

ANNUAL SECTION 5309 NEW STARTS REPORT

CAPITAL AND OPERATING FINANCE PLAN

Columbia River Crossing Project



October 2013

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



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COLUMBIA RIVER CROSSING PROJECT CAPITAL AND OPERATING FINANCE PLAN

1.0 OVERVIEW

1.1 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 CRC Phased Project (CRC-PP) is a phase of the multi-modal CRC Project that consists of the main river crossing bridge, critical highway/interchange improvements, and the full light rail extension between Expo Center in Portland, Oregon and the Central Park-and-Ride in Vancouver, Washington. CRC-PP also incorporates all project elements required to make the tolling fully functional on both the existing interstate bridges (during construction) and the new, replacement bridges when open for operations. The second phase of the multi-modal project consists of a series of interchange improvements in Washington (north of SR 14); the financial plan in this report does not address this second phase.

CRC-PP 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 as an integrated, multi-modal plan. FTA has advised that this finance plan address both the finance plan for CRC-PP (the “CRC-PP Finance Plan”) and the portion of CRC-PP that represents the scope to be proposed for the Full Funding Grant Agreement (FFGA) (the “CRC-FFGA Finance Plan”). The Oregon Department of Transportation (ODOT) is the lead agency for the design and construction of the CRC-PP. TriMet (the transit operator in Portland, Oregon) is proposed to be the Grantee for the FFGA. TriMet and C-TRAN (the transit operator in Clark County, Washington) would be responsible for funding and performing LRT operations.

Thus this report addresses the capital finance plan for CRC-PP, the capital finance plan for CRC-FFGA, and the 20-year agency-wide finance plan for the two affected public transit districts -- C-TRAN and TriMet.

1.2 Changes from September 2012 New Starts Submittal

As a result of last year’s New Starts submittal, the CRC Project received an overall rating of medium-high and was included in FTA’s *Annual Report on Funding Recommendations for FY 2014 Capital Investment Grant Program* as a “Recommended New Starts Project for FFGA.”

Since last year’s New Starts report there have been significant events that have reshaped the project. While during its regular 2013 session the Oregon legislature approved the full ODOT contribution to the CRC Project (HB 2800), the Washington legislature did not approve the WSDOT contribution. In response, ODOT proposed a project scope, finance

plan, and project management approach that do not rely on Washington funding. Specifically, ODOT proposed: (a) an initial project scope (CRC-PP) that defers to a future phase the highway interchange improvements in Washington north of SR 14, (b) a management structure that has ODOT as the overall lead agency and TriMet as the Grantee for the FFGA, (c) a finance plan for CRC-PP that does not rely on any additional funding from or financings by WSDOT, and (d) a scope and finance plan for the FFGA (CRC-FFGA) that provides a 20% local match in a manner that responds to previous concerns by FTA.

At the time this report is being written, key agreements required to implement this new scope and approach are already executed; others are in preparation and expected to be executed by the end of the year. Also at the time of this writing, it is anticipated that a Special Session of the Oregon legislature will soon be called to amend the Oregon funding bill (HB 2800), approved earlier this year, to conform it to the new approach.

Taking all of these factors into consideration, CRC-PP (including CRC-FFGA) are substantially further along than in the 2012 submittal; substantial funding for the capital project and its operation, including the operations of the LRT component, has been committed. Subject to legislature approval of the amendments to HB 2800, it is ODOT's and TriMet's intent to submit materials for a FFGA application by the end of calendar 2013.

As a result of these events, there are notable differences between financial plan for the initial phase of the CRC presented in this report and the financial plan submitted to FTA last year. While there are notable differences, the basic project and project funding concepts are quite similar to those of last year. The list below of key modifications provides a general overview of the changes; more specific commentary regarding the differences is provided throughout this report.

- Overall project management has been transferred to ODOT from WSDOT; WSDOT continues to be a project partner.
- TriMet is proposed to be the Grantee for the FFGA; previously it had been WSDOT.
- The scope of the full multimodal project was phased with regard to highway interchange improvements in Washington (the interchange improvements north of SR 14 have been deferred to a future construction phase); the proposed transit improvements remains the same.
- The proposed scope for CRC- FFGA was established to include: LRT improvements and procurements, associated bicycle and pedestrian improvements, and allocated portion of costs of designing/permitting/constructing the replacement I-5 Bridges (on which LRT, bicycle, pedestrian travel will operate) and demolishing the old I-5 Bridges.
- The finance plans for the full, multi-modal project and the FFGA proposed scope each provide at least a 20% local match on a cumulative, month-by-month basis throughout the design and construction period.

- ODOT will have sole responsibility to fund the remaining project costs, including issuing all toll-related debt. WSDOT’s direct financial contribution to the initial phase of the project consists of the funds it committed and spent for the project until June 30, 2013; WSDOT will be solely responsible for funding the highway interchange improvements north of SR 14 in a future phase.
- ODOT will have exclusive rights to toll the I-5 Interstate Bridges and to retain all toll revenues; in the past toll revenues were equally divided between ODOT and WSDOT.
- ODOT will be the sole applicant for TIFIA credit assistance for the CRC Project; last year it was undecided how this would be handled.
- The Oregon legislature approved and the Governor signed into law the ODOT funding contribution for the project and the associated bond authorizations. On October 1, 2013 this law expired due to the absence of continuing WSDOT funding. The law must now be amended to resurrect the Oregon funding contribution.
- An agreement has been executed between C-TRAN and TriMet defining the roles and responsibilities for the operations and maintenance of the LRT extension. In this executed contract, both C-TRAN and TriMet have committed full funding for CRC LRT operations and maintenance, no further approvals are needed.

1.3 The Integrated Multi-Modal Finance Plan: Authority

As in previous submissions, the financial structure of CRC-PP (and CRC-FFGA) as an integrated, multimodal project finance plan 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 federal funds is addressed 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.”

1.4 Overview of CRC-PP and CRC-FFGA Scope of Improvements

1.4.1 CRC-PP

CRC-PP 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, interchange improvements at Hayden Island, Marine Drive, and SR 14.
- Extension of light rail from the Expo Center in Portland to Clark College in Vancouver
- Bicycle and pedestrian improvements
- Tolling the I-5 Interstate Bridge

1.4.1.1 Columbia River Crossing Bridge

CRC-PP includes construction of new bridges across the main channel of the Columbia River, three new structures across North Portland Harbor, and 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. Where 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.

1.4.1.2 Highway Improvements

CRC-PP includes replacements to interchanges at Hayden Island and SR 14, improvements to the Marine Driver interchange, and a new arterial connection between North Portland and Hayden Island.

1.4.1.3 Light Rail Extension

CRC-PP includes a 2.8-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.

1.4.1.4 Bicycle and Pedestrian Improvements

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

1.4.1.5 Tolling

CRC-PP 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 across the bridge at freeway speeds; charges would be transmitted to a computer system that automatically invoices the 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.

The finance plan incorporates two phases of tolling. During construction (beginning no later than January 2016), the existing bridges of the Columbia River would be tolled (this is referred to as “Pre-Completion Tolling”). During the Pre-Completion phase the southbound lanes on the new, replacement bridge will open for traffic – and those lanes will be tolled as part of Pre-Completion Tolling. Post-Completion Tolling will commence when the northbound lanes on the new, replacement bridge opens for traffic. The toll rate structures for Post-Completion Tolling will differ from that used for Pre-Completion Tolling.

1.4.2 Scope of Improvements for CRC-FFGA

The scope of improvements proposed for CRC- FFGA is a subset of the improvements described above for CRC-PP that consists of all the improvements described for the LRT extension in Section 1.4.1.2 and for the bicycle/pedestrian improvements in Section 1.4.1.4 and for allocated costs of the bridge described in Section 1.4.1.1. The 34% allocated costs of the bridge is based on the proportion of the area that the lower deck of the bridges (where the LRT and bicycle/pedestrian improvements are located) represents of the total area of the upper deck (where highway traffic is located) and the lower deck.

1.5 CRC Project Roles and Responsibilities

1.5.1 Local Roles and Responsibilities

Notwithstanding some confusion about an ‘Oregon Only’ approach to the project, the project remains a bi-state project that includes the Oregon Department of Transportation (ODOT), Washington State Department of Transportation (WSDOT), 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:

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

	Construction	Operations
ODOT	Lead of overall multi-modal project. Responsible for design and construction of highway improvements in Oregon, the main river crossing, bicycle and pedestrian improvements, SR 14 ramps in Washington.	Responsible for maintaining bridge structure and highway improvements in Oregon. Tolls and retain all toll revenues from interstate bridges. The Oregon Transportation Commission (OTC) sets toll rates.
WSDOT	During CRC-PP, WSDOT would provide right-of-way acquisition services for highway and bridge improvements, and design and construction review and inspections. During second phase, WSDOT would lead design and construction of interchange projects.	Partially funds the operations and maintenance of the interstate bridges. WSDOT maintains highway approaches to bridge in Washington.
TriMet	TriMet is proposed to be the Grantee for the FFGA, and would lead the design and construction of the transit improvements. TriMet provides day-to-day management of the 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. TriMet operates connecting bus service in its district. TriMet and C-TRAN establish mutual bi-state operating policies. Each accepts transfers from other district.
C-TRAN	C-TRAN works with TriMet on design and construction of LRT elements. C-TRAN provides right-of-way acquisition services for the transit improvements in Washington.	C-TRAN approves LRT service policy with TriMet. LRT O&M costs and farebox revenues shared with TriMet. C-TRAN operates connecting bus service in its district. TriMet and C-TRAN establish mutual bi-state operating policies. Each accepts transfers from other district. Performs some LRT-related operations, such as managing park-and-rides, maintaining stations in Washington, etc.
City of Vancouver	COV permits LRT construction in Washington.	COV assigned certain LRT operations and maintenance responsibilities.

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

1.5.2 Federal Roles and Responsibilities

In August 2012 the CRC Project was one of four nationally and regionally significant transportation projects selected to receive expedited federal review and approvals under the President’s “We Can’t Wait” initiative. Under the associated Executive Order, OMB is charged with overseeing a federal government-wide effort to expedite federal approvals and permitting.

1.6 CRC-PP and CRC-FFGA Capital Cost Estimate

The cost estimates for the CRC Project were initially developed using WSDOT’s Cost Estimate Validation Process (CEVP), a risk-based methodology. CEVP 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 initial CEVP cost estimates were adjusted to reflect the revised scope and schedule for CRC-PP and CRC-FFGA. The CRC-PP and CRC-FFGA cost estimates incorporate an 18% to 20% contingency. The cost estimates developed through CEVP were then converted into the Standard Cost Categories (SCC) format required by FTA. The project cost by SCC for CRC-PP is summarized in Table 1-2, and for CRC-FFGA in Table 1-3.

