EXHIBIT A

CHAPTER 4

Financial Analysis

This chapter describes project costs, revenue options, and finance plan scenarios for the locally preferred alternative (LPA) and LPA with highway phasing alternatives. The finance plan scenarios incorporate tolling of the I-5 bridges. Toll rate scenarios are shown in 2006 dollars to be consistent with past project documents; toll rates are assumed to increase at 2.5 percent per year. Capital and operating costs and revenues are addressed. Capital cost is estimated to be $3.40–$3.76 billion for the LPA and $3.16–$3.51 billion for the LPA with highway phasing, in year of expenditure dollars. The capital finance plans are summarized in Exhibit 4.4-3.

CHAPTER CONTENTS

4.1 Background

This section explains the capital cost estimates for the LPA and LPA with highway phasing. The capital cost estimates cover all costs of developing and constructing the highway, bridges, bicycle/pedestrian, and light rail elements of these alternatives, including engineering, project administration, right-of-way acquisition, system procurement and installation, vehicle procurement, construction of maintenance facilities, construction, and start-up costs.

The capital cost estimates used in this Final Environmental Impact Statement (FEIS), which are detailed in the August 2011 cost estimate update (CRC 2011a), reflect the results of the Washington Department of Transportation's (WSDOT) Cost Estimate Validation Process (CEVP), a risk assessment methodology that accounts for uncertainties that may cause project costs to increase. Contingency is added to the base capital cost estimate to address these potential cost increases and to produce a range of cost estimates reflecting the probability, or confidence, that the actual cost of the project

will be less than the estimated cost. The 60 percent confidence cost estimate incorporates sufficient contingency to meet expected risks, and is referred to as the Medium cost estimate. The 90 percent confidence cost estimate incorporates substantially increased contingency to address a wide range of potential cost increases, and is referred to as the High cost estimate.

Capital cost estimates are shown in year-of-expenditure dollars, which show the aggregate cost in inflated dollars. To develop the year-of-expenditure cost estimates, annual cost escalation rates were developed for major cost elements. Over the 11-year project development period, the assumed annual escalation rate for construction activities ranged from +1.49 percent to +3.62 percent.[1] The assumed annual cost escalation rate ranged from 0.72 percent to 3.30 percent for engineering and from -3.99 percent to 7.74 percent for right-of-way.

While the Columbia River Crossing (CRC) project is an integrated multimodal project, the use of some funding sources is limited by law (for example, fuel tax revenues in Oregon and Washington may only be used for highway-related improvements). Thus, the capital cost estimates are divided into highway and transit components. Many project costs are easily allocated to transit or highway because they are distinctly attributable to one of the components; for example, the cost of mainline highway improvements where there is no transit alignment is a highway cost, and the cost of light rail track is a transit cost. However, the costs of some highway and transit improvements overlap and must be allocated between these components. The allocation methodology underlying the cost estimates is summarized below.

- *Columbia River Crossing Main Bridge Structure:* Because one of the bridges crossing the Columbia River would incorporate highway and transit elements, the cost of the bridges can be apportioned into highway and transit costs. Transit's share of the bridge structure cost is the marginal cost incurred to accommodate transit, calculated as the difference between the cost of the stacked highway-transit bridge proposed for the project and the cost of an equivalent conventional box-girder bridge that does not accommodate the light rail alignment. The cost of removing the existing bridge structures is fully allocated to the highway cost. The cost of the transit tracks, electrification, and systems equipment on the main bridge is fully allocated to the transit cost. The transit structures crossing North Portland Harbor, Tomahawk Island Drive, and Hayden Island Drive are fully allocated to the transit cost; and the associated highway structures are fully allocated to the highway cost.
- *Right-of-Way:* Right-of-way acquisition costs are also apportioned between transit and highway elements. The final apportionment will be based on a real estate acquisition management plan (RAMP), agreed to by FTA and FHWA following the Record of Decision (ROD) for this FEIS.
- Engineering and Project Management/Administration: The highway and transit costs include their respective share of preliminary engineering and

1 Inflation rates are documented in CRC, Columbia River Crossing CEVP Final Report, (August 2011) and may change in later updates to the cost estimate.

final design costs, calculated by applying multipliers[2] to the construction costs of the highway and transit elements.

Based on these assumptions:[3]

- Highway capital costs include the costs of designing, acquiring right-of-way for, and constructing the highway sections of the river crossing, mainline I-5 improvements, highway interchange improvements,[4] local roadway connections to the highway interchanges, the bicycle and pedestrian improvements incorporated in the main river crossing and highway sections, and related project administration costs.
- *Transit capital costs* include the costs of designing, procuring, installing, and constructing the transit guideway and related structures (including a share of the main river crossing); stations and park and ride facilities; maintenance facilities; electrification, signalization, and communication systems and equipment; related transit improvements; vehicles; bicycle/pedestrian improvements on transit-only structures; start-up costs; improvements to the Steel Bridge, and related project administration costs.

2 The transit costs assume that preliminary engineering costs would be 3 percent and final design costs would be 7 percent of the estimated transit construction cost. The same calculation was applied to highway costs.

3 The allocation of bicycle, pedestrian other costs between highway and transit may be refined based on continuing discussions with FTA and FHWA.

4 The access road to the Clark Park and Ride, which is part of the Fourth Plain interchange improvement, is included in the transit cost.

4.2 Capital Costs of the CRC Project

Exhibit 4.2-1 shows the range of capital cost estimates in year-of-expenditure dollars for the LPA and LPA with highway phasing. The difference between the capital costs of the LPA and LPA with highway phasing represents the cost of improvements that would be deferred if the total amount of revenue needed for the LPA were not available prior to the start of construction. In such a circumstance, no transit improvement would be deferred. Thus, the transit elements in the LPA and LPA with highway phasing are identical, as are their capital costs. Highway elements proposed to be deferred include improvements to I-5 ramps at Victory Boulevard, the flyover ramp at Marine Drive, and the northern section of the SR 500 interchange. Thus the cost differences (and financial plan differences) between the LPA and LPA with highway phasing illustrate the impact during the initial construction period of deferring these highway elements to a future date. The deferred improvements would incur increased escalation cost as a result of the deferral, and their actual year-of-expenditure cost would be higher and would depend on the length of the deferral.

Exhibit 4.2-1
Capital Cost Estimates by Alternative in Millions of Year-of-Expenditure Dollars

	Medium Cost Estimate[a]	High Cost Estimate[b]
LPA		
Transit[d]	$856.3	$944.3
Highway	$2,539.7	$2,819.3
LPA Total	**$3,396.0**	**$3,763.6**
LPA with Highway Phasing		
Transit[c]	$856.3	$944.0
Highway	$2,301.0	$2,563.8
LPA with Highway Phasing Total	**$3,157.3**	**$3,507.8**

Source: Columbia River Crossing CEVP Final Report, August 2011.

a Medium cost estimate assumes the 60% confidence cost estimate.

b High cost estimate assumes the 90% confidence cost estimate.

c The transit elements of the LPA and LPA with highway phasing include interim borrowing cost based on the assumed availability of New Starts Funds.

d The assumed amount of New Starts funding and target dates scheduled are not guaranteed by FTA; funding amount and schedule will be negotiated as part of preparing the FFGA.

As shown in Exhibit 4.2-2, the DEIS showed Medium and High estimates of capital costs in year-of-expenditure dollars for the supplemental and replacement bridge alternatives, the full-length light rail and bus rapid transit alternatives, and two minimum operable segments for each of the transit components.

Exhibit 4.2-2

Capital Cost Estimates of DEIS Alternatives[a] In Billions of Year-of-Expenditure Dollars

DEIS Alternative	Alternative 2 Replacement Bridge/BRT	Alternative 3 Replacement Bridge/LRT	Alternative 4 Supplemental Bridge/BRT	Alternative 5 Supplemental Bridge/LRT
Medium Cost Estimate				
Full Length Alternatives[b]	$3.54-$3.71	$3.72-$3.90	$3.41-$3.60	$3.58-$3.77
Minimum Operable Segments[c]	$3.26-$3.32	$3.37-$3.43	$3.13-$3.19	$3.21-$3.28
High Cost Estimate				
Full Length Alternatives[b]	$3.74-$3.92	$3.92-$4.09	$3.59-$3.78	$3.76-$3.95
Minimum Operable Segments[c]	$3.47-$3.50	$3.55-$3.61	$3.32-$3.35	$3.45-$3.49

a Costs of full-length alternatives from DEIS Exhibit 4.2-1 and costs of minimum operable segments from DEIS Exhibit 4.2-3.

b Full-length alternatives include termini at Kiggins Bowl or Lincoln Street.

c Minimum operable segments include termini at Mill Plain and Clark College.

Costs for the replacement bridge with full-length bus rapid transit alternative ranged between $3.5 billion and $3.9 billion in year-of-expenditure; and between $3.3 billion and $3.5 billion for the minimum operable segment options. Costs for the replacement bridge with full-length light rail transit alternative ranged between $3.7 billion and $4.1 billion in year-of-expenditure; and between $3.4 billion and $3.6 billion for the minimum operable segment options. Costs for the supplemental bridge with full-length bus rapid transit alternative ranged between $3.4 and $3.8 billion in year-of-expenditure; and between $3.1billion and $3.3 billion for the minimum operable segment options. Costs for the supplemental bridge with full-length light rail transit alternative ranged between $3.6 billion and $4.0 billion in year-of-expenditure; and between $3.2 billion and $3.5 billion for the minimum operable segment options. The cost estimates in this FEIS build on the information documented in the DEIS, but have been updated for the LPA and LPA with highway phasing alternatives based on the greater level of design, project development scheduling, and cost estimating performed on the LPA.

The current total capital cost estimates for the LPA range between $3.40 billion and $3.76 billion in year-of-expenditure dollars. In comparison, the LPA with highway phasing is currently estimated to cost between $3.16 billion and $3.51 billion in year-of-expenditure dollars. Thus, the deferral of the Victory Boulevard ramp, the flyover ramp at Marine Drive, and the northern section of the SR 500 interchange would reduce the cost of the LPA with highway phasing by about $0.24 to $0.25 billion compared to the LPA.

4.3 Capital Revenue Options

This section identifies the federal and state funding programs potentially applicable to the CRC project. Many of these funding sources can be used to pay highway, transit, and bicycle/pedestrian costs. However, several are subject to legal requirements or restrictions that limit their use to certain project components. Exhibit 4.3-1 enumerates the federal funding programs potentially applicable to the CRC project and the restrictions, if any, on their use. Exhibit 4.3-2 provides similar information on state and regional funding programs. The funding programs currently incorporated in the finance plan scenarios are identified in Section 4.4.2; the final list of funding programs used in the CRC finance plan will result from continued discussions, during final design, with stakeholders and legislative committees.

Exhibit 4.3-1
Summary of Revenue and Financing Options: Federal Programs

Funding Source	Highway Eligible	Transit Eligible[a]	Comment
Federal Discretionary Funds			
Projects of National and Regional Significance	x		May be a criteria-based administrative award program or a congressional appropriation.
Reauthorization Bill: High Priority Projects	x	x	Can be any type of improvement specified in reauthorization act.
Transportation Investment Generating Economic Recovery (TIGER) program	x	x	
Transit Investments for Greenhouse Gas and Energy Reduction (TIGGER) program		x	
Interstate Maintenance Discretionary Funds (IMD)	x		
Value Pricing Pilot Program	x		
New Starts Capital Program (Section 5309)		x	
Transportation Community and System Preservation Program Funds (TCSP)	x	x	
Innovative Bridge Research and Deployment Program (IBRD)	x		
Highways for LIFE Program (HfL)	x		
Alternative Transportation in Parks and Public Lands Funds		x	
Discretionary Bus and Bus Facilities Funds (Section 5309-B)		x	
Federal Formula Funds			
National Highway System Funds (NHS)	x	x	Certain conditions required for transit uses.
Surface Transportation Program Funds (STP)	x	x	
Interstate Maintenance Funds (IM)	x		
Fixed Guideway Modernization Funds (Section 5309)		x	Limited to capital improvement or preventive maintenance for existing fixed guideways. Not available until eighth year of operations.
National Highway Traffic Safety Administration Grants (NHTSA)	x		
Congestion Mitigation Air Quality Funds (CMAQ)	x	x	Limited to activities with air quality benefits. Not eligible for major highway expansion.

Funding Source	Highway Eligible	Transit Eligible[a]	Comment
Urbanized Area Formula Grants (Section 5307)		x	
Jobs Access and Reverse Commute Funds (JARC Section 5316)		x	Targeted for particular transit operations.
New Freedom Funds (Section 5317)		x	Targeted for particular transit operations
Federal Financing Programs			
Transportation Infrastructure Finance and Innovation Act (TIFIA)	x	x	Loan and credit enhancement program.
Grant Anticipation Revenue Vehicles (GARVEE Bonds) or Grant Anticipation Notes (GANs)	x	x	Allows future federal grants to be bonded.

Note: This table provides a comprehensive list of funding programs; inclusion in the list does not mean a funding source is planned for use.

a Parentheses indicate that the funding source depends on specific conditions or the authority granted is future legislation.

Exhibit 4.3-2

Summary of Revenue and Financing Options: State and Regional Programs

Funding Source	Highway Eligible	Transit Eligible[a]	Comment
State Funds			
Fuel Tax Revenue Oregon and Washington	x		Oregon and Washington state constitutions restrict use of these revenues.
Oregon Motor Carrier Taxes and Fees and DMV Fees	x		Restricted by Oregon Constitution.
Oregon Lottery Funds	x	x	
Washington Licensing Fees: Trucks, Buses, For-Hire/Passenger Vehicles	x	(x)	Uses described in statute.
Washington Sales and Use Tax	x	x	
Public Private Partnerships	x	x	
Real Property Contributions	x	x	Limited opportunities.
Tolls	x	(x)	Use in Oregon limited to highway purposes by Oregon Constitution. Use in Washington specified by legislature.
Regional Funds			
Existing and Additional Revenues Available to TriMet	(x)	x	Can be used for certain road purposes, but not applicable to CRC highway costs.
Existing and Additional Revenues Available to C-TRAN		x	Existing sales and use tax can be increased with voter approval. Additional funding sources are provided by Washington's High-capacity Transit (HCT) Act.
Transportation Benefit District (TBD) Revenues	x	x	There are several funding sources available to TBDs; most require voter approval.

Note: This table provides a comprehensive list of funding programs; inclusion in the list does not mean a funding soured is planned for use.

a Parentheses indicate that the funding source depends on specific conditions or the authority granted is future legislation.

4.3.1 Federal Revenue and Financing Options

Federal Discretionary Funds

Federal transportation funds include (i) formula funds, those funds apportioned to states or regions on the basis of a formula set by law and (ii) discretionary funds, those allocated to projects on a case-by-case basis. There are two basic categories of discretionary federal transportation funds: (i) those allocated to projects by the U.S. Department of Transportation (USDOT), usually based on criteria set forth in law or regulation, and (ii) those allocated to projects through Congressional actions, usually in transportation reauthorization acts or annual appropriation bills. WSDOT, the Oregon Department of Transportation (ODOT), the Tri-County Metropolitan Transportation District (TriMet), and the Clark County Public Transit Benefit Area Authority (C-TRAN) have each received discretionary transportation funds, both through USDOT and by congressional-action.

The Section 5309 New Starts program provides federal discretionary grants to construct fixed-guideway transit systems, such as light rail transit. The amount of New Starts funds available nationally is established in each federal transportation reauthorization act. The statutory authority in 49 U.S.C. Section 5309(d)(3) prescribes a rating process, administered by FTA, to determine if a project merits New Starts funding. The amount of local funding needed is based on the Federal program requirements for local matching funds. The CRC project received an overall rating from FTA of Medium-High when it entered preliminary engineering. FTA will re-rate the project at various points during its development. The finance plan scenarios shown in this FEIS differ slightly from the finance plan reviewed by FTA during its most recent rating process; the differences primarily are a consequence of refined assumptions regarding toll bonding capacity.

If approved for New Starts funding, the CRC project would receive a Full Funding Grant Agreement (FFGA) that establishes the maximum amount of New Starts funds for the project and the terms and conditions of receiving the funds. The annual amount of New Starts funding actually made available to the CRC project would be set through the congressional appropriation process and generally guided by the amount proposed in the FFGA.

Federal Formula Funds

ODOT, WSDOT, C-TRAN, TriMet, Metro, and the Southwest Washington Regional Transportation Council (RTC) receive transportation funding from a variety of federal formula grant programs. In an urban area, the metropolitan planning organizations (MPOs) program these funds to specific eligible uses. In the Portland-Vancouver region, this is accomplished through Metro's or RTC's Metropolitan Transportation Improvement Program (MTIP) processes. State and federal funds are also programmed in ODOT's and WSDOT's State Transportation Improvement Programs (STIPs). While federal formula funds potentially could be used for the CRC project, many of these funds are currently programmed for other uses, and the finance plan for the CRC project does not anticipate reprogramming of these funds.

Federal Financing Programs

The project may employ Grant Anticipation Revenue Vehicle (GARVEE) bonds[5] to match the availability of New Starts funds with the cash-flow needs of light rail construction. Through the use of GARVEEs, the New Starts funds provided in the FFGA for the CRC project could be pledged to repay noteholders and the proceeds would be used to pay construction costs. To secure a better interest rate, additional revenues may be pledged in the event that future New Starts funds are not available. TriMet has used a similar approach to help fund portions of the South Corridor project, the Wilsonville to Beaverton Commuter Rail Project, and the Portland-Milwaukie Light Rail Project.

The finance plan may also incorporate credit assistance from the Transportation Infrastructure Finance and Innovation (TIFIA) program. TIFIA is a federal credit program for transportation projects of national or regional significance under which USDOT may provide direct loans, loan guarantees, or standby lines of credit, at times at better interest rates or terms than otherwise available. TIFIA assistance is awarded through a competitive nationwide process based on established criteria. While not a grant, a TIFIA award adds capital funding by increasing the borrowing capacity of the net toll revenues.

4.3.2 State Funding Options

In addition to federal formula funds, ODOT and WSDOT also administer state funding programs, primarily from fuel taxes, fees on motor carriers, and licensing and registration fees. Prior to issuance of this FEIS, both ODOT and WSDOT committed state funds to the CRC project for preliminary engineering and other project development activities. The funding plan calls for additional commitments of state transportation funds. New revenues may be created by increasing one or more of the statewide fees or taxes. The actual package of taxes, fees, and other revenue sources that may be used to fund each state's share of CRC capital costs will be developed through their legislative processes. Oregon's 2011 Legislative Assembly established an interim legislative committee to review information and report to the Legislature by February 2012 on the Columbia River Crossing cost estimates, procurement schedule and financing plans as a precursor to legislative consideration of the state's contribution. In Washington, the governor has created the Connecting Washington Task Force, which is charged with developing a 10-year investing and funding plan for the state's transportation system, including the CRC project, and presenting it to the 2012 Legislature.

4.3.3 Toll Bond Proceeds and Revenues

Both the LPA and LPA with highway phasing alternatives incorporate two-way tolling on the I-5 bridges. 23 U.S.C 129(a)(1)(C) permits states to toll a bridge on the Interstate System when the bridge is either being replaced or reconstructed, as is the case for the CRC project. Federal statutes delegate to the states decisions regarding toll rate schedules and the time when tolls can first be charged, except that tolls may not be imposed prior to awarding the initial construction contract. The decision as to the time when tolls are removed is also reserved for the states. As a pre-requisite to tolling the I-5

5 23 USC 122(a) and (b).

bridges, WSDOT and ODOT must enter into a tolling agreement with FHWA. This tolling agreement will require that toll revenues be first used for debt service and the operation and maintenance of the bridge. The use of toll revenues exceeding the amount needed for debt service or operations and maintenance is subject to state laws and regulations.

Under current state statutes, the toll rate schedule for the I-5 bridges (i.e., the toll rates by time of day, day of week, vehicle classification, and applicable discounts, if any) must be formally set by the state transportation commissions through specific processes set in state law and further detailed in a bi-state agreement between WSDOT and ODOT. At the time of this FEIS, ODOT has general statutory authority to toll facilities it owns, including the I-5 bridges, but does not operate any toll facilities. Under Washington law, WSDOT is provided tolling authority on a project by project basis. WSDOT currently operates two toll facilities (Tacoma Narrows Bridge and SR 167 high occupancy toll [HOT] Lane) and will open a third toll facility (SR 520) in late 2011. WSDOT is not currently authorized to toll the I-5 bridges. WSDOT anticipates seeking such authority in the 2012 or, as a secondary option, the 2013 legislative session. The bi-state agreement between ODOT and WSDOT will be executed following WSDOT's authorization to toll the I-5 bridges and would include any agreed-upon refinements to project governance.

This analysis examines the potential levels of project funding from tolling. It considers several tolling scenarios that differ by (i) the toll rate schedule (i.e., the toll rate for a given hour of the day for a particular class of vehicles) and (ii) whether two-way tolling starts after completion of the new southbound I-5 bridge in July 2018 (post-completion tolling) or earlier (pre-completion tolling). The analysis examines three prototypical toll rate schedules including the Base toll rate schedule (shown as Schedule 1 in Exhibit 4.3-3, below), which is used to forecast the traffic and traffic-related impacts reported in Chapter 3, and two variations on the Base toll rate schedule. The formal toll rate-setting process may consider other toll rate schedules beyond those reported here.

Exhibit 4.3-3 provides the assumed weekday toll rate schedules for passenger cars by time period. Toll rates are expressed in 2006 dollars to be consistent with previous studies. These rates are assumed to be increased on average at 2.5 percent annually.[6] Thus, for example, the peak-period toll rate for an automobile with a transponder under the Base toll rate schedule ($2.00 in 2006 dollars) would be $2.21 in 2010 dollars and $2.69 in 2018 when the new southbound I-5 bridge is scheduled to open for traffic.

The rates shown are one-way tolls. A round-trip would pay tolls in each direction at the appropriate rate for the time period of each crossing. These toll rate schedules are applicable to both the LPA and LPA with highway phasing alternatives.

6 Toll rate increases must be approved in accordance with the processes set forth in a bi-state tolling agreement, and under current state law will require approval by the Oregon Transportation Commission and Washington Transportation Commission.

