs from their contractor and operator directly into the design process. This is also known as designing for constructability and operability.

Through this approach, the private sector is designing and pricing to assume lifecycle risks. Given the long-term nature of the contract, in some situations, the initial overall price may appear higher than traditional procurement. But, under traditional procurement, the public sector retains project delivery and all lifecycle risks, which are not reflected in traditional pricing from a contractor. P3 structures also tend to provide further lifecycle cost savings through the private sector's desire to optimize its capital and operating expenditures over time in terms of both gross expenditure and net present value consideration. These concepts are illustrated in Figure 2.3.

As shown in Figure 2.3, due to budgetary limitations, conventional lifecycle profiles of transportation infrastructure in the US often suffer from a "band aid" approach to funding allocations. Capital maintenance projects do not attract the same headlines as new build projects, and in many cases it is difficult for the public to even see a need for preventative capital maintenance (once damage is visible, maintenance becomes reactionary rather than preventative, and far more costly). As a result, funding for preventative maintenance has often been seen as a relatively easy cost cutting measure, or rather, there has been less pressure to increase it over time in line with actual needs. P3 offers the means to address these concerns.

Figure 2.3 Illustrative Lifecycle Cost Comparison



Under long term P3 contracts, the interests of public and private partners are further aligned due to:

- the private partner's need to distinguish its product (the facility) as offering a consistently higher level of service to users than free alternatives (particularly in the case of revenue risk concessions);
- its need to maintain a positive image amongst the public and its users;
- the ability to spend money when it is needed and simply when it is available; and
- its need to meet minimum performance and asset condition requirements at the risk of financial penalties.

2.1.6 Risk Allocation

The ability to transfer risk from the public sector to the private sector can be a major potential benefit of P3 delivery. In a traditional design-bid-build procurement, the public sector retains most risks associated with project delivery, including schedule delays, cost overruns property acquisition, design, construction, financing, operation, and maintenance. In a P3, however, project risks are allocated between the private and public sector based which partner can best price and manage each of the risks. In a DBFOM P3, for example, the same private entity is responsible and assumes the risks for construction and maintenance of, as well as investment in, the asset. As mentioned above in Section 3.1.5, this creates the incentive to build a high quality project that will require fewer capital repairs in the long term. The potential bearers of risk in a P3 include developers, operators, contractors, insurers, private investors (lenders and equity sponsors), facility users and toll payers, public agencies, stakeholders, and taxpayers. In determining which party is best situated to manage each

risk, one must assess the likelihood of each risk occurring as well as the ability of each party to mitigate the impact of that risk. This risk assessment is conducted during project evaluation as part of the comparative financial model, and it will inform the ideal type of contract and project delivery approach. Every risk has a potential cost in time and money, and by allocating risks efficiently, transportation projects can be built faster and the highest Value for Money will be achieved.

In developing a P3 contract, the public agency and private partner will spend time negotiating the most appropriate allocation of specific risks. Every project is different, and the ideal transfer of risks will depend on elements such as the difficulty of construction, the ability to bundle projects and utilize economies of scale, and potential demand for the asset. For some risks (such as force majeure or catastrophic uninsurable events), neither party is particularly suited to manage the risk and a compromise solution is negotiated typically through insurance, termination for convenience clauses or other means, including extension of the project agreement to recover lost revenues, etc.

For illustrative purposes, Table 2.3 below provides a high level risk apportionment scenario that includes a number of common risk categories, and ways that the public and private sector have occasionally shared each. Additional lessons learned from existing P3 projects are included in detail in Appendix B: Supporting Material. Risk apportionment assumptions have also been prepared for each candidate projects in relation to PSC and P3 delivery alternatives, as described in section 3.6.3.

Table 2.3 Sample High Level P3 Risk Allocation Scenario

Risk Category	Project Sponsor (Public Sector)	Contractor/Project Company
Design	Sufficiency of scope and user directed design change risks	Completeness, conflicts and coordination risks
Site Condition	Unknown geotechnical, environmental or archaeological risks	Known geotechnical or environmental conditions
Construction	Owner delays, unknown conditions and resulting impact on schedule and costs	All other construction risks including damages, defects, deficiencies, scheduling errors, safety
Resource Availability	Few risks	Labor supply, materials and equipment shortages risks
Equipment	Selection and procurement risks	Installation and coordination risks
Permits & Approvals	Initial Federal, State and Local permits/approvals	Building code and occupancy permits
Financial	Cost of any required scope change	Cost of financing, interest rates, all other financial risks
Labor	General strikes (shared risk)	Trade strike or isolated labor disruption
Policy or Legislation Change	State laws relating explicitly to the facility	Changes in federal or general laws
Operations	Limited demand risk and mandated change in service requirements	Assigned demand risks and all other operational risks
Force Majeure	Shared	Shared

2.2 P3 Financing

P3 structures typically involve the consolidation of project finances under a Special Purpose Vehicle (SPV), through which all project revenues are collected, expenditures paid, and investor repayments distributed over the life of a concession. The nature of these three functions depends on:

- the type of P3 structure in use;
- the length of the concession;
- the nature of project revenues and associated risks;
- the scope of short and long term capital and operating expenditure obligations of the SPV; and
- the sources of funds used to capitalize the SPV and associated repayment requirements.

A summary of these factors and their application to the type of P3 structure in use is provided in Table 2.4, with detailed explanation throughout the following sections.

Table 2.4 Financing Factors by P3 Delivery Method

Delivery Method	DBF	DBOM	DBFOM (Availability Payment)	DBFOM (Revenue Risk)
	Duration of Project Agreement			
	construction only	20-60 yrs	20-60 yrs	20-60 yrs
	Nature of Project Revenues			
	milestone payments	milestone or availability payment or shadow tolls		user fees (tolls)
	Expenditure Obligations			
Initial Capital	initial construction	none	initial construction	initial construction
Long Term Capital Expenditures (CAPEX)	none	none	major maintenance and repairs of all asset components; can include capacity expansion on an as needed or negotiated basis	
Long Term Operating Expenditures (OPEX)	none	customer service, routine O&M, management. Can include tolling and ITS on behalf of the public sector as appropriate		tolling, ITS, customer service, routine O&M, management
	Potential Sources of Capital			
Private	- equity - short term debt	- NA	- equity - short and long term bank debt - taxable bonds and tax-exempt Private Activity Bonds	
Public	- TIFIA - Municipal debt	- TIFIA - State Allocations - Municipal debt	- TIFIA - state allocations	

Note: Entries are indicative and relate to typical conditions for Major Transportation Projects specifically highways. AP = Availability Payment; Rev = Revenue Risk Concession.

2.2.1 Duration of Project Agreement

P3 contracts other than DBF involve a long term project agreement of predetermined length – also known as the term, duration or concession life.

Project terms are set by the public agency and vary significantly around the world, typically from 20 year up to 99 years, depending on profitability, project risks and complexity, government preferences and delivery method (noting that DBF contracts are much shorter often lasting the same length or not much longer than the duration of project construction). In general, the public agency's objective should be to balance project term with policy goals that optimize Value for Money and the public interest. Specific considerations include:

- public sector protections that are often built into long term project agreements, such as
  - revenue sharing above an agreed maximum rate of return
  - termination on predefined repayment milestones
  - reduced tolls under higher than anticipated traffic and revenue conditions and/or
  - restrictions or profit sharing on private partner windfalls such as refinancing gains
- lifecycle savings that the private partner may be able to achieve on a long term basis and pass through to the public sector and users;
- tax implications;
- level of service advantages that the private partner may offer to users and the public;
- the ability to pass long term capital improvement obligations to the private partner including capacity expansion requirements over time; and
- forecasts for when the private partner should break even based on indicative project revenues and costs.

It is recommended that the State of Washington take relevant considerations into account in setting the duration of project agreements on a project specific (rather than statutory) basis. It is also recommended that project terms should be targeted between 30 and 60 years in order to realize lifecycle cost savings.

Shorter contract terms typically discourage the types of long-term investors that would be most interested in investing in a P3 project, such as pension funds. Such investors are attracted to infrastructure for its stable, inflation protected, long duration profile and are not looking for the high returns on investment that other investors would for projects with a shorter duration. In addition, P3

projects with different structures dictate different contract lengths. If a project involves revenue risk, for instance, the private partner will want a longer contract term to ensure that returns are reached over the long-term, taking into account economic downturns that could affect traffic and revenue.

Excessively long contract terms are also problematic in that they usually provide drastically diminishing returns beyond 50 or 60 years, and at worst can negatively affect the public interest through an effective loss of control by Government.

2.2.2 Revenue Models

The following methods can be used to pay the SPV for services it provides, subject to its compliance with the terms and conditions of the project agreement.

2.2.2.1 Milestone Payments

Milestone payments are a type of performance payment that apply to DBF and potentially DBOM and DBFOM contracts, in which the public sector reimburses the private developer for capital costs based on delivery milestones. Similar payment terms apply to DB contracts. Milestone payments are those made for capital expenditures, traditionally during the construction phase, and are generally paid from public funds and public debt, while non-milestone performance payments are typically made in relation to day to day activities such as operations and maintenance.

2.2.2.2 Availability Payments

In this model, the public sector makes periodic payments to the private partner as the project is delivered, available, and performing as stipulated in the project agreement. The revenues for these payments can come from tolls collected by the public sector, general appropriations, another dedicated public revenue stream (such as a dedicated sales tax), or a combination of these sources. The use of this performance-based payment structure helps to promote private sector efficiencies and limit cost overruns, and it also ensures that the asset performs as desired through the life of the contract. The private partner, often through the use of a special purpose vehicle, will leverage these payments to raise private debt and equity capital, ultimately increasing the pool of available funds beyond what would otherwise be available to the public agency. Typically, two types of payments are made to the private partner: milestone payments and availability payments. While milestone payments are paid during the construction phase, availability payments are made during the operations and maintenance phase, based on the “availability,” or agreed-upon level of service, of the asset.

2.2.2.3 Shadow Tolls

This is a hybrid model that allows the public sector to set revenue policy and rates while assigning project demand risk to the private sector. In a shadow toll road project, the project company agrees to design, build, finance and operate and maintain the project road. In return, the host government is required to make payments to the project company that are based on the level of traffic using the project road. These payments are commonly known as "shadow toll" payments as tolls are not payable by the motorist. Instead, the volume of traffic using the road is measured using sophisticated measuring equipment and shadow toll payments are calculated by applying certain pre-agreed shadow toll rates to traffic volumes. It should be noted that just because a project is a shadow toll project does not negate the traffic risk. Shadow toll payments are still dependent upon the amount of traffic that uses the road and therefore a full traffic analysis will still need to be carried out.

2.2.2.4 User Fees (Tolls)

In this model, the private sector collects revenues through user fees (tolls in the case of highways). The terms of the project agreement can set initial toll rates and/or restrict toll increases over time. These decisions are based on policy preferences balancing affordability and profitability, where a common target is for a project to become self financing[16] but still affordable for users. Projects that are expected to do better than break even can either be modified to generate less revenue or can be procured on an upfront payment basis[17]. Projects that are not expected to break even on user fees alone will either fail to attract a private partner or will require some form of milestone payment, revenue subsidy, or guarantee similar to an availability payment. Minimum revenue guarantees are valuable in supporting projects with highly volatile revenue risk but that will help to spur economic development and are relatively common on rail and transit projects. Further discussion of Tolling as applied to P3 projects is provided in Section 3.6.1.

2.2.3 Expenditure Obligations

Table 2.4 summarizes the broad categories of expenditure that the private partner is typically required to pay out under various P3 models, namely initial construction; ongoing major maintenance; and Operations and Maintenance (O&M). Short and long term expenditures are usually treated differently by private partners in their approach to project financing as are Capital Expenditures (CAPEX) and Operating Expenditures (OPEX). These differences are discussed further in Section 3.6.4.

[16] i.e. project revenues (once capitalized) are sufficient to cover all of the SPV's costs including initial construction, operations, maintenance, lifecycle capital costs and all repayment obligations over the term of the Concession.

[17] These projects are usually awarded to the bidder that offers the highest upfront payment to the grantor in order for rights to the Concession. Upfront payment is typical for brownfield asset monetizations with established revenue streams.

2.2.4 Potential Funding Sources and Repayment Obligations

As a general rule, P3s broaden the available financial alternatives for project delivery. Traditionally, public sector entities have relied on appropriations (tax revenues) and user fees (tolls and license, permit and fee revenue) to fund transportation investments, leveraging these resources through public financing tools such as general obligation and revenue bonds. P3s expand the pool of available capital by allowing projects to access private debt and equity markets. Several alternative financing sources will be explained and evaluated over the next few pages.

All financing sources to a P3 project require repayment by the private partner over time in accordance with agreed financing terms that are set forth in the financing agreements between the private partner and its lenders. The cost of debt varies with market conditions, while equity contributions are based on minimum Internal Rate of Return (IRR) requirements of the private investors, which varies based on project risks[18].

As revenues from a project are received, they are used to pay project costs in a specific order known as the "waterfall approach." At the top of the waterfall, revenues are first applied to operations and maintenance costs. Next, revenues are applied to make loan repayments. The priority (or order) of debt repayment is governed by the seniority of each debt instrument and may involve intercreditor agreements, which outline the rights of each lender with respect to each other. "Senior debt" is paid first, followed by "subordinate debt." Generally, the lower the priority of the debt, the higher the cost of capital to the borrower. Some federal loan programs such as TIFIA (explained below) allow for flexible repayment schedules that can be deferred in certain circumstances. After debt payments, project revenues are then used to pay equity investors in line with any return limitations set by the P3 agreement or by law. Many equity investors are willing to see no return on their investment for the first few years of a concession as long as these shortfalls are made up for over time. If any revenues remain, they may then be shared between the public and private sectors (known as "windfall profit sharing"), which would also be established in the P3 agreement.

Since the early 1990s, innovative federal financing tools have emerged to facilitate the entry of private capital into transportation projects, including the Transportation Infrastructure Finance and Innovation

[18] Under current US market conditions, equity IRR requirements can vary from 13% for extremely "safe" investments to over 20% for more risky projects.

Act (TIFIA), Railroad Rehabilitation & Improvement Financing (RRIF), and Private Activity Bonds (PABs).

2.2.4.1 TIFIA

The Transportation Infrastructure Finance and Innovation Act (TIFIA) is a federal financing tool that provides direct loans, loan guarantees, and lines of credit to infrastructure projects of national or regional significance. TIFIA loans are subordinate, non-recourse loans with flexible repayment terms and favorable interest rates set at the State and Local Government Series (SLGS) rate. On December 23, 2011, for example, the interest rate on a 35-year TIFIA loan was 3.00%, and debt service coverage ratios on TIFIA loans can be as low as 1.1.[19] These flexible, below-market terms provide significant value for P3s, especially for the revenue concession model, and can fill the funding gap for otherwise successful projects. TIFIA loan guarantees and lines of credit are designed to provide security for infrastructure projects and reduce risk premiums, which can attract private investment and reduce overall project cost.

TIFIA proceeds can fund up to 33% of eligible project costs, and the project must feature a revenue stream that can be applied toward repayment. TIFIA can be applied to both P3 and traditional public projects, as long as those projects have a revenue stream - the goal of TIFIA is for TIFIA to attract and support additional sources of funding and financing. All environmental approvals required for a project under the National Environmental Policy Act (NEPA) must be in place before TIFIA assistance can be obligated.

TIFIA is a popular, competitive program that is as much as 14 times oversubscribed, meaning there are far more applications for funds than funds available. In March of 2011, 34 projects from 13 states applied for TIFIA loans, but only 8 projects were invited to submit a formal application. Eligible projects are those included in the State Transportation Improvement Program and State Transportation Plan (STIP and STP) with a capital cost of either $50 million or at least 1/3 of a state's annual apportionment of federal aid funds. Projects that employ intelligent transportation systems (ITS) for congestion reduction can be eligible with a capital cost of $15 million or more. The senior debt for a TIFIA project must be rated investment grade. Currently, approximately $110 million is

[19] Debt service coverage ratio (DSCR) is a measure of a project's ability to repay its debt obligations. DSCR is typically measured as a ratio of loan payments to cash flow (revenues after operating expenses). It is common for private lenders to require a DSCR of 2.0, meaning that annual cash flow is double annual loan payments. With a DSCF of 1.1, TIFIA loans only require that project revenues be 1.1 times as high as the TIFIA loan payment. In this way, TIFIA loans require a lower revenue stream than private debt and support a wider range of projects. This also reduces the pressure on a project to raise revenues in order to obtain debt financing.

allocated annually to the TIFIA program, which can be leveraged to support as much as $1.1 billion in total investment. Since its creation in 1998, TIFIA has provided approximately $8.4 billion in total assistance and supported approximately $31 billion in total investment. There is currently broad, bipartisan support within Congress to expand the TIFIA program. The State of Washington currently has a pending application for TIFIA assistance for the SR 520 bridge replacement project.

2.2.4.2 Private Activity Bonds (PABs)

Private Activity Bonds are tax-exempt debt instruments to finance privately-operated projects that serve a public purpose. PABs allow private investors to access the tax-exempt bond market when investing in qualified transportation facilities, including roads, bridges, airports, and intermodal transfer facilities. These bonds are issued by a government entity, such as a state government or a port authority, as a conduit issuer on behalf of the private investor. Typically, the government entity's credit is not pledged as repayment; rather, the project's net cash flows are pledged on a non-recourse basis. Projects must receive some amount of federal funding to be eligible for PABs, and PABs can only be used for new projects, as opposed to those that have already commenced revenue operations. Examples of recent PAB transactions include the Denver FasTracks project and the North Tarrant Expressway in the Dallas/Ft. Worth area, which both received allocations of approximately $400 million with coupon rates ranging from 6-7%. PABs have not been used in Washington State to date.

2.2.4.3 RRIF

The Railroad Rehabilitation & Improvement Financing (RRIF) Program provides direct federal loans and loan guarantees to finance the development of railroad infrastructure. Like TIFIA, RRIF loans offer flexible repayment terms and favorable interest rates equal to the cost of borrowing to the government (a risk premium is added to cover administrative costs). Unlike TIFIA, RRIF loans can be used to pay for up to 100% of project costs. A total of $35 billion has been allocated to the RRIF program, up to 20% of which is reserved for smaller (non-Class I) freight railroads. RRIF funds may be used to acquire, improve, or rehabilitate rail equipment or facilities; refinance outstanding debt from these projects; or to construct/establish new rail facilities. Intermodal facilities are also eligible for RRIF support. Since its inception, a majority of RRIF-funded projects have benefitted freight railroads, although some of the largest RRIF allocations have gone to Amtrak, the Denver Union Station Project, and the Virginia Railway Express commuter line. In 2007, a $3 million RIF loan was awarded to the Yakima-based Columbia Basin Railroad. All environmental approvals required for a project under NEPA must be in place before RRIF assistance can be obligated.

2.2.5 Cost of Capital

Washington State's transportation projects have historically (with a few potential exceptions) been financed either on a "pay-as-you-go" basis (e.g., project costs are funded with tax receipts when and as available) or with proceeds of tax-exempt debt, sometimes backed by toll revenues. Measured by interest rates alone, municipal tax-exempt debt is almost always cheaper than private, taxable financing. In a P3, however, the higher cost of private finance can be offset by private sector innovation, reduced lifecycle costs and faster project delivery.

As mentioned previously, these P3 cost savings can result when development and maintenance risks are transferred to the private sector. Because the private sector is assuming the risk of many aspects of project delivery that the public sector would normally accept, the private sector can bring to bear innovations that would not normally be possible in a traditional delivery approach. The transfer of these risks can enable performance-based project delivery and long-term lower cost guarantees at more attractive levels than those available through the public sector. Consequently, as has been evidenced by recent US P3 projects, private bidders have produced overall savings in the project cost compared to a traditional publicly financed approach.

In overall terms, private financing can expand the pool of available capital, leading to higher levels of investment and reducing project funding gaps. The Texas SH 130 P3 project is a good example of this, in which private financing provided an additional $600 million that would not have been possible under traditional procurement methods. The actual financing costs in a P3 can also be offset by the ability to generate long-term depreciation benefits, which provide a tax savings to private investors but not to public entities.

A recent example of a public agency capitalizing on this private risk appetite is the Florida Department of Transportation in its long-term concession for the Port of Miami Tunnel project. This project has been structured as a 35-year P3 contract between the Florida Department of Transportation (FDOT) and a private consortium to design, build, finance, maintain and operate three miles of tunnel and upgrade a linked causeway and feeder roads. Given the significant technical complexities of this project (complex geotechnical environment under an operating water channel), along with the lack of US experience with this type of tunneling, FDOT sought to transfer major project delivery and long-term operational risks to another party and attract bidders from across the globe with the relevant tunneling experience. The preliminary cost estimate prepared by FDOT's technical advisor for

undertaking a P3 for the Port of Miami Tunnel was nearly $1.2 billion. The winning P3 consortium, however, prevailed with a bid of $657 million for the 35-year contract, owing to the incentive for value engineering and lifecycle costing.

Given the financing advantages of traditional tax-exempt bonds, however, there are also instances in which the higher costs of private finance are not offset by cost savings elsewhere. Thus, a Value for Money analysis should always be employed to determine if, from a long-term perspective, a P3 delivery approach provides greater savings than a traditional financing and delivery approach.

2.3 Developing a P3 Policy Framework for Washington

Before Washington State develops a new P3 program to attract outside capital, an overall policy framework must be developed that defines Washington's unique goals, objectives, and public interest concerns. Many states have neglected to lay this critical groundwork before advancing P3 projects and as a result have stumbled in their attempt to utilize innovative delivery. In order to avoid these pitfalls the State of Washington has commissioned this Study to:

- establish a clear policy framework addressing if, why and how P3 should be considered as a delivery option for Washington's major transportation infrastructure with primary focus on the public interest;
- identify and assess candidate projects in a standardized and transparent manner that demonstrates the rationale for outcomes and protection of public interest based on Value for Money Analysis;
- set realistic legislative, administrative and schedule targets for transitioning to a P3 capable market and discuss specific approaches to achieving these; and
- establish a roadmap for implementation to ensure that for every P3 project, concrete goals – such as transparency, job creation, and accountability – are adhered to and reflected in the procurement approach and the project agreement.

The following sections discuss the way in which these considerations have been addressed throughout the Study.

2.3.1 Protecting the Public Interest – Key Policy Considerations

A core objective of this Study was to define if or how P3s could be advanced in a manner that protects the public interest concerns of Washington State. The following key public interest protections were identified through discussion and consultation with the PWG, WSDOT and other stakeholders. These recommendations are based on market precedent and lessons learned in other jurisdictions. It is recommended that each policy goal be adopted and enforced through statute or on a project by project basis:

It is recommended that the State should maintain ultimate control and/or ownership of assets involved in P3 projects.

Transportation P3 projects deal with public assets, and there is a significant public interest to ensure that these assets remain under public control. Many states have addressed this concern by ensuring that these assets remain in public ownership throughout the length of a P3 agreement, with the private entity at times entering into a long-term lease to operate and maintain the facility as well as collect its revenues. As part of the P3 project agreement, the public sector can maintain oversight of the asset and set strict performance standards for the private partner. Through policy, the public agency can also limit the maximum term of the P3 agreement.

It is recommended that Value for Money (VfM) must be assessed by the Office of Transportation P3 (OTP3) in relation to all candidate projects, and that only those projects demonstrating potential to achieve a positive value through P3 delivery be pursued as P3 projects. It is further recommended that VfM be periodically reassessed through pre-development and procurement in accordance with Section 4.4.3.

A comparison must be undertaken between the lifecycle cost of procuring a project through the traditional means of delivery (either design-bid-build or design-build) versus a P3 approach. Relative treatment of risks need to be reflected in both public sector and private sector options to ensure full and fair analysis of value to taxpayers.

Upfront payments generated by P3 projects, which are paid to the State by the private partner should be used only to address transportation needs, and not diverted to pay for other government costs.

Some P3 toll projects have sufficient revenue to generate an upfront payment by the private partner to the State. This private upfront payment is in addition to funds that the private sector will spend on required capacity improvements. In some states, this upfront payment has been used for non-transportation purposes, a practice which has generated considerable controversy. Through discussion and consultation with the PWG, WSDOT, and other stakeholders, it is recommended that any funds generated through a P3 project be directed to the State's transportation program.

The long-term quality of service delivered in a P3 project must be ensured through stringent contract provisions and ongoing oversight by the OTP3.

Historically, the public sector is often forced to defer expenditures on preservation and maintenance to avoid budget deficits or the need to issue new debt. In contrast, a P3 can provide a consistent and

high standard of service delivery and asset maintenance which must be priced and therefore budgeted from day one of the contract. In order to deliver this optimum level of service, a P3 must be structured as a performance based contract, which gives the public sector greater control over quality of service delivery, while allowing the private partner to take significantly more risk. Through a performance based approach, quality of service will be guaranteed because the private partner will get paid for the delivery of services and financial penalties will be imposed if services fail to meet specified performance standards. An effective public sector monitoring regime will adjust payment to the private partner based on asset performance and include a clear procedure for the escalation of remedies.

P3 projects should conform to the State's toll setting policy, rather than allowing the private sector to change toll rates without contractually stipulated limits.

Rather than ceding all toll setting authority to the private sector, states such as Virginia have developed well-defined rate-setting policies to ensure rates are fair and appropriate for users, provide certainty for the private partner, and enhance the value of the concession. In many situations the public sector sets the initial toll rate and limits any future increases to inflation. In the case of HOT or many toll facilities, tolls are set with reference to traffic volumes and through put speeds.

The State must safeguard against private partners realizing excessive returns.

P3 agreements can be structured to protect public interests while allowing private investors to earn a fair return. Gain share agreements can be negotiated to fully mitigate this risk and have the public sector share in any upside potential of the transaction. For instance, such revenue sharing between the public and private sector partners based on gross revenue is commonly built into P3 agreements. In addition, the P3 contract can also set out agreement on sharing in any future refinancing gains realized by the private sector party.

P3 projects should meet relevant State laws as with any other public works project.

Where relevant laws include:

- Apprenticeship Requirements

- Prevailing wage laws
- Minority and Women-Owned Business Enterprises (MWBEs) requirements

Through contractual and statutory provisions, the State must ensure that the private partner selected will be solvent and able to deliver over the long-term.

P3 contracts are performance based with the public sector clearly defining the requirements of service delivery and the private sector determining how to respond to those standards. This approach can motivate solutions through private sector innovation, but the public sector must undertake appropriate upfront due diligence in drafting the agreements to ensure the specifications are comprehensive. As with traditional project procurement, the structure of a P3 provides safeguards against insolvency through the use of performance or 'surety' bonds as a guarantee of construction completion in case the private-sector party goes bankrupt and the project therefore is left incomplete. When the public sector requires a performance bond, the risk of paying out the bond incentivizes the private partner to perform and stay the course if a dispute arises. In addition, under a P3 contract, the private sector is not paid until after construction is complete and the facility is operational. Therefore, there is significantly less risk to the public sector than under a traditional procurement or even a design-build contract with milestone payments.

Further, if the private-sector party fails to deliver the project on-time or to comply with performance requirements, the public sector will not be required to start payment until the project is completed to specification and can also use contractual protections such as liquidated damages and performance bonds. Liquidated damages are rules that set in advance an amount that must be paid by the private partner to compensate for the estimated economic losses incurred by the public sector in case of certain breaches of contract. Liquidated damages are often calculated as a percentage of the contract price that depends on the project complexity.

The State should maintain the ability to terminate a P3 contract, or project agreement, if the private partner is not able to deliver according to the performance specifications of the contract.

P3 project agreements should be structured to allow the public agency to terminate the concession if service is not acceptable, either as the result of long-term inadequacies or a material failure. Contract terms must stipulate a fair means to ensure that the asset returns to public control.

The State should ensure that P3 contracts clearly specify the condition the asset must be in when the project agreement expires or is terminated.

Maintenance reserves, quality standards, and an effective monitoring regime will ensure that the asset is returned to the public sector in the desired condition. At handback, the asset can revert to public ownership.

These public interest concerns necessitate both a clear articulation of program objectives and the creation of appropriate checks and balances to meet these objectives. Checks and balances are applied at multiple stages; both through the project screening process as well as through the overall framework of a P3 program, which consists of both legislative and administrative (project level) protections.

2.3.2 Screening Process, Overview

The most successful P3 programs are those that employ a rigorous and impartial screening process at the outset of project designation; ideally in conjunction with a Value for Money Analysis (refer Section 2.3.4). This process allows policymakers to identify potential challenges early on, particularly any fatal flaws that would negate the benefits of a P3 delivery, or deem P3 non viable altogether.

The criteria used to inform the screening process must be comprehensive, covering elements of public interest, political, financial, technical, and risk apportionment. The specific criteria used to create a P3 screening tool can be adjusted to reflect the key objectives and desired risk allocation of government stakeholders. A successful screening tool will establish clear and objective requirements for all input data, include a system to consistently assess subjective criteria, and will identify “fatal flaws” that would preclude a project from succeeding as a P3 (such as a lack of market viability or regulatory uncertainty).

A consistent application of screening processes across all projects that are being considered for potential P3 delivery is essential in preventing the State from wasting considerable time advancing a project that is not a suitable P3 candidate. In addition, the development of a clear process for identifying projects will allow the State to create a pipeline of prioritized projects that are in the best interests of the public sector – that take into account which projects can pass muster given the State’s

diverse policy goals and concerns. Further, a screening process will increase the State's credibility among potential private sector bidders and better prepare the State for the procurement process. The development, form, calibration and application of the screening tool prepared for the State under this Study is discussed in detail in Section 3.3. Extensive dialogue between the Consultant Team and the Policy and Staff Workgroups and WSDOT project managers went into the development of the screening tool, supported by a wide variety of educational material and case studies. A sample of this supporting information is included in Appendix B: Supporting Material under Section 5.1.

2.3.3 Financial Analysis – Purpose and Process

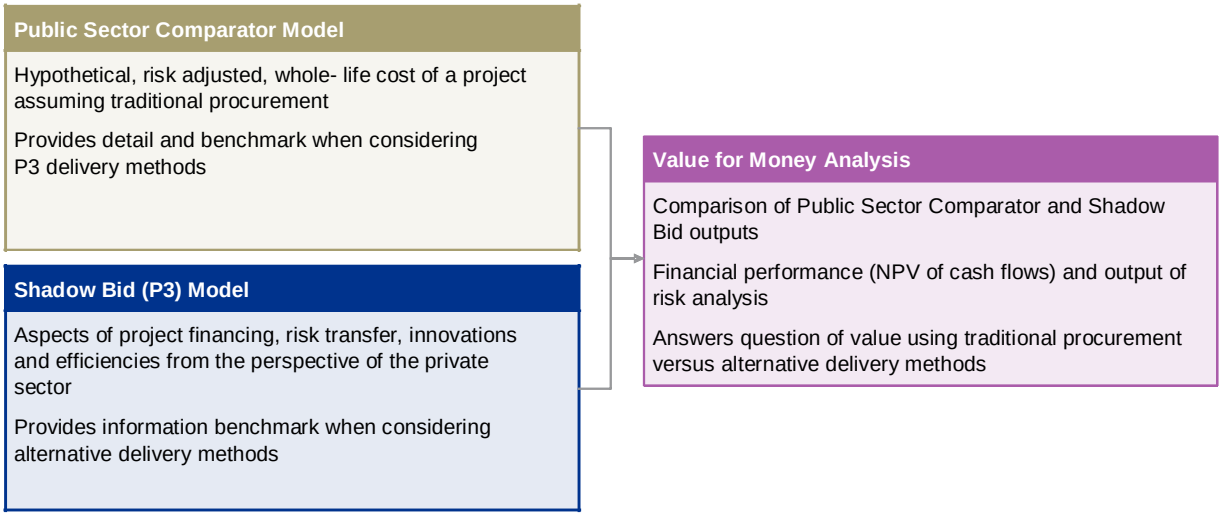
As part of the Study, a comparative financial model was developed by the Consultant Team. The purpose of the comparative financial model was to quantitatively assess the traditional delivery model and the P3 delivery model for each project in order to estimate which delivery model has the potential to offer the State the best Value for Money. As described in more detail in Section 2.3.4, the Value for Money analysis compares the total estimated costs of the traditional delivery model and the total estimated costs of the P3 delivery model for a given project. Therefore, the output from the comparative financial model is a key component in the Value for Money analysis.

As part of the financial analysis, the traditional delivery model was assessed using a Public Sector Comparator and the P3 delivery model was assessed using a Shadow Bid Model. The Public Sector Comparator mimics the estimated cost to the State under a traditional delivery model; the Shadow Bid Model mimics the estimated bid price that a private sector developer would submit for a given project as described in more detail below:

- Public Sector Comparator (PSC) – the PSC models the risk-adjusted, whole-life estimated costs of a project if it is procured traditionally (normally as a design-bid-build procurement or a design-build procurement). The financial model is structured to calculate the indicative Net Present Value (NPV) of a project's cash flows under a traditional delivery model. This model seeks to mimic the "status quo" and acts as a benchmark against proposer bid financial models. Importantly, to be an effective comparison it must take into account the estimated value of "retained risks."
- Shadow Bid Model – the Shadow Bid Model analyzes the estimated cost of delivery under a P3 delivery approach. The financial model estimates a proposer's bid model and calculates an indicative NPV of the project under a P3 delivery model. The model assists in evaluating whether a P3 delivery model has the potential to offer more value to the State than the traditional delivery model and can be used at later stages of the procurement to assess different scope or commercial terms, analyze financing structures, and develop payment mechanisms. However, the

model will be supplanted by actual bids received from the private sector should the State chose to pursue a P3 procurement.

The following graphic depicts the role of the PSC and the Shadow Bid Model in the Value for Money analysis:



2.3.3.1 Process

The financial analysis process consists of three core steps: (1) inputs; (2) calculations; and (3) outputs. At its core, the comparative financial model is simply a tool that can be used to perform calculations using the inputs and produce outputs, or a quantitative assessment, of each delivery model for a given project.

2.3.3.2 Inputs

For the PSC, project inputs, such as estimated revenue, construction costs, and operating and maintenance costs, were received by the Consultant Team from WSDOT. As discussed previously, the PSC seeks to mimic the total cost to the State under a traditional delivery model. Therefore, the costs associated with the State's traditional form of financing were also an input into the PSC. WSDOT and the Washington State Treasurer's Office provided the financing inputs for the traditional delivery model for input into the PSC.

For the Shadow Bid Model, project inputs were developed by The Consultant Team using information provided by WSDOT as well as industry benchmarks. The Shadow Bid Model seeks to mimic the

estimated bid price that a private sector developer would submit for a given project. Therefore, the costs associated with private financing were also developed and input into the Shadow Bid Model. The Consultant Team provided the financing inputs for the P3 delivery model based upon industry benchmarks.

Pre-development cost inputs were provided by WSDOT for costs that would be incurred prior to construction. These costs do not vary by delivery model, other than under traditional design-bid-build which is forecast as marginally higher than either P3 or design-build (and only affects the PSC for the SR 167 Extension project) and were excluded from the comparative financial model because it was assumed that these costs would be paid by WSDOT regardless of the final delivery model chosen for a given project. However, these costs were included in the Value for Money analysis in order to calculate the total cost to deliver a project. Table 2.5 summarizes the differences in inputs between the PSC and the Shadow Bid Model.

The analysis also included, where appropriate, certain adjustments to the level of revenue on the public sector comparator and on the shadow bid model. These adjustments, or sensitivities, around a central base case were designed to reflect potential uncertainties that might exist in the revenue inputs and therefore provide a range of revenues that could be achieved. The use of such sensitivities is described more fully, if they were used, with each project.

Table 2.5 Shadow Bid and PSC Model Input Differences

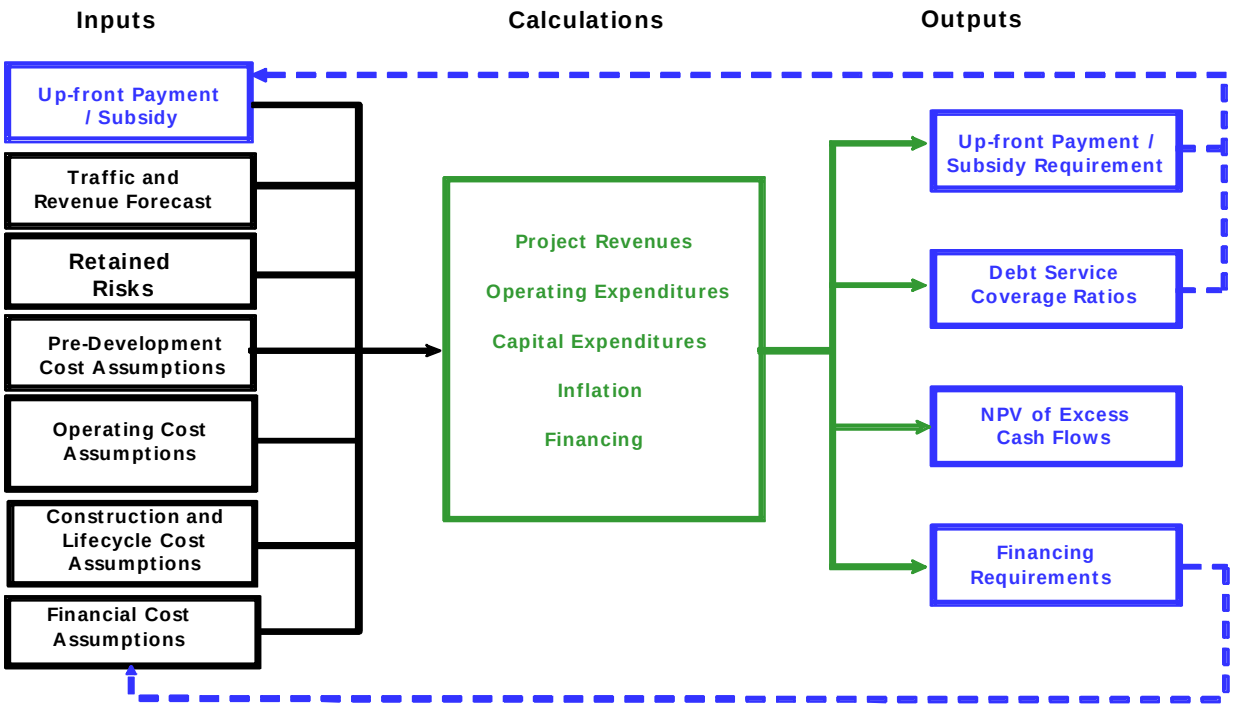
	Public Sector Comparator	P3 Delivery (Shadow Bid)
Revenue	Baseline projections	Baseline projections that consider an “equity” view
Pre-Development	Baseline cost projections incurred by the State regardless of delivery model	Baseline cost projections incurred by the State regardless of delivery model
Construction	Baseline cost projections for construction of facility using DB model (except SR 167 – DBB)	Projections using a fixed-price DB model
O&M	Baseline projections for O&M assuming WSDOT as provider	Baseline projections for private O&M provider
Lifecycle	Baseline projections for lifecycle assuming ‘status quo’ approach	Baseline projections with impact of private sector O&M strategy
Tax	Not applicable	Federal and state taxes Depreciation and impact on taxation
Financing	General obligation bonds Toll revenue bonds	Private finance terms for: Taxable bank/bond debt Tax-Exempt Private Activity Bonds TIFIA Equity
Inflation	Inflation rates for revenue, construction, O&M	Inflation rates for revenue, construction, O&M

2.3.3.3 Calculation

The comparative financial model was developed by the Consultant Team specifically for this Study. It consists of numerous calculations that seek to quantitatively assess the estimated cost of the project under a traditional delivery model (through the PSC) and the P3 delivery model (through the Shadow Bid Model). The key calculations in the comparative financial model include:

- **Project revenues** – the financial model uses the revenue inputs provided for each delivery model and calculates the amount of revenue that the project will produce over the period of the analysis (35 – 50 years).
- **Operating expenditures** – the financial model uses the operating and maintenance inputs provided for each delivery model and calculates the amount of operating and maintenance expenditures that the project will incur over the period of the analysis (35 – 50 years).
- **Capital expenditures** – the financial model uses the construction inputs provided for each delivery model and calculates the amount of construction expenditures that the project will incur. The financial model also uses the lifecycle inputs provided for each delivery model and calculates the amount of preservation expenditures that the project will incur over the period of the analysis (35 – 50 years).
- **Financing** – based on the project inputs (revenue, operating expenditures, and capital expenditures) the model calculates the estimated amount of financing that can be raised under each delivery model. If the financial model calculates that the estimated amount of financing that can be raised exceeds the construction expenditures required, then the project is estimated not to require any additional funds (it is deemed to be “self supporting” or “revenue positive”). If the financial model calculates that the amount of estimated financing that can be raised does not meet the construction expenditures required, then the project is estimated to require supplementary funding in addition to the financing to meet the expected costs. Therefore it is iterative in nature, as depicted in Figure 2.4.

Figure 2.4 Comparative Financial Model Schematic



2.3.3.4 Outputs

The model produces the following quantitative outputs that assess the merits of each delivery model:

- **Funding Surplus or Gap** – is a measure of the financial viability of a particular project considering the relevant business assumptions and financing tools associated with a particular delivery model. If the value is positive it indicates that the project could be financially viable on a stand-alone basis; if the value is negative it indicates that the project is not financially viable on a stand-alone basis and that a source of additional funds would be required for the project to be developed. The funding surplus or gap is represented in the form of a concession or public subsidy, each term being defined below. In each case the value of funding surplus or gap includes an estimate of pre-development costs (defined below).
- **Net Project Value** – is calculated as the sum of the funding surplus (or gap); excess cash flow (which if exists is positive); and the retained risk value (negative). Each of the terms used above is defined below
  - **Concession payment** – an indication of an amount of money, over and above the project's costs, that is estimated could be raised through a revenue risk P3 delivery model and paid to the State by a private party / concessionaire upon its reaching Financial Close for the project.

Concession payments do not result from traditional delivery approaches, as this would be analogous to the State over budgeting a project and repaying itself the balance at the start of construction.

- **Excess cash flow** – also indicates that the scenario under analysis produces more gross revenue than gross cost, however these surplus amounts would be received by the State on a day-to-day (long term) basis and is therefore a present value of these future cashflows rather than being received as an upfront concession payment. In the models developed for this Study, excess cash flows only arise in the case of traditional delivery models, as these amounts cannot be realized as upfront concession payments.
- **Public subsidy** – is essentially the opposite of a concession payment or excess cash flow and indicates that the sources of revenue associated with the project are estimated to be insufficient to meet the anticipated project costs, and that the project would require additional funding to allow its costs to be fully met.
- **Retained risks** – are an input value to the financial model that reflect the estimated "value" of project risks retained by the State (on a likelihood and magnitude weighted basis).
- **Pre-development costs** – an input to the financial model that estimates the sum of right-of-way acquisition, preliminary engineering, and the State's administrative costs in preparing for a procurement process. Pre-development costs are always incurred by the State before it has engaged a private partner (except for in the case of pre-development agreement concessions that are not recommended by or contemplated in this Study).

- **Value for Money** – is the final output of the financial analysis, and helps the State to make a decision on which delivery method could be capable of delivering the overall best value to the State over the life of the project. It compares the Net Project Value of each scenario tested for a project. Value for Money is calculated as the absolute difference in Net Project Value for each scenario tested. On this basis the scenario with the best Net Project Value could provide the best Value for Money. Additional context to this assessment follows below.

2.3.4 Value for Money Analysis

Once it is determined that a potential project has passed the Project Screening Tool, there should be a quantitative process for evaluating the cost-benefit of pursuing P3 delivery. This quantitative framework is often referred to as a Value for Money (VfM) analysis.

VfM is a method of comparing the total estimated lifecycle costs of traditional procurement versus the costs of P3 procurement. The projected lifecycle cost for traditional procurement is a "public sector

comparator" (PSC) against which to compare the estimated total lifecycle cost of any P3 opportunity. The traditional procurement model represents the means by which the State would typically procure a surface transportation infrastructure asset and as has been described earlier; traditional procurement is represented in this analysis as a combination of a design-bid-build procurement or a design-build procurement financed by either a toll-revenue bond or alternatively by a general obligation bond. Lifecycle costs typically include all upfront design, construction, ongoing maintenance and operations, and financing, costs. If the estimated costs of the P3 procurement are less than the estimated costs of the traditional public sector procurement for a given project, then the P3 delivery model has the potential to show positive VfM, and the P3 model should be examined further.

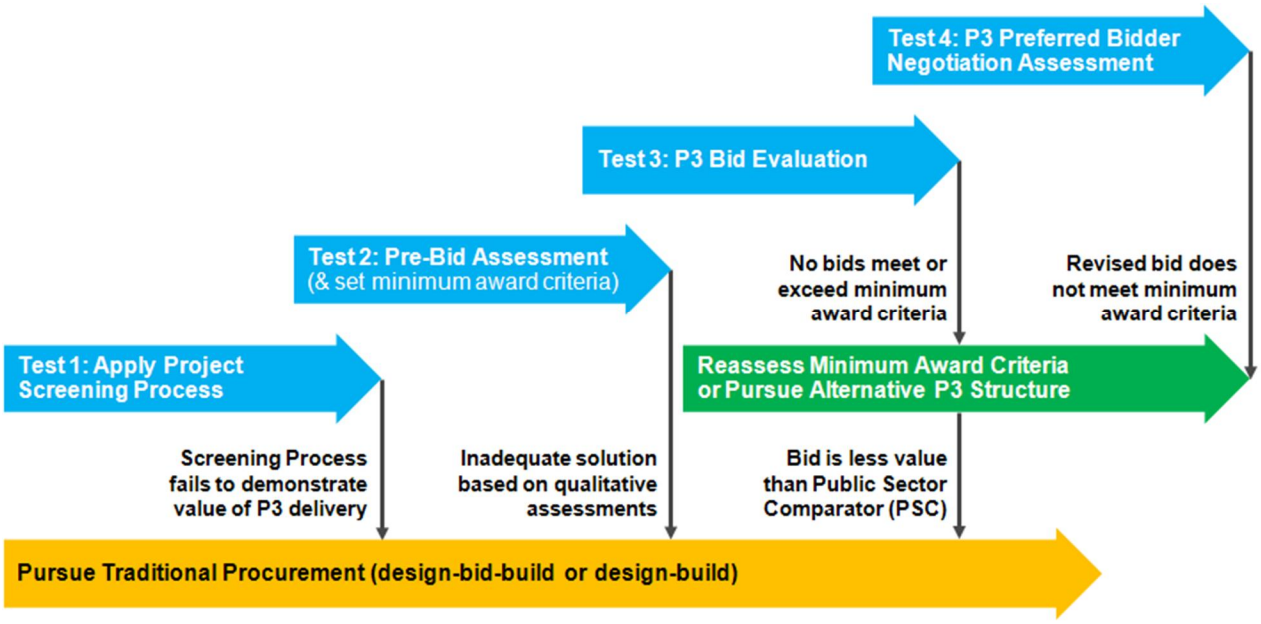
As an example for the application of VfM, in 2007 the province of Quebec used a VfM analysis to decide whether the Autoroute 30 Highway project should be advanced as a P3 or through a traditional procurement approach. After a VfM analysis revealed that the Province of Quebec could save an estimated $750 million through an alternative delivery method, a P3 was pursued for the project.

While there are several important drivers to this concept, VfM is achieved with an optimal and enforceable risk allocation between public and private partners. However, every project is unique and has a distinct risk profile; because of this, there has to be an objective methodology to understand what these associated risks consist of, what is their magnitude, and how the allocation of these risks changes between different procurement strategies. The goal is to evaluate and thus compare how the value of the risks change between the various parties involved.

A critical aspect of a VfM analysis is that it should be iterative and not be simply done once at the beginning of a P3 assessment. Financial market conditions can change rapidly, which can impact the financability and VfM of a P3 project. In addition, various policy concerns, risks, and financing issues may arise during the procurement process that will need to be assessed in terms of impact on VfM.

Figure 2.5 represents a best practice approach to iterative VfM assessment that is in-keeping with relevant recommendations of this Study presented in Section 4.4.3 on page 151. VfM concepts and outputs are also incorporated in both the Screening Tool and Comparative Financial Model which correspond to Test 1 below.

Figure 2.5 Assessment of Value for Money Over Time



2.3.5 Crafting Sound P3 Legislation

Legislation sets the parameters around which the public and private sector can come to terms on various P3 structures for designing, constructing, operating, maintaining, and financing transportation projects. Strong P3 legislation reflects the policy goals and public interest concerns of the State. Specifically, legislation sets conditions that can facilitate P3, while ensuring these policy goals are adhered to in every P3 contract advanced. Legislation is important in determining the level of flexibility and innovation available in contract negotiation between the public sector and the private sector. Over 30 US States currently have P3 statutes on the books, but there is significant variation among these States in how to address issues such as types of projects eligible for P3, toll rates, and the organization of P3 oversight. The nature of how P3 legislation is structured is critical from a private sector perspective as a failure to include various provisions, such as enabling availability payments, can decrease private sector interest in pursuing a project.

Therefore, in crafting sound P3 legislation a balance must be kept in mind between maintaining public interest protections and policy goals and ensuring a robust and competitive environment for private sector participation.

2.3.5.1 Discussion and Key Objectives

The following discussion of legislation to authorize use of a P3 embraces the perspective outlined above. It provides guidelines for Washington State to enjoy the benefits of sound, workable P3 legislation; where each of the following objectives form general recommendations of the Consultant Team.

It is recommended that the State keep the determination of project worthiness separate from the determination of whether to use P3 delivery.

The question of whether to pursue a transportation project, and in what form, is informed by a multitude of public policy considerations, including mobility needs, congestion mitigation, environmental protection, multi-modalism, safety improvement, economic conditions, community development objectives, job creation and the like. The merits of a project are decided through the many electoral, governmental and public involvement processes that occur under existing laws.

The question whether to use a P3 is a separate matter. Decisions on this question hinge on determining whether this tool is the most suitable to achieve the project objectives independently determined through these other processes.

The Value for Money analysis performed for a P3 suitability decision, however, may produce data that better informs or changes policy objectives, such as project scope, tolling policy and other matters affecting financial feasibility.

It is recommended that the State must protect the public interest through legislation.

Various legislative provisions can and should be included in P3 legislation to protect the public interest. In addition to the public interest protections identified in Section 2.3, the State should consider its legislative protection of:

1. Limitations on public entity liability for project debt;
2. Requirement for payment and performance security during construction in form and amount that the public entity determines appropriate;

3. Transparency of the procurement process and contract terms, consistent with maintaining an effective competitive environment and with protection of private party trade secrets;
4. Broad public entity oversight and audit rights;
5. Reasonable limits on the maximum length of the term of concessions, which should not be so short that it interferes with maximizing Value for Money, and not so long that if fails to produce up front benefits; and
6. Requirement that P3 agreements include effective contractual remedies for the public entity.

The State must de-politicize the approach to P3 development and control.

The jurisdictions with the best record of success in using P3s are those that achieve consistent expertise and programmatic stability over time. Virginia, Partnerships British Columbia and Partnership Ontario are good examples in North America, but there are many others. An essential ingredient in this success is to reduce political influence and political risk, at least at the point in time that a P3 procurement commences. The success (or lack thereof) of P3 projects is dependent on the political context in which they exist; it is important to channel politics into pre-procurement decision-making about project objectives and whether to use the P3 tool.

Granting any local jurisdiction that lies within the project boundaries a unilateral veto right can be extremely detrimental to the success of a P3 project, as local politics may prevent the P3 project from moving forward. In Minnesota, the P3 law provides each municipality within which the project extends a right to disapprove the transaction within 30 days after approval of the P3 agreement by the Minnesota Transportation Commission. In 1997, after extensive negotiation of a P3 agreement for the TH 212 project and Commission approval, one city vetoed the transaction and the transaction was subsequently cancelled.

Defining the “rules of engagement” for undertaking P3 projects early has proved critical to securing the private sector’s appetite and ability to partner. In order for a private consortium to bid on a PPP project they must undertake an incredible amount of due diligence, usually costing upwards of 3% of project costs, because the bids they put forward are fixed and cannot be changed. Consequently, the private sector is looking for greater certainty that projects will reach the finish line, will not be hijacked at the end, and that the process will be fair.

In Texas, for example, the Texas Department of Transportation conducted a potentially lucrative P3 procurement for the SH 121 project. The preferred proposer offered an upfront payment considerably larger than TxDOT anticipated. After selection in late 2006, however, the Texas Legislature changed the law and granted a regional tolling authority the right to make a pre-emptive offer on better terms than the selected proposer. The regional tolling authority subsequently took over the project. The action by the Legislature to change the course of the procurement at such a late stage was very costly for private sector bidders that had spent millions just on the due diligence to submit a proposal for the project. In order to regain private sector interest on future project opportunities, Texas DOT has changed their approach to ensure the Legislature is fully informed of P3 projects and supportive before any are advanced.[20] In addition, in 2008 the procurement was initiated for the monetization of the Pennsylvania Turnpike under a long-term toll concession before the Legislature had provided P3 approval. As it turned out, the decision to move forward with the procurement before gathering legislative approval failed and the transaction was cancelled, despite the fact that millions had been spent by the private sector to bid on the project.

In Washington, the existing law imposes a post-procurement discretionary action by the State Transportation Commission. The proposed agreement, together with a financial analysis, must be submitted; a public hearing must be held; the Commission must appoint a five to nine member advisory committee and receive an expert panel review of committee recommendations on the proposed agreement; the Commission must consult with the Governor; and then it must vote to approve or reject or continue negotiation of the proposed agreement. This process creates a lot of political risk that a P3 procurement would be susceptible to cancellation should the political environment change.

In addition, Washington's P3 law requires approval by the Legislature of tolling for any project and expenditures from a state account of P3 project revenues. Uncertainty over whether such legislative action is required for post-procurement toll changes or expenditures is another significant flaw in the existing P3 law.

20 It had to pledge the revenues of its entire toll road system to produce a payment marginally higher than the winning proposer's offer, which was based solely on project revenues. The tolling authority's credit rating was downgraded as a result of this pledge.

The State must professionalize its P3 functions.

Legislation can create sound authority, flexibility and key parameters. It must be recognized, however, that the key to realizing the public policy objectives of a project, and protecting the public agency from risk, lies in the terms and conditions of the P3 procurement and P3 agreement that emerges. Legislation should create the means for the public agency to assemble the informed leadership and technical, financial and legal expertise necessary to establish and maintain a P3 program, conduct P3 procurements and structure and negotiate these agreements.

Most US jurisdictions with P3 laws vest administration of the law in the agency or agencies authorized to use the tool. This can be an effective means to professionalize P3 application, provided the agency has the long-term political support to develop a programmatic approach and adequate resources to implement the program through dedicated leadership and a systematic decision-making mechanism. TxDOT and VDOT are examples where movement from ad hoc project-oriented decisions to well-developed P3 programs has started to occur.

The Canadian provinces, particularly British Columbia and Ontario, have established independent P3 agencies with plenary authority over P3 decision-making, procurements and contracting across all infrastructure sectors. Public entities from the provincial to the local level submit projects to these P3 agencies for preliminary and detailed evaluation of whether a P3 is the best tool to use. Because each of these provinces has enjoyed a proven record of public benefit from using P3 for many projects, their laws contain a rebuttable presumption that projects over $50 million are to be pursued as P3s through its P3 agency. These agencies have evolved into true centers of expertise in all facets of P3 project delivery, with relatively steady political support. They also have a record of selectivity; many submitted projects are rejected as not suitable for a P3.

In between the typical US model and this Canadian approach are several jurisdictions that have established P3 entities with different levels of authority and involvement in P3 project selection, procurement and delivery.

The attached Appendix B: Supporting Material, Table of Special P3 Governmental Authorities, summarizes the basic composition and role of these P3 entities. We present this information to give Washington legislators information on the range of choices they may want to consider for establishing P3 authority in the State. Governmental arrangements such as these, which gather precedent and

lessons learned and augment use of state-of-the-art analytical tools, procurement methods and contracting terms, will help ensure optimal application of the P3 tool and, over time, a reliable and efficient P3 program in the State.

The State must avoid requirements and limitations incompatible with private participation.

Sound P3 legislation avoids provisions that effectively preclude financial feasibility, bar or limit private sector participation in the very activities in which the private sector can produce real value, or otherwise inhibit effective application of the P3 tool.

Washington's existing P3 law has such flaws. Only the state treasurer may issue indebtedness for a P3 project; no privately arranged or issued debt financing is permitted. Further, even though the law authorizes private entity contributions, it bars use of tolls to pay a return on equity. Equity is an essential element of the overall financing package and allows the project to raise significantly more upfront capital than would otherwise be the case. Equity by its very nature assumes higher risk than debt or bond finance and requires a higher level of return as a consequence. If the private sector is asked to assume a much higher level of risk on projects – in exchange for price and schedule certainty for the public sector – then the equity must be able to realize a rate of return. While there is no free money in a P3 project, there is the ability to share risks with the parties that can best manage them. The cost of transferring various risks to the private sector (taking into account a rate of return on equity) can be less than the cost when risks are retained by the public sector. Because the existing statute precludes private debt and equity, one of the central advantages of a P3 - to harness private capital formation for projects – is effectively removed by Washington's P3 law.