Table 1-2¹
CRC-PP Project Cost by SCC in Millions of Dollars

Standard Cost Category	Cost
10 Guideway & Track Elements	\$910.5
20 Stations, Stops, Terminals & Intermodal	\$117.2
30 Support Facilities: Yards, Shops & Admin Buildings	\$29.7
40 Sitework & Special Conditions	\$484.9
50 Systems	\$118.5
60 Right-of-Way & Land Improvements	\$176.4
70 Vehicles	\$90.9
80 Professional Services	\$475.3
90 Unallocated Contingency	\$37.0
100 Finance Costs)	\$85.4
Total Project Cost in Base Year (2013) Dollars (without Finance Costs)	\$2,525.8
Escalation	\$186.0
Total Project Costs in YOE Dollars	\$2,711.8

Table 1-3²
CRC-FFGA Project Cost by SCC in Millions of Dollars

Standard Cost Category	Cost
10 Guideway & Track Elements	\$295.8
20 Stations, Stops, Terminals & Intermodal	\$117.2
30 Support Facilities: Yards, Shops & Admin Buildings	\$29.7
40 Sitework & Special Conditions	\$142.0
50 Systems	\$86.1
60 Right-of-Way & Land Improvements	\$33.3
70 Vehicles	\$90.9
80 Professional Services	\$175.2
90 Unallocated Contingency	\$22.8
100 Finance Costs (in YOE Dollars)	\$85.4
Total Project Cost in Base Year (2013) Dollars (without Finance Costs)	\$1,078.1
Escalation	\$79.1
Total Project Costs in YOE Dollars	\$1,157.2

¹ Cost shown exclude the recently negotiated bridge height mitigation cost of about \$86.4 million. These mitigation costs are detached, for now, from the project budget to facilitate legislative deliberations regarding how these mitigation costs should be funded. These costs are addressed later in this report.

² Cost shown excludes the approximate \$29 million share of bridge height mitigation allocable to the FFGA scope of improvements. These costs are addressed later in this report.

1.7 CRC-PP and CRC-FFGA Finance Plan

Section 2 of this report details the capital finance plan for CRC-PP and for CRC-FFGA. Table 1-4, below, summarizes the plan for CRC-PP; and Table 1-5 summarizes the plan for CRC-FFGA. These plans will continue to be refined.

**Table 1-4
Summary of CRC-PP Capital Funding Plan (YOE\$)**

Status (1)	Source	Amount \$Millions	Explanation
C	Existing Federal Funds: Oregon	\$52.5	Oregon state highway funds for PE. Excludes funds provided pre-PE.
C	Existing State Funds: Oregon	\$5.4	Washington state highway funds for PE. Excludes funds provided pre-PE.
C	Existing Federal Funds: Washington	\$31.7	Federal funds from Interstate Maintenance Discretionary, formula federal funds, and "Corridors of the Future via ODOT for PE.
C	Existing State Funds: Washington	\$18.2	Federal funds from Interstate Maintenance Discretionary, NHS, STP, and "Corridors of the Future' via WSDOT for PE.
P	Additional Funds: Oregon	\$404.3	Funding from ODOT subject to further legislative action in 2013.
P	TriMet Funds	\$45.7	Local TriMet funds.
B	Pre-Completion Toll Proceeds	\$229.6	Net toll proceeds during pre-completion tolling stage, provided to toll-eligible project costs on pay-go basis.
B/P	Toll-Backed Borrowing Proceeds (2)	\$1,074.5	Plan incorporates a TIFIA loan of \$900 million plus \$174.5 million of net bond proceeds, repaid with net toll revenues remaining after funding operating and maintenance expenses and reserves.
P	New Start Funds	\$850.00	Proposed amount; same as previously proposed.
TOTAL		\$2,711.8	

Note: Finance plan covers the period from approval to begin Preliminary Engineering (PE) in December 2009 through completion of CRC-PP; excludes revenues expended prior to beginning PE.

(1) C = committed funding source, B = budgeted funding source, P = planned funding source

(2) Current funding plan assumes a combination of TIFIA loan and toll bonds. TIFIA is not approved at this time, and the related portion of borrowing proceeds is "Planned," other toll proceeds are "Budgeted."

(3) Bridge height mitigation costs addressed separately, as explained in Section 2.

**Table 1-5
Summary of CRC-FFGA Capital Funding Plan (YOE\$)**

Status (1)	Source	Amount \$Millions	Explanation
C	Existing Federal Funds: Oregon	\$0.0	Oregon state highway funds for PE. Excludes funds provided pre-PE.
C	Existing State Funds: Oregon	\$0.0	Washington state highway funds for PE. Excludes funds provided pre-PE.
C	Existing Federal Funds: Washington	\$31.3	Federal funds from Interstate Maintenance Discretionary, formula federal funds, and "Corridors of the Future via ODOT for PE. Matched with toll credits.
C	Existing State Funds: Washington	\$0.0	Federal funds from Interstate Maintenance Discretionary, NHS, STP, and "Corridors of the Future' via WSDOT for PE.
P	Additional Funds: Oregon	\$22.7	Funding from ODOT subject to further legislative action in 2013.
P	TriMet Funds	\$45.7	Local TriMet funds.
B	Pre-Completion Toll Proceeds	\$28.5	Net toll proceeds during pre-completion tolling stage, provided to toll-eligible project costs on pay-go basis.
B/P	Toll-Backed Borrowing Proceeds (2)	\$179.0	Plan incorporates a TIFIA loan of \$900 million plus \$174.5 million of net bond proceeds, repaid with net toll revenues remaining after funding operating and maintenance expenses and reserves.
P	New Start Funds	\$850.00	Proposed amount; same as previously proposed.
TOTAL		\$1,157.2	

Note: Finance plan covers the period from approval to begin Preliminary Engineering (PE) in December 2009 through completion of CRC-PP; excludes revenues expended prior to beginning PE.

(1) C = committed funding source, B = budgeted funding source, P = planned funding source

(2) Current funding plan assumes a combination of TIFIA loan and toll bonds. TIFIA is not approved at this time, and the related portion of borrowing proceeds is "Planned," other proceeds are "Budgeted."

(3) Bridge height mitigation costs addressed separately, as explained in Section 2.

Details on each funding source and references to applicable appendices are provided in Section 2.

1.8 Compliance with Capital Plan Rating Standards

The following summarizes how the CRC-PP and CRC-FFGA capital finance plans meets New Starts Capital Plan Rating Standards. Additional information is provided throughout the report.

A. Non-Section 5309 New Starts Share

As explained earlier, the *Consolidated Appropriations Act, 2010, Section 173 (H.R. 3288, December 9, 2009)* requires the CRC Project capital finance plan to be evaluated as an integrated, multi-modal finance plan. The language requires the rating of the non-New Starts share of the finance plan to be based on the percentage that non-New Starts funds

comprises of all revenues in the integrated finance plan. The proposed non-New Starts share of finance plan is about 31 %; the non-New Starts share is about 69%.

B. Current Capital Condition

- **Age of Bus Fleet:**

- TriMet: The current average age of TriMet's bus fleet is 12.5 year; it will be 10.9 years by the end of this fiscal year (after purchased buses arrive). Bus procurement has resumed at a sustainable pace that will bring the average age of the bus fleet down to 8 years by the end of FY2016.
- C-TRAN: The average age of C-TRAN's fixed route bus fleet is currently 9.1 years; the average age of the paratransit fleet is 5.7 years.

- **Bond Rating** (Rating documents are provided in Appendix E, Exhibit 10):

All bonds issued for the CRC-PP or FFGA finance plans would be issued by ODOT/State of Oregon. Recent bond ratings for ODOT highway bonds and Oregon General Obligation (GO) Bonds are shown below. In addition, recent bond ratings for TriMet are also shown, even though TriMet is not proposed to issue any bonds for CRC-PP or FFGA. C-TRAN has not issued debt, has no credit ratings at this time, and is not required to do any borrowing for CRC-PP or FFGA finance plans.

- Oregon: Recent credit ratings for State of Oregon General Obligation (GO) Bonds are:
 - Fitch: AA+ Stable (1/30/2013)
 - Moody's Aa1 Stable (1/31/2013)
 - S&P AA+ /A-1 Stable (2/1/2013)
- ODOT: Credit ratings for ODOT highway user tax bonds are:
 - Moody's Aa1 Stable on senior lien highway user tax revenue bonds (8/28/2013)
 - Fitch: AA+ Stable on senior lien highway revenue bonds (8/28/2013)
 - S&P AAA Stable on senior lien highway user tax revenue bonds (8/28/2013)
 - Moody's Aa2 Stable on subordinate lien highway user tax revenue bonds (8/28/2013)
 - Fitch AA Stable on subordinate lien highway revenue bonds (8/28/2013)
 - S&P AA+ Stable on subordinate highway user tax revenue bonds (8/28/2013)
- TriMet: The TriMet Senior Lien Payroll Tax Revenue Bonds Series 2012A rating by Moody's Investors Service to Aa1 (stable). The bonds are secured by a senior

lien gross pledge of TriMet's payroll tax, self-employment tax, and state payments in lieu of tax revenues.

C. Completeness of Capital Plan

- CRC-PP and FFGA: The assumptions underlying the costs and revenues for CRC-PP and FFGA capital finance plans are documented in Section 2 of this report. The capital cost estimates are based on current LRT construction data from TriMet's Portland-Milwaukie LRT Project and WSDOT's risk-based capital cost estimating methodology ("Cost Estimate Validation Process" or "CEVP"). 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. The *Basis of the Capital Cost Report* is provided in Appendix E, Exhibit 1 and capital costs are shown in detailed SCC template form in Appendix E, Exhibit 2. The analysis of interim borrowing requirements for the capital plan is provided in Appendix E, Exhibit 3. Details on the toll forecasts and toll bonding are provided in Appendix E, Exhibits 5-8. The CRC-PP and CRC-FFGA capital finance plans, prepared on a month-by-month cash flow basis, are detailed in Appendix E, Exhibit 9.
- TriMet: TriMet's agency-wide capital plan is incorporated in its 20-year cash flow shown in Appendix A, Tables 1-11. Assumptions regarding costs and revenues are detailed in Section 3. Historical and forecast data regarding agency-wide capital improvements and bus replacement is provided in Appendix A, Table 8, and for LIFT vehicle replacement in Appendix A, Table 8A. Fleet management plans for TriMet buses and LRT are provided in Appendix F, Exhibits 1-2.
- C-TRAN: C-TRAN's agency-wide capital plan is included in its 20-year cash flow shown in Appendix G. 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 provided in Appendix F, Exhibit 3. Historic data on C-TRAN's capital improvement and replacement program is provided in Table 4-27.
- 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.
- Historic service and financial data is provided throughout Sections 3 and 4. In addition, historical transit service information is provided in Appendix D, Exhibits 1-7, 11, and 12. Historical transit financial data is provided in Appendix C, Exhibits 1-2.