Exhibit 4.3-3
Toll Rate Schedule Scenarios - Toll Rates In Each Direction[a,b,c,d]

	Post-completion Toll Rate Structure for Autos[e]			
Time Period	Schedule 1 Base	Schedule 2 Added Price Point	Schedule 3 1.5X Base	Pre-completion Toll Rate Structure for Autos[f]
12 AM–5 AM	$1.00	$1.00	$1.50	$0.00
5 AM–6 AM	$1.50	$1.50	$2.25	$1.50
6 AM–7 AM	$2.00	$2.00	$3.00	$2.00
7 AM–9 AM	$2.00	$2.50	$3.00	$2.00
9 AM–10 AM	$2.00	$2.00	$3.00	$2.00
10 AM–3 PM	$1.50	$1.75	$2.25	$1.50
3 PM–4 PM	$2.00	$2.00	$3.00	$2.00
4 PM–6 PM	$2.00	$2.50	$3.00	$2.00
6 PM–7 PM	$2.00	$2.00	$3.00	$2.00
7 PM–8 PM	$1.50	$1.50	$2.25	$1.50
8 PM–12 AM	$1.00	$1.00	$1.50	$0.00
Pay-by-plate Surchargeg	$1.22	$1.22	$1.22	$1.22

a Toll rates are shown in 2006 dollars. Toll rates are assumed to escalate at 2.5% per year. Thus, for example, a $2.00 toll in 2006 dollars would be about $2.21 in 2010 dollars.

b Medium trucks, defined as vehicles with three or four axles, are assumed to have a toll rate that is twice the rates shown above for autos.

c Large trucks, defined as vehicles with five or more axles, are assumed to have a toll rate that is four times the rates shown above for autos.

d The actual toll rates imposed through the formal toll setting may differ from these scenarios.

e Toll rates charged after the new southbound I-5 bridge is opened for traffic operations.

f Toll rates on existing I-5 bridges, if tolls were imposed prior to completion of the new southbound I-5 bridge.

g The pay-by-plate surcharge, shown in 2006 dollars, is applicable to all types of vehicles and does not change by time of day. The surcharge represents an average of the anticipated added cost to collect these tolls compared to costs for vehicles with transponders. The surcharge would change as the cost to collect these tolls increases; the escalation rate is anticipated to be lower than the cost of inflation.

Toll rates for commercial vehicles are assumed to be proportionately greater than for passenger cars, roughly based on the number of axles. Many toll facilities follow this approach including, for example, the Tacoma Narrows Bridge. For the purposes of this analysis, it is assumed that large-sized commercial vehicles (five or more axles) would pay four times the passenger car rate for the given time of day, and medium-sized commercial vehicles (three- or four-axle vehicles) would pay two times the passenger car rate for the given time of day. The actual toll rates for commercial vehicles will be determined in the formal toll rate–setting process.

4.3.4 Regional Funding Options[7]

The capital finance plan for the CRC project does not rely on using regional funding; regional funding is preserved for transit operations and maintenance needs. Future refinements to the capital finance plan may employ regional funds for certain supplemental improvements.

7 Regional funding options include local transportation taxes and fees (such as TriMet's payroll tax proceeds or C-TRAN sales and use tax proceeds) and federal transportation grant funds allocated to the Portland/Vancouver region by formula and programmed by regional governmental entities for specific uses (such as Section 5307 Urbanized Area Formula Grants provided to TriMet or C-TRAN).

4.4 Capital Finance Plan

Sections 4.1 through 4.3 explain the elements of the capital finance plan for the CRC project. This section merges these elements into capital finance plan scenarios for the LPA and LPA with highway phasing. A range of finance plan scenarios is shown for each alternative, reflecting the cost estimates and the range of available funding. These capital finance plan scenarios illustrate the basic financial trade-offs associated with the alternatives and funding sources. The actual amount of funds derived from each source depends on the amount approved by the applicable approval body.

4.4.1 Integrated Multimodal Finance Plan

The financial plan for the CRC project is rooted in an integrated, multimodal project finance plan facilitated by a federal statute requiring USDOT to take into account the entire funding plan, including local highway revenues, in rating the light rail transit component of the CRC project for New Starts funding.[8] The statute also provides that the local match requirement for New Starts funds can be met by the entirety of local funding included in the integrated finance plan. The finance plan also accounts for (i) the timing of when funding commitments are established and (ii) the cash flow schedule for when funds are actually provided to pay project costs. The assumed schedule for these activities is shown in Exhibit 4.4-1. The timing of when funds are available to pay project costs (i.e., cash flow) is determined by authorization, appropriation, and administrative provisions specific to each funding source; key cash flow assumptions for each funding source are explained in Section 4.4.2.

Exhibit 4.4-1
Assumed Capital Finance Plan Implementation Schedule

Activity	Date
Washington Legislative Approval Authorizing Tolling for the CRC Project	March 2012
Submit Letter of Interest for TIFIA Loan	2012[e]
Washington Legislative Approval of State Funding Contribution	March 2012[c,d]
Oregon Legislative Approval Committing State Funding Contribution	March 2012[c]
Highway Discretionary Funding Program Enacted in Transportation Reauthorization Act[a]	October 2013
Initial Construction Contract Executed	October 2013
FTA Approval of Full Funding Grant Agreement for Section 5309 New Starts Funds[b]	September 2013
If applicable, Start of Pre-completion Tolling on Existing Bridges [e]	July 2014
Start Post-completion Tolling on New Southbound Bridge	July 2018
Light Rail Construction Complete/Service Starts	July 2019
New Northbound Bridge Open	July 2020

a Highway discretionary funding may come from a congressional action and/or approval of an administrative program for which the CRC project is eligible.

b Assumes all local matching funds for FFGA are committed in 2012.

c As a secondary option, the legislative request would be made in the 2013 session. If legislative approvals are deferred until the 2013 session, the scheduled dates for Final Design and the FFGA will change.

d If legislative approval includes referral to voters, state funding commitment will not be effective until voter approval.

e Submission date for TIFIA letter of interest depends on schedule for FHWA annual solicitation process.

8 The Consolidated Appropriations Act, 2010, Section 173 (H.R. 3288, December 9, 2009) states as follows: "Hereafter, for interstate multi-modal projects which are in Interstate highway corridors, the Secretary shall base the rating under section 5309(d) of title 49, United States Code, of the non-New Starts share of the public transportation element of the project on the percentage of non-New Starts funds in the unified finance plan for the multi-modal project: Provided, That the Secretary shall base the accounting of local matching funds on the total amount of all local funds incorporated in the unified finance plan for the multi-modal project for the purposes of funding under chapter 53 of title 49, United States Code and title 23, United States Code: Provided further, That the Secretary shall evaluate the justification for the project under section 5309(d) of title 49, United States Code, including cost effectiveness, on the public transportation costs and public transportation benefits."

4.4.2 Assumptions Regarding Anticipated Funding Sources

Various finance plan scenarios are shown for each of the alternatives, for both the medium and high capital cost estimates. The scenarios shown in this FEIS were selected to illustrate the basic financial trade-offs between funding concepts, and will be refined during the final design stage of the project.

The proposed funding sources and their assumed contributions to the finance plan scenarios shown below represent the starting point for an action plan to secure funding commitments. As is customarily the case, procuring these funds depends on future actions by federal and state legislators and administrators. The proposed sources and amounts of funding may need to be adjusted depending on the actions taken.

Federal Discretionary Highway Funds

The funding plan anticipates seeking an allocation of funds from the Projects of National and Regional Significance (PNRS) program. If PNRS funds are not sufficiently available for the CRC project, other discretionary highway funds may be sought, such as High Priority Projects, TIGER grants, and Interstate Maintenance Discretionary funds. If insufficient highway discretionary funds are secured for the project, construction may have to be phased and/or additional capital funds would be required from state sources and/or tolling. The finance plan scenarios shown in Section 4.4.3 assume the following:

- The LPA with highway phasing finance plan scenarios assume $400 million in discretionary highway funds would be secured in the upcoming reauthorization period and provided in four $100 million installments from federal fiscal year (FFY) 2014 through FFY 2017.
- The LPA funding scenarios also assume $400 million in discretionary highway funds provided in four $100 million installments from FFY 2014 through FFY 2017. However, some LPA funding scenarios also assume an additional $100 million highway discretionary action (for a total of $500 million in highway discretionary funds) in four $25 million installments, from FFY 2018 through FFY 2021, to fund the later highway elements of the LPA.
- For both alternatives, highway discretionary funds are anticipated to be used to pay project costs on a cash basis.

Section 5309 New Starts Funds

The finance plan scenarios anticipate securing Section 5309 New Starts funds, discussed in Section 4.3.1, to pay the final design and construction costs of the light rail element of the CRC project. The project is following FTA's New Starts process to ensure its eligibility for New Starts funds. The finance plan employs the provisions of Section 173 of the Consolidated Appropriations Act, 2010, to meet FTA New Starts rating criteria and to provide local match for the New Starts funds.

The finance plan scenarios shown in Section 4.4.3 are based on the following assumptions:[9]

9 The assumptions regarding the amount and schedule of New Starts funds requested for the CRC project may refined based on further financial planning,

- The estimated amount of New Starts funds that CRC is seeking for the project is $850 million.
- An estimated maximum of $100 million per year was used for the annual payout of New Starts funds in the FEIS. FTA will revise the New Starts payout schedule at the time a FFGA is negotiated.
- It is assumed that annual New Starts appropriations will be $100 million. There are years in which the assumed amount of New Starts funds available would be less than the amount needed to meet project costs.[10] The finance plan scenarios incorporate an interim borrowing program (i.e. GANs) to address these cash-flow deficits. Under such a program, the project would borrow to meet the cash-flow needs of the light rail element, pay interest costs for such borrowings, and repay the borrowings with New Starts funds appropriated later. The interest costs paid on the GANs are project costs, and are eligible to be reimbursed with future New Starts funds, to the extent there are sufficient New Starts funds committed to the project.

ODOT/WSDOT Funds

Prior to this FEIS, WSDOT and ODOT collectively committed about $147 million in state funds to the CRC project to pay for preliminary engineering and subsequent project development activities[11]. The funding plan seeks additional funds from ODOT and WSDOT. The actual package of formula federal funds, taxes, fees, and/or other revenue sources that may be used to provide the additional ODOT/WSDOT funds must be developed through future state legislative processes and/or allocations of existing funds. Depending on the source and timing of funds, state funds may be provided by a combination of cash grants and bond proceeds.

The finance plan scenarios shown in Section 4.4.3 are based on the following assumptions:

- Both the LPA and the LPA with highway phasing funding scenarios assume an additional $900 million aggregate contribution from ODOT and WSDOT.[12]
- In all scenarios, the state contribution is used prior to the toll bond proceeds.

Toll Revenues and Toll Bond and Loan Proceeds

Toll revenues are used to fund the CRC project by (a) pledging toll revenues to repay bonds and other loans and using the proceeds to pay project costs and/or (b) directly using the toll revenues on a cash basis to pay project costs.

Initial Funding Capacity of Post-completion Toll Revenues

The majority of toll funding for the project comes from borrowings that are repaid with a multiyear stream of net toll revenues. Net toll revenues exclude the toll revenues used to pay the operating and maintenance costs of toll collection and the facility. In addition, net toll revenues must provide "coverage" of bond debt service

10 In addition, the New Starts funds appropriated for the project are generally not available to pay project costs until several months into the federal fiscal year, which adds to the cash-flow deficit of the project.

11 The states also provided additional funds to cover the early planning for the project including preparation of the DEIS. Since the funding scenarios shown in this FEIS begin with the initiation of preliminary engineering (PE), the costs incurred and revenues expended prior to PE are not incorporated in the funding scenarios.

12 This is in addition to the state funds committed prior to issuance of this FEIS.

to assure there will be sufficient net revenues to pay debt service. This coverage reduces the amount of project funding available from the net toll revenues.[13]

Toll bonds and loans would be issued prior to opening the new bridges and would require a portion of the proceeds to be used to pay interest on the bonds until toll collection starts (i.e., capitalized interest). While the traffic forecast assumes toll rates escalate at 2.5 percent per year, *the estimated financial capacity of the toll bonds and loans do not rely on any escalation in toll rates after the start of post-completion tolling in July 2018*. This is a conservative assumption to reduce the financial risk of toll-backed borrowings.

The funding capacity of a toll rate schedule depends on the financing structure employed, including the timing of the bond issuances; the back-up pledge (if any) provided; and the type of bonds issued. This analysis is used to estimate a baseline financing structure in which net toll revenues are pledged to repay:

- A $500 million TIFIA loan
- The balance in toll bonds backed by a state general obligation and/or highway trust fund pledge

As explained earlier, TIFIA is a federal credit program awarded to transportation projects on a competitive basis. While the baseline financing structure assumes a $500 million TIFIA loan, the final mix and amount of TIFIA loans and toll bonds will depend on the ultimate availability of TIFIA funds and the size of the project. The project sponsors would seek the maximum appropriate TIFIA award available to the CRC project; such an award may lower the proposed amount of federal discretionary highway funds.

Exhibit 4.4-2 shows the range of the initial project funding contribution from each toll rate schedule assuming the baseline financing structure. The impacts of the alternative financing structures are discussed later in this chapter. The estimated funding capacities shown in Exhibit 4.4-2 are the amount of bond proceeds available to pay for project design and construction after deducting bond proceeds used for capitalized interest, bond issuance costs, and reserves. The funding capacities assume that state-backed bonds would be repaid in 30 years and the TIFIA loan would be repaid 35 years after project completion.

Funding capacity is provided as a range to reflect the possibility that revenue collections facility operations and maintenance costs, financing costs, and timing of the toll bonds, may differ from the assumptions used in the financial forecasts. The High estimate in Exhibit 4.4-2 reflects the traffic volumes assessed in Chapter 3 of this FEIS. The Medium estimate reflects traffic volumes about 7 to 8 percent below the High estimate, and the Low estimate reflects traffic volumes about 15 percent below the Medium estimate. To conservatively appraise financial feasibility, the financial plan scenarios discussed later in this section are based on the Low estimates of borrowing capacity shown in Exhibit 4.4-2.

13 A 25 percent coverage factor is assumed for state-backed debt (i.e., net toll revenues must be at least 1.25 times debt service each year) and an aggregate 10 percent coverage factor is assumed for TIFIA loans (i.e.; net toll revenues must be at least 1.1 times aggregate debt service each year).

Exhibit 4.4-2

Initial Borrowing Capacity of Toll Rate Schedules with Baseline Financial Structure in Billions of Year-of-Expenditure Dollars[a,b]

Point in Range[c]	Post-completion Tolls[d]			Pre-completion Add-on[e]
	Schedule 1	Schedule 2	Schedule 3	
Low	$0.932	$1.005	$1.197	$0.204
Medium	$1.106	$1.195	$1.428	$0.249
High	$1.181	$1.281	$1.574	$0.292

a Net bond proceeds for the design and construction costs; excludes proceeds used for issuance costs, capitalized interest, and reserves.

b While the project sponsors will seek the maximum appropriate TIFIA loan, the estimates in this exhibit assume a $500-million TIFIA loan combined with f state-backed senior bonds.

c A range of funding is shown for each schedule, reflecting the potential variability in traffic forecasts, financing assumptions, and schedule.

d Post-completion toll rate schedules assume that toll collection starts when the new southbound I-5 bridge opens for general traffic operations.

e Pre-completion funding capacity assumes that (a) two-way tolls start in July 2014 and pre-completion tolling ends when the new southbound bridge opens in 2018 and (b) these toll revenues are used on a cash basis. Thus, this amount is an add-on to the post- completion toll bond capacity for each of the toll rate schedules.

A comparison of the post-completion toll rate schedules illustrates the sensitivity of project funding levels from tolls to the differences in the toll schedules. The $0.50 higher rate in the 2-hour peak of the morning and afternoon peak periods in Schedule 2 compared to Schedule 1 produces $74 million to $98 million more project funding. The 50 percent higher toll rates in Schedule 3 compared to Schedule 1 produce an additional $248 million to $368 million in project funding.

Alternative Financial Structures

While Exhibit 4.4-2 uses the baseline financial structure, the actual financial structure employed will depend on the state and federal authorizations, market conditions, and other technical factors at the time bonds are issued. This could increase or decrease the project funding available from tolls. To illustrate these impacts, a sensitivity analysis was undertaken to assess the impacts of alternative financial structures. The sensitivity analysis focused solely on Toll Rate Schedule 1 and employed only the low estimate of net toll revenues from these tolls.

The sensitivity analysis found that incorporating TIFIA in the financial structure substantially increases project funding. For example, a state-backed bond without TIFIA would produce about $142 million less project funding than an equivalent state-backed bond combined with a $500 million TIFIA loan. Because the amount of project funding available from net toll revenues increases as the size of the TIFIA loan increases, the project sponsors will seek to maximize the use of TIFIA loans. State backing of the bonds also helps to increase project funding. A structure that combines bonds that do not have state backing with a $500 million TIFIA loan produces about $37 million less project funding than a financial structure that combines state-backed bonds with an equivalent $500 TIFIA million loan.

Pre-completion Toll Revenues

Some finance plan scenarios include tolling the existing I-5 bridges prior to the completion of the new southbound bridge, which is referred to as pre-completion tolling in this FEIS. By providing early toll revenues for project construction, pre-completion tolling can be used to provide additional revenues for project construction, reduce the amount of toll bond proceeds used to pay capitalized interest, and/or reduce the long-term post-completion toll rates. The $204 million to $292 million potentially available from pre-completion tolling shown in Exhibit 4.4-2 assumes:

- The pre-completion toll rate schedule shown in Exhibit 4.3-3.
- Pre-completion tolling would start, if required, as early as mid-2014 and continue until the new southbound bridge opens in mid-2018, when post-completion tolling begins.
- Facility operations and maintenance costs for the existing bridges are funded by ODOT and WSDOT as currently, and not from toll revenues.
- Net toll revenues from pre-completion tolling would pay project costs on a cash (pay-as-you-go) basis. Thus, for this analysis, the potential pre-completion tolling contribution can be viewed as an add-on to the post-completion funding capacity for each of the tolling scenarios.[14]

While Exhibit 4.4-2 shows a range of forecasts for pre-completion toll revenues, the finance plan scenarios in Section 4.4.3 use only the Low estimate.

Residual Toll Revenues

Because the toll bonding scenarios assume (i) a portion of the net toll revenues would provide coverage to supply a funding cushion for debt service and operating costs and (ii) the initial toll bonds would not rely on toll revenues from toll rate increases imposed after the opening of the new southbound bridge, there would be residual toll revenues available each year after the southbound bridge opens for traffic. A portion of these residual toll revenues would be required to pay for ongoing repair and replacement costs and also to fund prudent reserves for purposes such as operations and maintenance, repair and replacement, and toll rate stabilization. However, residual toll revenues not needed for repair and replacement costs or reserves could be used to pay for later stages of capital construction, including project elements that were deferred due to initial budget constraints. Residual toll revenues made available for capital construction could be used on a cash basis, the assumption used in this FEIS, or capitalized through future borrowings after the toll rate increase is imposed. Alternatively, these revenues may be used to accelerate repayment of toll bonds and/or mitigate the need for future toll rate increases.

4.4.3 Capital Finance Plan Scenarios

This section describes finance plan scenarios for the medium- and high-cost LPA and LPA with highway phasing alternatives. These funding scenarios were developed based on the assumptions and data provided above. All of the finance plan scenarios employ the low estimates of net toll revenues for the applicable toll rate schedule and the baseline financial structure. A wide range of scenarios are possible; those shown below were selected to illustrate basic trade-offs. The finance plan scenarios will be further refined during final design.

14 Pre-completion tolling could also be used as part of a bond program with post-completion tolling.

The finance plan scenarios show the year-by-year project costs, including interim borrowing requirements, and each of the project funding sources for the entire project development and construction period. Costs and funding are shown on a FFY basis. Costs and funding shown exclude those for alternatives analysis, preparation of the DEIS, and other activities between FFY 2004 and the start of preliminary engineering in FFY 2010. The finance plan scenarios shown in this FEIS differ slightly from the finance plan reviewed by FTA during its most recent rating process; the differences primarily reflect or are a consequence of refined assumptions regarding toll borrowing capacity. Exhibit 4.4-3, below, summarizes the funding plans for each of the scenarios discussed below.

Exhibit 4.4-3
Summary of Capital Finance Plan Scenarios in Millions of Year-of-Expenditure Dollars[a]

		LPA		LPA with Highway Phasing	
	Revenue Source	Medium Cost Estimate	High Cost Estimate	Medium Cost Estimate	High Cost Estimate
F	Federal Discretionary Highway	$400	$500	$400	$400
A	ODOT/WSDOT: Existing	$147.3	$147.3	$147.3	$147.3
F	ODOT/WSDOT: Additional	$900	$900	$900	$900
F	Post-completion Toll Bond and Loan Proceeds[a]	$918.2–$1,140.0	$1,161.9	$901.3	$918.2–$1,166.2
F	Residual Toll Revenues[a]	$0–$17.4	$0	$0	$44.2-$87.8
F	Pre-completion Toll Revenues [a]	$0-$204.4	$204.4	$0	$0 - $204.4
F	Section 5309 New Starts Funds[b]	$808.7	$850.0	$808.7	$850.0
	Total Revenues	**$3,396.0**	**$3,763.6**	**$3,157.3**	**$3,507.8**

Notes: A = currently available and committed to project; F = subject to future approvals; not currently available.

a The amounts shown for post-completion toll bond proceeds, residual toll revenues, and pre-completion toll revenues in all finance plan scenarios are based the Low forecast of toll revenues.

b The assumed amount of New Starts funding and target dates scheduled are not guaranteed by FTA; funding amount and schedule will be negotiated as part of preparing the FFGA.