It is the case that P3 legislation in some states contains requirements for some public authority to set, revise, charge and collect tolls. For instance, North Carolina vests such powers in its turnpike authority, subject to prior review by several other state executive and legislative bodies. While tolling policy is quintessentially a public policy decision, it is important that these decisions be made by adopting a tolling policy for a project (or region) in advance of conducting a toll concession procurement. It is extremely difficult to extract value and maximize capital formation from the procurement if each future change in toll rates must be reviewed and approved by a third party. It should also be noted that it is a standard term of indentures for revenue bond financing that tolls or other user fees must be raised if certain covenants are breached.

In states lacking existing laws and regulations creating cost-effective mechanisms to trace and bring enforcement actions against toll violators, it is necessary for P3 legislation to include toll enforcement provisions. These can be detailed and complex, but they are fundamental to effective modern toll revenue financing. An example of such a state is Arizona, where there is no existing tolled facility and/or law on toll enforcement. Consequently, until the P3 law is revised to include such authority, it is not possible to pursue tolled P3 projects in the state using modern electronic toll collection systems.

Another problematic legislative mandate can be the removal of tolls upon repayment of debt or termination of the P3 contract. These legislative provisions can undermine the application of advantageous terms in P3 agreements. For instance, if tolls must end when the contract ends, the public entity is placed in an impossible position should it need to terminate the contract for the private or public party's material default or for the State's convenience. Such a termination almost always requires payment of some compensation to the private party, offset by any damages payable to the State. But without a continuing project revenue stream post-termination, the public entity will lack project revenues to pay or finance payment of the termination compensation. These provisions also often do not take account of future maintenance and capital improvements.

Laws outside the scope of the P3 statute, but applicable to P3 projects and transactions, can also stand in the way of effective utilization of the tool. One of the most significant areas of concern is state law regarding public indebtedness and appropriations. P3 agreements are long-term contracts with monetary obligations of the public entity, both definite and contingent, that endure throughout the term. These laws vary from state to state. In Texas, the state attorney general interprets the state constitutional limit on incurring debt to mean that a future monetary obligation must be conditioned upon an appropriation, and that if there is no appropriation, there exists no contractual obligation or liability – and therefore no permissible remedy beyond payment with funds not subject to appropriation. In California, in order to avoid treatment of these payment obligations at indebtedness requiring legislative and voter approval, the payment also must expressly be subject to appropriation. However, the failure to pay may still be treated as a default triggering remedies such as the right to terminate. The private sector usually is able to accept these indebtedness and appropriation laws, but, depending on how these laws work, P3 legislation sometimes can improve treatment and ultimately value to the State.

The State must carefully weigh the potential impact of a legislative provision on competition and the receipt of value.

Many provisions in P3 laws—or the lack thereof —can have the effect, intended or unintended, of reducing competition or the value that can be gained through competition for P3 contracts. Sometimes there is an inadequate understanding of these effects. When these effects are understood, legislators can make fully informed decisions on whether the policy objectives of the provision outweigh the effects on competition or value.

A good example is whether to exempt P3 projects, and the private party's interest in the project, from real property taxation. Some P3 laws contain explicit exemptions; others, such as Alaska's statute for the Knik Arm Bridge and Toll Authority, are silent on the matter, leaving the question up to general state property tax law. The private party will adjust its pricing to recover this tax cost. In some cases, this added cost can spell the difference between a self-sustaining project and one requiring public funding contributions.

Georgia has a provision prohibiting the state from indemnifying the private party from liability for hazardous materials. Experience indicates that the P3 industry is averse to taking on exposure to hazardous materials liability under US law, due to its strict and unending liability. The bar against indemnification can chill interest in competing and/or lead to unnecessarily large contingencies in bidder pricing, thus reducing value to the State.

The State must provide flexible authority that supports the different types and scopes of P3 agreements the State wishes to pursue.

Types of P3 Procurements and Agreements

P3 procurements and P3 agreements do not come in a single form. Different methods of procurement, and different types and scopes of agreements are available.

A P3 procurement can be run as an auction process, with the winner being the one submitting the highest sealed bid price. It can be run as a purely qualifications-based selection following negotiation of price and contract terms. Most often, it is run as a best value selection, where price, qualifications, innovations and other factors are evaluated under a weighted scoring system, and fairly limited negotiations occur after selection.

The steps in the procurement process can also vary. The most common method is to use two steps: First, a solicitation and evaluation of team qualifications resulting in selection of a short list of proposers; and second, a solicitation and evaluation of detailed pricing, financing and technical proposals resulting in ranking, selection and award.

P3 legislation also should authorize any fair and neutral procurement activities as the public entity believes will serve the public interest. Among these in modern P3 procurements are:

- Payment of stipends to responsive, losing proposers in exchange for their work product and ideas for the project;
- Conduct one-on-one meetings with individual proposers to exchange ideas, comments and questions regarding the project and procurement documents; and
- Procedures where alternative technical and financial concepts can be submitted on a confidential basis to the procuring agency prior to proposal submission so that it can review and decide whether to allow inclusion of the concept in proposals.

P3 agreements range from design-build contracts to contracts for all activities and services needed for a project over the long term, with many permutations in between.

In addition, public entities sometimes use pre-development agreements, under which the private party provides project development services leading to later determinations of project scope and feasibility followed (if the project is feasible) by negotiation of one of the forms of long term agreements. Washington used pre-development agreements for its first round of P3s in the 1990s. The pre-development agreement for the Tacoma Narrows bridge proved effective in narrowing the options for this project, producing preliminary design, determining the tolling regime for the project, navigating litigation, obtaining permits and otherwise preparing the project for final design and construction. It ultimately led to negotiation of one of the state's largest design-build contracts.

A well-conducted P3 suitability and Value for Money analysis, geared toward fulfilling identified project objectives, informs not only the decision on whether to use a P3, but also which type of P3 agreement and which type of procurement process is best for the particular project. P3 legislation should, therefore, accommodate and authorize all these choices.

Types of Projects

An important policy issue for legislators is what types of projects should be authorized to use the P3 tool. Internationally, P3 has been authorized not only for transportation but for a broad array of publicly-owned and delivered infrastructure, including schools, colleges and universities, correctional facilities, court facilities, hospitals, and water and wastewater facilities. In the United States, so far there are few examples of P3 authorization for social infrastructure. Texas recently enacted legislation (SB 1048, 82nd Legislature) expanding P3 authority from transportation to a wide range of additional project types (e.g. hospitals, schools, medical facilities, water/wastewater systems, energy projects and public buildings). Virginia has a P3 law for educational facilities.

For the State of Washington, the question is what types of transportation facilities to include. Just specific projects? Just highways and bridges? Tunnels? Transit systems? Airport facilities? Ports? It is essential that the definition of included transportation facilities be precise. In Arizona, the original P3 law passed in 2010 is unclear whether the P3 tool is available for safety rest areas, DMV information systems, solar and other energy systems to serve roadways, and similar projects that the state DOT is interested in pursuing as P3s. The legislation was amended to provide clarity and the most opportunity for the desired types of projects to be advanced.

In California, ambiguous language defining “transportation project” created an issue whether authority is limited to new facilities or is available for reconstruction and other work on existing facilities. Opponents brought litigation on this basis to challenge the authority to use a P3 for the Presidio Parkway project. The litigation was ultimately resolved in Caltrans’ favor but delayed financing for the project throughout 2011.

Sources of Funds and Means of Financing

The P3 tool is most effective when a full array of potential funding sources and methods of financing is available to the public entity and private party. The reality for most major projects in the US is that they face significant funding gaps. As a result, a primary project objective and major driver for numerous US P3 projects has been to maximize upfront capital formation, combining many sources into a complete financing package. Good examples are the North Tarrant Express and I-635 managed lanes projects in Texas, which are using a combination of federal and state grant funds, private activity bonds, TIFIA loans and private equity.

To attract the best combination of financing for P3 projects, P3 legislation must create an environment attractive to the debt and equity markets. Key elements include provisions that:

- Allow all lawful forms and combinations of financing for a P3 project. Washington's existing P3 law, as described above, does not. Another example of a pitfall is Georgia's law that allows the state's tolling authority to impose tolls only in connection with its issuance of toll revenue bonds. For the West by Northwest project, this provision has created considerable problems with deal structuring, including questions over who actually owns the right to toll revenue and to pledge those revenues. These questions, in turn, inhibit capital formation by the private sector and thus value to the State. The P3 procurement of the West by Northwest project was recently cancelled.
- Promote creditworthiness for the public entity's P3 contractual obligations. This is particularly important for availability payment P3s, discussed separately below. The better the public entity's credit, the better will be the cost of funds.
- Assure that toll revenues are isolated to support and secure private project financing. P3 laws that direct toll revenues into a pooled account, or that make them subject to legislative appropriation, inhibit, if not eliminate, project financing, which is the central financing mechanism for P3 projects.
- Authorize compensation from the public entity to the private party, and vice versa. This is necessary in order to craft optimal risk allocations and exercise termination rights. And, of course, it is essential to an availability payment form of P3.
- Create exceptions, if necessary and lawful, to sovereign immunity and immunity from suit laws so that they do not bar effective legal and equitable remedies for public entity breach. If there is no legal path to reasonable contract remedies for the private entity, it will have no success in raising financing.
- Have sufficient scope and clarity regarding authority so that an unqualified legal opinion on authority and enforceability can be rendered. Both debt and equity providers will not take the risk that the public entity lacks the right and power to engage in the transaction.
- Establish a fair and expeditious dispute resolution process.

Note that it is not necessary for the public entity to undertake any contractual or legal obligation or guaranty to repay private indebtedness. Statutory provisions barring this, if properly written, do not interfere with P3 financing.

Authority to Collect and Enforce User Fees

P3 legislation should clearly authorize the use of tolls or user fees, but should not necessarily require them.

It is important that P3 legislation create authority for both the public entity and the private party to levy, collect and enforce tolls or other user fees. In a toll concession, it is the private party that needs these powers and owns the revenues, subject to complying with the adopted tolling policy. In availability payment P3s for tolled projects, it is the public entity that performs these functions and owns the toll revenue.

In Texas, P3 legislation vests tolling enforcement powers only in TxDOT, which has required TxDOT to appoint the P3 private party as TxDOT's agent for performing toll collection and enforcement functions. Pending legislation in Pennsylvania (HB 3) creates toll collection and enforcement authority in a neutral fashion, so that the function and authority can be properly assigned to one or the other party in the P3 agreement.

It is recommended that the State should enable Availability Payment P3s.

An availability payment P3 is a long-term concession under which the public entity pays the private party a unitary payment for the design, construction, financing, operation and maintenance services and functions provided by the private entity. The payment is earned for making and keeping the project available for public use and benefit. Failures to keep the project open and available, as well as other failures in performance, can result in deductions from the availability payments. In this type of concession, the private party does not own project revenues (if any) and therefore does not take revenue risk. The public entity retains revenue risk and benefit.

Since the financial markets crisis in 2008, availability payment P3s have emerged as an important and growing tool in the US and this growth is expected to continue. They have been successfully procured for Florida's Port of Miami Tunnel and I-595 projects, for Caltrans' Presidio Parkway project, and for the Long Beach, California courthouse. This year the Knik Arm Bridge and Toll Authority in Anchorage, Alaska, charged with building a toll bridge and approaches, cancelled its original toll concession procurement, started an availability payment P3 procurement, and benefitted from a significant improvement in competition and the quality of proposers as a result.

P3 legislation should authorize and enable availability payment P3s. Too often, however, P3 laws either lack this authorization or do not do an adequate job of maximizing the potential value of this tool to the public. An availability payment P3 is founded upon the credit of the public entity and, therefore,

legislators should consider how to create creditworthy arrangements and reliable future sources of funding.

Florida addressed this question through a statutory prioritization of availability payments. Its P3 law establishes the priority for availability payments after operations and maintenance but ahead of later capital projects in the FDOT budget.

Arizona's P3 law adopted in 2010 vested tolling powers only in the private party, inhibiting the use of availability payment P3s.

The California P3 law is silent on the subject of availability payments and contains no prioritization. Caltrans addressed the problem for the Presidio Parkway, which is not tolled, by adopting a budget policy and making contract commitments that prioritize the payments at equal priority with existing and future capital outlays. The Knik Arm Bridge and Toll Authority in Anchorage, Alaska (KABATA) has a governing statute which indicates that it has a "separate and independent legal existence" from the state, meaning that the only credit backing its planned long-term availability payment obligation is the toll revenues from the project. This, of course, places revenue risk back onto the private party with very limited or no ability to manage this risk. KABATA is seeking a legislative solution under which its payment obligations will be state obligations subject to appropriation. This would lift the credit to the state's AA appropriation debt rating and thereby significantly improve the pricing from proposers. KABATA also plans to place toll revenues under a trust arrangement with restricted and prioritized uses to further enhance the credit and assure these revenues are devoted to availability payments.

2.3.5.2 Recommendations

In the context of the above discussion and extensive discourse throughout the Study, our recommendation to the State is that a modification to its current P3 legislation is both necessary and timely should it elect to pursue a P3 procurement in the future. These recommendations are provided in Section 4.3.

2.3.6 Administration: Creating a P3 Office

In many successful P3 programs, there is one clear public partner responsible for establishing uniform standards, channeling private sector expertise, providing transaction support to public agencies, and managing the project procurement process. This partner often takes the form of a centralized public P3 entity, which acts as the public champion of P3s, develops a project pipeline, standardizes core

documents and procedures, monitors projects, and ensures for transparency and fairness throughout. The following case studies demonstrate how other states and provinces have filled this central role.

2.3.6.1 Virginia DOT Office of Transportation Public-Private Partnerships

In 1995, Virginia enacted the Public Private Transportation Act (PPTA) to allow private entities to enter into agreements to construct, improve, maintain and operate transportation facilities, In 2010, the Office of the Secretary of Transportation initiated a programmatic review of the 1995 Act to identify opportunities for improving the existing PPTA processes, resulting in the creation of the new Office of Transportation Public-Private Partnerships. This office works with the Secretary of Transportation and the five Virginia transportation agencies to coordinate P3 projects across all modes of transportation.

2.3.6.2 Partnerships BC

Partnerships BC is one of several province-wide P3 agencies that have encouraged the development of a robust and successful P3 market in Canada. These agencies are public companies (known as “crown corporations”) that are wholly owned by the provincial government. Partnerships BC works with a broad range of public agencies and on various asset types, providing planning services to public sector agencies and serving as a center of expertise on policies and best practices. Partnerships BC develops standardized transaction documents and processes, and it serves as the entry point for the private sector to bring forward ideas and solutions. By creating an entity such as Partnerships BC, the goal is to impose discipline on P3 procurement through business planning and feasibility studies, a clear and stable procurement process, and support during implementation. Next to Ontario, British Columbia has undertaken the largest number of completed and ongoing infrastructure P3s of any jurisdiction in North America, including more than twenty projects that have been, or are scheduled to be, delivered on time and on budget through public-private partnerships.

2.3.6.3 Recommendations

A detailed set of recommendations in relation to the State of Washington’s developing an enhanced P3 administrative body is provided in Section 4.4.

3.0 Project Evaluation

This chapter summarizes the development and application of the Project Screening Tool and Comparative Financial Model. These tools are integral to the Study, both as deliverables for future use by the State, and in the context of their findings in relation to the five candidate projects that have been evaluated.

3.1 Overview of Candidate Projects and Findings

The following sections 3.1.1 through 3.1.5 summarize relevant characteristics of the five candidate projects and the Study's findings in relation to their suitability for P3 delivery. This is followed by a detailed account of the methodology that has been developed and applied through the Study in determining these findings – collectively termed the screening process.

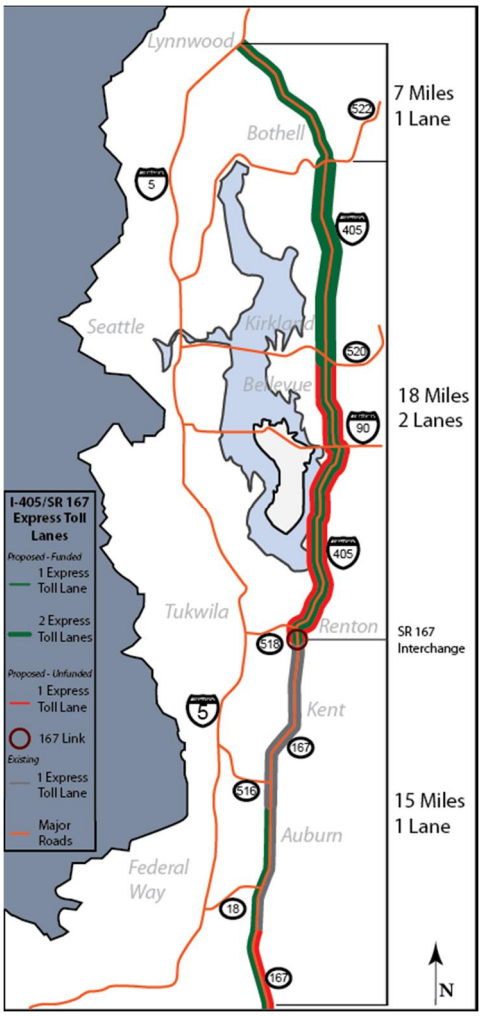
All information about the projects has been sourced through WSDOT from existing studies and reference material. The physical and operational limits of each project are defined by particular cases from previous tolling studies, as per Table 3.1. Comprehensive assumptions have also been agreed with WSDOT in relation to the funding; delivery method; sources of operating revenue (tolling); and Operations and Maintenance of each project under a business as usual approach, all of which are detailed in the following sections of this chapter in the context of relevant technical discussion.

Table 3.1 Definition of Candidate Projects by Source

Project	Source Study	Option Assessed
I-405/SR 167 Express Toll Lanes	Tolling Study (January 2010) www.wsdot.wa.gov/Tolling/EastsideCorridor/Report I-405/SR 167 Corridor Express Toll Lanes Project Information Summary July 21, 2011	4.2
I-5/SR 509 Extension	SR 509 Tolling Feasibility Study (September 2010) SR 509 Project Information Summary July 25, 2011	3a
SR 167 Extension	SR 167 Tolling Feasibility Study (September 2010) SR 167 Extension, Puyallup to SR 509 Project Information Summary July 25, 2011 http://www.wsdot.wa.gov/Projects/SR167/TacomaToEdgewood/default.htm	2
US 2 Monroe Bypass	Monroe Bypass Project Information Summary prepared by WSDOT; July 25, 2011	NA
I-5 Columbia River Crossing (CRC)	Columbia River Crossing Tolling Study Committee Report to the Washington and Oregon Legislatures (January 2010) Columbia River Crossing May 2010 CEVP Workshop Final Report	1A

3.1.1 I-405/SR 167 Express Toll Lanes

3.1.1.1 Background and Planning History



This project would construct up to two new express toll lanes in each direction along Interstate 405 and SR 167, the primary bypass route for Interstate 5 in Snohomish, King, and Pierce Counties. This project is the product of multiple planning efforts led by WSDOT, including the I-405 Corridor Master Plan (2002) and the SR 167 Valley Freeway Plan (2009). In the long term, these vision plans call for a unified corridor featuring new lanes, express toll lanes, improved interchanges, and enhanced transit options including new transit centers, a bus rapid transit system, and 1,700 new vanpools. Express lanes on the corridor were first proposed in the 2002 Master Plan and were supported by the Legislature in two subsequent resolutions, in 2005 and 2007, which endorsed tolling as a means to offset the cost of new lane construction. In 2010, the Legislature directed the Transportation Commission to conduct a traffic and revenue study for the managed lane concept on Interstate 405, which identified a preferred 40-mile system costing $1.95 billion. The results of this study were vetted and approved by an impartial expert review panel. This plan builds upon a preliminary managed lane pilot program on SR 167, which was implemented in 2008.

Nearly all environmental documents for this project are complete. The 2002 I-405 Corridor Master Plan received its Record of Decision in 2002, and Environmental Assessments for specific segments of the corridor were approved in 2008 and 2011. A supplemental Environmental Assessment will be required to specifically address toll lanes. For Phase 1 of the project (see below), permitting and ROW acquisitions are complete. For Phase 2, no permits have been issued and no property has yet been acquired. Approximately 85 parcels must be purchased for Phase 2 construction to proceed.

3.1.1.2 Project Phasing and Funding

The 40-mile express toll lane proposal has a ten-year implementation strategy, including three years to construct Phase 1 (Bellevue to Lynnwood), and seven years to design and construct the remainder

as Phase 2. Phase 1, with a cost of $470 million, is fully funded through a combination of gas tax appropriations and savings within the corridor. The estimated cost of Phase 2 is approximately $1.5 billion, for which funding has not yet been secured. It is anticipated that leveraged toll revenues from Phase 1 will support Phase 2 construction.

3.1.1.3 Potential Specific Project Risks

- Potential risk of future initiatives e.g. failed ballot initiative 1125, which would have prohibited the use of variable toll pricing in Washington State (50% Probability).
- $144 million in matching funds for Phase 1 have been delayed until 2025 by the Legislature, potentially delaying the project until 2025 (20% Probability).
- Lack of committed funding for Phase 2 (20% Probability).
- Potential permitting and acquisition delays for Phase 2 (varying probability).
- User-generated revenue risk: this would be the first two-lane express toll lane system in Washington State.

3.1.1.4 Findings and Recommendation

Type of Financing / Delivery Model	PSC (Public Sector Comparator		P3 Delivery (Shadow Bid)
	GO Bond	Toll Revenue Bond	Toll Revenue P3 Concession
Net Project Value	+ $510 Million	+ $340 to + $470 Million	+ $910 Million
Value for Money	-	-	Highest

Under the assumed toll collection regime, it is estimated that the I-405/SR 167 Express Toll Lanes project is revenue positive and is capable of generating an upfront positive value in the range of $910 million to the State. It is estimated that a P3 toll concession model provides the greatest Value for Money, is the recommended delivery model, and should be evaluated further.

Screening Tool Assessment

The project did not register any fatal flaws and passed the overall assessment.

Financial Model Inputs

Three scenarios have been analyzed for this project: public sector comparator design-build delivery with cases for both Toll Revenue and GO Bond Finance; and a P3 DBFOM delivery, toll revenue concession.

Revenue Forecasts. Other than an adjustment to reflect early completion of the project's construction under the P3 case (refer below) and associated earlier opening to traffic, the toll rates and revenue inputs to this project's P3 and PSC cases are identical. Forecasts for all three segments of the project were drawn from the relevant documents outlined in Table 3.1 which run from 2015 to 2055. In order to extend the forecast to meet the agreed project term, the Consultant Team assumed no traffic growth from 2055 to 2070 along with a continuing toll escalation of 2.5% per year to match CPI.

Initial Construction Cost Forecasts. The primary differences in the PSC and P3 scenarios were that the private sector is assumed to deliver the project more rapidly, resulting in time and cost savings as per Figure 3.2 and discussed in Section 3.6.2.1. No differences have been assumed as a result of economies of scale or procurement efficiencies. Under these assumptions the P3 case assumes a 15% initial CAPEX saving.

Preservation Cost Forecasts were developed for the PSC case by WSDOT project staff in line with forecast quantities and typical unit costs and frequencies of major preservation (CAPEX) activities undertaken by WSDOT in relation to similar existing assets. This included a full assessment of tolling and ITS costs along with other categories as discussed in Section 3.6.2.2. P3 costs were developed by the Consultant Team using identical quantities but different unit rate and intervention assumptions (both type and frequency) based on P3 industry experience and practices. It is estimated that total ongoing CAPEX savings is approximately 10% under the P3 case over the project's life, as detailed in Figure 3.3.

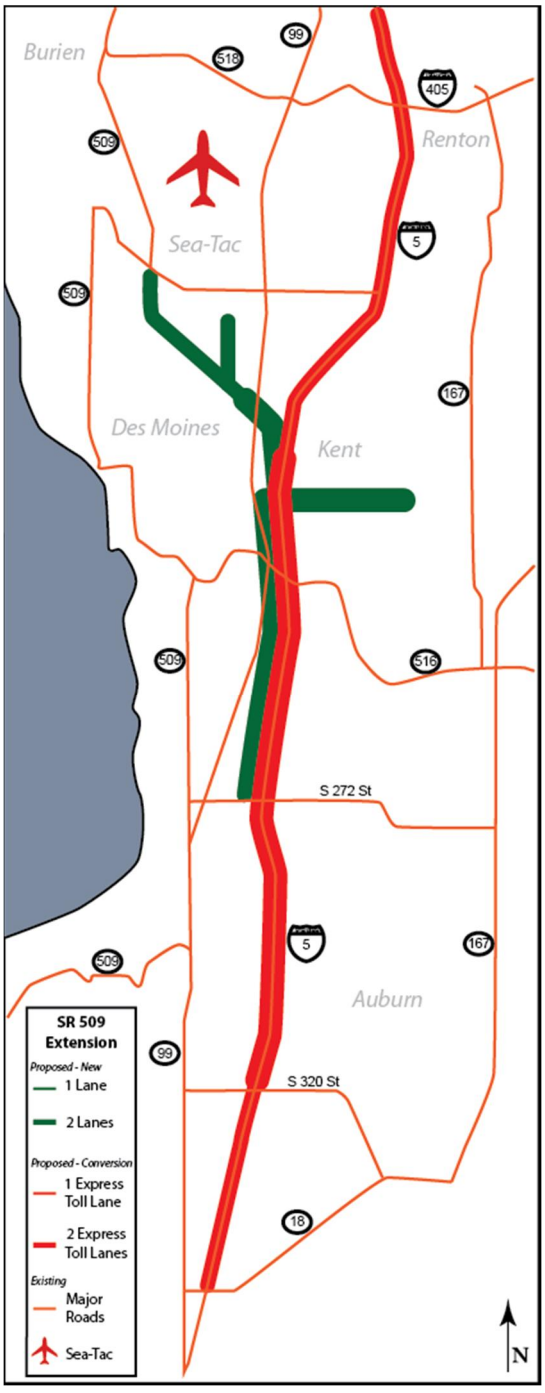
O&M Cost Forecasts were developed in the same way as preservation cost forecasts, with the Consultant Team applying metrics, such as tolling cost per transaction and credit card fees as a percent of revenue, from an extensive database of US P3 projects to O&M costs from the PSC case. Unique costs such as winter maintenance, enforcement and uncollectable tolls were assumed identical for all cases. Table 3.5 presents P3 and PSC findings. A total O&M savings of 34% has been identified under the P3 case.

Risk Apportionment has been assessed for PSC and P3 cases in relation to project risks retained by the public sector, assessed at $168M and $27M respectively. This result has contributed to the finding that P3 delivery has the potential to provide better Value for Money than PSC delivery for the project.

3.1.2 I-5/SR 509 Extension

3.1.2.1 Background and Planning History

The SR 509 extension would complete a limited access freeway from south Seattle to Interstate 5 in the Kent/Des Moines area, including a new access road to Sea-Tac airport from the south. Once completed, this roadway would improve regional connections in South King County, alleviate congestion on Interstate 5, and facilitate freight movement throughout the region. Planning for this extension began in 1992, and the Record of Decision for the project was issued in 2003. The design process is 30% complete, and 40% of the necessary ROW has been acquired.



3.1.2.2 Project Phasing and Funding

The SR 509 project evaluated in this Study would build one lane in each direction of the SR 509 extension between S. 188th Street and S. 24th Avenue/S. 28th Avenue, and two lanes each direction between 24th/26th avenues south to I-5. It includes both inside and outside connections to I-5. The inside connection would merge to proposed HOT lanes during the off-peak period. A total of $86 million has been committed and spent for this project from gas tax revenue and other sources. This funding was used to advance preliminary design, purchase ROW, and construct environmental mitigation projects. No additional funds are currently available.

In 2010, WSDOT completed a tolling feasibility study for the corridor and considered six different tolling options that could provide between $250 million and $605 million in potential revenue. Construction cost estimates range from $580 to $930 million, leaving a gap of $120 to $675 million. As part of the study, stakeholders expressed a preference for “Option 3a,” which would build the specified links to the Port of Seattle, Sea-Tac Airport, Des Moines and Kent with a toll funding

contribution of 70% - 93% of total costs. A second tolling study is currently underway and will be completed in early 2012. On November 21, 2011, the SR 509 Project Executive Committee decided that Option C from the new study is the preferred first phase option for the project. The difference between Option C and the formerly preferred option (Option 3A) is the use of 28th/24th Avenue South as access to Sea-Tac Airport, deferring the construction of the South Access Road to a later phase.

3.1.2.3 Potential Specific Project Risks

- Potential risk of future initiatives e.g. failed ballot initiative 1125, which would have prohibited the use of variable toll pricing in Washington State (50% Probability).
- Changes to state stormwater management requirements may require a re-design of highway runoff elements (80% Probability).
- ROW Acquisition may be delayed by unwilling sellers (30% Probability).
- Site contamination and other site conditions may increase construction costs (varying probability).

3.1.2.4 Findings and Recommendation

Type of Financing / Delivery Model	PSC (Public Sector Comparator	P3 Delivery (Shadow Bid)
	Toll Revenue Bond	Toll Revenue P3 Concession
Net Project Value	- $210 to - $250 Million	**- $80 to + $40 Million**
Value for Money	-	Highest

The SR 509 Extension project is estimated to generate greater Value for Money under a P3 delivery model than under a traditional delivery model. Under the traditional delivery model, it is estimated that a funding gap will remain; however, the P3 delivery model has the potential to fully fund the project under an optimistic scenario. This revenue positive outcome indicates the potential for this project to be self financing under such conditions. Therefore, a P3 toll concession approach is the recommended delivery approach and should be evaluated further.

Screening Tool Assessment

The project did not register any fatal flaws and passed the overall assessment.

Financial Model Inputs

Two scenarios have been analyzed for this project: a public sector comparator design-build delivery with Toll Revenue Bond Finance; and a P3 DBFOM delivery, toll revenue concession.

Revenue Forecasts were drawn from the relevant documents outlined in Table 3.1 which run from 2020 to 2055. In order to extend the forecast to the end of the project term, the revenue forecast applied assumptions of no traffic growth and a continuing toll escalation of 2.5% per year to match CPI from 2055 to 2070. Other than an adjustment to reflect early completion of the project's construction under the P3 case (refer below) and associated earlier opening to traffic, the revenue inputs for this project's P3 and PSC cases are identical. High and low sensitivities were also tested to provide a range of results for both cases.

Initial Construction Cost Forecasts. The primary differences in the PSC and P3 scenarios were that the private sector is assumed to deliver the project more rapidly, resulting in time and cost savings as shown in Figure 3.2 and discussed in Section 3.6.2.1. No differences have been assumed as a result of economies of scale or procurement efficiencies. It is estimated that the P3 delivery model generates approximately 4% in total savings.

Preservation Cost Forecasts were developed for the PSC case by WSDOT project staff in line with forecast quantities and typical unit costs and frequencies of preservation (CAPEX) activities undertaken by WSDOT in relation to similar existing assets. This included a full assessment of tolling and ITS costs along with other categories as discussed in Section 3.6.2.2. P3 costs were developed by the Consultant Team using identical quantities but different unit rate and intervention assumptions (both type and frequency) based on P3 industry experience and practices. Approximately 25% on ongoing CAPEX savings have been estimated under the P3 case, as detailed in Figure 3.3.

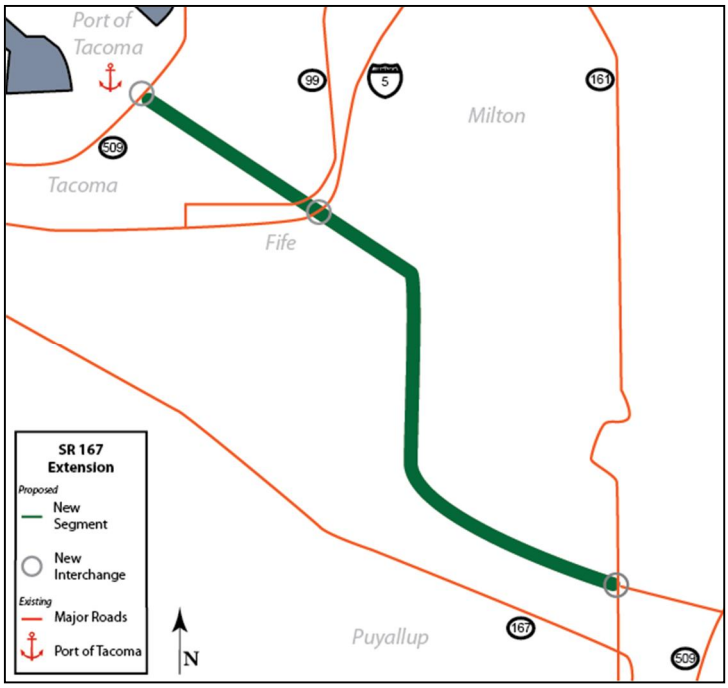
O&M Cost Forecasts were developed in the same way as preservation cost forecasts, with the Consultant Team applying metrics, such as tolling cost per transaction and credit card fees as a percent of revenue, from an extensive database of US P3 projects to O&M costs from the PSC case. Unique costs such as winter maintenance, uncollectable tolls and the cost of enforcement were assumed identical for all cases as shown in Figure 3.6. A total P&M savings of 45% has been identified under the P3 case.

Risk Apportionment has been assessed for PSC and P3 cases in relation to project risks retained by the public sector, assessed at $67M and $18M respectively. This result has contributed to the finding that P3 delivery provides better Value for Money than PSC delivery for the project.

3.1.3 SR 167 Extension

3.1.3.1 Background and Planning History

The SR 167 extension would build a new 6-mile freeway connecting the City of Puyallup with Interstate 5 and SR 509 in Tacoma. This project would significantly reduce congestion and improve safety along surrounding local roads and would improve regional mobility for both passenger cars and freight operators. WSDOT began planning for this extension in 1990 with a Tier I EIS. This study was completed in 1999, identifying the preferred corridor and allowing WSDOT to proceed to a Tier II EIS. This process concluded with a Record of Decision in 2007.



Approximately 70% of the necessary ROW has been acquired, and the project is currently in the advanced design stage.

3.1.3.2 Project Phasing and Funding

Approximately $157 million has been allocated to this project from gas tax revenues as well as other sources. These funds have been used to support ROW acquisition, engineering, and design work, although further funding for these steps was terminated on June 30, 2011. No funds are currently available to support further design or construction. Project phasing will be based on funding availability.

In 2009, the Legislature directed WSDOT to conduct a comprehensive tolling study for the corridor, the results of which will be available in 2012. This study is considering six different tolling options, including scenarios that place tolls only on SR 167 as well as others that also toll SR 509 and I-5. The potential funding need for this project ranges from $900 million to $1.9 billion. Preliminary projections indicate that tolls could provide between $265 million and $545 million in revenue, leaving a funding gap of $537 million to $1.6 billion depending on the scenario Option 2 from the tolling study was considered for the purposes of this Study.

3.1.3.3 Potential Specific Project Risks

- The EIS must be re-evaluated to incorporate design refinements (will delay project by 1-2 years).
- Additional design will be required to accommodate tolling infrastructure.
- Adjacent floodplain boundaries may be expanded, requiring costly mitigation (25% Probability).
- ROW purchases could become more costly with changes to the real estate market (25% Probability).
- Site conditions may increase construction costs (varying probability).
- Potential risk of future initiatives e.g. failed ballot initiative 1125, which would have prohibited the use of variable toll pricing in Washington State (50% Probability).

3.1.3.4 Findings and Recommendation

Type of Financing / Delivery Model	PSC (Public Sector Comparator	P3 Delivery (Shadow Bid)
	Toll Revenue Bond	Availability Payment
Net Project Value	- $740 Million	**- $370 Million**
Value for Money	-	Highest

Despite considerable savings through P3 delivery, the SR 167 project has a significant funding gap under all scenarios tested and would require significant new funds in order to become financially viable. It is therefore recommended that the project be put on hold until the State can secure such funds or redefine the project to be less costly or more financeable. At such time, the project should be reassessed under the screening process.

Screening Tool Assessment

The project did not register any fatal flaws but did come close to failing due to its significant funding gaps.

Financial Model Inputs

Two scenarios have been analyzed for this project: a public sector comparator design-bid-build delivery with Toll Revenue Bond Finance; and a P3 DBFOM delivery, availability payment concession.

Revenue Forecasts for the PSC case were drawn from the relevant documents outlined in Table 3.1 which run from 2020 to 2050. The P3 case does not rely on revenue forecasts to raise financing; instead the availability payment revenue stream paid by the state is pledged as security for the private financing. It is assumed that the toll revenue generated by the project will be used to pay

availability payments. For both cases an operating period of 35 years is assumed. Note that under the P3 case, the private party is required to collect tolls on behalf of the State.

Initial Construction Cost Forecasts were considered using existing construction cost and schedule estimates for the project. Due to the nature of the project's construction and differences in delivery models, it is estimated that the proposed P3 case results in time and cost savings as shown in Figure 3.2 and discussed in Section 3.6.2.1. Further savings have been assumed as a result of economies of scale and procurement efficiencies. Based on these assumptions, it is estimated that the P3 delivery model generates a 19% cost savings.

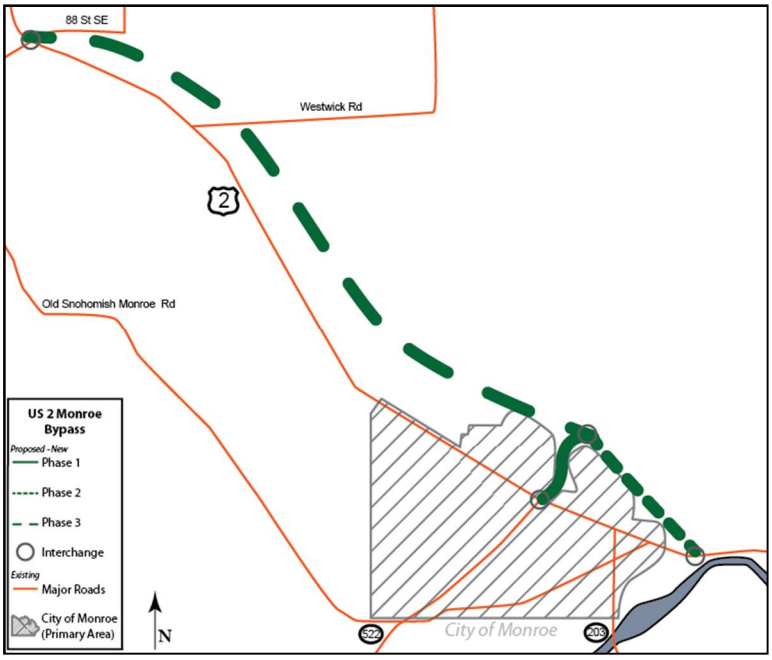
Preservation Cost Forecasts were developed for the PSC case by WSDOT project staff in line with forecast quantities and typical unit costs and frequencies of preservation (CAPEX) activities undertaken by WSDOT in relation to similar existing assets. This included a full assessment of tolling and ITS costs along with other categories as discussed in Section 3.6.2.2. P3 costs were developed by the Consultant Team using identical quantities but different unit rate and intervention assumptions (both type and frequency) based on P3 industry experience and practices. On this basis the Consultant Team has forecast cumulative savings of 22% on ongoing CAPEX under the P3 case, as detailed in Figure 3.3.

O&M Cost Forecasts were developed in the same way as preservation cost forecasts, with the Consultant Team applying metrics, such as tolling cost per transaction and credit card fees as a percent of revenue, from an extensive database of US P3 projects to O&M costs from the PSC case. Unique costs such as the cost of enforcement, winter maintenance and uncollectable tolls were assumed identical for all cases as shown in Figure 3.7. A total O&M savings of 62% has been identified under the P3 case.

Risk Apportionment has been assessed for PSC and P3 cases in relation to project risks retained by the public sector, assessed at $116M and $41M respectively. This result has contributed to the finding that P3 delivery has the potential to provide better Value for Money than PSC delivery for the project.

3.1.4 US 2 Monroe Bypass

3.1.4.1 Background and Planning History



This project would construct a new 5.5 mile, 2-lane limited-access highway along US 2 to bypass the city of Monroe, alleviating significant congestion that frequently brings traffic to stop and go conditions. US 2 is a major east-west thoroughfare through the State that has seen substantial travel demand growth in the past twenty years. Initial plans for a 4-lane bypass of Monroe were developed in 1968. In 1996, a design analysis was conducted to identify elements of the 1968 plan in need of updating, including an updated cost estimate. In 2007, the Monroe Bypass was identified as one of 56 potential improvement projects in the US 2 Route Development Plan (RDP), and a preliminary cost estimate was made for a 2-lane version of the bypass.

A preliminary design and engineering study has been completed for Phase 1 of this project (see below), amounting to 5% of the required planning for this stage. No design work has been conducted for Phases 2 or 3. Approximately 90% of the ROW needed for the project has been acquired, and Phase 1 can be constructed on existing WSDOT ROW. The initial EIS for the US 2 corridor was completed in 1976; an update of the EIS for this project would require 2-3 years to complete.

3.1.4.2 Project Phasing and Funding

The current cost estimate for the entire project is $326 million. Revenue and tolling studies have not yet been conducted, and no construction funds have been secured. The project consists of 3 phases, the first of which would build an extension of SR 522 north of Monroe, with the second and third phases building a new spur of US 2 to connect to this extension and bypass the city. Preliminary estimates from the 2007 RDP place the cost of Phase 1 at $43 million. Approximately $2-3 million would be required to update the original corridor EIS. No traffic or revenue studies have been conducted.

3.1.4.3 Potential Specific Project Risks

- The EIS update will require 2-3 years to complete.
- Potential design modifications and other mitigation efforts could require an additional 2-3 years.
- Design elements from the 1968 study will likely need to be updated to meet modern standards.
- Cost estimates are preliminary and incomplete.
- Parts of the bypass may be logistically difficult to toll.

3.1.4.4 Findings and Recommendations

Based on the outcome of the screening process, it is recommended that the US 2 Monroe Bypass project not be advanced as a candidate project for P3 delivery until the State has reviewed the causes for its failure under the screening tool assessment and moved to address these causes in line with its broader transportation policy goals. If at such time it can be demonstrated that the project would likely pass the fatal flaw criteria then it should be reassessed under the screening process. Administrative guidelines for the selection or reselection of projects for assessment under the Screening Process in this manner are contained in Section 3.2 of this report.

This project failed the screening tool assessment due to lack of a viable revenue stream and an out-of-date Environmental Impact Statement. For projects that fail the screening process, this failure should not be perceived as a final decision, but rather indicative of the list of issues that must be addressed in order for the project to be considered for P3 delivery in the future. In the case of US 2 Monroe Bypass this would mean addressing the various concerns outlined below. A set of general considerations for projects that fail the screening tool based on fatal flaw responses is given in Table 3.2.

Screening Tool Assessment

The Project Screening Tool was applied to the US 2 Monroe Bypass by WSDOT project managers, with assistance from the Consultant Team, and was reviewed by the Policy and Staff Workgroups. It was agreed that this project failed the application of the Project Screening Tool due to two fatal flaw criteria:

- **Financial Feasibility** – Due to the lack of a viable revenue stream, the project is not financially self supporting and no additional sources of funding have been identified.
- **Environmental approvals expected within three years** – This is not possible until the project EIS is recompleted, submitted and near approval, which generally takes longer than three years.

Additionally, the project was deemed to pass with limitations[21] in response to the following criteria:

- **Affordability** – With no identified and prioritized funding source the project is not currently affordable.
- **Support from elected officials and the public** – While the project would undoubtedly bring safety benefits to users and congestion relief for the town of Monroe, insufficient evidence is available to verify widespread public support for the project, and to confirm that no environmental, landowner or other groups would be fundamentally opposed to the project.
- **Return justifies risk** – The project has not been studied in sufficient detail to determine the quantum and nature of risks that would be involved with its delivery; however its alignment, which crosses relatively undeveloped rural areas and natural water bodies would indicate a reasonable likelihood of archaeological, environmental and potentially geotechnical risks. Financing risks are also significant without an identified source of project funds.
- **Are land ownerships issues likely to stop the project** – Insufficient information is available to adequately assess this criterion.

Table 3.2 General Actions Available for Failed Projects Seeking Reassessment

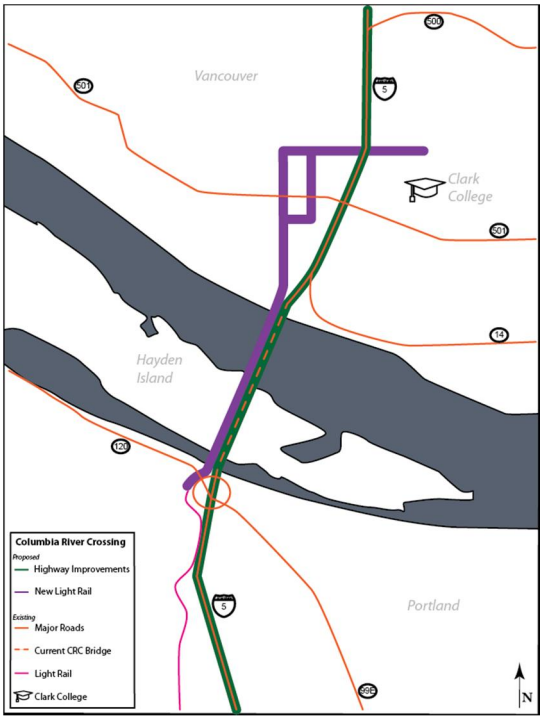
Criteria		Potential Course of Action
1.01.01	Affordability	The project is not likely to be affordable either because user fees would be too high or the project is not a priority for public funds. To address: Appropriate more State money for the project Identify additional revenues e.g. developer levies, special taxation zones, beneficiary contributions, advertising, etc (market study); and/or Advocate for prioritization of project based on needs
1.01.02	Support from elected officials and the public	Combination of political advocacy and public and stakeholder relations. Controversial projects require a proactive approach to garner public support
1.02.01	Financial Feasibility	Same as 1.01.01; AND, assess potential for innovative methods of public financial support; i.e. shadow toll or availability payment approaches
1.03.01	Return Justifies Risk	Reconsider State risk apportionment preferences and “must haves”
1.03.02	Suitable Deal Size	If too small, consider expanding or consolidating projects.
1.04.01	Environmental Approvals expected within 3 years	Accelerate approvals to the greatest extent possible, possibly including “sponsorship” of a designated employee within the relevant approval agencies
1.04.02	Are land ownership issues likely to stop the project	Assess potential to re-design project around affected properties; viability for use of eminent domain or land swap deals

[21] Under Tier 2 (non-fatal flaw) of the screening tool, projects are scored on each criteria from a range of 0 (pass) to 4 (fail) – any result between these scores is termed a “pass with limitations.”

3.1.5 I-5 Columbia River Crossing (CRC)

3.1.5.1 Background and Planning History

This project would construct a new, multi-modal river crossing along Interstate 5 between Vancouver, WA and Portland, OR. This project would replace a congested lift bridge and dangerous interchanges with two elevated, two-level structures supporting vehicles, light rail, and pedestrians. This is one of two river crossings in the Vancouver-Portland area, with the second being a toll-free bridge on nearby Interstate 205.



Planning for this project began in 1999, with a draft EIS issued in 2008 that identified the current preferred alternative. In 2010, a Bridge Review Panel was convened to determine an appropriate bridge type based on a variety of public interest concerns, ultimately selecting a composite deck truss bridge. The final version of the EIS completed the public review period on October 24, 2011, and a Record of Decision was issued on December 7, 2011. This planning process has involved two states, and two transit agencies, two federal highway divisions, the FTA, nine American Indian tribes, and substantial public input. The project is currently in the advanced design and engineering phase, but property acquisition has not yet begun.

3.1.5.2 Project Phasing and Funding

A total of approximately $203 million has been allocated to this project by the federal government and the states of Oregon and Washington. Of this amount, approximately $136 million has been spent to date on design, engineering, environmental studies, and public outreach. With completion of the EIS process in 2011, construction could begin in 2013. The southbound and northbound crossings will be constructed separately, and each crossing will consist of at least two bridge segments (one on each side of Hayden Island) as well as multiple interchanges. Current cost estimates for the entire project range from $3.1 to 3.5 billion.

It is anticipated that construction funds for this project will come from a combination of toll revenues, the federal government, and the states of Washington and Oregon. The project has applied for $850 million in federal New Starts funding for its transit component and has been designated as a federal “Project of National Significance,” which should facilitate federal funding. In 2010, a tolling study considered 10

potential tolling scenarios for the bridge. This study concluded that tolling could generate revenues ranging from $1 billion to as much as $3.6 billion, depending on the scenario, Option 1a was considered for the purpose of this Study.

3.1.5.3 Potential Specific Project Risks

- Any of the major funding milestones (appropriations from either state, FHWA, FTA, or tolling/bonding authority) could be delayed by one funding cycle (30% Probability).
- Inter-agency contractual delays between state, federal, and other stakeholders may occur (varying probability).
- ROW purchases, permits, and other necessary agreements may experience unexpected delays (varying probability).
- Multiple project sections within a constrained area may lead to conflicts and delays among contractors (20% Probability).
- Potential risk of future initiatives e.g. failed ballot initiative 1125, which would have prohibited the use of variable toll pricing in Washington State (50% Probability).

3.1.5.4 Findings and Recommendation

Type of Financing / Delivery Model	PSC (Public Sector Comparator		P3 Delivery (Shadow Bid)	
	GO Bond	Toll Revenue Bond	Availability Payment	Toll Revenue
Net Project Value	- $1,570 Million	- $1,930 to - $2,000 Million	- $1,560 Million	**- $1,250 to - $1,480 Million**
Value for Money	-	-	-	Highest

The I-5 Columbia River Crossing project is estimated to have a funding gap under all the scenarios analyzed. Of all the scenarios, the P3 DBFOM toll concession is estimated to generate the greatest cost savings. However, when comparing the availability payment P3 delivery model to the GO bond PSC model, there is relatively little difference in Net Project Value, so it is too close to make a definitive call that P3 can or cannot provide superior Value for Money. It is therefore recommended that the project be reassessed in future as the various input assumptions are refined to a greater level of confidence.

Screening Tool Assessment

The project did not register any fatal flaws and passed the overall assessment; however, it also exhibits a substantial funding gap.

Financial Model Inputs

Four scenarios have been analyzed for this project: public sector comparator design-build delivery with cases for both Toll Revenue and GO Bond Finance; and P3 DBFOM delivery with toll revenue concession and availability payment cases.

Revenue Forecasts were drawn from the relevant documents outlined in Table 3.1 which run from 2019 to 2059. In order to reach the agreed project term the low case forecast was extended based on no escalation past 2059 and 1% traffic growth. Other than an adjustment to reflect early completion of the project's construction under the P3 cases (refer below) and associated earlier opening to traffic, the toll rates and revenue inputs to this project's P3 and PSC cases are assumed identical.

Initial Construction Cost Forecasts. The primary differences in the PSC and P3 scenarios were that the private sector is assumed to deliver the project more rapidly, resulting in time and cost savings as shown in Figure 3.2 and discussed in Section 3.6.2.1. No differences have been assumed as a result of economies of scale or procurement efficiencies. Based on these assumptions the Consultant Team has forecast a 10% total saving under the P3 cases.

Preservation Cost Forecasts were developed for the PSC case by WSDOT project staff in line with forecast quantities and typical unit costs and frequencies of preservation (CAPEX) activities undertaken by WSDOT in relation to similar existing assets. This included a full assessment of tolling and ITS costs along with other categories as discussed in Section 3.6.2.2. P3 costs were developed by the Consultant Team using identical quantities but different unit rate and intervention assumptions (both type and frequency) based on P3 industry experience and practices. On this basis the Consultant Team has forecast cumulative savings of 15% on ongoing CAPEX under the P3 case, as detailed in Figure 3.8.

O&M Cost Forecasts were developed in the same way as preservation cost forecasts, with the Consultant Team applying metrics, such as tolling cost per transaction and credit card fees as a percent of revenue, from an extensive database of US P3 projects to O&M costs from the PSC case. Unique costs such as winter maintenance, uncollectable tolls and the cost of enforcement were assumed identical for all cases. A total O&M savings of 58% has been identified under the P3 case.

Risk Apportionment has been assessed for PSC and P3 cases in relation to project risks retained by the public sector, estimated at $124M and $47M respectively. This result has contributed to the finding that P3 delivery has the potential to provide better Value for Money than PSC delivery for the project.

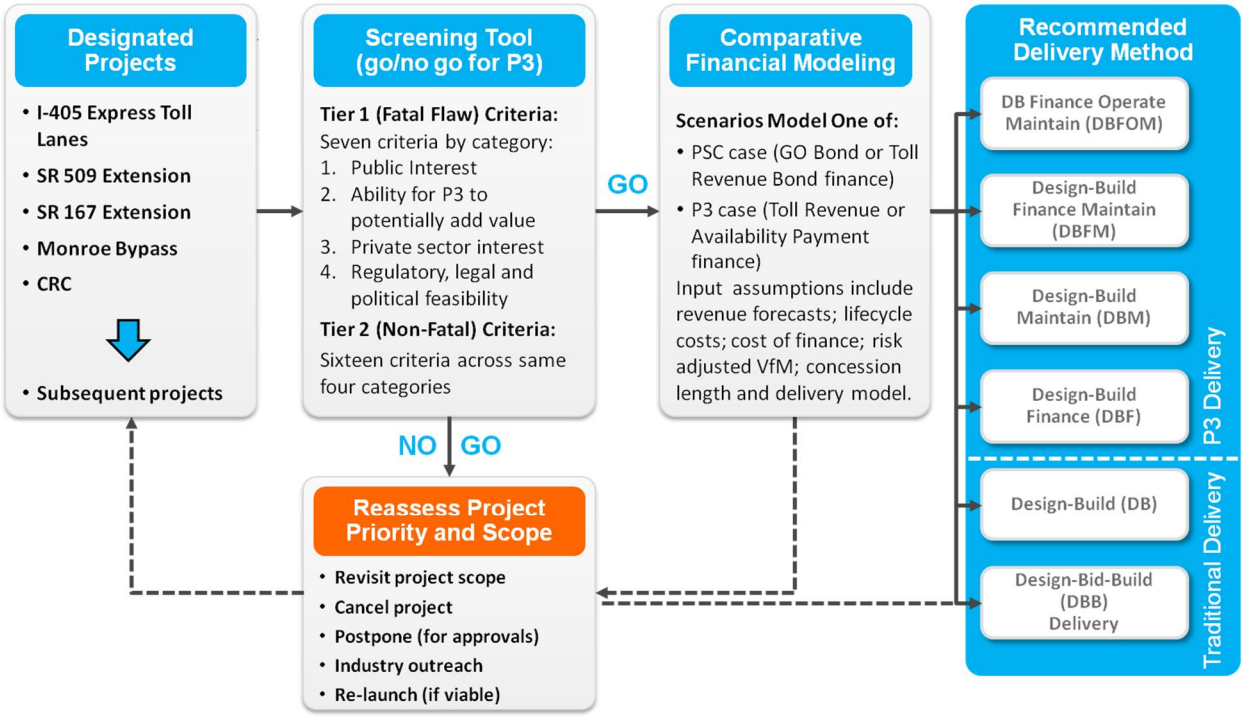
3.2 Summary of Screening Process Approach

The Consultant Team was tasked with producing a two-step method for assessing the suitability of P3 delivery for State Transportation Projects, consisting of:

I. A Project Screening Tool including a fatal flaws analysis; and
II. A Comparative Financial Model to aid in quantitatively evaluating the P3 delivery model and traditional delivery model.

The development and application of these tools is described in sections 3.3 and 3.5 respectively. The position and role of these tools within the overall project screening process is illustrated in Figure 3.1. Recommendations for the State's handling of the screening process in the future are presented throughout the following sections of 3.1 with sections 3.3 - 3.5 detailing the methodology for development of the tools; the processes through which they were calibrated for the specific needs and policy goals of Washington State; and their application in relation to the five candidate projects.

Figure 3.1 Screening Process Flow Diagram



3.2.1 Designation of Candidate Projects

The top left box of Figure 3.1 lists the candidate projects that have been considered as test cases for this Study.

It is anticipated that the State may wish to screen additional projects in the future; and in doing so should follow the detailed guidelines for the timing and identification of candidate outlined in Section 3.2.1 of this Study.

- There is no limit to the number of projects that can be designated, subject to these other recommendations;
- Projects that have previously failed the Project Screening Tool assessment should not be restricted from being assessed more than once, subject to these other recommendations and the process described in section 3.2.2;
- The Project Screening Tool and Comparative Financial Model are limited in nature and have been tailored to and should be used only for the assessment of State Transportation Projects, specifically greenfield toll roads and non-toll (availability payment) road projects;
- The State's Transportation P3 Office should have discretion in selecting which projects are deemed to be P3 delivery candidates – and the subsequent task of running these projects through the screening process;
- Candidate projects should ideally be identified and tested no later than 18 months prior to the time they are anticipated to enter a traditional procurement for construction process;
- Candidate projects should be identified no sooner than three years before their approvals are anticipated to be in place and should ideally have had the following characteristics pre-defined
    - Decision if the project will be tolled or not, and if tolled an initial tolling study completed indicating future toll rates, transaction and initial revenue forecasts
    - Concept design performed to a standard that has or would allow the development of order of magnitude Capital and Operating cost forecasts
    - Projects should have passed a basic purpose and need rationale and is included in an official State Transportation Plan

3.2.2 Treatment of Projects That Fail the Screening Tool

As illustrated in Figure 3.1, projects that fail the Screening Tool analysis are designated (at the time) to be “no go” for P3 – and should persist with a traditional delivery approach by the DOT, unless they can pass a reassessment in the future.

