

The background of the entire page is a photograph of the Washington State Capitol building at night. The building is illuminated with warm yellow lights, and its large dome is a prominent feature. The building is situated on a hillside covered in snow, with some trees and lights visible in the foreground. The sky is a deep blue, suggesting twilight or early evening.

Evaluation of Public Private Partnerships Executive Summary

Washington State Joint Transportation Committee

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 through 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 risk¹), 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 operators² 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 report³.

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

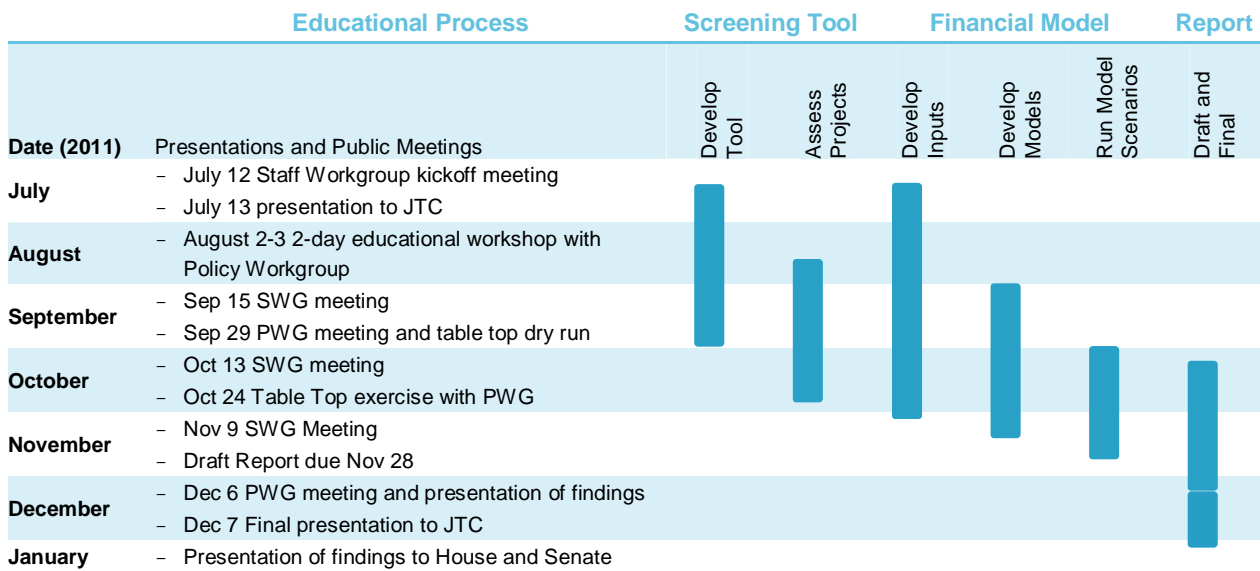
guidance that has been incorporated into this Study. The continual solicitation of input has resulted in a Study that documents and reflects the input, policy guidance, objectives, concerns, and recommendations of a wide stakeholder base in combination with the experience and market understanding of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