LPA with Highway Phasing Alternative

Exhibit 4.4-4 shows a finance plan scenario for the LPA with highway phasing alternative assuming the Medium capital cost estimate and the Base toll rate schedule (Schedule 1). This is the least costly alternative considered in this FEIS. As a result, the amount of post-completion toll bond/loan proceeds required for this scenario ($901 million) is less than the estimated borrowing capacity of the Base (Schedule 1) toll rate schedule. No use of pre-completion tolling or residual tolls is required in this scenario. The scenario requires $400 million in federal highway discretionary funding. In addition, while this FEIS assumes $850 million of New Starts funding is the estimated maximum amount potentially available to the CRC project, the finance plan scenario shown in Exhibit 4.4-4 proposes only about $809 million of New Starts funds for the light rail extension, because that amount is all that is required for the Medium cost alternative.

Exhibits 4.4-6 and 4.4-7 show alternative finance plan scenarios for the LPA with highway phasing alternative assuming the High capital cost estimate. Exhibit 4.4-6 illustrates a scenario that assumes the Base (Schedule 1) toll rate schedule; as a result the post-completion bond/loan contribution is limited to about $932 million. Given this toll bond/loan contribution, this scenario requires pre-completion tolling and residual toll revenues to meet funding requirements. The pre-completion toll contribution, which is assumed to be provided on a cash basis, is at its maximum level; given the finance plan

scenarios assume the Low estimate of net toll revenues. In order to generate the necessary level of residual tolls, which are also provided on a cash basis, the project completion schedule must be extended by a year. In comparison, Exhibit 4.4-7 illustrates a scenario that assumes the Toll Rate Schedule 3, which has toll rates 1.5 times the toll rates in the Base toll rate schedule (Schedule 1). As a result of the $265 million higher bond/loan capacity of Schedule 3, this finance plan scenario does not require any pre-completion toll revenues and does not have to extend the construction schedule to achieve its required level of residual toll revenues. Both scenarios require $400 million in federal highway discretionary funding. In addition, both of these finance plan scenarios require the assumed maximum amount of New Starts funds available for the light rail extension of $850 million.

LPA Alternative

Exhibits 4.4-7 and 4.4-8 show alternative finance plan scenarios for the LPA alternative assuming the Medium capital cost estimate. Exhibit 4.4-7 illustrates a scenario that assumes the Base (Schedule 1) toll rate schedule. This scenario requires pre-completion tolling and residual toll revenues to meet funding requirements. The pre-completion toll contribution is at its maximum level, given that these financial scenarios assume the Low estimate of net toll revenues. A relatively small amount of residual toll revenues completes the financing scenario without having to extend the construction schedule. Exhibit 4.4-8 illustrates a scenario based on Toll Rate Schedule 3. The amount of post-completion toll bonds required for this scenario ($1.14 billion) is less than the estimated bond capacity of Toll Rate Schedule 3. No use of pre-completion tolling or residual tolls is required. Both scenarios require $400 million in federal discretionary highway funds. In addition, both finance plan scenarios propose only about $809 million of New Starts funding for the light rail extension because that amount is all that is required for the Medium cost scenario.

Exhibit 4.4-9 illustrates a scenario for the LPA alternative assuming the High capital cost estimate and Toll Rate Schedule 3. This is the highest cost alternative considered. Given the baseline financial assumptions used in this FEIS, finance plan scenarios based on either the Base (Schedule 1) or Schedule 2 toll rates do not appear to be viable. The finance plan scenario shown assumes Toll Rate Schedule 3 and employs its entire borrowing capacity. It employs 3 years of pre-completion tolling on a cash basis and a small amount of residual toll revenues. To complete the plan requirements, this scenario assumes a $500-million federal discretionary highway contribution, $100 million more than any other scenario. The additional discretionary funds are employed in the later years of construction. The scenario does not use residual toll revenues in lieu of the additional discretionary highway funds, because they would be insufficient to meet funding requirements unless there was a multiple year extension of the construction schedule. As a variation, residual revenues can be used to a limited extent and thereby lower the amount of additional discretionary highway funds that would be needed. The scenario requires the assumed maximum of $850 million of New Starts funds for the light rail extension.

As stated earlier, the finance plan scenarios discussed above are illustrative of the financial tradeoffs between the alternatives. The finance plan will be refined during final design, and the final plan may differ from the scenarios discussed above.

Exhibit 4.4-4

Finance plan scenario for LPA with Highway Phasing: Medium Cost Estimate with low estimate of funding from Toll Rate Schedule 1 in Millions of Year-of-Expenditure Dollars

Federal Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	TOTAL
TOTAL PROJECT CAPITAL COST															
Highway AA, DEIS, Eng. Construction	$22.7	$26.0	$62.6	$103.8	$295.7	$389.3	$392.7	$398.6	$169.3	$192.3	$166.1	$75.7	$6.3		$2,301.0
Transit PE, Design and Construction[a]	$2.5	$4.0	$9.4	$31.7	$49.5	$145.7	$213.8	$227.0	$102.7	$49.5	$13.8				$856.3
Total Project Capital Cost	**$25.1**	**$30.0**	**$72.1**	**$135.5**	**$345.2**	**$535.0**	**$606.5**	**$625.6**	**$271.9**	**$241.8**	**$179.9**	**$81.0**	**$7.8**		**$3,157.3**
TOTAL PROJECT REVENUES															
Federal Discretionary Highway					$100.0	$100.0	$100.0	$100.0							$400.0
ODOT/WSDOT: Existing	$25.1	$30.0	$72.1	$20.3											$147.5
ODOT/WSDOT: Additional				$115.2	$195.7	$289.3	$292.7	$7.0							$900.0
Post-completion Toll Bond/ Loan Proceeds[b]								$291.6	$169.3	$192.3	$166.1	$75.7	$6.3		$901.2
Residual Toll Revenues															$0.0
Pre-completion Toll Revenues															$0.0
Section 5309 New Starts Funds[c]					$49.5	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$59.2		$808.7
Interim Borrowed Funds						$45.7	$113.8	$127.0	$2.7	($50.5)	($86.2)	($94.7)	($57.7)		$0.0
Total Project Revenues	**$25.1**	**$30.0**	**$72.1**	**$135.5**	**$345.2**	**$535.0**	**$606.5**	**$625.6**	**$271.9**	**$241.8**	**$179.9**	**$81.0**	**$7.8**		**$3,157.3**

a Transit costs include interim borrowing costs incurred due to the assumed annual appropriations of New Starts funds.

b Assumes the Low estimate of net toll revenues for Toll Rate Schedule 1 and the Baseline finance structure does not require full financial capacity of this toll rate schedule.

c The assumed amount of New Starts funding and target dates scheduled are not guaranteed by FTA; funding amount and schedule will be negotiated as part of preparing the FFGA.

Exhibit 4.4-5

Finance Plan Scenario for LPA with Highway Phasing: High Cost Estimate with Low Estimate of Funding from Toll Rate Schedule 1 in Millions of Year-of-Expenditure Dollars

Federal Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	TOTAL
CAPITAL COST															
Highway PE, Final Eng. and Construction	$22.7	$27.0	$68.5	$112.7	$324.9	$430.2	$434.2	$441.2	$194.3	$225.4	$193.2	$63.3	$13.3	$13.0	$2,563.8
Transit PE, Design and Construction[a]	$2.5	$4.2	$10.8	$35.6	$54.5	$158.7	$233.2	$249.1	$111.7	$56.5	$17.4	$7.2	$2.5		$944.0
Total Project Capital Cost	**$25.1**	**$31.2**	**$79.3**	**$148.3**	**$379.4**	**$588.9**	**$667.4**	**$690.4**	**$306.0**	**$281.9**	**$210.6**	**$70.5**	**$15.7**	**$13.0**	**$3,507.8**
PROJECT REVENUES															
Federal Discretionary Highway						$100.0	$100.0	$100.0	$100.0						$400.0
ODOT/WSDOT: Existing	$25.1	$31.2	$79.3	$11.8											$147.4
ODOT/WSDOT: Additional				$136.5	$329.4	$329.9	$104.2								$900.0
Post Completion Toll Bond/Loan Proceeds[b]							$178.9	$284.2	$34.6	$225.4	$193.2	$15.9			$932.2
Residual Toll Revenues[b]												$47.4	$13.3	$13.0	$73.7
Pre-Completion Toll Revenues[b]						$36.6	$51.1	$57.0	$59.7						$204.4
Section 5309 New Starts Funds[c]					$50.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0		$850.0
Interim Borrowed Funds						$22.4	$133.2	$149.1	$11.7	($43.5)	($82.6)	($92.8)	($97.5)		$0.0
Total Project Revenues	**$25.1**	**$31.2**	**$79.3**	**$148.3**	**$379.4**	**$588.9**	**$667.4**	**$690.4**	**$306.0**	**$281.9**	**$210.6**	**$70.5**	**$15.7**	**$13.0**	**$3,507.8**

a Transit costs include interim borrowing costs incurred due to the assumed annual appropriations of New Starts funds.

b Assumes the Low estimate of net toll revenues for Toll Rate Schedule 1 and the Baseline finance structure.

c The assumed amount of New Starts funding and target dates scheduled are not guaranteed by FTA; funding amount and schedule will be negotiated as part of preparing the FFGA.

Exhibit 4.4-6

Finance Plan Scenario for LPA with Highway Phasing: High Cost Estimate with Low Estimate of Funding from Toll Rate Schedule 3 in Millions of Year-of-Expenditure Dollars

Federal Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	TOTAL
CAPITAL COST															
Highway PE, Final Eng. and Construction	$22.7	$27.0	$68.5	$112.7	$324.9	$430.2	$434.2	$441.2	$194.3	$225.4	$193.2	$82.8	$6.9		$2,563.8
Transit PE, Design and Construction[a]	$2.5	$4.2	$10.8	$35.6	$54.5	$158.7	$233.2	$249.1	$111.7	$56.5	$17.4	$7.2	$2.5		$944.0
Total Project Capital Cost	**$25.1**	**$31.2**	**$79.3**	**$148.3**	**$379.4**	**$588.9**	**$667.4**	**$690.4**	**$306.0**	**$281.9**	**$210.6**	**$90.0**	**$9.3**		**$3,507.8**
PROJECT REVENUES															
Federal Discretionary Highway						$100.0	$100.0	$100.0	$100.0						$400.0
ODOT/WSDOT: Existing	$25.1	$31.2	$79.3	$11.8											$147.4
ODOT/WSDOT: Additional				$136.5	$329.4	$366.5	$67.6								$900.0
Post Completion Toll Bond/Loan Proceeds[b]							$266.6	$341.2	$94.3	$225.4	$193.2	$76.0			$1,196.8
Residual Toll Revenues												$6.7	$6.9		$13.6
Pre-Completion Toll Revenues[b]															$0.0
Section 5309 New Starts Funds[c]					$50.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0		$850.0
Interim Borrowed Funds						$22.4	$133.2	$149.1	$11.7	($43.5)	($82.6)	($92.8)	($97.5)		$0.0
Total Project Revenues	**$25.1**	**$31.2**	**$79.3**	**$148.3**	**$379.4**	**$588.9**	**$667.4**	**$690.4**	**$306.0**	**$281.9**	**$210.6**	**$90.0**	**$9.3**		**$3,507.8**

a Transit costs include the interim borrowings costs incurred due to the assumed annual appropriations of New Starts funds.

b Assumes the Low estimate of net toll revenues for Toll Rate Schedule 3 and the Baseline finance structure.

c The assumed amount of New Starts funding and target dates scheduled are not guaranteed by FTA; funding amount and schedule will be negotiated as part of preparing the FFGA.

Exhibit 4.4-7

Finance Plan Scenario for LPA: Medium Cost with Low Estimate of Funding from Toll Rate Schedule 1 in Millions of Year-of-Expenditure Dollars

Federal Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	TOTAL
TOTAL PROJECT CAPITAL COST															
Highway AA, DEIS, Eng. Construction	$22.7	$26.0	$63.0	$104.7	$297.6	$393.7	$398.0	$406.5	$225.7	$284.1	$228.4	$83.0	$6.3		$2,539.7
Transit PE, Design and Construction[a]	$2.5	$4.0	$9.4	$31.7	$49.5	$145.7	$213.8	$227.0	$102.7	$49.5	$13.8	$5.3	$1.5		$856.3
Total Project Capital Cost	**$25.1**	**$30.0**	**$72.5**	**$136.4**	**$347.1**	**$539.4**	**$611.8**	**$633.5**	**$328.4**	**$333.6**	**$242.2**	**$88.3**	**$7.8**		**$3,395.9**
TOTAL PROJECT REVENUES															
Federal Discretionary Highway					$100.0	$100.0	$100.0	$100.0							$400.0
ODOT/WSDOT: Existing	$25.1	$30.0	$72.5	$19.8											$147.3
ODOT/WSDOT: Additional				$116.6	$197.6	$257.1	$246.9	$81.8							$900.0
Post Completion Toll Bond/Loan Proceeds[b]								$167.7	$166.0	$284.1	$228.4	$83.0	$3.0		$932.2
Residual Toll Revenues[b]													$3.3		$3.3
Pre-Completion Toll Revenues[b]						$36.6	$51.1	$57.0	$59.7						$204.4
Section 5309 New Starts Funds[c]					$49.5	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$59.2		$808.6
Interim Borrowed Funds						$45.7	$113.8	$127.0	$2.7	($50.5)	($86.2)	($94.7)	($57.7)		$0.0
Total Project Revenues	**$25.1**	**$30.0**	**$72.5**	**$136.4**	**$347.1**	**$539.4**	**$611.8**	**$633.5**	**$328.4**	**$333.6**	**$242.2**	**$88.3**	**$7.8**		**$3,395.9**

a Transit costs include the interim borrowings costs incurred due to the assumed annual appropriations of New Starts funds.

b Assumes the Low estimate of net toll revenues for Toll Rate Schedule 1 and the Baseline finance structure.

c The assumed amount of New Starts funding and target dates scheduled are not guaranteed by FTA; funding amount and schedule will be negotiated as part of preparing the FFGA.

Exhibit 4.4-8

Finance Plan Scenario for LPA: Medium Cost Estimate with Low Estimate of Funding from Toll Rate Schedule 3 in Millions of Year-of-Expenditure Dollars

Federal Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	TOTAL
TOTAL PROJECT CAPITAL COST															
Highway AA, DEIS, Eng. Construction	$22.7	$26.0	$63.0	$104.7	$297.6	$393.7	$398.0	$406.5	$225.7	$284.1	$228.4	$83.0	$6.3		$2,539.7
Transit PE, Design and Construction[a]	$2.5	$4.0	$9.4	$31.7	$49.5	$145.7	$213.8	$227.0	$102.7	$49.5	$13.8	$5.3	$1.5		$856.3
Total Project Capital Cost	**$25.1**	**$30.0**	**$72.5**	**$136.4**	**$347.1**	**$539.4**	**$611.8**	**$633.5**	**$328.4**	**$333.6**	**$242.2**	**$88.3**	**$7.8**		**$3,395.9**
TOTAL PROJECT REVENUES															
Federal Discretionary Highway					$100.0	$100.0	$100.0	$100.0							$400.0
ODOT/WSDOT: Existing	$25.1	$30.0	$72.5	$19.8											$147.3
ODOT/WSDOT: Additional				$116.6	$197.6	$293.7	$292.1								$900.0
Post-completion Toll Bond/Loan Proceeds[b]							$5.9	$306.5	$225.7	$284.1	$228.4	$83.0	$6.3		$1,140.0
Residual Toll Revenues[b]															
Pre-completion Toll Revenues[b]															
Section 5309 New Starts Funds[c]					$49.5	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$59.2		$808.6
Interim Borrowed Funds						$45.7	$113.8	$127.0	$2.7	($50.5)	($86.2)	($94.7)	($57.7)		$0.0
Total Project Revenues	**$25.1**	**$30.0**	**$72.5**	**$136.4**	**$347.1**	**$539.4**	**$611.8**	**$633.5**	**$328.4**	**$333.6**	**$242.2**	**$88.3**	**$7.8**		**$3,395.9**

a Transit costs include the interim borrowings costs incurred due to the assumed annual appropriations of New Starts funds.

b Assumes the Low estimate of net toll revenues for Toll Rate Schedule 3 and the Baseline finance structure; does not require full financial capacity of this toll rate schedule.

c The assumed amount of New Starts funding and target dates scheduled are not guaranteed by FTA; funding amount and schedule will be negotiated as part of preparing the FFGA.

Exhibit 4.4-9

Finance Plan Scenario for LPA: High Cost Estimate with Low Estimate of Funding from Toll Rate Schedule 3 in Millions of Year-of-Expenditure Dollars

Federal Fiscal Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	TOTAL
TOTAL PROJECT CAPITAL COST															
Highway AA, DEIS, Eng. Construction	$22.7	$27.0	$68.9	$113.7	$326.6	$434.0	$438.9	$448.9	$255.4	$325.2	$260.6	$90.6	$6.9		$2,819.3
Transit PE, Design and Construction	$2.5	$4.2	$10.8	$35.6	$54.6	$158.8	$233.3	$249.2	$111.7	$56.5	$17.4	$7.2	$2.5		$944.3
Total Project Capital Cost	**$25.1**	**$31.2**	**$79.8**	**$149.3**	**$381.2**	**$592.7**	**$672.2**	**$698.1**	**$367.1**	**$381.8**	**$278.0**	**$97.8**	**$9.3**		**$3,763.6**
TOTAL PROJECT REVENUES															
Federal Discretionary Highway					$100.0	$100.0	$100.0	$100.0	$25.0	$25.0	$25.0	$25.0			$500.0
ODOT/WSDOT: Existing	$25.1	$31.2	$79.8	$11.3											$147.4
ODOT/WSDOT: Additional				$138.0	$231.2	$370.5	$160.4								$900.0
Post Completion Toll Bond Proceeds							$127.5	$291.9	$170.7	$300.2	$235.6	$65.6	$5.3		$1,196.8
Residual Toll Revenues													$1.5		$1.5
Pre-Completion Toll Revenues							$51.1	$57.0	$59.7						$167.8
Section 5309 New Starts Funds[c]					$50.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0		$850.0
Interim Borrowed Funds						$22.2	$133.3	$149.2	$11.7	($43.5)	($82.6)	($92.8)	($97.5)		$0.0
Total Project Revenues	**$25.1**	**$31.2**	**$79.8**	**$149.3**	**$381.2**	**$592.7**	**$672.2**	**$698.1**	**$367.1**	**$381.8**	**$278.0**	**$97.8**	**$9.3**		**$3,763.6**

a Transit costs include the interim borrowings costs incurred due to the assumed annual appropriations of New Starts funds.

b Assumes the Low estimate of net toll revenues for Toll Rate Schedule 3 and the Baseline finance structure.

c The assumed amount of New Starts funding and target dates scheduled are not guaranteed by FTA; funding amount and schedule will be negotiated as part of preparing the FFGA.

4.5 CRC Project Operations & Maintenance Costs

This section describes the operations and maintenance (O&M) costs and revenues for the LPA alternatives.[15] O&M costs and revenues for both the highway and transit components are addressed.

4.5.1 Highway Operations and Maintenance Costs

The highway O&M cost of the CRC project consists of (i) annual routine O&M costs and (ii) periodic rehabilitation and replacement (R&R) costs. Each is described below.

Annual Routine O&M Costs

Routine highway O&M costs consists of (i) facility costs (i.e., the annual costs of operating and maintaining the roadway and bridges) and (ii) toll collection costs (i.e., the annual costs of collecting tolls and maintaining toll equipment). These costs are summarized in Exhibit 4.5-1 and explained in the paragraphs that follow.

Exhibit 4.5-1
Routine Annual Highway/Tolling O&M Costs[a]

O&M Cost Component	Annual Cost
Annual Facility O&M Costs	
Annual Incident Response	$0.66
Routine Annual Roadway O&M	$1.21
Routine Annual Bridge O&M	$0.07
Total Annual Facility Costs	**$1.94**
Annual Tolling O&M Costs	
Fixed Toll Collection Costs	
Salaries and Benefits	$1.94
Invoicing: Printing and Postage	$3.30
Transponders, Supplies, Services, Rent	$3.58
Total Annual Tolling Fixed Costs	**$8.82**
Variable Toll Collection Costs[b]	
Base Toll Collection Cost	$0.10 per transaction
Surcharge for Pay-by-plate Toll Collection[c]	$1.22 per transaction
Bridge Insurance	
Annual Bridge Insurance Premium	$1.50

Source: Based on tolling costs estimated for WSDOT's SR 520 project, including the CRC project's share of collection center costs.

a In millions of 2010 dollars.

b Total cost depends on number of transactions, which differs by year and toll scenario. This transaction cost excludes any fees paid on credit card transactions.

c The actual charge for a pay-by-plate transaction depends on the method of toll collection; $1.22 is an average estimated cost.

15 The highway and transit operations and maintenance costs for the LPA and the LPA with highway phasing are identical. Accordingly, this section uses the term LPA alternatives to refer to both the LPA ad LPA with highway phasing options.

ROUTINE ANNUAL FACILITY O&M COSTS

Routine facility operations and maintenance generally includes such activities as regular crack sealing, cleaning, landscaping, sign repair, guardrail repair, pavement marking, snow removal, lighting, and other similar activities. Routine facility O&M costs for a high-volume section, such as the I-5 corridor, were estimated to cost $1.2 million per year (in 2010 dollars).[16] An additional $72,000 per year[17] is estimated to be required to operate and maintain the bridges (excluding the decks/roadways). In addition, a high-quality incident response program[18] is assumed for the new I-5 bridges to avoid unnecessary loss of toll revenue. This incident response program is estimated to cost $660,000 per year in 2010 dollars.

ROUTINE ANNUAL TOLLING O&M COSTS

The CRC project would incorporate an all-electronic toll collection system (ETC). With ETC, most toll collections would be through in-vehicle transponders linked to pre-paid accounts. An alternative payment method for users without transponders would employ a photographic license plate recognition system, sometimes referred to as a pay-by-plate system. In a pay-by-plate system, the vehicle's license plate would be recorded upon entering the bridge. The vehicle owner would then either contact the customer service center to make payment or wait to be invoiced via mail. An additional administrative fee or surcharge would be added to the base toll to cover the additional cost of collection.