It is recommended that detailed guidelines per Section 3.2.2 be followed by the OTP3 when dealing with projects that fail analysis under the screening tool.

- As discussed throughout section 3.3, the results of the screening tool actually provide a roadmap for those elements of a project that must be addressed, rectified, improved or studied in more detail in order for it to potentially pass P3 screening in the future if this is thought to be appropriate – and it is recommended that this information be reviewed in determining if such actions should be undertaken, and followed by reassessment of the project on their completion (however the decision to pursue future reassessment is at the discretion of the P3 office);
- Projects that may have failed due to scale or revenue shortfalls should (if considered appropriate) be redefined to consider expansion, grouping or consolidation with other projects – and then reassessed;
- Projects that do fail due to a lack of clarity in definition, can be reassessed in the future once this detail is available;
- The Transportation P3 Office may wish to consider some form of industry outreach in relation to specific projects both to gauge the rationale for pushing forward with reassessment in the future and to solicit innovative solutions;
- Projects that fail due to inadequate funding (through either user fees or Government funds) should be reviewed in the context of the State’s Budget, with a decision to reassess made on the basis of if and when additional funds may be secured for the project in the future; and
- Projects with unrecoverable fatal flaws should not be reassessed.

3.2.3 Treatment of Projects That Pass the Screening Tool

Once a project passes the Project Screening Tool it should proceed to assessment under the Comparative Financial Model in a timely manner; but only when a threshold level of detailed project information is available for assessment. The required minimum type and nature of input data and assumptions to the Comparative Financial Models is defined in section 3.5.

3.2.4 Treatment of Projects after Comparative Financial Model Assessment

As illustrated in Figure 3.1, projects assessed using the Comparative Financial Model do not strictly pass or fail, but are instead defined in terms of their relative Value for Money under both P3 and traditional delivery scenarios[22] – from which the State can determine a preferred delivery model and indicative funding surplus or shortfalls for the project. Based on the combination of results from the Comparative Financial Model, various courses of action would be called for as illustrated in Table 3.3.

Table 3.3 Recommended Next Steps Based on Screening Conclusions

Model Conclusions	**Recommended Delivery Method**	
	Traditional (DB or DBB)	P3 (DBFOM or other)
Project is Self Financing	Proceed with traditional procurement in accordance with WSDOT's original schedule and budget No further involvement of P3 Office	WSDOT seek legislative approval through its proposed budget to deliver the project as a P3 WSDOT designate delivery responsibility of the project to control of the P3 Office P3 Office adjusts its resources for ramp up to a procurement process
Project Has a Funding Gap	Depending on extent of funding gap, WSDOT to investigate potential sources of additional funds and assess impact on original (traditional) delivery schedule Explore potential to re-scope project to meet existing funding sources P3 Office to remain informed of any changes and need for reassessment	Depending on extent of funding gap, WSDOT to investigate potential sources of additional funds and assess impact on P3 delivery schedule Explore potential to re-scope project to meet existing funding sources If and when funds can be secured proceed as above (per a self financing P3) If funds cannot be secured reassess project with Screening Tool and/or put project on hold until funds can be identified; OR revert to traditional delivery

[22] It is noted that for both the PSC and P3 cases, the specific type of delivery model assessed (e.g. DBB vs. DB for traditional and DFOM vs. other for P3) are inputs to the Comparative Financial Model rather than outputs. This limitation can be addressed by running various Comparative Financial Model scenarios for each project, as has been performed for the various projects tested through this Study.

3.3 Development of the Project Screening Tool

Over the course of the Study, the Consultant Team worked closely with the SWG and PWG to develop a Project Screening Tool that best reflects the State's public interest and policy goals. This was done by presenting a series of best practices from screening tools used in other states and countries, as well as through a detailed examination of the public interest protections currently found in Washington's legal and administrative frameworks. A summary of this educational process is provided in Section 6.0 as Appendix B: Supporting Material. In developing the Project Screening Tool, the following considerations and actions have been paramount.

Essential Considerations

- Good Screening Tools assess common, comprehensive criteria
  - Public interest
  - Project viability and Private sector ability to partner
  - Spending need and cost savings
  - Risk
  - Regulatory, legal and political feasibility
- Asking the rights questions is key, but it is equally important to:
  - Weigh responses to suit values and objectives of the State
  - Establish clear and objective requirements for inputs to the screening tool for consistency
  - Establish appropriate fatal flaws

Calibration to Washington State

- Draft criteria have been presented and discussed in detail with the PWG and SWG, including interactive workshops to calibrate the screening tool using the candidate projects
- The list of criteria has been set in consideration of:
  - Fatal Flaws
  - Weighting of objective criteria
  - Assessment and weighting of subjective criteria
  - Potential legal / legislative hurdles
  - Consistency with statewide planning and policy goals
  - The State's ability to use the tool with available information

Completed versions of the final Project Screening Tool are included as Appendix C to this report, which include a list of all 23 assessment criteria (also presented in Table 3.6), and their detailed definitions.

3.3.1 Screening Tool Format

The final Project Screening Tool contains two "tiers" of assessment; the first being specific to fatal flaw criteria and the second for non-fatal flaw criteria. Tier 1 criteria are those that are so significant in the eyes of the State, that if a candidate project fails to demonstrate an appropriate outcome in relation to any of these issues then the project automatically fails overall and is unsuited for P3 procurement in its current form. The Tiers are then divided further into four "categories" that group criteria by common themes. The final allocation of criteria along these lines is outlined in Table 3.4.

Table 3.4 Allocation of Criteria within the Screening Tool

Category	Tier 1 (fatal flaw criteria)	Tier 2 (other criteria)
1 Public Interest	2	1
2 Is there ability for P3 to potentially add value	1	8
3 Will the project attract private sector interest	2	4
4 Regulatory, legal and political feasibility	2	3
Total	**7**	**16**

3.3.2 Scoring System

In addition to the fatal flaw component of the screening tool, it is designed to take account of all other criteria through a weighted scoring system. Under this system each criterion is allocated a score, from 0 to 4 based on the project's ability to pass each assessment; where 0 represents a complete pass, scores 1, 2 and 3 represent increasingly compromised passes with limitations; and 4 designated a non-fatal project failure.

There are three ways that a candidate project can fail the screening tool:

1. Answering Yes (fail) to any single Tier 1 criteria
2. A cumulative Tier 1 score greater than 11
3. A cumulative Tier 2 score greater than 24

The scoring system of the screening has been calibrated over the course of the Study through ongoing discussion with the SWG, PWG and WSDOT project staff, and by its application to the five candidate projects the assessment of which is discussed in section 3.4.

3.4 Screening Tool Application and Findings

With assistance from the Consultant Team, WSDOT project staff were engaged during the Study to help with the application of the Project Screening Tool to the five candidate projects. Completed screening tools for each project were subsequently reviewed by the PWG and SWG during meetings and workshops, including detailed discussion of why and how each criterion was assessed.

The overall results of the screening tool assessment of the five candidate projects are summarized in Table 3.5. Scoring rules that frame the findings are discussed in section 3.3.2, and completed copies of the screening tools themselves are attached as Appendix C to this report.

Table 3.5 Screening Tool Findings for the Five Candidate Projects

	Tier 1 (Fatal Flaw) Criteria			Tier 2 (Non-Fatal) Criteria		
		Pass with limitations scores		Pass with limitations scores		Overall Result
Project	Fatal Flaw Triggered?	Score Result	Failing Score	Score Result	Failing Score	Pass / Fail
I-405/SR 167 Express Toll Lanes	No	5	11	13	24	Pass
I-5/SR 509 Extension	No	0	11	10	24	Pass
SR 167 Extension	No	10	11	12	24	Pass
US 2 Monroe Bypass	Yes	17	11	20	24	Fail
I-5 Columbia River Crossing (CRC)	No	4	11	13	24	Pass

3.4.1 Screening Tool Results

As shown in Table 3.5, four projects passed assessment under the screening tool and only one (US 2 Monroe Bypass) failed. No projects came close to failing on Tier 2 cumulative scoring alone; however one other project (SR 167 Extension) came close to failing based on non fatal flaw cumulative Tier 1 scores, specifically due to a lack of secure public funds for construction. A complete set of results for the 23 criteria by project follows in Table 3.6. Definitions of each criterion can be found in the Screening Tools in Appendix C.

Table 3.6 Screening Tool Score Summary

Tier	Category	Number	Criteria	I-405/SR 167 Express Toll Lanes	I-5/SR 509 Extension	SR 167 Extension	I-5 Crossing (CRC)	US 2 Monroe Bypass
1	1	1.01.01	Affordability	1	0	4	0	4
1	1	1.01.02	Support from elected officials and the public	0	0	0	2	2
1	2	1.02.01	Financial Feasibility	2	0	4	2	4
1	3	1.03.01	Return justifies risk	2	0	0	0	2
1	3	1.03.02	Suitable deal size	0	0	0	0	0
1	4	1.04.01	Environmental approvals expected within three years	0	0	0	0	4
1	4	1.04.02	Are land ownerships issues likely to stop the project	0	0	2	0	1
			Tier 1 Total	**5**	**0**	**10**	**4**	**17**
2	1	2.01.01	Consistency with statewide transportation plan	0	0	0	0	0
2	2	2.02.01	Technical innovation	0	0	0	0	0
2	2	2.02.02	Provides Value for Money	2	0	2	2	2
2	2	2.02.03	Economies of scale	0	0	0	0	0
2	2	2.02.04	Risk Transfer	0	0	0	0	0
2	2	2.02.05	Schedule Certainty	0	0	0	0	4
2	2	2.02.06	Whole life costing	0	2	1	1	1
2	2	2.02.07	Renovation work would not constitute a substantial share of construction costs	2	0	0	0	0
2	2	2.02.08	Competitive market likely to produce at least three bids	0	0	0	0	0
2	3	2.03.01	Current market liquidity	0	0	0	0	0
2	3	2.03.02	Project's ability to attract TIFIA, Private Activity Bonds (PABs)	1	0	1	0	2
2	3	2.03.03	Confidence public sector will be able to facilitate project completion: Confidence in public sector timely & effective decision making process Transparency of the procurement process Credible Consultants to the public sector (technical, legal, and financial)	0	0	0	0	0
2	3	2.03.04	The private sector has sufficient P3 capacity (expertise and availability) to successfully deliver project objectives	0	0	0	0	0
2	4	2.04.01	Consensus among local and regional authorities	0	0	0	2	3
2	4	2.04.02	Need for new or change in legislation	4	4	4	4	4
2	4	2.04.03	No specific legislative approval required post award	4	4	4	4	4
			Tier 2 Total	**13**	**10**	**12**	**13**	**20**

3.4.2 Notes on Screening Tool Use

A number of notes and concessions were made during the assessment of candidate projects in conjunction with WSDOT project managers including the following:

- Responses to some forward looking questions, in particular 2.04.02 and 2.04.03 which refer to P3 legislation being in place, require standardized answers, and at the current time result in a "fail" result of 4;
- Category three criteria require the user of the tool (the State) to respond as if it were in the shoes of the private sector – while this is not necessarily difficult with the support of various forms of P3 media research and cursory market outreach, it will require input from professionals with relevant expertise; and
- A comments column has been included for documentation of notes supporting the assessment.

3.4.3 Treatment of Projects that Pass Screening

In accordance with the screening process defined in section 3.1, projects that pass the Screening Tool analysis proceed to evaluation under the comparative financial model. In the case of this Study all projects except the US 2 Monroe Bypass have progressed to this next stage of screening as detailed in section 3.5.

3.4.4 Treatment of Failed Projects (US 2 Monroe Bypass)

As shown in Table 3.6, the US 2 Monroe Bypass project registered the following fatal flaw results:

- Criterion 1.02.01: Financial Feasibility
  - Due to the lack of a viable revenue stream, the project is unlikely to be financially self supporting and no additional sources of funding have been identified at this time. The project can therefore not be considered affordable to the public until this assessment improves.
- Criterion 1.04.01: Environmental approvals expected within three years
  - This will not be possible until the project EIS (which has expired) is recompleted, submitted and nearing approval, which based on Washington State benchmarks could take anywhere from six to eleven years.
- Cumulative Tier 1 score of 17 exceeding the maximum passing score of 11
  - In addition to the 8 points scored for the above two criteria, pass with limitations scores were also recorded in response to the following criterion.

- 1.01.01: Affordability (scored 4) – with no identified and prioritized funding source the project is not currently affordable to the taxpayers of Washington State.
- 1.01.02: Support from elected officials and the public (scored 2) – while the project would undoubtedly bring safety benefits to users and congestion relief for the town of Monroe, insufficient evidence is available to verify widespread public support for the project, and to confirm that no environmental, landowner or other groups would be fundamentally opposed to the project.
- 1.03.01: Return justifies risk (scored 2) – the project has not been studied in sufficient detail to determine the quantum and nature of risks that would be involved with its delivery; however its alignment, which crosses relatively undeveloped rural areas and natural water bodies would indicate a reasonable likelihood of archaeological, environmental and potentially geotechnical risks. Financing risks are also significant without an identified source of project funds.
- 1.04.02: Are land ownerships issues likely to stop the project (scored 1) – insufficient information is available for this criterion to be a complete pass.

Having failed the screening tool, the US 2 Monroe Bypass project is not yet ready for further financial analysis as a P3. It is noted however, that this failure should not be perceived as the end of the line, but rather a guide for project promoters to identify a list of issues they must address in order for the project to be considered for a P3 in the future. In the case of US 2 Monroe Bypass, this would mean addressing the various concerns outlined above. A set of general actions that can potentially be applied to projects that fail the screening tool in preparation for future reassessment is summarized in Table 3.2.

3.5 Development of the Comparative Financial Model

The comparative financial model developed as part of this Study compares the cost of delivering a project using a traditional approach, and a P3 approach. The traditional approach is called the "Public Sector Comparator" (or PSC) and the P3 approach the "Shadow Bid Model." At a preliminary level, the model can identify which method of project delivery, facility management and financing provides the greatest monetary value to the State. The comparative financial model is a quantitative tool – it does not consider any qualitative aspects of a given project delivery such as, for example, the benefits to users of the facility for enhanced facility performance or early project delivery. This section introduces the structure of the model, its assumptions and the intent for its application.

3.5.1 Model Structure

The comparative financial model was built using Microsoft Excel software. Each project considered as part of the Study has its own financial model with project specific inputs for delivery mode, financing assumptions, timing assumptions, construction costs, revenue and operating costs, all of which are defined for each project in sections 3.6.1 through 3.6.4.

Once each project's comparative financial model was developed, eleven scenarios were then devised to analyze the impact of specific financing assumptions for both the public sector comparator and Shadow Bid cases – each with a unique set of input assumptions. The combination of financing alternatives by project used to develop the eleven scenarios is summarized in Table 3.7. This range was developed in consultation with the SWG and WSDOT and aims to reflect realistic PSC and P3 financing outcomes along with a diverse array of comparative findings for educational purposes.

Table 3.7 also shows that the term of analysis for each project is fixed under all scenarios; in order to present an equivalent assessment of O&M obligations, costs and revenues over time. The analysis period of fifty years was chosen as typical for greenfield revenue risk (tolled) US transportation concessions. A 35 year term (post construction completion) has been applied to both the PSC and P3 model in all scenarios where Availability Payments have been selected as the source of P3 revenues.

The delivery models assessed are also fixed for the PSC and P3 cases for each project under all scenarios, although funding and financing options do vary according to the use of Toll Revenues or not. Delivery models for the PSC cases were selected based on discussion with the SWG and

WSDOT; while a universal DBFOM P3 approach was selected by the project team in response to the State's position on tolling each project and the perceived potential benefits of incorporating long term O&M and Capital Maintenance obligations.

Table 3.7 Comparative Financial Model Scenarios Analyzed Under Study

		Public Sector Comparator (PSC)			P3 Delivery (Shadow Bid)		
Project	**Term of Analysis**	Delivery Model	GO Bond	Toll Revenue Bond	Delivery Model	Toll Concession	Availability Payments
I-405/SR 167 Express Toll Lanes	50 yrs	DB	X	X	DBFOM	X	
SR 167 Extension	35 yrs	DBB		X	DBFOM		X
I-5/SR 509 Extension	50 yrs	DB		X	DBFOM	X	
I-5 Columbia River Crossing (CRC)	50/35 yrs	DB	X	X	DBFOM	X	X
US 2 Monroe Bypass	NA	NA	NA	NA	NA	NA	NA

3.5.2 Intended Use of the Model

The overall approach to the development of the comparative financial model was to ensure that the complexity of the model, and the output the model produces, was commensurate with the level of detail and quality of available input data. The comparative financial model allows the State to input assumptions for a project and its delivery model and to compare the costs and cashflows associated with a particular delivery model over the life of the project. It is also capable of:

- identifying any estimated gap in funds that would be required to construct the asset;
- identifying, at a preliminary level, whether the method of project delivery, facility management and financing meets the public interest criteria and Value for Money expectations; and
- applying a range of discount factors that depend on, among other things, the risk associated with the cashflow.

Results are presented as a net present cost of the public sector comparator and shadow bid model with adjustments then made for non-financial costs, such as the value of retained risks as described in Section 3.6.3. While the comparative financial model produces output that can be used to compare different delivery options, it is merely a tool that performs calculations based on inputs, the quality of which directly affects the quality of its outputs.

3.6 Financial Model Application and Findings

The following sections summarize the various inputs that have been prepared in developing each scenario within the Comparative Financial Model, categorized by revenue; lifecycle cost (including public sector comparator schedule and contract details); risk (and Value for Money); and financing (including cost of capital). Finally, section 3.6.5 summarizes the application of the various scenarios, their results and conclusions.

All inputs prepared for the benefit of the Comparative Financial Model assessment undertaken as a part of this Study are strategic, non-investment grade, and order of magnitude in nature. All such input assumptions are based upon information provided to the Consultant Team by WSDOT, publicly available data, and industry standard benchmarks relating to various forms of project delivery and operations. Inputs to the Comparative Financial Model are in no way intended, or suitable for use in support of any financing or investment decisions by any public or private entity.

3.6.1 Revenue Inputs

A range of revenue forecasts were produced for each project for use in the Comparative Financial Model. The range of revenue forecasts was based on differences in assumptions including: probability of occurrence; future economic conditions; travel demand, and the level of risk appetite held by different types of investors.

For a design-build procurement when revenue risk sits with the State, the financial case would generally be built of the most likely case, also referred to as a P50 case. The notation “P50” represents a forecast for which 50% of possible outcomes are greater than the forecast (with 50% being below).

Project lenders on a P3 would suffer if revenues were significantly below expectations and the P3 project could not meet debt service payments. For this reason, lenders to P3 projects often base lending decisions on a P90 case, where 90% of the potential outcomes are expected to be above the forecast.

Equity investors meanwhile can profit from above-expectation revenues. For this reason the forecasts used to develop a financial case for an equity investor in a P3 are more aggressive. For this

assessment, a P25 forecast has been used, where 25% of the potential outcomes would exceed the forecast.

The determination of the various cases produced usually rests on the range of uncertainty around the input variables to a forecast, such as uncertainty in traffic count data, in future economic growth and willingness to pay tolls amongst drivers. For this assessment, the forecasting team had to adapt forecasts for each project available from WSDOT and use experience from past projects where the team has acted for equity investors and project lenders to derive a suitable P25 and P50, assuming that the forecasts developed for the State represent a P50 scenario.

Due to the preliminary nature of revenue inputs, on a project-by-project basis, the Consultant Team has used a range of project revenue inputs to account for the relative uncertainty of this data (this is known as a sensitivity analysis). When applied to the financial model, this process then provided a range of potential results that would be possible under each scenario.

3.6.1.1 I-405 / SR 167 Express Toll Lanes

The Consultant Team adopted an existing Traffic and Revenue forecast provided by WSDOT and originally produced by Wilbur Smith Associates (WSA). The original forecast period provided for the Study is from 2015 to 2055. This has been extended to 2070 assuming that traffic volume will stay the same and toll will grow at 2.5% to match the expected rate of CPI inflation for use in the Comparative Financial Model.

- The forecasts are based on a phased construction program, Option 1 projections are used until the south part of I-405 is complete. At that time, the Option 4 projections are adopted, resulting in the changes in revenue and trips. The WSA forecasts adopted show a 16% decrease in SR 167 total transactions when switching from Option 1 to Option 4.
- Travel patterns changed when switching from Option 1 to Option 4 in the forecast. One of the major changes was the transition to a regional system. This resulted in more regional trips in the system which displaced the shorter trips. These longer trips increased the per-trip toll and overall gross revenue.
- Finally, the SR 167/I-405 direct connector played a significant role in revenue. This is one of the most congested interchanges in the corridor and prior to Option 4, there was no way to pay to bypass it. With the direct connector ramps in Option 4, this became a possibility and many users were projected to pay to use it. Prior to the construction of this ramp, it was assumed that SR 167

would continue to operate with an HOV 2+ toll-free requirement. When the direct connector opens, SR 167 was assumed to switch to HOV 3+ toll-free to match the requirements on I-405.

3.6.1.2 I-5 Columbia River Crossing

The review of the traffic and revenue for this project used the Option 1A forecast provided by WSDOT. The forecast provided to the team covers the period of 2019 to 2059 with two options – with 2.5% toll escalation and no toll escalation. The Consultant Team has extended forecasts for both scenarios to 2070 by continuing the traffic growth rate – 1% after 2059.

- The low end forecast for Option 1A was used for the Study. It was used in the most recent analysis for the Federal EIS due to a critique of population and employment forecasts produced in 2006 as reflecting pre-recession expectations.
- Tolling begins in 2019 and includes the steep growth in demand and revenue on opening that is commonly observed on new tolled facilities, or “ramp-up.”
- The forecast produced included both toll pricing options — (1) the unconstrained gross toll revenues with toll escalation included, and (2) the gross revenues pledged to debt service, which reflect the same traffic but no escalation in tolls.

3.6.1.3 I-5/SR 509 Extension

Of the three options considered in the SR 509 Toll Feasibility Report dated September 2010, option 3a was that chosen for the assessment. Recently, the SR 509 Project Executive Committee selected Option C, from the new study options, as the preferred first phase. Although there are slight differences in the options (3A and C), the analysis results for this Study are within the Study margin of error. The forecast period provided to the team is 2020 to 2050. This has been extended to 2070 assuming that traffic volumes will not grow after 2050 and tolls will grow at 2.5% to match the expected rate of CPI inflation. Tolling is assumed to begin on opening in 2020.

3.6.1.4 SR 167 Tacoma to Edgewood

The primary source for the forecasts for this project is provided by WSDOT. Three options are available for this project and the forecast that The Consultant Team was provided chose option 2. The forecast period is from 2020 to 2050. This has been extended to 2070 assuming that traffic volume will stay the same and toll will grow at 2.5% to match the expected rate of CPI inflation.

3.6.2 Cost Inputs

In support of the comparative financial model assessment, cost inputs have been developed jointly by WSDOT and the Consultant Team for Public Sector Comparator (PSC) and Public Private Partnership (P3) scenarios respectively.

For all major transportation projects that involve initial construction AND long term upkeep of the asset over its “lifecycle”, the costs associated with these actions are typically analyzed in three categories:

1. Initial Construction Cost;
2. Preservation Costs (capital expenditure required over the term of a concession to maintain the asset in a good state of repair; also known as major maintenance costs); and
3. Operation and Maintenance (O&M) Costs.

Categories 1 and 2 above are both forms of capital expenditure (CAPEX) while category 3 is classified as operational expenditure (OPEX). CAPEX activities are generally associated with construction and can be depreciated by private entities, while OPEX activities primarily involve day-to-day actions by personnel and cannot be depreciated.

PSC Cost Inputs for each category have been developed by WSDOT through an iterative process with the SWG, relevant WSDOT project managers and its consultants. PSC estimates are largely based on preliminary feasibility studies and have been compiled from a variety of sources.

The development of the P3 cost inputs has been undertaken by the Consultant Team through detailed discussion with WSDOT and is generally based on the modification of PSC costs to reflect P3 industry benchmarks from actual US based project experience and private sector concession data.

A description of the methodology that the Consultant Team has employed in forecasting these costs for each project under both PSC and P3 scenarios, and the resulting input assumptions, follows.

3.6.2.1 Initial Construction Costs

For the purpose of this Study, the traditional delivery methods considered for the PSC for each project have been defined by WSDOT project staff as indicated in Table 3.8. Table 3.8 also shows the number of contracts that WSDOT anticipates would be required to deliver each project.

As discussed in sections 2.1.4.1 and 2.1.4.2, the selection of a traditional delivery model is significant in terms of the schedule and cost impacts that this will likely have on project delivery. WSDOT is a leader in the use of Design-Build contracts in the US[23], and has already experienced many of its benefits, primarily the on-time and on budget delivery of major transportation projects. This success is reflected in WSDOT's PSC assumptions, where all projects other than the SR 167 have had DB delivery identified as more likely than DBB.

Table 3.8 PSC Delivery Method by Project

	PSC Selection (Traditional Delivery Method)			
Project	**DBB**	**DB**	**No. of Contracts**	**Initial CAPEX Estimate**
I-405/SR 167 Express Toll Lanes		Y	1	$1,317 M (2011 USD)
I-5/SR 509 Extension		Y	1	$743 M (2011 USD)
SR 167 Extension	Y		2-3	$1,180 M (2011 USD)
US 2 Monroe Bypass	Y	Y	NA	NA
I-5 Columbia River Crossing		Y	1	$3,029 M (2011 USD)

The SR 167 is also the only project identified as needing more than one delivery contract. This is significant, as projects with multiple contracts require additional oversight during design and construction, and can also suffer relative inefficiencies in construction staging, traffic management and the procurement of labor and materials.

WSDOT has also provided milestone schedules in relation to Preliminary Engineering (P.E.), Right of Way (RoW) Acquisition and Construction, based on preliminary feasibility studies for each project and consideration of legislative, funding and typical historic construction schedules.

In defining the P3 case, the Consultant Team has produced independent estimates for each project's schedule based on industry trends for P3 delivery, including pro-rata comparison with North

[23] WSDOT has completed 12 transportation projects through DB, while 7 more are currently in construction and 2 are in the procurement phase. Furthermore, WSDOT employs US best practices for DB procurement such as the reduction of regular (100% of construction value) bid bonds that significantly hinder the progress of DB programmes in other states.

American projects of comparable or greater complexity and scope[24]. All P3 and PSC schedule assumptions are summarized in Table 3.9.

Table 3.9 Schedule and Contract Assumptions by Project

Schedule of Key Millstones (years)		P.E. and Right of Way Acquisition			Construction		
Project and Delivery Method		**Start**	**End**	**Duration**	**Start**	**End**	**Duration**
I-405/SR 167 Express Toll Lanes	PSC Delivery	2013	2018	5 yrs	2018	2022	5 yrs
	P3 Delivery	2013	2018	5 yrs	2018	2020	2.5 yrs
I-5/SR 509 Extension	PSC Delivery	2015	2017	2 yrs	2017	2019	3 yrs
	P3 Delivery	2015	2017	2 yrs	2017	2019	2.5 yrs
SR 167 Extension	PSC Delivery	2013	2016	3 yrs	2016	2020	5 yrs
	P3 Delivery	2013	2016	3 yrs	2016	2018	3 yrs
I-5 Columbia River Crossing	PSC Delivery	2012	2014	2 yrs	2013	2021	9 yrs
	P3 Delivery	2012	2014	2 yrs	2013	2017	5 yrs

Following these considerations, the Consultant Team modified the initial construction cost estimates for each project to produce a P3 case based on:

I. Time savings considered likely over WSDOT's currently assumed PSC schedules, resulting in a reduction of all time dependent construction costs (including Mobilization & Preparation, Traffic Control, and to a lesser extent all other labor dependent tasks); and

II. Economy of scale savings on all non time dependent costs, but only in cases where the PSC comparator is delivered through more than a single contract or with DBB delivery – i.e.for the SR 167 Extension Project only (reflecting the benefits of bulk purchase agreements on materials, and administrative savings).

No P3 time or cost savings have been assumed in relation to Preliminary Engineering or Right of Way acquisition, which are typically retained under public sector control. Initial construction cost assumptions and inputs are presented in Table 3.10, where "time dependent" values indicate the assumed percentage of total construction costs that are variable according to time; "time savings" are calculated as the assumed duration of initial construction under P3 delivery divided by the assumed duration under PSC delivery multiplied by the "time dependent" values per category; "total PSC costs" indicate values provided to the Consultant Team by WSDOT project staff; "total P3 costs"

[24] This includes the I-595 in Florida, SH 130, North Tarrant Expressway and LBJ projects in Texas, 407 ETR in Toronto, Canada and the Capital Beltway HOT Lanes project in Virginia.

indicate P3 costs by category after discounting for (multiplying by) the time savings percent per category and “overall savings” indicate the difference between total P3 and total PSC costs.

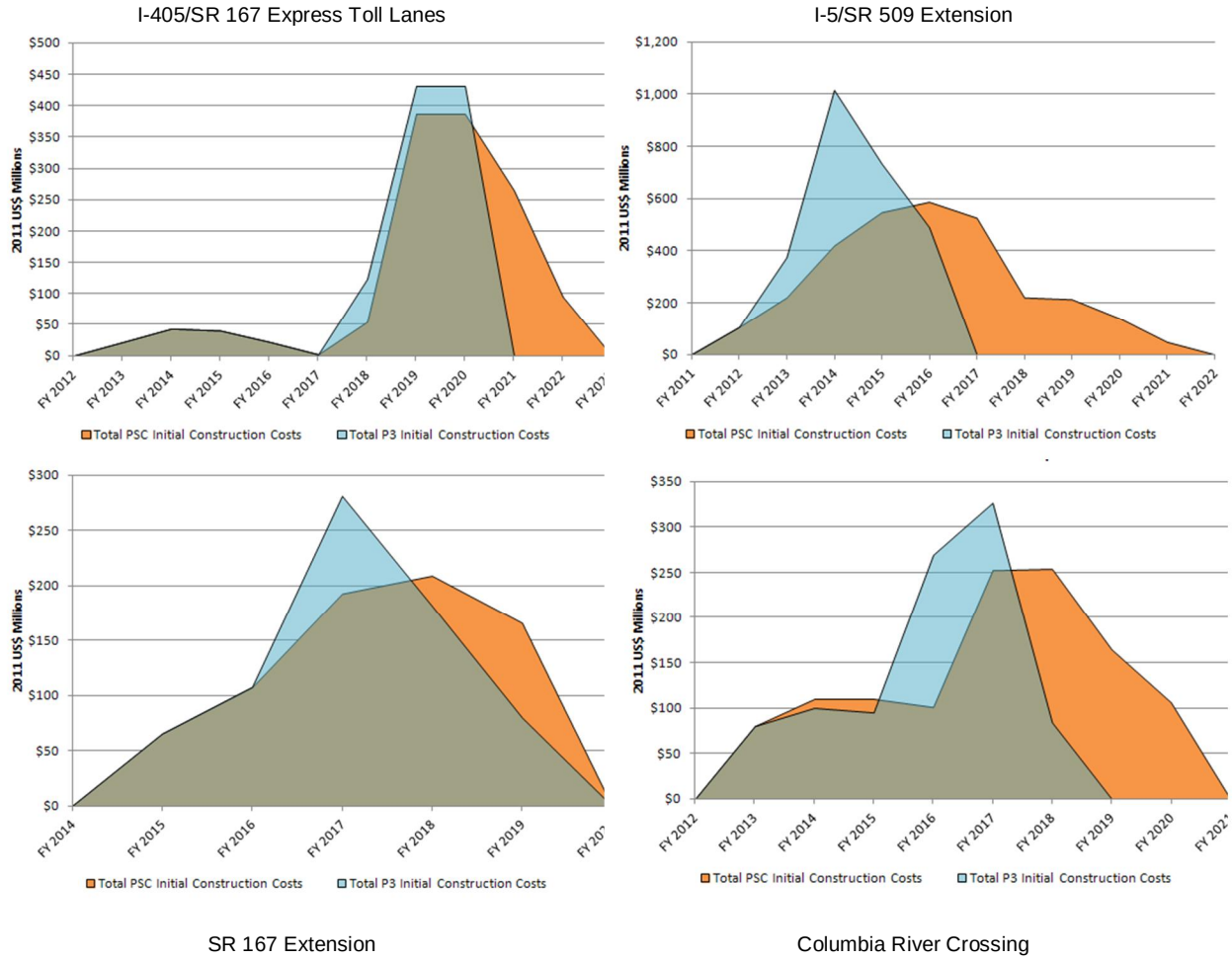
Table 3.10 Summary of Initial Cost P3 and PSC Assumptions

		Pre-Construction and Initial Construction Cost Categories												
Project	P3 Case Saving Assumptions, by percentage and Million USD (2011)	Preliminary Engineering (PE)	Right of Way	Mobilization and Preparation	Grading, Drainage and Stockpiling	Waterlines, Storm and Sanitary Sewers	Structures	Asphalt and Surfacing	Cement Concrete Pavement	Traffic Control	Tolling & ITS	Other Items	Non - Bid Costs	Total Initial Construction Costs
I-405/SR 167 Express Toll Lanes	Time Dependant	0%	0%	100%	25%	25%	20%	20%	20%	100%	0%	70%	70%	
	Time Savings	0%	0%	50%	13%	13%	10%	10%	10%	50%	0%	35%	35%	
	Total PSC Costs	$57	$72	$54	$112	$14	$239	$74	$50	$51	$35	$340	$220	$1,317
	Total P3 Costs	$57	$72	$27	$108	$13	$234	$73	$49	$26	$35	$257	$166	$1,116
	Overall Savings	0%	0%	50%	3%	0%	2%	2%	2%	50%	0%	25%	25%	15%
I-5/SR 509 Extension	Time Dependant	0%	0%	100%	25%	25%	20%	20%	20%	100%	0%	70%	70%	
	Time Savings	0%	0%	50%	13%	13%	10%	10%	10%	50%	0%	35%	35%	
	Total PSC Costs	$68	$105	$60	$108	$0	$221	$13	$21	$37	$14	$2	$93	$743
	Total P3 Costs	$68	$105	$50	$107	$0	$219	$13	$21	$31	$2	$85	$14	$716
	Overall Savings	0%	0%	17%	1%	0%	1%	1%	1%	17%	0%	8%	8%	4%
SR 167 Extension	Time Dependant	0%	0%	100%	25%	25%	30%	20%	20%	100%	0%	70%	70%	
	Time Savings	0%	0%	50%	13%	13%	15%	10%	10%	50%	0%	35%	35%	
	Economies of Scale	0%	0%	0%	20%	20%	30%	30%	30%	0%	20%	0%	0%	
	Total PSC Costs	$100	$175	$52	$138	$5	$303	$31	$0	$9	$34	$102	$232	$1,180
	Total P3 Costs	$100	$175	$26	$113	$4	$226	$23	$0	$5	$27	$77	$181	$956
	Overall Savings	0%	0%	50%	18%	0%	26%	26%	0%	50%	20%	25%	22%	19%
I-5 Columbia River Crossing	Time Dependant	0%	0%	100%	25%	25%	20%	20%	20%	100%	0%	70%	25%	
	Time Savings	0%	0%	56%	14%	14%	11%	11%	11%	56%	0%	39%	14%	
	Total PSC Costs	$157	$220	$293	$120	$68	$1,553	$101	$0	$122	$27	$368	$0	$3,029
	Total P3 Costs	$157	$220	$162	$116	$66	$1,519	$99	$0	$68	$27	$287	$0	$2,720
	Overall Savings	0%	0%	45%	3%	0%	2%	2%	0%	45%	0%	22%	0%	10%

Key assumptions and the effect of modifications to the public sector comparator case to prepare P3 cases for each project are highlighted in Figure 3.2 where each chart shows the assumed level of expenditure per year for both delivery cases. P3 expenditure over time is shown in transparent blue with PSC expenditure in orange. The extent of time savings assumed under P3 deliver varies for each project as can be seen where P3 expenditures finish earlier than PSC expenditure.

As a consequence of accelerated construction schedules, all four P3 cases result in a more peaked expenditure profile, where the maximum annual expenditure is greater than and occurs sooner than under the PSC case. While this is a primarily a consequence of the analysis applied it points to a key benefit of P3 delivery – that the expenditure capabilities of private parties is quite flexible, and can be tailored more towards meeting demands than constraints (a luxury the State does not always have).

Figure 3.2 Initial Construction Cost Comparison by Project



3.6.2.2 Preservation Costs

Preservation costs estimates present a total capital expenditure for each year of a project's life after it comes into operation. Estimates are built up according to the forecast repair and replacement cycle of all components of the asset, which vary depending on their quality, intended life, use over time and routine maintenance. For example, electronic tolling system equipment is typically replaced on a 10-12 year cycle assuming it is kept clean and well serviced – poorly maintained equipment may only last 6 years; while other more robust components such as bridge decks can last 50 years or more if well built and maintained, but as few as 20 years if heavily used and poorly maintained. So for each asset component, a major maintenance cost profile is developed over the life of the project according to a forecast "reasonable" replacement cycle, a quantity estimate and an all-in cost estimate for each major maintenance activity (including labor and materials). The total preservation cost estimate is the sum when all of these cost profiles are overlaid.

In developing preservation cost estimates a true like for like comparison has been paramount. Therefore, the following cost categories have been applied for both P3 and PSC cases:

1. Roadway Maintenance
2. Structures
3. Pavement Maintenance
4. Tolling & ITS Maintenance
5. Other Misc. Items
6. Engineering, Construction Mgmt. and Testing Fees
7. Design
8. Mobilization and Preparation
9. General Contingencies

A detailed account of the interpretation of cost categories supplied by WSDOT in relation to each of the above cost categories is presented in Table 6.1 of Appendix B. Categories 1-5 above have also been allocated various quantity assumptions by WSDOT, which in all cases have been held constant between the PSC and P3 cases. Further assumptions set equal for both the PSC and P3 cases are that:

- each asset will be maintained according to best routine and preventative maintenance practices;
- tolling is fully electronic (no cash collection is considered);

- no improvements or expansions have been considered for any of the projects, whether to accommodate traffic growth, change of standards or changes of operating strategy;
- the end of the forecast term for all projects is FY2070 under toll revenue cases and after 35 years of operation under all non toll revenue cases (i.e. availability payment and GO Bond cases); and
- all costs (PSC & P3) grow at 2.5% per year to match the expected rate of CPI inflation.

P3 vs. PSC Differences

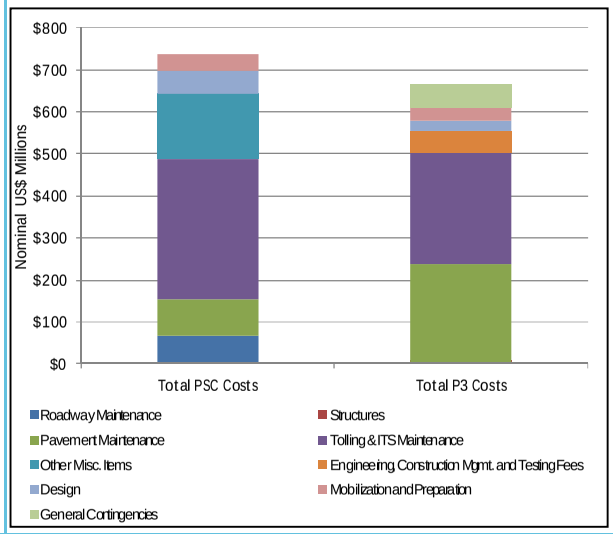
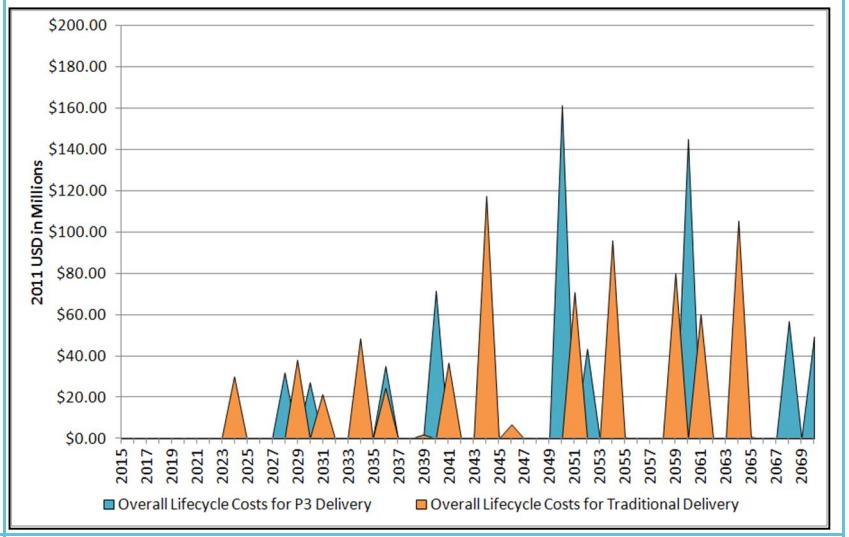
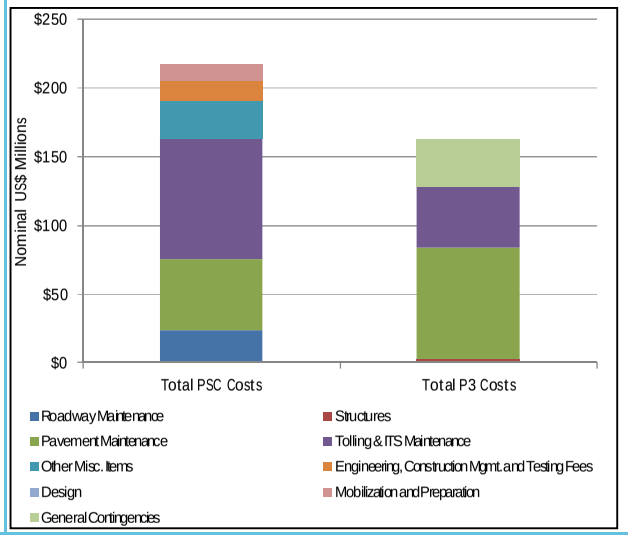
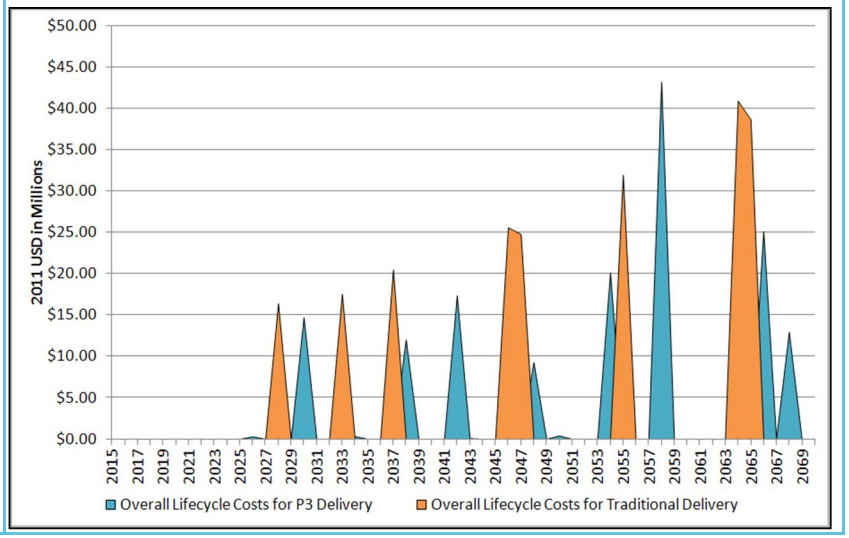
Public sector comparator preservation costs estimates were developed by WSDOT project staff in accordance with the methodology outlined above and based on WSDOT's experience of major maintenance requirements for relevant asset components (based on existing studies and actual historic repair and replacement activities); and the all-in unit costs undertake this work.

Subsequently, the Consultant Team has developed independent estimates of major maintenance requirements and associated costs based on industry trends for P3 delivery, including pro-rata comparison with North American projects of comparable or greater complexity and scope. The results of this analysis are presented over the following pages.

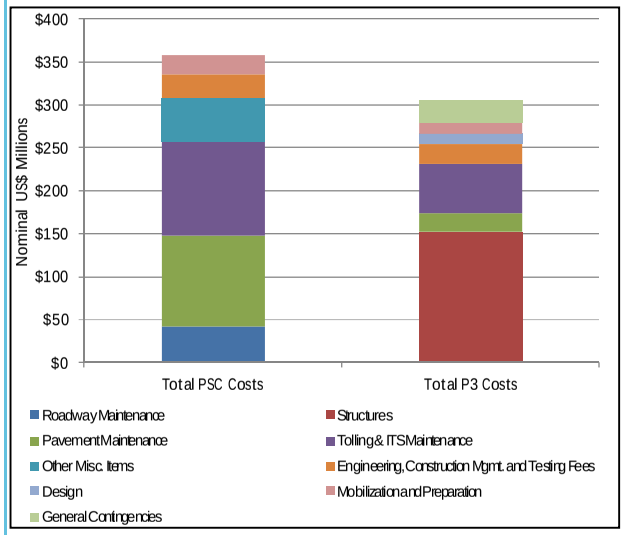
Table 3.11 P3 vs PSC Preservation Cost Comparison

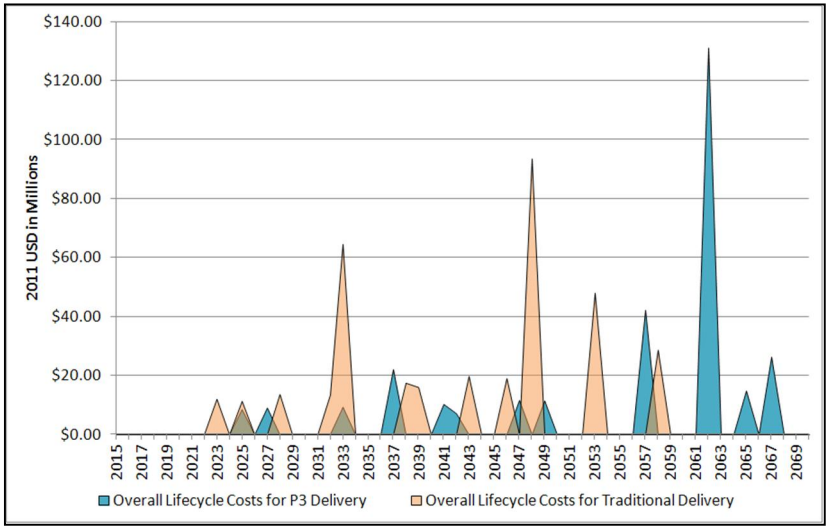
Preservation Cost Categories	I-405/SR 167 Express Toll Lanes		I-5/SR 509 Extension		SR 167 Extension		I-5 Columbia River Crossing	
	PSC	**P3**	**PSC**	**P3**	**PSC**	**P3**	**PSC**	**P3**
Roadway Maintenance	$67.43	$4.93	$23.53	$1.90	$12.93	$0.28	$42.41	$1.62
Structures	$0.00	$0.83	$0.00	$1.11	$0.00	$35.45	$0.00	$150.39
Pavement Maintenance	$85.22	$232.10	$51.72	$80.94	$28.34	$16.10	$105.33	$21.87
Tolling & ITS Maintenance	$336.22	$265.49	$87.46	$43.91	$47.14	$23.47	$109.91	$57.20
Other Misc. Items	$153.83	$0.00	$27.03	$0.00	$17.74	$0.00	$50.58	$0.00
Engineering, Construction Mgmt. and Testing Fees	$0.00	$50.34	$14.96	$0.00	$9.81	$6.02	$27.98	$23.11
Design	$54.79	$25.17	$0.00	$0.00	$0.00*	$3.77	$0.00	$11.55
Mobilization and Preparation	$42.14	$30.20	$11.50	$0.00	$7.55	$4.52	$21.52	$13.86
General Contingencies	$0.00	$55.37	$0.00	$35.34	$0.00*	$6.51	$0.00	$25.42
Total Lifecycle Costs	$739.63	$664.43	$216.21	$163.19	$123.51	$96.12	$357.73	$305.03
Total % Savings under P3	**10%**		**25%**		**22%**		**15%**	

Figure 3.3 Overall Preservation Costs by Project (toll revenue cases shown)

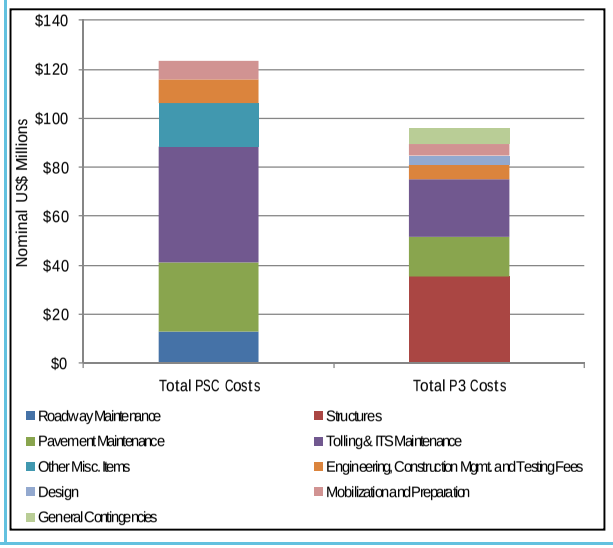
Project	Total Preservation Costs, sum of all years	Lifecycle Cost Comparison (total expenditure by year in 2011 dollars)
I-405/SR 167 Express Toll Lanes		
I-5/SR 509 Extension		

I-5 Columbia River Crossing





SR 167 Extension



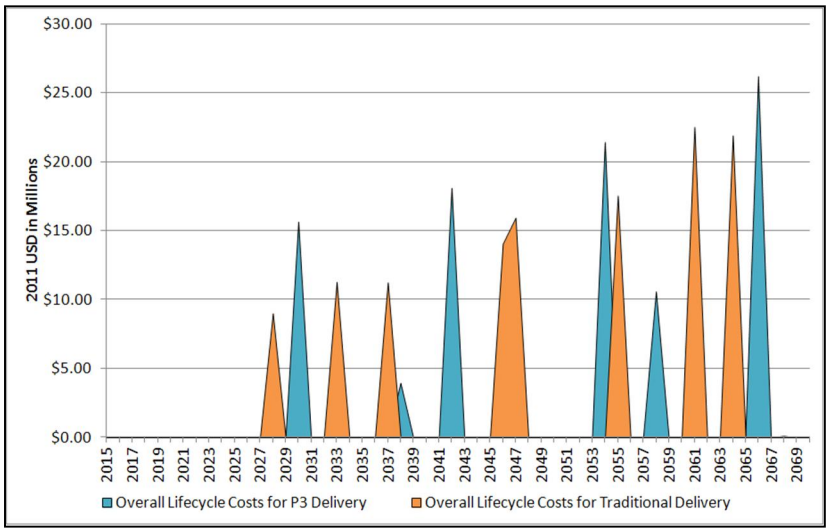


Figure 3.3 shows the forecast differences between P3 and public sector comparator cases for each project based on the analysis of the Consultant Team. As illustrated, while the timing of major expenditures varies between P3 and PSC cases the extent of the difference is not overly significant. This is reflective of the fact that WSDOT has used best practices in forecasting repair and replacement cycles for each asset comparable to those employed by private operators. The most significant difference in overall preservation costs is directly in relation to tolling and ITS components, and specifically the unit rates applied to their purchase. This difference alone is primarily responsible for the P3 savings identified through this analysis, which ranges from 10% to 25%. This conclusion is similar to that of O&M costs (see below), where based on actual historic data, the private sector is able to capitalize on economies of scale, global relationships and potentially other means to reduce the amount it pays for these specialized components.

3.6.2.3 O&M Costs

PSC and P3 O&M costs for all four projects have also been divided into distinct cost categories to allow a true like for like comparison. These cost categories are distinguished by the key cost drivers associated with day to day operation and maintenance of a typical roadway, specifically:

1. Personnel
2. Structures
3. Pavement
4. Tolling & ITS
5. Tolling Uncollectables (revenue lost due to users not paying tolls)
6. Enforcement
7. Facility Maintenance
8. Roadway General Maintenance
9. G&A (general and administration)

A comprehensive summary of the costs WSDOT has budgeted within each of these categories for each project is provided in Appendix B Table 6.2.

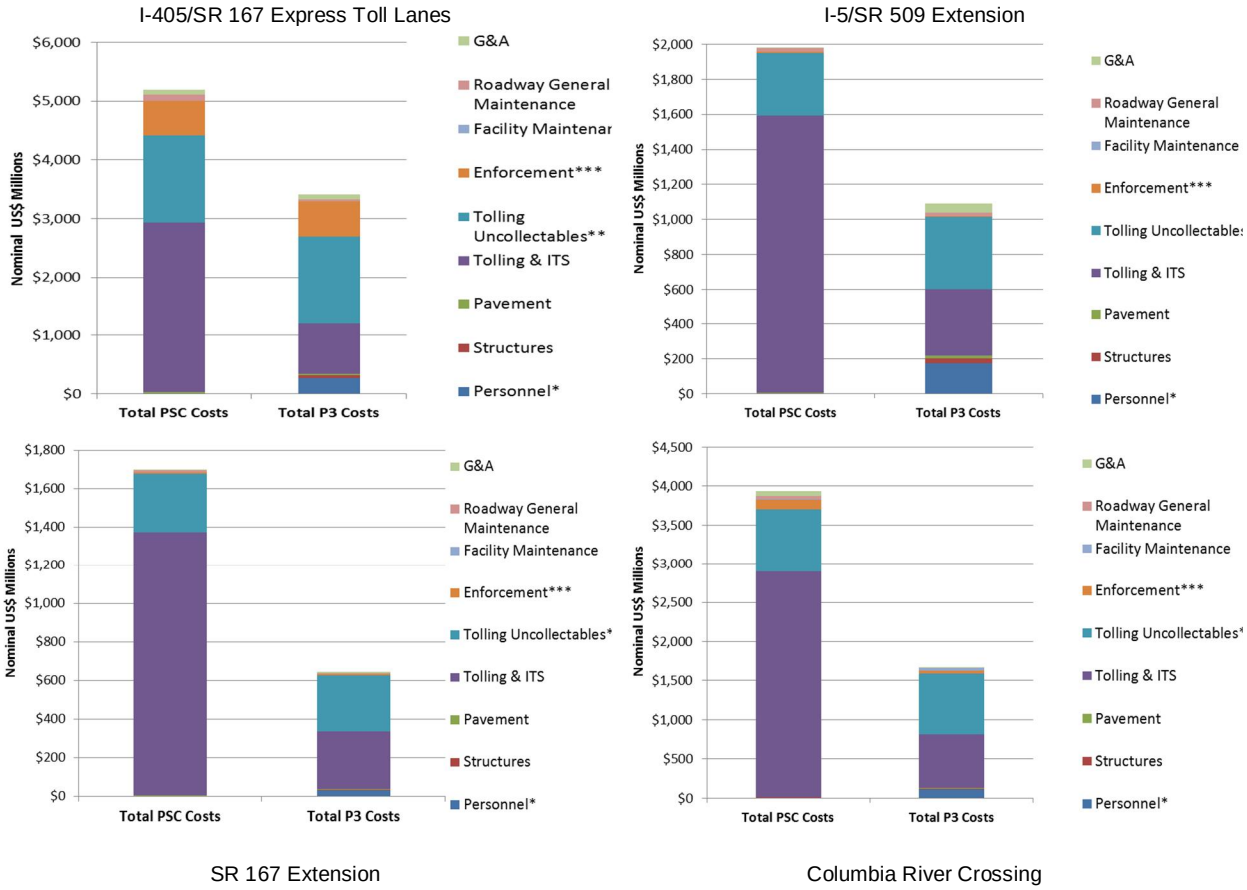
The PSC O&M Cost Inputs have been developed through an iterative process with WSDOT and its consultants. The resulting estimates have been compiled from a variety of sources, including existing studies and WSDOT experience of actual O&M activities and costs incurred on existing toll roads.

Through the course of relevant discussions the Consultant Team identified two necessary modifications to the PSC O&M costs developed by WSDOT in order to ensure a true like for like comparison, specifically in relation to:

1. forecast period – all O&M PSC cost forecast periods have been extended by the Consultant Team to 2070 assuming that costs will grow at 2.5% to match the expected rate of CPI inflation (although for Availability Payment cases operations and associated costs stop at year 35); and
2. fringe & overhead costs – an agreed multiplier of 112% was applied to all PSC personnel costs to adjust for fringe and overhead[25].

A summary of PSC O&M assumptions developed by WSDOT is shown in Figure 3.4 and Table 3.12.

Figure 3.4 O&M Cost Estimates by Category for All Years



[25] It is noted that 112% is a low (conservative) estimate for this figure and has been used in the absence of more precise data specific to WSDOT. Studies of other State DOT overhead rates of this nature range from around 140% to over 200%.