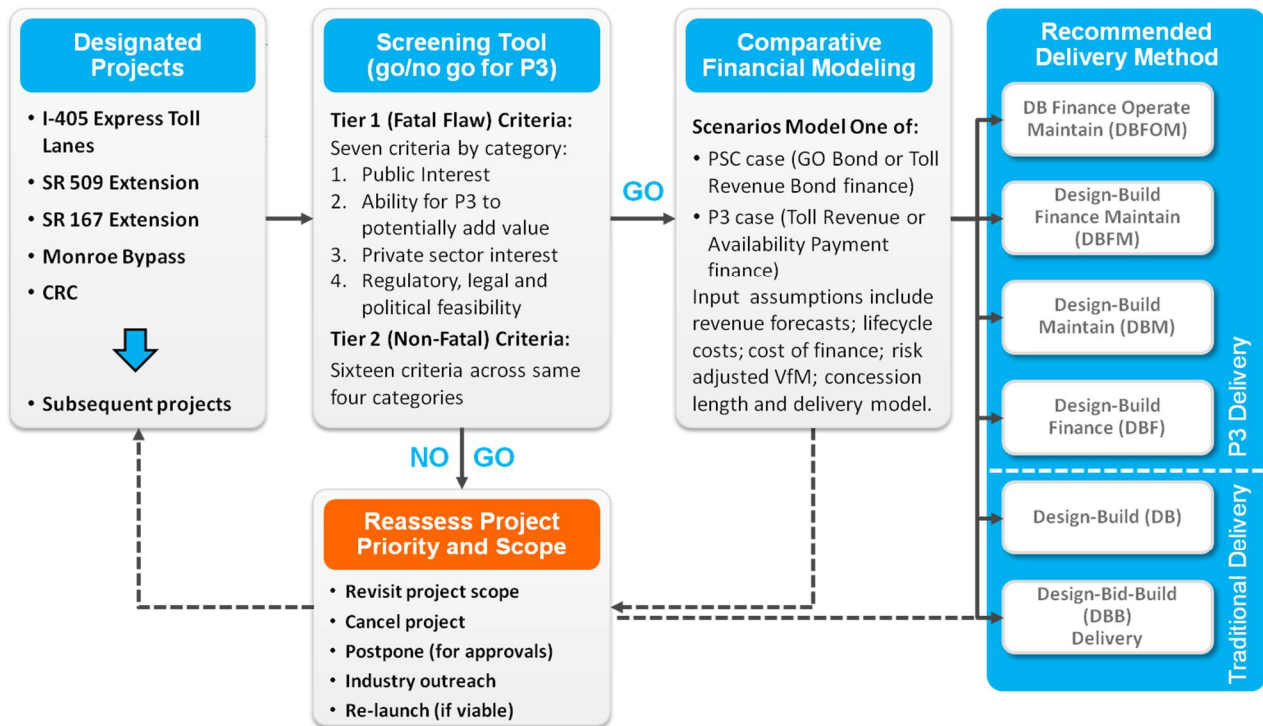


Notes: "Table Top" refers to an interactive workshop between the Consultants and meeting participants where deliverables under development are presented and worked through (either reviewed in detail or completed in real time) by all participants. This enables two-way learning and the opportunity for 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 Summary⁴



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 basis⁵. 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

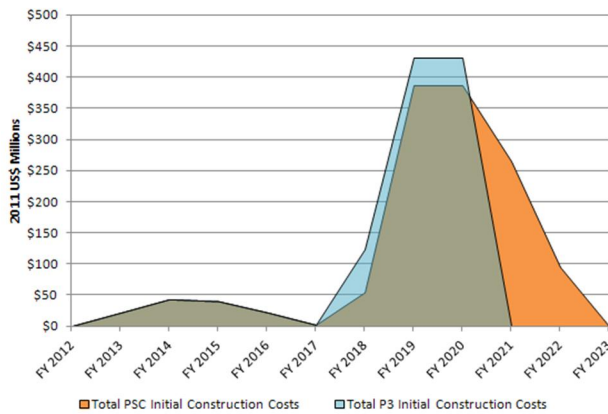
Three scenarios have been analyzed for this project: public sector comparator design-build delivery with cases for both Toll Revenue and GO Bond Finance; and a P3 DBFOM delivery, toll revenue concession.

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.

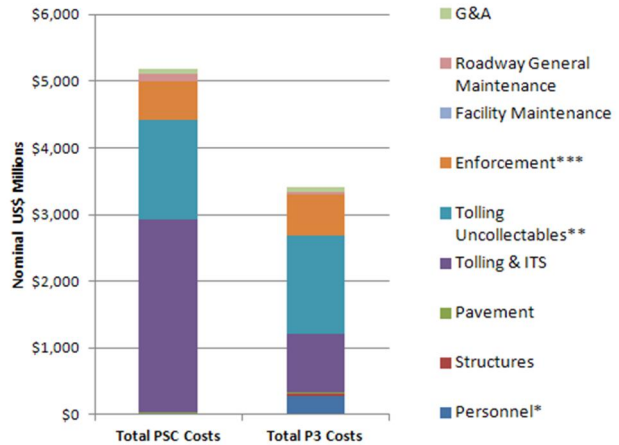
Initial Construction Cost Forecasts. The primary differences in the PSC and P3 scenarios stem from an assumed accelerated delivery under the P3 case, resulting in time and cost savings as per E.S. Figure III and discussed in Section 3.6.2.1. No differences have been assumed as a result of economies of 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 IV⁶ 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.