The annual O&M cost for toll collection consists of (i) the fixed annual costs of tolling, (ii) the variable expenses of toll collection (assumed as a per transaction cost), and (iii) bridge insurance costs. The estimated $8.2 million (in 2010 dollars) of fixed costs include the wages and benefits of tolling division staff assigned to the bridges (including those at customer service centers), and associated supplies, equipment, and office expenses.[19]

Variable tolling O&M costs include those expenditures for toll collection, customer service, and enforcement activities that vary with the number of transactions.[20] For vehicles with transponders, this cost is estimated to be $0.10 per transaction. The surcharge for a pay-by-plate transaction depends on the method of toll collection. For a customer that pays before a notice of infraction (NOI) is issued, the additional collection cost (or surcharge) is estimated to be $0.80 (2010 dollars). Customers paying after an NOI is issued would pay an estimated $2.98 (2010 dollars). Customers that fail to pay at that point would pay a higher cost. The average pay-by-plate surcharge is estimated to be $1.22. Another variable cost (not shown in Exhibit 4.5-1) is the expense of processing credit/debit card transactions (i.e., bank processing fees).[21]

16 Estimated as $221,000 per mile (2010 dollars) for the 5.5-mile length of I-5 between Victory Boulevard and SR 500; applicable to both alternatives.

17 Based on historical costs for the I-205 bridge.

18 Cost estimate assumes one incident response vehicle in evening and early morning hours, and two incident response vehicles during daytime hours.

19 This estimate is based on estimates prepared by WSDOT for the SR 520 Bridge Replacement and HOV Program.

20 This analysis uses a per transaction methodology to estimate variable tolling costs. Depending on the tolling system and vendor contract employed, these costs might also be based on the number of user accounts.

21 Based on WSDOT's experience with the Tacoma Narrows Bridge, credit card fees are assumed to be 4.5 percent of total gross revenues for the first year and 3.45 percent thereafter.

The bridges would be insured for physical damage and for loss toll revenues in the event the bridges cannot be operated and tolls cannot be collected for a period of time (i.e., business interruption insurance). The annual premium for such insurance is estimated to be $1.7 million in 2010 dollars.

Highway/Tolling Periodic Rehabilitation and Replacement (R&R) Costs

Periodic R&R costs consist of (i) facility costs and (ii) tolling costs which are summarized in Exhibit 4.5-2. A 30-year cumulative total is shown for the major R&R expenses based on the applicable replacement/inspection cycle for that expense. These costs are explained in the paragraphs that follow.

Exhibit 4.5-2
Periodic Facility and Tolling Rehabilitation and Replacement Costs[a]

	Unit Cost	Replacement/ Inspection Cycle (years)	30-year Total
Facility Rehabilitation and Replacement			
Road/Deck Resurfacing	$18.20	15	$36.40
Bridge Inspection	$1.66	5	$9.96
Total			**$46.36**
Tolling Equipment Rehabilitation and Replacement			
Toll Collection Software	$1.33	7	$5.32
Tolling Central System Hardware	$3.64	5	$21.84
Tolling Field Hardware	$3.25	7	$13.00
Total			**$40.16**
Total Facility and Tolling R&R Costs			**$86.52**

a Costs are in millions of 2010 dollars. These costs are the same for the LPA and LPA with highway phasing.

Highway periodic R&R primarily consists of roadway resurfacing and bridge inspection. No major capital replacement of a bridge element is anticipated during the term of the toll bonds. Roadway resurfacing is estimated to cost about $18.2 million (2010 dollars) and to occur every 15 years. Bridge inspection is expected to cost $1.7 million (2010 dollars) and to occur every 5 years. For the first 30 years of operation, a total of $46.4 million (in 2010 dollars) in facility R&R costs is anticipated.

Tolling periodic R&R consists of upgrading and replacement of toll collection equipment and software at the bridges and in the central system. Central system hardware is expected to be replaced every 5 years at a cost of $3.6 million (in 2010 dollars) per replacement. The computer hardware on the bridges is expected to be replaced every 7 years at a cost of about $3.3 million (2010 dollars) per replacement. Toll collection system software is expected to be updated every 7 years at $1.3 million (2010 dollars) per update. For the first 30 years of operation, tolling R&R is expected to cost almost $40.2 million (2010 dollars).

4.5.2 Transit Operations and Maintenance Costs

The bi-state governance of transit operations and maintenance would be addressed through an agreement between C- TRAN and TriMet.[22] The agreement would leave existing governing structures in place; establish specific roles, responsibilities, and authorities for both parties; and require approval of significant O&M issues by both transit districts. The agreement would also establish a decision-making process between the two transit districts regarding critical light rail operating policies such as headways, span of service, and anticipated annual O&M cost as part of the annual budget approvals required of both districts.

Under the bi-state transit operations agreement, TriMet would provide light rail operators, light rail vehicle maintenance, and systems maintenance.[23] These costs would be allocated between the districts based on a sharing formula set forth in the bi-state agreement. Current discussions have focused on two alternative cost sharing formulas that proportion the local funds required from each transit district based on the relative length of the alignment associated with the district: (i) using the Jantzen Beach station as the dividing point, or (ii) using the state line as the dividing point. Each district would undertake and pay for all other operations and maintenance activities within its district boundaries. Park and ride maintenance, maintenance of way, and station security and maintenance within the C-TRAN district would be performed and paid for by C-TRAN, and TriMet would perform and pay for these activities in its district. Each district would be responsible for marketing and public communications within its own district, although it is anticipated that these efforts will generally be done in a coordinated and integrated manner.

It is anticipated that ownership of the transit improvements and assets would be transferred from WSDOT, the federal funding grantee, to TriMet and C-TRAN via a Master Transfer Agreement that is agreed to by FTA. It is also anticipated that WSDOT/ODOT would own the main bridge crossing, and the light rail right would operate within the bridge under an agreement with the WSDOT and ODOT. Continuing control agreements with the WSDOT and ODOT and the Cities of Vancouver and Portland would ensure the long-term operations of light rail on the southbound bridge and within the public right-of-way. These continuing control agreements would address any shared maintenance obligations for the public right-of-way.

Exhibit 4.5-3 shows the total corridor transit O&M costs for C-TRAN and TriMet in the year 2030 (in 2010 dollars). Total corridor costs include the cost of extending light rail service between the Expo Center station and the Clark College station, fixed-route bus service in the entire C-TRAN district,[24] and TriMet's bus service in North Portland. The C-TRAN bus service underlying the O&M costs shown in Exhibit 4.5-3 is at the level required for the CRC project.[25] C-TRAN recently enacted a 20-year plan that provides more transit service than required for the CRC project. The revenues required for this

22 Alternative approaches may be considered during final design.

23 The bi-state agreement is under development. This FEIS summarizes the current status of the discussions. These terms have not been agreed upon by either district and could change during final design.

24 Corridor O&M costs do not include the costs of paratransit and other non-fixed-route services.

25 Year 2030 transit O&M costs are based on the transit service levels described in the CRC Transit Technical Report.

additional service are addressed in the 20-year plan. The O&M cost shown above focuses solely on the financial requirements of the CRC project.

The O&M cost of the light rail extension between the Expo Center and Clark College in the year 2030 is estimated to be $5.01 million in 2010 dollars.[26] Exhibit 4.5-3 shows the division of light rail O&M costs between C-TRAN and TriMet based on both allocation formulae currently under discussion.

Exhibit 4.5-3
2030 Corridor Transit O&M Cost by Transit District in Millions of 2010 Dollars[a]

Cost Allocation Formula:			Jantzen Beach as Dividing Line			State Line as Dividing Line		
Year/Alternative:	Existing O&M Cost	2030 No-Build O&M Cost	2030 LPA O&M Cost	Change from Existing	Change from No-Build	2030 LPA O&M Cost	Change from Existing	Change from No-Build
C-TRAN								
C-TRAN Bus O&M	$29.73	$33.65	$29.04	($0.68)	($4.61)	$29.04	($0.68)	($4.61)
C-TRAN LRT O&M Cost	$0.00	$0.00	$4.24	$4.24	$4.24	$3.25	$3.25	$3.25
Total C-TRAN O&M Costs	$29.73	$33.65	$33.29	$3.56	($0.36)	$32.29	$2.57	($1.36)
TriMet								
TriMet Bus O&M Cost	$31.92	$34.96	$34.96	$3.04	$0.00	$34.96	$3.04	$0.00
TriMet LRT O&M Cost	$0.00	$0.00	$0.77	$0.77	$0.77	$1.76	$1.76	$1.76
Total TriMet O&M Costs	$31.92	$34.96	$35.73	$3.81	$0.77	$36.72	$4.80	$1.76

a O&M costs are same for LPA and LPA with highway phasing.

LRT = light rail transit

As shown in Exhibit 4.5-3, TriMet's 2030 corridor O&M costs for the LPA alternatives are $0.77 to $1.76 million (2010 dollars) higher than those for the No-Build alternative, depending on the cost allocation formula used. Compared to the No-Build, the LPA alternatives reduce C-TRAN's 2030 corridor O&M costs by $0.36 to $1.36 million dollars (2010 dollars), because the reduction in bus operation costs exceeds the added cost of light rail. However, C-TRAN's 2030 O&M costs for the LPA alternatives are $2.57 to $3.56 million dollars (2010 dollars) higher than the current O&M cost.

It is estimated that after 7 years of operation, TriMet and C-TRAN would begin to cumulatively receive about $300,000 in Fixed Guideway Modernization funds for the light rail transit extension between the Expo Center and Clark College. Unless otherwise needed for capital improvements or replacement on the CRC light rail transit extension, these funds would be available for preventive maintenance activities on the light rail extension to Clark College, reducing the shared O&M costs that must be funded with C-TRAN and TriMet revenues.

26 This incremental cost is measured as the difference in 2030 transit O&M costs between the LPA and No-Build alternatives.

4.6 Operation and Maintenance Funding Options

4.6.1 Highway O&M Revenue and Finance Plan

The finance plan assumes that routine annual facility/tolling O&M costs and facility/tolling periodic R&R costs would be paid with toll revenues. This helps ensure that the revenue-generating asset is maintained in a condition that allows for uninterrupted operation. The cost of periodic R&R of the facility and tolling equipment/systems would also be paid with toll revenues, but with different levels of priority. Similar to routine annual O&M costs, toll revenues pledged for debt repayment would exclude the amount of toll revenues needed to pay for rehabilitation and replacement of tolling equipment/systems. However, only toll revenues remaining after debt service is paid would be used to pay facility R&R costs. Thus, facility rehabilitation and replacement (such as resurfacing) would be deferred if there were insufficient toll revenues after debt repayment, unless other state or federal funds could be identified. If tolls are terminated, the highway O&M costs would be divided between the states and funded through the respective highway trust funds, as is the practice on the current bridge.

4.6.2 Transit O&M Revenue and Finance Plan

C-TRAN

C-TRAN currently receives about $35.2 million in continuing annual revenues. C-TRAN currently levies a 5/10th of 1 percent sales and use tax; it could impose an additional 4/10th of 1 percent tax under its Public Transportation Benefit Area (PTBA) authority with voter approval.[27] The sales and use tax is C-TRAN's largest revenue source, estimated to account for about $22 million in 2011, reflecting a significant decline due to the recent economic downturn. Passenger fares are C-TRAN's second largest revenue source, estimated to account for about $7 million in 2011. Grants, interest income, and other operating revenues comprise the remainder of C-TRAN's existing revenue sources.

C-TRAN's existing revenues are required for meeting C-TRAN's fixed-route and paratransit service costs. Existing C-TRAN resources are generally not available for meeting the additional O&M costs of system expansion. In order to fund the additional O&M costs of the CRC project, C-TRAN could seek voter approval to increase the sales and use tax under its basic PTBA authority. In 2011, with the effect of the economic turndown still lingering, each 1/10th of 1 percent sales and use tax is estimated to generate about $4.4 million within the full C-TRAN district.

Implementation of the CRC project would make C-TRAN eligible for the additional funding authorities provided by the State of Washington's High Capacity Transit (HCT) Act,[28] which includes a supplemental sales and use tax not to exceed 9/10th of 1 percent. This is separate from and in addition to the 9/10th of 1 percent sales and use tax allowed, with voter approval, under C-TRAN's PTBA authority. Under the HCT Act, a transit agency must receive voter approval of a "high-capacity transportation system plan and financing plan." Voter approval of a system plan that includes a tax increase

27 RCW 36.57A authorizes the creation of Public Transportation Benefit Areas (PTBA), and RCW 82.14.045 authorizes PBTAs, such as C-TRAN, to levy a sale and use tax, subject to voter approval.

28 RCW 81.104.

constitutes approval of the tax. The vote can be within the entire C-TRAN district or within a sub-district of C-TRAN; if the vote is within a sub-district that tax, if approved, would only be levied within the sub-district.

The C-TRAN board of directors has decided it will seek an additional 3/10th of 1 percent sales and use tax, which includes 1/10th of 1 percent under its HCT Act authority to fund high capacity transit operations, including the CRC light rail, and a 2/10th of 1 percent increase under its PTBA authority to fund core bus service. The election on the 2/10th of 1 percent increase for core bus service is scheduled for November 2011. It is anticipated that the 1/10th of 1 percent increase for high capacity transit operations will occur in 2012; whether this election will be district-wide or within a sub-district is currently undecided.

Exhibit 4.6-1 shows the net results of a 20-year cash flow analysis of C-TRAN operating costs and revenues, which is measured by the amount of the working reserves available to C-TRAN at the beginning of each fiscal year. The working reserve is measured in year-of-expenditure dollars and in the number of months of C-TRAN operations the reserve could fund. As shown, with the proposed sales and use tax rate increase, C-TRAN could fund its 20-year plan, including its vehicle replacement requirements and its share of the CRC light rail transit O&M costs, while maintaining a beginning working reserve consistent with FTA requirements for New Starts projects.

Exhibit 4.6-1

Beginning Working Capital 2010-2030 in Millions of Year-of-Expenditure (YOE) Dollars and Months of Operations[a]

	C-TRAN		TriMet	
	Beginning Working Capital[b]	Beginning Working Capital in Months of Operating Cost[c]	Beginning Working Capital[d]	Beginning Working Capital in Months of Operating Cost[e]
2010	$45.9	15.0	$57.5	2.0
2011	$43.9	13.5	$93.9	3.1
2012	$36.1	10.2	$97.6	3.0
2013	$35.3	9.1	$98.4	2.9
2014	$41.9	10.3	$90.1	2.6
2015	$44.9	10.3	$85.3	2.4
2016	$46.8	10.2	$92.4	2.4
2017	$48.8	10.0	$103.3	2.6
2018	$50.5	9.2	$120.5	2.9
2019	$43.9	7.0	$147.9	3.4
2020	$38.9	5.8	$179.9	4.0
2021	$36.7	5.3	$215.2	4.6
2022	$35.6	4.9	$267.5	5.5
2023	$34.6	4.5	$330.7	6.5
2024	$33.3	4.2	$408.6	7.7
2025	$32.1	3.8	$503.7	9.1
2026	$28.2	3.1	$615.5	10.8
2027	$29.9	3.2	$725.7	12.2

	C-TRAN		TriMet	
	Beginning Working Capital[b]	Beginning Working Capital in Months of Operating Cost[c]	Beginning Working Capital[d]	Beginning Working Capital in Months of Operating Cost[e]
2028	$30.8	3.1	$852.2	13.7
2029	$30.9	3.0	$981.8	15.2
2030	$31.2	2.8	$1,133.5	16.9

Source: C-TRAN results from C-TRAN 20-year Plan financial model (2011); TriMet results from TriMet 20-year Cash Flow Model (2011).

a Results are identical for LPA and LPA with highway phasing.

b Amount of reserves at beginning of year after deducting $3 million for insurance reserve. Assumes 2/10th of 1 percent increase in C-TRAN sales and use tax beginning in 2012 and another 10th of 1 percent increase in 2013.

c Months of annual operating costs that could be funded with beginning year reserve, excluding insurance reserve.

d Amount of unrestricted cash and cash equivalents available at beginning of fiscal year, assumes the authorized 0.1 percent increase in the payroll tax rate will start its 10-year phase-in beginning January 2015.

e Months of annual operating costs that could be funded with beginning year unrestricted cash.

TriMet

As of January 1, 2011, TriMet levies a 0.6918 percent tax ($6.918 per $1000) on the payrolls of all businesses and municipalities in its district. The payroll tax is dedicated to TriMet and is TriMet's largest source of operating revenue, accounting for almost 49 percent (about $207 million) of its operating revenues in FY 2011. While TriMet suffered a decline in payroll tax revenues during FYs 2009 and 2010 due to the economic downturn, it forecasts modest short-term growth in payroll tax revenues followed by a 4.7 percent long-term annual growth rate, excluding any increase in the payroll tax rate. TriMet has enacted an ordinance that increases the payroll tax rate annually by 1/100th of one percent until FY 2014, when it reaches a tax rate of 0.7218 percent. TriMet has the statutory authority to increase the payroll tax rate to 0.8218 percent over a 10-year period, which it anticipates implementing beginning in January 2015.

TriMet also currently also levies a 0.6918 percent tax on the gross profits earned within its district by self-employed individuals. After some short-term decline in self-employment tax proceeds, TriMet anticipates a long-term underlying (i.e., excluding any tax rate increase) growth rate of 4.5 percent. The self-employment tax rate is scheduled to increase at the same rate as the payroll tax. State of Oregon government offices located within TriMet's district boundaries are not subject to the payroll tax. Instead, the State makes in-lieu of tax payments to TriMet based on 0.6218 percent of their gross payrolls. Passenger revenues are TriMet's second largest revenue source. In FY 2011, passenger revenues are estimated to total about $98.0 million, or 23 percent of operating revenue. Grants, interest income, and other revenues comprise the remainder of TriMet's revenue sources.

Exhibit 4.6-1 shows the results of TriMet's 20-year cash flow, including its cost for the CRC light rail transit extension and the Portland-Milwaukie Light Rail Project. As shown, with the payroll tax increases, TriMet could fund its total system costs, including its vehicle replacement requirements and its share of the added CRC light rail transit O&M cost, while maintaining a working capital reserve consistent with FTA requirements for New Starts projects.

4.7 Implementation Issues

Implementation of the CRC project finance plan requires the following:

- WSDOT, ODOT, C-TRAN, and TriMet must enter agreements on roles and responsibilities for project development, construction, and capital funding that address such issues as governance, project management and decision-making, capital cost obligations, and contracting procedures. Final agreements are scheduled to be complete by summer 2013.
- Agreements between C-TRAN and TriMet must be executed that address roles and responsibilities for operation and maintenance of the light rail extension and related bus service, including such issues as fare reciprocity, service and transfer policy, and cost and revenue sharing. Final agreements are scheduled to be complete by summer 2013.
- Legislative/administrative approval of the ODOT and WSDOT funding contributions must be secured; scheduled by summer 2013.
- Washington legislative approval providing authorization to toll the I-5 bridges must be obtained; scheduled by spring 2012. Subsequent to tolling authorization, a formal process must be initiated to establish the toll rate schedule.
- Approval of a TIFIA loan would be sought in 2012 or 2013, depending on when legislative approvals are secured.
- Federal discretionary highway funds would be sought in the upcoming transportation reauthorization bill, and/or an application would be submitted seeking administrative approval of a federal highway discretionary grant.
- Federal highway and transit funds allocated to the project must be included in the Metro and RTC Metropolitan Transportation Improvement Programs (MTIP) and the ODOT and WSDOT State Transportation Improvement Programs (STIP).
- An election is required in the C-TRAN district to secure additional O&M funds. An election for core bus service funding is scheduled for November 2011, and a subsequent election for high capacity transit funding is anticipated in 2012.
- Subsequent to the FEIS, information required of an updated New Starts rating must be submitted to FTA, and a final design application must be submitted to and approved by FTA; the final design application is anticipated in 2012.
- A toll agreement between ODOT, WSDOT, and FHWA must be executed.

A finance plan must be submitted to FTA, and FTA must approve and execute a Full Funding Grant Agreement (FFGA) for the project; anticipated in 2013.

A formal finance plan must be approved by FHWA prior to construction.

4.8 Summary

The finance plan to be submitted to FTA and FHWA in response to New Starts and major projects requirements will be refined during final design but is anticipated to be generally consistent with the concepts described above. The capital finance plan requires tolling the I-5 bridges; starting no later than when the new southbound bridge opens and earlier under some scenarios. Toll revenues would support borrowings (bonds and/or a TIFIA loan) and the proceeds of the borrowings would be used for construction costs; some scenarios may also use a portion of the toll revenues on a cash basis. ODOT and WSDOT are expected to provide a significant state funding contribution. Federal assistance in the form of a New Starts funding contribution for light rail costs, discretionary federal highway funding grant, and TIFIA allocation would be sought. Toll revenues would be used to pay highway-related O&M costs. Transit operations and maintenance costs would be shared by TriMet and C-TRAN; C-TRAN is expected to request voter approval of an additional sales and use tax to meet its funding obligation.

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EXHIBIT B

ANNUAL SECTION 5309 NEW STARTS REPORT

CAPITAL AND OPERATING FINANCE PLAN

Columbia River Crossing Project

September 2011

This report is submitted to FTA in compliance with annual New Starts reporting requirements. Finance plan is based on Preliminary Engineering, to date, and is subject to revisions based on further Preliminary Engineering and Final Design.

Title VI

The Columbia River Crossing project team ensures full compliance with Title VI of the Civil Rights Act of 1964 by prohibiting discrimination against any person on the basis of race, color, national origin, or sex in the provision of benefits and services resulting from its federally assisted programs and activities. For questions regarding WSDOT's Title VI Program, you may contact the Department's Title VI Coordinator at (360) 705-7098. For questions regarding ODOT's Title VI Program, you may contact the Department's Civil Rights Office at (503) 986-4350.

Americans with Disabilities Act (ADA) Information

If you would like copies of this document in an alternative format, please call the Columbia River Crossing (CRC) project office at (360) 737-2726 or (503) 256-2726. Persons who are deaf or hard of hearing may contact the CRC project through the Telecommunications Relay Service by dialing 7-1-1.

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COLUMBIA RIVER CROSSING PROJECT
CAPITAL AND OPERATING FINANCE PLAN

1.0 INTRODUCTION

The Columbia River Crossing (CRC) Project is a bi-state, multi-modal transportation project serving the heaviest congested corridor in the rapidly growing Portland-Vancouver metropolitan region. The Project is currently in Preliminary Engineering; a complete application to enter Final Design is anticipated to be transmitted to FTA in April 2012.