D. Commitment of Capital Funds

- Other than the proposed New Starts share and TIFIA assistance, all other revenue sources required for the CRC-PP and FFGA finance plans are committed or budgeted.
- As of the end of state FY2013, about \$107.8 million in state and federal funds had been committed to the project in the aggregate by ODOT and WSDOT for PE and

post-PE expenses (this excludes planning funds spent prior to FTA approval of PE). All but about \$8 million of this total was spent as of June 30, 2013.

- On March 22, 2013 the Governor signed the legislatively approved HB 2800 (Chapter 4, 2013 Laws) providing \$450 million of state highway funds to CRC-PP subject to the condition that Washington provide its contribution by September 30, 2013. Since the Washington legislature did not approve funding, HB 2800 must be amended Laws to eliminate the condition relating to the Washington contribution. A Special Session of the Oregon Legislature is expected soon to consider such an amendment.
- In addition, the capital finance plan for CRC-PP incorporates about \$1.3 billion in net project capital funds from tolling the I-5 bridges during construction (pre-completion tolling) and following the completion of the replacement bridge (post-completion tolling.) This amount is achieved by using toll revenues for a combination of pay-go payments, toll bonds, and a TIFIA loan. As a replacement bridge, the federal statutory authority to toll the I-5 bridges is provided in 23 U.S.C 129(a)(1)(C). ODOT has the state statutory authority to toll the I-5 interstate bridge, state statutes dedicate revenues from tolling the I-5 interstate bridge to the CRC Project, and state statutes require toll rates to yield sufficient toll revenues to meet the financing and operating requirements of the CRC Project.
- While all revenues are committed to CRC-PP and FFGA, TIFIA assistance is not yet committed. Without any TIFIA assistance at all, the toll revenues may yield as much as \$300 million less capital funding than described above for CRC-PP. Thus, accounting for the absence of committed TIFIA assistance and considering the entire CRC-PP capital funding plan, about 60 percent of the non-New Start funds in the plan is committed or budgeted.

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. 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 bases.
- LRT costs are based on current LRT cost data from TriMet's currently under construction Portland-Milwaukie LRT Project and recent data from Sound Transit.
- Interim borrowing is used in the CRC-PP and CRC-FFGA finance plans to address the anticipated lag in New Starts appropriations, as well as the delayed issuance of toll bonds. Both ODOT and TriMet would implement interim borrowing programs. The calculation of the interim borrowing is described in Sections 2.3.2 and shown in Appendix E, Exhibit 3.
- To ensure the reliability of the toll revenue forecasts, toll borrowing capacity results are based on conservative assumptions, including:

- a. No Reliance on On-Going Toll Rate Increases: While toll rates are anticipated to escalate over time, the forecast of borrowing capacity of the toll bonds and TIFIA loan assumes no escalation of toll rates after the northbound bridge across the Columbia River first opens for traffic in January 2021.
- b. Necessary Deductions Taken from Gross Revenues to Reflect Net Revenues: Net revenues fully reflect deductions from gross revenues for uncollectible accounts, facility O&M costs, toll collection O&M costs, credit card fees, bridge failure and business disruption insurance, and reserve account contributions.
- c. Adequate Coverage Provided: The financial plan assumes 1.3X coverage for state-backed toll bonds (to protect the state general fund) and 1.15X coverage (on aggregate debt) for the TIFIA loan.
- d. Headroom Retained on Assumed Toll Rates: The assumed toll rates are significantly below the rates at which toll revenue is maximized; providing over 75% “headroom” should rates have to be increased to cover unanticipated shortfalls.

F. Capital Funding Capacity

The capital finance plan supports a capital reserve capacity that can be used to pay for cost overruns, if any. Assuming current interest rates, net revenues from tolling are sufficient to leverage about \$280 million more in toll bond proceeds than incorporated in the base finance plan. At current interest rates plus 50 additional basis points, about \$80 million of reserve capacity exists. Another \$55 million in reserve capacity is available if the current assumption that the borrowing program will not rely on toll rate increases after 2021 is relaxed, assuming that toll rates increase a modest 5% every 5 years (1% per year on average). Another \$54 million of reserve capacity is available by capitalizing 10 years of residual revenues, assuming a 4.5% discount rate.

1.9 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 addressed in this report. The role and relationship between C-TRAN and TriMet with regard to CRC-PP is detailed in the executed C-TRAN-TriMet Project Development and Operations Agreement provided in Appendix E, Exhibit 14. In this agreement C-TRAN and TriMet irrevocably commit their shares of CRC LRT O&M funding, as set forth in the agreement.

TriMet and C-TRAN are rapidly recovering from the challenges caused by the economic downturn in 2007-2009; TriMet is in the process of re-instituting some of the bus service it eliminated during the recession and C-TRAN finances have substantially improved due to sales tax rate hike levied in April 2012 and generally improved sales within its district. The plans of both districts are built to ensure adequate revenues are in place to operate the transit component of CRC-PP/CRC-FFGA, 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.

1.9.1 TriMet

Key Changes Since September 2012 New Starts Report: TriMet's financial condition has improved since 2012. Tax revenues continue to recover from recession lows. TriMet prevailed in the appeal of the labor arbitration with the ATU. The revised medical benefit was reflected in better than anticipated medical insurance costs. TriMet has begun to reinstate service cutbacks that resulted from the recession.

In FY2013 about 50 percent of TriMet's continuing operating revenues came from the employer payroll tax, self-employment tax, and the state "in-lieu" of payroll tax. 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 forecasted underlying annual growth of employer payroll tax receipts (the underlying rate excludes revenue growth from the tax rate increases) is 4.76% per year, consistent with long-term trends in inflation, employment growth forecasts, and labor productivity forecasts.

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, 2013, is 0.7118%. 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 does not assume this tax rate increase.

TriMet prevailed in its 2011-2012 labor arbitration with the ATU. A result of the change to medical benefits was much improved medical benefit costs. While this previous labor arbitration just recently ended, the term of that contract is expiring. TriMet is now re-engaged in labor negotiations with ATU. This forecast is based on the offer proposed in those negotiations by TriMet management. Generally the offer reflects for union employees the benefit package currently provided non-union employees. In addition, TriMet executed an agreement with C-TRAN wherein each party committed their funding shares for CRC LRT O&M costs. The CRC LRT O&M costs and revenues in this plan reflect the C-TRAN-TriMet agreement.

The TriMet 20-year agency-wide cash flow, detailed in Section 3 of this report, demonstrates that TriMet can fund its system plan (including its share of operating the light rail extension to Clark County), a program of service replenishment and expansion, and its capital improvement and replacement program, and maintain a "cash and cash

equivalent” reserve in excess of 12% of annual operating costs throughout the 20-year forecast period.

1.9.2 C-TRAN

Key Changes Since September 2012 New Starts Report: C-TRAN’s financial condition continues to improve as sales and use tax receipts continue to recover from recession lows. C-TRAN has committed its contribution to LRT operations and maintenance costs from existing resources; eliminating the need for any elections to fund operations.

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% (2/10th 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 0.7% (7/10^{ths} of 1 percent) sales and use tax; with voter approval C-TRAN could impose an additional 0.2% tax under its PTBA authority. In previous New Start submittals it was noted that 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. In September 2013, the C-TRAN Board of Directors approved its funding contribution to the project without using the funding sources provided in the HCT Act. As a result, no vote is required under RCW 81.104.

The sales tax is the largest source of C-TRAN operating revenues comprising over two-thirds of all such revenues in 2012. The declines in sales tax receipts have bottomed-out, and are rapidly returning to pre-recession levels. Controlling for the sales tax rate, sales tax receipts in 2012 were up about over 11 percent above their low levels in 2009.

In response to declining sales tax receipts and reserves, and public pressure to expand and improve service, C-TRAN secured voter approval in November 2011 to increase its sales and use tax rate under its PBTA authority by 0.2% (to a total of 0.7%). C-TRAN began collecting this increased tax rate in April 2012. Given the 40 percent increase in tax rates in conjunction with recovering sales and use revenues, C-TRAN has the long-term financial capacity to preserve and expand its core bus and C-VAN services and meet its funding obligations for CRC LRT O&M costs, as set forth in its contract with TriMet.

The agency-wide operations and capital plan submitted hereunder 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 CRC-PP, a program of service replenishment and expansion, and its capital improvement and replacement program, while maintaining substantial working reserves and unreserved fund balances throughout the 20-year analysis period.

1.10 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:** TriMet's detailed 20-year agency-wide cash flow plan shown in Appendix A demonstrates the plan's ability to fund its share of CRC-LRT operations while maintaining existing and planned service, adequate capital replacement, and operating reserves. 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, 2013 was 2.86. Service reductions were made in FY2010 and FY2011 to respond to the economic downturn. However, even with the service reductions, the intermediate-term growth of fixed route service, adjusting rail vehicle hours for passenger capacity, has outpaced population growth. With the favorable results of the labor arbitration and the implementation of a higher-yielding fare system, TriMet has stabilized its long-term operating cash flow.
- **C-TRAN:** C-TRAN's detailed 20-year agency-wide cash flow plan shown in Appendix G demonstrates the plan's ability to fund its share of CRC-LRT operations while maintaining existing and planned service, adequate capital replacement, and operating reserves. C-TRAN received voter approval to raise its sales and use tax rate by 0.2% (2/10th of 1 percent) to 0.7%. With the 40% increase in the sales and use tax rate, C-TRAN is positioned for long-term stable and reliable O&M and vehicle replacement funding for its core system. Historical and actual balanced budgets and financial reports are provided in Appendix H, Exhibits 1-14. C-TRAN's operating ratio was 8.5 for calendar year 2012. This operating ratio reflects C-TRAN's \$58.8 million in unrestricted reserves at the end of 2012. C-TRAN has used these reserves to mitigate cash flow shortfalls. 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

- CRC LRT: An operational framework has been agreed to by C-TRAN and TriMet which is detailed in the executed contract provided in Appendix E, Exhibit 14. The CRC LRT O&M Cost model is shown in Appendix A, Tables 14-14H. The CRC-LRT O&M model is directly linked to the agency-wide operations cash flow plans for both C-TRAN and TriMet.
- 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 significant 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. Detailed historic data is also provided in the cash flow tables in Appendix A. All assumptions are detailed in Section 3 of this report. The sensitivity analysis is discussed in Section 3 and documented in Appendix B, Tables 1 and 2.
- 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 2-22, and the link to the CRC LRT O&M Cost model in Appendix A, Tables 14-14H. Ten years of historic data is provided in Appendix C, Exhibit 2 and Appendix D, Exhibit 11, and detailed 10-year historic data is provided for each element of C-TRAN's operations in Section 4. Historic data is also provided in the cash flow tables in Appendix G. All forecast assumptions are detailed in Section 4 of this report. A sensitivity analysis was prepared and is documented in Appendix G, Tables 22-23, and summarized in Section 4.8.2.