Table 3.12 P3 vs PSC O&M Cost Comparison

O&M Cost Categories	I-405/SR 167 Express Toll Lanes		I-5/SR 509 Extension		SR 167 Extension		I-5 Columbia River Crossing	
	PSC	**P3**	**PSC**	**P3**	**PSC**	**P3**	**PSC**	**P3**
Personnel	$0.00	$270.72	$0.00	$173.62	$0.00	$29.10	$0.00	$106.32
Structures	$4.41	$45.82	$0.21	$29.39	$0.00	$4.93	$9.46	$15.00
Pavement	$28.52	$20.95	$6.25	$13.43	$6.46	$2.25	$0.00	$6.86
Tolling & ITS	$2,897.57	$865.86	$1,584.54	$384.89	$1,367.15	$301.09	$2,891.04	$685.95
Tolling Uncollectables	$1,490.64	$1,489.52	$359.97	$412.88	$304.35	$290.36	$796.24	$771.58
Enforcement	$574.68	$604.65	$5.84	$5.81	$5.84	$5.89	$130.48	$41.92
Facility Maintenance	$0.00	$1.29	$0.00	$0.83	$0.00	$0.14	$8.76	$34.63
Roadway General	$108.22	$29.46	$20.05	$18.89	$12.88	$3.17	$36.22	$0.42
G&A (general and administration)	$83.12	$80.25	$4.74	$51.46	$2.18	$8.63	$62.88	$9.64
Total O&M Costs	$5,187.16	$3,408.52	$1,981.60	$1,091.20	$1,698.86	$645.56	$3,935.07	$1,672.31
Total % Savings under P3	**34%**		**45%**		**62%**		**58%**	

P3 O&M estimates were developed independently by the Consultant Team utilizing all available quantity information for each project and the same categories outlined above. The majority of the P3 O&M costs have been independently developed through a top down approach based on private sector concession data however, for the purpose of this Study a number of public sector comparator assumptions have been adopted (conservatively) for the P3 O&M Costs including:[26].

- transponder transactions and video tolling – initially video tolling transaction are assumed at 20% of all transactions dropping off to a minimum level of 5% under steady state operations;
- credit card fees incurred through electronic toll transactions – assumed 2.5% of Revenue;(despite the private sector having demonstrated significant savings for these costs);
- tolling uncollectables – assumed equal to 4.5% of transactions (and revenue);
- winter maintenance – assumed same costs as PSC delivery method; and
- enforcement by Washington State Patrol (WSP) – assumed same costs as PSC delivery method.

[26] These assumptions reflect standard practices for US toll road concessions. The treatment of uncollectable tolls varies by State and project, but is generally included in a broader process of violations processing that can be undertaken either by the State or the Private Party (depending on relevant legislation and State preferences).

In order to account for any difference in the starting year of operations due to early completion of construction under a P3 case, the P3 O&M cost forecast for each project begin prior to the PSC but in line with P3 end of construction assumption and revenue.

Resulting P3 O&M cost assumptions are summarized in Figure 3.4 and Table 3.12, which illustrates the difference (or similarities) between the various cost categories. As can clearly be seen from these graphs, the only noticeable difference between the P3 and PSC cases is in relation to Tolling and ITS O&M cost assumptions. These differences are significant and again reflect the private sector's ability to realize material savings in relation to the O&M of tolling and ITS assets. A detailed account of the assumed makeup of these costs under each P3 case is provided in Appendix B Section 6.2.8.

In order to provide context as to the validity of these assumptions the Consultant Team has engaged in extensive discussion of the rationale behind the P3 case Tolling and ITS assumptions with WSDOT, the SWG and PWG and has performed a range of sensibility checks to verify that the resulting P3 O&M costs are realistic and in-keeping with standard industry practices. A discussion of these findings and supporting assumptions follows below.

P3 vs. PSC Differences

There are a number of widely accepted indicators as to the viable performance of a typical toll road specifically in relation to its operation and maintenance costs, one of which is the EBITDA Margin, which is a measurement of a company's operating profitability defined by:

EBITDA Margin = 1 – (Gross OPEX / EBITDA)

where EBITDA is defined as earnings (gross revenue) before interest, tax, depreciation and amortization; and EBITDA Margin is typically calculated on an annual basis.

By measuring profitability EBITDA Margin can also be used to benchmark industry norms for various facilities, in addition to the upper and lower bounds of what can reasonably be achieved by public and private operators.

Based on US and international data for privately operated toll road P3 concessions, EBITDA Margin typically ranges from around 72% to 92%, and tends to increase over time as project revenues

increase and costs stabilize. In comparison, Table 3.13 shows the average EBITDA Margin resulting from the P3 case O&M assumptions over the concession period for each project. Note that the high range of the EBITDA Margin estimates represents the final year of operation of each case.

Table 3.13 EBTDA Margin Comparisons by Project

	Average EBITDA margin		EBITDA Range (start to end of Concession)		
Project	PSC	P3	PSC	P3	Comments
I-405/SR 167 Express Toll Lanes	79%	86%	22% - 85%	22% - 90%	Both the PSC and P3 O&M costs are within the standard EBITDA range.
I-5/SR 509 Extension	77%	87%	67% - 79%	65% - 89%	Both the PSC and P3 O&M costs are within the standard EBITDA range.
SR 167 Extension	72%	88%	61% - 75%	58% - 91%	The PSC margin is marginally within standard EBITDA range, the P3 margin resides at the higher end of the range.
I-5 Columbia River Crossing	73%	89%	58% - 78%	69% - 91%	The PSC margin resides at the lower end of the standard EBITDA range, the P3 margin resides at the higher end of the range.

These results indicate that the P3 and PSC estimates for EBITDA Margin resulting from other O&M cost input assumptions are reasonable and in-keeping with industry norms for all four projects (thereby validating the potential validity of such O&M assumptions). Differences in EBITDA Margin between the P3 and PSC case for each project are tied to assumed savings in O&M costs under P3 delivery rather than any difference in revenue – as revenue forecasts are the same for both cases.

Another basic metric for O&M tolling costs is the all-in cost per transaction for various methods of toll collection (but not including other routine O&M costs). For all four projects under consideration tolling has been defined by WSDOT as being fully electronic (ETC) in nature (no cash based transactions are assumed) – supported by transaction tags and readers, and video based tolling accounts. Vehicles that incur but do not pay tolls through any means are deemed to be “uncollectable tolls” under all scenarios.

Cost per transaction is calculated from the total O&M cost associated with toll collection (excluding capital expenditures) divided by the total number of transactions. Industry benchmarks for this cost vary from around $0.01 to $0.10 for tag based transactions depending on the associated services included (violation processing, customer service center, equipment maintenance etc.); while costs per video transaction are higher, typically above or around $0.25 per transaction.

Table 3.14 shows the average cost per transaction over the duration of the forecast period assuming full ETC for both the PSC & P3 delivery methods. As shown and commented below, both the forecast P3 and PSC metrics are well above industry norms for all projects, validating that relevant O&M input assumptions are potentially achievable and probably quite conservative.

Table 3.14 Average Cost per Transaction by Project and Case

Project	Average Cost per Transaction		Comments
	PSC	P3	
I-405/SR 167 Express Toll Lanes	$1.13	$0.35	Both the PSC & P3 cost per transaction are considerably higher than the industry norm, with the PSC over 3 times the P3 cost per transaction. The high transactional costs are largely due to credit card fees as well as the "Transaction Based Costs."
I-5/SR 509 Extension	$0.83	$0.21	Both the PSC & P3 cost per transaction are considerably higher than the industry norm, with the PSC nearly 4 times the P3 cost per transaction. The high transactional costs are largely due to credit card fees as well as the "Transaction Based Costs."
SR 167 Extension	$0.83	$0.20	Both the PSC & P3 cost per transaction are considerably higher than the industry norm, with the PSC nearly 4 times the P3 cost per transaction. The high transactional costs are largely due to credit card fees as well as the "Transaction Based Costs."
I-5 Columbia River Crossing	$1.02	$0.24	Both the PSC & P3 cost per transaction are considerably higher than the industry norm, with the PSC nearly 4 times the P3 cost per transaction. The high transactional costs are largely due to credit card fees as well as the "Transaction Based Costs."

*Tolling Uncollectables and Enforcement costs are not included within these analyses. Uncollectible tolls and enforcement are typically overseen by government, but pass-through of associated costs to the private partner is common. Transaction Based Costs include all other O&M activities associated with the day to day upkeep, inspection and cleaning of ETC equipment; and back office functions such as customer service and ETC account management.

3.6.3 Risk Inputs

While there are several important drivers to the concept, Value for Money is achieved with an optimal and enforceable risk allocation between public and private partners. Because every project is unique, there must be an objective risk assessment methodology to understand what the associated risks consist of, what their magnitude is in some measurable form, and ultimately how the allocation of those risks changes between different procurement strategies. The goal is to evaluate and thus compare how the value of the risks change between the various parties involved.

The model developed for evaluation utilizes the first Capital and the Operation and Maintenance cost elements as a benchmark against which to calculate the monetary equivalent of the various project specific risks. These monetary evaluations are considered for each relevant party to the project under consideration, i.e. both the public agency and the contractor/private partner. These risk evaluations are considered for both the traditional procurement model and for the P3 procurement model and the results under each different scenario are compared to allow evaluation of how risk changes between

the parties from one procurement methodology to another. This comparison provides the measurement of Value for Money transfer.
In order to facilitate this evaluation of comparative risks, the following process steps were implemented:

1. Develop a template for a comparative risk cost model utilizing a systematized risk register approach. A risk register is simply a list of risks.

2. Carry out a risk workshop for each project, with the individual project teams, in order to identify the key project risks and to score these. In order to facilitate evaluation and correct allocation of the Cost Basis for each risk, risks are characterized into specific categories that are generic and broadly representative of the typical risks that might occur on an average project. The matrix is not intended as a fully comprehensive listing but rather an initial aid to facilitate further discussion and development of unique project specific risks. It is thus a starting point against which the team completing the risk register can allocate their risks under the appropriate category.

3. Scoring of the project risks involves the evaluation of the likely probability of a particular risk event occurring. Then, should the risk occur, the assumed cost impact to the project under both a traditional procurement scenario and under an alternative methodology is compared, enabling a comparison between the two approaches.

4. Once the individual risks have been scored for probability and assumed cost impact, assessment is made as to which party actually carries that risk under the relevant delivery model. There are three possibilities for each risk – that all the risk is carried by the State; that all the risk is carried by the contractor / private partner; or that risk is shared. For each procurement approach the risk cost model is completed by inserting either a number 1, 2 or 3 to represent which party the calculated assumed risk cost impact should be set against.

The output of the risk register is a summation of all risks and their quantified risk allocations for each party under the different delivery methods considered, as discussed further below. A more detailed account of the assessment actions described above is presented in Appendix B Section 6.2.9.

3.6.3.1 Findings and Results[27]

The results presented herein are subject to the limitations and qualifications provided at the end of this section and are to be considered within the context of this Study. Further, when using or quoting the below information, it is important to remember that the risk costs shown below are high level estimates based on the information available at the time of this assessment. As such, estimated costs shown here are subject to change depending on the availability of additional information and refinement of key inputs and assumptions.

I-405/SR 167 Express Toll Lanes Comparative Risk Assessment

The DBFOM P3 scenario assumed for the I-405/SR 167 Express Toll Lane project results in a significant risk transfer from the public agency (grantor) to the private partner, with some of these risks becoming shared risks for both parties. Using a technique known as “weighted risk valuation,” the Consultant Team quantified the value (or cost) of those risks based on the likeliness of their occurrence. Under the traditional delivery approach, the cost of this project’s risks to the public agency is approximately $168M. Under the DBFOM P3 scenario, on the other hand, this cost to the public agency is reduced to $27M. This result has contributed to the finding that P3 delivery provides better Value for Money than traditional delivery for this project.

The P3 scenario for the I-405 project assumes that the private sector could deliver the project notably faster – in 2.5 years as opposed to 5 years under the traditional delivery scenario. As such, the P3 scenario forecasts a reduction of construction and design risk, as well as substantial reductions in lifecycle and operations risk through higher asset quality and performance. A few risks, such as land delivery and access, are relatively consistent across both scenarios, and two risks, project agreement risk and policy risk, are higher under the P3 case.

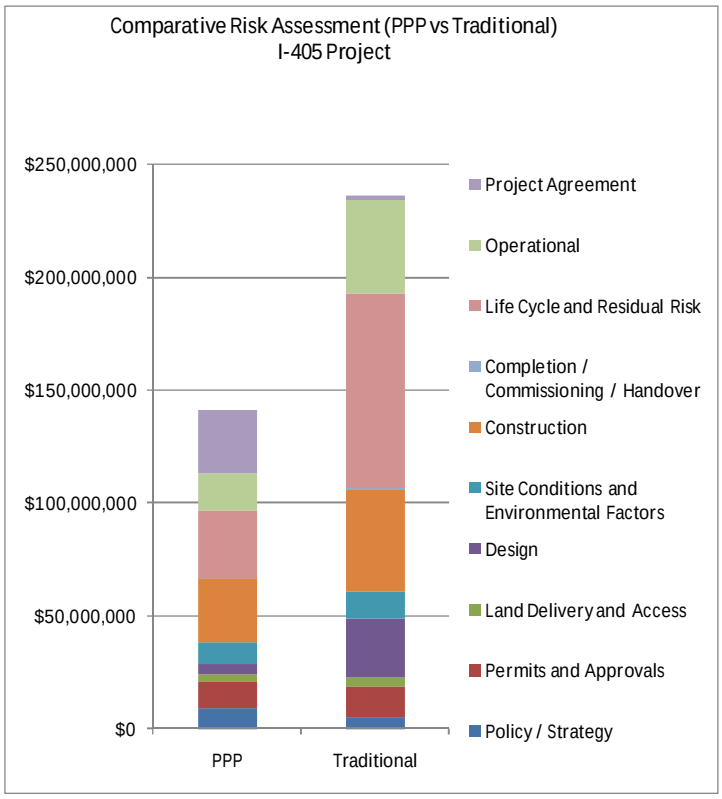
On the aggregate, the P3 scenario allows risks to be allocated in a more optimal manor than the traditional delivery approach, which has the effect of decreasing the overall cost of risks associated

[27] There are several limitations to the risk analysis described in this section, specifically: 1.) This analysis has not considered revenue-related risks. Therefore, this analysis may significantly underestimate overall risk as well as the difference in risk transfer between a P3 model and traditional procurement; 2.) The capital and operational maintenance costs have not been calculated by considering the 'time value of money'. Cash flows that feed these numbers have not accounted for inflation and are not discounted; 3.)The analysis assumes that all risks occur. A Monte Carlo simulation has not been conducted; 4.) The risks in the registers are broad risks as such not all project risks have been identified; 5.) The analysis has used the cost schedule to inform risk. In reality, risks are discrete independent events not related to the cost of the project or stages within it; 6.) This analysis uses 'Expected Value' to inform the totals in the above summary. These numbers may under estimate a prudent contingency level; 7.) Because risks have been grouped, it is likely that impacts have been understated. When the strategic risks are broken down into specific project risks, it is likely that the impact of each part will be greater than the original whole.

with this project by approximately $100M. Under the traditional delivery approach, the total cost of project risks is approximately $240M, while for the P3 scenario it is approximately $140M.

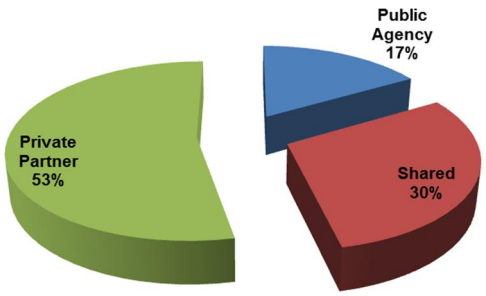
Figure 3.5 I-405/SR 167 – Risk Assessment Results

Total Estimated Risk Costs (2011 USD)

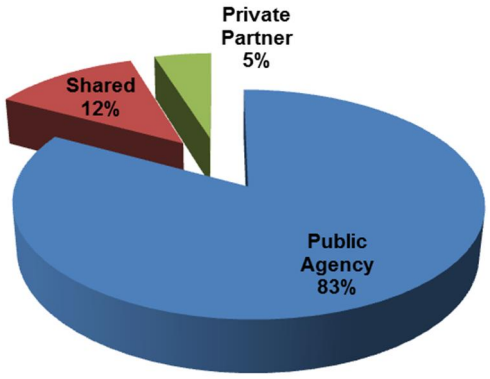


Risk Allocation by Party (proportional)

P3 Case



PSC Case

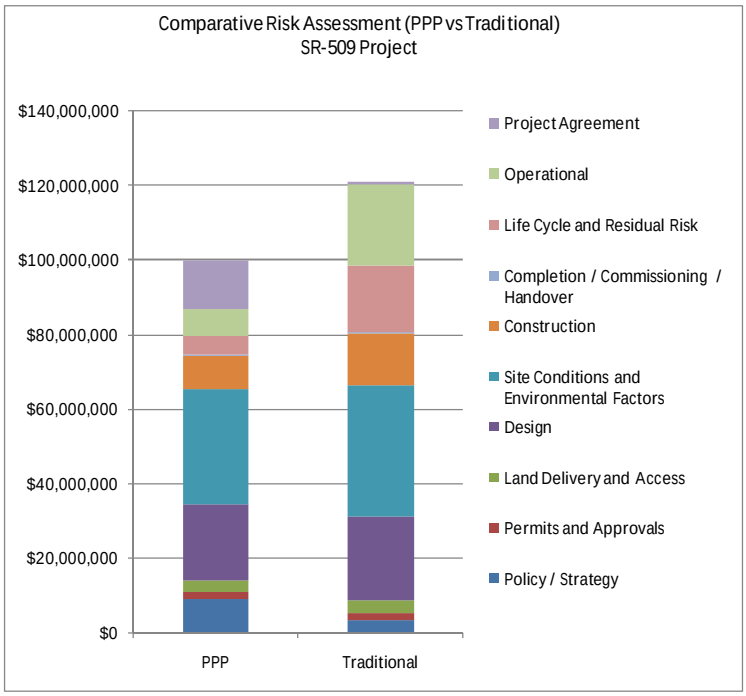


I-5/SR 509 Comparative Risk Assessment

The DBFOM P3 scenario assumed for the SR 509 project results in a significant risk transfer from the public agency (grantor) to the private partner, with some of these risks becoming shared risks for both parties. Using a technique known as “weighted risk valuation,” the Consultant Team quantified the value (or cost) of those risks based on the likeliness of their occurrence. Under the traditional delivery approach, the cost of this project’s risks to the public agency is approximately $67M. Under the DBFOM P3 scenario, on the other hand, this cost to the public agency is reduced to $18M. This result has contributed to the finding that P3 delivery provides better Value for Money than traditional delivery for this project.

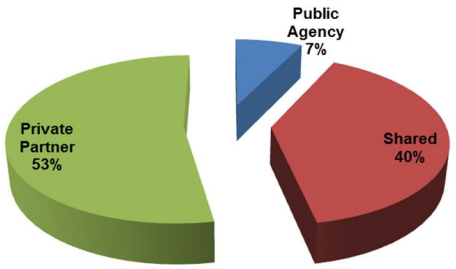
Figure 3.6 SR 509 – Risk Assessment Results

Total Estimated Risk Costs (2011 USD)

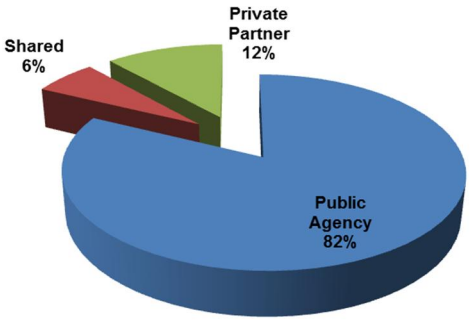


Risk Allocation by Party (proportional)

P3 Case



PSC Case



The P3 scenario for SR 509 assumes that the private sector could deliver the project somewhat faster – in 2.5 years as opposed to 3 years under the traditional delivery scenario. As such, the P3 scenario forecasts a reduction of construction risk, as well as substantial reductions in lifecycle and operations risk through higher asset quality and performance. A few risks, such as land delivery and access, are relatively consistent across both scenarios, and two risks, project agreement risk and policy risk, are significantly higher under the P3 case.

On the aggregate, the P3 scenario allows risks to be allocated in a more optimal manor than the traditional delivery approach, which has the effect of decreasing the overall cost of risks associated with this project by approximately $22.5M. Under the traditional delivery approach, the total cost of project risks is approximately $122.5M, while for the P3 scenario it is approximately $100M.

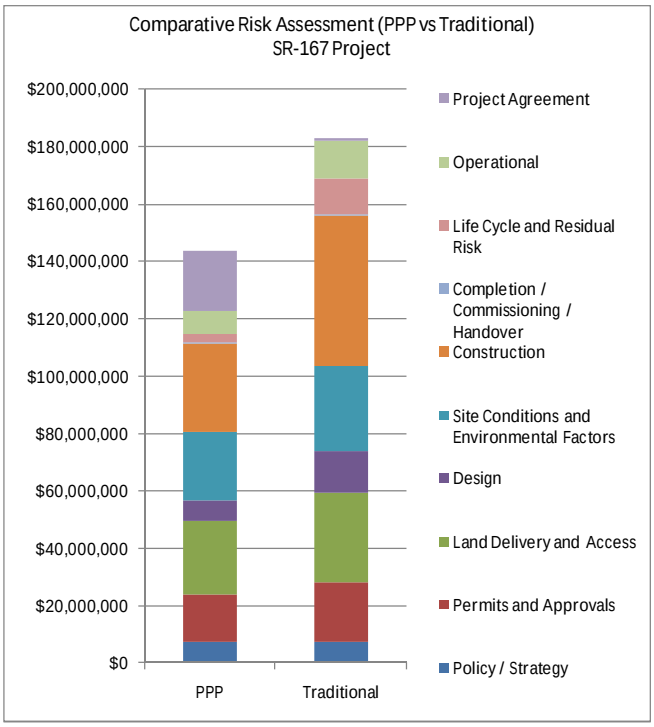
SR 167 Comparative Risk Assessment

The DBFOM P3 scenario assumed for the SR 167 project results in a significant risk transfer from the public agency (grantor) to the private partner, with some of these risks becoming shared risks for both parties. Using a technique known as “weighted risk valuation,” the Consultant Team quantified

the value (or cost) of those risks based on the likeliness of their occurrence. Under the traditional delivery approach, the cost of this project's risks to the public agency is approximately $116M. Under the DBFOM P3 scenario, on the other hand, this cost to the public agency is reduced to $41M. This result has contributed the finding that P3 delivery provides better Value for Money than traditional delivery for the project.

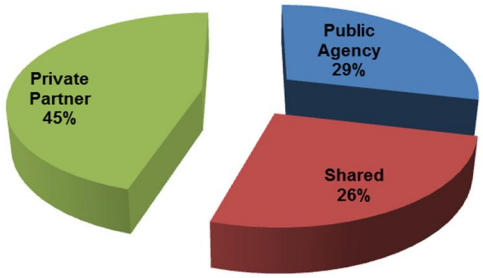
Figure 3.7 SR167 – Risk Assessment Results

Total Estimated Risk Costs (2011 USD)

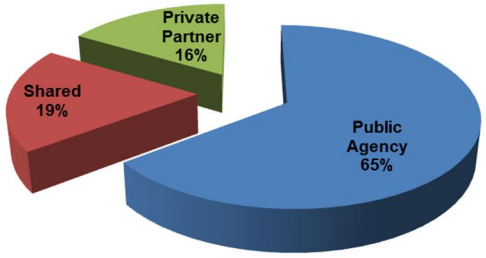


Risk Allocation by Party (proportional)

P3 Case



PSC Case



This risk transfer has the effect of substantially reducing costs in several areas under the P3 scenario, most notably in the construction phase. As mentioned previously, this results from the accelerated construction schedule possible under a P3, 3 years instead of the 5 projected for traditional delivery. The bundling of design and construction under the P3 scenario reduces the cost of design risks, and P3 efficiencies in asset quality and long-term maintenance reduce the cost of lifecycle and residual risks. A few risks, such as sight clearance and environmental factors, are relatively consistent across both scenarios, and one risk, project agreement risk, is significantly higher under the P3 case.

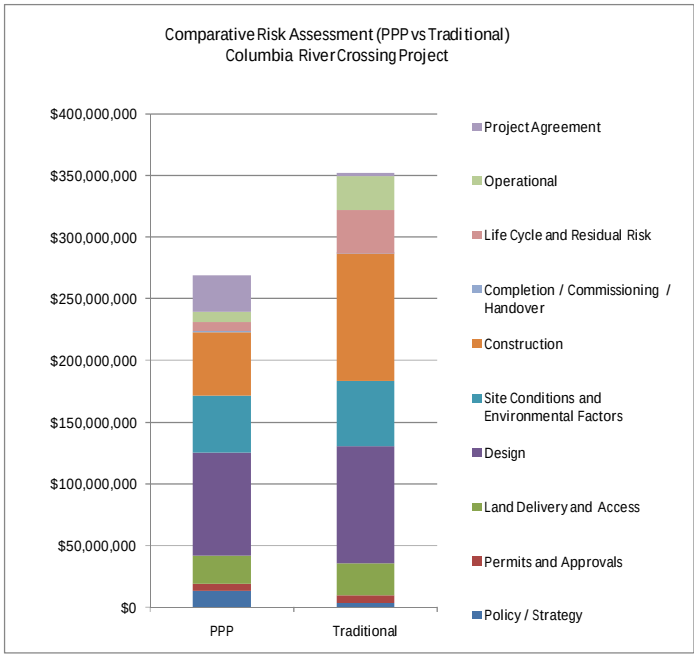
On the aggregate, the P3 scenario allows risks to be allocated in a more optimal manor than the traditional delivery approach, which has the effect of decreasing the overall cost of risks associated with this project by approximately $41M. Under the traditional delivery approach, the total cost of project risks is approximately $185M, while for the P3 scenario it is approximately $144M.

I-5 Columbia River Crossing Comparative Risk Assessment

The P3 scenarios assumed for the Columbia River Crossing project results in a substantial risk transfer from the public agency (grantor) to the private partner, with some of these risks becoming shared risks for both parties. Using a technique known as "weighted risk valuation," the Consultant Team quantified the value (or cost) of those risks based on the likeliness of their occurrence. Under the traditional delivery approaches, the cost of this project's risks to the public agency is approximately $124M. Under the DBFOM P3 scenario, on the other hand, this cost to the public agency is reduced to $47M.

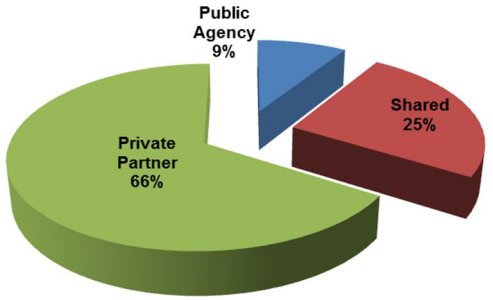
Figure 3.8 I-5 Columbia River Crossing – Risk Assessment Results

Total Estimated Risk Costs (2011 USD)

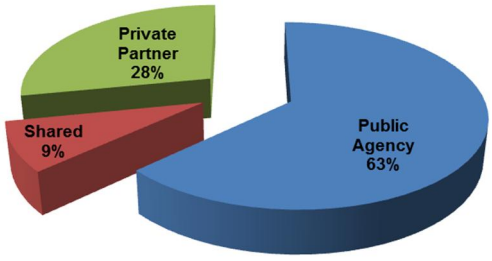


Risk Allocation by Party (proportional)

P3 Case



PSC Case



The P3 scenarios for this project assume that the private sector will deliver the project more rapidly than through traditional delivery – in 5 years as opposed to 9 – resulting in a significant reduction in construction cost risk. Advantages in asset quality and performance from the P3 scenario are also assumed to reduce lifecycle and operations risks. A few risks, such as land delivery and access, are

relatively consistent across both scenarios, and two risks, project agreement risk and policy risk, are higher under the P3 case.

On the aggregate, the P3 scenario allows risks to be allocated in a more optimal manor than the traditional delivery approach, which has the effect of decreasing the overall cost of risks associated with this project by approximately $85M. The total weighted cost of project risks in the P3 scenario is approximately $269M, as compared to approximately $356M in the traditional delivery scenario.

3.6.4 Financing Inputs

Financing assumptions were developed for each scenario. A summary of these assumptions is shown below.

3.6.4.1 Traditional Financing

The State of Washington borrows money to undertake large capital improvements including transportation projects. The State generally uses two primary types of debt instruments to finance its infrastructure projects – Motor Vehicle Fuel Tax General Obligation bonds (MVFT GO bonds, also referred to simply as General Obligation Bonds or GO Bonds in this Study) and Toll Revenue Bonds.

GO Bonds are backed by the full faith, credit and taxing power of the State; however, they are first payable from the proceeds of state excise taxes on motor vehicle and special fuels. Because the GO Bonds are backed by the full faith, credit and taxing power of the State they carry the same credit ratings and interest rates as the broader multi-purpose GO bonds which are not supported by fuel taxes.[28] While the MVFT GO Bonds do not count towards the State's constitutional debt limit of 9 percent of the average of the prior 3 years' general state revenues, they are viewed by credit rating agencies as the equivalent to general obligation bonds and, therefore, directly impact the State's credit rating. In addition, they are limited by forecasts of future motor vehicle fuel tax receipts.

Toll revenue bonds are a "stand-alone" of financing secured solely by net project revenue and not the full faith, credit and taxing power of the State. Toll revenue bonds typically have lower credit ratings and, therefore, higher interest rates than GO bonds. However, they do not impact the State's credit rating and do not count towards its constitutional debt limit. While there are not state revenue bonds currently outstanding, the State has the ability to authorize the issuance of toll revenue bonds. The

28 State of Washington Debt Affordability Study, January 31, 2011.

financing assumptions used for PSC delivery models of the Comparative Financial Model are presented in Table 3.15.

Table 3.15 Financing Assumptions for PSC Delivery Models

	Toll Revenue Bond	General Obligation Bond
Security pledge(s)	Net project revenue	Full faith and credit of the State of Washington
Capital structure	100% debt limited by debt covenants	100% debt
Maturity	35 years	30 years by law
Coverage	2.0x	N/A
Interest rate(s)	6%	5%

3.6.4.2 P3 Financing

The P3 delivery model uses various forms of private and public finance to fund the upfront construction costs of a given project. Depending upon the project economics, the project may be revenue positive and, therefore, has the potential to be “self-financing” (i.e. it does not require any additional funding) or the project may be revenue negative and, therefore has a funding gap (i.e it requires additional funding). For each project, a mixture of debt and equity financing was used to fund the construction costs in the P3 delivery model. If the project was estimated to be revenue positive, then it was assumed that for the purpose of this analysis a concession payment will be made to the State. A concession payment is an upfront payment that a private developer will pay to the State in exchange for the right to lease and collect toll revenue on a project. If the project was estimated to be revenue negative, then for the purpose of this analysis it was assumed that a public funds contribution will be required to be made by the State to the private developer. A public funds contribution is a payment by the State to the private developer to cover any construction costs that remain after financing proceeds have been applied. In the event that a given project’s P3 delivery model assumed that availability payments would be made, then the concept of revenue positive and revenue negative projects does not apply since availability payments are sized to cover all of the costs associated with the project (construction, operating and maintenance, and financing).

Depending upon the type of P3 delivery model assumed – toll concession or availability payment – the financing structure and assumptions vary. This is primarily due to the different levels of risk perceived by financiers when comparing the two P3 delivery models. Under the toll concession P3 delivery model, the source of repayment for the financing is the toll revenue after all operating and maintenance expenditures have been paid. Under the availability payment P3 delivery model, the source of repayment for the financing is availability payments after all operating and maintenance

expenditures have been paid. Because availability payments are akin to appropriations made by the State (even though the State can use toll revenue receipts to pay for the availability payments), the level of risk is perceived to be lower than a toll revenue concession. Toll revenue concessions rely on toll receipts to repay financing which are subject to greater risks such as downturn in the economy and change in user preference.

While there are many differences in the financing assumptions for the toll concession and the availability payment P3 delivery models, there are some uniform assumptions that were applied to both models. For example, both P3 models assume a mix of debt and equity financing for all projects; both P3 models also assume that TIFIA financing is available; and both models assume that commercial bank debt is used to fund a portion of the upfront costs during the construction period and is repaid with proceeds from a refinance facility during the operations period. Table 3.16 sets forth the financing assumptions used for the P3 delivery models in greater detail.

Table 3.16 Financing Assumptions for P3 Delivery Models

	Senior Debt		TIFIA		Equity	
P3 Delivery Model	Toll Concession	Availability Payment	Toll Concession	Availability Payment	Toll Concession	Availability Payment
Financing Instrument(s)	Commercial Bank Debt	Commercial Bank Debt	TIFIA	TIFIA	Toll revenue less operating costs less debt service	Availability payments less operating costs less debt service
Security Pledge(s)	Toll revenue less operating costs	Availability payments less operating costs	Toll revenue less operating costs, subordinate to senior debt	Availability payments less operating costs, subordinate to senior debt	30% of capital structure	20% of capital structure
Capital Structure	70% debt of capital structure	80% of capital structure	Limited to 33% of total project cost	Limited to 33% of total project cost	NA	NA
Maturity	Refinanced 5 years into operations with 30 year refinance facility	Refinanced 1 year into operations with 30 year refinance facility	35 years after substantial completion	35 years after substantial completion	NA	NA
Coverage	1.75x	1.50x	1.20x	1.20x	NA	NA
Interest Rate(s)	7.0% with step down to 6% after refinance	7.0% with step down to 5.5% after refinance	3%	3%	NA	NA
Cost of Equity	NA	NA	NA	NA	15%	13%

3.6.5 Summary of Findings

The SR 509, SR 167, I-405, and I-5 Columbia River Crossing projects were analyzed using the comparative financial model tool assuming the following with regard to delivery model and financing:

Table 3.17 Model Scenarios Run for Each Project

	Public Sector			Private Sector	
	Public Sector Comparator (PSC) Financing			Shadow Bid Delivery Model	
Project	Delivery Model	GO Bond	Toll Revenue Bond	Toll Concession	Availability Payment Model
I-405/SR 167 Express Toll Lanes	DB	X	X	X	
I-5/SR 509 Extension	DB		X	X	
SR 167 Extension	DBB		X		X
I-5 Crossing (CRC)	DB	X	X	X	X
US 2 Monroe Bypass	NA	NA	NA	NA	NA

3.6.5.1 I-5/SR 509 Extension

For the SR 509 project, the comparative financial model was used to quantitatively assess the traditional delivery model and P3 delivery model. The comparative financial model output was then used as an input into the Value for Money analysis.

Traditional Delivery Model

A traditional toll revenue bond financing model was compared to a P3 toll concession model over a 50 year analysis period.

Based on the project inputs provided by WSDOT, a three year construction period was assumed for the project under the traditional delivery model. The traditional delivery model scenario assumed a 47 year operations period which would begin at the completion of the construction period, such that the period of analysis was 50 years in total to match the same tenor of analysis assumed in the P3 toll concession model.

Under the traditional delivery model assuming a toll revenue bond financing, the SR 509 project is anticipated to require a public funds contribution. This is primarily a result of high construction costs when compared to the present value of the forecast project revenue. It is estimated that a funding gap of $330M - $350M (in present value terms) exists. The range is based on a sensitivity performed

on the revenue projections whereby a ten percent reduction was applied to toll revenue projections to mimic the relatively conservative view of toll revenue projections by lenders and rating agencies when fully underwriting project financing.

After taking into account the retained WSDOT risks and any excess cash flow that may be gained by the State during the operations period of the project under the traditional revenue bond financing scenario, the project has an estimated net project cost in the range of $210M - $250M.

P3 Delivery Model

A P3 toll concession model was compared to the traditional toll revenue bond financing over a 50 year analysis period.

Based on the project inputs developed by the Consultant Team in consultation with WSDOT, a three year construction period was assumed for the P3 delivery model. The P3 toll concession model assumed a 47 year operations period which would begin at the completion of the construction period to arrive at a total concession period of 50 years in line with other P3 toll concession projects in the US.

Under the P3 toll concession model, the SR 509 project may generate a funding surplus. This is mainly a result of the efficiencies in operating and maintenance costs that are gained through a P3 delivery model.

Under the P3 toll concession model, an estimated funding surplus (gap) in the range of $60M – ($60) (in present value terms) exists.

After taking into account the retained WSDOT risks under the P3 toll concession model the project has an estimated net project value (cost) in the range of $40M – ($80M).

Value for Money

The net project value (or cost) of the traditional toll revenue bond model was compared to the net project value (or cost) of the P3 toll concession model. The comparison was performed in order to determine which delivery model offered the potential for best Value for Money to the State. The results are provided below.

Table 3.18 I-5/SR 509 Extension Net Project Value

$ Present Value (millions, rounded)	Traditional Delivery Model (Toll Revenue Bond)	P3 Delivery Model (Toll Concession)
Concession Payment (Public Contribution)	$(220) - $(200)	$70 – $190
Pre-Development Costs	$(130)	$(130)
Funding Surplus (Gap)	$(350) - $(330)	$(60) - $60
Funding Surplus (Gap)	$(350) - $(330)	$(60) – $60
Excess Cash Flow	$170 - $190	-
Retained Risks	$(70)	$(20)
Net Project Value (Cost)	$(250) – $(210)	$(80) - $40
Difference - VfM		$170 - $250

The Value for Money analysis estimates that the P3 toll concession model may offer savings in the range of $170M - $250M when compared to the traditional toll revenue bond model.

3.6.5.2 I-405/SR 167 Express Toll Lanes

For the I-405 project, the comparative financial model was used to quantitatively assess two traditional delivery models and a P3 delivery model. The comparative financial model output was then used as an input into the Value for Money analysis. The results of the comparative financial model and the Value for Money analysis are provided below.

Traditional Delivery Model

Two traditional delivery model scenarios were analyzed for the I-405 project – a toll revenue bond financing scenario and a GO bond financing scenario. Both were compared to a P3 toll concession model over a 50 year analysis period.

Based on the project inputs provided by WSDOT, a five year construction period was assumed for the I-405 project under the traditional delivery model. It was assumed that a 45 year operations period would begin at the completion of the construction period, such that the period of analysis was 50 years in total to match the same tenor of analysis assumed in the P3 toll concession model.

Under both the toll revenue bond financing and GO bond financing scenarios, the I-405 project is anticipated to generate a funding surplus. This is primarily a result of high projected toll revenue when compared to the upfront construction costs and ongoing operating and maintenance costs. Under the toll revenue bond financing scenario, an estimated upfront funding surplus $510M - $640M (in present value terms) is generated. The range is based on a sensitivity performed on the revenue

projections, whereby a ten percent reduction was applied to toll revenue projections to mimic the relatively conservative view of toll revenue projections by lenders and rating agencies when fully underwriting project financing. Under the GO bond financing scenario, an estimated upfront funding surplus of $680M (in present value terms) is generated.

After taking into account the retained WSDOT risks under the traditional revenue bond financing scenario, the project has an estimated net project value in the range of $340M - $470M and the GO bond financing scenario has an estimated net project value of $510M.

P3 Delivery Model

A P3 toll concession model was analyzed for the I-405 project. A P3 toll concession model was compared to a both a traditional toll revenue bond and GO bond model over a 50 year analysis period. Based on the project inputs developed by the Consultant Team in consultation with WSDOT, a three year construction period was assumed for the P3 delivery model. The P3 toll concession model assumed a 47 year operations period such that the period of analysis was 50 years in line with other P3 toll concession projects in the US.

Under the P3 toll concession model, the I-405 project is anticipated to generate a funding surplus. Like the traditionally financed delivery models analyzed, this is primarily a result of high projected toll revenue when compared to the upfront construction costs and ongoing operating and maintenance costs.

Under the P3 toll concession model, an estimated upfront funding surplus of $1,040M (in present value terms) is generated. Unlike the other projects analyzed, a sensitivity analysis was not performed on the revenue projections for the I-405 project under a P3 delivery model. Given the relatively high projected traffic and revenue provided under the base case, the Consultant Team in consultation with WSDOT felt it would not be prudent to assume that an equity investor’s view of toll revenue projections would be more aggressive than these revenue projections.

After taking into account the retained WSDOT risks under the P3 toll concession model the project has an estimated net project value of $910M.

Value for Money

The net project value (or cost) of the traditional toll revenue bond model was compared to the net project value (or cost) of the P3 toll concession model. Likewise, the net project value (or cost) of the traditional GO bond model was compared to the net project value (or cost) of the P3 availability payment model. The comparisons were performed in order to determine which delivery models offered the estimated best Value for Money to the State. The results are provided in Table 3.19.

Table 3.19 I-405/SR 167 Express Toll Lanes Net Project Value

$ Present Value (millions, rounded)	Traditional Delivery Model (Toll Revenue Bond)	Traditional Delivery Model (GO Bond)	P3 Delivery Model (Toll Concession)
Concession Payment	-	-	$1,040
Pre-Development Costs	$(100)	$(100)	$(100)
Funding Surplus (Gap)	$510 - $640	$680	$940
Funding Surplus (Gap)	$510 - $640	$680	$940
Excess Cash Flow	$610 - $740	$780	-
Retained Risks	$(170)	$(170)	$(30)
Net Project Value (Cost)	$340 - $470	$510	$910
Difference – VfM			$400 - $570

The Value for Money analysis estimates that the P3 toll concession model may offer incremental value in the range of $400M - $570M when compared to the traditional toll revenue bond and GO bond models.

3.6.5.3 SR 167 Extension

For the SR 167 project, the comparative financial model was used to quantitatively assess a traditional delivery model and a P3 delivery model. The comparative financial model output was then used as an input into the Value for Money analysis. The results of the comparative financial model and the Value for Money analysis are provided below.

Traditional Delivery Model

A traditional toll revenue bond financing model was compared to a P3 toll availability payment model over a 38 year analysis period.

Based on the project inputs provided by WSDOT, a five year construction period was assumed for the project under the traditional delivery model. The traditional delivery model scenario assumed a 33 year operations period which would begin at the completion of the construction period, such that the

period of analysis was 38 years in total to match the same tenor of analysis assumed in the P3 availability payment model.

Under the traditional delivery model assuming a toll revenue bond financing, the SR 167 project is anticipated to require a public funds contribution. This is primarily a result of high construction costs when compared to the present value of the forecast project revenue. It is estimated that a funding gap of $720M (in present value terms) exists.

After taking into account the retained WSDOT risks and any excess cash flow that may be gained by the State during the operations period of the project under the traditional revenue bond financing scenario, the project has an estimated net project cost of $740M.

P3 Delivery Model

A P3 availability payment model was compared to the traditional toll revenue bond financing over a 38 year analysis period.

Based on the project inputs developed by the Consultant Team in consultation with WSDOT, a three year construction period was assumed for the P3 delivery model. The P3 availability payment model assumed a 35 year operations period which would begin at the completion of the construction period in line with other P3 availability payment projects in the US.

Under the P3 availability payment model, the SR 167 project is anticipated to require a public funds contribution. Like the traditional delivery model analyzed, the public funds contribution requirement is primarily a result of high construction costs when compared to the present value of the forecast project revenue.

Under the P3 availability payment model, an estimated funding gap of $110M (in present value terms) exists assuming that the toll revenue collected will be used to offset the ongoing availability payments.

After taking into account the retained WSDOT risks under the P3 toll concession model the project has an estimated net project cost of $370M.

Value for Money

The net project value (or cost) of the traditional toll revenue bond model was compared to the net project value (or cost) of the P3 availability payment model. The comparison was performed in order to determine which delivery model offered Value for Money to the State. The results are provided below.

Table 3.20 SR 167 Extension Net Project Value

$ Present Value (millions, rounded)	Traditional Delivery Model (Toll Revenue Bond)	P3 Delivery Model (Availability Payment)
Concession Payment (Public Contribution)	$(480)	-
Pre-Development Costs	$(240)	$(220)
Availability Payments	-	$(630)
Toll Revenue Offset Availability Payments	-	$520
Funding Surplus (Gap)	$(720)	$(350)
Funding Surplus (Gap)	$(720)	$(350)
Excess Cash Flow	$100	-
Retained Risks	$(120)	$(40)
Net Project Value (Cost)	$(740)	$(370)
Difference – VfM		$370

The Value for Money analysis estimates that the P3 availability payment model may offer savings of $370M when compared to the traditional toll revenue bond model.

3.6.5.4 I-5 Columbia River Crossing

For the I-5 Columbia River Crossing project, the comparative financial model was used to quantitatively assess a traditional delivery model and a P3 delivery model. The comparative financial model output was then used as an input into the Value for Money analysis. The results of the comparative financial model and the Value for Money analysis are provided below.

Traditional Delivery Model

Two traditional delivery model scenarios were analyzed for the CRC. A toll revenue bond financing was compared to a P3 toll concession model over a 50 year analysis period. A GO bond financing was compared to a P3 availability payment model over a 39 year analysis period.

Based on the project inputs provided by WSDOT, a nine year construction period was assumed for the CRC project under the traditional delivery model. The toll revenue bond financing scenario

assumed a 41 year operations period which would begin at the completion of the construction period, such that the period of analysis was 50 years in total to match the same tenor of analysis assumed in the P3 toll concession model. The GO bond financing scenario assumed a 30 year operations period which would begin at the completion of the construction period, such that the period of analysis was 39 years in total to match the same tenor of analysis assumed in the P3 availability payment model.

Under both the toll revenue bond financing and GO bond financing scenarios, the CRC project is anticipated to require a public funds contribution. This is primarily a result of high construction costs when compared to the present value of the forecast project revenue. Under the toll revenue bond financing scenario, an estimated upfront funding gap in the range of $2,050M - $2,080M (in present value terms) exists. The range is based on a sensitivity performed on the revenue projections, whereby a ten percent reduction was applied to toll revenue projections to mimic the relatively conservative view of toll revenue projections by lenders and rating agencies when fully underwriting project financing. Under the GO bond financing scenario, an estimated upfront funding gap of $1,450 (in present value terms) exists.

After taking into account the retained WSDOT risks and any excess cash flow that may be gained by the State during the operations period of the project under the traditional revenue bond financing scenario, the project has an estimated net project cost in the range of $1,930M - $2,000M and the GO bond financing scenario has an estimated net project cost of $1,570M.

P3 Delivery Model

Two P3 delivery model scenarios were analyzed for the CRC. A P3 toll concession model was compared to a traditional toll revenue bond model over a 50 year analysis period. A P3 availability payment model was compared to a traditional GO bond financing model over a 39 year analysis period.

Based on the project inputs developed by the Consultant Team in consultation with WSDOT, a four year construction period was assumed for P3 delivery model. The P3 toll concession model assumed a 46 year operations period such that the period of analysis was 50 years in line with other P3 toll concession projects in the US The P3 availability payment delivery model assumed a 30 year operations period which would begin at the completion of the construction period in line with other P3 availability payment projects in the US.

Under both the P3 toll concession and P3 availability payment models, the CRC project is anticipated to require a public funds contribution. Like the traditional delivery model analyzed, the public funds contribution requirement is primarily a result of high construction costs when compared to the present value of the forecast project revenue.

Under the P3 toll concession model, an estimated upfront funding gap in the range of $1,200M - $1,430M (in present value terms) exists. The range is based on a sensitivity performed on the revenue projections whereby a twenty-five percent increase was applied to toll revenue projections to mimic an equity investor's aggressive view of toll revenue projections when investing equity into a project financing. Under the P3 availability payment model, an estimated funding gap of $1,510M (in present value terms) exists assuming that the toll revenue collected will be used to offset the ongoing availability payments.

After taking into account the retained WSDOT risks under the P3 delivery model, the P3 toll concession model has an estimated net project cost in the range of $1,250M - $1,480M and the P3 availability payment model has an estimated net project cost of $1,560M.

Value for Money

The net project value (or cost) of the traditional toll revenue bond model was compared to the net project value (or cost) of the P3 toll concession model. Likewise, the net project value (or cost) of the traditional GO bond model was compared to the net project value (or cost) of the P3 availability payment model. The comparisons were performed in order to determine which delivery models offered Value for Money to the State. The results are provided in Table 3.21.

Table 3.21 I-5 Columbia River Crossing Net Project Value

$ Present Value (millions, rounded)	Traditional Delivery Model (Toll Revenue Bond)	P3 Delivery Model (Toll Concession)
Concession Payment (Public Contribution)	$(1,720) - $(1,750)	$(870) - $(1,100)
Pre-Development Costs	$(330)	$(330)
Funding Surplus (Gap)	$(2,050) - $(2,080)	$(1,200) - $(1,430)
Funding Surplus (Gap)	$(2,050) - $(2,080)	$(1,200) - $(1,430)
Excess Cash Flow	$240 - $200	-
Retained Risks	$(120)	$(50)
Net Project Value (Cost)	$(1,930) - $(2,000)	$(1,250) - $(1,480)
Difference – VfM		$680 - $520

$ Present Value (millions, rounded)	Traditional Delivery Model (GO Bond)	P3 Delivery Model (Availability Payment)
Concession Payment (Public Contribution)	$(1,120)	-
Pre-Development Costs	$(330)	$(330)
Availability Payments		$(2,370)
Toll Revenue Offset Availability Payments		$1,190
Funding Surplus (Gap)	$(1,450)	$(1,510)
Funding Surplus (Gap)	$(1,450)	$(1,510)
Excess Cash Flow	-	-
Retained Risks	$(120)	$(50)
Net Project Value (Cost)	$(1,570)	$(1,560)
Difference - VfM		$10

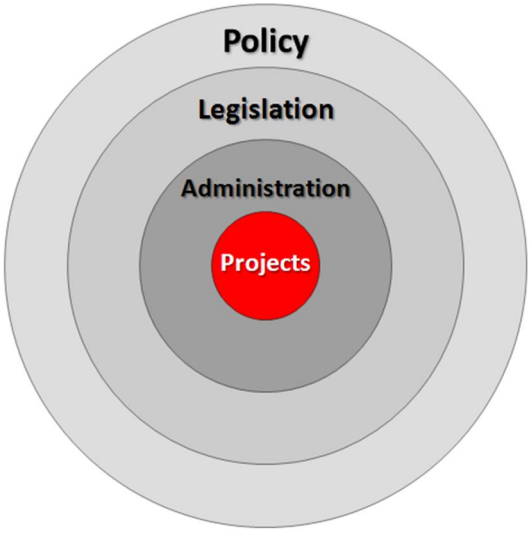
The Value for Money analysis estimates that the P3 toll concession model may offer savings in the range of $520M - $680M when compared to the traditional toll revenue bond model. The Value for Money analysis estimates that the P3 availability payment model offers nominal savings of $10M when compared to the traditional GO bond model.

4.0 Findings and Recommendations

Throughout the Study, a two-way educational process has been fostered between representatives of the State of Washington and the Consultant Team, enabling constant focus on the public interest and the needs of the State. Findings and recommendations have been developed in this context, and aim to provide the State with a roadmap to the policy, legislative, administrative and organizational milestones it may wish to pursue in order to leverage potential P3 benefits in the future.

4.1 Overview

In developing strategic recommendations for the State it is critical to understand the ideal relationship between Policy, Legislation and Administration:



- policy is all encompassing and defines the needs, preferences and objectives of the State as concisely as possible;
- legislation should be designed to fully reflect the State's policy objectives – and in its purest form is simply a tool for implementing such policy;
- the State's Administration is tailored to empower the Policy objectives of the State, within its legislative architecture – primarily in relation to the development and delivery of projects.

The Consultant Team has followed this methodology throughout the project, with a sequential approach to the investigation and development of policy, legislative and administrative recommendations, as discussed in the following sections.

Breadth and Depth of Recommendations

It is important to consider that the State's needs change over time and that there are a multitude of dynamic issues, stakeholders, obligations and actions related to the potential implementation of a P3 program ("facets" of P3). The Study's recommendations have addressed these requirements through the consideration of the following distinct phases and facets of P3:

- Stages of P3 Development (these represent business as usual requirements that are not project related – or what can be considered a "Steady State" for a P3 administration)
  - Stage A Current Steady State (represents the current position of the State and ends once the State has changed its P3 legislation to permit and facilitate P3 delivery)
  - Stage B Minimum Steady State (follows Stage A and is required to initiate and manage project specific Phases 1-4; changes is P3 legislation would also be required to facilitate an effective transition to Stage B)
- Project Specific Phases of P3 Development

  - Phase 1 Screening and Pre-Procurement (focusing on the identification, concept development, screening, selection and programming of candidate P3 projects prior to procurement)
  - Phase 2 Procurement (project specific, follows Phase 1, through the procurement process until final contract signing
  - Phase 3 Construction (follows Phase 2)
  - Phase 4 Operations (follows Phase 3, ending at termination of the Contract

- Key Facets of P3 Delivery
  - Relationship and interaction (both informational and contractual) between the public and private sector
  - Project screening and selection
  - Stakeholder outreach and public relations
  - Tolling and operations by private and public parties
  - Public and private funding and execution of construction and operations
  - Solicited and/or unsolicited proposals
  - Ownership and tax treatments
  - Approval and enforcement of binding project agreements, control and oversight
  - Numerous other considerations – this list is not exhaustive

4.2 Policy

It is recommended that Washington State adopt a policy framework that identifies a number of public interest protections as binding requirements of all future P3 projects. Such public interest protections are implementable and enforceable through statutes and/or as part of any P3 contract.

In consultation with the SWG and PWG, the Consultant Team has developed the following public interest protections for the State of Washington that should guide both the screening process as well as the State's P3 framework. These public interest protections should be required of all future P3 projects pursued in Washington State.

1. The State should maintain ultimate control and/or ownership of assets involved in P3 projects.
2. Value for Money must be assessed and show a positive value before the State pursues a P3 project.
3. Upfront payments generated by P3 projects to the State by the private partner should be used only to address transportation needs, and not diverted to pay for other government costs.
4. The long-term quality of service delivered in a P3 project must be ensured through stringent contract provisions and ongoing oversight.
5. P3 projects should conform to the State's toll setting policy, rather than allowing the private sector to change toll rates without contractually stipulated limits.
6. P3 projects should meet relevant State laws as with any other public works project including
   - Apprenticeship requirements
   - Prevailing wage laws
   - Minority and Women-Owned Business Enterprises (MWBEs) requirements
7. The State must safeguard against private partners realizing excessive returns.
8. Through contractual provisions, the State must ensure that the private partner selected will be solvent and able to deliver over the long-term.
9. The State should maintain the ability to terminate a P3 contract, or project agreement, if the private partner is not able to deliver according to the performance specifications of the contract.
10. The P3 contract should clearly specify the condition the asset must be in when the long-term lease concludes.

Future enforcement of these public interest protections will be facilitated through statutes and/or at a project level through individual P3 procurement processes and project agreements.

It is recommended that the State utilize the two-step screening tool developed in this Study to determine if a project is suitable, from an initial qualitative perspective, to be considered as a potential P3.

This screening tool (as described in Section 3.2) is intended to be used by the State to make an initial determination if a project has P3 potential. The screening tool will help provide understanding of what flaws exist to a project moving forward as a P3 and if those are minor then a strategy can be devised to move forward. If major obstacles exist to a P3, such as lack public support, minimal private sector interest, or lack of environmental clearance, then the project should be reassessed for delivery through traditional means. From a public policy lens, the screening tool should prevent the State from wasting time considering projects that do not make much sense to be pursued as a P3, taking into mind public interest concerns, policy objectives, and private sector appetite.

It is recommended that the State employ the financial model developed in this Study to determine whether Value for Money is greater in a P3 approach than in a traditional delivery method.

Before any P3 project is advanced in the State, a Value for Money analysis should be undertaken that is based on the comparative financial model created as part of this Study. The development of this model was informed by best practices globally and in the US and through interaction with the PWG and SWG. The comparative financial model helps compare the total estimated lifecycle costs of traditional procurement to those of a P3 procurement. If the estimated costs of P3 procurement are less than the estimated costs of the traditional public sector procurement, then there may be positive Value for Money, and the P3 project will warrant further study. This analysis should be undertaken in addition to the tolling feasibility study and financial analysis currently used by Washington State to evaluate potential projects.

4.3 Legislation

Building on the discussion in Section 2.3.5, this section presents recommendations to the State of Washington in its approach to P3 legislation. In the context of the study's other findings – that P3 can provide value to the State in delivering its transportation projects – **our primary recommendation in relation to legislation is that statutory changes are required** if the State is interested in pursuing P3 project delivery methods. As currently written, state law contains a number of provisions which effectively prevent the ability to pursue toll-financed projects using P3 procurement methods. **The current legislation must be repealed and replaced if P3 projects are to advance.**

In developing specific recommendations the Consultant Team has, within the limits of this engagement, focused on the desired outcomes of such changes rather than precise modifications to current language. The aim of this approach is to guide and inform the State's efforts to replace its current P3 legislation.

In this context, numerous recommendations have been developed over the course of the Study – albeit with some overlap between the boundaries of policy, legislation and administration, which are after all inherently linked as discussed in Section 4.1.

A summary table of the legislative recommendations, with characterization of the problems with the existing Washington State P3 legislation, is set forth at Section 6.5.

It is recommended that the State should repeal its current P3 legislation. It should enact new P3 legislation to encompass public interest protections, ensuring that for every project advanced, key policy goals are upheld.