The CRC Project is being developed as a single, multi-modal project and, as explained below, federal statutory language requires that the project finance plan be evaluated for New Starts rating purposes on the basis of being an integrated, multi-modal plan. Thus this report addresses the capital finance plan for the entire multi-modal Columbia River Crossing (CRC) Project, and the 20-year agency-wide operations finance plan for the two affected public transit districts -- C-TRAN (Vancouver, Washington) and TriMet (Portland, Oregon).

1.1 The Integrated Multi-Modal Finance Plan: Authority

The financial structure of the CRC Project is rooted in an integrated, multimodal project finance plan, which is facilitated by statutory language enacted in the *Consolidated Appropriations Act, 2010, Section 173 (H.R. 3288, December 9, 2009).* This statute requires USDOT to take into account the entire funding plan in rating the light rail transit component of the CRC project for New Starts funding. The statute also provides that the local match requirement for New Starts funds can be met by the entirety of local funding included in the integrated finance plan. Specifically, the federal statute states:

> "*Hereafter, for interstate multi-modal projects which are in Interstate highway corridors, the Secretary shall base the rating under section 5309(d) of title 49, United States Code, of the non-New Starts share of the public transportation element of the project on the percentage of non-New Starts funds in the unified finance plan for the multi-modal project: Provided, That the Secretary shall base the accounting of local matching funds on the total amount of all local funds incorporated in the unified finance plan for the multi-modal project for the purposes of funding under Section 53 of title 49, United States Code and title 23, United States Code: Provided further, That the Secretary shall evaluate the justification for the project under section 5309(d) of title 49, United States Code, including cost effectiveness, on the public transportation costs and public transportation benefits.*"

This statutory language was provided by FTA to the Subcommittee on Transportation, Housing and Urban Development, and Related Agencies of the Senate Appropriations Committee and was explained to mean that:

- The rating of the non-New Starts share component of the finance plan is based on the percentage that non-New Starts funds comprises of all revenues in the integrated finance plan, and
- The accounting of local match for FTA and FHWA funds is based on all local funds incorporated in the integrated finance plan.

1.2 Overview of the Columbia River Crossing Project

The Columbia River Crossing (CRC) Project includes the following improvements; which are described in more detail in the paragraphs that follow.

- The new river crossing over the Columbia River
- Highway improvements to I-5 north and south of the river, including reconstruction of highway interchanges.
- Extension of light rail from the Expo Center in Portland to Clark College in Vancouver
- Bicycle and pedestrian improvements;
- Tolling the I-5 Bridge over the Columbia River.

1.2.1 Columbia River Crossing Bridge

The CRC Project includes construction of new bridges across the main channel of the Columbia River and three new structures across North Portland Harbor, along with improvements to the existing bridge across North Portland Harbor.

The parallel bridges that form the existing I-5 crossing over the Columbia River would be replaced by two new parallel bridges. The eastern structure would accommodate northbound highway traffic on the bridge deck, with a bicycle and pedestrian path underneath; the western structure would carry southbound traffic, with a two-way light rail guideway below. Whereas the existing bridges have three lanes each with virtually no shoulders, each of the new bridges would be wide enough to accommodate three through-lanes; two add/drop lanes, and full-width shoulders. A lift-span would no longer be required. The existing highway structures over North Portland Harbor would not be replaced; instead, they would receive seismic upgrades and would be widened to accommodate all mainline I-5 traffic. In addition, parallel structures would be built across the waterway to provide highway access and access to Hayden Island.

1.2.2 Highway Improvements

The CRC Project includes improvements to seven interchanges along a 5-mile segment of I-5 between Victory Boulevard in Portland and SR 500 in Vancouver. These improvements include some reconfiguration of adjacent local streets to complement the new interchange designs, as well as new facilities for bicyclists and pedestrians.

1.2.3 Light Rail Extension

The CRC Project includes a 2.9-mile extension of TriMet's MAX (light rail) "Yellow Line" across the North Columbia Harbor, across Hayden Island in Oregon, across the Columbia River, through downtown Vancouver, Washington, ending near Clark College. The Project includes a total of five new stations; one in Oregon and four in Washington.

Starting from the Expo Center MAX station, the double track alignment would curve toward I-5. North of Marine Drive the profile would rise as the guideway transitions onto a bridge structure to cross the North Portland Harbor. A station would be constructed on Hayden Island. From the station, the LRT guideway would transition from its own alignment onto the new highway/LRT bridge over the Columbia River. The new bridge actually consists of two parallel bridges. One bridge is designed for southbound highway traffic on the upper level and both the northbound and southbound LRT on the lower level. The other bridge would be designed to accommodate northbound highway traffic as well as bicycles and pedestrians.

After crossing the Columbia River, the LRT alignment would curve northwards from the highway bridge onto its own approach structure in the State of Washington. The double-track alignment would reach grade prior to the intersection with 5th Street (there would be a LRT station between 5th and 6th Streets), and continue north to 7th Street where the northbound guideway would traverse two blocks east to Broadway and turn northward into the Broadway Street right-of-way. There would be a 570-space structured park-and-ride near SR-14. The LRT alignment would then form a couplet with the southbound guideway on Washington Street and the northbound guideway on Broadway Street.

The couplet would traverse ten blocks north to 17th Street. There are two stations on the couplet, each with a northbound platform on Broadway and a corresponding southbound platform on Washington. There would be two platforms on Washington: one at 9th Street and another at 15th Street. There would also be two platforms on Broadway: one between 9th Street and Evergreen Blvd and one between 15th and 16th Streets. In addition, there would be a 420 space structured park-and-ride lot near Mill Plain and 15th Street.

On 17th Street, a double-track guideway would traverse in the center of the street. The double-track guideway alignment would continue eastward approximately nine blocks crossing under I-5 and ending at a station in McLoughlin Boulevard east of I-5. This station would be on the western boundary of Clark College and would include a 1,910 space structured park-and-ride.

1.2.4 Bicycle and Pedestrian Improvements

The CRC Project includes a variety of bicycle and pedestrian improvement, including the multi-use pathway across the Columbia River, street improvements around the rebuilt interchanges, and facilities for bicyclists and pedestrians around the new light rail stations and park and rides.

1.2.5 Tolling

The CRC project incorporates all-electronic toll collection (ETC). ETC allows tolls to be collected without stopping traffic at tollbooths to pay tolls. Instead, customers would have two methods of payment. Customers with a transponder would be identified electronically as they travel; charges would be transmitted to a computer system that would automatically invoice vehicle-owner's account. Customers without a transponder would pay via a license plate recognition (pay-by-plate) system that either (i) matches the license plate to a customer account or (ii) identifies and invoices the vehicle's owner by mail. Customers with a transponder would pay the base "Transponder Rate" for that vehicle type and time of day. Vehicles without a transponder would pay the base toll rate charged to vehicles with a transponder for that vehicle type and time of day plus a "pay-by-plate" surcharge.[1] ETC has several advantages over traditional toll collection methods:

- Electronic toll collection avoids the need to stop drivers at tollbooths to pay cash tolls; instead, traffic remains free-flowing at highway speeds.
- The absence of toll plazas reduces potential displacement impacts, and noise and air quality impacts caused by vehicle acceleration/deceleration in toll plaza areas.
- Electronic toll collection eliminates the need for cash handling and cash transport.
- The cost of collection is lower for transponders than staffed booths, and the additional costs of license plate collection are recovered with the surcharge fee.

1.3 CRC Project Roles and Responsibilities

The multi-modal project will be financed and developed by a project team consisting of Washington State Department of Transportation (WSDOT), Oregon Department of Transportation (ODOT), Tri-County Metropolitan Transportation District of Oregon (TriMet), and the Clark County Public Transportation Benefit District Authority (C-TRAN), as well as partnering local and regional jurisdictions in Oregon and Washington. The basic roles of each of the major project partners are summarized below:

[1] The terms "administrative fee" or "processing fee" are sometimes used in lieu of the term "surcharge" when referring to the additional fee applied to pay-by-plate transactions to offset the additional collection costs of this method of payment. The assumed amount is the estimated average additional cost of collection. The actual surcharge or fee would be set as part of the formal toll rate setting process, and may depend on the methods required to collect the toll.

Table 1-1
Outline of General Roles and Responsibilities for CRC Project (1)

	Construction	Operations
WSDOT	FTA Grantee for transit grants. Lead agency for overall multi-modal project. Responsible for design and construction of Columbia River bridge and highway improvements in Washington.	Assigns ownership of transit improvements to C-TRAN and TriMet, as applicable. Responsible with ODOT for maintaining bridge structure shared with transit. Establishes highway toll rates with ODOT; collects and disburses toll revenues.
ODOT	Co-lead of overall multi-modal project. Responsible for design and construction of highway improvements in Oregon.	Responsible for maintaining bridge structure with WSDOT; and maintaining highway improvements in Oregon. Establishes toll rates with WSDOT; shares in toll revenues.
TriMet	As sub-recipient under WSDOT (grantee) and under the overall project management of WSDOT, TriMet manages design and construction of LRT elements, other than the shared Columbia River bridge structure that will be directly managed by the DOTs.	TriMet will operate and maintain the LRT in Oregon and, under an agreement with C-TRAN, in Washington. O&M costs share based on allocation methodology. LRT passenger revenues and Modernization grants also shared. TriMet operates connecting bus service in its district. TriMet and C-TRAN establish mutual bi-state fares and passes. Each accepts transfers from other district.
C-TRAN	C-TRAN works with TriMet on design and construction of LRT elements; as prospective owner of CRC LRT assets in Washington holds co-approval rights on design and construction issues.	C-TRAN approves LRT service policy approval with TriMet. LRT O&M costs, passenger revenues, and Modernization grants shared. C-TRAN operates connecting bus service in its district. TriMet and C-TRAN establish mutual bi-state fares and passes. Each accepts transfers from other district. Performs some LRT-related operations, such as manages park-and-rides, maintains stations in Washington, etc.

(1) Assumptions underlying New Start submittal. Concepts are being refined and are subject to final agreement by the applicable parties.

1.4 CRC Project Capital Cost Estimate

WSDOT uses the Cost Estimate Validation Process (CEVP), a risk-based methodology, to develop capital cost estimates for all major projects it undertakes. CEVP produces a distribution of cost estimates reflecting the confidence that a cost estimate will not be exceeded. WSDOT typically uses the 60% CEVP cost estimate for finance planning purposes (i.e.; there is a 60% probability the cost estimate will not be exceeded without managing risks). This capital finance plan uses the 90% CEVP cost estimate; considerably more conservative than the typical assumption

CEVP utilizes a detailed base cost estimate comprising over 1,000 line-items defined by capital element and area. A unit-cost, lump sum, or percentage is designated for each line item based on the recent cost experience of WSDOT, ODOT, TriMet, and other data bases and applicable quantities are estimated. The activities feeding into the line-item costs are then connected into a critical path chart based on a baseline project development schedule. CEVP then applies a project-specific array of potential scope risks, cost risks,

schedule risks, and inflation factors to yield a probability curve of total cost estimates in year-of-expenditure dollars.

FTA requires cost estimates for New Starts review to be reported in Standard Cost Categories (SCC) and to include an amount of contingency that FTA finds appropriate for the project's stage of development. Thus the CEVP costs estimates for the CRC Project must be converted to fit FTA requirements. The process for developing the SCC-formatted cost estimate began with the detailed, line-item base cost estimates developed through CEVP. Each line-item was assigned an allocated contingency defined by a percentage of line-item cost, with the percentage guided by past project experience. The contingency allocated to individual line-items plus additional unallocated contingency yielded a total project contingency of 27.6% of the base cost (or about 21.7% of total cost (i.e. base plus contingency). The resulting base cost and contingency by line-item was then rolled-up into the applicable SCC categories. These cost estimates by SCC category were then converted to year-of-expenditure costs by applying the most recent inflation factors developed by WSDOT for construction, engineering, and right-of-way. The resulting project cost by SCC is shown below in Table 1-2.

Table 1-2
Multi-Modal CRC Project Cost by SCC
In Millions of Dollars

Standard Cost Category	Total Cost
10 Guideway & Track Elements	$1,159.0
20 Stations, Stops, Terminals & Intermodal	$115.0
30 Support Facilities: Yards, Shops & Admin Buildings	$44.6
40 Sitework & Special Conditions	$625.1
50 Systems	$82.4
60 Right-of-Way & Land Improvements	$202.7
70 Vehicles	$105.8
80 Professional Services	$436.0
90 Unallocated Contingency	$220.0
Total Project Cost in Base Year (2011) Dollars (without Finance Costs)	$2,990.5
Escalation	$447.9
100 Finance Costs (in YOE Dollars)	$69.5
Total Project Costs in YOE Dollars	$3,507.9

1.5 CRC Project Finance Plan

Section 2 of this report details the capital finance plan for the multi-modal CRC Project. Table 1-3, on the following page, summarizes this funding plan, which will continue to be refined during Preliminary Engineering and Final Design.

Table 1-3
Integrated Capital Finance Plan for the CRC Project

Costs	Total	Explanation
Transit Component Cost	$944.0	Cost of PE, Final Design, ROW, construction, systems, and equipment for transit component of overall multi-modal CRC Project. Includes allocation of bridge cost and interest paid on interim borrowing required due to lagging New Start appropriations.
Highway Component Cost	$2,563.9	Cost of PE, PS&E, ROW, construction, etc. for the highway, bicycle, pedestrian, and bridge (except of costs allocated to transit) components of the multi-modal project.
Total Project Cost	$3,507.9	
Revenues		
ODOT/WSDOT: Existing	$147.4 Committed	An aggregate total of $225.2 million has already been committed to the project by ODOT and WSDOT; of which about $77.8 million was spent prior to FTA approval to enter PE. This finance plan addresses only the post-PE approval costs and revenues. Thus, about $147.4 million of state funding is currently committed to the project.
Federal Discretionary Highway	$5.0 Committed $395.0 Planned	Project seeking a total of $400 million in highway discretionary funds from Projects of National and Regional Significance program or other programs. $5 million currently committed from Interstate Maintenance Discretionary program.
ODOT/WSDOT: Additional	$900.0 Planned	Finance plan seeks $450 million additional (i.e.; beyond already committed) from each of ODOT and WDOT f during the 2012 legislative sessions. Washington governor implementing task force to make request; Oregon interim committee addressing proposal.
Proceeds for Toll Bond Borrowings (TIFIA Loan and State-Backed Bonds) repaid with Post-Completion Net Toll Revenues	$1,004.9 Planned	I-5 bridges will be tolled and net revenues bonded to provide capital funding for project. Plan assumed toll revenues from post-completion tolling would be used to repay state-backed bonds and a $500 million TIFIA loan. ODOT has authority to toll bridges; WSDOT seeking authority in 2012 Legislature. Low estimate of borrowing capacity is used in this plan.
Net Toll Revenues from Pre-Completion Tolling used on Cash Basis	$204.4 Planned	Pre-completion toll revenues are from tolling the existing I-5 bridges prior to the completion of the new southbound bridge. Plan assumes these are used on cash basis. Low estimate of revenues is used in plan.
Net Residual Toll Revenues used on Cash Basis	$1.2 Planned	Residual toll revenues are net revenues remaining after debt service, operations, and reserves are funded. Plan assumes these are used on cash basis. Low estimate of revenues is used in plan.
New Start Funds	$850.0	Proposed New Starts Share
Total Project Revenues	$3,507.9	

Details on each of these funding sources and references to appropriate back-up appendices are provided in Section 2 of this report.

1.6 Compliance with Capital Plan Rating Standards

The following summarizes how the CRC capital finance plan addresses the Capital Plan Rating Standards for New Starts for a project in Preliminary Engineering.

A. Non-Section 5309 New Starts Share

As explained earlier, the *Consolidated Appropriations Act, 2010, Section 173 (H.R. 3288, December 9, 2009)* mandates that the CRC be evaluated on the basis of its integrated, multi-modal finance plan. The language requires that rating of the non-New Starts share of the finance plan be based on the percentage that non-New Starts funds comprises of all revenues in the integrated finance plan. The proposed New Starts share of the CRC Project finance plan is about 24%.

B. Current Capital Condition

- **Age of Bus Fleet:**
    - TriMet: The average age of TriMet's bus fleet is 13 years. TriMet will replace 55 buses in FY12 and 40 buses per year throughout the forecast, lowering the average age of the fleet to 7.5 years.
    - C-TRAN: The average age of C-TRAN's fixed route bus fleet is currently 7.3 years; the average age of the paratransit fleet is 3.3 years.
- **Bond Rating** (Rating documents are provided in Appendix E, Exhibit 5):
    - Washington: The current (July 2011) credit ratings for State of Washington General Obligation (GO) Bonds are:
        - Fitch: AA+
        - Moody's Aa1
        - S&P AA+
    - Oregon: The current (May 2011) credit ratings for State of Oregon General Obligation (GO) Bonds are:
        - Fitch: AA+
        - Moody's Aa1
        - S&P AA+
    - ODOT The most recent (March/April 2010) credit ratings for ODOT highway user tax bonds are:
        - Moody's Aa1 on senior lien highway user tax revenue bonds
        - Fitch: AA+ on senior lien highway revenue bonds
        - S&P AAA on senior lien highway user tax revenue bonds

- Moody's Aa2 on subordinate lien highway user tax revenue bonds
- Fitch AA+ on subordinate lien highway revenue bonds
- S&P AA on subordinate highway user tax revenue bonds

- TriMet is not assumed to issue bonds for the CRC Project. However, TriMet Senior Lien Payroll Tax Revenue Bonds Series 2009 A (Tax-Exempt) and Series 2009B (Build American Bonds-Direct Payment), which sold September 1, 2009 were rated AAA by Standard and Poor's September 2009 and Aa3 by Moody's October 2009. Both rating were re-affirmed in March 2010. Moody's global rating change subsequently improved TriMet's rating to Aa2.
- C-TRAN has not issued debt, does not have a credit rating, and is not expected to issue any debt for the CRC Project.

C. Completeness of Capital Plan

- CRC Project: The assumptions underlying the CRC Project capital finance plan are documented in Section 2 of this report. The CRC Project capital finance plan is prepared on a cash flow basis, the details of which are documented in Appendix E, Exhibits 1-6.
- TriMet: TriMet's agency-wide capital plan is incorporated in its 20-year cash flow. Assumptions are detailed in Section 3 and Appendix A (in particular Table 9). Fleet management plans for TriMet buses and LRT are in Appendix F, Exhibits 1-2.
- C-TRAN: C-TRAN's agency-wide capital plan is included in its 20-year cash flow. Assumptions regarding replacement and improvement of rolling stock, facilities, and equipment are detailed in Section 4 and Appendix G, Tables 16-19. C-TRAN's Fleet management plan is included in Appendix F, Exhibit 3. Historic data on C-TRAN's capital improvement and replacement program is provided in Table 4-25.
- WSDOT's risk-based capital cost estimating methodology ("Cost Estimate Validation Process" or "CEVP") provides a probability distribution of capital cost estimates reflecting the confidence that a cost estimate will not be exceeded, based on an array of cost estimation risks and schedule risks. See *Columbia River Crossing CVEP Final Report, August 2011* (Appendix E, Exhibit 6). While WSDOT customarily uses the 60% CEVP as the basis of project finance plans, this finance plan is conservatively based on the 90% CEVP cost estimate (i.e.; 90% confidence that costs will not be exceeded without any mitigation of risks).
- Details of the analysis of the borrowing capacity from toll revenues are provided in Appendix E, Exhibits 4 and 10. The analysis incorporated a sensitivity analysis based on a range of estimates of traffic volumes and gross toll revenues. As explained below, the toll revenue analysis is based on several conservative assumptions.
- Historic and forecast information on regional population, employment, and other economic indicators is provided in Appendix D, Exhibit 4, Section 4.2, and Appendix J, Exhibit 1.
- Historical transit service information is provided in Appendix D, Exhibits 1-7, 11, and 13. Historical transit financial data is provided in Appendix C, Exhibits 1-2. In addition, service and financial data is provided throughout Sections 3 and 4.

D. Commitment of Capital Funds

- Approximately $225.2 million has already been committed to the project in the aggregate by ODOT and WSDOT; of which about $77.8 million was spent prior to FTA's approval to enter Preliminary Engineering (PE). This finance plan addresses only post-PE approval costs and revenues. Thus, about $147.3 million of state funding is currently committed in the proposed finance plan.

- The capital finance plan for the CRC Project incorporates bond and loan proceeds and cash revenues from tolling the I-5 bridges. As a replacement bridge, there is federal statutory authority to toll the I-5 bridges under 23 U.S.C 129(a)(1)(C). ODOT currently has statutory authority to toll the I-5 bridges. WSDOT is 2/3^{rds} through a three-legislative session plan to secure its state authority to toll the I-5 bridges. It is following a process successfully used to secure tolling authority for the SR-520 project in the Seattle region. During the 2009 session the Washington legislature mandated that WSDOT undertake a technical analysis and outreach program regarding tolling the CRC Project and report back to the legislature in 2010. The technical study and outreach program were completed and a final report was submitted to the Governor and legislature in compliance with state law. WSDOT anticipates securing the operative toll authorization in the 2012 Legislature

- The capital finance plan incorporates $450 million in state funds from each of ODOT and WSDOT, beyond the funding they have already committed. ODOT and WSDOT anticipate securing legislative approval of these additional funds in their 2012 legislative sessions. ODOT is currently working with a legislative interim committee and legislative leadership to prepare its 2012 request. Only legislative approval of the additional funding would be required in Oregon. In Washington, Governor Gregoire appointed and chairs a Task Force to structure its funding request for 2012. The Chairs and Ranking Members of the House and Senate Transportation Committees sit on the Task Force. Approval of state funding from Washington is likely to require voter approval, anticipated in November 2012.