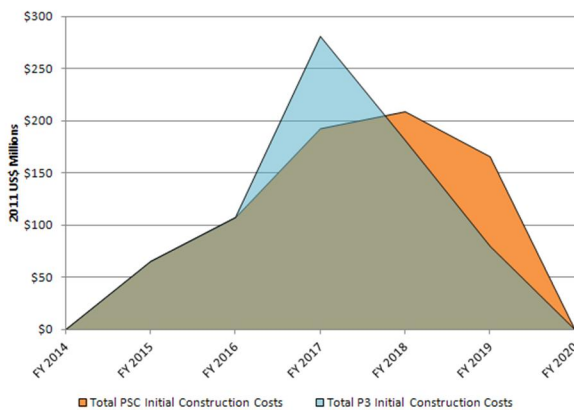
Revenue Forecasts were drawn from the relevant documents outlined in E.S. Table I which run from 2020 to 2055. In order to extend the revenue forecast to the agreed project term, a no traffic growth assumption was applied and a 2.5% annual toll escalation (to match CPI) was applied from 2055 to 2070. 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

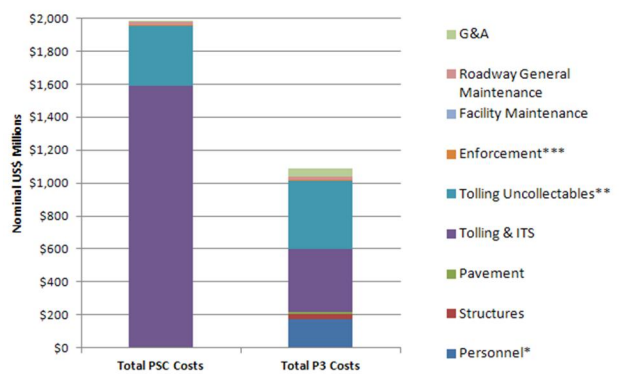
economies of scale or procurement efficiencies. Based on these assumptions, it is estimated that the P3 delivery model generates approximately 4% in total savings.

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 VI⁷. 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.

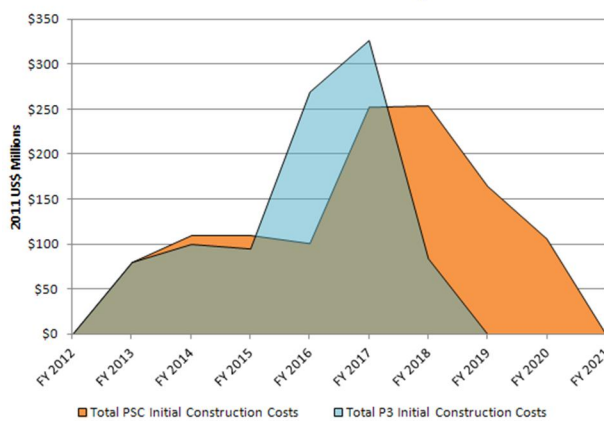
Revenue Forecasts for the PSC case were drawn from the relevant documents outlined in E.S. Table I, which runs from 2020 to 2050. The P3 case does not rely on revenue forecasts to raise financing; instead, the availability payment revenue stream that is paid by the state is pledged as security for the 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

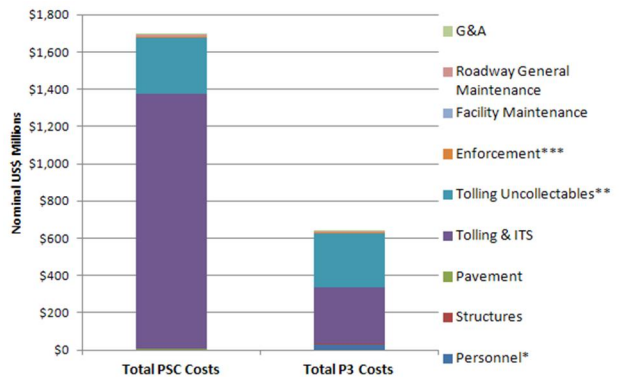
scale and procurement efficiencies. Based on these assumptions, it is estimated that the P3 delivery model generates a 19% cost savings.