C. Commitment of O&M Funds

- CRC LRT: In September 2013 TriMet and C-TRAN executed an agreement in which both transit agencies irrevocably committed their funding shares toward CRC LRT O&M costs, subject only to securing the FFGA for the project.
- TriMet: TriMet has the financial capacity to pay its share of CRC LRT O&M costs; restore and expand bus service; maintain, procure, and replace capital assets; and maintain an adequate reserve without a tax increase. 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 0.7118% as of January 2013.³ 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

³ See Appendix D, Exhibit 9 Ordinance No. 279 Revising Payroll and Self-Employment Tax Rates; Amending Chapters 13 and 14 of the TriMet Code

annual increase can exceed 0.02 percent. See Appendix D, Exhibit 10 *Senate Bill 34*. The plan reported herein does not rely on implementing the additional tax rate.

- C-TRAN: In November 2011 C-TRAN received voter approval to raise its sales and use tax rate by 0.2 percent (2/10th of 1 percent) to 0.7% (7/10th of 1 percent). This 40% increase in the tax rate, which began being collected in April 2012, provides sufficient funding to preserve and expand its core bus and C-VAN services and fulfill its CRC LRT O&M funding obligations pursuant to the executed agreement between C-TRAN and TriMet. The plan calls for a tax increase in 2020 to fund future intra-county service expansions.

D. O&M Funding Capacity

- TriMet: Under the base agency-wide finance plan projected cash balances and reserves in the 20-year cash flow shown in Appendix A, Table 1 exceed 12% of annual system operating expenditures throughout the forecast period. The sensitivity analysis shown in Appendix B, Tables 1 and 2 demonstrates that there are reasonable policy actions that TriMet Board can take if tax revenues grow slower than assumed in the cash flow tables than the agency-wide finance plan.
- 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 shown in Appendix G, Tables 22 and 23 demonstrates that there are reasonable policy actions that C-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 underlying the TriMet operating and maintenance cost estimates and revenue forecasts are consistent with historical experience. The assumptions are explained in detail and compared with historic trends 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; Appendix D, Exhibits 1-8; and the supplemental information in Appendix I.
- C-TRAN: The assumptions underlying the C-TRAN operating and maintenance cost estimates and revenue forecasts are consistent with historical experience. The assumptions and the historic data supporting the assumptions are explained in detail in Section 4. The build-up of individual costs and revenues are provided in Appendix G, Tables 1-21, and these can be compared to historic trends in Appendix C, Exhibit 2; Appendix D, Exhibit 11; Appendix H; and the detailed historic data provided in Section 4.

1.11 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 capital plan to finance the design and construction of CRC-PP and the scope of improvements proposed for the FFGA. A month-by-month capital cash flow plan for each of these is provided in the appendices.
- Section 3 addresses the TriMet agency-wide 20-year operations plan, including its capital improvement and replacement plan. A detailed 20-year cash flow is provided in the appendices. 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 the appendices.

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	Agency-wide Cash Flow: Historic and 20-Year Forecast
Table 2	Passenger Revenue
Table 2A	Passenger Revenue Input Factors
Table 2B	Fare Revenue Adjustment for FY13-FY14
Table 2C	Rail Hours
Table 2D	Bus Hours
Table 2E	Rail Miles
Table 3	Other Operating Revenue
Table 3A	Payroll Tax
Table 3B	Operating Revenue and Capital Reimbursement
Table 3C	One-Time Only and DMAP Reimbursement
Table 3D	ATP Revenue
Table 3E	PMMI
Table 3F	Advertising
Table 4	Departments
Table 5	Commuter Rail Forecast
Table 5B	WES Maintenance of Way (MOW)
Table 6	ATP Forecast
Table 6A	ATP Variable Costs
Table 6B	ATP Riders and Hours Forecast
Table 7	Labor Forecast I
Table 7A	Annual Labor Worksheet
Table 7B	Labor Cost Offer New Non-Union (NU)
Table 7C	M&S Offer with 65+

Table 7D	MOW 30-year Forecast
Table 7E	M&S 80%-20%-6% Non-Vested
Table 7F	M&S
Table 8	Vehicle Replacement and Capital Program
Table 8A	LIFT Vehicles
Table 9	Capital Grant Funds
Table 10	Debt Service
Table 11	PMLRT 2015
Table 11A	PMLRT 2030
Table 11B	PMLRT O&M Cost
Table 12	Empty
Table 13	Empty
Table 14	CRC LRT O&M Cost Cash Flow (Linked to TriMet and C-TRAN Agency-wide Cash Flow)
Table 14A	Input Factors
Table 14B	2013 Unit Cost Data (For LRT System)
Table 14C	CRC LRT O&M Cost 2019
Table 14D	CRC LRT O&M Cost 2030
Table 14E	Ticket Vending Machine (TVM) Cost Data
Table 14F	Information Technology (IT) Cost Data
Table 14G	YOE Conversion Factors
Table 14H	CRC LRT Farebox Revenue

Appendix B TriMet Agency-wide Stress Test Forecasts

Table 1A	TriMet Agency-wide Conservative Forecast – A
Table 1B	TriMet Agency-wide Conservative Forecast - B
Table 1C	TriMet Agency-wide Conservative Forecast - C
Table 2A	TriMet Agency-wide Pessimistic Forecast - A
Table 2B	TriMet Agency-wide Pessimistic Forecast - B

Appendix C Historical Transit System Financial Results

Exhibit 1	TriMet Historic Financial Summary
Exhibit 2	C-TRAN Historic Financial Summary

Appendix D Historical Transit Service and Regulatory Information

Exhibit 1	TriMet Historic Expenses
Exhibit 2	TriMet Historic Employer Tax Revenues
Exhibit 3	TriMet Historic Passenger Revenues
Exhibit 4	TriMet District Historic Economic Data
Exhibit 5	TriMet Historic Ridership and Service Data
Exhibit 6	TriMet Long-Term Recurring Obligation History
Exhibit 7	TriMet Fixed Route Performance Indices History
Exhibit 8	TriMet District Population and Employment History
Exhibit 9	TriMet Ordinance No 279 Revising Payroll and Self-Employment Tax Rates under ORS 267.385 as Amended by 2003 Oregon House Bill 3183

Exhibit 10	Oregon 2009 Legislature Senate Bill 34
Exhibit 11	C-TRAN Historic Operating Statistics
Exhibit 12	TriMet Transit Historical Data on Transit Capacity and Population

Appendix E Capital and Operations Cost Methodologies, Estimates, and Related Factors

Exhibit 1	Basis of Capital Cost Report
Exhibit 2	FTA Template-"Main Worksheet - Build Alternative" and "Inflation Worksheet"
Exhibit 3	Calculation of CRC-FFGA Interim Borrowing Costs
Exhibit 4	Capital Cost Allocation to FFGA Scope
Exhibit 5	Traffic and Gross Toll Revenue Forecast
Exhibit 6A	Tolling O&M Cost – Net Toll Revenue Methodology Report
Exhibit 6B	Toll Financing Assumptions and Results Report
Exhibit 6C	Traffic and Gross Toll Revenue Forecast Report
Exhibit 7	Calculation of Net Toll Revenues for Debt Service and Reserves
Exhibit 8	Calculation of Toll Borrowing Capacity (TIFIA and Toll Bonds)
Exhibit 9A	CRC-FFGA Capital Finance Plan by Month and FY
Exhibit 9B	CRC-PP Capital Finance Plan by Month and FY
Exhibit 10	Selected Credit Ratings and State Debt Reports <ul style="list-style-type: none"> A. Washington/WSDOT B. Oregon/ODOT
Exhibit 11	ORS 381 (Oregon Toll Authority)
Exhibit 12	ORS 383 (Oregon Toll Authority)
Exhibit 13	HB 2800
Exhibit 14	TriMet-C-TRAN CRC LRT O&M Agreement

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	Farebox Revenues
Table 2A	Ridership
Table 2B	Hours
Table 2C	20-year Plan Hours
Table 3	Sales Tax and Other Revenues
Table 3A	Added Sales Tax from CRC Project
Table 3B	Commercial Lease Revenues from CRC Parking Garages
Table 3C	Third Party Contribution to CRC LRT O&M
Table 4	Grant Revenues
Table 5	Salary and 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	Insurance Costs
Table 12	Lease Costs
Table 13	Taxes
Table 14	Miscellaneous Costs
Table 15	Innovative Program Costs
Table 16	CRC LRT O&M Budget
Table 17	Rolling Stock Plan and Costs
Table 17A	Vehicle Replacement
Table 18	Facilities Plan and Costs
Table 19	Equipment Plan and Costs
Table 20	Capital Improvement BRT Costs
Table 21	Added BRT Costs
Table 22	Sensitivity Scenario 1
Table 23	Sensitivity Scenario 2

Appendix H C-TRAN Supplemental Information

Exhibit 1	TriMet Supplemental Information
Exhibit 2	Financial Statement and Supplementary Information as of June 30, 2011 and 2010
Exhibit 3	Financial Statement and Supplementary Information as of June 30, 2012 and 2011
Exhibit 4	Financial Statement and Supplementary Information as of June 20, 2013 and 2012
Exhibit 5	2014 Adopted Budget
Exhibit 6	2013 Adopted Budget
Exhibit 7	2012 Adopted Budget
Exhibit 8	TriMet Official Statement TriMet 2009 Payroll Tax Bonds
Exhibit 9	Capital Improvement Plan
Exhibit 10	Transit Investment Plan
Exhibit 11	Regional Transportation Plan Projects
Exhibit 12	MTIP Approved Project List 2010-2013
Exhibit 13	Description of TriMet
Exhibit 14	20-Year C-TRAN Capital Plan

Appendix I TriMet Supplemental Information

Exhibit 1	Financial Statement and Supplementary Information as of June 30, 2011 and 2010
Exhibit 2	Financial Statement and Supplementary Information as of June 30, 2012 and 2011
Exhibit 3	Financial Statement and Supplementary Information as of June 20, 2013 and 2012
Exhibit 4	2014 Adopted Budget
Exhibit 5	2013 Adopted Budget
Exhibit 6	2012 Adopted Budget
Exhibit 7	TriMet Official Statement TriMet 2009 Payroll Tax Bonds
Exhibit 8	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-PP AND CRC-FFGA CAPITAL FINANCE PLAN S

Key Changes since September 2012 New Starts Report:

The 2012 submittal provided a finance plan for the multi-modal Columbia River Crossing – Initial Construction Program (CRC-ICP). This 2013 submittal provides finance plans for CRC-PP (which is a refinement from CRC-ICP) and separately the scope of improvements in CRC-PP that are proposed for the FFGA (“CRC-FFGA”). In 2012 bicycle/pedestrian improvements were primarily allocated as highway costs; they are now fully allocated to the FFGA scope. As a consequence, the allocation of bridge costs to transit has changed. Both CRC-PP and CRC-FFGA maintain a 20% local match on a cumulative month-by-month basis throughout the construction period.