- The capital finance plan incorporates $400 million in highway discretionary funds, which could come from an array of discretionary funding programs. The project previously received $44.3 million in discretionary highway funding from a combination of congressional earmarks and administrative grants. These funds were spent on project planning before entering PE. To secure the targeted amount of highway discretionary funds, funding from the Projects of National and Regional Significance (PNRS) program will be sought. The project would rate highly under the program's current criteria, as evidenced by the national importance historically placed on the project by FHWA. $400 million is equivalent to the total amount of PNRS funds received by Oregon ($160 million) and Washington ($220 million) in SAFETEA-LU. So while $400 is a large award, the two states in the aggregate have demonstrated ability to obtain this amount. In addition, the project recently received $5 million from the 2011 Interstate Maintenance Discretionary (IMD) program, which counts toward the targeted $400 million. Additional IMD funding will be sought.

E. Capital Cost Estimates and Planning Assumptions

- The capital cost estimate is based on the methodology and pricing factors described in *Basis of Capital Cost Report* shown in Appendix E, Exhibit 1, and the risk-based cost estimating process described in *Columbia River Crossing CEVP Final Report, August 2011* shown in Appendix E, Exhibit 6. Further explanation is provided in Section 2.
- Unit-costs and other capital cost assumptions for highway and bridge-component costs are based on the recent project cost experience of WSDOT, ODOT, and other construction cost data basses.
- Capital cost assumptions for the light rail component are consistent with recent experience with the I-205/Portland Mall Light Rail Project and those used to estimate the capital cost of the Portland-Milwaukie LRT Project.
- The computation of the interim borrowing costs resulting from the lag in Section 5309 New Start funding appropriations is described in Sections 2.3.2 and shown in Appendix E, Exhibit 3A. The interim borrowing cost is based on an assumed 5% interest rate; substantially higher than current rates for commercial paper, short-term fixed-rate borrowings, and index bonds that may be used in the final interim borrowing program.
- The finance plan uses several key conservative assumptions to ensure its feasibility:
    - WSDOT typically uses the 60% CEVP cost estimate for finance planning purposes (i.e.; there is a 60% probability the cost estimate will not be exceeded without managing risks). This capital finance plan uses the 90% CEVP cost estimate; considerably more conservative than the typical assumption.
    - While toll rates are anticipated to escalate over time, the forecast of borrowing capacity of the toll bonds and loans assumes no escalation of toll rates after the start of post-completion tolling in July 2018.
    - The assumed interest rate on the TIFIA loan is 5.50 percent; about 210 basis points higher than the 3.42 percent rate quoted on the TIFIA website as of August 19, 2011.
    - A 6.0% interest rate for Current Interest Bonds and a 7.25% interest rate for Capital Appreciation Bonds; about 140 basis points higher than current rates.
    - The finance plan uses the Low estimate of borrowing capacity; these estimates are $190-$276 million below the Medium and High estimate for post-completion toll borrowings and $45-$88 million for pre-completion net toll revenues.

F. Capital Funding Capacity

The plan for providing capital funding capacity to respond to unanticipated cost-revenue imbalances has four key elements, which are described below.

- Employ conservative assumptions regarding costs and revenues to reduce downside risks and provide a genuine opportunity to obtain additional funding capacity from the base finance plan

- Basing the finance plan on the 90% CEVP cost estimate, as opposed to the more routinely used 60% CEVP estimate, provides a potential cushion of about $350 million to address capital cost overruns and/or funding under-runs.
- Subject to the results of the investment-grade tolling analysis, a pre-requisite to rating the debt, the current use of the Low estimate of toll revenues in the finance plan potentially allows for $235-$364 million of added capital funding from a combination of toll bonds, loans, and cash revenues.
- In addition, the current finance plan's conservative use of borrowing interest rates that are 140-210 basis points above current rates may translate into additional funding capacity when the debt is issued.

- Adjust project staging if required to rebalance the funding plan
  - Some highway improvements (i.e.; the interchanges not physically connected to the bridge) can be deferred if costs of core project elements exceed estimates. This would allow the funding associated with the deferred elements to be used for cost overruns/funding shortfalls on the core improvements.
  - The finance plan uses a relatively small amount of residual toll revenues; larger and on-going residual toll revenues are available, if required, to fund deferred project improvements on a cash basis or to support future borrowings.
- Adapt the toll rate schedule to different circumstances, if required to rebalance the funding plan
  - Analyses have shown that toll revenues can be increased by increasing toll rates within reasonable limits, if additional funding capacity is required.
- Manage resources within the highway trust fund to adapt to different circumstances
  - OSOT and WSDOT are experienced with reprogramming undedicated and non-committed funds within their highway trust funds to respond to cash-flow needs.

1.7 Summary of the Agency-Wide Operations Plans for TriMet and C-TRAN

Because the CRC LRT would serve both the C-TRAN and TriMet districts, the agency-wide plan for both operators are analyzed in this report. The assumed role and relationship between C-TRAN and TriMet with regard to the CRC Project is summarized in Table 1-1.

Like most other transit districts throughout the country, TriMet and C-TRAN are facing challenges caused by the economic downturn, and are in the process of executing plans to mitigate its impact. The plans of both districts are built to ensure adequate revenues are in place to operate the transit component of the CRC Project, including the connecting bus network, as well as to meet their agency-wide service, capital improvement, and capital replacement requirements. The background of these plans are summarized below and detailed in Sections 3 and 4 of this report:

1.7.1 TriMet

While the recent economic slowdown reduced TriMet's payroll tax revenues, historically TriMet's operating revenues have been stable, reliable, and growing. By responding decisively with cost reductions and revenue increases, TriMet has maintained fiscal stability throughout the recession. TriMet undertook service reductions in FY2010 and FY2011 to attenuate the long-term impact of the economic slowdown. These service reductions were less severe than those of most comparable districts. Moreover, even with these service reductions, between FY1991 and FY2011 the growth of fixed route service (adjusting rail vehicle hours for seating capacity) outpaced population growth by about a 2:1 ratio; transit service grew 79% while population grew by only 37%.

In FY2011 about 53 percent of TriMet's continuing operating revenues came from the employer payroll tax, self-employment tax, and the state "in-lieu" of payroll tax. These sources of revenue are dedicated to TriMet. The employer payroll tax is TriMet's largest source of revenue. Except during recessions, when employment declines, the employer payroll tax has grown faster than inflation, supplying real growth in revenues. The historic average underlying annual growth of employer payroll tax receipts for the last fifteen years has been 4.7% (the underlying rate excludes revenue growth from the tax rate increases). Underlying growth has averaged 2.9% per year for the past five years, a period that includes the impact of the 2007 recession.

The 2003 Oregon Legislature gave the TriMet Board the authority to increase the payroll tax on employers and self-employed individuals from 0.6218% to 0.7218% in 1/100th of one percentage point increments over a 10-year period. The TriMet Board approved the increases in 2004 and the first increase went into effect January 1, 2005. The payroll tax rate, effective January 1, 2011, is 0.6918%. See Appendix D, Exhibit 9 *Ordinance No. 279 Revising Payroll and Self-Employment Tax Rates; Amending Sections 13 and 14 of the TriMet Code*. The increase in the tax rate adds about 1.5% per year to the underlying growth rate.

In its 2009 session, the Oregon Legislature gave the TriMet Board the authority to increase the payroll tax rate for employers and self-employed individuals from 0.7218% to 0.8218%. See Appendix D, Exhibit 10 *Senate Bill 34*. The forecast assumes the TriMet Board would first levy the payroll tax rate increase authorized by SB 34 on January 1, 2015. After the tax increase is fully phased-in, the payroll tax rate would be 0.8218% as of January 1, 2024.

The TriMet 20-year agency-wide cash flow, detailed in Section 3 of this report, demonstrates that as planned TriMet can fund its share of operating the light rail extension to Clark County (and the Portland-Milwaukie LRT Project currently seeking Full Funding Grant Agreement approval), a program of service replenishment and expansion, and its capital improvement and replacement program, while maintaining a "cash and cash equivalent" reserve in excess of 12% of annual operating costs throughout the 20-year analysis period.

1.7.2 C-TRAN

Prior to 1999 C-TRAN operations were primarily funded with 0.3% (3/10th of 1 percent) sales and use tax and a Motor Vehicle Excise Tax (MVET) that matched the amount of revenue derived from the sales tax. Due to passage of a statewide initiative in 1999, C-TRAN lost its MVET funding. In response, C-TRAN implemented a Service Retention Plan, amended its boundaries to focus on urban routes, and passed a 0.2% ($2/10^{th}$ of 1 percent) increase in its sales and use tax rate (making the sales and use tax rate a total of 0.5%). Even though it continues to have an aggregate tax rate lower than that in 1999, C-TRAN has been able to avoid a major service reduction by employing a large reserve it created in the 1990s.

Under its enabling legislation as a Public Transportation Benefit Area (PTBA), C-TRAN may levy a "sales and use" tax of up to 0.9% ($9/10^{ths}$ of 1 percent) for transit service and facilities in its district. Currently C-TRAN levies a 0.5% ($5/10^{ths}$ of 1 percent) sales and use tax; with voter approval C-TRAN could impose an additional 0.4% tax under its PTBA authority. Washington statutes provide an additional taxing authority for High Capacity Transit (HCT) systems. RCW 81.104, commonly referred to as the HCT Act, allows a transit district to levy an additional 0.9% sales and use tax for a HCT system (beyond the tax rate allowed under the PTBA authority), subject to voter approval of a HCT systems plan that includes the tax as part of its finance plan.

The sales tax is the largest source of C-TRAN operating revenues comprising about 61% of all such revenues in 2010. In 2006, after C-TRAN's district boundary was changed to its current limits, each 0.1% of sales tax produced about $5.2 million. In 2010 as a result of the recession, in particular the loss of construction activity, each 0.1% sales tax produced about $4.4 million. The declines have bottomed-out; sales tax receipts in 2010 were up about 4% above 2009 levels.

In response to declining sales tax receipts and reserves, and public pressure to expand and improve service, C-TRAN prepared the *20-year Transit Development Plan*, which was adopted by the C-TRAN Board on June 8, 2010 (See Appendix H, Exhibit 10).The plan addresses capital improvement, capital replacement, and operating needs of the agency by seeking increases to the current sales and use tax rate. The C-TRAN Board has approved a funding measure for the November 2011 ballot that with voter approval would increase its sales and use tax rate under its PBTA authority by 0.2% (to a total of 0.7%) to preserve and expand its core bus and C-VAN services. (See Appendix D, Exhibit 12). The Board has also expressed its intent to seek a 0.1% sales and use tax under its HCT authority to fund light rail and bus rapid transit expansion.

The agency-wide operations and capital plan submitted hereunder reflects the recently adopted C-TRAN *20-year Transit Development Plan*. The plan includes a continuous program of replacement and rehabilitation of equipment and vehicles; expansion of bus, paratransit and HCT service throughout the 20-year period, and provisions to fund the capital needs of the entire transit system as planned. The 20-year agency-wide cash flow demonstrates that as planned C-TRAN could fund its share of operating the light rail

component of the CRC Project, a program of service replenishment and expansion, and its capital improvement and replacement program, while maintaining a "cash and cash equivalent" reserve in excess of 12% of annual operating costs throughout the 20-year analysis period.

1.8 Compliance with Operations Finance Plan Rating Standards

The following summarizes how the Operations Finance Plan for TriMet and C-TRAN respond to the Federal Transit Administration's Operations Plan Rating Standards.

A. Current Operating Financial Condition

- TriMet: Historical and actual balanced budgets and financial reports are provided in Appendix I. Audited financial statements and budgets are provided showing historical positive net operating results and adequate cash reserves. Near term cash flow shortfalls caused by economic downturn were paid for with cash reserves. The operating ratio as of June 30, 2010 was 1.44. Service reductions were made in FY2010 and FY2011 to respond to economic downturn. However, even with the service reductions, the growth of fixed route service between FY1991 and FY2011, adjusting rail vehicle hours for seating capacity, has outpaced population growth by about 2:1; service has grown 79% while population has grown 37%.

- C-TRAN: Historical and actual balanced budgets and financial reports are provided in Appendix H, Exhibits 1-14. C-TRAN's operating ratio was 9.7 for calendar year 2010, the most recent audit. This operating ratio reflects C-TRAN's $46.9 million in cash and cash equivalent reserves. C-TRAN has used these reserves to mitigate cash flow shortfalls. While service was cut in 2000 and 1999 in response to the loss of MVET funding, service has grown since. Through the use of its cash reserves, C-TRAN was able to address the impacts of the recent economic downturn with a 5% cut in under-performing trips as of January 2010.

B. Completeness of Operating Plan

- TriMet: A 20-year agency-wide cash flow of all operating and capital revenues and expenses is provided in Appendix A, Table 1. The build-up of the individual components of the cash flow is provided in detail in Appendix A, Tables 2-11. Ten years of historic data is provided in Appendix C, Exhibit 1 and Appendix D, Tables 1-8. All assumptions are detailed in Section 3 of this report. A sensitivity analysis is discussed in Section 3 and documented in Appendix B, Tables 12 and 13.

- C-TRAN: A 20-year agency-wide cash flow of all operating and capital revenues and expenses is provided in Appendix G, Table 1. The build-up of the individual components of the cash flow is provided in detail in Appendix G, Tables 2-21. Ten years of historic data is provided in Appendix C, Exhibit 2 and Appendix D, Exhibit 11, and detailed historic data is provided throughout Section 4. All assumptions are

detailed in Section 4 of this report. A sensitivity analysis was prepared and is documented in Appendix G, Tables 21-22, and summarized in Section 4.8.2.

C. Commitment of O&M Funds

- TriMet: Additional O&M funding is committed and a reasonable plan is being implemented to secure the remaining amount of O&M funding required for the 20-year plan. In 2003, TriMet received the legislative authority to increase the payroll tax for employers and self-employed from 0.6218% to 0.7218% over a 10-year phase-in period in one-hundredth of one percent per year increments. The TriMet Board approved the full increase on August 11, 2004; and the rate has already increased to 0.6918% as of January 2011.[2] In 2009 the Oregon Legislature gave the TriMet Board the authority to increase the payroll tax rate for employers and self-employed individuals from 0.7218 percent to 0.8218 percent. The legislation specifies that the increase must be phased-in and that no annual increase can exceed 0.02 percent. See Appendix D, Exhibit 10 *Senate Bill 34*. The plan anticipates that the TriMet Board would levy this payroll tax rate increase as of January 1, 2015 and that it would be totally phased-in by January 1, 2024, at which time the total payroll (and self-employment) tax would be 0.8218%.

- C-TRAN: A plan is in place to secure funding for C-TRAN's share of operating and maintaining the CRC Project light rail extension. The C-TRAN Board approved the *20-year Transit Development Plan*, providing the policy basis for seeking additional operations funding. The C-TRAN Board has approved a funding measure for the November 2011 ballot that with voter approval would increase its sales and use tax rate under its PBTA authority by 0.2% (to a total of 0.7%) to preserve and expand its core bus and C-VAN services. (See Appendix D, Exhibit 12B). The Board has also adopted a resolution expressing its intent to seek a 0.1% sales and use tax under its HCT authority to fund light rail and bus rapid transit expansion. (See Appendix D, Exhibit 12A). This vote is anticipated to be in 2012.

D. O&M Funding Capacity

- TriMet: Under the plan, projected cash balances and reserves in the 20-year cash flow shown in Appendix A, Table 1 exceed 12% of annual system wide operating expenditures throughout the forecast period. The sensitivity analysis demonstrates that there are reasonable policy actions that TriMet Board can take if tax revenues grow slower or expenses grow faster than assumed in the cash flow tables.

- C-TRAN: With the planned sales and use tax rate increases, projected cash balances and reserves in the 20-year cash flow shown in Appendix G, Table 1 exceed 12% of annual system wide operating expenditures throughout the forecast period. The sensitivity analysis demonstrates that there are reasonable policy actions that C-

[2] See Appendix D, Exhibit 9 Ordinance No. 279 Revising Payroll and Self-Employment Tax Rates; Amending Chapters 13 and 14 of the TriMet Code

TRAN Board can take if tax revenues grow slower or expenses grow faster than assumed in the cash flow tables.

E. Operating Cost Estimates and Planning Assumptions

- TriMet: The assumptions supporting the operating and maintenance cost estimates and revenue forecasts are consistent with (or more conservative than) historical experience. The assumptions are explained in detail in Section 3. The build-up of individual costs and revenues are provided in Appendix A, Tables 2-11, and these can be compared to historic trends detailed in Appendix C, Exhibit 1 and D, Exhibits 1-8, and the supplemental information in Appendix I.

- C-TRAN: The assumptions supporting the operating and maintenance cost estimates and revenue forecasts are consistent with (or more conservative than) historical experience. The assumptions are explained in detail in Section 4. The build-up of individual costs and revenues are provided in Appendix G, Tables 2-21, and these can be compared to historic trends in Section 4, Appendix C, Exhibit 2, Appendix D, Exhibit 11, and the detailed historic data provided in Section 4.

1.9 Organization of Report

This report is organized as follows:

- Section 1 provides an overall introduction and summary of conclusions regarding the capital and operations plans.
- Section 2 details the plan to finance the design and construction of the CRC Light Rail Project.
- Section 3 addresses the TriMet agency-wide 20-year operations plan, including the 20-year capital plan beyond the CRC Light Rail Project. A 20-year cash flow and historical data are provided.
- Section 4 addresses the C-TRAN agency-wide 20-year operations plan, including the 20-year capital plan beyond the CRC Light Rail Project. A 20-year cash flow and historical data are provided.

In addition, this report includes the following appendices, which are included in the materials posted for FTA review:

Appendix A	TriMet Cash Flow Forecast
Table 1	Cash Flow
Table 2	Passenger Revenue
Table 3	Other Operating Revenue
Table 3A	One-Time-Only and DMAP Reimbursement
Table 4	Operating Grants and Capital Reimbursement
Table 5	Capital and Operating Project Grants
Table 6	Accessible Transportation Program Revenues

Exhibit 8	Forecasts of Transit Operations and Maintenance Cost Report
Exhibit 9	2009 Washington Legislature SB 5352, Section 306 (12)
Exhibit 10	CRC Project Highway and Tolling O&M Costs

Appendix F	**Fleet Management Plans**
Exhibit 1	TriMet Bus Fleet Management Plan
Exhibit 2	TriMet Light Rail Transit Fleet Management Plan
Exhibit 3	C-TRAN Fleet Management Plan

Appendix G	**C-TRAN Cash Flow**
Table 1	C-TRAN 20-year Cash Flow
Table 2	Passenger Revenues
Table 3	Sales Tax and Other Revenues
Table 4	Grant Revenues
Table 5	Wage Costs
Table 6	Benefit Costs
Table 7	Service Costs
Table 8	Fuel Costs
Table 9	Other Supply Costs
Table 10	Utility Costs
Table 11	Taxes
Table 12	Insurance Costs
Table 13	Lease Costs
Table 14	Miscellaneous Costs
Table 15	Innovative Program Costs
Table 16	Rolling Stock Plan and Costs
Table 17	Facilities Plan and Costs
Table 18	Equipment Plan and Costs
Table 19	Capital Improvement BRT Costs
Table 20	Financial Charts
Table 21	Bond Sizing
Table 22	Sensitivity Test 1
Table 23	Sensitivity Test 2

Appendix H	**C-TRAN Supplemental Information**
Exhibit 1	Auditor's Report 2008
Exhibit 2	Auditor's Report 2009
Exhibit 3	Auditor's Report 2010
Exhibit 4	2008 Adopted Budget, C-TRAN.
Exhibit 5	2009 Adopted Budget, C-TRAN.
Exhibit 6	2010 Adopted Budget, C-TRAN.
Exhibit 7	C-TRAN Comprehensive Annual Financial Report for the Fiscal Year Ended December 31, 2008
Exhibit 8	C-TRAN Comprehensive Annual Financial Report for the Fiscal Year Ended December 31, 2009

Exhibit 9	C-TRAN Comprehensive Annual Financial Report for the Fiscal Year Ended December 31, 2010
Exhibit 10	C-TRAN 20 Year Transit Development Plan
Exhibit 11	STIP Summary
Exhibit 12	RTC Metropolitan Transportation Plan for Clark County
Exhibit 13	Description of C-TRAN
Exhibit 14	20-Year C-TRAN Capital Plan

Appendix I	**TriMet Supplemental Information**
Exhibit 1	Financial Statement and Supplementary Information as of June 30, 2010 and 2009
Exhibit 2	Financial Statement and Supplementary Information as of June 30, 2009 and 2008
Exhibit 3	Financial Statement and Supplementary Information as of June 20, 2008 and 2007
Exhibit 4	2012 Adopted Budget
Exhibit 5	2011 Adopted Budget
Exhibit 6	2010 Adopted Budget
Exhibit 7	TriMet Official Statement TriMet 2009 Payroll Tax Bonds
Exhibit 8	2011-2015 Capital Improvement Plan
Exhibit 9	Transit Investment Plan
Exhibit 10	Regional Transportation Plan Projects
Exhibit 11	MTIP Approved Project List 2010-2013
Exhibit 12	Description of TriMet

Appendix J	**Regional Supplemental Information**
Exhibit 1	Metro, 20 and 50 Year Regional Population and Employment Range Forecasts, April 2009

2. CRC PROJECT CAPITAL FINANCE PLAN

This section addresses the capital finance plan for the CRC Project. The capital improvement and replacement plans of TriMet and C-TRAN beyond the CRC Project are addressed as part of the agency-wide operations plans in Sections 3 and 4 of this report.

2.1 Background

As explained in Section 1.1, the CRC Project capital finance plan is prepared on the basis of being an integrated, multimodal finance plan. The use of the integrated multimodal finance plan is mandated by the statutory language enacted in the *Consolidated Appropriations Act, 2010, Section 173 (H.R. 3288, December 9, 2009)*, which in summary provides that: [3]

- The rating of the non-New Starts share component of the finance plan compares the non-New Starts share to the total cost of the entire project, and
- The accounting of local match for FTA and FHWA funds is based on the entirety of local funds incorporated in the finance plan.

The sections below describe the costs and revenues of the integrated finance plan and demonstrate its compliance with FTA ratings criteria.

2.2 Project Development Schedule

The project capital finance plan is based on a detailed baseline schedule, which is summarized below in Table 2-1.