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.

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 VIII⁸. 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 limitations⁹ 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: <ul style="list-style-type: none"> 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.

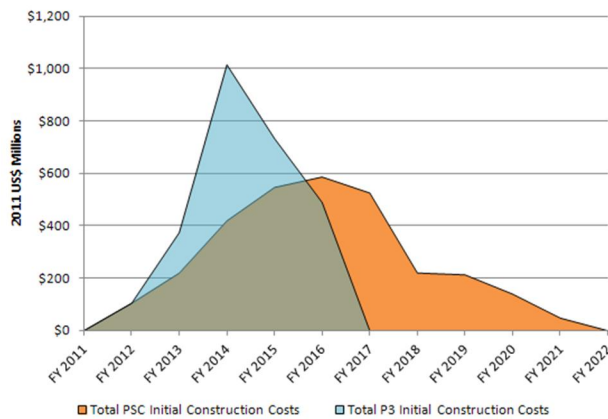
Revenue Forecasts were drawn from the relevant documents outlined in E.S. Table I which run from 2019 to 2059. In order to reach the agreed project term, a low case forecast was extended with no escalation past 2059 and 1% traffic growth. Other than an adjustment to reflect early completion of the project's 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

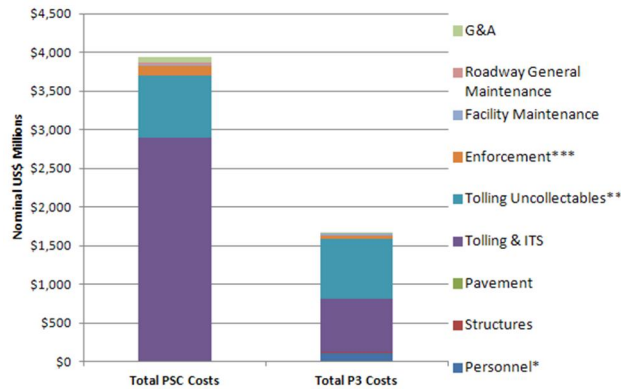
in E.S. Figure IX and discussed in Section 3.6.2.1. No differences have been assumed as a result of economies of scale or procurement efficiencies. Based on these assumptions the Consultant Team has forecast a 10% total saving under the P3 cases.

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 X¹⁰. 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

Project	Tier 1 (Fatal Flaw) Criteria			Tier 2 (Non-Fatal) Criteria		Overall Result
	Fatal Flaw Triggered?	Pass with limitations scores		Pass with limitations scores		
		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 PSC¹¹, 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 expenditures¹². 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

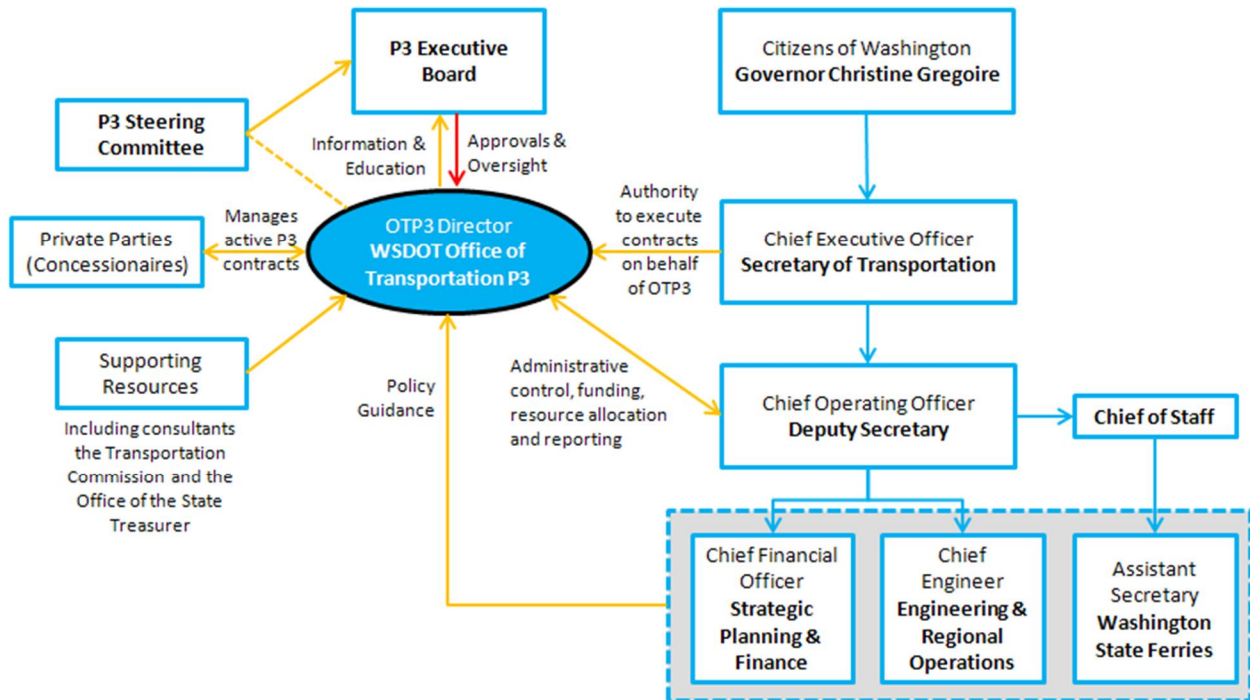
The Consultant Team's approach to facilitating the administrative recommendations outlined in E.S. Table VI has focused on redefining the OTP3, its resources, authority, reporting, and the way in which it relates to WSDOT, the State Legislature and other relevant entities (notably the Transportation 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.