In March 2013, the Oregon legislature passed HB 2800 providing full funding for ODOT’s capital share. However, with the failure of the Washington legislature to provide WSDOT’s contribution, an amendment to HB 2800 is required. Thus, the Oregon funding is “planned” at this time; but the toll revenues and other non-Section 5309 funding remains committed or budgeted. Accounting for the potential that without TIFIA the toll borrowings could yield about \$300 million less project funding, the project funding that is “committed” or “budgeted” represents about 60% of the non-New Starts share of the CRC-PP capital finance plan and about 76% of the CRC-FFGA capital finance plan.

This section addresses the capital finance plan for the Phased Project of the CRC Project (“CRC-PP”) and for the scope of improvements proposed for the FFGA (“CRC-FFGA”). The capital improvement and replacement plans of TriMet and C-TRAN for other than the CRC-PP/CRC-FFGA project are addressed in the agency-wide operations plans for TriMet and C-TRAN in Sections 3 and 4, respectively, of this report.

2.1 Background

As explained in Section 1.1, the CRC capital finance plan is 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 provides that:

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.”

FTA has interpreted this to mean that the rating of ‘non-New Starts share’ is to be calculated on the basis of the CRC-PP and the 20% local match must be calculated on a stand-alone basis for CRC-FFGA. The capital finance plans described in this report provide a 20% local match for both the CRC-PP and on a stand-alone basis the CRC-FFGA. Thus, the differing interpretation of how the above-cited bill language should be applied to local match requirements is no longer pertinent.

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.

**Table 2-1
Major Milestone Schedule**

Activity	Date
FTA Approves Entry into Preliminary Engineering	December-09
Publication of FEIS	September-11
Record of Decision (ROD) Issued	December-11
Initial Oregon Legislative Approval of State Funding Commitment	March-13
Notified Project Entered Engineering Phase of New Starts Process	April-13
Legislative Amendment to Oregon Funding Law	October-13
Submit Letter of Interest for TIFIA Assistance	November-13
Issue RFQ for Main River Crossing Design-Build (D-B) Contract	October-13
Submit Application for Full Funding Grant Agreement	December-13
Issue RFP for Main River Crossing D-B Contract	January-14
TIFIA Credit Board Awards Assistance	May-14
FFGA to OMB Review	June-14
Select Main River Crossing D-B	September-14
TIFIA Credit Agreement Executed	September-14
FTA Approval of Full Funding Grant Agreement for Section 5309 New Starts Funds	September-14
Notice to Proceed for Main River Crossing D-B	October-14
Begin In-Water Work for Main River Crossing	December-14
Start of Pre-Completion Tolling	January-16
CRC Light Rail Service Starts	September-19
New Bridge Fully Open to Traffic	July-21
Start of Post-Completion Tolling	July-21

(1) Subject to further refinement based on continuing discussions with FTA and PMOC

In August 2012 CRC-PP was one of four nationally and regionally significant transportation projects selected to receive expedited federal review and approvals under the President’s “We Can’t Wait” initiative. Under the associated Executive Order, OMB is charged with overseeing a federal government-wide effort to expedite federal approvals and permitting.

2.3 Capital Cost Estimates for CRC-PP and CRC-FFGA

2.3.1 Cost Estimating Methodology

A. Methodology for CRC-PP

The capital cost estimates cover all costs of developing and constructing the highway, bridge, bicycle/pedestrian, and light rail elements of the CRC Phased Project (CRC-PP), 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 for CRC-FFGA is a subset of the costs for CRC-PP.

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. CEVP utilizes a detailed base cost estimate comprising over 1,000 line-items. 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 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 inflation factors developed 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

B. Methodology for CRC-FFGA

While CRC-PP is an integrated multimodal project, FTA requires a finance plan for the scope of improvements included in the FFGA – which are a subset of the costs of the full CRC-PP. Thus, the estimated capital cost must be allocated between highway and transit (i.e.; FFGA) components. Many project costs are easily allocated 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.

Bicycle/Pedestrian Facility: The bicycle and pedestrian facilities are incorporated in the scope of improvements for the FFGA.

Columbia River Crossing Main Bridge Structure: 34% of the cost of the main river crossing (bridges) is allocated to the FFGA scope. In addition, 34% of the cost of demolishing the existing bridge is allocated to the FFGA scope. The cost of the transit tracks, electrification, and systems equipment on the main bridge is fully allocated to the transit cost. An explanation of the allocation methodology is provided in Appendix E, Exhibit 4 – Capital Cost Allocation Methodology.

Mainland Connector: The ‘mainland connector’ improvement between Hayden Island and the Expo Center (over North Portland Harbor) is employed for highway, transit, bicycle, and pedestrian travel; thus its cost must be allocated. Based on deck area used by each mode, 44% of the cost of this structure is allocated to the FFGA scope.

Right-of-Way: Right-of-way acquisition costs solely due to the scope of the improvements in the FFGA are apportioned to the FFGA.

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 to the construction costs of the highway and transit elements.

2.3.2 Interim Borrowing Costs

Interim borrowing requirements in the capital finance plan for CRC-PP (and CRC-FFGA) are employed to fill temporary funding shortfalls in the FFGA scope of improvements caused by (a) delayed receipt of New Starts funds or (b) delay in issuing toll bonds used to fund bridge/bicycle/pedestrian improvement costs in the FFGA scope. As explained below, TriMet and ODOT will share in these interim borrowing obligations.

A. ODOT Interim Borrowing

There are over \$350 million of improvements in the FFGA scope that are eligible for highway funds under Oregon law, of which about \$313 million are the allocated cost of the main bridge crossings and \$37 million are bicycle/pedestrian facility costs. These costs will be incorporated in the main Design-Build (DB) contract issued by ODOT, and ODOT would be responsible for paying the contractor. TriMet, as Grantee for the FFGA, would be responsible for reimbursing ODOT for a portion of these expenses with New Start funds. If the availability of New Starts funds and toll bonds were not an issue, each month ODOT would request reimbursement for 80% of these costs paid in the prior month, and TriMet would make such reimbursement up to the amount ODOT is entitled under the TriMet-ODOT agreement, currently in preparation. Instead this agreement will provide that ODOT will interim borrow to pay these costs and withhold requesting reimbursement by TriMet until TriMet has received its full share of New Starts funds under the agreement. Stated simply, ODOT will be last to receive reimbursement from

the New Start funds provided under the FFGA. Not all of the ODOT interim borrowing program will be reimbursed with New Start funds; a portion will be reimbursed with toll bond proceeds. These bonds will be issued and retained by ODOT; thus ODOT will be reimbursing itself without involving TriMet.

Interim borrowing costs will accrue to ODOT for this period; these costs are for improvements in the FFGA scope and therefore are eligible FFGA costs and included in the CRC-FFGA cost estimate. While the structure of the ODOT interim borrowing program will depend on market conditions 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 assumes a 2 percent interest rate, which is meant to account for interest and any administrative fees. Based on these assumptions, the CRC-FFGA capital cost incorporates almost \$32 million in estimated interim borrowing costs by ODOT.

The calculation of ODOT's interim borrowing requirement is provided in Appendix E, Exhibit 3.

B. TriMet Interim Borrowing

In addition to ODOT interim borrowing, TriMet will also need to establish an interim borrowing program for FFGA costs incurred within contracts it manages due to the prolonged flow of Section 5309 New Starts funds. The finance plan assumes a maximum annual allotment of New Start funds of \$100 million per year. At these levels of New Starts appropriations the New Starts funds do not keep pace with construction expenditures, necessitating the 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. Because, as explained above, ODOT will be last to receive New Starts reimbursement, TriMet will seek New Starts reimbursement as soon as such monies become available from FTA.

The structure of the TriMet interim borrowing program will depend on market conditions at the time the program is funded. The finance plan assumes a 5 percent interest rate on outstanding balances, which is meant to account for interest and any administrative fees. Based on these assumptions, the CRC-FFGA capital cost incorporates almost \$31 million in estimated TriMet interim borrowing costs. The calculation of TriMet's interim borrowing requirement is also provided in Appendix E, Exhibit 3.

2.3.3 Cost Estimate for CRC-PP and CRC-FFGA

The capital costs in 2013 and year of expenditure dollars (YOES) 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 CRC-PP cost estimate by SCC category is shown in Table 2-2A, below. Following is a summary cost estimate for CRC-FFGA by SCC category.

Table 2-2A
Summary of Capital Cost of CRC-PP by SCC Code (1)

In \$1000s

SCC Code	SCC Category	Base Year Dollars WITHOUT Allocated Contingency	Allocated Contingency	Base Year Dollars Total
10	Guideway/Track Elements	\$778.2	\$132.4	\$910.5
20	Stations, Stops, Terminals	\$97.6	\$19.6	\$117.2
30	Support Facilities: Yards	\$24.6	\$5.0	\$29.7
40	Sitework Special Conditions	\$420.4	\$64.5	\$484.9
50	Systems	\$102.9	\$15.5	\$118.5
60	Right of Way	\$145.7	\$30.7	\$176.4
70	Vehicles	\$77.2	\$13.7	\$90.9
80	Professional Services	\$417.8	\$57.6	\$475.3
90	Unallocated Contingency	\$37.0		\$37.0
100	Finance Cost	\$85.4		\$85.4
	Sub-Total (2013\$)	\$2,186.9	\$339.0	\$2,525.8
	Escalation to YOES			\$186.0
	Total in YOE Dollars			\$2,711.8

(1) Cost shown exclude the recently negotiated bridge height mitigation cost of about \$86.4 million. These mitigation costs are detached, for now, from the project budget to facilitate legislative deliberations regarding how these mitigation costs should be funded. The impacts of these mitigation costs are addressed later in this report.

Table 2-2B
Summary of Capital Cost of CRC-FFGA by SCC Code (1)
In \$1000s

SCC Code	SCC Category	Base Year Dollars WITHOUT Allocated Contingency	Allocated Contingency	Base Year Dollars Total
10	Guideway/Track Elements	\$251.1	\$44.7	\$295.8
20	Stations, Stops, Terminals	\$97.6	\$19.6	\$117.2
30	Support Facilities: Yards	\$24.6	\$5.0	\$29.7
40	Sitework, Special Conditions	\$122.0	\$20.1	\$142.0
50	Systems	\$75.2	\$10.9	\$86.1
60	Right of Way	\$27.5	\$5.8	\$33.3
70	Vehicles	\$77.2	\$13.7	\$90.9
80	Professional Services	\$152.1	\$23.1	\$175.2
90	Unallocated Contingency	\$22.8		\$22.8
100	Finance Cost	\$85.4		\$85.4
Sub-Total (2013\$)		\$935.5	\$142.9	\$1,078.1
Escalation to YOES				\$79.1
Total in YOE Dollars				\$1,157.2

(1) Cost shown excludes the approximate \$29 million share of bridge height mitigation allocable to the FFGA scope of improvements. These mitigation costs are detached, for now, from the project budget to facilitate legislative deliberations regarding how these mitigation costs should be funded. The impacts of these mitigation costs are addressed later in this report.