As mentioned above in the policy recommendations, this Study has identified public interest protections that should be upheld for every project. Many of these recommendations should be incorporated into Washington State's P3 statute.

1. **Maintaining control and/or ownership over the asset** – There is currently no mention in the existing Washington State P3 legislation as to whether the State would maintain ultimate control and/or ownership of an asset in a P3 contract. Given public interest concerns, legislation should be replaced to require that the fee ownership of the assets, both existing and to be developed, at all times remains with the eligible public entity, albeit subject to the private entity's lease,

easement, operating interest or other short-term or long-term interests. Closely related to the question of asset ownership is ownership of, or rights to, toll revenues from tolled facilities. New legislation should confirm the authority to grant the private party the right to toll revenues during the term of a P3 agreement, the authority of the private party to pledge its interest in project revenues as security for project debt, and the authority of the DOT to pledge its interest in project revenues as security for its monetary obligations under the P3 agreement.

2. **Value for Money of P3 approach must be assessed** – The existing Washington State P3 legislation requires the Transportation Commission to complete a tolling feasibility study and adopt procurement procedures that include "a comparison with the department's internal ability to complete the project that documents the advantages of completing the project as a partnership versus solely as a public venture" (47.29.090(a), (b)(i) RCW). There is also a requirement for a financial analysis after a proposed final agreement is developed but before it is executed (47.29.160(1)(a) RCW). None of these provisions clearly requires the type of rigorous, pre-procurement two-step screening and Value for Money analysis recommended. Legislation should be replaced to reflect the need to ensure that given cost of capital concerns, Value for Money analysis is a central part of a pre-procurement decision-making process.
3. **Use of upfront funds and tolls generated by P3 projects** – New Washington State P3 legislation should specify that any new funding generated through a P3 agreement for a transportation project should not be diverted back to the State's general fund, but should be used to finance the DOT's capital program. In addition, the existing Washington State P3 legislation's limit on the use of a project's toll revenue to the particular project's needs should be expanded. Toll revenues in excess of project needs (including return on equity) could be freed up to allow the revenues to subsidize other transportation needs and projects serving the same community or region of the State. This change will be particularly important if the State ever desires to implement a Puget Sound regional congestion pricing program, as it would allow excess toll revenue from one roadway on the congestion management highway grid to help pay for the costs of other roadways on the grid.
4. **Responding to poor service delivery** – There is currently no mention of quality of service delivery in the existing Washington State P3 legislation. Legislation should be replaced to ensure that the P3 agreement includes performance standards and requirements for quality control and quality assurance. The legislation can also require that the P3 agreement create remedies for the private party's failure to comply with the standards in any significant manner.
5. **Toll Setting Authority** – In the existing Washington State P3 legislation, the Legislature holds the exclusive authority to authorize tolling of highways. Because the Legislature holds exclusive

authority, presumably it may act to cease tolling of a highway at any time. Once the Legislature gives its authorization, the Transportation Commission sets the toll rates. No changes in rates may be implemented without Commission authorization. This approach to toll setting makes a toll concession P3 much less attractive, if not impossible to be attractive, to the private sector, which would not be inclined to take revenue risk on a project if there is uncertainty on the continuing authorization to toll, as well as the timing and manner by which tolls could be increased. Consequently, Washington State would have a very difficult time advancing any projects that transfer traffic and revenue risk to the private sector unless there is a change to the legislation. The recommended legislative solution to this tolling issue is to provide the Transportation Commission with the exclusive authority, after consultation with the P3 office and state, regional and local stakeholders, to devise and authorize a toll regime – prior to initiating or completing a P3 procurement – that allows the private sector to raise rates in the future according to this regime. The law should be flexible, to accommodate everything from setting maximum toll rates by vehicle classification with annual escalators for a particular project, to a regional or managed lane congestion pricing regime. At the same time, this framework should include strong public interest protections that function alongside the other policy and legislative recommendations of this Study, such as revenue sharing agreements with the public sector, limitations on excessive private sector returns, and "windfall" clauses that restrict or share any gains from project refinancing (as discussed in Point 7, below).

6. **P3 projects should meet relevant State laws** as with any other public works project including
   - State Apprenticeship Requirements – New P3 legislation should require that P3 projects abide by the same State apprenticeship requirements as other traditionally financed public works projects.
   - Protection of Prevailing Wage – The existing P3 law in Washington State notes that if public funds are used to pay any costs of construction of a public facility that is part of an eligible project, chapter 39.12 RCW applies to the entire eligible public works project. A small minority of P3 projects, however, that are revenue generating may not require a public subsidy. Nevertheless, because such a project will be owned by the public sector and serve a public function, the Legislature may wish to extend chapter 39.12 RCW to P3 projects constructed without public funds. The legislation should also provide that the prevailing wage requirements are subject to enforcement by the Washington State Department of Labor and Industries.
   - Minority and Women-Owned Business Enterprises (MWBE) – There is no mention of MWBE participation in P3 projects in the existing Washington State P3 legislation. Future P3

legislation should require that WSDOT, or the relevant P3 procuring agency, encourage and may in their discretion include a requirement in the P3 agreement that the private partner demonstrate good faith efforts to comply with the objectives and goals of minority and women-owned business enterprises pursuant to goals set forth in Washington State law.

7. **Preventing excessive returns** – There are currently no safeguards in the existing Washington State P3 legislation to protect against the private sector realizing excessive returns relative to the risks assumed. New legislation should specify the inclusion in P3 agreements of mechanisms to reasonably protect against exorbitant profit, which may include (a) a revenue sharing provision in which the public agency receives a share of the profits if the profits exceed a certain threshold to be established in the P3 agreement, (b) sharing of gains from refinancing, (c) cessation of the P3 when a reasonable rate of return is realized, and (d) other measures.
8. **Solvency of private partners** – There is no mention in the existing Washington State P3 legislation of guidelines around the relevant experience necessary from the private partner selected or of any level of financial guarantees required. New P3 legislation should require that procurements set forth minimum qualifications for proposers, including evidence that members of the contracting entity have demonstrated the experience and competency to complete a project of similar size, scope, or complexity, and that proposed key personnel have sufficient experience and training to competently manage and complete the design and construction of the project. In addition, legislation should also speak to the need for a financial statement that ensures that the private partner has the capacity to complete the project.
9. **Termination of the P3 Agreement** - The existing Washington State P3 legislation lacks any mention of when P3 agreements can and should be terminated e.g. for insolvency, or material breach of contract, notice period required, compensation for sunk investment, surviving obligations etc. New P3 legislation should include provisions that clarify such instances when a contract can be terminated.
10. **Handback requirements** – The existing Washington State P3 legislation makes no mention as to what condition the asset should be in at the end of the term of the P3 agreement with the private partner. New P3 legislation should specify that the issue of handback requirements should be addressed in all P3 agreements (other than pre-development agreements), including the condition that the asset should be in at the end of the term and that direct control and possession of the project must return to the public sector at that time.

Another issue directly affecting protection of the public interest is the treatment of competing facilities. In toll concessions the private sector, in taking revenue risk, seeks protections against threats to

traffic demand from unpredictable future development of other facilities that could compete for traffic. Such covenants can create vexing problems for the public sector where legitimate interest in public safety and congestion relief call for future competing facility development. It is important that legislation strike the proper balance between these public and private interests. We recommend that new legislation prohibit non-compete provisions that provide any remedy to the private party other than reasonable compensation for the net adverse effects on revenue, as defined in the P3 agreement, and except out from any contractual protection certain kinds of future facility development, including transportation projects identified in long range transportation plans at the time of a procurement.

It is recommended that the State should take a programmatic approach to P3 project delivery by authorizing the creation of a P3 oversight office within the Department of Transportation (the OTP3) that is responsible for upholding public interest concerns and facilitating projects in the best interest of the public and private sector. The Legislature should adequately fund this P3 office.

A P3 oversight office is a center of P3 competence in which the Legislature can place the confidence needed to make sound pre-procurement decisions on whether to pursue a project through the P3 tool. We recommend that such a P3 office have the primary responsibility to investigate and determine the optimal method of procurement, using the tools and guidelines produced by this Study. The Consultant Team notes that the question of whether to use advisory committees and public involvement processes are policy decisions having much more to do with the nature, scope and impact of a project than whether it is delivered via a P3 vs. a traditional method. If the Legislature wishes to preserve these arrangements, it should do so as a matter of major project planning and policy regardless of project delivery method, and not tie these arrangements to the P3 decision-making process.

In establishing a P3 office (the OTP3), the following authority should be granted to the new entity in new legislation:

1. Complete authority to approve and authorize use of a P3 for eligible projects. The new legislation would provide that a P3 may be utilized and a P3 procurement commenced only with this prior approval;
2. To recommend a user fee regime for projects, for review and approval by the State Transportation Commission, in consultation with state, regional and local stakeholders;
3. To establish and update priorities in the evaluation and development of eligible projects;

4. To establish and enforce uniform screening criteria and procedures, in advance of a P3 procurement, for:
    a. Selecting eligible projects for P3 delivery;
    b. Selecting the type of P3 to be used (Pre-Development Agreement (PDA), D/B/F/O/M, availability payment P3, toll concession); and
    c. Selecting the procurement method to be used (One-step vs RFQ/RFP; best value; low bid; negotiation; other).
5. To prepare screening analyses and reports, including Value for Money analyses;
6. To mandatorily conduct a step 1 screening of the following projects for suitability of P3 project delivery:
    a. Every eligible project that is a horizontal transportation project having an estimated capital cost of $250 million or more (e.g. bridges, highways, transit); and
    b. Every other eligible transportation project, system or equipment having an estimated capital cost of $50 million or more (e.g. ferries).
7. To procure, negotiate and execute P3 agreements (including hiring advisory support);
8. To identify and analyze project opportunities throughout the State that could benefit from alternative project delivery methods and that should be considered as a P3;
9. To promote and conduct studies, research, analyses and investigations, including, but not limited to, research of domestic and international projects that have employed alternative project delivery methods, and identification and evaluation of lessons learned from those projects;
10. To serve as a clearinghouse for information on national and international best practices for alternative project delivery methods;
11. To serve as a means of reducing transaction costs, increase efficiency and promote consistency among alternative procurement methods
12. To establish a consistent framework for operations, including standardizing procedures, procurement documents and contracts, taking into account differences among sectors, projects, procurement approaches, contract types, sources of public funding, applicable state law and other relevant factors; and
13. To adopt regulations establishing its administrative procedures.

We recommend that the P3 office be housed in the Department of Transportation, as further defined in Section 4.4. The P3 office would have a core staff with in-depth P3 experience and would utilize

staff from WSDOT and other agencies as needed. The P3 office would also enlist the help of outside technical, legal, and financial advisors to review project details and documents at different points of the procurement process.

The P3 office will be effective only if it has an on-going budget adequate to support the functions and level of expertise recommended. Without separate line-item appropriations for this P3 office, it will be completely dependent on the loan of employee time from other parts of the Department and probably remain a paper tiger.

The existing Washington State P3 legislation requires that Department funds spent on P3 procurements be repaid from the proceeds of project bonds or other project financing. This provision erroneously presupposes that a P3 office can support all its funding needs out of P3 project financings. This requirement can be a barrier to obtaining the best value out of P3 procurements and can add an unnecessary burden to the financial feasibility of a project. From a policy perspective, there seems to be no reason to single out this type of project cost from any other pre-construction cost. There is no similar requirement, for instance, that environmental review costs for a project, or other project development phase costs, be recovered from its subsequent financing. We therefore recommend that new legislation eliminate this provision.

It is recommended that the State should enact new P3 legislation to clearly authorize a full range of procurement structures and tolls, such as two-step procurements (Request for Qualifications (RFQ)/shortlisting and Request for Proposals (RFP)), and a period for dialogue with proposers.

The current legislation provides little mention as to how the procurement process for a P3 delivery would be structured. There are significant differences from the traditional sealed low bid method of procuring construction contracts. New legislation should create a full range of procurement tools. These tools are important from a public policy perspective in terms of ensuring the most qualified proposers come forward, that the public sector obtain input on the project and procurement from proposers prior to bid, and that a robust competition is cultivated. These procurement tools should include the following essential procurement methods and requirements:

1. Authorization to use:
    a. Solicited proposals;
    b. Unsolicited proposals with opportunity for competition, subject to public agency controls over its availability and right to impose fees;

   c. Best price;
   d. Best value;
   e. Qualifications-based selection;
   f. Negotiating authority;
   g. One-step procurements (RFP):
   h. Two-step procurements (request for qualifications, statements of qualifications and shortlist or pre-qualification; then request for proposals, proposals, selection);
2. Authorization for alternative technical and financial concepts;
3. Authorization to pay stipends in exchange for work product to all active proposers if the public agency cancels the procurement before proposal submission, or to unsuccessful proposers that submit responsive proposals;
4. Authorization to conduct confidential pre-proposal meetings with individual proposers;
5. Authorization to disclose to proposers the primary evaluation factors and weightings;
6. Minimum qualifications of proposers, including qualification to do business in the State, no debarment or suspension, and licensure of proposal team members.

In addition, legislation can also stipulate the creation of an evaluation manual which the P3 office, or DOT, would complete for internal use that would describe in detail the methodology the P3 office must use to process, review, and score qualifications submittals and proposals, and to ultimately select a preferred proposer.

It is recommended that the State's current P3 statute should be replaced to remove the post-procurement discretionary action by the State Transportation Commission and other post-procurement, pre-execution processes. Such existing requirements will preclude the State from undertaking any major P3 projects.

The existing Washington State P3 legislation is a complex series of reviews, analyses, procedures and authorizations before and even after a P3 agreement is executed. Among these are post-procurement, pre-execution requirements (a) for public involvement and participation in project development before final approval of a P3 agreement, (b) for a public hearing on the proposed agreement after 20 days' notice, (c) for a 20-day wait period after the public hearing, (d) for appointment of a three to five member expert review panel to make recommendations to the State Transportation Commission and Governor on the proposed agreement, (e) for Commission consultation with the Governor, (f) for review of the proposed agreement and conduct of a financial analysis, (g) for comparison of the proposals with the Department of Transportation's internal ability

to complete the project, in order to document the advantages of the P3 and (h) finally, for a discretionary Commission vote to approve or reject or continue negotiation of the proposed agreement. These statutory requirements were written at a time when the only type of P3 agreement contemplated was a pre-development agreement, such as that entered into for the Tacoma Narrow Bridge project. While they may work for pre-development agreements, these requirements are incompatible with other types of P3s, creating political risk that drives private sector bidders away and harms competition to the detriment of the public.

Once a P3 procurement is initiated, very substantial private as well as public sector investments must be made to reach the point of receiving quality, responsive proposals. The private sector will typically spend 3-5% of the project costs just to bid on a P3 project (this includes upfront due diligence on traffic and revenue forecasting, etc.). The cost to the public sector to run a P3 procurement also often runs into several million dollars. Uncertainty over whether the solicited offer will be accepted due to these myriad post-proposal processes and approval conditions – i.e. political risk - chills private sector interest and risks waste of scarce public sector resources. In the past, private proposers have lost millions on projects like the PA Turnpike and Pittsburgh Parking when politics interfered with the procurement process after a preferred proposer had been selected. Consequently, firms are reluctant to invest time and money in a procurement path whose inherent competitive uncertainty is compounded by political risks.

Moreover, delay between the date of proposal submissions - which often include specific debt and equity financing commitments - and agreement execution and financial closing cause by these myriad reviews, hearings and analyses can drive up the cost to the public sector of the financing or even preclude the ability to obtain these financing commitments.

For these reasons, it is critical to protect the public interest in a way that nonetheless provides the private sector with certainty that the procurement process will not be derailed by politics or post-procurement discretionary approvals. New Washington State P3 legislation should establish public sector analyses, reviews and processes regarding the decision whether to use a P3 that are concluded BEFORE a P3 procurement commences (except with respect to pre-development agreements). As a corollary, the legislation must avoid granting the Legislature any power to veto a P3 project after an RFP is issued.

It is recommended that the State should enact new P3 legislation to enable the use of privately arranged or issued debt financing, and allow private partners to realize a return on equity.

By including provisions that preclude the use of privately arranged or issued debt financing, and by limiting permitted uses of toll revenues such that use to pay a return on equity is excluded, the existing Washington State P3 legislation makes a P3 project nearly impossible. Logically one would think that both these provisions would make rational sense given that the cost of tax-exempt debt is cheaper than privately issue debt and equity. But, as was discussed previously in this report (see section on risk allocation and Value for Money analysis), the benefits of risk transfer and overall private sector efficiency when coupled with profit motive and risk of loss are significant and can produce overall project cost savings that make up for the differential in financing costs between a traditional tax-exempt financed approach and privately financed approach. In addition, the combination of private activity bonds and TIFIA financing can produce a weighted average cost of financing at or quite close to the cost of tax-exempt debt. TIFIA selection criteria include a preference for innovative private sector participation and investment, making the advantages of TIFIA credit assistance more likely to be available for projects using P3s and private equity investment. than for projects financed with tax-exempt debt. Due to tax laws, it is not possible to combine tax-exempt financing with long-term private participation, except through the use of Private Activity Bonds. Therefore, allowing the use of private debt financing is critical to advancing a P3 project.

Further, while limiting private sector returns is a worthy public policy goal, it is not practical to reduce returns to zero if the State is interested in advancing a P3 project. The essence of a P3 is the element of risk transfer – the private sector is willing to assume many risks and guarantee a fixed price, schedule certain delivery over the long-term. In order to take these risks the private sector must be allowed to generate a return on its investment commensurate with risk. Some States, such as Virginia, have developed ways to manage the returns private sector partners are able to realize on P3 projects. But in the Washington State legislation's current form, a private firm has no incentive to take on a considerable amount of risk since they cannot earn any return on investment.

It is recommended that provisions directing toll revenues into the transportation innovative partnership account and making expenditures from toll revenues subject to appropriation should be replaced so that they do not adversely affect private sector financing of eligible projects and so that toll revenue expenditures are freed from legislative appropriation.

The existing Washington State P3 legislation requires that all project revenues, and all proceeds from revenue bonds or other financing instruments, be held in a transportation innovative partnership account established in the custody of the State Treasurer (47.29.230 RCW). All funds in the account are subject to allotment procedures for state budgeting under chapter 43.88 RCW, and none of the funds may be expended except pursuant to legislative appropriation or other statutory direction. (Id.) Another statute makes all expenditures of toll revenue subject to appropriation (47.46.820 RCW).

The existing law permits the State to establish project subaccounts and to pledge project toll revenues in the subaccount to repayment of loans made to the private partner, but such pledge is expressly subordinated to pledges securing bonds payable from the motor vehicle fund or from the main innovative partnership account. Accordingly, the private partner has no ability to assuredly grant a senior security interest in project revenues, and no ability to obtain access to project revenues to earn a return on equity.

These provisions are fundamentally incompatible with project financing, the bedrock of P3s. It is impossible to effectively pledge toll revenues to the repayment of project debt and to provide a return on equity if such use of the toll revenue is subject to budget allotment and requires annual legislative appropriation. Where a toll concession is the chosen type of P3 arrangement, it must be clear that the tolls are an asset of the private party. The State cannot expect the private party to take revenue risk if it does not have the assured availability of the revenue stream to pay project debt, other project costs and earn a return on its equity.

Similarly, where the chosen type of P3 arrangement is an availability payment agreement for a tolled project, the credit behind the availability payment obligation in some circumstances could be optimized if the Department has the ability to direct the revenues into a project trust fund establishing priorities in the flow of funds for the availability payments. The requirement to place all such revenues into the transportation innovative partnership account and the need to obtain appropriations from the Legislature would preclude such arrangements, to the detriment of the public interest.

It is recommended that if lawful, Washington State should enact new P3 legislation to enable the use of continuing appropriations that would allow for availability payment contracts to be advanced.

The new Washington State legislation should enable the DOT to enter into alternative delivery contracts that provide for annual or extended payment procedures, such as availability payment

contracts, and for obligatory payments under such contracts in the event of early termination. Availability payment contracts have become increasingly popular in the US, with projects such as the Port of Miami Tunnel and I-595 (see Appendix) moving forward. Enabling the use of availability payment contracts would allow the State to undertake performance based P3 projects where traffic or revenue risk (tolls) are maintained by the public sector and most delivery risks are transferred to the private sector.

Some states, such as California, have constitutional provisions allowing the Legislature to continuously appropriate funds over years for specific obligations. Whether this is permitted under Washington law is beyond the scope of this Study. But if such multi-year appropriations are lawful, a continuous legislative appropriation for DOT monetary obligations under P3 agreements would be beneficial to the viability and creditworthiness of these agreements.

Another advantageous legislative provision is to establish a statutory prioritization in the DOT budget of availability payments, up to a limit. Prioritization is a necessary ingredient to establishing investment grade ratings for availability payment P3s, thus reducing the cost of capital and generating lower cost and lower availability payments.

It is recommended that the State enact new P3 legislation to expand the scope of eligible transportation projects.

The existing Washington State P3 legislation is limited to projects having the primary purpose of preserving or facilitating the safe transport of people or goods via any mode of travel. While this is fairly expansive, it may not capture potential projects that might benefit from the use of the P3 tool. For example, some transportation agencies are considering use of P3s to obtain the benefits of solar energy to serve their highways. Such solar facilities probably do not meet the primary transport purpose requirement in the existing law. P3s to replace, rehabilitate or expand DOT maintenance facilities or DOT offices, or to provide operating services for traffic management centers, traveler information services, and DMV services also may not fit within the primary transport purpose requirement. To capture these kinds of worthy projects, the new legislation should include as eligible projects systems, facilities, areas, buildings, structures and equipment used in providing, operating, maintaining or administering transportation facilities or services, including ITS systems, DMV systems, transportation-related websites and information systems, power generation and supply systems on or for transportation facilities, safety rest areas, and user fee collection systems.

It is recommended that the State enact new P3 legislation to enable conduit issuance of private activity bonds.

The existing Washington State P3 legislation authorizes the State Treasurer "to issue revenue bonds on behalf of the public sector partner" (47.29.250 RCW). The bond proceeds may be used to pay project costs and "reimburse the public sector partners for any costs related to carrying out the projects …" (Id.) This authority does not enable issuance of private activity bonds, which are conduit issuances on behalf of the private partner, the proceeds of which can be used to reimburse certain eligible private partner costs. We recommend that new legislation authorize some existing conduit issuer, in addition to the Department of Transportation, to issue private activity bonds (whether on behalf of public partner or private partner) supported by a pledge of eligible project revenues.

It is recommended that the State institute a 4-year moratorium on unsolicited proposals, and enact new P3 legislation to improve control over unsolicited proposals after that time.

The existing Washington State P3 legislation allows unsolicited proposals under a two-step process. The first step is State Transportation Commission review of the unsolicited proposal. If the Commission is interested in the proposal, the second step consists of publishing information and giving a 30-day period for other parties to express interest, followed by an additional 60 days for other parties to submit detailed proposals. This process may not be adequate to create robust, effective competition for projects initiated by an unsolicited proposal.

It is the recommendation of this Study that Washington State focus its efforts on solicited projects only for the first five years of its new P3 program. This will allow the State to develop and refine all aspects of the program by focusing on those projects that the State is best prepared to pursue. After this four-year period, the Consultant Team recommends that the State accept unsolicited proposals under a revised and more robust process. The new P3 legislation should enable the conduct of a full competitive procurement process following receipt of meritorious project concepts via unsolicited proposals. This will enhance the likelihood that the State will receive best value. In addition, the evaluation of unsolicited proposals should rest in the recommended P3 office.

It is recommended that if necessary, Washington State should rectify any insurmountable barrier to the use of P3s created by existing provisions concerning the State personnel system reform act.

The existing Washington State P3 legislation requires that "maintenance issues must be resolved in a manner consistent with the personnel system reform act, chapter 41.80 RCW" (47.29.030 RCW). In addition, for any project for "stand-alone maintenance or asset management services," the services must be provided consistently with any collective bargaining arrangements, the personnel system reform act, and civil service laws (47.29.140 RCW).

Evaluation of the impact of these collective bargaining and other labor laws on P3s is beyond the scope of this Study. We caution, however, that these provisions should be evaluated for whether they will erect insurmountable barriers to private sector participation in maintenance services for P3 projects. If their effect is to require that maintenance be provided only by public employees, then these provisions create a serious problem.

It is recommended that new P3 legislation should address its relationship to other State laws.

It is often the case that a state's P3 law fails to clarify whether it preempts other state laws, and whether it augments or replaces other statutory authority of the public partner. This can lead to confusion, interfere with issuance of unqualified legal opinions, and distort how P3 agreements are procured and written.

To avoid these problems, we recommend that new legislation state that:

1. It augments and is in addition to any other powers and authority of the Department, which the Department may exercise in connection with P3 projects; and
2. It supersedes conflicting procurement and contracting laws and regulations, including those whose application is fundamentally inconsistent with the P3 method of project procurement, financing and delivery.

4.4 Administration

Assessment of the State's current administrative approach to P3 has been made in the context of:

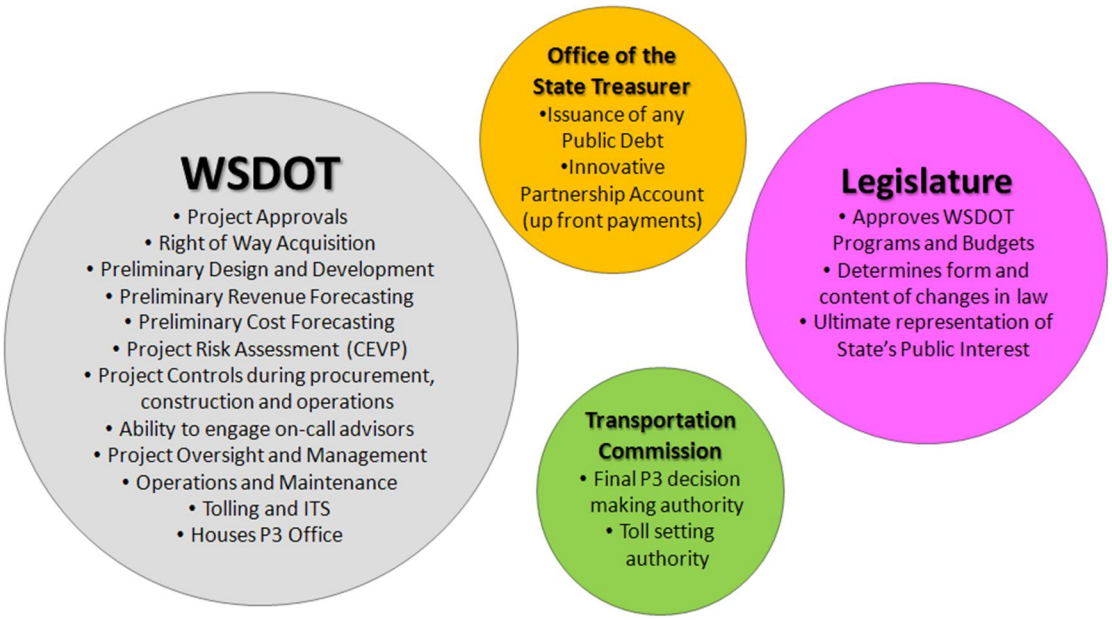
- the current housing of the State's relevant resources throughout its departments, agencies and other organizational entities;
- the State's current approval mechanisms as relevant to P3 projects, and the nature of each;
- for both of the above, the identification of any gaps, redundancy or conflicts – and proposed solutions;
- the State's dynamic needs across various "facets" of P3 as outlined ; and
- the legislative and policy findings and recommendations of this report.

The Consultant Team has sought guidance from the Staff and Policy Workgroups in relation to each of these issues in developing findings and recommendations. Best practices for the administration of P3 projects and processes have also been considered as described in Section 2.3.6.

4.4.1 Resources and Authority

Four entities have been identified as containing resources and authority deemed significant to the State's undertaking of P3s, as discussed below and illustrated in Figure 4.1

Figure 4.1 Existing State Resources and Authority



WSDOT

As illustrated above, WSDOT contains most of the resources that would be required to progress P3 projects through all stages of their development from identification and screening, procurement, contract negotiation, execution and oversight through construction and operations (per Figure 4.3). WSDOT also houses the State's P3 Office for major transportation projects.

Office of the State Treasurer

The Office of the State Treasurer has authority over two functions that would have significance for some but not all P3 projects, specifically:

- Issuance of any public debt – which would be required for any P3 projects with availability payment or shadow toll revenue streams or any projects where a State contribution is required to supplement initial construction or other project activities; and
- Innovative Partnerships Account – which would receive all upfront payments, and possibly any revenue sharing proceeds payable by a private partner to the State.

Transportation Commission

The Transportation Commission has authority over two significant functions:

- P3 Decision Making Authority – which it exercises in relation to all draft P3 project contracts (project agreements) prior to their execution with a pre-determined preferred party; and
- Toll setting Authority – in relation to setting toll rates for all toll roads in the State on a regular or as needed basis.

State Legislature

The State Legislature can also influence the development of P3 projects, although the way in which it does this changes over time. Prior to contract signing, the Legislature has discretion over the development of all WSDOT projects through its review and approval of State budgets. Once a project agreement is signed it becomes a binding contract between the private party and the State, in which the State must be represented by a single entity (nominally WSDOT's P3 office).

Findings in Relation to Resources

In reviewing the State's current resources relevant to P3, it is concluded that:

- the majority are housed within WSDOT, including those relevant to contract negotiation and support resources;

- supplemental expertise relevant to toll setting is housed within the Transportation Commission;
- expertise relevant to State Finances (debt and revenue) is housed within the Office of the State Treasurer.

The State is accustomed to supplementing its internal resources with specialty service providers, consultants and contractors – and this would definitely be required if a P3 procurement were to be launched today. However, the State has no successful precedent for, or predefined approach to such a process in relation to a P3. Study recommendations for filling these gaps are presented in Table 4.1.

Findings in Relation to Authority

There are significant problems with the State's current approach to authorizing and overseeing P3 projects stemming from:

- a suboptimal approach to approvals during the procurement process where
  - the Legislature has an ability to cancel a P3 project at any time up until contract execution (commercial close) for a given project; and
  - the Transportation Commission has the ability to cancel or significantly impede execution of a P3 contract after a preferred bidder has been identified through a competitive process bound by fixed project, financial, and contractual assumptions;
- an approach to toll setting that is incompatible with standard procedures for revenue risk projects;
- contradictory P3 and tolling legislation;
- an insufficiently defined role for the Office of the State Treasurer in enabling and supporting P3 projects that require Government contributions or that generate profits for the State; and
- as a consequence of the above – the State not having a unique entity to consolidate all of its decisions, obligations, and negotiations in relation to P3 projects, and to enter into contracts with private parties in order to comprehensively and unambiguously bind all of these components.

All of the above issues are fundamental concerns for the private sector. Post-procurement approvals have cost P3 developers millions of dollars in recent years, a risk they will now strongly avoid. The State's position on tolling is relatively unique, although it will also deter investors if a compromise solution cannot be achieved on toll revenue risk P3 projects.

4.4.2 Recommendations

The Consultant Team recommends the following general measures in relation to the State's administrative need.

The State should make best use of its existing expertise and resources by channeling these through a single entity – the WSDOT Office of Transportation P3 (OTP3).

The State should fill any gaps in its internal expertise and resources with third party support as would be required at various times – procured through the WSDOT OTP3.

The State should consolidate all of its P3 approval and contracting functions through the WSDOT OTP3 – while also streamlining the number and type of approvals to the greatest extent possible.

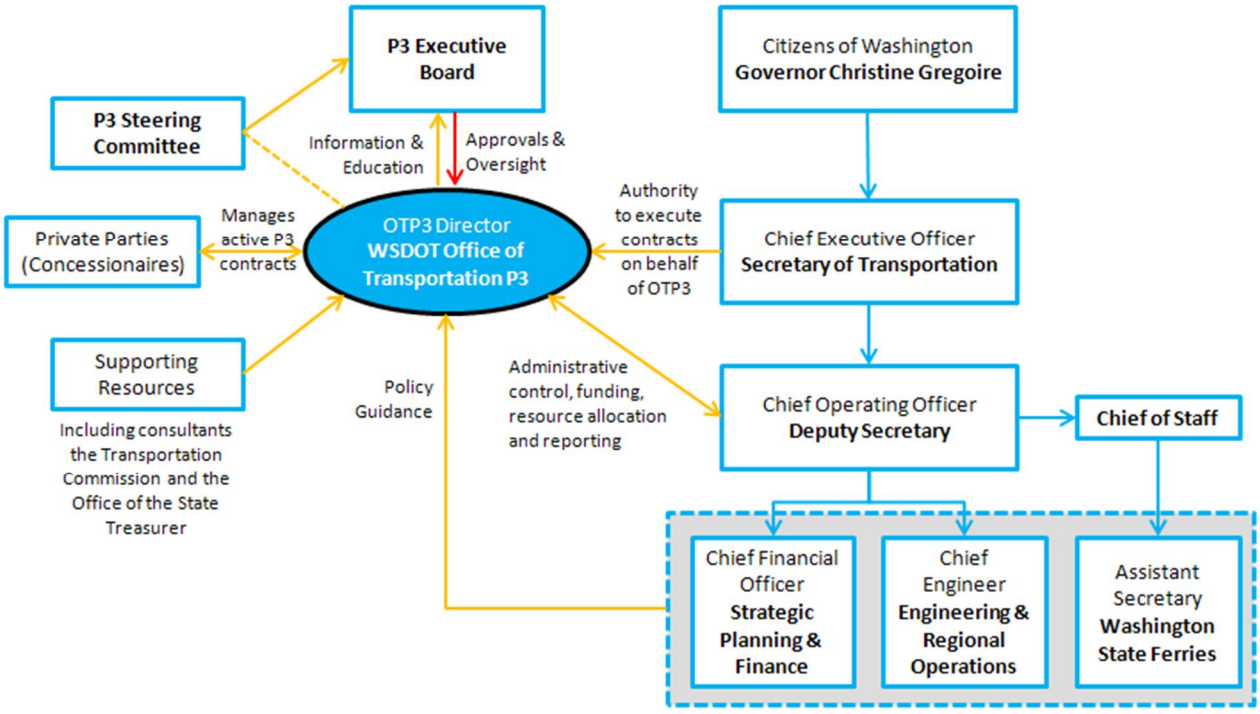
The State should overcome any contradictions within current legislation.

The State should uphold the public interest by ensuring that legislative oversight of P3 processes is informed, effective and clearly defined in line with the detailed administrative recommendations contained in Section 4.4.2 (and summarized within the Executive Summary) of this report.

The Consultant Team's approach to facilitating these goals has focused on redefining the OTP3, its resources, authority, reporting, and the way in which it relates to WSDOT, the State Legislature and other relevant entities (notably the Transportation Commission, Office of the State Treasurer and private developers that eventually qualify to enter into P3 contracts).

Particular focus has been given to balancing the OTP3s administrative needs (as a division within WSDOT), with its need for a direct report to the State Legislature via a **P3 Executive Board** (the Board) appointed by the Legislature. A P3 steering committee is also recommended to provide the P3 Executive Board with independent expert opinion informing its oversight and approval roles. The proposed structure of the OTP3 and its connection to these various entities is illustrated in Figure 4.2.

Figure 4.2 Proposed Administrative Structure for the WSDOT OTP3



The **P3 Executive Board** should be formed with the purpose of overseeing the OTP3 on behalf of the State Legislature and with sole authority to:

- authorize a project delivery mandate to the OTP3 (in conjunction with WSDOT);
- authorize the OTP3 to release any P3 Project Request for Qualifications (RFQ), Request for Proposals (RFP) or draft project agreement subject to its review and approval; and
- If for a given procurement, no RFP response (bid) achieves predetermined minimum award criteria; guide and authorize the OTP3 in deciding to terminate, modify or award the project based on its revised VfM analysis.

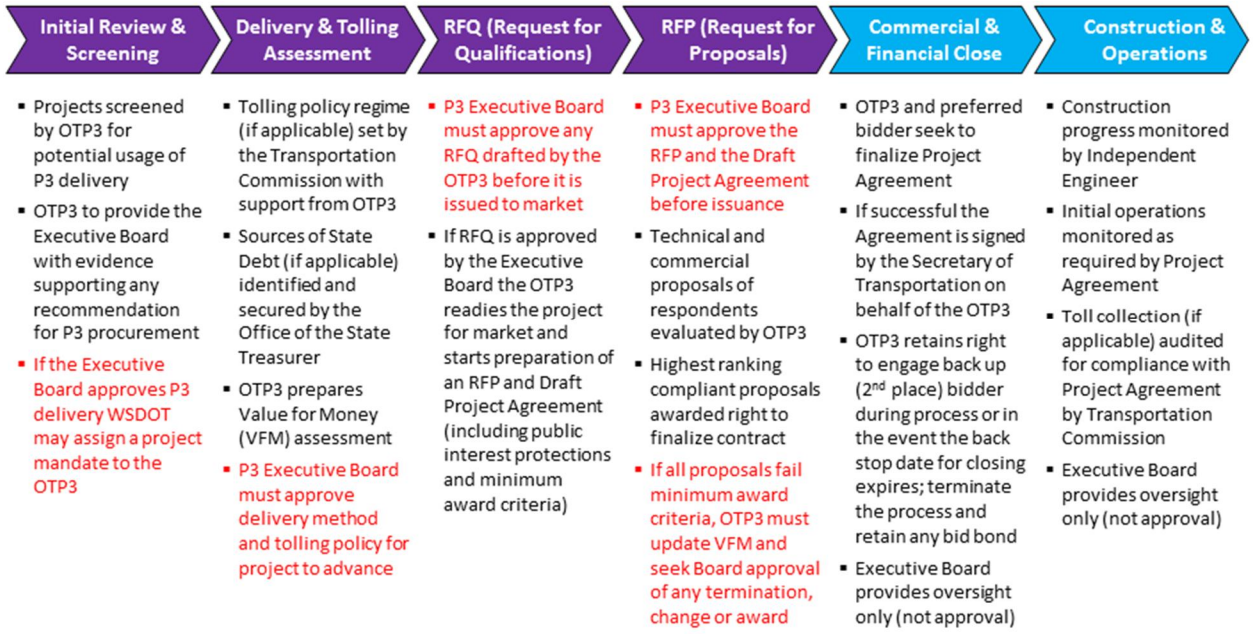
Based on discussion with the PWG and other stakeholders, it is recommended that the Board sit within WSDOT; and that its membership comprise:

- Four (4) ex-officio (non-voting) Legislators
  - the House and Senate Transportation Committees Chairs
  - the Ranking Members of House and Senate Transportation Committees
- Five (5) executive members with voting rights

- a representative of the Governor's Office of Financial Management
- a representative of the State Treasurer's office
- the Chair of the Transportation Commission
- Secretary of Transportation or his/her designee
- An appointee of the Governor who will also serve as Chair of the Board

The Board's responsibilities change over the course of project development as outlined in Figure 4.3, which shows its various approval functions in red text in the context of P3 project development milestones overseen by the OTP3.

Figure 4.3 Changing Role of State Entities Over Time in Relation to P3 Developments



It is recommended that the OTP3 exercise its reporting requirements to the Board through regular summary level reports with detailed reporting on an exception basis in support of specific approval requirements. The Board shall also have the right to perform audits of the OTP3 and its contracts including toll collection audits to be undertaken by the Transportation Commission and Financial audits by the Office of the State Treasurer.

An intended consequence of this reporting process is that the OTP3 will have ample opportunity to inform the State Legislature of its program and project activities (via the Board) on a regular basis, so that this might benefit the Legislature's approach to budget approvals.

The P3 Steering Committee shall be an independent body commissioned by WSDOT comprising:

- WSDOT's Capital Program Development and Management
- WSDOT's Chief Operating Officer
- WSDOT's head of the Toll Division
- WSDOT's Operations Manager

The role of the Steering Committee is to provide the Board with independent expert guidance on the activities of the OTP3 so as to inform its oversight and approval roles. The Steering Committee shall also meet with the OTP3 on a regular basis, but only for the purposes of sharing information.

The Secretary of Transportation shall liaise with the OTP3 both from an approvals standpoint (through his or her position on the Board) and in an administrative capacity specific to WSDOT. While the Secretary of Transportation must have the ability to delegate departmental (administrative) control over the OTP3, (such as budget setting, administrative reporting, HR and other broader WSDOT functions as occurs with the administrative control of other departments) they will be required to participate in the procurement process for all P3 projects and be solely responsible for executing P3 contracts for transportation projects on behalf of the State of Washington and the OTP3.

The WSDOT Deputy Secretary shall take responsibility for departmental administrative functions in relation to the OTP3 in the same way that they do for WSDOT's three Assistant Secretaries (refer to Appendix B Section 6.5 for detail of WSDOT's current organizational and reporting structure).

WSDOT's Assistant Secretaries (namely WSDOT's CFO, Chief Engineer and Assistant Secretary for Washington State Ferries) shall collectively provide policy guidance to the OTP3 on an ad hoc basis particularly in relation to the identification and initial review of projects. These WSDOT executives will also be responsible for providing the OTP3 with project staff to support its screening of relevant projects, and if they progress as P3s, to support their development and procurement.

Supporting Resources will be required from time to time to supplement the OTP3's WSDOT sourced resources, including:

- External Advisors (consultants)
  - Financial Advisors
  - Legal Advisors
  - Technical Advisors (including Independent Engineers)
  - Other specialty firms, potentially including public relations, media relations, stakeholder meeting facilitators, advertising consultants, etc. as required
- The Transportation Commission, to assist in
  - developing the tolling regime for projects prior to their procurement
  - developing inputs to the tolling regime to be included in the draft project agreement (which may include formula and parameters for fixed or variable tolling increases over time)
  - auditing the toll collection practices of P3 projects under operation to ensure their compliance with relevant project agreements
- The Office of the State Treasurer, to assist in
  - identifying and securing any state debt that is required and agreed upon in relation to the development of any transportation P3 project (prior to procurement)
  - issuance of any agreed public debt on behalf of the State in support of commercial or financial close of P3 projects
  - in the case of projects that generate revenue for the State, management of such capital via the Innovative Partnerships Account
  - and potentially, an auditing role of P3 project finances once they are in operation, on behalf of the State

With respect to 3rd party (non-Government) resources, it is important that the OTP3 have an ability to solicit and procure advisory services on behalf of WSDOT.

The Consultant Team has prepared guidelines for the OTP3s need to engage supporting resources over time, as outlined in Table 4.1.

Finally, **Private Parties** shall be permitted to enter into P3 contracts (project agreements) with the OTP3, by the authority of Secretary of Transportation (who shall execute contracts on behalf of the

OTP3). Once signed the OTP3 shall be responsible for the management, oversight and enforcement of the contract.

Table 4.1 Role of Internal and External Entities Over Time

Entity	Day-to-day Role (not project specific)	Screening and Pre-Procurement	Procurement	Construction	Operations
WSDOT	- P3 Office	- P3 Office - Project Staff	- P3 Office - Project Staff	- P3 Office - Project Staff	- P3 Office
Transportation Commission	- None	- Contribute to tolling concept	- Contribute to setting toll formula	- None	- Potential Toll Audit Role
Legislature	- Oversight via P3 Exec Board - Approval via WSDOT budget	- Approval via P3 Exec Board - Approval via WSDOT budget	- Approval via P3 Exec Board - Approval via WSDOT budget	- Oversight via P3 Exec Board	- Oversight via P3 Exec Board
Office of the State Treasurer	- None	- Identify & Secure State Debt	- Issue State Debt	- Oversight via P3 Exec Board	- Manages State Revenue - Audit Role
Financial Advisor	- Optional	- Recommended	- Required	- Recommended	- Recommended
Legal Advisor	- Optional	- Recommended	- Required	- Recommended	- Recommended
Technical Advisor	- Optional	- Recommended	- Required	- Required	- Required

4.4.3 The Application of VfM Assessment – Discussion

This section outlines the recommended approach to the application of VfM by the State in relation to the assessment and development of P3 projects. This discussion encompasses not just the timing and scope of VfM assessments but also the way in which VfM concepts should be carried through to the assessment and award of P3 procurements so as to ensure that the State's expectations are met or exceeded.

Further to the discussion of Value for Money (VfM) concepts in Section 2.3.4 and framing the detailed recommendations in Section 4.4.3, it is recommended that all VfM assessment of candidate P3 projects be undertaken through the OTP3.

The recommended timing and application of these assessments is illustrated in Figure 2.5 (page 44), and would specifically include:

- a preliminary assessment through the application of the project screening process (developed through this study)

- for projects that pass the screening process and progress towards P3 procurement by the OTP3;
  - the development of a pre-bid VfM assessment similar in nature to the comparative financial model described in this report but containing a more detailed qualitative and quantitative assessment of P3 and PSC scenarios
  - this assessment will be structured so as to enable reassessment of bids throughout the procurement process to account for revised input assumptions, market conditions, risk apportionment, etc.
  - this assessment will also help define the “minimum award criteria” (see below)

- once bids are received, reassessment of the VfM presented by each bid in the context of the pre-bid VfM assessment and minimum award criteria
  - in the event that all bids are non compliant or fail to meet the minimum award criteria, the OTP3 must perform a detailed VfM assessment to determine if any acceptable changes to the project’s structure, duration, tolling regime, risk apportionment, funding or any other modification to the proposed bid phase project agreement or minimum award criteria could potentially restore P3 delivery as a value adding approach
  - the OTP3 must receive approval from the P3 Executive Board in relation to any proposed changes to the bid-phase project agreement or minimum award criteria that would be required to restore P3 delivery as a superior VfM approach to delivery
  - the OTP3 must receive approval from the P3 Executive Board in relation to any subsequent termination, change or award of the procurement

- in the event that there is any significant change to the terms of the Project Agreement after project award and prior to financial close, the OTP3 shall at its discretion reassess VfM resulting from any current and valid bid (offered by either the preferred bidder and/or any reserve bidder).

Minimum award criteria are also to be developed through the OTP3 on a project specific basis. Ideally, minimum award criteria should be considered from an early stage of project development in conjunction with VfM assessment and refined over time as the project request for proposals (RFP) is defined. Minimum award criteria are developed in the context of project specific issues such as tolling regimes and anticipated profitability where the most common criteria are:

- for self supporting projects, a reserve price representing the minimum upfront payment the State would accept in order to award the rights to develop a given project; and

- for availability payment projects, a maximum (monthly or yearly) availability payment which bidders must meet or better (by committing to a lower amount);
- in both of these cases, the exact value is strictly confidential and must not be shared with bidders in order to ensure the procurement process remains competitive.

Because minimum award criteria present a pass or fail test for P3 bids they should be used sparingly and in conjunction with other general assessment criteria defined by a project's RFP for the benefit of all bidders.

General assessment criteria can be weighted to reflect the State's priorities and typically cover a combination of financial, technical and other (socio economic or public interest) factors. The State may also wish to consider a staged approach to the assessment of bids that would include an assessment of technical concepts followed by the development and assessment of financial proposals, potentially followed by a best and final offer (BAFO) process, which is usually only triggered if any financial proposals are within a predetermined range of each other (usually 5-10%).

4.4.4 The Administration of Tolling – Discussion

Over the course of the Study, the Consultant Team has facilitated extensive debate in relation toll escalation, and it will remain a contentious issue in future particularly in relation to the potential use of revenue risk P3 projects. With this in mind, this section aims to outline the definitions, key issues and rationale behind the Consultant Team's recommendations in relation to tolling.

The following definitions are relevant to this discussion:

- toll escalation is the term used to describe increases in road user fees (tolls) over time
  - this is not to be confused with traffic growth, which describes a change in the total number of users of a facility
- total revenue for a toll road changes over time as a function of both toll escalation and traffic growth (or negative growth) – where annual toll revenues are equal to the total number of transactions multiplied by the average toll per transaction;
- "tolling regime" is the term commonly used to describe a predetermined tolling framework for a specific project, that can include
  - dynamic tolls, which vary in real time in response to demand as typically applied to HOT lane projects (this regime is applicable to P3 projects);

  - fixed tolling regimes, that start at an agreed rate in the first year of revenue collection and escalate at an agreed rate (fixed, variable or other[29]) over time, typically on an annual basis (this is the standard regime applied to P3 projects, where the toll escalation equation and the definition of all of its fixed and variable inputs are clearly defined in the project agreement and become a binding component of this contract upon its execution);
  - State controlled tolling regimes, where tolls can only be increased as a result of a specific legislative authority or political action (this is currently the model employed by Washington State, overseen by the Transportation Commission and the Legislature – this model is not viable for P3 revenue risk concessions due to the significance of this risk to private investors, particularly when applied over a long term concession, such as for 50 years;
  - note that for all tolling regimes, tolls typically vary by vehicle class.

- Consumer Price Index (CPI) is a widely used (time series) measure of consumer price inflation, usually measured over a one year period – CPI rates are monitored and published by various entities, primarily the Federal Bureau of Labor Statistics of the U.S. Department of Labor – Federal CPI is also a widely accepted proxy for that rate at which O&M costs (which are comprised of wages, equipment, services and some materials) escalate over time.

The debate surrounding toll escalation is extensive but ideally focuses on fairness in terms of what would constitute a reasonable annual increase to cover rising costs, and what would constitute an unreasonable burden on the public. While this framework applies to both public and privately operated toll roads, there are some subtle but crucial differences that must be considered.

1. Under privately operated P3s, operating costs are paid before all other repayment obligations, therefore the private operator is inherently motivated to optimize such costs in order to maximize its return on investment (within the quality requirements stipulated by the project agreement) in a way that the public sector is not.

2. Under a competitively bid revenue risk P3, bidders are required to forecast and price their estimated annual operating costs as a part of their bid, to a level of detail not contemplated by the public sector prior to the commencement of operations. This relies upon the bidders having absolute certainty over their ability to raise toll rates over time; and provides competitive tension to ensure that O&M costs are not “padded” prior to project award.

[29] A fixed increase could be set to a set maximum allowable increase (say 2.5%) per year; a variable increase could be set to a widely accepted proxy for economic growth such as State or Federal CPI; “other” increase rates are also used under some P3 agreements and can either be a selection from the highest or lowest of an agreed range of rates (say the lower of 2.5% or CPI), or based on other parameters such as the profitability of the project (based on real time equity IRR).

3. Under State controlled tolling regimes, the decision to increase tolls can often be so politically unpalatable that it is either deferred or diluted. Under P3 projects, the “risk” of having to authorize toll increases on a regular basis is effectively passed to the private party along with clearly defined limits of toll escalation.

4. If left solely to the discretion of the private operator, toll rates would certainly increase to a point of revenue maximization – which is often the highest toll rate that the market can bear, while still capturing a reasonable volume of traffic. This model is employed on some P3 projects such as the 407 ETR in Toronto, Canada, but is not widely used due to negative public response. The “fairness” of P3 tolling regimes is a critical component of all project agreements, and a range of sophisticated mechanisms have been developed to address this fundamental concern, such as:

    a. fixed tolling regimes that escalate according to defined but variable parameters, most commonly CPI (which generally keeps tolls constant in real terms in the same way as consumer goods), but also potentially by the financial performance of the private party;
    b. revenue sharing mechanisms above a predetermined level of profit, or on a sliding scale up to a cap where all surplus profit is paid back to the State;
    c. early termination of the project agreement based on predefined repayment milestones;
    d. low or no toll escalation under higher than anticipated traffic and revenue conditions;
    e. restrictions or profit sharing on private partner windfalls such as refinancing gains;
    f. requirements for the private party to expand the capacity of the project either at predetermined capacity limits or as otherwise defined.

5. The private sector cannot negotiate discretionary toll escalation processes in the same way State entities do. Specifically, any use of Toll Revenue Bonds by the State comes with an obligation to raise tolls as necessary that private finance cannot match; and, in the event of any refusal by the State to raise tolls in line with reasonable cost increases – the private sector would not have any direct recourse against this action (unless it is contractually permitted to compensation for such an event), whereas arguably State entities would.

6. Linked to point 5 – while the public sector is willing to take on and finance the risk that the State will allow itself to increase tolls as and when necessary in future, the private sector cannot. There is simply too much that can go wrong over a 50 year period, for investors to have confidence in a revenue forecast that is not only variable to traffic growth, but also to toll rates with no framework for assessing this parameter over time. The only potential ways of mitigating this risk would be

a. To include in the project agreement some form of backstop payment or subsidy, compensating the private party for the State's inability to raise toll rates in line with expectations or
b. Clearly stating from the start of project procurement that NO toll escalation will be permitted over time and thereby leveling the playing field for bidders. This would also have a range of follow on effects:

- bidders' revenue growth forecasts would be entirely tied to traffic
- the project would be less attractive to investors due to significantly deflated up side cases and a much lower chance of refinancing gains
- it is likely that the cost of finance for the project would be higher than normal
- note that this approach does not form a recommendation of the study, but rather is intended to show some of the potential consequences if Washington State does not revise its current approach to toll setting in relation to revenue risk P3 projects.

Each of the above points contribute to the understanding of why revenue risk P3 project agreements must contain a fixed tolling regime, or an agreed dynamic tolling regime – neither of which can be subject to any discretionary change by the State at any point in time beyond execution of the project agreement. They also demonstrate that P3s make available a selection of public interest protection mechanisms in relation to the fairness of toll escalation that address the exact same objectives as those of the Transportation Commission but in a contractually abiding framework. Furthermore, the above points demonstrate that while the role of the Transportation Commission (as detailed in Section 4.3) is critical and appropriate for setting and monitoring tolls in relation to publicly operated toll roads – this role was not adequately designed for, and is not suitable for application in relation to revenue risk P3 projects.

This notwithstanding, the Consultant Team recognizes the Transportation Commission as the State's center of excellence for the development of tolling regimes, and we recommend that the Commission continue to lead this function on behalf of the State. Specifically, the OTP3 should rely on the Commission to develop tolling concepts during pre-procurement and screening of candidate projects, followed by the development and authorization of a detailed tolling regime for any revenue risk P3 procurement process, in consultation with the OTP3 and State, regional and local stakeholders. At the same time, this framework should include strong public interest protections that function alongside the other policy and legislative recommendations of this Study, such as revenue sharing

agreements with the public sector, limitations on excessive private sector returns, and “windfall” clauses that restrict or share any gains from project refinancing.

Under this model, the Transportation Commission would have full discretion to set the conditions of the tolling regime based on the specific needs and characteristics of the project. The Commission’s tolling regime would be initially presented to bidders through the project RFP, and after preliminary negotiations with bidders and any subsequent modifications, would be included in the draft project agreement. Once a project starts operations, the Transportation Commission could at the request of the OTP3, retain an audit role to ensure that the provisions of the tolling regime are followed correctly during the project term.

4.4.5 Internal Structure of the OTP3

The Consultant Team recommends that Washington’s OTP3 begin with a core staff of 1-2 full time employees (FTEs) who have first-hand experience executing P3 projects. These initial staff members will be tasked with building the institutional knowledge of the Office across financial, commercial, legal, technical, and process issues—as such, any new hires should possess an in-depth understanding of project delivery, planning, finance and procurement from the perspectives of both the public and private sectors. To aid in this effort, OTP3 staff should receive supplemental assistance from the staff of WSDOT and other public agencies as required, based on the specific skill sets needed. Over time, the OTP3 should also enlist the help of outside technical, legal, and financial advisors to review project details and documents at different points of the procurement process, as illustrated in Table 4.1.

As previously discussed, the OTP3 will be effective only if it has an ongoing budget adequate to support the functions and level of expertise recommended. As such, the OTP3 will require separate line-item appropriations for both initial funding and long-term operations. A portion of the OTP3’s costs, however, can and should be recovered through administrative, transaction, and service fees charged to project proposers. It is important that the OTP3 not be required to recover all of its administrative costs through fees or project proceeds, however, as this can lead to P3 projects that do not represent the best Value for Money to the State, and it can also create unnecessary barriers to the progress of pre-development processes.

4.5 Next Steps

This Study presents a list of policy, legislative, and administrative recommendations that can help Washington State develop a robust and successful P3 program to compliment current investments in its transportation network. This section presents a brief overview of the steps the State can follow to implement these recommendations.

As referenced in Section 4.1, the term "policy" is all encompassing and refers to the needs, preferences, and objectives of the State. The first step toward the implementation of these recommendations is to reach political consensus on the policy goals outlined in this Study. We recommend that this be targeted for 2012 based on the findings of this Study and ensuing debate.

If a policy consensus is reached, the effort to modify the State's P3 legislation could begin later in 2012. This new legislation must be signed into law before the first P3 project enters procurement, and legislative changes will be required before any administrative changes are finalized.