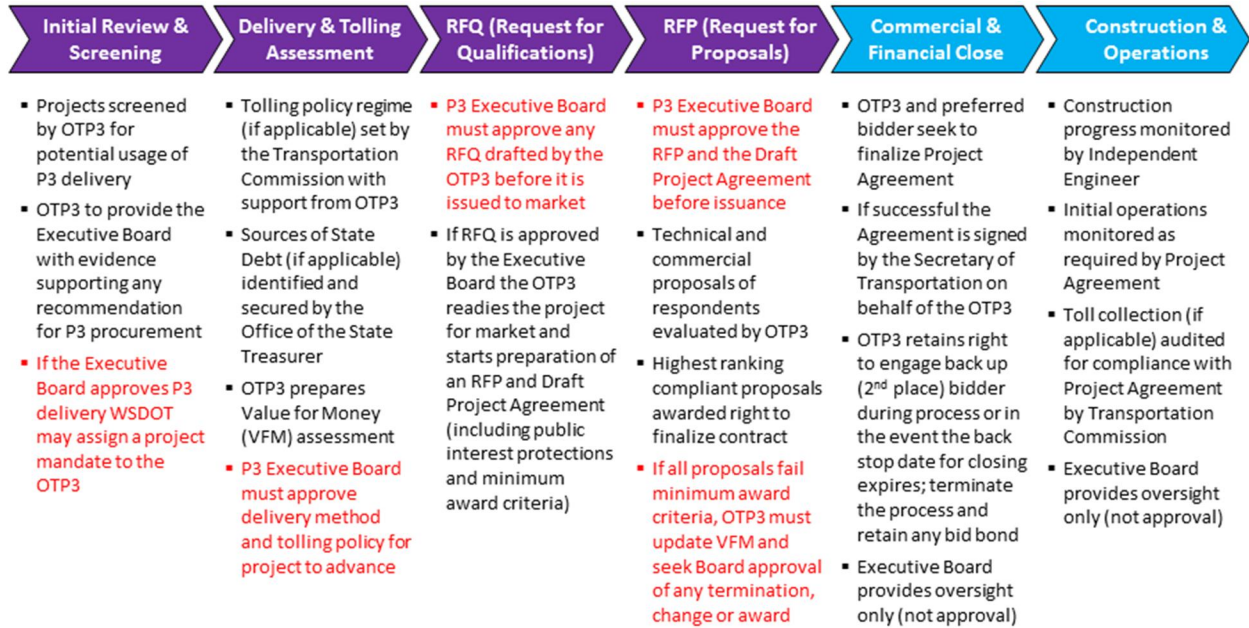
An intended consequence of this reporting process is that the OTP3 will have ample opportunity to inform the State Legislature of its program and project activities (via the Board) on a regular basis, so that this might benefit the Legislature's approach to budget approvals.

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