[3] "*Hereafter, for interstate multi-modal projects which are in Interstate highway corridors, the Secretary shall base the rating under section 5309(d) of title 49, United States Code, of the non-New Starts share of the public transportation element of the project on the percentage of non-New Starts funds in the unified finance plan for the multi-modal project: Provided, That the Secretary shall base the accounting of local matching funds on the total amount of all local funds incorporated in the unified finance plan for the multi-modal project for the purposes of funding under Section 53 of title 49, United States Code and title 23, United States Code: Provided further, That the Secretary shall evaluate the justification for the project under section 5309(d) of title 49, United States Code, including cost effectiveness, on the public transportation costs and public transportation benefits.*"

Table 2-1
Major Milestone Schedule

Activity	Date
Publication of FEIS	September-11
Record of Decision (ROD) Issued	December-11
Washington Legislative Approval Authorizing Tolling for the CRC Project	March-12
Submit Letter of Interest for TIFIA Loan	March-12
Washington Legislative Approval of State Funding Contribution	March-12
Oregon Legislative Approval Committing State Funding Contribution	March-12
Submit Complete Application for Final Design	April-12
Receive Final Design Approval	September-12
Submit Application for Full Funding Grant Agreement	January-13
FTA Approval of Full Funding Grant Agreement for Section 5309 New Starts Funds	September-13
Initial Design-Build Contract Executed	October-13
New Southbound Bridge Open	July-18
Light Rail Service Starts	September-19
New Northbound Bridge Open	July-20

2.3 Capital Cost Estimates for Multi-Modal CRC Project

2.3.1 Cost Estimating Methodology

The capital cost estimates cover all costs of developing and constructing the highway, bridge, bicycle/pedestrian, and light rail elements of these alternatives, including the cost of engineering, project administration, right-of-way acquisition, system procurement and installation, vehicle procurement, construction, finance, and start-up cost.

The capital cost estimate used in this New Starts finance plan reflect the results of the Washington Department of Transportation's (WSDOT) Cost Estimate Validation Process (CEVP), a risk assessment methodology that accounts for uncertainties that may cause project costs to increase. (See *Columbia River Crossing CVEP Final Report*, August 2011, in Appendix E, Exhibit 6). CEVP utilizes a detailed base cost estimate comprising over 1,000 line-items defined by capital element and area. For each line-item, a unit-cost, lump sum or percentage is designated based on the recent project cost experience of WSDOT, ODOT, TriMet, and other construction cost data bases and applicable quantities are estimated. (*See Basis of Capital Cost Report*, in Appendix E, Exhibit 1).The activities feeding into the line-item costs are then connected into a critical path chart based on a baseline project development schedule. CEVP then applies a project-specific array of potential scope risks, cost risks, schedule risks, and inflation factors to yield a probability curve of total cost estimates in year-of-expenditure dollars.

The capital cost estimate used in this finance plan is the "90% confidence level" estimate (referred to herein as the "90%" estimate) from CEVP, adjusted (as explained in the following paragraph) to comply with FTA's SCC methodology. The 90% estimate is the cost that would only be exceeded 10% of the time (i.e. there is a 90% probability that the

actual cost will be at or lower than the estimate) without any management or mitigation of the array of risks. This is a conservative cost estimate; the 60% estimate is frequently used for financial planning, recognizing that on an actual project cost overruns and schedule risks would be managed or mitigated.

While WSDOT employs CEVP cost estimates, FTA requires cost estimates for New Starts review to be in Standard Cost Categories (SCC) and to include an amount of contingency that FTA finds appropriate for the project's stage of development. Thus the CEVP cost estimates for the CRC Project needed to be converted to fit FTA requirements. The process for developing the SCC-formatted cost estimate began with the detailed, line-item base cost estimates developed through CEVP. Each line-item was assigned an allocated contingency defined by a percentage of line-item cost, with the percentage guided by past project experience.

For the SCC-formatted cost estimate, the contingency allocated to individual line-items plus additional unallocated contingency yielded a total project contingency of 27.6% of the base cost (or about 21.7% of total cost (i.e. base plus contingency).[4] The resulting base cost and contingency by line-item was then rolled-up into the applicable SCC categories. These cost estimates by SCC category were then converted to year-of-expenditure costs by applying the most recent inflation factors developed by WSDOT for construction, engineering, and right-of-way. These inflation factors were assigned to the comparable SCC and a weighted annual escalation rate for each year was calculated and applied in the SCC spreadsheet.

Capital cost estimates are shown in year-of-expenditure dollars, which show the aggregate cost in inflated dollars. To develop the year-of-expenditure cost estimates, annual cost escalation rates were developed for major cost elements. Over the 11-year project development period, the assumed annual escalation rate for construction activities ranged from +1.49 percent to +3.62 percent.[5] The assumed annual cost escalation rate ranged from 0.72 percent to 3.30 percent for engineering and from -3.99 percent to 7.74 percent for right-of-way.

While the Columbia River Crossing (CRC) project is an integrated multimodal project, the use of some funding sources is limited by law (for example, fuel tax revenues in Oregon and Washington may only be used for highway-related improvements). Thus, the capital cost estimates are divided into highway and transit components. Many project costs are easily allocated to transit or highway because they are distinctly attributable to one of the components; for example, the cost of mainline highway improvements where there is no transit alignment is a highway cost, and the cost of light rail track is a transit cost. However, the costs of some highway and transit improvements overlap and must be allocated between these components. The allocation methodology underlying the cost estimates is summarized below.

[4] CEVP does not actually add contingency as is done in SCC cost estimates; it raises the cost estimate based on the occurrences of a risk array at a given confidence interval. The effective contingency derived from CEVP can be back-calculated by backing out inflation and comparing the result to the baseline cost estimate in current dollars.

[5] Inflation rates are documented in CRC, Columbia River Crossing CVEP Final Report, (August 2011) and may change in later updates to the cost estimate.

Columbia River Crossing Main Bridge Structure: Because one of the bridges crossing the Columbia River would incorporate highway and transit elements, the cost of the bridges can be apportioned into highway and transit costs. Transit's share of the bridge structure cost is the marginal cost incurred to accommodate transit, calculated as the difference between the cost of the stacked highway-transit bridge proposed for the project and the cost of an equivalent conventional box-girder bridge that does not accommodate the light rail alignment. The cost of removing the existing bridge structures is fully allocated to the highway cost. The cost of the transit tracks, electrification, and systems equipment on the main bridge is fully allocated to the transit cost. The transit structures crossing North Portland Harbor, Tomahawk Island Drive, and Hayden Island Drive are fully allocated to transit cost; and the associated highway structures are fully allocated to highway cost.

Right-of-Way: Right-of-way acquisition costs are also apportioned between transit and highway elements. The final apportionment will be based on a real estate acquisition management plan (RAMP), agreed to by FTA and FHWA following the Record of Decision (ROD) for this FEIS.

Engineering and Project Management/Administration: The highway and transit costs include their respective share of preliminary engineering and final design costs, calculated by applying multipliers[6] to the construction costs of the highway and transit elements.

Based on these assumptions[7]:

Highway capital costs include the costs of designing, acquiring right-of-way for, and constructing the highway sections of the river crossing, mainline I-5 improvements, highway interchange improvements,[8] local roadway connections to the highway interchanges, the bicycle and pedestrian improvements incorporated in the main river crossing and highway sections, and related project administration costs.

Transit capital costs include the costs of designing, procuring, installing, and constructing the transit guideway and related structures (including a share of the main river crossing); stations and park and ride facilities; maintenance facilities; electrification, signalization, and communication systems and equipment; related transit improvements; vehicles; bicycle/pedestrian improvements on transit-only structures; start-up costs; improvements to the Steel Bridge, and related project administration costs.

[6] The transit costs assume that preliminary engineering costs would be 3 percent and final design costs would be 7 percent of the estimated transit construction cost. The same calculation was applied to highway costs.

[7] The allocation of bicycle, pedestrian and other costs between highway and transit may be refined based on continuing discussions with FTA and FHWA.

[8] The access road to the Clark Park and Ride, which is part of the Fourth Plain interchange improvement, is included in the transit cost.

2.3.2 Interim Borrowing Costs

The project finance plan requires an interim borrowing program to fill temporary funding shortfalls caused by the time lag between when New Starts funds are received and when they are needed to meet the construction expenditure schedule. It is anticipated that the state funds and toll bond proceeds will be available as needed for cash flow purposes. The federal discretionary funds incorporated in the finance plan are scheduled for use based on their expected availability, and do not add to the interim borrowing requirement.

Thus, the interim borrowing requirement is driven by the prolonged flow of Section 5309 New Starts funds. FTA guidance provides that project development planning assume a maximum annual allotment of New Starts funds for a project of $100 million. At these levels of New Starts appropriations the New Starts funds do not keep pace with construction expenditures, necessitating an interim borrowing program.

The interim borrowing program is assumed to (a) start when the cumulative New Starts-eligible expenses exceeds the cumulative amount of New Starts funds available to the project and (b) end when the cumulative amount of New Start funds made available to the project equals the full amount of New Starts funds proposed in the finance plan. Due to the time it takes to receive grant funds, New Starts funds are assumed to be available for cost reimbursement in the April following passage of the appropriation.

While the structure of the interim borrowing program will depend on market conditions that exist at the time the program is funded, this finance plan assumes a commercial paper program in which funds are borrowed on a month-by-month basis as needed. It conservatively assumes a 5 percent interest rate, which is meant to account for interest and any administrative fees. Based on these assumptions, the project capital incorporates about $69 million in estimated interim borrowing costs. The calculation of the interim borrowing requirement is provided in Appendix B, Exhibit 3A.

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2.3.3 Cost Estimate for CRC LRT

The capital costs in 2011 and year of expenditure dollars (YOE$) by standard cost categories are provided in FTA's templates "Main Worksheet – Build Alternative" and "Inflation Worksheet", which are provided in Appendix E, Exhibit 2. A summary of the cost estimate by component and SCC category is shown in Table 2-2, below.

Table 2-2
Summary of Capital Cost by SCC and Component
In Millions of Dollars

Standard Cost Category	Highway Costs	Transit Cost	Total Cost
10 Guideway & Track Elements	$983.5	$175.4	$1,159.0
20 Stations, Stops, Terminals & Intermodal	$0.0	$115.0	$115.0
30 Support Facilities: Yards, Shops & Admin Buildings	$0.0	$44.6	$44.6
40 Sitework & Special Conditions	$533.0	$92.1	$625.1
50 Systems	$24.5	$57.9	$82.4
60 Right-of-Way & Land Improvements	$165.6	$37.0	$202.7
70 Vehicles	$0.0	$105.8	$105.8
80 Professional Services	$350.8	$85.2	$436.0
90 Unallocated Contingency	$175.0	$45.0	$220.0
Total Project Cost in Base Year (2011) Dollars (without Finance Costs)	$2,232.4	$758.1	$2,990.5
Escalation	$331.4	$116.5	$447.9
100 Finance Costs (in YOE Dollars)	$0.0	$69.5	$69.5
Total Project Costs in YOE Dollars	$2,563.9	$944.0	$3,507.9

2.4 Proposed Capital Funding Sources

The following sub-sections describe the funding sources.

2.4.1 $147.4 million in Currently Committed State Funds

An aggregate total of approximately $225.2 million has already been committed to the project by ODOT and WSDOT; of which about $77.8 million was spent prior to FTA's approval to enter Preliminary Engineering (PE). This finance plan addresses only the post-PE approval costs and revenues. Thus, about $147.4 million of state funding is currently committed to the project, and a plan is in place to secure the remaining funds.

2.4.2 $400 Million in Highway Discretionary Funds

While the project sponsors intend to seek funding from the Projects of National and Regional Significance (PNRS) program, the targeted amount of discretionary highway funds could come from an array of discretionary funding programs

The PNRS program was established under Section 1301 of SAFETEA-LU as a discretionary funding program, patterned after FTA's New Starts program, which provides funding to high-cost surface transportation projects (sometimes referred to as "mega-projects"). The criteria for funding from the PNRS program are set forth in FHWA regulations at 23 CFR 505, and include such factors as:

- Eligible project costs. Eligible project costs must exceed the lesser of $500 million or 75 percent of the state's formula transportation funding apportionment;[9]
- The ability of the project to generate national and/or regional economic benefits;
- The amount and importance of freight and passenger travel served;
- The ability of the project to generate long-term congestion relief and enhance the national transportation system by improving throughput; and
- The ability of the project to improve transportation safety.

While funding allocation under the PNRS program was envisioned as a criteria-based administrative program, the entire $1.8 billion funding authorization was earmarked to specific projects in SAFETEA-LU. Oregon received an award of $160 million to improve bridges throughout the state in the I-5 corridor, and Washington received a $220 million award for the Alaska Way Viaduct project. The aggregate amount of earmarks to Oregon and Washington of $380 million is similar to the amount planned to be secured for the CRC Project.

The PNRS program is anticipated to continue in the upcoming reauthorization act; however, the extent to which PNRS funds will be earmarked in the act or awarded to projects by USDOT is uncertain. In either case, PNRS funding will be sought for the CRC project. While $400 million would be a large earmark, the aggregate PNRS earmark received by Oregon and Washington in SAFETEA-LU illustrate the states' ability to obtain this amount.

An administrative grant would be sought if PNRS is not earmarked in reauthorization and instead left to operate as a FHWA discretionary program. The CRC Project would rate highly as a national project under the program's current criteria, as evidenced by the CRC Project's designation as a "*Corridor of the Future*" and a priority project under Executive Order 13274 for *Environmental Stewardship and Transportation Infrastructure Reviews.* While these specific designations may no longer be applicable, they indicate the national importance FHWA has historically placed on the project.

If PNRS funds are not sufficiently available for the CRC project, other discretionary highway funds will be sought, such as High Priority Projects (HPP) and Interstate Maintenance Discretionary (IMD) funds. Traditionally reauthorization bills include the HPP program, which generally provides funding to specific projects named in the bill. While HPP has not provided earmarks as large as PNRS, earmarks in the $20-$30 million range are not unusual. Earmarks from the HPP program could supplement monies from other programs, including PNRS. In SAFETEA-LU Oregon received $307 million in HPP funds. Washington received $250 million, including $11.2 million for the Alaska Way Viaduct, which also received an earmark from the PNRS program. Between Oregon and Washington earmarks, the CRC Project received $14.2 million in HPP funding in SAFETEA-LU; these monies were spent on pre-PE planning analyses.

[9] For multi-state projects such as the CRC project, the largest apportionment among the participating states applies.

IMD funds may be used for reconstructing the Interstate System, including providing additional Interstate highway capacity. Currently about $100 million per year is authorized nationwide under this program. Prior to PE approval, the CRC project received several grants from this discretionary program totaling about $22 million, which was spent on pre-PE expenses. Recently, WSDOT received a $2 million IMD grant and ODOT received a $3 million IMD grant for the CRC Project as part of the 2011 awards. These $5 million count toward the $400 million targeted amount of highway discretionary funds in the finance plan.

2.4.3 $900 Million in Additional (i.e.; beyond currently committed) State Funds

The funding plan calls for $900 million in additional state transportation funds collectively from ODOT and WSDOT beyond the amounts already committed to the project and discussed in Section 2.4.1, above. ODOT and WSDOT are each responsible for one-half of the aggregate amount.

These funds can come entirely from new revenues that are legislatively approved for the CRC Project or a combination of new revenues and existing revenues. The current plan is to pursue new revenues for the project. New revenues may be created by increasing one or more of the statewide fees or taxes. While the actual package of taxes, fees, and other revenue sources that may be used to fund each state's share of CRC capital costs must be developed through their legislative processes, potential sources of new state revenues are described below.

2.4.3.1 Oregon

ODOT is working with interim legislative committees with regard to the CRC Project, and currently anticipates seeking new revenues in the 2012 legislative session to fund its $450 million share of additional state funds.

While the package of new revenues must be resolved through the legislative process, that package may include an increased fuel tax. The Oregon legislature may increase the fuel tax rate by vote of the legislature. The use of any revenues resulting from an increase to the fuel tax would be set in the legislation enacting the increase. Oregon currently levies a 30¢ per gallon tax on all fuels used for vehicle transportation. ODOT estimates that in fiscal year (FY) 2011 the fuel tax will gross about $17.8 million per penny of tax (from *ODOT, Summary of Transportation Economic and Revenue Forecasts, September 2010 (released February 2011*)). State law requires certain transfers and expenses be paid from gross fuel tax revenues; as a result, a 1¢ fuel tax in FY 2011 is forecast to produce about $17.0 million net revenues for transportation projects.[10] The net fuel tax revenues are generally allocated between the state, counties, and cities.

[10] The fuel tax is customarily paired with an equivalent amount of motor carrier fees and taxes; the net proceeds forecasted for FY 2011 from a 1¢ fuel tax with these equivalent taxes and fees is about $27.1 million. The Oregon Constitution restricts the use of fuel tax revenues to highway purposes only.

Oregon also levies several fees and taxes on heavy trucks, including weight-mile taxes, heavy vehicle registration fee, trip permits, and other fees paid by motor carriers. Taken together these are referred to as "motor carrier fees and taxes." The Oregon legislature may increase motor carrier fees and taxes by vote of the legislature. The use of any revenues resulting from an increase in motor carrier fees or taxes would be set forth in the legislation enacting the increase.

The Oregon Constitution restricts the use of fuel tax and truck-related revenues to highway purposes only. The Oregon Constitution also requires the proportion of highway revenues paid among the major vehicle classes, primarily passenger vehicles and heavy trucks, match the relative financial burden each places on the transportation system. This concept is commonly referred to as "cost responsibility." To maintain cost responsibility, any increase in the fuel tax rate may be paired with a proportionate increase in taxes on heavy trucks. An increase in motor carrier fees and taxes proportionate to a 1¢ increase in fuel tax would generate about $10.1 million in net proceeds in FY2011.Accordingly, a 1¢ increase in fuels tax plus an equivalent increase in motor carrier taxes and fees would annually produce $27.1 million in net revenues on average.

Thus, for example, if all of the proceeds from an Oregon 1.5¢ fuel tax plus an equivalent increase in motor carrier taxes and fees were dedicated to a multi-year revenue stream, the revenue stream would produce about $510 million in net bond proceeds.[11] Oregon collects a variety of Department of Motor Vehicle (DMV) fees, including vehicle registration fees, title fees, driver license fees, and other fees. One or more of these fees can be increased to fund a transportation improvement program and, thereby, reduce the required increases from gas tax and motor carrier fees. The amount of required new revenues may also be decreased by allocating existing revenues to the project.

2.4.3.2 Washington

Governor Gregoire has formed the *Connecting Washington Task Force* and charged it with identifying revenue sources to address top priorities, including the CRC Project. The Task Force includes the Chairs and Ranking Members of State House and Senate transportation committees, organized labor, trade associations, businesses, and others; the Governor serves as chair. The Task Force will present its recommendations to the 2012 Legislature. While the components of the recommendation depend on the results of the Task Force process, it could include a fuels tax increase.

The State of Washington currently levies a 37.5¢ per gallon fuels tax on gasoline and other "special" transportation fuels. The proceeds from these fuel taxes are estimated to gross about $33.3 million per 1¢ of tax in FY 2011 (*March 2011 Transportation, Economic, and Revenue Forecast, Transportation Revenue Forecast Council*). After deducting a variety of expenses and transfers mandated by state law, a 1¢ combined gas and special fuels tax is estimated to net about $31.7 million in FY 2011. The Washington state constitution limits the use of proceeds from the state fuels tax to highway purposes.

[11] Assumes issuance of uniform-payment, subordinated highway revenue bonds with a 25-year term, 6 percent annual interest, 2 percent issuance costs, and coverage supplied by other revenues.

The allocation of the fuels tax proceeds in Washington depends on the provisions in the legislation enacting each increase. A share of existing fuels tax revenues is generally allocated among the state, cities, and counties; the allocation formula among these recipients has varied in different fuels tax legislation. The use or allocation of any future increases to the fuel tax would be set forth in the legislation enacting the increase. If, for example, the entire proceeds of a 1¢ Washington fuel tax (no allocation to cities and counties) were dedicated to a multi-year revenue stream, the revenue stream would produce about $428 million in net bond proceeds for highway projects.[12]

In Washington, licensing fees for trucks, buses, and for-hire vehicles consist of combination of a fee based on the gross weight of the vehicle (gross weight fee) and an additional fee of 1 dollar. The gross weight fee schedule for trucks was increased by 15 percent as part of the Nickel Package. The Transportation Partnership Account legislation increased the licensing fee for light trucks, except for farm vehicles, by $10 to $30, depending on weight. Registration fees for passenger cars consist of a combination of a $30 license fee plus a fee that depends on the gross weight of the vehicle (vehicle weight fee). The vehicle weight fee was introduced as part of the Transportation Partnership Account legislation.

Each $1 increase to the basic vehicle license fee in Washington is estimated to produce almost $4.9 million in FY 2011. Each 1 percent increase in the combined license fee (CLF) on commercial vehicles in Washington would produce about $1.7 million in 2011.

2.4.4 $850 Million in Section 5309 New Start Funds

$850 million in New Starts funds are proposed for the CRC Project. The schedule assumes the Full Funding Grant Agreement would be executed in September 2013. Some acquisition and construction would be undertaken prior to the FFGA under the automatic pre-award authorities that are available with issuance of the ROD and Final Design approval, and some under Letter of No Prejudice (LONP) project sponsors anticipate requesting.

After the first year of New Start appropriations at $57 million in 2014, the finance plan assumes an annual amount of New Starts funds that is the lesser of (a) $100 million or (b) the amount of New Start eligible expenses in that year, up to a cumulative total of $850 million in New Start funds.

2.4.5 Interim Borrowing Program

As discussed in Section 2.3.2, the project must establish an interim borrowing program to fill temporary funding shortfalls caused by the difference between when New Start funds are received versus when they are needed to meet the construction expenditure schedule. To meet project needs, this program must be sized to provide up to an estimated $360 million in interim borrowing capacity. The calculation of interim borrowing requirements and costs is shown in Appendix E, Exhibit 3A.

[12] Assumes uniform-payment highway revenue bonds with a 30-year term, 6 percent annual interest, 2 percent issuance costs, and coverage supplied by other revenues.