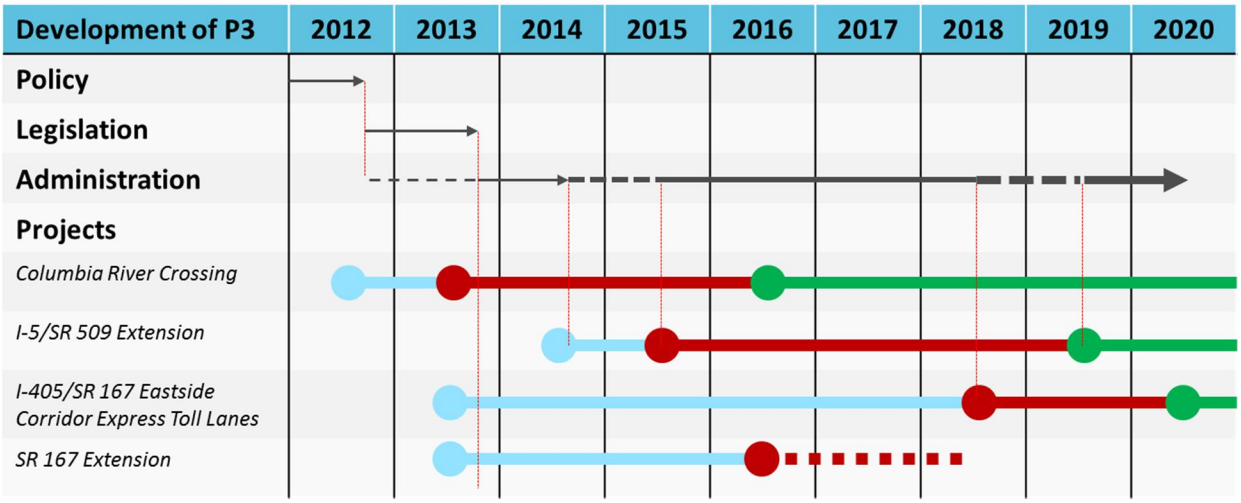
With legislation in place, the State's P3 administration will develop over time, with its first task being the development of pre-procurement activities such as the screening of potential projects. Once an administrative framework is in place, it will evolve over time as project needs progress – through phases of conceptual development, procurement, negotiation, construction, operations and ultimately handback.

Figure 4.4 illustrates conceptually the tasks and timeline outlined above along with the current WSDOT schedule assumptions for the four projects that passed the P3 screening tool in this Study (with proposed milestones for development,[30] construction, and operations shown as blue, red, and green lines respectively).

Based on these milestones, it is evident that if the I-5 Columbia River Crossing project is due to start construction in 2013, and this would in fact be too early to allow for P3 delivery based on the indicative timeframe that will be required for the State to adequately develop its policy, legislative and administrative requirements. Other projects, in particular the I-405/SR 167 Express Toll Lane project may be more suitable from a financial and schedule perspective.

[30] In this context, development includes preliminary design and right-of-way acquisition in addition to all pre-procurement and procurement activities.

Figure 4.4 Indicative Next Steps Timeline



Finally it is noted that for projects that are scheduled but not funded such as the I-5/SR 509 Extension, any potential for a revenue risk P3 delivery to facilitate a self financing project should be investigated by the State as an opportunity to accelerate its procurement.

5.0 Appendix A: Glossary of Technical Terms

5.1 Glossary of Technical Terms

Please note, all terms and definitions contained in this glossary are for information only, and have been sourced from readily available public information. The enclosed material has been collated by the Consultant Team for reference only and does not represent the opinions of the Consultant Team.

AFTER TAX CASH FLOW: Total cash generated by an investment annually, defined as profit after-tax plus depreciation, or equivalently, operating income after tax plus the tax rate times depreciation.

AFTER-TAX REAL RATE OF RETURN: Money after-tax rate of return minus the inflation rate.

AGENT: A firm that executes orders for or otherwise acts on behalf of another party (the principal) and is subject to its control and authority. The agent may receive a fee or a commission for its services.

AGREEMENT AMONG UNDERWRITERS: A legal document forming underwriting banks into a syndicate for a new issue and giving the lead manager the authority to act on behalf of the group.

ALL-IN COST: Total cost, explicit and other.

ALL-IN RATE: An interest rate on a loan that includes the cost of compensating balances, commitment fees and any other charges.

ALTERNATIVE DELIVERY: A method to deliver infrastructure that that utilizes project finance, risk transfer, and/or innovations and efficiencies provided by the private sector.

AMORTIZATION: The gradual reduction of any amount over a period of time. A general term which includes various specific practices such as depreciation depletion, write-off or intangibles, prepaid expenses, and deferred charges; or general reduction of loan principal. Gradual repayment of a debt over time. Repayment through the operation of a sinking or purchase fund.

AMORTIZING SWAP: A swap in which the notional principal amount decreases in a predetermined way over the life of the swap.

AMT: An acronym for alternative minimum tax, which is a separate federal income tax imposed on corporations where their alternative minimum tax exceeds their regular corporate tax. Alternative minimum tax is computed after adjustments to regular corporate taxable income.

AMTI: Alternative minimum taxable income. The amount of income which is used to compute alternative minimum tax.

ANNUAL DEBT SERVICE COVER RATIO (DSCR): Usually refer to the ratio of free cash flow to scheduled repayments and interest over a period of time (e.g. a given year, the term of the debt, the term of the concession agreement etc.). The Cover Ratios provide an indication of the project company's ability to meet its loan repayments in any year over the term of the loan, or over the life of the corresponding contract or concession. Hence they are a guide to the performance and "creditworthiness" of the project company. They are used to determine whether, for example, the project company may make dividend payments to shareholders, or whether an Event of Default has occurred. The most commonly used ratios are:

Annual Debt Service Cover Ratio - in any given year the ratio of cash flow available to repay debt and interest to the total of debt repayments and interest payments due in that year.

Loan Life Cover Ratio - the ratio of the net present value of available cash flow protected to be received over the remaining life of the loan to the loan outstanding at the start of the period.

Project Life Cover Ratio - the ratio of the net present value of available cashflow projected to be received over the life of the contract/concession to the loan outstanding at the start of the period.

ARRANGER: The lender or lenders arranging the senior and / or junior debt for the project company. The Arrangers will negotiate documentation and carry out due diligence on behalf of all the lenders.

ASSIGNMENT AND TRANSFERS: Lenders may wish to assign or transfer all or part of their participation in a loan transaction to another lender. New lenders would have the same obligations and rights as the previous ones.

AVAILABILITY PAYMENT: An availability payment is a periodic payment made to a concessionaire by a public authority for providing an available facility. Payments are reduced if the facility is not available for a period of time, or not being maintained in satisfactory condition. Using an availability payment structure eliminates the need for the concessionaire to assume any traffic risk and protects the interests of the public by giving the concessionaire a financial incentive to maintain the facility in satisfactory condition and operating at a specified level of performance.

AVAILABILITY PERIOD: The period during which the loan facility is available to be drawn down by the project company. Usually this is during the construction period.

AVERAGE LIFE: Average life is the weighted average of the maturities of a given loan.

AVERAGE PAYMENT PERIOD: The number of days, on average, within which a firm pays off its accounts payables.

AVERAGE RATE CURRENCY OPTION: An option that has a payoff that is the difference between the strike exchange rate for the underlying currency and the average exchange rate over the life of the option for the underling currency. Also called an Asian currency option.

AVERAGE RATE OF RETURN (ARR): The ratio of average net earnings to average investment.

BALANCE SHEET: A snap-shot of the assets owned and liabilities owed by a business at a point in time. Also see Off Balance Sheet.

BALLOON PAYMENT: Where a term loan is amortized in equal periodic installments except for the final payment, which is substantially larger than the other payments, the final payment is known as a balloon payment.

BASE CASE: The assumptions and projections set out in the financial model and upon which the contract prices are based which provides the basis for agreeing the financial impact of changes to the project including refinancing.

BASE RATE: Floating interest rates on bank loans in the United States as quoted on the basis of the prime rate or the base rate of the lender.

BASE RENT: Rental paid during the base term of the lease.

BASIS: In the futures market, the difference between the cash price and the futures price.

BASIS POINTS: Each one hundredth of one percent (0.01%; 1% is equal to 100 bp). Basis points are often used to measure changes in or differences between yields on fixed income securities, since these often change by very small amounts.

BASIS RISK: The risk between two different instruments used to index the floating-rate side of a swap transaction. For example, if one swap is written at 11% fixed against six-month Libor and the offsetting swap is written at 11% against six-month certificates of deposit (CD), then there is a risk that over time the spread between Libor and CDs will vary, resulting in a gain or loss for either party. In hedging, it is the risk that the hedger takes that the basis will change because the futures will be mispriced relative to the cash price.

BASIS SWAP: An interest rate swap from one floating instrument into another floating instrument in the same currency, undertaken to eliminate or minimize basis risk.

BEST AND FINAL OFFER (BAFO): During procurement, if the negotiated procedure is followed, bidders are often invited to submit a Best and Final Offer following negotiations on the original tender.

BOO: Build-Own-Operate

BOND: A bond is a negotiable note or certificate which evidences indebtedness. It is a legal contract sold by one party, the issuer, to another, the investor, promising to repay the holder the face value of the bond plus interest at future dates. Bonds are also referred to as notes or debentures. The term note usually implies a shorter maturity than bond. Some bond issues are secured by a mortgage on a specific property, plant, or piece of equipment (See also Debenture)

A bond is secured by a lien on some or all of the issuing organization's property (as opposed to a stock, which is an equity, or ownership, share in the issuing company). Typically, either a bond is payable to the bearer, and coupons representing annual or semi-annual payments of interest are attached (these are called coupon bonds), or it is registered in the name of the owner as the principal only (registered bonds). The word bond is sometimes used in a broader sense to signify an unsecured debt instrument, with the interest obligation limited or tied to the corporate earnings for the year. Participating bonds are another variation of debt instrument, with the interest obligation arranged so that holders are entitled to receive additional amounts from excess earnings or from excess distributions, depending on the terms of the participating bond. Bonds are often described according to the issuing body (US government, state, municipal, or corporate bonds); the currency in which the bonds will be paid (dollars, gold, etc.); any special privileges (participatory or convertible bonds); the types of liens that are the subject of the bond (junior, first or second mortgage bonds); the bond's investment grade (safe versus high-yield or "junk" bonds); or its maturity (long- or short-term).

BOND (SURETY): An agreement by which a party (called the surety) obligates itself to a second party (the obligee) to answer for the default, acts or omissions of a third person (the principal). A bond can guarantee the performance of the principal under a contract with the obligee (i.e., a performance bond), or it can protect against the dishonesty of employees (i.e., a fidelity bond).

BOND ENHANCER: A financial institution rated AAA with a large balance sheet assuming the credit risk of a

security for a fee, therefore enhancing the rating of the security.

BOND HOUSE: A firm which underwrites, distributes and deals in bonds as one of its primary activities.

BULLET LOAN: A term lean with periodic installments of interest only with the entire principal due at the end of the term as a final payment. The final payment on a balloon loan is sometimes referred to as a bullet.

BUY-BACK: Another term for a repurchase agreement.

CALTRANS: California Department of Transportation

CAPITAL: The amount invested in a venture.

CAPITAL APPRECIATION: The upward change in the value of an asset from one date to another.

CAPITAL EXPENDITURE (CAPEX): In construction; the amount spent on any Capital Works including major maintenance and initial construction. Capital Expenditures are depreciable.

CAPITAL LEASE: A lease is classified and accounted for by a lessee as a capital lease in the United States if it meets any of the following criteria:

the lease transfers ownership to the lessee at the end of the lease term;

the lease contains an option to purchase property at a bargain price;

the lease term is equal to 75% or more of the estimated economic life of the property (exceptions for used property leased towards the end of its useful life); or

the present value of minimum lease rental payments is equal to 90% or more of the fair market value of the leased property less related investment tax credit retained by the lessor. (In the UK, a subjective test is substituted for d.)

CAPITAL STRUCTURE: The financing mix of a firm. The more debt in relation to equity, the more financial leverage or gearing the firm is said to have.

CAPITALIZATION: The amount of equity invested in a venture.

CAPITALIZING LEASES: Capitalizing a lease is the same as finding its debt equivalent. The principal portion of a lease (the capitalized value) can be determined by discounting all remaining lease payments at the appropriate lease rate. In analyzing a company's financial statements in which leases are not capitalized, a simple method of estimating the capitalized value of such a company's leases is to take the rents for a representative year's leases and multiply this number first by the estimated average lease term and then by two-thirds to give the debt equivalent.

CARVE-OUT: An exception to a general rule or provision or covenant. Refers to a production payment carved out of a larger production payment, or a right to a specified share of production from a certain mineral property.

CASH CASCADE (Waterfall): Prioritization of cash flow. The order in which the project's cash flow is used to meet operating costs, debt repayments, interest payments, reserve retentions and shareholder distributions. Also sometimes termed Cash Waterfall.

CASH FLOW: Reported profits plus depreciation, depletion and amortization. Net income, depreciation and amortization during the period analyzed. A measure of a company's liquidity, consisting of net income plus non-cash expenditures (such as depreciation charges). In a credit analysis, cash flow is

analyzed to assess the probability that debt retirement commitments can be met without refinancing, that regular dividends will be maintained in the face of falling earnings, or that plant and equipment can be modernized, replaced or expanded without increasing the equity or debt capital.

CATEGORICAL EXCLUSION (CE): A document prepared under the National Environmental Protection Act for actions (projects) that do not individually or cumulatively have a significant effect on the environment.

CHANGE OF LAW PROVISIONS: The provisions in a contract which specify the party to the contract who will pay the cost of any change to an existing law or the introduction of a new law.

CLAW BACK: A British term to describe a taxpayer paying back to the government an amount equal to tax benefits previously claimed, such as depreciation deductions.

CLOSED-END FUND: A closed-end fund sells a fixed number of shares to investors. Consequently, these types of fund are also often limited in time (typically 10 years). Those shares sell on an exchange and vary in price, depending on demand for the fund. A fund's shares, for example, can trade below their net asset value or above their net asset value – depending on investors' demand for the shares. Country funds that represent shares in a specific country or region, such as Italy or France, are often closed-end funds.

CLOSED-END LEASE: A true lease in which the lessor assumes the risk of depreciation and residual value. The lessee bears little or no obligation at the conclusion of the lease. Usually a net lease in which the lessee maintains, insures and pays property taxes on the equipment. The term is used to distinguish a lease from an open-end lease, particularly in automobile leasing.

COMMERCIAL CLOSE: The date upon which all contract documentation is signed but usually a date before financing agreements are fully effective

COMMITMENT FEE: A fee payable usually quarterly or semi-annually in advance on the amount of the loan not drawn down but committed by the lenders. Once construction of a project is completed or the loan is fully drawn down, these are no longer payable and any undrawn debt is cancelled.

COMPREHENSIVE DEVELOPMENT AGREEMENT (CDA): See Project Agreement.

CONCESSION: An arrangement whereby a private party leases assets for service provision from a public authority for an extended period and has responsibility for financing specified new fixed investments during the period; the assets revert to the public sector at expiration of the contract. In some circumstances (e.g. Mining) the two parties are private.

CONCESSION AGREEMENT (PROJECT AGREEMENT): See Project Agreement.

CONDITIONS PRECEDENT: Conditions that have to be met before an event can take place. Included in key project documents as a means of enabling signature when some conditions remain outstanding (e.g. planning). The project documents only become effective when all conditions precedent have been satisfied or waived.

CONSTRUCTION MANAGEMENT AT-RISK (CMR): A variation on traditional procurement in which the construction contractor guarantees to build the asset for a guaranteed maximum price prior to the start of construction.

COST OF CAPITAL: See Weighted Average Cost of Capital.

COUPON: The interest rate on a bond that the issuer promises to pay the investor until maturity, expressed as an annual percentage of the face value of the bond.

COUPON RATE: The rate of interest received by a bondholder on an annual, bi-annual or quarterly basis.

COVENANTS: The project company promises (covenants) to the lenders in the Credit Agreement that it will (positive covenant) or will not (negative covenant) do certain things.

CPI: Consumer Price Index, a measure of inflation

CRC: I-5 Columbia River Crossing

CREDIT AGREEMENT: The agreement between the project company and the lenders governing the terms of the loan. Also known as a Facility Agreement.

CREDIT APPROVAL: The agreement by the lenders' internal credit authorities to provide the loan to the project company subject to suitable documentation.

CREDIT RATING: An indication by a Credit Rating Agency of an entity's long term or short term creditworthiness. A long term rating of Aaa/AAA is the most credit worthy. A long term rating of C/D means that an entity is most probably in default of its obligations. Baa/BBB represents the minimum investment grade rating and is usually what is given to P3 companies, prior to any wrapping.

CREDIT RATING AGENCY: An agency which independently assesses the short or long term creditworthiness of entities including countries, companies and some municipalities. The best known agencies are Moody's and Standard and Poor's.

DBB: Design-Bid-Build, also known as traditional procurement.

DB: Design-Build

DBF: Design-Build-Finance

DBFM: Design-Build-Finance-Maintain

DBOM: Design-Build-Operate-Maintain

DBFOM: Design-Build-Finance-Operate-Maintain

DBE: Disadvantaged Business Enterprise

DEBT/EQUITY RATIO: The ratio of a firm's debt to its equity. The higher this ratio, the greater the financial leverage of the firm.

DEBT SERVICE: The amount of debt interest and the principal repayments.

DEBT SERVICE RESERVE: A cash reserve maintained by the project company, usually as a requirement of the lenders, to meet future debt service costs (principal and interest) in the event that there is a shortfall in revenue. There may be both a senior and subordinated debt service reserve. The reserve is normally kept in an account over which the lenders have control and security.

DEFAULT: Legally, non performance of a duty, whether arising under a contract or otherwise; failure to meet an obligation when due. In finance, failure to make timely payment of interest or principal on a debt security or to otherwise comply with provisions of a bond indenture or loan agreement.

DEPRECIATION: The allocation of an asset's costs, for tax or management purposes over a period of time based on its age.

DIRECT AGREEMENTS: These are agreements entered into by the senior debt providers [typically in the case of a hospital, with the building contractor, the provider of facilities management services and the Trust]. They allow in certain circumstances, the senior lenders to "step in" or appoint a third party to perform the obligations under a contract. (For example, if the building contractor becomes insolvent then the senior debt providers are able to appoint another contractor to fulfill the contract).

DISCOUNT RATE: Discount Rates are percentage rates used to 'discount' or deflate the value of cash flows occurring in the future based on the principle that cash in the present is more valuable than cash in the future because of the time value of money. In addition to time value, cash flows in the future are worth less because of inflation. If we ignore inflation, and cash flows are measured in constant year prices, a real discount rate must be applied. Cash flows which reflect the effect of inflation are called nominal cash flows, and the discount rate used to deflate nominal cash flows must incorporate the impact of inflation.

DRAWDOWN: A loan payment made by the lenders to the project company in accordance with the terms of the senior or junior debt facilities.

DUE DILIGENCE: The process of investigation, performed by investors, into the details of a potential investment. Due diligence is likely to be carried out on the legal, technical, insurance and financial aspects of a project.

ECONOMIC ASSUMPTIONS: These are the assumptions of inflation, interest, taxation etc. used in the financial model.

EBIT: Earnings Before Interest and Taxes

EBITDA: Earnings Before Interest, Taxes, Depreciation and Amortization

ENVIRONMENTAL ASSESSMENT (EA): A document prepared under the National Environmental Protection Act for actions (projects) in which the significance of the environmental impact is not clearly established.

ENVIRONMENTAL IMPACT STATEMENT (EIS): A document prepared under the National Environmental Protection Act for projects where it is known that the action will have a significant effect on the environment. This is the most comprehensive of the three documents prepared under NEPA.

EQUITY: Ordinary share capital invested in the project company by the sponsors and any third party investor. A wider definition of Equity includes loan stock or loans made by shareholders. Typically equity has the last claim upon the project's income, hence the highest risk and is therefore is the most expensive source of finance.

EVENTS OF DEFAULT (Default): Events which allow one party to terminate a contract. The right to terminate a P3 contract is often subject to: 1) allowing parties time to rectify the event of default; 2) the lenders' step in rights.

EXCESS CASH FLOW: The excess cash flow, if any, that is estimated to the State under the traditional delivery model after the State has met its operating expenditures and debt service requirements.

EXPRESS LANES: A lane in which access is limited during long stretches of the facility, minimizing turbulence in the flow of vehicles. Some express lanes are also HOT lanes.

FDOT: Florida Department of Transportation

FINANCIAL CLOSE: The time when the credit agreement is signed by all parties concerned. First drawdown of funds follows financial close and the satisfaction of any conditions precedent specified in the credit agreement.

FINANCIAL MODEL: A computer model which projects the financial performance of the project company, including cash flow, profit and loss account and balance sheet. It also includes calculations of the cover ratios and is used to prepare the Base Case.

FORCE MAJEURE EVENT: Generally defined as event beyond the reasonable control of the party experiencing the event which directly causes the party to be unable to comply with all or a material part of its obligation in the contract. The Standardization of P3 Contracts recommends a narrow definition of Force Majeure events (war/terrorism; nuclear, chemical or biological contamination; pressure waves caused by devices travelling at supersonic speeds).

GEARING: The ratio of debt to equity in the project company.

GENERAL OBLIGATION BOND (GO): See Motor Vehicle General Obligation Bond.

GRANTOR: In a transaction, the party granting the concession or contracting for project delivery. In the context of this Study, this term refers to the public agency.

HANDBACK: The point at which control of an asset is returned to the public sector.

HEDGING: A course of action undertaken to mitigate a risk. Typically the risk that interest rates might increase is hedged by the project company taking out an interest rate instrument (see Interest Rate Swap) for all or some of the duration of the loan. It is also possible to hedge against the risk of changes in the rate of inflation.

HOV LANES: A High Occupancy Vehicle lane, which requires that vehicles meet a minimum occupancy requirement to use the lane.

HOT LANES: A High Occupancy Vehicle lane that allows vehicles not meeting minimum occupancy requirement to use the lane by paying a toll.

INTELLIGENT TRANSPORTATION SYSTEMS (ITS): A broad range of wireless and wire line communications-based information and electronics technologies that improve transportation safety and mobility. Examples include electronic toll collection systems, GPS systems that communicate traffic data, and automatic license plate recognition.

INTEREST RATE SWAP: A contract between a borrower and a financial institution whereby the borrower exchanges a variable interest rate (usually LIBOR based) on a loan for a fixed interest rate to the financial institution. Thereby will either receive or need to pay a balancing amount each fund period. The loan provider will find at LIBOR and margin and MRC (which then pays the variable interest rate to the original lender). The borrower does not necessarily have to pay the financial institution an upfront fee for an interest rate swap as the fee may be included in the fixed interest rate charged by the financial institution.

INTERNAL RATE OF RETURN (IRR): The discount rate which, when applied to a given series of cash flows, results in an NPV of zero.

INVESTMENT GRADE: A bond judged likely enough to meet payment obligations that banks are allowed to invest in it. Ratings by Moody's and Standard & Poor's are given below:

Rating Agency	Moody's	S & P
Investment Grade Ratings	Aaa	AAA
	Aa	AA
	A	A
	Baa	BBB
Below Investment Grade ("Junk Bond")	Ba	BB
	B	B
	Caa	CCC
	Ca	CC
	C	C
In Default		D

JTC: Joint Transportation Committee

JUNIOR DEBT: Debt which is subordinate in terms of interest and principal repayment to senior debt. Usually scheduled repayment is made to the providers of junior debt unless all scheduled repayments and interest due to senior debt providers have been met. Typically the term of junior debt is at least as long as that of the senior debt. The margin on the junior debt tends to be higher than that on senior debt in view of the higher risk of default on repayments.

KABATA: Knik Arm Bridge and Toll Authority (Anchorage, Alaska)

LATENT DEFECTS: When any building or construction is complete it will have some obvious defects which should be quickly remedied. Over a period of time other defects may become apparent - such a defect is generally referred to as a latent defect, provided it is attributable to:

defective design;

defective workmanship or defective materials, plant or machinery used in construction;

defective installation of anything in or on the buildings;

defective preparation of the site on which the building is constructed;

defects brought about by adverse ground conditions or by reason of subsidence, water table change or any other change to ground conditions.

Within P3 projects involving refurbishment the transfer to the private sector of latent defect risk within the existing estate can be a contentious issue. Provided Value for Money Value for Money can be achieved transferring this risk is by far the best option for the public sector.

LETTER OF CREDIT: An obligation on a bank on behalf of a customer to pay on demand monies against the receipt of certain specified and pre agreed documents or conditions usually a fixed rate have been met (it is similar to a guarantee).

LIFECYCLE: The various phases of a project—predevelopment, development, operating, maintenance, and rehabilitation.

LIFECYCLE COSTS: The total costs accrued over all phases of the project.

LONDON INTERBANK OFFER RATE (LIBOR): The rate that banks can usually lend to each other in sterling in London and represents the interest rate of senior debt less the margin.

LIMITED RECOURCE FINANCE: Financing which involves limited obligations of the sponsor companies. Lenders have recourse to the contracts and the cash flows generated from these.

MAINTENANCE RESERVE: A cash reserve maintained by the project company usually at the requirement of the lenders to meet future maintenance

capital expenditure costs in the event that there is a shortfall in revenue.

MANAGED LANES: A broad term referring to highway lanes in which operational strategies are implemented and managed in response to changing conditions. Lanes are often "managed" through the use of pricing (tolls), vehicle eligibility, and access control. Examples of managed lanes include express lanes, HOV and HOT lanes, and toll lanes featuring variable pricing.

MARGIN: The rate of interest charged above LIBOR or some other base rate by senior lenders, representing the riskiness of the facility.

MATERIAL ADVERSE EFFECT/CHANGE: An event which could have, generally in the opinion of the lenders, a materially adverse effect on the project.

MATURITY: The length of a loan or other financial instrument. Upon maturity, the principal and all remaining interest of a loan are due.

MEZZANINE FINANCE: Mezzanine Finance is so called as it lies between equity and debt.

MILESTONE PAYMENTS: Useful to reduce concession payments (in availability payment modeled P3 deals) and allows for available upfront funds to be integrated into the P3 financial model. Milestone payments are generally made during the construction phase of a project, while availability payments are generally made during the operations / maintenance phase.

MONETIZATION: A term that refers to the sale or lease of an existing asset with a revenue stream.

MOTOR VEHICLE GENERAL OBLIGATION BOND (GO): A municipal bond that is backed first by the Motor Vehicle Fuel Tax, and second by the full faith and credit of the State of Washington. These bonds carry the same credit rating and interest rates as broader, multi-purpose GO bonds, but they do not count toward the State's constitutional debt limit. They are limited by forecasts of future motor vehicle fuel tax receipts.

MWBE: Minority and Women-Owned Business Enterprise

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA): Passed in 1969, NEPA established a broad national framework for environmental protection. NEPA requires that all federal agencies' funding or permitting decisions be made with full consideration of the impact to the natural and human environment. Under NEPA, one of three types of documentation must be produced to determine and mitigate the environmental impact of a proposed transportation project: an Environmental Impact Statement (EIS), an Environmental Assessment (EA), or a Categorical Exclusion (CE).

NET PRESENT VALUE (NPV): The discounted value of future cash flows less the initial investment required to generate such cash flow. These cash flows are discounted to take account of the fact that money today is worth more than the same amount of money in the future.

NET PROJECT VALUE: A product of financial analysis, this value indicates the relative financability of a project based on the assumptions made in the financial model (i.e. the delivery method used and the associated costs and revenues). When comparing the net project value of different development scenarios, the scenario with the highest net project value indicates the greatest Value for Money to the State.

NON-RECOURSE FINANCE: A loan where the lending bank or investor is only entitled to repayment from the

profits of the project the loan is funding, not from other assets of the borrower.

OFF BALANCE SHEET: An asset or a liability that does not appear as an asset or a liability in the financial statements of the relevant entity.

OPERATIONAL EXPENDITURES (OPEX): Funds used to pay for the operation and maintenance of a business or asset. Operational Expenditures are not depreciable.

OUTPUT SPECIFICATION: A specification written to focus on the deliverable service and outputs rather than prescriptive inputs.

P3 OR PPP: Public-Private Partnership

PERFORMANCE BONDS: A bond issued by an insurance company to guarantee satisfactory completion of a project by a contractor.

PROJECT AGREEMENT: Also referred to as a concession agreement or a Comprehensive Development Agreement, this term refers to the contract between the public agency and private partner(s) in a public-private partnership. The project agreement is a comprehensive document that lists the rights and responsibilities of both parties, the design and operational specifications of the facility, the length of the agreement, and the remedies of either party for noncompliance.

PREFERRED BIDDER: A bidder selected from the shortlist to carry out exclusive negotiations with the public sector authority.

PRIVATE ACTIVITY BOND (PAB): In the US, states and municipalities have traditionally financed public transportation infrastructure using tax receipts (e.g., fuel taxes) and proceeds of tax-exempt municipal bonds. Until recently, however, private participants in transportation P3s have not had the benefit of tax-exempt bond financing and have had to resort to taxable debt financing to support their bids for transportation concessions. This is the result of the US tax code, which limits tax-exempt status for bonds issued by state and local authorities if the proceeds are used for private business purposes. Certain categories of infrastructure, such as airports, waste to energy facilities, and water and sewage facilities, among others, historically have benefited from special exemptions permitting tax-exempt treatment even if projects were developed by private participants. The bonds issued under these exemptions are known as Private Activity Bonds.

In 2005, pursuant to the SAFETEA-LU legislation, the US Congress amended the US Internal Revenue Code to establish a new category of “exempt facility”—qualified highway or surface freight transfer facilities—with respect to which up to US$15bn of tax-exempt private activity bonds, or PABs, may be issued by state or local governmental entities for the benefit of private developers. Accordingly, private concessionaires receiving PAB allocations may now benefit from the lower cost of capital achievable in the US tax-exempt bond markets. As with other private activity bonds, a government conduit entity is required to issue the bonds.

Qualifying projects for PABs include surface transportation projects that are otherwise receiving federal assistance; an international bridge or tunnel project for which an international entity authorized under federal or state law is responsible and which is otherwise receiving federal assistance; and any facility for the transfer of freight from rail to truck or vice versa (including temporary storage facilities relating to such transfers, but excluding lodging, retail, industrial or manufacturing facilities). If 95% of net bond proceeds

are not expended for the relevant project within five years of issuance, the remaining proceeds must be used to redeem bonds within 90 days of the five-year anniversary date.

PRIVATE FINANCE INITIATIVE (PFI): A formal, programmatic framework for P3s established by the British Government in 1992.

PROJECT FINANCE: A method of using debt to finance the construction of a specific project with the loan being repaid solely from the cashflows associated with that project. Project Finance was developed in the 1980s in sectors such as energy, transport, and infrastructure.

PUBLIC SECTOR COMPARATOR (PSC): Assessment of whether a P3 offers value of money is an essential part of a P3 process. This entails comparing the proposed P3 with the cost of the public sector undertaking the project. To ensure the analysis of the two alternatives is comparable there will need to be a proper accounting for quality of services, price, time frame, risk apportionment and certainty. This requires the preparation of a benchmark or public sector comparator (PSC). The PSC describes the option and assesses what it would cost the public sector to provide the outputs it is requesting from the private sector through a more traditional delivery approach.

PUBLIC-PRIVATE INITIATIVES IN TRANSPORTATION ACT (PPI): Legislation passed by the State of Washington in 1993 to create a legal framework for P3s. This legislation was phased out and replaced by the Transportation Innovative Partnerships Act in 2005.

PUBLIC-PRIVATE TRANSPORTATION ACT (PPTA): Legislation passed by the State of Virginia in 1995 to implement transportation P3s. This law was amended in 2010 to create the Office of Transportation Public-Private Partnerships, a dedicated state agency to coordinate P3 projects across all modes of transportation.

PWG: Policy Workgroup

RDP: Route Development Plan

RECOURSE-FINANCE: (1) The ability of a lender to demand payment from a borrower if the collateral is insufficient to pay the debt in full, or even if the lender chooses not to attempt foreclosure of the collateral. (2) The requirement that the seller of a promissory note repurchase it if the borrower defaults.

REFINANCING: The prepayment of existing debt and/or equity and its replacement with debt enjoying better terms (eg lower margin, longer tenor, weaker covenants etc).

REPRESENTATIONS & WARRANTIES: A project company will be required to represent and warrant that certain statements and information are true. An unfulfilled warranty does not invalidate the contract but could result in damages being sought by the authority.

RESERVE BIDDER: During a procurement process, the Grantor may retain an agreement with bidders that are not the preferred bidder (typically the 2nd placed bidder) to maintain the validity of their bid over an extended period with the option to take the place of the preferred bidder if and when requested to do so by the Grantor (and if such action is agreeable to the Reserve Bidder).

REVENUE BOND: A municipal bond supported by the revenue from a specific project, such as a toll bridge, highway, or local stadium.

REVENUE CONCESSION: A project in which the private partner assumes revenue risk,

REVENUE RISK: The risk that project revenues will be sufficient to cover project costs.

RFP: Request for Proposals

RFQ: Request for Qualifications

RISK PREMIUM: The additional return or interest rate required by an investor based on the specific risks of an investment. As the risks associated with an investment rise, the required rate of return will generally rise, and vice versa. For transportation projects that utilize private investment, lowering the project's risk premium can have the effect of lowering the project's cost.

RISK TRANSFER: The passing of risk under contract from one party to another.

RRIF: The Railroad Rehabilitation & Improvement Financing (RRIF) Program provides direct federal loans and loan guarantees to finance the development of railroad infrastructure. Like TIFIA, RRIF loans offer flexible repayment terms and favorable interest rates equal to the cost of borrowing to the government. Unlike TIFIA, RRIF loans can be used to pay for up to 100% of project costs. A total of $35 billion has been allocated to the RRIF program, up to 20% of which is reserved for smaller (non-Class I) freight railroads. RRIF funds may be used to acquire, improve, or rehabilitate rail equipment or facilities; refinance outstanding debt from these projects; or to construct/establish new rail facilities. Intermodal facilities are also eligible for RRIF support. All environmental approvals required for a project under NEPA must be in place before RRIF assistance can be obligated.

ROW: Right-Of-Way

SENIOR DEBT: The bank debt that is used by a project company (SPV) to fund the construction of a P3 project.

SHADOW BID: In a Value for Money Assessment, the Shadow Bid evaluates the cost of delivering a project using a P3 structure. This bid is then compared to the Public Sector Comparator to determine which method provides the most Value for Money for the State.

SHADOW TOLL ROAD: In a shadow toll road project, the project company agrees to design, build, finance and operate and maintain the project road. In return, the host government is required to make payments to the project company that are based on the level of traffic using the project road. These payments are commonly known as "shadow toll" payments as tolls are not payable by the motorist. Instead, the volume of traffic using the road is measured using sophisticated measuring equipment and shadow toll payments are calculated by applying certain pre-agreed shadow toll rates to traffic volumes. It should be noted that just because a project is a shadow toll project does not negate the traffic risk. Shadow toll payments are still dependent upon the amount of traffic that uses the road and therefore a full traffic analysis will still need to be carried out.

SPECIAL PURPOSE VEHICLE (SPV): A company established for the specific purpose of entering into the concession agreement or Contract for a project. Often referred to as the Project Company in respect to a particular project.

SPONSORS: The companies providing the service under a P3 contract or concession (typically the construction and facilities management companies). The companies are usually also shareholders of the

Project Company through investment company subsidiaries.

SR: State Route

SUBORDINATION: This term refers to the order in which debts must be repaid. When one loan is subordinate to another, payments must be made to the non-subordinated loan first. TIFIA loans are subordinate to private debt, and equity is generally subordinate to all debt.

SWG: Staff Workgroup

SYNDICATION: The Arrangers may invite additional lenders to participate in the Senior or Junior Debt through a syndication or a sell down. This process usually takes place after Financial Close and allows other financiers with a relationship with the project's sponsors or with an interest in the sector to join the facilities. It also allows the Arrangers to reduce their exposure to the project, allowing them to free up capital for further projects. Where the Senior Debt is provided by way of a Bond then the Underwriter is likely to syndicate by selling the Bonds to other investors.

TENOR: The length of time that a senior debt facility for a project can be outstanding. Normally this is one or two years shorter than the term of the underlying P3 contract or concession

TERM: The duration of a P3 project agreement

TERM SHEET: A summary of proposed terms and conditions of the senior debt facilities for a project.

TIFIA: In 1998, the US Congress passed the Transportation Infrastructure Finance and Innovation Act, or TIFIA, which established a US federal credit program for eligible surface transportation projects of national or regional significance. Under this program, the US Department of Transportation is authorized to provide three types of credit assistance—direct secured loans, loan guarantees and standby lines of credit. TIFIA loans are subordinate, non-recourse loans with flexible repayment terms and favorable interest rates equal to the cost of borrowing to the government. The objective of the TIFIA program is to leverage US federal transportation funding by attracting private investment to the US surface transportation sector. Towards this end, TIFIA funding is available to state departments of transportation, transit operators, special transportation authorities, local governments and private investors. Projects seeking TIFIA financing must meet several threshold requirements, including:

Minimum anticipated project costs (generally no less than US$50m).

The TIFIA portion of the financing cannot exceed 33% of reasonably anticipated eligible project costs.

The project’s senior debt must receive an investment grade rating from a nationally recognized credit rating agency.

The project must be included in the relevant state’s transportation planning and programming cycle.

The project must have a dedicated revenue source, such as tolls or other user fees, that are pledged to secure debt service payments for both the TIFIA and senior debt financing.

TOLLING REGIME: A predetermined framework that governs the conditions under which tolls are set and adjusted over time. A tolling regime is usually created prior to the procurement phase of a project. For P3 projects that include tolls, the terms and conditions of the tolling regime are included in the P3 project agreement.

TRADITIONAL PROCUREMENT: The method by which infrastructure has traditionally been delivered in the United States. Also known as Design-Bid-Build (DBB), this method involves a public agency contracting with separate entities for each stage of project development and/or performing these stages directly. In this model, many key risks are held by the public agency. Traditional procurement relies on traditional public financing tools, such as general appropriations, dedicated revenue sources (such as sales taxes), general obligation bonds, and revenue-backed bonds. In Washington State, Design-Build (DB) is also considered to be a form of traditional procurement.

TRANSPORTATION INNOVATIVE PARTNERSHIPS ACT (TIPP): Legislation passed by the State of Washington in 2005 to build upon the lessons learned from the PPI Act.

TxDOT: Texas Department of Transportation

UNDERWRITER: A financial institution that guarantees to the Project Company that it will provide a specified amount of debt or equity for a project financing on pre agreed terms. An Underwriter takes the risk that it will subsequently be able to syndicate or "sell down" the debt to other lenders. Both bank debt and Bonds may be underwritten. Also used in the usual context of an insurance underwriter.

USER FEE REVENUE: Revenue received from a charge levied only against those who take advantage of a product or service. In most cases, these fees are distinguished from other fees and government charges, which are assessed to the general population as taxes.

VALUE FOR MONEY ASSESSMENT (VfM): An economic assessment by the public sector as to whether a P3 project represents Value for Money ; the optimum combination of cost and quality to provide the required service. VfM is usually represented as a comparison of bidders proposals against the Public Sector Comparator, taking into consideration the benefits, opportunities, and values of public sector retained risk in a project.

VARIABLE TOLLING: Tolls that adjust based on the time of day, level of congestion on the road, or other factors.

VDOT: Virginia Department of Transportation

WATERFALL: See Cash Cascade.

WEIGHTED AVERAGE COST OF CAPITAL (WACC): The average cost of a company's finance (equity, loans, etc.) weighted according to the proportion each element bears to the total.

WSDOT: Washington State Department of Transportation

YIELD: Rate of return on a loan, expressed as a percent and annualized.

63-20 PROJECT: Non-profit corporations, which, pursuant to Internal Revenue Service (IRS) Rule 63-20 and Revenue Proclamation 82-26, are able to issue tax-exempt debt on behalf of private project developers.

CRITERIA FOR A 63-20 NONPROFIT CORPORATION TO ISSUE TAX EXEMPT DEBT: In order for a non-profit corporation to issue tax-exempt debt, it must satisfy the following criteria established by the IRS:

The corporation must engage in activities which are essentially "public in nature."

It must not be organized for profit.

The corporate income must not inure to any private person.

The State or political subdivision must have a "beneficial interest" in the corporation while the indebtedness remains outstanding.

The corporation must be approved by the State or the political subdivision, which must also approve the specific obligations issued by the corporation.

Unencumbered legal title in the financed facilities must vest in the governmental unit after the bonds are paid.

The rules for determining whether the governmental unit has the requisite "beneficial interest" in the nonprofit corporation are likewise quite straightforward.

The governmental unit must have exclusive beneficial possession and use of at least 95 percent of the fair market value of the facilities; or If the nonprofit corporation has exclusive beneficial use and possession of 95 percent of the fair market value of the facilities, the governmental unit appoints 80 percent of the members of the board of the corporation and has the power to remove and replace members of the board; or The governmental unit has the right at any time to get unencumbered title and exclusive possession of the financed facility by defeasing (paying off or providing for payment of) the bonds.

6.0 Appendix B: Supporting Material

6.1 Risk Apportionment: Lessons Learned

Recent P3 transactions in the United States and Canada can provide valuable insights for Washington State in its consideration of P3. The following project profiles summarize a series of important good and bad lessons learned.

Project and Key Lessons	
Port of Miami Tunnel: Achieving Value for Money	The Port of Miami Tunnel project will build a new tunnel connection between the Port of Miami and mainland Florida, providing a direct highway link from the Port to Interstate 395 and reducing truck traffic through downtown Miami. Built as a non-toll facility, the project will be structured as a DBFOM P3 with a 35-year term, in which the concessionaires will be paid through availability payments. Through the use of this payment structure, the public agencies were able to transfer construction and operating risk to the private partner, which is notable because the project is technically challenging. A competitive procurement process resulted in competition from three international bidding consortia and generated considerable cost savings, with the winning bid coming in at 49% of original public sector estimates Detailed performance metrics will ensure that routine and heavy maintenance are performed over the life of the contract and upon handback to public control.
Florida I-595: Achieving Value for Money	This project consists of the reconstruction, widening, and resurfacing of approximately 10.5 miles of Interstate 595 in Florida. A portion of this project had been funded under the state's Strategic Intermodal System Growth Management Plan, but due to funding constraints, the state was unable to implement the project. As a result, the state held a P3 forum to gauge investor interest in the project and ultimately procured the project as a 35-year DBFOM contract, with annual availability payments of $63 million made in exchange for the planned improvements and ongoing maintenance. The new lanes feature variable tolling, which provides a revenue source to repay the private partner. This deal allowed the State of Florida to fill the funding gap and implement the project ten years ahead of schedule, while also benefitting from improved design and construction efficiency as well as a reduced potential for time and cost overruns.
I-495 Capital Beltway: Managed Lanes	This project involves the construction of two new high-occupancy toll (HOT) lanes along the Beltway in Virginia, which includes the replacement of more than 50 bridges, overpasses, and major interchanges. The new lanes will feature dynamic pricing, in which high-occupancy vehicles ride for free and single-occupancy motorists pay a varying fee to use the lanes, based on real-time traffic conditions. The project is structured as an 80-year project agreement, which includes a $1.9 billion fixed price design-build contract. The Commonwealth of Virginia will retain ownership of the facility, oversee project development, and ensure compliance with safety & design standards as well as environmental reviews. The funding sources for this project are diverse and include a private equity investment ($349 million), private activity bonds ($586 million), a TIFIA loan ($585 million), and a Commonwealth contribution ($409 million). The project includes a revenue sharing agreement, in which revenues over an agreed-upon total return on investment (TRI) will be shared with the Commonwealth.
Texas SH 130: Closing the Funding Gap	This 40-mile project entails the extension of state highway 130 and the conversion of existing portions to an all-electronic toll system. Total capital costs for the project were approximately $1.4 billion, but available public funds left a gap of $600 million. Built as a 50-year concession, this gap was closed with approximately $950 million in P3 financing, including a $685 million senior loan, a $100 million liquidity facility, a $430 million TIFIA loan, and $197 million in equity.

Project and Key Lessons	
California SR 125:A Project in Default	This was one of the first P3 projects in California, built as a full concession that opened for traffic in 2007. The project faced two key challenges: 1.) a legal dispute between the design/build contractor and the project company, and 2.) traffic and revenue figures that fell below projections. The project company filed for bankruptcy in 2010, resulting in a settlement with creditors, a write-off from the equity provider, and the State of California retaining ownership. Despite these developments, the facility continues to operate as usual, with no impact felt by the end users. This example demonstrates that long-term revenue projections are very important to project feasibility and must be properly vetted. In addition, this also demonstrates that properly-constructed P3 agreement will insulate the public agency from liability—in the case of SR 125, it was the project's creditors and equity provider who were ultimately liable for the project default.
California SR 91: A Caution on Non-Compete Provisions	This was another early P3 project in California to expand SR 91 with several tolled express/HOT lanes. These lanes were built in 1995 by a private developer (CPTC) for $134 million with a 35-year project agreement. The project included a "non-compete" provision that prevented the state from making any improvements on the existing non-tolled portions of the road, including lane widening or the addition of mass transit, which led CPTC to sue Caltrans over one widening project. This controversy was settled when the Orange County Transportation Authority (OCTA) purchased the project from CPTC for $207.5 million. This example demonstrates that careful consideration must be given to commercial clauses (such as non-compete provision) in long-term P3 agreements.
Virginia Pocahontas Parkway: 63-20 Corporations	The Pocahontas Parkway is an 8.8 mile new toll road that was initially developed through a 63-20 corporation, an earlier P3 structure that involves the creation of a nonprofit project entity with both public and private representation that issues tax-exempt debt and contracts with the private sector for construction and/or O&M. Due to overestimates in traffic and revenue projections, the project was in danger of default on its upcoming debt service payments in 2005. In recognition of the parkway's difficulties, a private company (Transurban) submitted an unsolicited proposal under the Commonwealth's Public Private Transportation Act (PPTA) for a concession of the parkway. After completion of the competitive process outlined by the PPTA, Transurban assumed the rights and obligations to manage, operate, maintain and collect tolls on the Pocahontas Parkway and build a much needed airport connector, through a 99-year concession for $611 million. This restructuring allowed Virginia to save the project from default and also achieve new improvements on the road.
South Carolina Greenville Connector: 63-20 Corporations	The Greenville Connector is a 16-mile, four-lane road that was constructed through a 63-20 corporation in February 2001, nine months ahead of schedule. The nonprofit public benefit corporation in charge of the roadway, the Connector 2000 Association, issued $200 million in toll revenue bonds to finance the project. Demand forecasts for the corridor, and subsequent toll revenues, were tied to future corridor development that did not materialize as planned; as a result, the Association depleted its reserves and defaulted on its bonds in January 2010.The Connector continues to operate the facility using toll revenues to pay operating expenses, but this example provides another caution that the accuracy of demand projections are important for project success.
Chicago Parking Meters: Poor Public Perceptions	In this project, the City of Chicago received a $1.15 billion upfront payment in exchange for a 75-year lease on 36,000 parking meters with revenues of $19 million per year. As part of the agreement, the operator agreed to perform a "wholesale system overhaul," replacing coin-operated meters with automated ones, and the city remained responsible for rate setting, parking regulation, and fine collection. Soon after the project began, however, major operational glitches occurred that led to a strong public backlash. Several legal challenges soon followed, including a lawsuit, an investigation by the Illinois Attorney General, and a critical report from the Chicago Inspector General. The private operator admitted that it "underestimated the resources required" to overhaul the system but eventually solved the glitches and the program is now running smoothly. This example should remind stakeholders that adequate upfront preparations and accurate cost estimating are very important, especially because P3 concessions are new to the general public.
Toronto 407 ETR: Poor Public Perceptions	This road was developed in two phases, with a CN $1.5 billion DBO for Phase 1 (69 km) and a 108 km extension for CA $3.1 billion for Phase II, which included a 99-year concession. Built as the first open road tolling project in North America, the project developer retrained the right to set toll rates and charge additional "access fees," which caused significant public opposition and legal disputes by the government, which were decided in favour of the project company. Individuals with substantial unpaid tolls can have their vehicle permits denied by the Registrar of Motor Vehicles, another decision that the Ontario government challenged unsuccessfully. In general, these conflicts have led the public to perceive rising toll rates as a "luxury" rather than congestion mitigation or the means to fund improvements.

6.2 Screening Tool Case Studies

Several domestic and international P3 programs have developed a robust screening process that contributes greatly to their success. To compliment this process, effective public agencies have also acted quickly on the process' results to avoid abortive work on infeasible projects, and they have made key supporting decisions, such as public funding commitments, early in the project development process. A brief description of screening tool case studies follows.

6.2.1 US Federal Highway Administration (FHWA) P3 Project Selection Criteria

The US FHWA has prepared separate sample lists of criteria that should be met before public and private actors pursue a P3 project.

Public Sector Criteria	Private Sector Criteria
- Enabling legislation in place - Urgent transportation need - Political and institutional support - Lack of internal resources to deliver the project through traditional methods - Leverage public resources and transfer cost/schedule risks to the private sector - Expedite schedule through access to capital markets and innovative project delivery - Transfer cost, schedule, and quality risks to a capable private partner - Increased cost-effectiveness through best practices and access to new technology - Competitive market environment based on firms with proven experience - Capability to manage transparent procurement/contract administration process - Public accountability through monitoring of contract performance standards	- Enabling legislation in place - Pressing transportation need - Reasonable development timeframe - Financially feasible (adequate funds to satisfy required rate of return on investment) - Manageable risks consistent with responsibilities and rewards as reflected in contract - Supportive political climate - Defined procurement path providing equal opportunity to all interested parties - Comprehensive market evaluation to assure reasonable traffic & revenue risks - Commitment to public sector sponsorship of environmental clearance and permitting - Commitment by public sector acquisition of necessary rights-of-way - Partnership philosophy demonstrated by project sponsor in flexible contract terms - Opportunity to apply innovative approaches to reduce project costs and risk

Source: **US Department of Transportation Federal Highway Administration, User Guidebook on Implementing Public-Private Partnerships for Transportation Infrastructure Projects in the United States, July 7, 2007.**

6.2.2 Minnesota P3 Screening Process

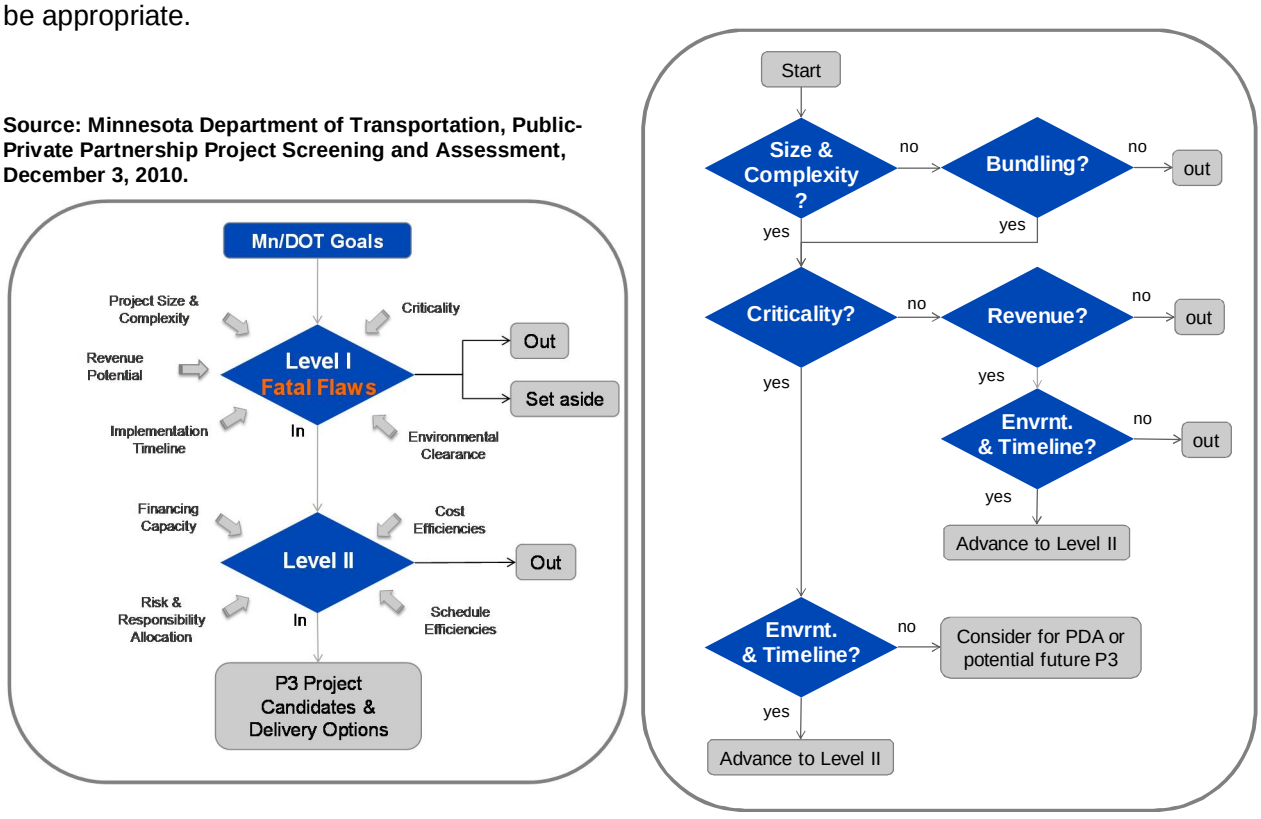
The Minnesota Department of Transportation also employs a two-level screening process to identify the most feasible P3 projects that reflect the state's policy goals. In Level I, potential projects are evaluated based on the following four criteria:

- Project size and complexity: Is the project sufficiently large and complex enough to merit P3 procurement?

- Criticality: Is the project closely aligned with the state's priorities for safety, legislative obligations, system preservation, mobility, and network completion?
- Revenue potential: Does the project possess a potential revenue stream to be leveraged through a P3?
- Implementation timeframe and environmental clearance: Can the project be implemented in the short (2-3 year) or medium (4-11 year) timeframe?

If the project advances to the Level II analysis, revenue projections are then collected to determine both the financial feasibility and the potential for P3 cost and schedule efficiencies, using order-of-magnitude estimates of capital, O&M, and rehabilitation and renewal costs over a twenty to forty-year time horizon. This information is then used to determine which, if any, P3 procurement models would be appropriate.

Source: Minnesota Department of Transportation, Public-Private Partnership Project Screening and Assessment, December 3, 2010.



6.2.3 Infrastructure Ontario, Canada

The Ontario Ministry of Energy and Infrastructure determines P3 eligibility according to five principles:

- The public interest is paramount
- Value for money

- Public ownership must be preserved
- Accountability must be maintained
- All processes must be fair, transparent, and efficient

6.2.4 Georgia Department of Transportation

GDOT is required to develop a biennial P3 list for Transportation Board consideration, for which projects can be proposed by GDOT, other state agencies, local authorities, and metropolitan planning organizations via a Project Data Request Form. Projects must be part of the Strategic Transportation Improvement Program. Screening factors include:

- Potential for added value through private sector involvement
- Preparedness of the requesting department to implement the project
- Project scope
- Public funding
- Market interest
- Financial feasibility

6.2.5 Screening Tool Best Practices

An analysis of these case studies reveals the following recommendations for the public sector:

1. Establish a project screening and prioritization framework that includes need for the project, technical feasibility, financial feasibility, operational considerations, environmental considerations, public acceptability, and legislative acceptability. Screened projects should come from an adopted transportation plan, statute, or the Legislature. The criteria and the output from the screening process should be uniform to assist with making comparisons.
2. Publish a prioritized “short list” of candidate projects that are classified as short, medium, and long-term priorities. Projects should be prioritized in a way that incorporates the results of the screening process, transportation priorities, available funding, environmental issues, and public benefits. This list should be shared with the P3 industry, and projects should be procured using a competitive procurement method.
3. Update the short-list of projects regularly. Public sponsors should solicit industry input through regular dialogue with the private sector and should revisit market assumptions as necessary. The short-list should be updated every two years to reflect changes in priority and/or transportation needs.

4. Decisions on projects should be made as early as possible, which will enable an early start for further environmental and public outreach. The funding needs for a project should be identified early in the process.

6.2.6 Detailed Preservation Cost Categories by Project

In developing preservation cost categories the following interpretation of WSDOT's cost estimates has been required to ensure a standard comparison between public sector comparator and P3 cases; and between projects.

Table 6.1 WSDOT Defined Preservation Cost Categories

	Preservation Cost Categories	I-405	SR 509, SR 167 & CRC
1	**Roadway Maintenance**	Grading, Drainage and Stockpiling	Earthwork, drainage, TESC (not applicable to Tolling/ITS)
		Waterlines, Storm and Sanitary Sewers	Traffic control during construction
		Traffic Control	Everything else, including Signing, Lighting, Environmental Mitigation, Barrier, DB Engineering, Differing Site Conditions, Minor Items (not applicable to Tolling/ITS)
2	**Structures**	Structures	Not included as a separate item
3	**Pavement Maintenance**	Asphalt and Surfacing	Roadway Resurfacing/Paving
		Cement Concrete Pavement	
4	**Tolling & ITS Maintenance**	Tolling & ITS	Tolling & ITS
5	**Other Misc. Items**	Other Items	All WSDOT Costs - Sales Tax, CE, Contingency, Stipends, DPS
		Non - Bid Costs	
6	**Engineering, Construction Mgmt. and Testing Fees**	Not included as a separate item	Preliminary Engineering
7	**Design**	Design	Not included as a separate item
8	**Mobilization and Preparation**	Mobilization and Preparation	Mobilization
9	**General Contingencies**	Not included as a separate item	Not included as a separate item

6.2.7 Detailed O&M Categories by Project

In developing O&M cost categories the following interpretation of WSDOT's cost estimates has been required to ensure a standard comparison between PSC and P3 cases; and between projects.