2.3.4 Contingency in Capital Cost Estimates

The capital cost estimate for CRC-PP shown above in Table 2-2A includes about \$339 million (2013\$) of allocated contingency and \$37 million (2013\$) of unallocated contingency. The \$376 million (YOES) total contingency represents a 18.2% contingency rate for CRC-PP.⁴ The capital cost estimate for CRC-FFGA shown above in Table 2-2B includes about \$142.9 million (2013\$) of allocated contingency and \$22.8 million (2013\$) of unallocated contingency. The \$165.7 million (2013\$) total contingency represents a 20.02% contingency rate for CRC-FFGA.

2.4 Proposed Capital Funding Sources

The following sub-sections describe the capital funding sources.

2.4.1 \$107.8 million in ODOT and WSDOT Funds Expended to Date

⁴ Per FTA SCC workbook, calculated as total contingency (allocated and unallocated) divided by total cost excluding contingency and finance costs.

As shown in Table 2-3, for the period starting with FTA approval to enter Preliminary Engineering (PE) in December 2009 through September 2013, ODOT and WSDOT funded about \$107 million for project development. These contributions came from federal grants and state transportation accounts. The federal funds committed from ODOT were primarily from the “Corridors of the Future,” Interstate Maintenance Discretionary (IMD) programs, and federal formula fund programs. WSDOT’s federal funds were also from Corridors of the Future and IMD, as well as STP and NHS funds.

Table 2-3
Currently Committed Funds (1)(2)

Contributor:	State Funds	Federal Funds	Total
ODOT	\$5,401,144	\$52,493,031	\$57,894,176
WSDOT	\$18,161,341	\$31,732,835	\$49,894,176
Total	\$23,562,485	\$84,225,866	\$107,788,351

(1) All but about \$8 million of total was spent on eligible project expenses as of June 30, 2013.

(2) Amount is less than previous year because WSDOT rescinded previously committed funds that were not spent as of June 30, 2013.

These funds are primarily used for Preliminary Engineering⁵ and early right-of-way acquisition costs. Because gas tax revenues from both Oregon and Washington may not be used for transit purposes, transit costs were paid using federal funds provided through WSDOT that were matched with toll credits (See 23 U.S.C. § 120(j)) that were also provided by WSDOT.

2.4.2 ODOT (Non-Toll) Contribution of \$450 million

In March 2013 the Oregon Legislature passed and the governor signed into law HB 2800 (See Appendix E; Exhibit 13), which resolved several issues regarding the CRC Project. Most notably it provided, subject to certain conditions, for the \$450 million ODOT contribution to the project. Funding was to come from existing State Highway Fund sources; no new tax was required.

HB 2800 established Washington legislative approval by September 30, 2013 of WSDOT’s funding as a pre-requisite to making further ODOT monies available for the project. In early July 2013 the Washington legislative session adjourned without approving WSDOT funding. As a result, the \$450 million ODOT contribution approved under HB 2800 could only be made available to the project if the legislature amends the law to eliminate WSDOT funding as a condition precedent. There has been public discussion regarding the possibility of a Special Session of the Oregon Legislative Assembly this fall 2013 to vote on such an amendment. The Special Session has not been

⁵ Under MAP-21 language PE would be referred to as “Project Development” and partially could overlap “Engineering”

called as of the date of this writing. The finance plan discussed herein relies on successfully approving the required amendments to HB 2800. Based on the needs of the finance plan and ODOT's financial capacity, the plan employs a combination of formula federal funds and General Obligation and/or Highway Revenue Bonds to provide the full contribution.

2.4.3 \$850 Million in Section 5309 New Start Funds

\$850 million in New Starts funds are proposed for the project. The schedule assumes the Full Funding Grant Agreement would be executed in September 2014. Some acquisition and construction may be undertaken prior to the FFGA under the automatic pre-award authorities that are available with issuance of the ROD and Engineering approval, and possibly some under a Letter of No Prejudice (LONP). The schedule (See Table 2-1) anticipates that the first installment of New Starts funds would be in the Federal FY2015 appropriation bill. As shown in Table 2-4, which is on the following page, the finance plan assumes no more that \$100 million of New Starts funds would be appropriated to the project in a year.

2.4.4 \$1.3 Billion from Tolling (TIFIA Loans, Toll Bonds, and Toll Proceeds on Pay-Go Basis)

Key Changes since New Starts Report Submitted in September 2012: The finance plan discussed herein relies on ODOT being fully and solely responsible for tolling the Interstate 5/Columbia River bridges. ODOT will toll the bridges under its existing authority, collect and retain all toll revenues, and undertake all financing pledging the toll revenues for repayment. WSDOT will no longer be involved in these activities. It is anticipated that ODOT will enter a project development agreement with WSDOT to define their rights and obligations regarding the project; this agreement will set forth ODOT's role with regard to tolling. ODOT needs no additional legislative action or authority to fulfill its intended role in tolling.

**Table 2-4
New Starts Appropriations Schedule**

Action	Date	Amount
President's Budget	2/3//2014	
FY2015 Appropriation Bill Passes	9/30/2014	
FY2015 Grant Available	4/1/2015	\$100,000,000
President's Budget	2/2/2015	
FY2016 Appropriation Bill Passes	9/30/2015	
FY2016 Grant Available	4/1/2016	\$100,000,000
President's Budget	2/1/2016	
FY20157Appropriation Bill Passes	9/30/2016	
FY2017 Grant Available	4/1/2017	\$100,000,000
President's Budget	2/6/2017	
FY2018 Appropriation Bill Passes	9/30/2017	
FY2018 Grant Available	4/1/2018	\$100,000,000
President's Budget	2/5/2018	
FY2019 Appropriation Bill Passes	9/30/2018	
FY2019 Grant Available	4/1/2019	\$100,000,000
President's Budget	2/4/2019	
FY2020 Appropriation Bill Passes	9/30/2019	
FY2020 Grant Available	4/1/2020	\$100,000,000
President's Budget	2/3/2020	
FY2021 Appropriation Bill Passes	9/30/2020	
FY2021 Grant Available	4/1/2021	\$100,000,000
President's Budget	2/2/2021	
FY2022 Appropriation Bill Passes	9/30/2021	
FY2022 Grant Available	4/1/2022	\$100,000,000
President's Budget	2/7/2022	
FY2023 Appropriation Bill Passes	9/30/2022	
FY2023 Grant Available	4/1/2023	\$50,000,000
Total New Start Appropriations		\$850,000,000

2.4.4.1 Introduction

As explained in Section 1, the I-5 (Interstate) Bridge would be tolled as part of the project. Under the finance plan toll revenues would first be used for operating and maintenance costs and the net toll revenues after the payment of these expenses would be pledged to repay borrowings (TIFIA loan and toll bonds) used to pay capital expenses. In

total, toll revenues comprise almost one-half (48%) of the capital finance plan for CRC-PP. In addition, residual toll revenues not used for O&M or debt service afford additional funding capacity to address cost overruns, if any, and/or future phases of the CRC Project. The following sub-sections address the implementation of tolling and the estimated revenues it would produce, including the following:

- The authority to toll the new bridge
- The level of commitment of toll revenues for New Starts rating purposes
- Toll rate structure
- Estimation of net toll revenues available to the capital finance plan
- Financing assumptions
- Borrowing capacity (loan and bonds) from post-completion tolling
- Capital reserves capacity

2.4.4.2 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 CRC-PP. 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. Under MAP-21 there is no longer a requirement for ODOT to enter into a tolling agreement with FHWA. Under ORS 381 and 383 ODOT has the state statutory authority to toll facilities it owns, including the I-5 bridges, no additional authority is required. (See Appendix E, Exhibit 11 and 12) 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 Oregon Transportation Commission (“OTC”).

2.4.4.3 Toll Bond/Loan Proceeds are “Budgeted” for New Starts Rating Purposes

The toll revenues and bond proceeds included in the capital funding plan for CRC-PP constitute ‘budgeted’ funding sources for New Starts rating purposes. ODOT is responsible for developing and implementing the capital funding plan for the CRC Project.⁶ ODOT is also responsible for identifying toll funding commitment targets for the state. The ODOT Director has advised FTA of their intent to target at least \$1 billion of project capital funding from toll revenues.

State law assigns the OTC as the responsible body for approving toll rates for the CRC Project.⁷ OTC will be required to set toll rates to provide sufficient revenue to pay debt service, applicable operations and maintenance costs and repairs and replacement.⁸ Given the funding target set by ODOT, the toll rates set by OTC would have to be sufficient to provide at least \$1.3 billion in net project funding, assuming TIFIA assistance. Since TIFIA assistance would yield about \$300 million of additional project funding but is not

⁶ See ORS 367.050; ORS 367.010-367.060.

⁷ See ORS 383.

⁸ See ORS 383.

approved at this time \$1.0 billion of toll-related capital funding is considered ‘budgeted’ for New Starts purposes.

2.4.4.4 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 OTC. CDM Smith has been retained as the “investment-grade” traffic and revenue consultant. CDM Smith has upgraded the tolling models to near-investment-grade level (the final investment-grade model is due in December 2013) and has retained ECONorthwest (ECONW), a highly experienced and independent economic forecasting firm located in Portland, to provide investment-grade socio-economic forecasts as inputs to the travel demand models. During the summer 2013, CDM Smith prepared an updated analysis of several toll scenarios that differed based on toll rates, socio-economic forecasts, tolling parameters, and travel demand model factors. (See: CDM Smith, *Columbia River Crossing Traffic and Revenue Study: Update of Preliminary Gross Toll Revenue Estimates*, September 2013). A middle-ground scenario was selected for financial planning purposes, both in this report and with regard to work with the Oregon State Treasurer and the Oregon legislature. This scenario is described below.

A. Assumed Toll Rate Schedule

The tables below shows the assumed weekday toll rates for passenger cars – in year-of-expenditure dollars – for the Pre-Completion and Post-Completion phases and by the method of payment (i.e.; Good to Go (i.e.; Customer Account) or Pay-by-Mail) of the tolls. They differ as to whether the customer is traveling in a passenger car (2-axles), medium truck (3-4 axles), or heavy truck (5 or more axles).