Interim borrowing capacity may be provided in a manner similar to that used for TriMet's recent light rail transit projects; in which the monies in the Full Funding Grant Agreement are pledged to repay commercial paper, a letter of credit, or other form of borrowing; possibly backed with other project revenues. This analysis assumes a rolling commercial paper program at a conservatively assumed 5% interest

Washington legislation may be sought similar to that enacted for the SR-520 Project, which would permit sales and use taxes applicable to the CRC Project to be deferred until five years after completion of the project. This may reduce the interim borrowing capacity requirements by about $60 million.

2.4.6 $1.2 Billion from Tolling (Loans, Bonds, and Pay-Go Cash)

2.4.6.1 Introduction

As explained in Section 1, under the CRC Project the I-5 Bridge would be tolled. Toll revenues are planned to be used for borrowings (loans and bonds supported by post-completion tolling) and pay-go cash (from pre-completion tolling and net residual toll revenues) to pay for capital expenses. In total, the capital finance plan for the CRC Project depends on toll revenues to cover about 35 percent of project costs. In addition, the toll revenues may provide capacity to address any project cost overruns and/or revenue shortfalls in other project revenues. The following sub-sections describe the steps to be taken to implement tolling and the estimated revenues that it would produce. Specifically, the following factors are addressed:

- The authority to toll the new bridge
- Toll rate structure
- The cost of operating the bridge/highway component of the CRC Project (note that the transit operating costs are addressed in Sections 3 and 4 of this report)
- Estimation of net toll revenues available to the capital finance plan
- Financing assumptions
- Borrowing capacity (loan and bonds) from post-completion tolling
- Pay-Go cash from pre-completion tolling revenue
- Pay-Go cash from residual toll revenues

2.4.6.2 Authority

23 U.S.C 129(a)(1)(C) permits states to toll a bridge on the Interstate System when the bridge is either being replaced or reconstructed, as is the case for the CRC project. Federal statutes delegate to the states decisions regarding toll rate schedules and the time when tolls can first be charged, except that tolls may not be imposed prior to awarding the initial construction contract. The decision as to the time when tolls are removed is also reserved for the states. As a pre-requisite to tolling the I-5 bridges, WSDOT and ODOT must enter into a tolling agreement with FHWA. This tolling agreement will require that toll revenues be first used for debt service and the operation and maintenance of the bridge. The use of toll revenues exceeding the amount needed for debt service or operations and maintenance is subject to state laws and regulations.

Under current state statutes, the toll rate schedule for the I-5 bridges (i.e., the toll rates by time of day, day of week, vehicle classification, and applicable discounts, if any) must be

formally set by the state transportation commissions through specific processes set in state law and further detailed in a bi-state agreement between WSDOT and ODOT.

At this time, ODOT has general statutory authority to toll facilities it owns, including the I-5 bridges, no additional authority is required. Under Washington law, WSDOT is provided tolling authority on a project-by-project basis. WSDOT currently operates two toll facilities (Tacoma Narrows Bridge and SR 167 high occupancy toll [HOT] Lane) and will open a third toll facility (SR 520) in late 2011. WSDOT is not currently authorized to toll the I-5 bridges; but is 2/3rds through a three-legislative session plan to secure the state authority. It is following a process patterned after the process successfully used to secure tolling authority for the SR-520 project in the Seattle region. During the 2009 session the Washington legislature mandated[13] that WSDOT undertake a technical analysis and outreach program regarding tolling the CRC Project and report back to the legislature in 2010. The technical study and outreach program were completed and a final report was submitted to the Governor and legislature in compliance with state law. WSDOT now anticipates seeking the toll authorization in the 2012 Legislature.

2.4.6.3 Toll Rate Schedule and Gross Toll Revenue Forecasting

As explained above, the toll rate schedule for the I-5 bridges (i.e., the toll rates by time-of-day, day-of-week, vehicle classification, and applicable discounts, if any) must be formally set by the state transportation commissions through specific processes set in state law and the bi-state agreement between WSDOT and ODOT. An analysis was undertaken to examine the traffic and revenue impacts of a broad array of toll scenarios; several of which are documented in the FEIS. This finance plan report focuses on the Toll Rate Schedule 2 (Added Price Point) in the FEIS; the finance plan would be generally similar with other toll rate schedules, although some specific numbers would differ.

Table 2-3 provides the assumed weekday toll rate schedules for passenger cars by time period. Toll rate schedules are shown for "post-completion tolls," which is when two-way tolling starts after completion of the new southbound I-5 bridge in July 2018 (post-completion tolling), and for "pre-completion tolls," which is when two-way tolls are collected on the existing I-5 bridges prior to the completion of the new southbound I-5 bridge. The rates shown are one-way tolls. A round-trip would pay tolls in each direction at the appropriate rate for the time period of each crossing. Toll rates are expressed in 2006 dollars to be consistent with previous studies. These rates are assumed to be increased on average at 2.5 percent annually.[14] Thus, for example, the peak-period toll rate for an automobile with a transponder under the Base toll rate schedule ($2.00 in 2006 dollars) would be $2.69 in 2018 when the new southbound I-5 bridge opens for traffic.

[13] 2009 Washington Legislature SB 5352, Section 306 (12) (See Appendix E, Exhibit 9)

[14] Toll rate increases must be approved in accordance with the processes set forth in a bi-state tolling agreement, and under current state law will require approval by the Oregon Transportation Commission and Washington Transportation Commission.

Table 2-3
Toll Rate Schedule Scenarios - One-Way Toll Rates [A,B,C,D]

Toll Rates for Autos in Each Direction [a,b,c,d]		
Time Period	**Post Completion Toll Rate Schedule 2 Added Price Point**	**Pre-completion Toll Rate Schedule [f]**
12 AM–5 AM	$1.00	$0.00
5 AM–6 AM	$1.50	$1.50
6 AM–7 AM	$2.00	$2.00
7 AM–9 AM	$2.50	$2.00
9 AM–10 AM	$2.00	$2.00
10 AM–3 PM	$1.75	$1.50
3 PM–4 PM	$2.00	$2.00
4 PM–6 PM	$2.50	$2.00
6 PM–7 PM	$2.00	$2.00
7 PM–8 PM	$1.50	$1.50
8 PM–12 AM	$1.00	$0.00
Pay-by-plate Surcharge [g]	$1.22	$1.22

A Toll rates are shown in 2006 dollars. Toll rates are assumed to escalate at 2.5% per year. Thus, for example, a $2.00 toll in 2006 dollars would be about $2.21 in 2010 dollars.

B Medium trucks, defined as vehicles with three or four axles, are assumed to have a toll rate that is twice the rates shown above for autos.

C Large trucks, defined as vehicles with five or more axles, are assumed to have a toll rate that is four times the rates shown above for autos.

D The actual toll rates imposed through the formal toll setting may differ from these scenarios.

E Toll rates charged after the new southbound I-5 bridge is opened for traffic operations.

F Toll rates on existing I-5 bridges, prior to completion of the new southbound I-5 bridge

G The pay-by-plate surcharge, shown in 2006 dollars, is applicable to all types of vehicles and does not change by time of day. The surcharge represents an average of the anticipated added cost to collect these tolls compared to costs for vehicles with transponders. The surcharge would change as the cost to collect these tolls increases; the escalation rate is anticipated to be lower than the cost of inflation.

Toll rates for commercial vehicles are assumed to be proportionately greater than for passenger cars, roughly based on the number of axles. Many toll facilities follow this approach including, for example, the Tacoma Narrows Bridge. For the purposes of this analysis, it is assumed that large-sized commercial vehicles (five or more axles) would pay four times the passenger car rate for the given time of day, and medium-sized commercial vehicles (three- or four-axle vehicles) would pay two times the passenger car rate for the given time of day. The actual toll rates for commercial vehicles will be determined in the formal toll rate–setting process.

Forecasts of bridge traffic volumes and gross toll revenues were computed for the assumed toll rate schedule (and others). The process consisted of employing Metro's regional travel demand models, which incorporated a toll sub-model based on an extensive stated preference survey of passenger and freight travel. Those results were "post-processed" using a micro-simulation traffic assignment model (VISSIM) to refine

the assignments. The Metro model results and "post-processed" results were provided to Stantec, a consulting firm with worldwide experience in toll analyses, which prepared a range of gross toll revenues by creating hour-by-hour traffic volumes by vehicle type and toll payment method and applying the appropriate toll rate. This was done on a year-by-year basis for about thirty-five years of operation.

2.4.6.4 Toll/Bridge Operating Costs and Conversion of Gross Toll Revenues to Net Toll Revenues

The costs of toll operations and maintaining and rehabilitating the bridge were estimated on the basis of comparable operations on the Tacoma Narrows Bridge, as well as the current I-5 and I-205 Bridges. Specifically, the following costs were estimated:

- Routine highway facility O&M costs (i.e.; the annual costs of operating and maintaining the roadway and bridges)
- Routine annual toll collection costs (i.e.; the annual fixed and variable (per transaction) costs of collecting tolls and maintaining toll equipment)
- Bridge insurance costs, including property damage and business loss
- Periodic rehabilitation and replacement facility costs (i.e.; resurfacing, bridge inspections, etc.)
- Periodic rehabilitation and replacement of tolling equipment and software

Additional details are shown in *CRC Project Highway and Tolling O&M Costs.* (See Appendix E, Exhibit 10).

The net toll revenues pledged to borrowings or used on a cash basis to pay projects expenses exclude the toll revenues used to pay the operating and maintenance costs of toll collection and the facility summarized above, as well as credit card transaction fees and uncollectible accounts.

2.4.6.5 Financing Assumptions and Factors

Net toll revenues are used to fund the CRC project by (a) pledging net toll revenues to repay bonds and loans and using the proceeds to pay project costs and/or (b) directly using the net toll revenues on a cash basis to pay project costs. The majority of toll funding for the project comes from borrowings that are repaid with a multiyear stream of net toll revenues.

The funding capacity of a toll rate schedule depends on the financing structure employed. This analysis used for its estimates a baseline financing structure consisting of the following major assumptions:

- While it is anticipated that toll rates will escalate at 2.5 percent per year, the estimated financial capacity of the toll bonds and loans do not rely on any escalation in toll rates after the start of post-completion tolling in July 2018. This is a conservative assumption to reduce the financial risk of toll-backed borrowings.
- Net toll revenues from post-completion tolling would be used to repay a $500 million TIFIA loan. While this finance plan assumes a $500 million TIFIA loan, the final mix and amount of TIFIA loans and toll bonds will depend on the ultimate availability of

TIFIA. The project sponsors would seek the maximum appropriate TIFIA award available to the CRC Project.

- In addition to the TIFIA loan, net toll revenues would be used to repay toll bonds backed by a state general obligation and/or highway trust fund pledge.

The following summarizes the assumptions used to determine the borrowing capacity of the net toll revenues:

- For the TIFIA loan:
    - The assumed interest rate on the TIFIA loan is 5.50 percent; about 210 basis points higher than the 3.42 percent rate quoted for a 35-year loan on the TIFIA website for August 19, 2011.
    - A 10 percent coverage factor is assumed (i.e.; net toll revenues must be at least 1.1 times aggregate debt service each year).
    - The loan would be repaid in 35 years following completion of the project.

- For the state-backed bonds:
    - A blend of serial Current Interest Bonds (CIBs) and Capital Appreciation Bonds (CABs) are used to tailor debt repayment to match the revenue stream.
    - A 6.0% interest rate for Current Interest Bonds and a 7.25% interest rate for Capital Appreciation Bonds. These interest rates are assumed to be constant over the maturity periods of the bonds.
    - Bonds are assumed to be sold in multiple annual issues
    - Bonds are assumed to be 30-year state-backed debt.
    - A 1.25X debt service coverage factor is maintained on the state-backed bonds.
    - For each bond issuance, the gross bond proceeds are sized to include capitalized interest to cover interest payments prior to the start of revenue operations.
    - Issuance costs include an underwriter's discount of 0.5% for Current Interest Bonds and 1.0% for Capital Appreciation Bonds plus a 0.2% to cover other issuance costs.

2.4.6.6 Borrowing Capacity of Toll Revenues

Table 2-4 shows the range of net borrowing proceeds potentially available from each of the toll rate scenarios. The borrowing capacities shown in Table 2-4 are the amount of proceeds available to pay for project design and construction after deducting bond proceeds used for capitalized interest, issuance costs, and reserves. Borrowing capacity is shown as a range to reflect the possibility that revenue collections, facility operations and maintenance costs, financing costs, timing of the toll bonds, and/or other factors affecting the amount of net bond proceeds may differ from the assumptions used. The "High" estimate reflects the traffic volumes resulting from the post-processing methodology, and serve as the basis for the traffic impact analysis in the FEIS. The "Medium" estimate reflects traffic volumes about 7-8% below the High estimate, and the "Low" estimate reflects traffic volumes about 15% below the Medium estimate. **To employ a**

conservative methodology, the financial plan is based on the Low estimates of borrowing capacity shown in Table 2-4.

Table 2-4
Initial Borrowing Capacity of Net Toll Revenues
In Billions of Year-of-Expenditure Dollars [a,b]

Point in Range [c]	Post-completion [d] Toll Rate Schedule 2	Pre-completion Tolls Add-on [e]
Low	$1.005	$0.204
Medium	$1.195	$0.249
High	$1.281	$0.292

a Net bond proceeds for the design and construction costs; excludes proceeds used for issuance costs, capitalized interest, and reserves.

b While the project sponsors will seek the maximum appropriate TIFIA loan, the estimates in this Exhibit assume a $500 million TIFIA loan combined with f state-backed senior bonds.

c A range of funding is shown for each schedule, reflecting the potential variability in traffic forecasts, financing assumptions, and schedule.

d Post-completion toll rate schedules assume that toll collection starts when the new southbound I-5 bridge opens for general traffic operations.

e Pre-completion funding capacity assumes that (a) two-way tolls start in July 2014 and pre-completion tolling ends when the new southbound bridge opens in 2018 and (b) these toll revenues are used on a cash basis. Thus, this amount is an add-on to the post- completion toll bond capacity for each of the toll rate schedules.

Additional detail on the post-completion borrowing program assumed in this finance plan is shown in *Borrowing Analysis for Toll Schedule 2: Added Price Point – Low Estimate* (See Appendix E, Exhibit 4).

2.4.6.7 Pre-completion Toll Revenues

The finance plan includes revenues from tolling the existing I-5 bridges prior to the completion of the new southbound bridge, which is referred to as pre-completion tolling. By providing early toll revenues for project construction, pre-completion tolling can be used to provide additional revenues for project construction, reduce the amount of toll bond proceeds used to pay capitalized interest, and/or reduce the long-term post-completion toll rates. The $204 million – $292 million potentially available from pre-completion tolling shown in Table 2-4 assumes:

- The pre-completion toll rate schedule shown in Table 2-3.
- Pre-completion tolling would start, if required, as early as mid-2014 and continue until the new southbound bridge opens in mid-2018, when post-completion tolling begins.
- Facility operations and maintenance costs for the existing bridges are funded by ODOT and WSDOT as currently, and not from toll revenues.
- Net toll revenues from pre-completion tolling would pay project costs on a cash (pay-as-you-go) basis. Thus, for this analysis, the potential pre-completion tolling

contribution can be viewed as an add-on to the post-completion funding capacity for each of the tolling scenarios.[15]

While Table 2-4 shows a range of forecasts for pre-completion toll revenues, the finance plan uses only the "Low" estimate.

2.4.6.8 Residual Toll Revenues

Because the toll bonding scenarios assume a portion of the net toll revenues would provide coverage to supply a funding cushion for debt service and operating costs and the initial toll bonds would not rely on toll revenues from toll rate increases imposed after the opening of the new southbound bridge, there would be "residual toll revenues" available each year after the southbound bridge opens for traffic.

A portion of these residual toll revenues would be required to pay for ongoing repair and replacement costs and also to fund prudent reserves for purposes such as operations and maintenance, repair and replacement, and toll rate stabilization. However, residual toll revenues not needed for repair and replacement costs or reserves could be used to pay for later stages of capital construction, including project elements that were deferred due to initial budget constraints. Residual toll revenues made available for capital construction could be used on a cash basis, the assumption used in this finance plan, or capitalized through future borrowings after the toll rate increase is imposed. Alternatively, these revenues may be used to accelerate repayment of toll bonds and/or mitigate the need for future toll rate increases.

2.5 The Capital Finance Plan

2.5.1 Cash Flow Plan

Table 2-5 illustrates the capital finance plan on a cash-flow basis based on the above factors and assumptions, a cash flow. The cash-flow requirements are aligned with both the political and administrative timing of receiving funding approvals as well as the technical requirements of the design, construction, and procurement activities themselves.

2.5.2 Capital Funding Capacity

The project capital plan provides funding capacity to respond to unanticipated cost-revenue imbalances in several ways, as outlined in the subsections that follow:

2.5.2.1.1 Employ Conservative Assumptions regarding Costs and Revenues to Reduce Risks and Provide a Genuine Opportunity for Additional Funding Capacity from the Base Finance Plan

CEVP produces a distribution of cost estimates reflecting the confidence that a cost estimate will not be exceeded. The finance plan in this New Starts submittal incorporates the 90% CEVP cost estimate. Customarily, WSDOT uses the 60% CEVP cost estimate for project planning purposes. Basing the finance plan on 90% CEVP cost estimates, as

[15] Pre-completion tolling could also be used as part of a bond program with post-completion tolling.

opposed to the more routinely used 60% CEVP estimates, provides a potential cushion of about $350 million to address capital cost overruns and/or funding under-runs. In addition, the use of the Low estimate of toll revenues potentially provides for $235-$364 million of added capital revenues, compared to the Base and High estimates, from a combination of toll bonds, loans, and cash revenues. Further, the use of borrowing interest rates that are 140-210 basis points above current rates may add additional funding capacity.

2.5.2.1.2 Adjust Project Staging if required to Rebalance the Funding Plan

Some highway improvements (i.e.; the interchanges not physically connected to the bridge) can be deferred if costs of core project elements exceed estimates. This would allow the funding associated with the deferred elements to be used for cost overruns/funding shortfalls on the core improvements. In addition, the finance plan uses a relatively small amount of residual toll revenues; larger and on-going residual toll revenues are available to fund deferred project improvements on a cash basis or used to repay future borrowings, if required.

Table 2-5

CRC Funding Plan for New Starts Submittal 2011

In Millions of Year-of-Expenditure Dollars

	FFY2010	FFY2011	FFY2012	FFY2013	FFY2014	FFY2015	FFY2016	FFY2017	FFY2018	FFY2019	FFY2020	FFY2021	FFY2022	TOTAL
CAPITAL COST														
Highway PE, Final Eng. and Construction	$21.3	$23.6	$74.5	$107.1	$395.8	$442.7	$457.1	$427.4	$156.8	$195.2	$175.2	$80.5	$6.6	$2,563.9
Transit PE, Design and Construction	$5.4	$4.7	$3.1	$27.1	$61.1	$165.7	$233.7	$243.9	$93.1	$34.1	$2.5	$0.0		$874.5
Interim Finance Costs: Transit					$0.5	$0.2	$4.3	$11.5	$16.2	$15.2	$11.7	$7.3	$2.7	$69.5
Total Project Capital Cost	$26.7	$28.3	$77.6	$134.2	$457.4	$608.7	$695.1	$682.8	$266.0	$244.5	$189.4	$87.7	$9.3	$3,507.9
PROJECT REVENUES														
Fed. Discretionary Highway						$100.0	$100.0	$100.0	$100.0					$400.0
ODOT/WSDOT: Existing	$26.7	$28.3	$77.6	$14.8										$147.4
ODOT/WSDOT: Additional				$119.4	$400.4	$355.2	$24.9							$900.0
Post Completion Toll Bond Proceeds							$281.1	$270.4	-$2.9	$195.2	$175.2	$80.5	$5.4	$1,004.9
Residual Toll Revenues													$1.2	$1.2
Pre-Completion Toll Revenues						$36.6	$51.1	$57.0	$59.7					$204.4
Section 5309 New Start Funds					$57.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$100.0	$93.0	$850.0
Interim Borrowed Funds						$16.9	$138.0	$155.3	$9.2	($50.6)	($85.7)	($92.7)	($90.3)	$0.0
Total Project Revenues	$26.7	$28.3	$77.6	$134.2	$457.4	$608.7	$695.1	$682.8	$266.0	$244.5	$189.4	$87.7	$9.3	$3,507.9
Cumulative Federal Funds					$57.0	$257.0	$457.0	$657.0	$857.0	$957.0	$1,057.0	$1,157.0	$1,250.0	
Cumulative Local Funds	$26.7	$55.0	$132.7	$266.9	$667.3	$1,059.1	$1,416.2	$1,743.7	$1,800.5	$1,995.6	$2,170.8	$2,251.2	$2,257.9	
Cumulative Total Funds	$26.7	$55.0	$132.7	$266.9	$724.3	$1,316.1	$1,873.2	$2,400.7	$2,657.5	$2,952.6	$3,227.8	$3,408.2	$3,507.9	
Percent Local	100%	100%	100%	100%	92%	80%	76%	73%	68%	68%	67%	66%	64%	

2.5.2.4 Adapt Tolling to Different Circumstances if required to Rebalance the Funding Plan

Toll rates can be adjusted within reasonable amounts if additional funding capacity is required. Tolling analyses found that gross toll revenues can be increased by raising toll rates up to almost $6.00 (2006$) each way, after which the diversion impacts of higher rates exceeds the added revenues the higher rates produce. Toll rates that high are not being proposed. However, the analysis demonstrates that an increased toll rate schedule can produce additional funding capacity, if that was required.

2.5.2.5 Manage State Highway Trust Funds to Adapt to Different Circumstances

The Departments of Transportation manage their respective highway trust funds, which are primarily funded with formula federal funds and existing state transportation taxes and fees, to meet the cash-flow needs of their state highway programs. Some of the monies in the highway trust funds are dedicated to specific uses through legislation or existing commitments and are unavailable to the CRC Project. However, the DOTs are able to and are experienced with reprogramming undedicated and non-committed funds within their highway trust funds to respond to cash-flow needs or priority projects, such as the Columbia River Crossing.