Table 6.2 Standardization of Operations and Maintenance (O&M) Cost Assumptions by Project

	O&M Cost Categories	I-405/SR 167 Express Toll Lanes	I-5/SR 509 Extension	SR 167 Extension	I-5 Columbia River Crossing*
1	Personnel**	WSDOT personnel costs are incorporated within each of the line items below such as structures, pavements etc.			
2	Structures	Roadway Maintenance - Bridge and Tunnel M&O	Facility - Structures and Bridge Operations		Bridge Maintenance
3	Pavement	Roadway Maintenance - Roadway M&O	Facility - Roadway Surface		Roadway - Pavement Repair
		Not included as a separate item	Facility - Slope and Shoulders		Not included as separate
4	Tolling & ITS	Toll Collection - Fixed Back Office Costs			
		Toll Collection - Transaction Based Costs			
		Toll Collection - Credit Card Fees			
		Toll Collection - Annual Maintenance			Not included as a separate item
		Not included as a separate item			Toll Collection -Transponder Purchase and Inventory
					Toll Collection - Back Office Costs for Pay By Plate Processing
5	Tolling Uncollectables	Tolling Uncollectables			
6	Enforcement	Toll Collection - Enforcement by Washington State Patrol (WSP)			
7	Facility Maintenance	Roadway Maint - Rest Area Operations	Not included as separate item/not relevant	Facility - Rest Areas	Not included as separate item/not relevant
8	Roadway General Maintenance	Drainage M&O			
		Roadway Maintenance - Roadside and Vegetation Landscaping			
		Roadway Maintenance - Snow and Ice Control			
		Roadway Maintenance - Traffic Control M&O, Traffic Signs Direction Markers and Signal O&M			
		General Roadway Maintenance			Not included as a separate item
		Not included as a separate item	Facility - Striping and Pavements		
			Facility - Guard Rails, Barriers, Attenuators		
			Facility - Electrical Equipment, ITS		
			Facility - Electrical Services, Highway Lighting		
		Not included as a separate item			Incident Response
9	G&A	3rd Party Damage			Not included as a separate item
		Roadway Maintenance - IRT	Not included as a separate item	Not included as a separate item	
		Not included as a separate item		Facility - Permits and Franchises	
				Facility - Disaster Operations	
				Facility - Miscellaneous	

Notes: * The cost associated with Bridge Insurance Premiums for I-5 Columbia River Crossing has been removed from the PSC cost buildup to allow a true like for like comparison with the P3 costs.

** WSDOT personnel costs are incorporated within each of the line items below such as structures, pavements etc. In order to accurately evaluate and compare the PSC O&M costs against the P3 O&M costs, the Personnel cost were extracted from each item, and as part of the iterative process an assumption on the percentage of personnel based cost associated with each cost item was made. For example costs for Roadside and Vegetation O&M are considered 75% personnel based costs but 3rd party damages are considered only 10% personnel based cost. Through discussions with WSDOT the extracted personnel cost was then multiplied by 112% to account for fringe & overhead costs and then included within each O&M cost category.

6.2.8 Detailed Breakdown of Tolling and ITS Costs by Project

The following four figures illustrate the makeup of assumed Tolling and ITS costs for both P3 and public sector comparator cases as have been analyzed in the financial model analysis (for revenue generating cases that include toll collection activities).Values are equivalent to the sum of costs in USD 2011 for all years under operation (i.e. from the commencement of operations until 2070).

Note that while uncollectable tolls (accounts) and Washington State Police (WSP) enforcement have been set even for the P3 and PSC cases, minor differences are shown and account for differences in the year that operations commence. Also note that under the P3 case, “Tolling and ITS – Transaction based costs” account for the same set of activities and associated costs covered collectively by three of the PSC categories namely “Equipment O&M”, “Transaction based CSC (Customer Service Centre) Costs” and “Fixed Back Office Costs” (enabling a like for like comparison).

Figure 6.1 I-405/SR 167 Express Toll Lanes Tolling and ITS Cost Comparison

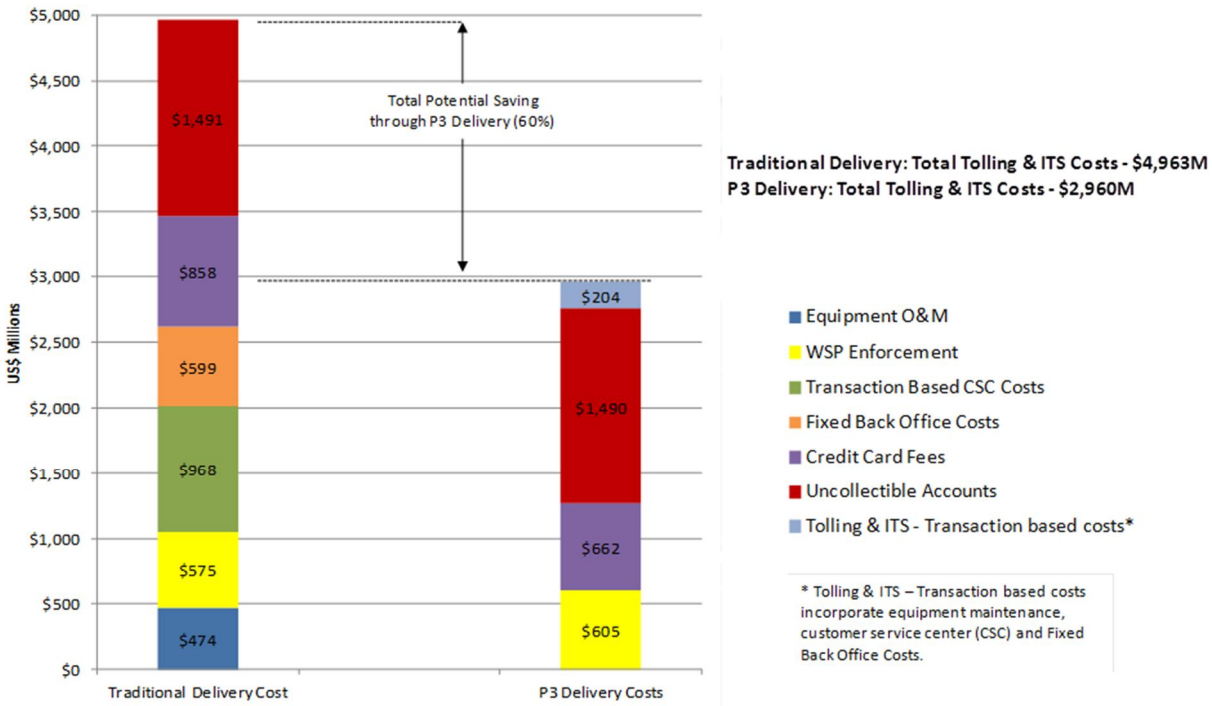


Figure 6.2 I-5/SR 509 Extension Tolling and ITS Cost Comparison

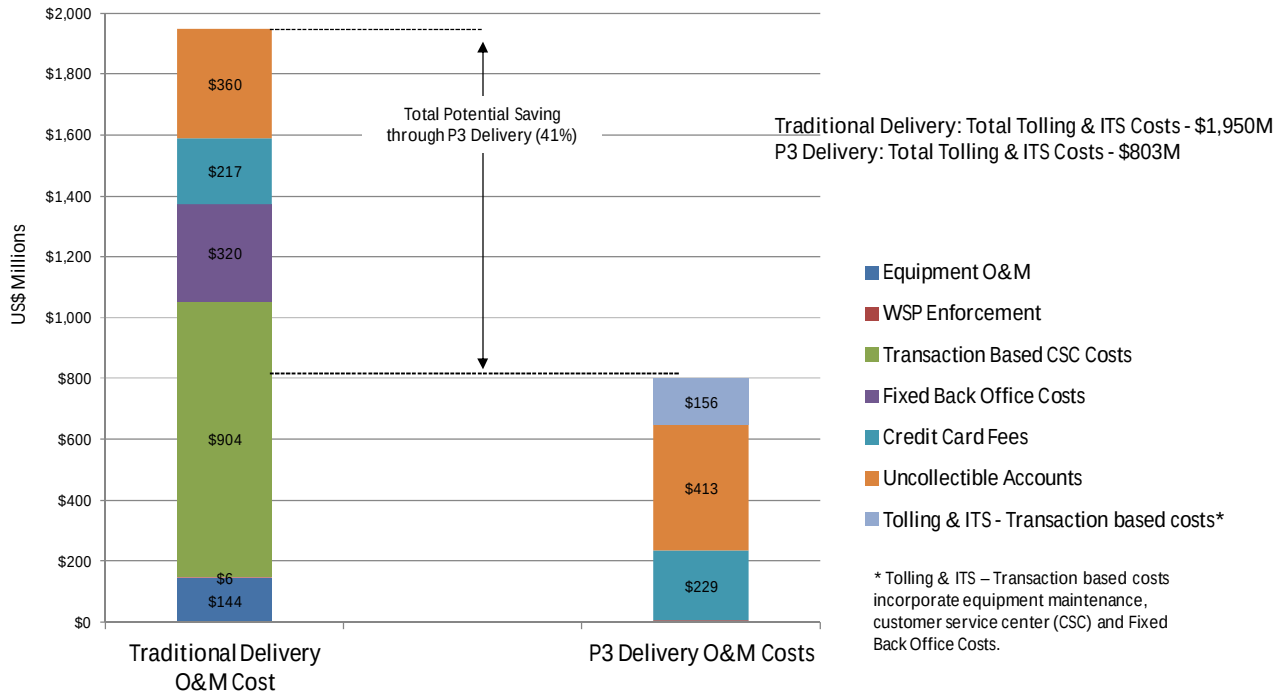


Figure 6.3 SR 167 Extension Tolling and ITS Cost Comparison

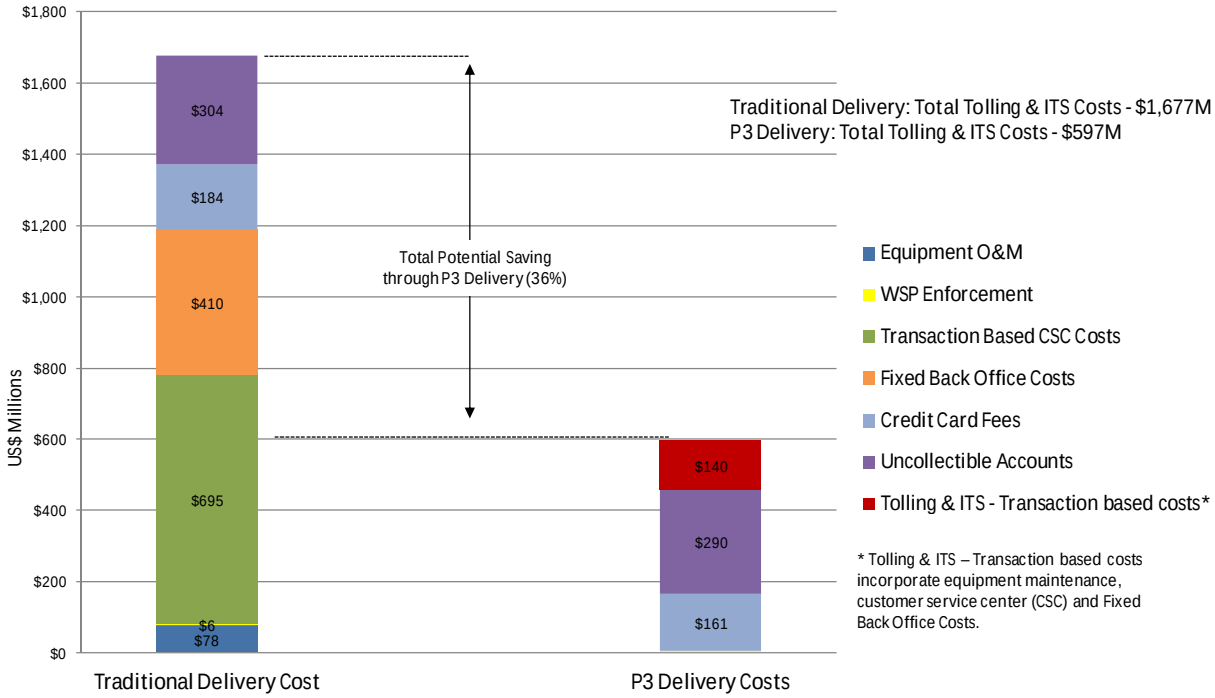
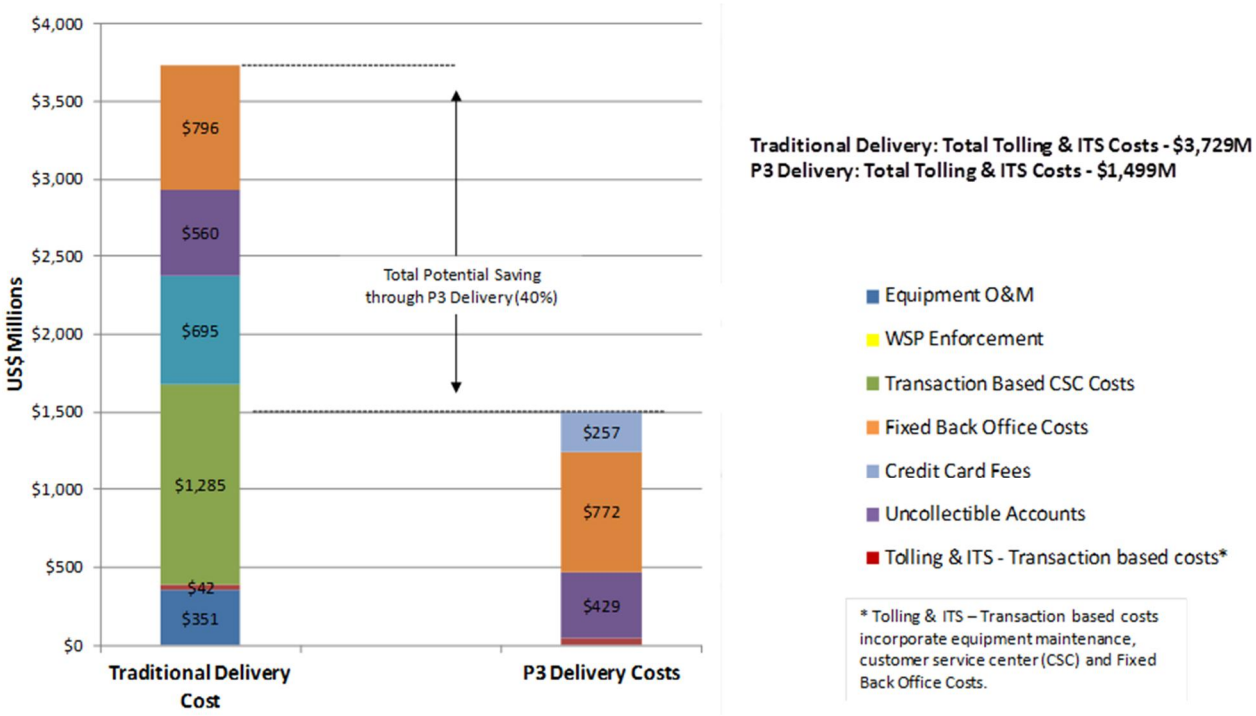


Figure 6.4 I-5 Columbia River Crossing (CRC) Tolling and ITS Cost Comparison



Further explanation of the differences between each Tolling and ITS related cost category for the PSC and P3 cases by project follows in Table 6.3. All costs are presented in USD Millions.

Table 6.3 Detailed Tolling and ITS Cost Input Differences by Case and Project

I-405/SR 167 Express Toll Lanes Tolling Costs (Millions)	Traditional Delivery Model	P3 Delivery Model	% Variance	Comment
Equipment O&M	$473.76	$0.00	NA	- The Traditional Delivery Model Equipment O&M costs equate to 11% of the overall costs annually. - Costs for the P3 Delivery Model are incorporated in the Tolling & ITS – Transaction based costs.
WSP Enforcement	$574.68	$604.65	-5%	- Minor differences which account for differences in the year that operations commence.
Transaction Based CSC Costs	$967.66	$0.00	NA	- The Traditional Delivery Model Transaction Based CSC Costs vary between $0.24 - $0.44 per transaction over the project's life (reduces initially from $0.39 to $0.24 per transaction within the first 7 years and then increases yearly until it reaches $0.44 per transaction where it is then constant for the remaining years of the project's life). - Costs for the P3 Delivery Model are incorporated in the Tolling & ITS – Transaction based costs.
Fixed Back Office Costs	$598.53	$0.00	NA	- The Traditional Delivery Model Fixed Back Office Costs follow a similar trend to the Transaction Based CSC Costs and vary between $0.12 - $0.30 per transaction over the project's life (reduces initially from $0.22 to $0.12 per transaction within the first 7 years and then increases yearly until it reaches $0.30 per transaction where it is then constant for the remaining years of the project's life). - Costs for the P3 Delivery Model are incorporated in the Tolling & ITS – Transaction based costs.
Credit Card Fees	$857.61	$662.01	23%	- The Traditional Delivery Model Credit Card Fees are based on a percentage of revenue, this percentage varies largely between 2.55% and 2.62% over the project's life however is at 4.16% of the revenue in year 2021. On average, Credit Card Fees are 2.65% of the revenue. - The P3 Delivery Model Credit Card Fees are based on 2.5% of the Revenue. The assumed percentage of revenue for Credit Card Fees remains constant throughout the project's life.
Uncollectible Accounts	$1,490.64	$1,489.52	0%	- Minor differences which account for differences in the year that operations commence and the associated % of revenue assumed for uncollectible accounts. - The Traditional Delivery Model assumed % of revenue starts at 7% and reduced to 5% within the first 8years of the project's life. - The P3 Delivery Model assumes a constant 4.5% of the revenue throughout the project's life.
Tolling & ITS - Transaction based costs*	$0.00	$203.85	NA	- The P3 Delivery Model Tolling & ITS - Transaction based costs are based on a number of assumptions and can be broken down into Transponder Transaction costs and Video Tolling costs. These costs are all inclusive costs and account for the same set of activities and associated costs covered collectively by three of the PSC categories namely Equipment O&M, Transaction based CSC (Customer Service Centre) Costs and Fixed Back Office Costs. - Transponder Transaction Costs are based on an all inclusive cost per transaction of $0.05. This cost per transaction remains constant throughout the project's life. It has been assumed that initially 80% of all transactions are transponder based transactions and that this assumed % increases to 95% within the first 8 years of the project's life and remains constant thereafter.

				- Video Tolling costs vary over time and are based on the assumed % of transactions requiring video tolling (initially 20% reducing to 5% over an eight year period) and a varying cost per transaction for video tolling (reduces from $3.00 to $0.25 over an eight year period).
Total Tolling & ITS Cost over Concession	$4,963	$2,960	40%	- The average all inclusive cost per transaction (excluding Uncollectables) is: - $1.13 For the Traditional Delivery Model; and - $0.35 For the P3 Delivery Model
I-5/SR 509 Extension Tolling Costs (Millions)	**Traditional Delivery Model**	**P3 Delivery Model**	**% Variance**	**Comment**
Equipment O&M	$143.57	$0.00	NA	- The Traditional Delivery Model Equipment O&M costs equate to 7% of the overall costs annually. - Costs for the P3 Delivery Model are incorporated in the Tolling & ITS – Transaction based costs.
WSP Enforcement	$5.84	$5.81	1%	- Minor differences.
Transaction Based CSC Costs	$903.72	$0.00	NA	- The Traditional Delivery Model Transaction Based CSC Costs vary between $0.42 - $0.78 per transaction over the project's life. It reduces initially from $0.46 to $0.42 per transaction within the first 14 years and then increases yearly until 2070 where it reaches $0.78 per transaction. - Costs for the P3 Delivery Model are incorporated in the Tolling & ITS – Transaction based costs.
Fixed Back Office Costs	$320.31	$0.00	NA	- The Traditional Delivery Model Fixed Back Office Costs are initially $019 per transaction reducing immediately to $0.14 per transaction the second year of the project's life where it remains for the next 22 years at which point it increases yearly until 2070 where it reaches $0.30 per transaction. - Costs for the P3 Delivery Model are incorporated in the Tolling & ITS – Transaction based costs.
Credit Card Fees	$216.94	$229.38	-6%	- The Traditional Delivery Model Credit Card Fees are based on a percentage of revenue, this percentage varies largely between 2.28% and 2.42% over the project's life. On average, Credit Card Fees are 2.4% of the revenue. - The P3 Delivery Model Credit Card Fees are based on 2.5% of the Revenue. The assumed percentage of revenue for Credit Card Fees remains constant throughout the project's life.
Uncollectible Accounts	$359.97	$412.88	-15%	- Minor differences which account for differences in the year that operations commence and the associated % of revenue assumed for uncollectible accounts. - The Traditional Delivery Model assumed % of revenue starts at 5% and reduces to 3.8% within the first 16 years of the project's life and then increases annually until it reaches 4.1% where it then remains constant. - The P3 Delivery Model assumes a constant 4.5% of the revenue throughout the project's life.
Tolling & ITS - Transaction based costs*	$0.00	$155.51	NA	- The P3 Delivery Model Tolling & ITS - Transaction based costs are based on a number of assumptions and can be broken down into Transponder Transaction costs and Video Tolling costs. These costs are all inclusive costs and account for the same set of activities and associated costs covered collectively by three of the PSC categories namely Equipment O&M, Transaction based CSC (Customer Service Centre) Costs and Fixed Back Office Costs. For the P3 Delivery Model the average cost per transaction is $0.10 over the project's life (initially $0.64 reducing to $0.06 per transaction). - Transponder Transaction Costs are based on an all inclusive cost per transaction of $0.05. This cost per

				transaction remains constant throughout the project's life. It has been assumed that initially 80% of all transactions are transponder based transactions and that this assumed % increases to 95% within the first 8 years of the project's life and remains constant thereafter. - Video Tolling costs vary over time and are based on the assumed % of transactions requiring video tolling (initially 20% reducing to 5% over an eight year period) and a varying cost per transaction for video tolling (reduces from $3.00 to $0.25 over an eight year period).
Total Tolling & ITS Cost over Concession	$1,950	$803	59%	- The average all inclusive cost per transaction (excluding Uncollectables) is: - $0.83 For the Traditional Delivery Model; and - $0.21 For the P3 Delivery Model
I-5 Columbia River Crossing Tolling Costs (Millions)	**Traditional Delivery Model**	**P3 Delivery Model**	**% Variance**	**Comment**
Equipment O&M	$350.77	$0.00	NA	- The Traditional Delivery Model Equipment O&M costs equate to 9% of the overall costs annually. - Costs for the P3 Delivery Model are incorporated in the Tolling & ITS – Transaction based costs.
WSP Enforcement	$42.33	$41.92	1%	- Minor differences.
Transaction Based CSC Costs	$1,285.27	$0.00	NA	- The Traditional Delivery Model Transaction Based CSC Costs vary between $0.50 - $0.68 per transaction over the project's life (reduces initially from $0.68 to $0.50 per transaction within the first 8 years and then slowly increases reaching $0.57 per transaction in the remaining years of the project's life). - Costs for the P3 Delivery Model are incorporated in the Tolling & ITS – Transaction based costs.
Fixed Back Office Costs	$695.11	$0.00	NA	- The Traditional Delivery Model Fixed Back Office Costs follow a similar trend to the Transaction Based CSC Costs and reduces from $0.22 to $0.19 per transaction over the first 3 years the project's life and slowly increases reaching $0.29 per transaction in the remaining years of the project's life. - Costs for the P3 Delivery Model are incorporated in the Tolling & ITS – Transaction based costs.
Credit Card Fees	$559.89	$428.66	23%	- The Traditional Delivery Model Credit Card Fees are based on a percentage of revenue; this percentage is 4.5% for the first year of operations and then reduces to 3.4% and remains constant throughout the project's life. - The P3 Delivery Model Credit Card Fees are based on 2.5% of the Revenue. The assumed percentage of revenue for Credit Card Fees remains constant throughout the project's life.
Uncollectible Accounts	$796.24	$771.58	3%	- Minor differences which account for differences in the year that operations commence and the associated % of revenue assumed for uncollectible accounts. - The Traditional Delivery Model assumed % of revenue is 4.9% of the project's life. - The P3 Delivery Model assumes a constant 4.5% of the revenue throughout the project's life.
Tolling & ITS - Transaction based costs*	$0.00	$257.30	NA	- The P3 Delivery Model Tolling & ITS - Transaction based costs are based on a number of assumptions and can be broken down into Transponder Transaction costs and Video Tolling costs. These costs are all inclusive costs and account for the same set of activities and associated costs covered collectively by three of the PSC categories namely Equipment O&M, Transaction based CSC (Customer Service Centre) Costs and Fixed Back Office Costs.

				- Transponder Transaction Costs are based on an all inclusive cost per transaction of $0.05. This cost per transaction remains constant throughout the project's life. It has been assumed that initially 80% of all transactions are transponder based transactions and that this assumed % increases to 95% within the first 8 years of the project's life and remains constant thereafter. - Video Tolling costs vary over time and are based on the assumed % of transactions requiring video tolling (initially 20% reducing to 5% over an eight year period) and a varying cost per transaction for video tolling (reduces from $3.00 to $0.25 over an eight year period).
Total Tolling & ITS Cost over Concession	$3,729	$1,499	59%	- The average all inclusive cost per transaction (including credit card fees, uncollectables etc.) is: - $1.02 For the Traditional Delivery Model; and - $0.24 For the P3 Delivery Model
SR 167 Tacoma to Edgewood Tolling Costs (Millions)	**Traditional Delivery Model**	**P3 Delivery Model**	**% Variance**	**Comment**
Equipment O&M	$77.96	$0.00	NA	- The Traditional Delivery Model Equipment O&M costs equate to 5% of the overall costs annually. - Costs for the P3 Delivery Model are incorporated in the Tolling & ITS – Transaction based costs.
WSP Enforcement	$5.84	$5.89	-1%	- Minor differences which account for differences in the year that operations commence.
Transaction Based CSC Costs	$695.46	$0.00	NA	- The Traditional Delivery Model Transaction Based CSC Costs vary between $0.34 - $0.36 per transaction for the first 17 years project's life, it then increases annually reaching $0.65 in year 2070. - Costs for the P3 Delivery Model are incorporated in the Tolling & ITS – Transaction based costs.
Fixed Back Office Costs	$410.17	$0.00	NA	- The Traditional Delivery Model Fixed Back Office Costs follow a similar trend to the Transaction Based CSC Costs and remains at $0.17 per transaction for the first 10 years the project's life. It then increases steadily reaching $0.41 per transaction in the final year of the project life. - Costs for the P3 Delivery Model are incorporated in the Tolling & ITS – Transaction based costs.
Credit Card Fees	$183.56	$161.31	12%	- The Traditional Delivery Model Credit Card Fees are based on 2.8% of the Revenue. The assumed percentage of revenue for Credit Card Fees remains constant throughout the project's life. - The P3 Delivery Model Credit Card Fees are based on 2.5% of the Revenue. The assumed percentage of revenue for Credit Card Fees remains constant throughout the project's life.
Uncollectible Accounts	$304.35	$290.36	5%	- Minor differences which account for differences in the year that operations commence and the associated % of revenue assumed for uncollectible accounts. - The Traditional Delivery Model assumed % of revenue starts at 6.2% and reduces to 4.8% over the project's life. - The P3 Delivery Model assumes a constant 4.5% of the revenue throughout the project's life.
Tolling & ITS - Transaction based costs*	$0.00	$139.78	NA	- The P3 Delivery Model Tolling & ITS - Transaction based costs are based on a number of assumptions and can be broken down into Transponder Transaction costs and Video Tolling costs. These costs are all inclusive costs and account for the same set of activities and associated costs covered collectively by three of the PSC categories namely Equipment O&M, Transaction based CSC (Customer Service Centre) Costs and Fixed Back Office Costs.

				- Transponder Transaction Costs are based on an all inclusive cost per transaction of $0.05. This cost per transaction remains constant throughout the project's life. It has been assumed that initially 80% of all transactions are transponder based transactions and that this assumed % increases to 95% within the first 8 years of the project's life and remains constant thereafter. - Video Tolling costs vary over time and are based on the assumed % of transactions requiring video tolling (initially 20% reducing to 5% over an eight year period) and a varying cost per transaction for video tolling (reduces from $3.00 to $0.25 over an eight year period).
Total Tolling & ITS Cost over Concession	$1,677	$597	64%	- The average all inclusive cost per transaction (including credit card fees, uncollectables etc.) is: - $0.83 For the Traditional Delivery Model; and - $0.20 For the P3 Delivery Model

6.2.9 Detailed Discussion of Risk Register Assessment Process

6.2.9.1 Cost Base

The cost base is the project cost element that is most specific to the risk category item being reviewed e.g. if the risk item is predominantly a construction related item then the cost base would be the construction cost. Likewise if the risk item is a design related item then the cost base would be the design costs.

Of critical importance within the risk register is the recognition that each of the primary cost base elements (design, construction, capital maintenance and operational costs) will be different under the two different procurement strategies. For example operation and maintenance costs under the P3 method incorporate efficiencies and cost savings a private partner may be able to realize under a P3 procurement as compared to business as usual costs estimated under the traditional approach.

6.2.9.2 Probability

The probability of a risk is the likelihood of the risk occurring expressed as a percentage on a scale of 0% to 100% with 100% probability recognizing that there is absolute certainty that the risk event will take place and 0% probability recognizing that the risk event will never take place. Probability assumptions are qualitative and based on the information available at the time of the assessment.

6.2.9.3 Assumed Impact of Risk

Assumed impact is the most likely cost impact that would accrue should the risk occur. This is expressed as a % of the Value Base specific to that item. For example, if it is believed that a cost of $5,000,000 would accrue were a risk to occur, and the Value base is $100,000,000, then 5% would be inserted against this item. Risk impact assumptions are qualitative and based on the information available at the time of the assessment.

6.2.9.4 Risk Allocation

An initial assessment of where the responsibility for carrying the specific risk lies is made. For example, if the risk is believed to be wholly carried by the public agency, under the traditional procurement route, then a "1" would be inserted in the required risk register column. If the risk is believed to be shared then a "2", or if the sole responsibility is carried by the contractor / private partner then a "3" would be inserted. The risk cost sheet then populates the appropriate sheet cells with the calculated Risk Allocation Quantified value. While there is no universal risk allocation for any one P3 project (generally this risk allocation is tailored to the specifics of a given project),

assumptions have been made according to what is considered a “typical” risk sharing seen in DBFOM projects and in design build projects. For instance, it is assumed that under both procurement methods, most risks related to right-of-way acquisition will be borne by the public agency. However under the P3 procurement, long term capital and operational risks will be borne by the private partner while under a traditional design build procurement method, those same risks will be borne by the public agency.

6.2.9.5 Risk Allocation Quantified

The risk allocation quantified value is a simple formula that uses the three risk register inputs and is as follows;

Cost Base x Probability of Risk x Assumed Impact of Risk

This calculated value is placed into the relevant cell determined by the risk allocation designation given to that particular risk. So if a “1” was placed against a specific risk item then this calculated value would be placed under the public agency’s column heading etc.

The original risk cost model intent was to carry out a formal Risk Workshop for each of the individual five projects under consideration, however, during discussions with the client it was concluded that this may place an onerous time constraint of all of the individual project team members concerned. It was thus decided that a more limited risk discussion would take place, for each project, during the two day Consultant Team Meetings that were to take place on September 15th and 16th, 2011 at WSDOT offices in Olympia, WA where time was allocated for these risk discussions.

During the Consultant Team Meetings, each project team presented their individual projects to the Consultant Team. During these presentations, it became apparent that project risk evaluations on each project had already been carried out in detail as an integral part of WSDOT project delivery process. As such in order not to duplicate work effort, it was decided, that for each project, the Consultant Team would issue to WSDOT, blank risk registers into which the relevant Project Manager would populate already identified project risks. The project manager would then score these risks, assuming just a traditional procurement approach, for probability of risk occurrence, for the assumed impact of the risk should it occur and for the risk allocation. Each risk register would then be returned to the Consultant Team and the alternate finance and procure side of the risk cost model would then be completed.

The above methodology was applied to the four main projects that survived the initial selection criteria evaluation, specifically the SR 167 Extension, I-5 Columbia River Crossing, I-405/SR 167 Express Toll Lanes, and the SR 509 Extension. For each of these projects, the analysis provides a comparison of Risk Transfer from one procurement method to another as well as estimated risk costs.

6.3 Definitions of Risk Categories

Each one of the risk categories identified below relates to a capital project from master planning through construction, and includes a 30 year maintenance and operations term. Each capital project, under the Design Build Finance Maintain model, requires its own individual analysis depending upon at which point in the process the risk study is carried out.

1.00 Policy/Strategy – the cost base for this category is the total contract value, excluding financing		
1.01	Planning, process and allocation practices	The risk that internal government approvals are not received in a timely manner, which ultimately delays the issuing of bids.
1.02	Changes in government funding policies	The risk that the method of funding the project is changed by the current or subsequent governments
1.03	Deal termination due to government policy changes	Risk that a change in law, government policy or protocols leads to a change in the process or to termination of the process
Design, Bid and Construction		
2.00 Design and Bid – the cost base for this category is the construction and design portion of the contract value		
2.01	Technology selection	The risk that changes in equipment selection and/or specification could affect the design requirements (room sizes, space requirements, power supply, cooling requirements) and could lead to increased costs.
2.02	Owner's Project Management Team Experience	Risk that, during design phases, the Project Management Team does not have sufficient experience to design and manage the procurement model. Risk of inadequate information flow within the Project Team. It is assumed that under DBFM, the Owner's Project Management Team will be an integral team member..
2.03	Sign off by user groups incl. F.F.&E./I.T.	Risks that user groups wish to revisit the design of their program space. Risk that approvals for F.F. & E. and I.T. components are not forthcoming. Risk that this could result in delays in the design process and ultimately delay the issue of the bid.
2.04	Incomplete RFP Bid Documentation	Risk that the RFP bid documentation is not complete. This will result in increased addenda and could give a sense of uncertainty to bidders, resulting in reduced tolerance to risk resulting in higher bids.
2.05	Uncoordinated Information	Risk that bid documentation is uncoordinated. This will result in increased addenda and could give a sense of uncertainty to bidders, resulting in reduced tolerance to risk resulting in higher bids.
2.06	Financial capability of Proponent	Risk that proponent does not have the financial resources or experience with the procurement model. The likelihood of one of the entities or joint-venture partners of the proponent becoming unable to fulfill its contractual obligations are greater under the DBFM model, due to the number of parties involved and the complexity of such a financial arrangement. Under the traditional model the components would be procured separately, thereby posing no risk to the other parties.
2.07	Bidding Competition Available -GCs	Risk that the lack of pre-qualified or interested general contractors results in smaller than expected number of bids. This could result in higher bid prices.
2.08	Bidding Competition Available -Sub trades	Risk that lack of pre-qualified or interested subcontractors results in smaller than expected number of bidders. This could result in higher general contract bid prices.
2.09	Scope Changes by Owner -During RFP	Risk that scope of work is changed by the Owner during the RFP process. This could lead to a lack of confidence in the whole process. A reduced tolerance for risk exhibited by the bidders could result in higher tender prices

2.1	Contract Award / Commercial Close Delay	Risk that award of contract is delayed.
2.11	Financial Close Delay	Risk that Commercial Financial Close is delayed.
3.00 Site Conditions/Environmental -The cost base for this category is the construction and design portion of the contract value		
3.01	Relocation of Municipal Services	Risk that a relocation of municipal services could result in delays or additional costs. Risk that existing Utility services are inadequate. If Owner has taken responsibility for provision of services then this could result in a change of scope.
3.02	Existing Condition Information provided by the Province	Risk that reports provided to bidders is inadequate and does not sufficiently describe the existing building conditions. This could result in the contractor having a claim for additional time and costs.
3.03	Geotechnical	Risk that Geotechnical reports provided to bidders are incomplete. This could result in the contractor having a claim for additional time and costs. Magnitude of risk will vary depending on particular site conditions and foundation designs.
3.04	Environmental Condition of Site	Risk that Environmental reports provided to bidders contain errors. This could result in the contractor having a claim for additional time and costs. Magnitude of risk will vary depending on particular site conditions. Bidders will insist that they can rely upon the environmental reports provided in the bid documentation.
3.05	Archaeological	Risk that archaeological finds will result in a delay and increased costs.
3.06	Construction activity results in contamination	Risk that construction activity results in contamination of the site. This could result in temporary closure of the site and delay in contract completion.
4.00 Site Construction-The cost base for this category is the construction and design portion of the contract value		
4.01	Weather	Risk that delays occur due to adverse weather conditions.
4.02	Construction Delays	Risk that delays in the construction schedule could result in a delay to the handover of the facility. Delays will result in additional costs for the contractor. This could have detrimental effect on the liquidity of the contractor and ultimately result in bankruptcy. A delay in handover could result in additional or duplicate operating costs for the Owner. In a traditional project, delays extend the schedule, under the DBFM the proponent will attempt to mitigate delays.
4.03	Failure to build to design	Risk that project is not constructed in accordance with the design documents. This could result in remedial work, defective elements requiring earlier replacement or catastrophic failure.
4.04	Acceleration to maintain schedule – Construction Impact	Risk associated with the construction contractor having to accelerate the schedule to achieve the completion date. This could result in additional costs for the construction contractor but could also result in a substantial reduction in the quality of the works due to sub trades working longer hours.
4.05	Acceleration to maintain schedule – Labor Impact	Risk associated with the construction contractor having to accelerate the schedule to achieve the completion date. This could result in additional costs for the construction contractor but could also result in a substantial reduction in the quality of the works due to sub trades working longer hours
4.06	Construction safety obligations	Risk associated with increased labor costs for the construction contractor having to accelerate the schedule to achieve the completion date.
4.07	Force Majeure	Risk that the construction contractor does not satisfy its safety obligations resulting in an increased incidence of lost work days for site labor. This could affect the overall schedule and profitability of the project for the construction contractor.
4.08	Adequacy of Insurance	Risk that the insurance provided by the construction contractor is not sufficient for a particular occurrence. Risk with adequacy of Bonding, especially major sub-trades. Risk of Bonding capabilities of General Contractors and sub-contractors.

4.09	Acute Market Conditions	Risk associated with construction costs being higher than estimated by the construction contractor. This results in higher costs and a reduced profit margin for the contractor.
4.1	Deficiencies as Work Progresses	Risk that defects are discovered during the construction of the project. This results in increased financial pressure on subcontractors and could result in reduced profit margins or even bankruptcy for the subcontractor.
4.11	Latent Defects	Risk that latent defects are discovered after substantial completion.
4.12	Resource Availability; equipment	Risk that equipment resources are not available when required for the project, resulting in delay and increased costs for the construction contractor.
4.13	Resource Availability; materials, cement, steel , etc.	Risk that critical materials may not be available when required, resulting in delays and additional costs. Risk associated with lead time for materials, impact of major commercial and institutional projects sourcing the same materials especially Mechanical Head end equipment and Electrical distribution equipment.
4.14	Resource Availability; Labor	Risk that labor resources are not available when required for the project, resulting in delay and increased costs for the construction contractor.
4.15	LEED / Other Performance Requirements	Risk associated with the contractor's obligation to meet the LEED requirements stated in the contract documents.
4.16	On-Site Security during Construction	Risk that on-site security is inadequate resulting in theft or damage. This will involve additional costs for the contractors and, in some cases, a delay to the schedule.
4.17	Non-Payment: Cost & Delay to Substantial Completion	Risk that the Finance Company defaults and is unwilling to meet financial obligations, resulting in delays to substantial completion.
4.18	Construction Contractor Default	Risk that the construction contractor defaults and has to be replaced. This could result in delays to the delivery of the asset and additional costs for the Owner. In DBFM the Consortium Lead and/or the Lender would take over in this situation.
4.19	Pre-bid material	Risk that pre bid materials are not procured early enough and result in delays to the overall schedule.
4.2	Project Management Team Experience (Contractor)	Risk that the contractor's Project Management Team does not have sufficient experience to manage the construction contract. Risk that management team is not familiar with the procurement model. Risk that Project management team are unfamiliar with the particular challenges of the type of structure to be constructed (for example, road versus a tunnel). Risk of inadequate information flow within the Project Team. In traditional model, if the project is delayed due to the Contractor's inexperience, the Owner will accept the delay. In DBFM, the Proponent receives a penalty from the Lender for delays and, therefore, has its 'A' team assigned to the project.
4.21	Project Management Team Experience (Owner / State)	Risk that the Owner / State's Project Management Team does not have sufficient experience to manage the construction contract. Risk that management team is not familiar with the procurement model. Risk of inadequate information flow within the Project Team.
4.22	Scope Changes by Owner -During Construction	Risk that the scope of work is changed by the Owner during the construction period.
4.23	Cash Allowance Amounts	The risk that the amount included in the contract documents for cash allowances is insufficient. Cost increases will result in a higher overall cost to the Owner. In traditional, cash allowances are included for items not fully designed in detail. In DBFM, these incidents are mitigated.
4.24	Design Co-Ordination / Completion	Risk that change orders are issued during construction due to design coordination/design completion/design gaps. Includes the risk that method of pricing of change orders is not fully prescribed in the contract resulting in change order costs exceeding estimated amounts.
4.25	Construction variations due to equipment selection	Risk that there are construction scope changes as a result of equipment selection by the Owner. This could result in additional costs for the construction contractor. Under DBFM, although the risk has been mitigated by transferring the co-ordination to the contractor, there still remains inherent risk in Owner changes.
4.26	Impact on Schedule due to F.F.&E.	Risk that equipment selection changes and construction variations as a result, could impact the schedule. Under DBFM, although the risk has been mitigated by transferring the co-ordination to the contractor, there still remains inherent risk in Owner changes.

4.27	General Strike	Risk that a general strike could delay the overall schedule and result in additional costs.
4.28	Strike Specific to Contractor	Risk that a strike specific to the construction site could affect schedule and result in additional costs.
5.00 Equipment Risk (F.F. &E.)-The cost base for this category is the equipment value, which is not traditionally included in the contract		
5.01	Owner Procurement / Project Co.	Risk that equipment procured by the Owner is not suitable for the required use, or is not delivered in compliance with the construction contractor's schedule.
5.02	Equipment Selection Changes	Risk that there are changes to the selected equipment by the Owner resulting in delays and additional costs for the construction contractor.
6.00 Permit and Approvals -The cost base for this category is the construction and design portion of the contract value		
6.01	Municipal Approvals	Risk that municipal approvals delay commencement of construction.
6.02	Building Permits	Risk that there is a delay in providing the Building Permit to the construction contractor and this results in an extension of time for the construction contractor with resultant additional costs.
6.03	Other Permits	Where Other Permits are to be obtained by the Owner; then any delay in providing those Permits to the construction contractor would result in an extension of time for the construction contractor with resultant additional costs.
6.04	Building Code Design	The risk that the design does not meet current building code. \
6.05	Building Code Construction	The risk that construction does not meet current building code.
6.07	Utilities Company Fees	The risk that Utility Company fees are not included in the contract sum. The contract documents should clearly state which party is to include for utility company fees.
6.08	Title/Access/Title Encumbrances	Risk that the construction contractor does not comply with all the encumbrances associated with the site.
7.00 Completion/Commissioning -The cost base for this category is the construction and design portion of the contract value		
7.01	Commissioning Delays	Risk that commissioning delays could result in a delay to the handover of the facility. Delays will result in additional costs for the contractor. This could have detrimental effect on the liquidity of the contractor and ultimately result in bankruptcy. A delay in handover could result in additional or duplicate operating costs for the State.
7.02	Deficiencies	Risk that there are excessive deficiencies upon substantial completion resulting in operational difficulties and overall client satisfaction.
7.03	Handover Agreement	Risk that ambiguities exist in the handover agreement that could lead to disagreements at a later stage.
Maintenance		
8.00 Lifecycle and Residual Risk – the cost base for this category is the maintenance portion of the contract value		
8.01	General capital maintenance/LCC schedule	Risk that capital maintenance to the structure and systems of the building is not performed when appropriate to sustain the capital value of the property. Often in the private sector the landlord has no incentive to provide quality maintenance towards the latter period of the term where a special purpose build is involved. Under DBFM the risk and responsibility is transferred to Project Co. and Project Co. has an incentive to maintain the asset to meet their hand back obligations. An example of general capital maintenance is a scheduled bridge bearing replacement.

8.02	Preventative/periodic maintenance	Risk that periodic maintenance of the structure is not adequate to sustain the service requirements. This type of risk increases the probability that the structure under performs, causing higher utility costs, and the residual value depreciates more than if it was properly maintained. Government has a tendency to under-fund budgets for structure maintenance and improvements, while the private sector tends to do the appropriate repairs to protect its investment where market alternatives exist. An example of preventative / periodic maintenance would be annually servicing mechanical and electrical systems and major equipment.
8.03	Unscheduled emergency maintenance	Risk that emergency maintenance is required that affects the life safety & immediate operation of the structure. The impact of this risk impacting the project is lower under DBFM because the Proponent is more likely to carry out general capital maintenance and preventative maintenance due to performance obligations.
8.04	Overlooked defects	Risk associated with design errors related to project details. Risk that overlooked design, construction, and manufacturing defects or design elements will cause unexpected problems and as a result increased capital repair expenditures/costs.
8.05	Technology changes	Risk involving technology changes that could impact the delivery of automation systems, etc. Variance from operational budget due to changes required to address technology changes that will enhance systems, including mechanical, electrical, life safety, building automation systems, security systems, etc. This risk is typically accounted for in the structural reserve.
8.06	Major structure reconfiguration and improvements	Risk associated with required technology changes, safety and security, and any other changes required by the Government that may lead to major alterations to the structure, including mechanical and electrical components.
8.07	Occupancy requirements	Risk associated with legislative and/or government occupancy requirements. Changes to requirements may require changes to a base building and/or tenant improvements if a building is involved. This could impact capital repairs and/or tenant improvement costs. Government has an obligation to ensure that required changes are implemented immediately; however, may be less willing to pay for the changes for leased premises. In DBFM, the Proponent is responsible to ensure occupancy requirements are met
8.08	Lifecycle	Lifecycle maintenance costs are higher than projected. The risk and associated costs of maintaining the structure and systems in good working order and in a mode of delivery of service or function required. This is the risk that sub-systems identified for lifecycle maintenance would require renewal costs higher or sooner than estimated or fail before renewal. This risk includes variance from operational budget due to request changes to address revised codes and/or local authority requirements, change in material, change in service delivery requirements, deferral of replacement schedules. Includes all exterior and site: building envelope if applicable, landscaping, irrigation, storm and sanitary, exterior signage, bridges, underpasses, paving, tunnels, etc.
8.09	Default of Property Management	Risk of bankruptcy or default of asset maintenance company.
8.1	Incomplete RFP Bid Documentation	Risk that the RFP bid documentation is not complete. This will result in increased addenda and could give a sense of uncertainty to bidders, resulting in reduced tolerance to risk resulting in higher bids.
8.11	Uncoordinated Information	Risk that bid documentation is uncoordinated. This will result in increased addenda and could give a sense of uncertainty to bidders, resulting in reduced tolerance to risk resulting in higher bids.
8.12	Asset Residual	Risk in connection with residual value of the asset at the end of the term. Under the DBFM model the contract provision calls for very stringent requirements for handover procedure, hence the probability of it posing a financial risk to the proponent is greater. However, through the AFP model the impact would be less due to the mandatory LCC plans.
9.00 Operational -The cost base for this category is the operation portion of the contract value		
9.01	Supplier / Contract Management / Outsourcing and Structure and Systems including Maintenance	Supplier and Contract Management Risk is the risk of any contractor, outsourced serviced provider, or supplier failing to provide products or services as agreed. It is also the risk that supplier could walk away / breach the contract. It is also the risk of the State not managing its multitude of contracts in a systematic, efficient and timely manner. This risk also relates to the impact of forming strategic alliances with inappropriate parties due to incomplete information or an inadequate or inappropriate selection process. This risk can result in disruptions in service and program delivery, missed deadlines, increased costs to the State and increased exposure to liability.
9.02	Technological Obsolescence and Upgrade	Risk of the contracted services and its method of delivery not keeping pace, from a technological perspective, with specified requirements and risk associated with the need for upgrade of the assets over the term of the project to meet performance requirements.

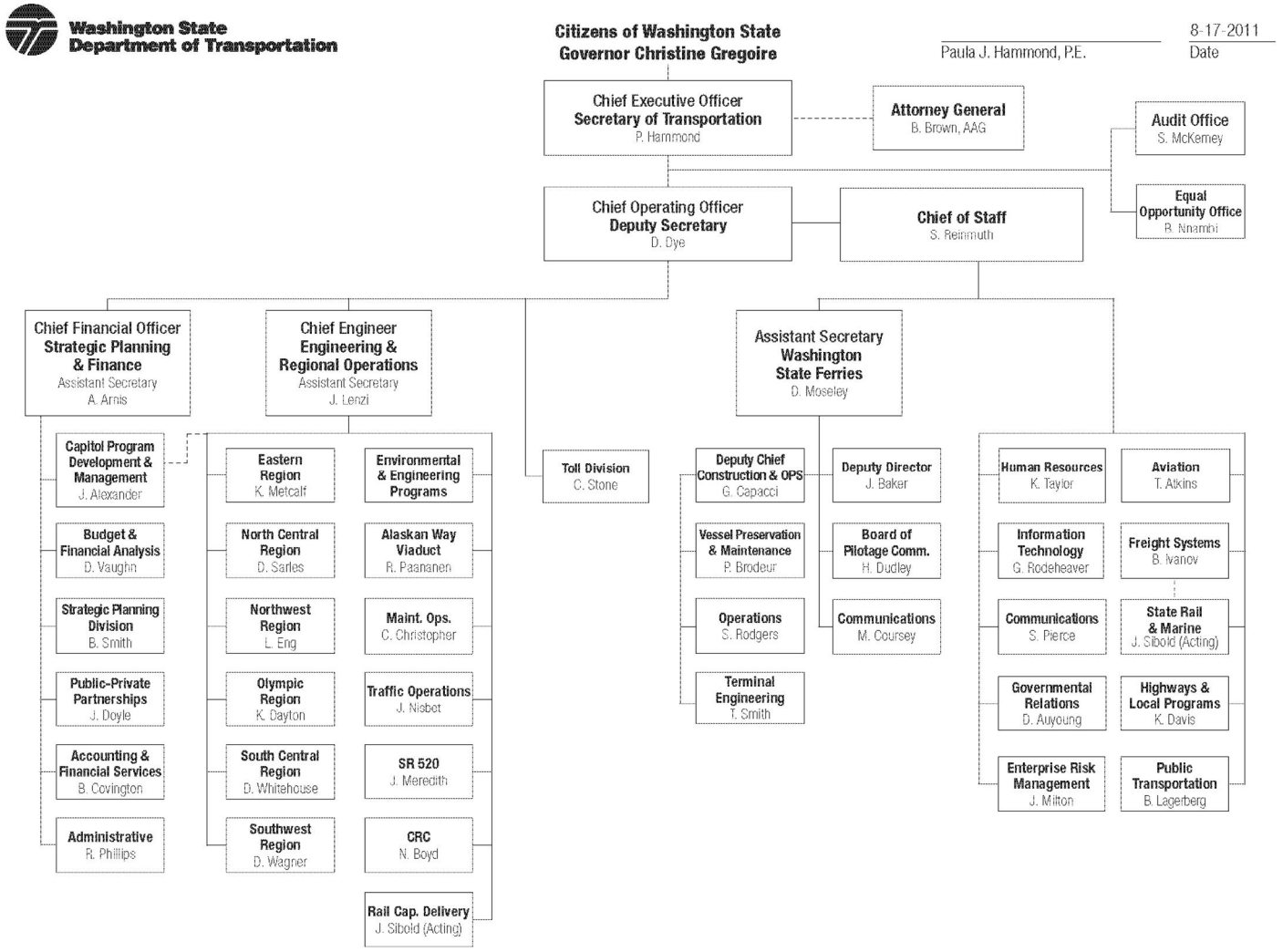
9.03	Operation of Asset for Occupant Use	Risk that appropriate performance specifications do not suit required standards of intended users. Failure to provide services to required standards and quantity.
9.04	Health & Safety	The service is not operated in compliance with safety requirements.
9.05	Quality Risk	Risk that government will change asset quality standards. This could negatively impact operational costs of the structure service provider, including one-time expenses/costs to upgrade the structure to meet required quality standards.
9.06	Un-anticipated Operating Costs	Risk that operating costs will be higher than projected due to inflation factor or because of inaccurate estimates and assumptions, affecting utility and maintenance costs. Amongst the factors contributing to higher than projected operating costs are environmental issues (air quality), changes to structure design, security supporting systems, and others.
9.07	Labor Relations -Disputes	The risks of adversarial union/management relations or inability to settle contract negotiations in a timely, fiscally responsible manner. The risk of not being able to put adequate structures in place (in a timely fashion or not at all) due to contract limitations. This risk can lead to strikes, decreased employee morale and business service interruptions.
9.08	Recruiting, Retention And Employee Satisfaction	Recruiting and retention risk is the failure to appropriately identify, screen, hire and retain the most competent, individual for the job. Failure to manage this risk can lead to low productivity, loss of key personnel. The inability to attract these people may be a function of skill shortages in the marketplace, non-competitive compensation packages, high demand for certain skills, or a perception that the organization is not a good place to work.
9.1	Professional and Legal Liability	The risk that key staff of operating facility may be subject to litigation and claims related to negligence. Risk may affect operations of facility, causing delays in delivering services to public and, as a result, damaging reputation of the Ministry.
9.1	Incomplete RFP Bid Documentation	Risk that the RFP bid documentation is not complete. This will result in increased addenda and could give a sense of uncertainty to bidders, resulting in reduced tolerance to risk resulting in higher bids.
9.11	Uncoordinated Information	Risk that bid documentation is uncoordinated. This will result in increased addenda and could give a sense of uncertainty to bidders, resulting in reduced tolerance to risk resulting in higher bids.
9.12	Client / Customer / Public Satisfaction	Inability to meet client/customer/public expectations, a lack of focus on specifics of the project and associated service requirements. Key contributors to this risk can include failure to respond in a prompt and efficient manner, failure to deliver services in an efficient and timely manner, lack of client/customer confidentiality, inadequate or inappropriate services delivery.
10.00	**Project Agreement The cost base for this category is the total contract value, excluding financing**	
10	Ambiguities in Agreement	Risk that ambiguities exist in the project agreement that could lead to disagreements at a later stage.
10	Form of Contract	Risk that ambiguities exist in the contract that could lead to disagreements at a later stage.
10	Termination For Convenience	Risk that government(s) will terminate the contract prior to the expiration of the term, for convenience – i.e., not for cause thus resulting in the loss of opportunity by the partner.
10	Innovation Risk	Risk of not implementing the Project optimally. There is a risk that innovative approach, using an AFP model, to deliver this type of project will not achieve the desired outcome. Risk that make up of consortia may not be most cost effective / efficient.

6.4 Table of Special P3 Governmental Authorities

Government	Virginia	California	Puerto Rico	British Columbia
	VA Code, Title 56, Public Service Companies, Chapter 22 – Public-Private Partnership Act of 1995	CA Streets & Highways Code, § 143	PR Laws, S.B. 469, Act No. 29 (2009)	Partnerships BC (see www.partnershipsbc.ca for all references)
P3 Authority:	Office of Transportation Public-Private Partnerships Works in coordination with (and reports to) Secretary of Transportation. Cooperates with all five VA transportation agencies.	California Transportation Commission (CTC) to approve P3 projects nominated by Caltrans and regional transportation agencies (RTAs); selection from project nominations to occur at regularly scheduled public hearings Public Infrastructure Advisory Commission (PIAC) (est. in the Business, Transportation and Housing Agency) advises Caltrans and RTAs in developing transportation projects through performance-based infrastructure partnerships.	Puerto Rico Public-Private Partnerships Authority (P3A), an affiliate of the Government Development Bank for PR, is the sole government entity authorized and responsible for implementing the public policy on partnerships and for determining the functions, services and facilities for which such partnerships are to be established (Act No. 29, § 6(b).)	Goal is to structure and implement P3 solutions which serve the public interest and encourage the development of the partnerships market in BC. Goal is to structure and implement P3 solutions which serve the public interest and encourage the development of the partnerships market in BC. Provides full spectrum of services ranging from business planning and procurement management to advisory services during the design and construction and operations phases (see below for more detail),
Role of Authority	The responsible public entity (agency or institution of Commonwealth of VA, not PPTA) may grant approval for development or operation of a transportation facility if it determines that it serves 'public purpose' defined in § 56-560(c) (§ 56-560(A).); may also solicit projects by requesting proposals (§ 56-560(B).) PPTA is responsible for overseeing projects procured under this legislation across all transportation modes. If an unsolicited project proposal passes detailed screening, PPTA will issue solicitation under a competitive review procurement process.	CTC has jurisdiction over state transportation planning and allocation of federal and state transportation funds. CTC guidelines require submission and evaluation of project reports setting forth information and financial analysis regarding a nominated P3 project and the merits of using P3. PIAC role is to identify transportation P3 opportunities throughout the state, research similar projects nationally and internationally and document and identify lessons learned; assemble and make available to Caltrans and RTAs a library of info/precedents; upon request advise Caltrans and RTAs regarding infrastructure partnership suitability and best practices and provide procurement services. PIAC may charge fee for requested advice and procurement services. PIAC also reviews and comments on proposed P3 agreements.	P3A establishes priorities in the development of projects; evaluates desirability and suitability and decides whether or not to proceed with project. May consider solicited or unsolicited proposals or those of its own initiative (§ 7(a).) Once P3A decides to proceed and establish a partnership, the partnering governing entity and the bank are bound to provide such technical, expert, financial and human resource assistance as the P3A may require. P3A is to form a "Partnership Committee" (agency staff) for each project that P3A has determined appropriate and feasible. Partnership Committee to evaluate and select partners and negotiate terms and conditions it deems appropriate for any partnership contract. Note that no legislative approval is required prior to receipt of a proposal.	All capital projects with a provincial capital contribution of $50M (CAN) or more will be considered first by Partnerships BC to be built as P3 unless there is a compelling reason otherwise. Projects with provincial funding btw $20 to $50M (CAN) will be screened to determine whether a more comprehensive assessment of the project as P3 is warranted. Mandate to evaluate, structure and implement P3 (incl. P3 policy development, P3 feasibility analysis, business case support and competitive process, P3 contract support and ongoing program monitoring and assimilation of lessons learned.) Note that although Partnerships BC assesses whether or not a project qualifies as a viable P3, final approval lies with Minister of Finance.