Table 2-5A: Toll Rate Schedule - One-Way, Weekday Toll Rates for Passenger Cars

Fiscal Year	5-6am	6-7am	7-9am	9-10am	10am-3pm	3-4pm	4-6pm	6-7pm	7-8pm	8pm-5am
Good To Go! Precompletion										
2016	\$1.87	\$2.50	\$2.50	\$2.50	\$1.87	\$2.50	\$2.50	\$2.50	\$1.87	-
2017	\$1.92	\$2.56	\$2.56	\$2.56	\$1.92	\$2.56	\$2.56	\$2.56	\$1.92	-
2018	\$1.97	\$2.62	\$2.62	\$2.62	\$1.97	\$2.62	\$2.62	\$2.62	\$1.97	-
2019	\$2.02	\$2.69	\$2.69	\$2.69	\$2.02	\$2.69	\$2.69	\$2.69	\$2.02	-
2020	\$2.07	\$2.76	\$2.76	\$2.76	\$2.07	\$2.76	\$2.76	\$2.76	\$2.07	-
2021	\$2.12	\$2.83	\$2.83	\$2.83	\$2.12	\$2.83	\$2.83	\$2.83	\$2.12	-
Good To Go! Post Completion										
2022-60	\$2.17	\$2.90	\$3.62	\$2.90	\$2.53	\$2.90	\$3.62	\$2.90	\$2.17	\$1.45
Pay By Mail Precompletion										
2016	\$3.39	\$4.02	\$4.02	\$4.02	\$3.39	\$4.02	\$4.02	\$4.02	\$3.39	-
2017	\$3.48	\$4.12	\$4.12	\$4.12	\$3.48	\$4.12	\$4.12	\$4.12	\$3.48	-
2018	\$3.57	\$4.22	\$4.22	\$4.22	\$3.57	\$4.22	\$4.22	\$4.22	\$3.57	-
2019	\$3.66	\$4.33	\$4.33	\$4.33	\$3.66	\$4.33	\$4.33	\$4.33	\$3.66	-
2020	\$3.75	\$4.44	\$4.44	\$4.44	\$3.75	\$4.44	\$4.44	\$4.44	\$3.75	-
2021	\$3.84	\$4.55	\$4.55	\$4.55	\$3.84	\$4.55	\$4.55	\$4.55	\$3.84	-
Pay By Mail Post Completion										
2022-60	\$3.94	\$4.67	\$5.39	\$4.67	\$4.30	\$4.67	\$5.39	\$4.67	\$3.94	\$3.22

**Table 2-5B
Toll Rate Schedule - One-Way, Weekday Toll Rates for Medium Trucks**

Fiscal Year	5-6am	6-7am	7-9am	9-10am	10am-3pm	3-4pm	4-6pm	6-7pm	7-8pm	8pm-5am
Good To Go! Precompletion										
2016	\$3.74	\$5.00	\$5.00	\$5.00	\$3.74	\$5.00	\$5.00	\$5.00	\$3.74	-
2017	\$3.84	\$5.12	\$5.12	\$5.12	\$3.84	\$5.12	\$5.12	\$5.12	\$3.84	-
2018	\$3.94	\$5.24	\$5.24	\$5.24	\$3.94	\$5.24	\$5.24	\$5.24	\$3.94	-
2019	\$4.04	\$5.38	\$5.38	\$5.38	\$4.04	\$5.38	\$5.38	\$5.38	\$4.04	-
2020	\$4.14	\$5.52	\$5.52	\$5.52	\$4.14	\$5.52	\$5.52	\$5.52	\$4.14	-
2021	\$4.24	\$5.66	\$5.66	\$5.66	\$4.24	\$5.66	\$5.66	\$5.66	\$4.24	-
Good To Go! Post Completion										
2022-60	\$4.34	\$5.80	\$7.24	\$5.80	\$5.06	\$5.80	\$7.24	\$5.80	\$4.34	\$2.90
Pay By Mail Precompletion										
2016	\$5.26	\$6.52	\$6.52	\$6.52	\$5.26	\$6.52	\$6.52	\$6.52	\$5.26	-
2017	\$5.40	\$6.68	\$6.68	\$6.68	\$5.40	\$6.68	\$6.68	\$6.68	\$5.40	-
2018	\$5.54	\$6.84	\$6.84	\$6.84	\$5.54	\$6.84	\$6.84	\$6.84	\$5.54	-
2019	\$5.68	\$7.02	\$7.02	\$7.02	\$5.68	\$7.02	\$7.02	\$7.02	\$5.68	-
2020	\$5.82	\$7.20	\$7.20	\$7.20	\$5.82	\$7.20	\$7.20	\$7.20	\$5.82	-
2021	\$5.96	\$7.38	\$7.38	\$7.38	\$5.96	\$7.38	\$7.38	\$7.38	\$5.96	-
Pay By Mail Post Completion										
2022-60	\$6.11	\$7.57	\$9.01	\$7.57	\$6.83	\$7.57	\$9.01	\$7.57	\$6.11	\$4.67

**Table 2-5C
Toll Rate Schedule - One-Way, Weekday Toll Rates for Heavy Trucks**

Fiscal Year	5-6am	6-7am	7-9am	9-10am	10am-3pm	3-4pm	4-6pm	6-7pm	7-8pm	8pm-5am
Good To Go! Precompletion										
2016	\$7.48	\$10.00	\$10.00	\$10.00	\$7.48	\$10.00	\$10.00	\$10.00	\$7.48	-
2017	\$7.68	\$10.24	\$10.24	\$10.24	\$7.68	\$10.24	\$10.24	\$10.24	\$7.68	-
2018	\$7.88	\$10.48	\$10.48	\$10.48	\$7.88	\$10.48	\$10.48	\$10.48	\$7.88	-
2019	\$8.08	\$10.76	\$10.76	\$10.76	\$8.08	\$10.76	\$10.76	\$10.76	\$8.08	-
2020	\$8.28	\$11.04	\$11.04	\$11.04	\$8.28	\$11.04	\$11.04	\$11.04	\$8.28	-
2021	\$8.48	\$11.32	\$11.32	\$11.32	\$8.48	\$11.32	\$11.32	\$11.32	\$8.48	-
Good To Go! Post Completion										
2022-60	\$8.68	\$11.60	\$14.48	\$11.60	\$10.12	\$11.60	\$14.48	\$11.60	\$8.68	\$5.80
Pay By Mail Precompletion										
2016	\$9.00	\$11.52	\$11.52	\$11.52	\$9.00	\$11.52	\$11.52	\$11.52	\$9.00	-
2017	\$9.24	\$11.80	\$11.80	\$11.80	\$9.24	\$11.80	\$11.80	\$11.80	\$9.24	-
2018	\$9.48	\$12.08	\$12.08	\$12.08	\$9.48	\$12.08	\$12.08	\$12.08	\$9.48	-
2019	\$9.72	\$12.40	\$12.40	\$12.40	\$9.72	\$12.40	\$12.40	\$12.40	\$9.72	-
2020	\$9.96	\$12.72	\$12.72	\$12.72	\$9.96	\$12.72	\$12.72	\$12.72	\$9.96	-
2021	\$10.20	\$13.04	\$13.04	\$13.04	\$10.20	\$13.04	\$13.04	\$13.04	\$10.20	-
Pay By Mail Post Completion										
2022-60	\$10.45	\$13.37	\$16.25	\$13.37	\$11.89	\$13.37	\$16.25	\$13.37	\$10.45	\$7.57

B. Socio-Economic Forecast

The socio-economic forecast used for the current toll revenue analysis was developed in a three-step process by ECONW. The national context was considered first. Then a regional Portland Metropolitan area estimate was derived. This regional estimate was divided into small geographic units called transportation analysis zones for the tolling analysis.

For forecasts of national macro-economic drivers of the regional economy, the FairModel, an open-source macro model of the US economy was used. To develop the high and low scenarios, the forecast of national real Gross Domestic Product (GDP) was adjusted up by 15 percent of the standard error for the high scenario and down by 25 percent of the standard error for the low scenario. Note that this leads to a conservative forecast in that the downward adjustment is larger than the upward adjustment.

The high and low national GDP inputs were then used in the ECONW regional economic model, which generates regional control totals for population, households, and employment. Portland Metro's integrated land use and transportation forecast model – MetroScope – was employed by ECONW to geographically distribute the regional population, households, and employment forecast totals to transportation analysis zones for employment (by industry class) and households (by household size, income bracket, and age bracket). MetroScope forecasts future changes in land use development patterns and transportation growth in an integrated fashion, modeling location choices by households and employers, taking into account prices and accessibilities, and constrained by land-use policies and infrastructure availability.

C. Model Parameters

A summary of other key travel demand model parameters is provided in the table below:

Factor	Assumption
Value of Time	Peak Passenger Car = \$12.28 per hour (Pre-Completion)
	Peak Passenger Car = \$14.13 per hour (Post-Completion)
Vehicle Operating Cost	Passenger Car = \$0.18 per mile (2011\$)
Customer Account Share of Transactions	Low Assumption of 50% (2016), 58% (2020), 62% (2022), 75% (2036)
Trip Pattern Changes	Pre-Completion: High degree of downward adjustment
	Post-Completion: Moderate degree of downward adjustment
Ramp Up: Amount forecast is	FY16= -5%; FY17= -3%, FY18= -1%
Reduced for Ramp-Up	FY22= -5%; FY2023 = -3%