Membership /constitution of authority:	Governed by PPTA Program Steering Committee comprised of Chairman (Commonwealth Transportation Commissioner) and Chief Deputy Transportation Commissioner, Deputy Secretary of Transportation, Chief Engineer of VDOT, Chief Financial Officer of VDOT, Chief of Planning and Programming of VDOT and one representative each from VPA, DRPT, VDOA and DMV.	CTC members appointed by Governor or Legislature PIAC members appointed by the Secretary of BTH.	5 member Board of Directors, incl. the President of the Gov. Bank, Secretary of the Treasury, President of Planning and 2 persons in representation of the public interest (selected by Governor from a shortlist of 3 candidates identified by each Presiding Officer of the Legislative Bodies to the Governor).	9 member Board of Directors (drawn from public and private sectors), reporting to the provincial Minister of Finance. Subcommittees incl. audit/risk management committee and human resources/governance committee. Appointed by Minister of Finance.
	Members elect a chairman and vice-chairman for two-year terms.	PIAC chaired by Secretary.	None of the members of the board can be elected officials.	
	Quarterly meetings or at intervals as called by the chairman.			
Duration of membership	Hold office for the term of appointment to public office.	CTC board members serve for statutory terms/ PIAC members serve at the pleasure of the Secretary of BTH.	Public officials hold office for term of their appointment; public interest representatives hold office for 4-year terms	Tenure (private company)

6.5 WSDOT Current Organizational Structure



6.6 Table of Recommended Legislative Changes

Recommended Legislative Change	Existing Legislation Potentially Reduces Value to Public Sector	Existing Legislation Contains Potential Fatal Flaw
Create public interest protections regarding:		
Tolling setting authority	√	
Asset ownership	√	
Responding to poor service delivery	√	
Preventing excessive returns		√ (allows no return on equity)
Solvency of private partners	√	
MWBE		
Handback requirements	√	
State apprenticeship requirements		
Protection of prevailing wage		
Assessing Value for Money of P3 approach	√	
Use of upfront funds and tolls generated	√	
Termination of P3 agreement	√	
Competing facilities	√	
Remove post-procurement discretionary action by the State Transportation Commission and other post-procurement, pre-execution processes		√
Adopt programmatic approach to P3 project delivery by authorizing the creation of, and adequately funding, a centrally located, oversight office within the Department of Transportation	√	
Clearly authorize a full range of procurement structures and tools	√	
Enable the use of privately arranged or issued debt financing, and allow the private partner to realize a return on equity		√
Revise controls on toll revenues (funding into innovative partnerships account; appropriations requirement) so that they do not adversely affect private sector financing of eligible projects and so that toll revenue expenditures are freed from legislative appropriation		√
If lawful, enable the use of continuing appropriations that would allow for availability payment contracts to be advanced	√	
Expand the scope of eligible transportation projects	√	
Clarify what types of agreements are governed by the P3 legislation	√	
Improve control over unsolicited proposals	√	
If necessary, rectify any insurmountable barrier created by provisions concerning the state personnel system reform act		√
Address relationship of new P3 laws to other state laws	√	

7.0 Appendix C: Project Screening Tool Results

Pass with Limitations - Rating Scale Level

4	High level of restrictions/limitations	Detailed analyses required
3	Intermediate limitations	Limitations considerable attention required
2	Some restrictions/limitations	Minor limitations attention required
1	Low level of restrictions/limitations	Some limitations some attention required

Screening Tool Color Indicator

	Indicates that the cell is expecting an input (selection from a dropdown menu or level of limitation)
Fatal Flaw or Error	indicates the project has failed in a critical criteria and is not suitable for P3 delivery or the level of limitation chosen is to high

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Public Interest Protections

In order for the Screening tool to be applied in a practical manner, a number of minimum Public Interest Protections must be assumed to be binding requirements of all future PPP projects. Such protections are implementable and enforceable through statutes and / or mandatory guidelines at a project level (through RFP and concession agreement control mechanisms), and include:

1. Maintaining control and/or ownership over the asset
2. Use of upfront funds generated by PPP projects
3. Quality of service and responding to poor service delivery
4. Setting and controlling fares/tolls
5. Preventing excessive returns
6. State Apprenticeship Requirements
7. Provides Value for Money
8. Solvency of private partners
9. Termination of the concession
10. Handback and asset condition
11. Prevailing Wage
12. Minority and Women-Owned Business Enterprises (MWBEs) should be encouraged to participate in P3 initiatives

Tier 1 - Fatal Flaw Category (Pass or Fatal Flaw)

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
Category 1 - Public Interest					
1.01.01	Affordability	While the private partner may provide the initial funding for capital improvements, there must be a means of repayment of this investment over the long term of the partnership. The income stream can be generated by a variety and combination of sources, but must be assured for the length of the partnership.	Project Specific	Pass with Limitations	1
1.01.02	Support from elected officials and the public	This criterion will help determine the level of support that a project has among stakeholders, elected officials, transportation officials, and the public at large. The procuring authority must consider the existing levels of support, the issues raised by any project opposition, and potential means to mitigate any opposition.	Yes	Pass	
Category 2 - Is there ability for PPP to potentially add value to the project					
1.02.01	Financial Feasibility	A PPP project is considered financially feasible if lenders are willing to finance it (generally on a project finance basis), debt is a cheaper source of funding than equity, as it carries relatively less risk. Lending to PPP projects looks to the cash flow of the project as the principal source of security. The State and its advisers need to assess financial risks thoroughly. The financial risks experienced by PPP projects tend to be related to some or all of the following factors: • reliance on optimistic revenue assumptions and on levels of demand from a poorly chosen “baseline” case; • lack of attention to financing needs in the project feasibility, which leads to larger amounts of debt in projects; • long-term PPP projects that are financed with short-term debt, coupled with a sometimes unjustified assumption that the short-term debt can be rolled over at the same or even	Yes	Pass with Limitations	2

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
		better refinancing conditions; floating rate debt that creates interest rate risk; • refinancing that can create unforeseen benefits for the PPP Company, which the State might not share if the contract does not explicitly provide for this possibility			
Category 3 - Will the project attract private sector interest?					
1.03.01	Return justifies risk	When assessing the viability of a P3 project it is critical to determine if the likely returns that the private sector will realize will be commensurate with the risks they are assuming. Projects that have risks which are hard to quantify, unknown, difficult to control, and dispersed will be less attractive to the private sector. It is important to continually consider whether the risks being transferred can be better managed by the private sector.	Yes	Pass with Limitations	2
1.03.02	Suitable deal size	Is the deal size appropriate at current market condition between 100 million and 4 billion	Yes	Pass	
Category 4 - Regulatory, legal, and political feasibility					
1.04.01	Environmental approvals expected within three years	Completion or near-completion of requisite early planning work, including environmental assessment, is a strong indicator of project implementation state-of-readiness. Private sector bidders will more likely respond to Request for Proposals for projects that have achieved, or are close to achieving, environmental approval and supported by the requisite feasibility studies.	Yes	Pass	
1.04.02	Are land ownerships issues likely to stop the project	The public partner should examine its ability to assemble the necessary land. Evaluate the capacity for the right of eminent domain. Consider the potential for land banking to avoid any land assembly issues if the opportunity makes itself available.	Yes	Pass	

Total number of Criteria	7
Maximum value of Limitations	11
Total value of Limitations	5

Has a Fatal Flaw occurred?	No
Why has a fatal Flaw occurred?	

Project Suitability	Potentially suitable for Public Private Partnership (P3) Delivery Method

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Public Interest Protections

In order for the Screening tool to be applied in a practical manner, a number of minimum Public Interest Protections must be assumed to be binding requirements of all future PPP projects. Such protections are implementable and enforceable through statutes and / or mandatory guidelines at a project level (through RFP and concession agreement control mechanisms), and include:

1. Maintaining control and/or ownership over the asset
2. Use of upfront funds generated by PPP projects
3. Quality of service and responding to poor service delivery
4. Setting and controlling fares/tolls
5. Preventing excessive returns
6. State Apprenticeship Requirements
7. Provides Value for Money
8. Solvency of private partners
9. Termination of the concession
10. Handback and asset condition
11. Prevailing Wage
12. Minority and Women-Owned Business Enterprises (MWBEs) should be encouraged to participate in P3 initiatives

Tier 2 - Non Fatal Flaw Category (Pass, Pass with Limitations or Fail)

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
Category 1 - Public Interest					
2.01.01	Consistency with statewide transportation plan	This purpose of this criterion is to determine whether a project is consistent with an adopted statewide transportation plan. The procuring public entity should consider whether or not a project is included in an adopted statewide transportation plan and, if so, what the project's ranking is in the plan.	No	Pass	
Category 2 - Is there ability for PPP to potentially add value to the project					
2.02.01	Technical innovation	Does the project provide opportunities for technical innovation, including in the interface between design and build phases? If so, risk transfer to private proponents can provide strong incentives realizing the innovation opportunities	No	Pass	
2.02.02	Provides value for money	Value for Money (VFM) is a method of analysis for comparing the total estimated life cycle costs of traditional procurement versus alternative procurement. VFM describes the benefits to the public expected to be realized through a particular procurement method, and can be quantitative and/or qualitative in nature. The Value for Money is a progressive analyze and needs to be considered during all stages of any procumbent process.	No	Pass with Limitations	2
2.02.03	Economies of scale	This screening evaluation should identify if opportunities exist to group phases of a project together rather than spreading delivery out over multiple phases. In addition, individual but similar projects can be bundled together to achieve efficiencies of scale, such as the replacement of 2-300 short span bridges.	No	Pass	
2.02.04	Risk Transfer	Well-structured public-private partnership agreements are tailored to address the specific characteristic of a particular project and to allocate risks to the party best positioned to assume and price those risks. In considering risk transfer as a criterion it is important to determine whether the public sector can manage the various project risks better than the private sector. Selection of the right contractual and financial models facilitates efficient	No	Pass	

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
		allocation of risk and opportunity, which will ultimately determine the Value for Money available for a project under a particular asset maximization approach.			
2.02.05	Schedule Certainty	If there is a timing benefit associated with a PPP, private financing can be utilized by the State to accelerate project delivery, avoiding up-front capital costs and paying for infrastructure only when it is ready to be used.	No	Pass	
2.02.06	Whole life costing	To determine whether "whole life costing" is associated with a project, the State must consider the benefit of tying the upfront construction and operating and maintenance costs together. If structured appropriately, the transfer of risk over the life cycle of the project can generate savings and budget certainty to the public.	No	Pass	
2.02.07	Renovation work would not constitute a substantial share of construction costs	A new build versus renovation will lead to differences in both cost and functionality. Historically with PPP projects, if a substantial share of the project consists of renovation work, the risk transfer to the private sector has been more difficult to achieve due to latent risks associated with original infrastructure	No	Pass with Limitations	2
2.02.08	Competitive market likely to produce at least 3 bids	A process used to assess the market's reaction to a proposed project and or procurement approach by providing an opportunity for market participants to provide input in terms of interest, capability and capacity. The objective is to structure a project in a manner that will encourage competition by generating a favorable market response	No	Pass	
Category 3 - Will the project attract private sector interest?					
2.03.01	Current market liquidity	In difficult financial market conditions (e.g. reduced liquidity), fully committed financing packages may be difficult to obtain at the time of bidding. This may mean that the financing agreements will not be concluded immediately once the PPP contract is signed.	No	Pass	
2.03.02	Project's ability to attract TIFIA, Private Activity Bonds (PABs)	With highway and transit funds becoming limited, federal loans are taking the place of federal grants. TIFIA financing and a PABs allocation is often applied for prior to seeking proposals from bidders in order to provide bidders with the opportunity to factor these sources of financing into their proposals. PABs, may be issued by state or local governmental entities for the benefit of private developers. Accordingly, private concessionaires receiving PAB allocations may now benefit from the lower cost of capital achievable in the US tax-exempt bond markets.	No	Pass with Limitations	1
2.03.03	Confidence public sector will be able to facilitate project completion: • Confidence in public sector timely & effective decision making process • Transparency of the procurement process • Credible Consultants to the public sector (technical, legal, and financial)	The manner by which the public sector is organized to execute a P3 procurement and oversee the project's implementation can attract or discourage investors. In a P3, the private sector assumes schedule, budget, and many major project delivery risks over the long-term. While the private sector is taking on these risks, it must still gather approval from the public agency throughout the course of the project. If an agency appears to be fragmented and decisions will take considerable time to be made and if it appears there is a lack of understanding that overseeing a P3 project differs from a traditionally delivered project, bidders will be reluctant to come forward. However, if an agency is organized so that individuals are empowered with clear authority to make decisions on P3 projects, bidders will be more encouraged to participate and the overall cost of financing the project will be reduced.	No	Pass	

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
2.03.04	The private sector has sufficient P3 capacity (expertise and availability) to successfully deliver project objectives	Potential private sector must be sufficiently qualified to deliver the facility and services it will be required to fulfil. The private sector will need adequate administrative and investment appetite based on how much money they have to spend and if they have sufficient resources to deliver project objectives.	No	Pass	
Category 4 - Regulatory, legal, and political feasibility					
2.04.01	Consensus among local and regional authorities	This criterion will help determine the level of support that a project has among stakeholders, elected officials, transportation officials, and the public at large. The procuring authority must consider the existing levels of support, the issues raised by any project opposition, and potential means to mitigate any opposition.	No	Pass	
2.04.02	Need for new or change in legislation	Early identification of whether there are any legal obstacles to moving a project forward as a P3 is critical. If changes are needed it is necessary to pinpoint them upfront and work together new legislation before an RFP is advanced. Given the significant cost of responding to a P3 procurement, bidders will be weary of responding to an RFP unless legislative authority is clear and issues concerning the project's bankability are addressed.	No	Pass with Limitations	4
2.04.03	No specific legislative approval required post award	If specific legislative approval is required before Financial Close is reached, given the significant cost of responding to a P3 procurement and risk associated with such approval, bidders will be weary of responding to an RFP.	No	Fail	4

Total number of Criteria	16
Maximum value of Limitations	24
Total value of Limitations	13

Has a Fatal Flaw occurred?	No
Why has a fatal Flaw occurred?	

Project Suitability	Potentially suitable for Public Private Partnership (P3) Delivery Method

I-5/SR 509 Extension

Public Interest Protections

In order for the Screening tool to be applied in a practical manner, a number of minimum Public Interest Protections must be assumed to be binding requirements of all future PPP projects. Such protections are implementable and enforceable through statutes and / or mandatory guidelines at a project level (through RFP and concession agreement control mechanisms), and include:

1. Maintaining control and/or ownership over the asset
2. Use of upfront funds generated by PPP projects
3. Quality of service and responding to poor service delivery
4. Setting and controlling fares/tolls
5. Preventing excessive returns
6. State Apprenticeship Requirements
7. Provides Value for Money
8. Solvency of private partners
9. Termination of the concession
10. Handback and asset condition
11. Prevailing Wage
12. Minority and Women-Owned Business Enterprises (MWBEs) should be encouraged to participate in P3 initiatives

Tier 1 - Fatal Flaw Category (Pass or Fatal Flaw)

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
Category 1 - Public Interest					
1.01.01	Affordability	While the private partner may provide the initial funding for capital improvements, there must be a means of repayment of this investment over the long term of the partnership. The income stream can be generated by a variety and combination of sources, but must be assured for the length of the partnership.	Project Specific	Pass	
1.01.02	Support from elected officials and the public	This criterion will help determine the level of support that a project has among stakeholders, elected officials, transportation officials, and the public at large. The procuring authority must consider the existing levels of support, the issues raised by any project opposition, and potential means to mitigate any opposition.	Yes	Pass	
Category 2 - Is there ability for PPP to potentially add value to the project					
1.02.01	Financial Feasibility	A PPP project is considered financially feasible if lenders are willing to finance it (generally on a project finance basis), debt is a cheaper source of funding than equity, as it carries relatively less risk. Lending to PPP projects looks to the cash flow of the project as the principal source of security. The State and its advisers need to assess financial risks thoroughly. The financial risks experienced by PPP projects tend to be related to some or all of the following factors: • reliance on optimistic revenue assumptions and on levels of demand from a poorly chosen “baseline” case; • lack of attention to financing needs in the project feasibility, which leads to larger amounts of debt in projects; • long-term PPP projects that are financed with short-term debt, coupled with a sometimes unjustified assumption that the short-term debt can be rolled over at the same or even better refinancing conditions; floating rate debt that creates interest rate risk;	Yes	Pass	

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
		• refinancing that can create unforeseen benefits for the PPP Company, which the State might not share if the contract does not explicitly provide for this possibility			
Category 3 - Will the project attract private sector interest?					
1.03.01	Return justifies risk	When assessing the viability of a P3 project it is critical to determine if the likely returns that the private sector will realize will be commensurate with the risks they are assuming. Projects that have risks which are hard to quantify, unknown, difficult to control, and dispersed will be less attractive to the private sector. It is important to continually consider whether the risks being transferred can be better managed by the private sector.	Yes	Pass	
1.03.02	Suitable deal size	Is the deal size appropriate at current market condition between 100 million and 4 billion	Yes	Pass	
Category 4 - Regulatory, legal, and political feasibility					
1.04.01	Environmental approvals expected within three years	Completion or near-completion of requisite early planning work, including environmental assessment, is a strong indicator of project implementation state-of-readiness. Private sector bidders will more likely respond to Request for Proposals for projects that have achieved, or are close to achieving, environmental approval and supported by the requisite feasibility studies.	Yes	Pass	
1.04.02	Are land ownerships issues likely to stop the project	The public partner should examine its ability to assemble the necessary land. Evaluate the capacity for the right of eminent domain. Consider the potential for land banking to avoid any land assembly issues if the opportunity makes itself available.	Yes	Pass	

Total number of Criteria	7
Maximum value of Limitations	11
Total value of Limitations	0

Has a Fatal Flaw occurred?	No
Why has a fatal Flaw occurred?	

Project Suitability	Potentially suitable for Public Private Partnership (P3) Delivery Method

I-5/SR 509 Extension

Public Interest Protections

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1. Maintaining control and/or ownership over the asset
2. Use of upfront funds generated by PPP projects
3. Quality of service and responding to poor service delivery
4. Setting and controlling fares/tolls
5. Preventing excessive returns
6. State Apprenticeship Requirements
7. Provides Value for Money
8. Solvency of private partners
9. Termination of the concession
10. Handback and asset condition
11. Prevailing Wage
12. Minority and Women-Owned Business Enterprises (MWBEs) should be encouraged to participate in P3 initiatives

Tier 2 - Non Fatal Flaw Category (Pass, Pass with Limitations or Fail)

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
Category 1 - Public Interest					
2.01.01	Consistency with statewide transportation plan	This purpose of this criterion is to determine whether a project is consistent with an adopted statewide transportation plan. The procuring public entity should consider whether or not a project is included in an adopted statewide transportation plan and, if so, what the project's ranking is in the plan.	No	Pass	
Category 2 - Is there ability for PPP to potentially add value to the project					
2.02.01	Technical innovation	Does the project provide opportunities for technical innovation, including in the interface between design and build phases? If so, risk transfer to private proponents can provide strong incentives realizing the innovation opportunities	No	Pass	
2.02.02	Provides value for money	Value for Money (VFM) is a method of analysis for comparing the total estimated life cycle costs of traditional procurement versus alternative procurement. VFM describes the benefits to the public expected to be realized through a particular procurement method, and can be quantitative and/or qualitative in nature. The Value for Money is a progressive analyze and needs to be considered during all stages of any procumbent process.	No	Pass	
2.02.03	Economies of scale	This screening evaluation should identify if opportunities exist to group phases of a project together rather than spreading delivery out over multiple phases. In addition, individual but similar projects can be bundled together to achieve efficiencies of scale, such as the replacement of 2-300 short span bridges.	No	Pass	
2.02.04	Risk Transfer	Well-structured public-private partnership agreements are tailored to address the specific characteristic of a particular project and to allocate risks to the party best positioned to assume and price those risks. In considering risk transfer as a criterion it is important to determine whether the public sector can manage the various project risks better than the private sector. Selection of the right contractual and financial models facilitates efficient	No	Pass	

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
		allocation of risk and opportunity, which will ultimately determine the Value for Money available for a project under a particular asset maximization approach.			
2.02.05	Schedule Certainty	If there is a timing benefit associated with a PPP, private financing can be utilized by the State to accelerate project delivery, avoiding up-front capital costs and paying for infrastructure only when it is ready to be used.	No	Pass	
2.02.06	Whole life costing	To determine whether "whole life costing" is associated with a project, the State must consider the benefit of tying the upfront construction and operating and maintenance costs together. If structured appropriately, the transfer of risk over the life cycle of the project can generate savings and budget certainty to the public.	No	Pass with Limitations	2
2.02.07	Renovation work would not constitute a substantial share of construction costs	A new build versus renovation will lead to differences in both cost and functionality. Historically with PPP projects, if a substantial share of the project consists of renovation work, the risk transfer to the private sector has been more difficult to achieve due to latent risks associated with original infrastructure	No	Pass	
2.02.08	Competitive market likely to produce at least 3 bids	A process used to assess the market's reaction to a proposed project and or procurement approach by providing an opportunity for market participants to provide input in terms of interest, capability and capacity. The objective is to structure a project in a manner that will encourage competition by generating a favorable market response	No	Pass	
Category 3 - Will the project attract private sector interest?					
2.03.01	Current market liquidity	In difficult financial market conditions (e.g. reduced liquidity), fully committed financing packages may be difficult to obtain at the time of bidding. This may mean that the financing agreements will not be concluded immediately once the PPP contract is signed.	No	Pass	
2.03.02	Project's ability to attract TIFIA, Private Activity Bonds (PABs)	With highway and transit funds becoming limited, federal loans are taking the place of federal grants. TIFIA financing and a PABs allocation is often applied for prior to seeking proposals from bidders in order to provide bidders with the opportunity to factor these sources of financing into their proposals. PABs, may be issued by state or local governmental entities for the benefit of private developers. Accordingly, private concessionaires receiving PAB allocations may now benefit from the lower cost of capital achievable in the US tax-exempt bond markets.	No	Pass	
2.03.03	Confidence public sector will be able to facilitate project completion: • Confidence in public sector timely & effective decision making process • Transparency of the procurement process • Credible Consultants to the public sector (technical, legal, and financial)	The manner by which the public sector is organized to execute a P3 procurement and oversee the project's implementation can attract or discourage investors. In a P3, the private sector assumes schedule, budget, and many major project delivery risks over the long-term. While the private sector is taking on these risks, it must still gather approval from the public agency throughout the course of the project. If an agency appears to be fragmented and decisions will take considerable time to be made and if it appears there is a lack of understanding that overseeing a P3 project differs from a traditionally delivered project, bidders will be reluctant to come forward. However, if an agency is organized so that individuals are empowered with clear authority to make decisions on P3 projects, bidders will be more encouraged to participate and the overall cost of financing the project will be reduced.	No	Pass	

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
2.03.04	The private sector has sufficient P3 capacity (expertise and availability) to successfully deliver project objectives	Potential private sector must be sufficiently qualified to deliver the facility and services it will be required to fulfil. The private sector will need adequate administrative and investment appetite based on how much money they have to spend and if they have sufficient resources to deliver project objectives.	No	Pass	
Category 4 - Regulatory, legal, and political feasibility					
2.04.01	Consensus among local and regional authorities	This criterion will help determine the level of support that a project has among stakeholders, elected officials, transportation officials, and the public at large. The procuring authority must consider the existing levels of support, the issues raised by any project opposition, and potential means to mitigate any opposition.	No	Pass	
2.04.02	Need for new or change in legislation	Early identification of whether there are any legal obstacles to moving a project forward as a P3 is critical. If changes are needed it is necessary to pinpoint them upfront and work together new legislation before an RFP is advanced. Given the significant cost of responding to a P3 procurement, bidders will be weary of responding to an RFP unless legislative authority is clear and issues concerning the project's bankability are addressed.	No	Fail	4
2.04.03	No specific legislative approval required post award	If specific legislative approval is required before Financial Close is reached, given the significant cost of responding to a P3 procurement and risk associated with such approval, bidders will be weary of responding to an RFP.	No	Fail	4

Total number of Criteria	16
Maximum value of Limitations	24
Total value of Limitations	10

Has a Fatal Flaw occurred?	No
Why has a fatal Flaw occurred?	

Project Suitability	Potentially suitable for Public Private Partnership (P3) Delivery Method

SR 167 Extension

Public Interest Protections

In order for the Screening tool to be applied in a practical manner, a number of minimum Public Interest Protections must be assumed to be binding requirements of all future PPP projects. Such protections are implementable and enforceable through statutes and / or mandatory guidelines at a project level (through RFP and concession agreement control mechanisms), and include:

1. Maintaining control and/or ownership over the asset
2. Use of upfront funds generated by PPP projects
3. Quality of service and responding to poor service delivery
4. Setting and controlling fares/tolls
5. Preventing excessive returns
6. State Apprenticeship Requirements
7. Provides Value for Money
8. Solvency of private partners
9. Termination of the concession
10. Handback and asset condition
11. Prevailing Wage
12. Minority and Women-Owned Business Enterprises (MWBEs) should be encouraged to participate in P3 initiatives

Tier 1 - Fatal Flaw Category (Pass or Fatal Flaw)

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
Category 1 - Public Interest					
1.01.01	Affordability	While the private partner may provide the initial funding for capital improvements, there must be a means of repayment of this investment over the long term of the partnership. The income stream can be generated by a variety and combination of sources, but must be assured for the length of the partnership.	Project Specific	Pass with Limitations	4
1.01.02	Support from elected officials and the public	This criterion will help determine the level of support that a project has among stakeholders, elected officials, transportation officials, and the public at large. The procuring authority must consider the existing levels of support, the issues raised by any project opposition, and potential means to mitigate any opposition.	Yes	Pass	
Category 2 - Is there ability for PPP to potentially add value to the project					
1.02.01	Financial Feasibility	A PPP project is considered financially feasible if lenders are willing to finance it (generally on a project finance basis), debt is a cheaper source of funding than equity, as it carries relatively less risk. Lending to PPP projects looks to the cash flow of the project as the principal source of security. The State and its advisers need to assess financial risks thoroughly. The financial risks experienced by PPP projects tend to be related to some or all of the following factors: • reliance on optimistic revenue assumptions and on levels of demand from a poorly chosen “baseline” case; • lack of attention to financing needs in the project feasibility, which leads to larger amounts of debt in projects; • long-term PPP projects that are financed with short-term debt, coupled with a sometimes unjustified assumption that the short-term debt can be rolled over at the same or even better refinancing conditions; floating rate debt that creates interest rate risk;	Yes	Pass with Limitations	4

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
		• refinancing that can create unforeseen benefits for the PPP Company, which the State might not share if the contract does not explicitly provide for this possibility			
Category 3 - Will the project attract private sector interest?					
1.03.01	Return justifies risk	When assessing the viability of a P3 project it is critical to determine if the likely returns that the private sector will realize will be commensurate with the risks they are assuming. Projects that have risks which are hard to quantify, unknown, difficult to control, and dispersed will be less attractive to the private sector. It is important to continually consider whether the risks being transferred can be better managed by the private sector.	Yes	Pass	
1.03.02	Suitable deal size	Is the deal size appropriate at current market condition between 100 million and 4 billion	Yes	Pass	
Category 4 - Regulatory, legal, and political feasibility					
1.04.01	Environmental approvals expected within three years	Completion or near-completion of requisite early planning work, including environmental assessment, is a strong indicator of project implementation state-of-readiness. Private sector bidders will more likely respond to Request for Proposals for projects that have achieved, or are close to achieving, environmental approval and supported by the requisite feasibility studies.	Yes	Pass	
1.04.02	Are land ownerships issues likely to stop the project	The public partner should examine its ability to assemble the necessary land. Evaluate the capacity for the right of eminent domain. Consider the potential for land banking to avoid any land assembly issues if the opportunity makes itself available.	Yes	Pass with Limitations	2

Total number of Criteria	7
Maximum value of Limitations	11
Total value of Limitations	10

Has a Fatal Flaw occurred?	No
Why has a fatal Flaw occurred?	

Project Suitability	Potentially suitable for Public Private Partnership (P3) Delivery Method

SR 167 Extension

Public Interest Protections

In order for the Screening tool to be applied in a practical manner, a number of minimum Public Interest Protections must be assumed to be binding requirements of all future PPP projects. Such protections are implementable and enforceable through statutes and / or mandatory guidelines at a project level (through RFP and concession agreement control mechanisms), and include:

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2. Use of upfront funds generated by PPP projects
3. Quality of service and responding to poor service delivery
4. Setting and controlling fares/tolls
5. Preventing excessive returns
6. State Apprenticeship Requirements
7. Provides Value for Money
8. Solvency of private partners
9. Termination of the concession
10. Handback and asset condition
11. Prevailing Wage
12. Minority and Women-Owned Business Enterprises (MWBEs) should be encouraged to participate in P3 initiatives

Tier 2 - Non Fatal Flaw Category (Pass, Pass with Limitations or Fail)

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
Category 1 - Public Interest					
2.01.01	Consistency with statewide transportation plan	This purpose of this criterion is to determine whether a project is consistent with an adopted statewide transportation plan. The procuring public entity should consider whether or not a project is included in an adopted statewide transportation plan and, if so, what the project's ranking is in the plan.	No	Pass	
Category 2 - Is there ability for PPP to potentially add value to the project					
2.02.01	Technical innovation	Does the project provide opportunities for technical innovation, including in the interface between design and build phases? If so, risk transfer to private proponents can provide strong incentives realizing the innovation opportunities	No	Pass	
2.02.02	Provides value for money	Value for Money (VFM) is a method of analysis for comparing the total estimated life cycle costs of traditional procurement versus alternative procurement. VFM describes the benefits to the public expected to be realized through a particular procurement method, and can be quantitative and/or qualitative in nature. The Value for Money is a progressive analyze and needs to be considered during all stages of any procumbent process.	No	Pass with Limitations	2
2.02.03	Economies of scale	This screening evaluation should identify if opportunities exist to group phases of a project together rather than spreading delivery out over multiple phases. In addition, individual but similar projects can be bundled together to achieve efficiencies of scale, such as the replacement of 2-300 short span bridges.	No	Pass	
2.02.04	Risk Transfer	Well-structured public-private partnership agreements are tailored to address the specific characteristic of a particular project and to allocate risks to the party best positioned to assume and price those risks. In considering risk transfer as a criterion it is important to determine whether the public sector can manage the various project risks better than the private sector. Selection of the right contractual and financial models facilitates efficient	No	Pass	

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
		allocation of risk and opportunity, which will ultimately determine the Value for Money available for a project under a particular asset maximization approach.			
2.02.05	Schedule Certainty	If there is a timing benefit associated with a PPP, private financing can be utilized by the State to accelerate project delivery, avoiding up-front capital costs and paying for infrastructure only when it is ready to be used.	No	Pass	
2.02.06	Whole life costing	To determine whether "whole life costing" is associated with a project, the State must consider the benefit of tying the upfront construction and operating and maintenance costs together. If structured appropriately, the transfer of risk over the life cycle of the project can generate savings and budget certainty to the public.	No	Pass with Limitations	1
2.02.07	Renovation work would not constitute a substantial share of construction costs	A new build versus renovation will lead to differences in both cost and functionality. Historically with PPP projects, if a substantial share of the project consists of renovation work, the risk transfer to the private sector has been more difficult to achieve due to latent risks associated with original infrastructure	No	Pass	
2.02.08	Competitive market likely to produce at least 3 bids	A process used to assess the market's reaction to a proposed project and or procurement approach by providing an opportunity for market participants to provide input in terms of interest, capability and capacity. The objective is to structure a project in a manner that will encourage competition by generating a favorable market response	No	Pass	
Category 3 - Will the project attract private sector interest?					
2.03.01	Current market liquidity	In difficult financial market conditions (e.g. reduced liquidity), fully committed financing packages may be difficult to obtain at the time of bidding. This may mean that the financing agreements will not be concluded immediately once the PPP contract is signed.	No	Pass	
2.03.02	Project's ability to attract TIFIA, Private Activity Bonds (PABs)	With highway and transit funds becoming limited, federal loans are taking the place of federal grants. TIFIA financing and a PABs allocation is often applied for prior to seeking proposals from bidders in order to provide bidders with the opportunity to factor these sources of financing into their proposals. PABs, may be issued by state or local governmental entities for the benefit of private developers. Accordingly, private concessionaires receiving PAB allocations may now benefit from the lower cost of capital achievable in the US tax-exempt bond markets.	No	Pass with Limitations	1
2.03.03	Confidence public sector will be able to facilitate project completion: • Confidence in public sector timely & effective decision making process • Transparency of the procurement process • Credible Consultants to the public sector (technical, legal, and financial)	The manner by which the public sector is organized to execute a P3 procurement and oversee the project's implementation can attract or discourage investors. In a P3, the private sector assumes schedule, budget, and many major project delivery risks over the long-term. While the private sector is taking on these risks, it must still gather approval from the public agency throughout the course of the project. If an agency appears to be fragmented and decisions will take considerable time to be made and if it appears there is a lack of understanding that overseeing a P3 project differs from a traditionally delivered project, bidders will be reluctant to come forward. However, if an agency is organized so that individuals are empowered with clear authority to make decisions on P3 projects, bidders will be more encouraged to participate and the overall cost of financing the project will be reduced.	No	Pass	

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
2.03.04	The private sector has sufficient P3 capacity (expertise and availability) to successfully deliver project objectives	Potential private sector must be sufficiently qualified to deliver the facility and services it will be required to fulfil. The private sector will need adequate administrative and investment appetite based on how much money they have to spend and if they have sufficient resources to deliver project objectives.	No	Pass	
Category 4 - Regulatory, legal, and political feasibility					
2.04.01	Consensus among local and regional authorities	This criterion will help determine the level of support that a project has among stakeholders, elected officials, transportation officials, and the public at large. The procuring authority must consider the existing levels of support, the issues raised by any project opposition, and potential means to mitigate any opposition.	No	Pass	
2.04.02	Need for new or change in legislation	Early identification of whether there are any legal obstacles to moving a project forward as a P3 is critical. If changes are needed it is necessary to pinpoint them upfront and work together new legislation before an RFP is advanced. Given the significant cost of responding to a P3 procurement, bidders will be weary of responding to an RFP unless legislative authority is clear and issues concerning the project's bankability are addressed.	No	Fail	4
2.04.03	No specific legislative approval required post award	If specific legislative approval is required before Financial Close is reached, given the significant cost of responding to a P3 procurement and risk associated with such approval, bidders will be weary of responding to an RFP.	No	Fail	4

Total number of Criteria	16
Maximum value of Limitations	24
Total value of Limitations	12

Has a Fatal Flaw occurred?	No
Why has a fatal Flaw occurred?	

Project Suitability	Potentially suitable for Public Private Partnership (P3) Delivery Method

US 2 Monroe Bypass

Public Interest Protections

In order for the Screening tool to be applied in a practical manner, a number of minimum Public Interest Protections must be assumed to be binding requirements of all future PPP projects. Such protections are implementable and enforceable through statutes and / or mandatory guidelines at a project level (through RFP and concession agreement control mechanisms), and include:

1. Maintaining control and/or ownership over the asset
2. Use of upfront funds generated by PPP projects
3. Quality of service and responding to poor service delivery
4. Setting and controlling fares/tolls
5. Preventing excessive returns
6. State Apprenticeship Requirements
7. Provides Value for Money
8. Solvency of private partners
9. Termination of the concession
10. Handback and asset condition
11. Prevailing Wage
12. Minority and Women-Owned Business Enterprises (MWBEs) should be encouraged to participate in P3 initiatives

Tier 1 - Fatal Flaw Category (Pass or Fatal Flaw)

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
Category 1 - Public Interest					
1.01.01	Affordability	While the private partner may provide the initial funding for capital improvements, there must be a means of repayment of this investment over the long term of the partnership. The income stream can be generated by a variety and combination of sources, but must be assured for the length of the partnership.	Project Specific	Fatal Flaw	
1.01.02	Support from elected officials and the public	This criterion will help determine the level of support that a project has among stakeholders, elected officials, transportation officials, and the public at large. The procuring authority must consider the existing levels of support, the issues raised by any project opposition, and potential means to mitigate any opposition.	Yes	Pass with Limitations	2
Category 2 - Is there ability for PPP to potentially add value to the project					
1.02.01	Financial Feasibility	A PPP project is considered financially feasible if lenders are willing to finance it (generally on a project finance basis), debt is a cheaper source of funding than equity, as it carries relatively less risk. Lending to PPP projects looks to the cash flow of the project as the principal source of security. The State and its advisers need to assess financial risks thoroughly. The financial risks experienced by PPP projects tend to be related to some or all of the following factors: • reliance on optimistic revenue assumptions and on levels of demand from a poorly chosen "baseline" case; • lack of attention to financing needs in the project feasibility, which leads to larger amounts of debt in projects; • long-term PPP projects that are financed with short-term debt, coupled with a sometimes unjustified assumption that the short-term debt can be rolled over at the same or even	Yes	Pass with Limitations	4

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
		better refinancing conditions; floating rate debt that creates interest rate risk; • refinancing that can create unforeseen benefits for the PPP Company, which the State might not share if the contract does not explicitly provide for this possibility			
Category 3 - Will the project attract private sector interest?					
1.03.01	Return justifies risk	When assessing the viability of a P3 project it is critical to determine if the likely returns that the private sector will realize will be commensurate with the risks they are assuming. Projects that have risks which are hard to quantify, unknown, difficult to control, and dispersed will be less attractive to the private sector. It is important to continually consider whether the risks being transferred can be better managed by the private sector.	Yes	Pass with Limitations	2
1.03.02	Suitable deal size	Is the deal size appropriate at current market condition between 100 million and 4 billion	Yes	Pass	
Category 4 - Regulatory, legal, and political feasibility					
1.04.01	Environmental approvals expected within three years	Completion or near-completion of requisite early planning work, including environmental assessment, is a strong indicator of project implementation state-of-readiness. Private sector bidders will more likely respond to Request for Proposals for projects that have achieved, or are close to achieving, environmental approval and supported by the requisite feasibility studies.	Yes	Fatal Flaw	
1.04.02	Are land ownerships issues likely to stop the project	The public partner should examine its ability to assemble the necessary land. Evaluate the capacity for the right of eminent domain. Consider the potential for land banking to avoid any land assembly issues if the opportunity makes itself available.	Yes	Pass with Limitations	1

Total number of Criteria	7
Maximum value of Limitations	11
Total value of Limitations	9

Has a Fatal Flaw occurred?	Fatal Flaw has occur - Project not currently suitable for P3 delivery method
Why has a fatal Flaw occurred?	One or more criteria has not passed the Fatal Flaw analyses

Project Suitability	Potentially not suitable for Public Private Partnership (P3) Delivery Method

US 2 Monroe Bypass

Public Interest Protections

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2. Use of upfront funds generated by PPP projects
3. Quality of service and responding to poor service delivery
4. Setting and controlling fares/tolls
5. Preventing excessive returns
6. State Apprenticeship Requirements
7. Provides Value for Money
8. Solvency of private partners
9. Termination of the concession
10. Handback and asset condition
11. Prevailing Wage
12. Minority and Women-Owned Business Enterprises (MWBEs) should be encouraged to participate in P3 initiatives

Tier 2 - Non Fatal Flaw Category (Pass, Pass with Limitations or Fail)

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
Category 1 - Public Interest					
2.01.01	Consistency with statewide transportation plan	This purpose of this criterion is to determine whether a project is consistent with an adopted statewide transportation plan. The procuring public entity should consider whether or not a project is included in an adopted statewide transportation plan and, if so, what the project's ranking is in the plan.	No	Pass	
Category 2 - Is there ability for PPP to potentially add value to the project					
2.02.01	Technical innovation	Does the project provide opportunities for technical innovation, including in the interface between design and build phases? If so, risk transfer to private proponents can provide strong incentives realizing the innovation opportunities	No	Pass	
2.02.02	Provides value for money	Value for Money (VFM) is a method of analysis for comparing the total estimated life cycle costs of traditional procurement versus alternative procurement. VFM describes the benefits to the public expected to be realized through a particular procurement method, and can be quantitative and/or qualitative in nature. The Value for Money is a progressive analyze and needs to be considered during all stages of any procumbent process.	No	Pass with Limitations	2
2.02.03	Economies of scale	This screening evaluation should identify if opportunities exist to group phases of a project together rather than spreading delivery out over multiple phases. In addition, individual but similar projects can be bundled together to achieve efficiencies of scale, such as the replacement of 2-300 short span bridges.	No	Pass	
2.02.04	Risk Transfer	Well-structured public-private partnership agreements are tailored to address the specific characteristic of a particular project and to allocate risks to the party best positioned to assume and price those risks. In considering risk transfer as a criterion it is important to determine whether the public sector can manage the various project risks better than the private sector. Selection of the right contractual and financial models facilitates efficient	No	Pass	

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
		allocation of risk and opportunity, which will ultimately determine the Value for Money available for a project under a particular asset maximization approach.			
2.02.05	Schedule Certainty	If there is a timing benefit associated with a PPP, private financing can be utilized by the State to accelerate project delivery, avoiding up-front capital costs and paying for infrastructure only when it is ready to be used.	No	Fail	4
2.02.06	Whole life costing	To determine whether "whole life costing" is associated with a project, the State must consider the benefit of tying the upfront construction and operating and maintenance costs together. If structured appropriately, the transfer of risk over the life cycle of the project can generate savings and budget certainty to the public.	No	Pass with Limitations	1
2.02.07	Renovation work would not constitute a substantial share of construction costs	A new build versus renovation will lead to differences in both cost and functionality. Historically with PPP projects, if a substantial share of the project consists of renovation work, the risk transfer to the private sector has been more difficult to achieve due to latent risks associated with original infrastructure	No	Pass	
2.02.08	Competitive market likely to produce at least 3 bids	A process used to assess the market's reaction to a proposed project and or procurement approach by providing an opportunity for market participants to provide input in terms of interest, capability and capacity. The objective is to structure a project in a manner that will encourage competition by generating a favorable market response	No	Pass	
Category 3 - Will the project attract private sector interest?					
2.03.01	Current market liquidity	In difficult financial market conditions (e.g. reduced liquidity), fully committed financing packages may be difficult to obtain at the time of bidding. This may mean that the financing agreements will not be concluded immediately once the PPP contract is signed.	No	Pass	
2.03.02	Project's ability to attract TIFIA, Private Activity Bonds (PABs)	With highway and transit funds becoming limited, federal loans are taking the place of federal grants. TIFIA financing and a PABs allocation is often applied for prior to seeking proposals from bidders in order to provide bidders with the opportunity to factor these sources of financing into their proposals. PABs, may be issued by state or local governmental entities for the benefit of private developers. Accordingly, private concessionaires receiving PAB allocations may now benefit from the lower cost of capital achievable in the US tax-exempt bond markets.	No	Pass with Limitations	2
2.03.03	Confidence public sector will be able to facilitate project completion: • Confidence in public sector timely & effective decision making process • Transparency of the procurement process • Credible Consultants to the public sector (technical, legal, and financial)	The manner by which the public sector is organized to execute a P3 procurement and oversee the project's implementation can attract or discourage investors. In a P3, the private sector assumes schedule, budget, and many major project delivery risks over the long-term. While the private sector is taking on these risks, it must still gather approval from the public agency throughout the course of the project. If an agency appears to be fragmented and decisions will take considerable time to be made and if it appears there is a lack of understanding that overseeing a P3 project differs from a traditionally delivered project, bidders will be reluctant to come forward. However, if an agency is organized so that individuals are empowered with clear authority to make decisions on P3 projects, bidders will be more encouraged to participate and the overall cost of financing the project will be reduced.	No	Pass	

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
2.03.04	The private sector has sufficient P3 capacity (expertise and availability) to successfully deliver project objectives	Potential private sector must be sufficiently qualified to deliver the facility and services it will be required to fulfil. The private sector will need adequate administrative and investment appetite based on how much money they have to spend and if they have sufficient resources to deliver project objectives.	No	Pass	
Category 4 - Regulatory, legal, and political feasibility					
2.04.01	Consensus among local and regional authorities	This criterion will help determine the level of support that a project has among stakeholders, elected officials, transportation officials, and the public at large. The procuring authority must consider the existing levels of support, the issues raised by any project opposition, and potential means to mitigate any opposition.	No	Pass with Limitations	3
2.04.02	Need for new or change in legislation	Early identification of whether there are any legal obstacles to moving a project forward as a P3 is critical. If changes are needed it is necessary to pinpoint them upfront and work together new legislation before an RFP is advanced. Given the significant cost of responding to a P3 procurement, bidders will be weary of responding to an RFP unless legislative authority is clear and issues concerning the project's bankability are addressed.	No	Fail	4
2.04.03	No specific legislative approval required post award	If specific legislative approval is required before Financial Close is reached, given the significant cost of responding to a P3 procurement and risk associated with such approval, bidders will be weary of responding to an RFP.	No	Fail	4

Total number of Criteria	16
Maximum value of Limitations	24
Total value of Limitations	20

Has a Fatal Flaw occurred?	No
Why has a fatal Flaw occurred?	

Project Suitability	Potentially suitable for Public Private Partnership (P3) Delivery Method

I-5 Columbia River Crossing (CRC)

Public Interest Protections

In order for the Screening tool to be applied in a practical manner, a number of minimum Public Interest Protections must be assumed to be binding requirements of all future PPP projects. Such protections are implementable and enforceable through statutes and / or mandatory guidelines at a project level (through RFP and concession agreement control mechanisms), and include:

1. Maintaining control and/or ownership over the asset
2. Use of upfront funds generated by PPP projects
3. Quality of service and responding to poor service delivery
4. Setting and controlling fares/tolls
5. Preventing excessive returns
6. State Apprenticeship Requirements
7. Provides Value for Money
8. Solvency of private partners
9. Termination of the concession
10. Handback and asset condition
11. Prevailing Wage
12. Minority and Women-Owned Business Enterprises (MWBEs) should be encouraged to participate in P3 initiatives

Tier 1 - Fatal Flaw Category (Pass or Fatal Flaw)

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
Category 1 - Public Interest					
1.01.01	Affordability	While the private partner may provide the initial funding for capital improvements, there must be a means of repayment of this investment over the long term of the partnership. The income stream can be generated by a variety and combination of sources, but must be assured for the length of the partnership.	Project Specific	Pass	
1.01.02	Support from elected officials and the public	This criterion will help determine the level of support that a project has among stakeholders, elected officials, transportation officials, and the public at large. The procuring authority must consider the existing levels of support, the issues raised by any project opposition, and potential means to mitigate any opposition.	Yes	Pass with Limitations	2
Category 2 - Is there ability for PPP to potentially add value to the project					
1.02.01	Financial Feasibility	A PPP project is considered financially feasible if lenders are willing to finance it (generally on a project finance basis), debt is a cheaper source of funding than equity, as it carries relatively less risk. Lending to PPP projects looks to the cash flow of the project as the principal source of security. The State and its advisers need to assess financial risks thoroughly. The financial risks experienced by PPP projects tend to be related to some or all of the following factors: • reliance on optimistic revenue assumptions and on levels of demand from a poorly chosen “baseline” case; • lack of attention to financing needs in the project feasibility, which leads to larger amounts of debt in projects; • long-term PPP projects that are financed with short-term debt, coupled with a sometimes unjustified assumption that the short-term debt can be rolled over at the same or even	Yes	Pass with Limitations	2

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
		better refinancing conditions; floating rate debt that creates interest rate risk; • refinancing that can create unforeseen benefits for the PPP Company, which the State might not share if the contract does not explicitly provide for this possibility			
Category 3 - Will the project attract private sector interest?					
1.03.01	Return justifies risk	When assessing the viability of a P3 project it is critical to determine if the likely returns that the private sector will realize will be commensurate with the risks they are assuming. Projects that have risks which are hard to quantify, unknown, difficult to control, and dispersed will be less attractive to the private sector. It is important to continually consider whether the risks being transferred can be better managed by the private sector.	Yes	Pass	
1.03.02	Suitable deal size	Is the deal size appropriate at current market condition between 100 million and 4 billion	Yes	Pass	
Category 4 - Regulatory, legal, and political feasibility					
1.04.01	Environmental approvals expected within three years	Completion or near-completion of requisite early planning work, including environmental assessment, is a strong indicator of project implementation state-of-readiness. Private sector bidders will more likely respond to Request for Proposals for projects that have achieved, or are close to achieving, environmental approval and supported by the requisite feasibility studies.	Yes	Pass	
1.04.02	Are land ownerships issues likely to stop the project	The public partner should examine its ability to assemble the necessary land. Evaluate the capacity for the right of eminent domain. Consider the potential for land banking to avoid any land assembly issues if the opportunity makes itself available.	Yes	Pass	

Total number of Criteria	7
Maximum value of Limitations	11
Total value of Limitations	4

Has a Fatal Flaw occurred?	No
Why has a fatal Flaw occurred?	

Project Suitability	Potentially suitable for Public Private Partnership (P3) Delivery Method

I-5 Columbia River Crossing (CRC)

Public Interest Protections

In order for the Screening tool to be applied in a practical manner, a number of minimum Public Interest Protections must be assumed to be binding requirements of all future PPP projects. Such protections are implementable and enforceable through statutes and / or mandatory guidelines at a project level (through RFP and concession agreement control mechanisms), and include:

1. Maintaining control and/or ownership over the asset
2. Use of upfront funds generated by PPP projects
3. Quality of service and responding to poor service delivery
4. Setting and controlling fares/tolls
5. Preventing excessive returns
6. State Apprenticeship Requirements
7. Provides Value for Money
8. Solvency of private partners
9. Termination of the concession
10. Handback and asset condition
11. Prevailing Wage
12. Minority and Women-Owned Business Enterprises (MWBEs) should be encouraged to participate in P3 initiatives

Tier 2 - Non Fatal Flaw Category (Pass, Pass with Limitations or Fail)

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
Category 1 - Public Interest					
2.01.01	Consistency with statewide transportation plan	This purpose of this criterion is to determine whether a project is consistent with an adopted statewide transportation plan. The procuring public entity should consider whether or not a project is included in an adopted statewide transportation plan and, if so, what the project's ranking is in the plan.	No	Pass	
Category 2 - Is there ability for PPP to potentially add value to the project					
2.02.01	Technical innovation	Does the project provide opportunities for technical innovation, including in the interface between design and build phases? If so, risk transfer to private proponents can provide strong incentives realizing the innovation opportunities	No	Pass	
2.02.02	Provides value for money	Value for Money (VFM) is a method of analysis for comparing the total estimated life cycle costs of traditional procurement versus alternative procurement. VFM describes the benefits to the public expected to be realized through a particular procurement method, and can be quantitative and/or qualitative in nature. The Value for Money is a progressive analyze and needs to be considered during all stages of any procumbent process.	No	Pass with Limitations	2
2.02.03	Economies of scale	This screening evaluation should identify if opportunities exist to group phases of a project together rather than spreading delivery out over multiple phases. In addition, individual but similar projects can be bundled together to achieve efficiencies of scale, such as the replacement of 2-300 short span bridges.	No	Pass	
2.02.04	Risk Transfer	Well-structured public-private partnership agreements are tailored to address the specific characteristic of a particular project and to allocate risks to the party best positioned to assume and price those risks. In considering risk transfer as a criterion it is important to determine whether the public sector can manage the various project risks better than the private sector. Selection of the right contractual and financial models facilitates efficient	No	Pass	

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
		allocation of risk and opportunity, which will ultimately determine the Value for Money available for a project under a particular asset maximization approach.			
2.02.05	Schedule Certainty	If there is a timing benefit associated with a PPP, private financing can be utilized by the State to accelerate project delivery, avoiding up-front capital costs and paying for infrastructure only when it is ready to be used.	No	Pass	
2.02.06	Whole life costing	To determine whether "whole life costing" is associated with a project, the State must consider the benefit of tying the upfront construction and operating and maintenance costs together. If structured appropriately, the transfer of risk over the life cycle of the project can generate savings and budget certainty to the public.	No	Pass with Limitations	1
2.02.07	Renovation work would not constitute a substantial share of construction costs	A new build versus renovation will lead to differences in both cost and functionality. Historically with PPP projects, if a substantial share of the project consists of renovation work, the risk transfer to the private sector has been more difficult to achieve due to latent risks associated with original infrastructure	No	Pass	
2.02.08	Competitive market likely to produce at least 3 bids	A process used to assess the market's reaction to a proposed project and or procurement approach by providing an opportunity for market participants to provide input in terms of interest, capability and capacity. The objective is to structure a project in a manner that will encourage competition by generating a favorable market response	No	Pass	
Category 3 - Will the project attract private sector interest?					
2.03.01	Current market liquidity	In difficult financial market conditions (e.g. reduced liquidity), fully committed financing packages may be difficult to obtain at the time of bidding. This may mean that the financing agreements will not be concluded immediately once the PPP contract is signed.	No	Pass	
2.03.02	Project's ability to attract TIFIA, Private Activity Bonds (PABs)	With highway and transit funds becoming limited, federal loans are taking the place of federal grants. TIFIA financing and a PABs allocation is often applied for prior to seeking proposals from bidders in order to provide bidders with the opportunity to factor these sources of financing into their proposals. PABs, may be issued by state or local governmental entities for the benefit of private developers. Accordingly, private concessionaires receiving PAB allocations may now benefit from the lower cost of capital achievable in the US tax-exempt bond markets.	No	Pass	
2.03.03	Confidence public sector will be able to facilitate project completion: • Confidence in public sector timely & effective decision making process • Transparency of the procurement process • Credible Consultants to the public sector (technical, legal, and financial)	The manner by which the public sector is organized to execute a P3 procurement and oversee the project's implementation can attract or discourage investors. In a P3, the private sector assumes schedule, budget, and many major project delivery risks over the long-term. While the private sector is taking on these risks, it must still gather approval from the public agency throughout the course of the project. If an agency appears to be fragmented and decisions will take considerable time to be made and if it appears there is a lack of understanding that overseeing a P3 project differs from a traditionally delivered project, bidders will be reluctant to come forward. However, if an agency is organized so that individuals are empowered with clear authority to make decisions on P3 projects, bidders will be more encouraged to participate and the overall cost of financing the project will be reduced.	No	Pass	

Criteria		Description of Criteria	Fatal Flaw? (Yes, No, Project Specific)	Result	Rating Scale Between 1 (lowest) and 4 (highest)
2.03.04	The private sector has sufficient P3 capacity (expertise and availability) to successfully deliver project objectives	Potential private sector must be sufficiently qualified to deliver the facility and services it will be required to fulfil. The private sector will need adequate administrative and investment appetite based on how much money they have to spend and if they have sufficient resources to deliver project objectives.	No	Pass	
Category 4 - Regulatory, legal, and political feasibility					
2.04.01	Consensus among local and regional authorities	This criterion will help determine the level of support that a project has among stakeholders, elected officials, transportation officials, and the public at large. The procuring authority must consider the existing levels of support, the issues raised by any project opposition, and potential means to mitigate any opposition.	No	Pass with Limitations	2
2.04.02	Need for new or change in legislation	Early identification of whether there are any legal obstacles to moving a project forward as a P3 is critical. If changes are needed it is necessary to pinpoint them upfront and work together new legislation before an RFP is advanced. Given the significant cost of responding to a P3 procurement, bidders will be weary of responding to an RFP unless legislative authority is clear and issues concerning the project's bankability are addressed.	No	Fail	4
2.04.03	No specific legislative approval required post award	If specific legislative approval is required before Financial Close is reached, given the significant cost of responding to a P3 procurement and risk associated with such approval, bidders will be weary of responding to an RFP.	No	Fail	4

Total number of Criteria	16
Maximum value of Limitations	24
Total value of Limitations	13

Has a Fatal Flaw occurred?	No
Why has a fatal Flaw occurred?	

Project Suitability	Potentially suitable for Public Private Partnership (P3) Delivery Method