D. Gross Toll Revenues

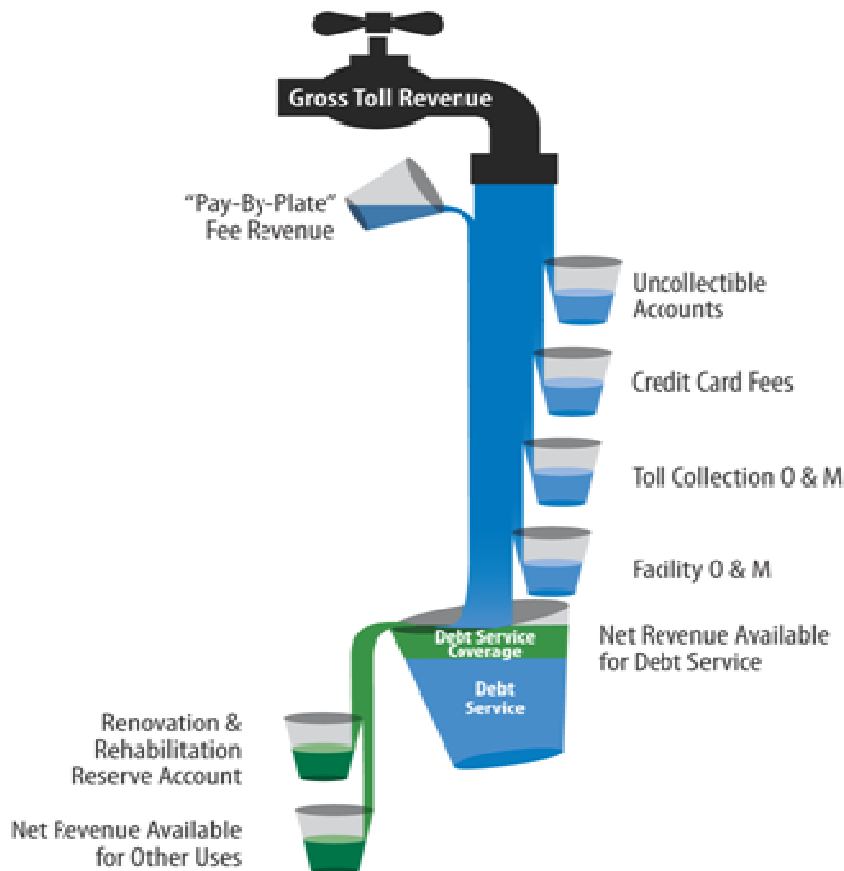
Traffic and gross toll revenue estimates were made using the four step travel demand modeling process. The steps of trip generation, trip distribution, and mode split used modified versions of the Metro modeling process. The trip assignment step which includes route diversion used the CDM Smith toll diversion model process. The model

was run for all the scenarios for the model years of FY 2016, FY 2020, FY 2022, and FY 2036. Results for intermediate years were determined by linear interpolation of the model year results. For years beyond FY 2036 results were developed by assumed growth results informed by model year results. The revenue results prepared by CDM Smith are expected revenue which assumes all vehicles pay the prescribed toll rate. Leakage is not accounted for in the CDM Smith forecast – but is accounted for in the next step, which converts gross estimates to net revenues. The resultant annual estimate of toll transactions by payment type and gross toll revenues are provided in Appendix E, Exhibit 5.

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

Parsons Brinkerhoff (PB) ⁹ prepared the conversion of the gross toll revenue estimates (prepared by CDM Smith) to net toll revenues for project funding. A general depiction of the flow of toll revenue funds is shown in Figure A.

Exhibit A: CRC Flow of Funds from Toll Revenues



The following adjustments to gross toll revenues for each year are made to calculate the net toll revenues available to pay for project debt service.

⁹ See Appendix E, Exhibit 6

- Administrative fee revenue from pay-by-plate transactions is added to gross toll revenues.
- Toll revenue associated with uncollectible (i.e.; “leakage”) accounts (not technically an expense, but rather a reduction in realized revenue) is subtracted from gross toll revenues.
- Annual routine toll collection O&M expenses including toll equipment rehabilitation and replacement (R&R), pay-by-plate costs, and credit card fees, are subtracted from gross toll revenues.
- Annual facility O&M costs are subtracted from gross toll revenues, including Bridge Insurance.

The remainder after the above-described deductions is the net revenue available for reserves, senior debt service (repayment of principal and interest on the bonds), and coverage on the debt service. The excess net toll revenue remaining after senior debt service arising from the coverage could be available for repayment of junior debt and/or to pay for periodic facility R&R costs.

The costs of toll operations and maintaining and rehabilitating the bridge were estimated on the basis of comparable operations on the Tacoma Narrows Bridge, SR-520, as well as the current I-5 and I-205 Bridges.

- Routine highway facility O&M costs (i.e.; the annual costs of operating and maintaining the bridge/highway)
- 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 on toll and facility O&M costs are explained in Appendix E, Exhibit 6A. The detailed calculation converting gross toll revenues to net toll revenues is shown in Appendix E, Exhibit 7.

2.4.4.6 Use of Pre-Completion Toll Revenues for Funding Capital Project Costs and Reserves

The finance plan anticipates that Pre-Completion Toll revenues will be used to (i) pay toll operation costs of the I-5 bridges; (ii) fund reserves required by the capital borrowing markets, and (iii) provide funding on a pay-go basis for project capital costs.

The anticipated reserves required by lenders are patterned after those for the toll bonds issued for the SR-520 Project in the Seattle area, and include:

- **O&M Reserve Subaccount:** a reserve to ensure CRC-PP will be operated and maintained properly. It is funded at an amount equal to six months of operating and maintenance expenses for the subsequent fiscal year. During the pre-completion toll period, this reserve is funded with pre-completion toll revenues; afterwards it is incrementally increased with residual post-completion toll revenues.

- **Revenue Stabilization Subaccount:** primarily a debt service reserve, although its use for certain other project purposes is permitted. This reserve is funded each year at 30% of the estimated net toll revenues for the next fiscal year. During the pre-completion toll period, this reserve is funded with pre-completion toll revenues to ensure it is fully funded at the time CRC-PP is substantially complete. Thereafter, an incremental deposit is funded with residual post-completion toll revenues to maintain the account at 30% of the next fiscal year anticipated revenues.
- **Repair and Replacement Subaccount:** provides the liquidity needed to meet periodic major repairs or capital replacement items. The Repair and Replacement Reserve Subaccount is used exclusively for: (i) repair and replacement expenses in accordance with the then-current capital improvement program and budget and (ii) any other emergency repair and replacement expenses that must be incurred to restore or maintain a safe operating condition. Amounts to be deposited in the Repair and Replacement Reserve Subaccount are determined by ODOT based on its projected long-term repair and replacement expense needs, in consultation with the Consulting Engineer.

The on-going deposits into these reserves are shown in the net toll revenue calculations shown in Appendix E, Exhibit 7

Table 2-6 shows the cumulative amounts deposited in each of these reserves at the end of the pre-completion tolling period.

Table 2-6
Reserve Account Balances
at Start of Post-Completion Tolling
In Millions of Dollars (YOE\$)

Revenue Stabilization Account	O&M Reserve Account	Deposits to R&R Fund
\$22.91	\$9.59	\$5.55

These reserve funds are further funded on an on-going basis during the Post-Completion Tolling phase so that the criteria for each reserve are fulfilled each year.

In addition to funding the above, Pre-Completion Toll revenues not required for tolling operations or the bond-related reserves are used on a pay-go basis for project capital costs. The finance plan assumes that Pre-Completion Tolling starts January 2016 and that proceeds are not available for pay-go funding until three months after the toll transaction occurs.

Table 2-7
Pay-Go Capital Funding from Pre-Completion Tolling

	2016	2017	2018	2019	2020	2021	2022	Total
Pre-Completion Revenues used for Capital Costs on Pay-Go Basis	\$7.1	\$32.4	\$45.5	\$49.0	\$51.1	\$41.8	\$2.7	\$229.6

2.4.4.7 Toll Borrowing Capacity Analysis Assumptions

Net toll revenues from post-completion tolling are used to fund CRC-PP by pledging net toll revenues to repay bonds and loans and using the proceeds to pay project costs. Estimates of the financial capacity of these toll revenues were prepared by Public Resources Advisory Group (“PRAG”), a well-experienced and independent financial advisory firm.

This finance plan assumes a baseline structure consisting of the following:

- While it is anticipated toll rates will escalate over time, 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 2021. 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 TIFIA loan – assumed in this finance plan to be for \$900 million – which represents slightly less than one-third of TIFIA-eligible project expenses. The final mix and amount of TIFIA loans and toll bonds depends on the future availability of TIFIA for CRC-PP.
- In addition to the TIFIA loan, net toll revenues would be used to repay state-backed toll bonds.

The assumptions used by PRAG to determine the project funding capacity of the TIFIA loan and state-backed toll bonds include:

- **Toll Revenue** – PRAG’s analysis was based on the gross toll revenues for Scenario F prepared by CDM Smith and the resulting net toll revenues prepared by PB.
- **Net Toll Revenue** – All toll-backed bonds and TIFIA loans are assumed to be paid after the funding of O&M expenses for the facility and tolling operations, but before R&R expenditures. This approach is consistent with the debt structure used for WSDOT’s SR 520 project.
- **Project Schedule** – The financial capacity analysis is based on the project funding sources and uses, schedule, and timing of required bond proceeds as set forth in the cash-flow and capital finance plan for CRC-PP.
- **Bond Structuring Assumptions** – Generally the debt structure is designed to match the stream of net toll revenues. This produces a modestly increasing debt service structure, with compound average growth rates of between approximately 1.0% per year and 2.3% per year during the years when the bulk of the debt is amortizing,

depending on the scenario analyzed. For the post-completion period from FY 2022 forward, the modestly increasing debt service is the result of increasing net revenue that is driven primarily by traffic growth, since tolls are not assumed to escalate.

- **Interest Rates** – For purposes of this finance plan, interest rate assumptions were established to represent current market conditions (as of August 30, 2013) for the applicable debt rounded-up to the nearest 0.25% plus 50 basis points (bps). Sensitivity analyses were also prepared with lower and higher interest rates. These sensitivity analysis results are described later in this report.
- **Pre-Completion Tolling** – It is assumed that revenues from Pre-Completion Tolls revenues will be used to pay O&M costs and fund an O&M reserve, R&R reserve, and a rate stabilization fund during the pre-completion period. Any Pre-Completion Toll revenues remaining after these payments would be used for project capital expenses on a pay-go basis.
- **TIFIA Loan Amount** – Based on the CRC-PP project cost of \$2.71 billion, the assumed TIFIA loan amount was set at \$900 million, representing approximately 33% of the project costs. While MAP-21 permits TIFIA loans in amounts up to 49% of eligible project costs, loans exceeding one-third of project costs are generally not awarded. Consequently, the TIFIA loan amount in the finance plan is constrained to this lower percentage.
- **Coverage** –Based on WSDOT’s experience with the SR 520 TIFIA loan, the debt service coverage factor for the TIFIA loan was set at 1.15X. The debt service coverage factor for the state-backed toll revenue bonds was assumed to be 1.30X.
- **State-Backed Bond Amortization.** Toll bonds are assumed to have a 40-year term.

2.4.4.8 Borrowing and Total Funding Capacity of Toll Revenues

A. Methodology

Under the financial plan the capacity of project funding from net toll revenues (after payment of facility and tolling O&M costs and reserves) is equal to:

- Net amount of TIFIA loan proceeds after payment of accreted interest (which under the TIFIA program is added to loan principal);
- PLUS the net amount of proceeds from Current Interest Bonds (CIB) after payment of issuance costs, capitalized interest, and, if applicable, reserves;
- PLUS the net amount of proceeds from Capital Appreciation Bonds (CAB) after payment of issuance costs, capitalized interest, and, if applicable, reserves;
- PLUS the Pre-Completion Toll proceeds available to pay project costs on a pay-go basis (after payment of facility and tolling O&M costs and reserves);
- PLUS residual toll revenues, when applicable (the finance plan presented in this report does not use residual toll revenues).

Most of the amounts depend on the financing structure chosen and the interest rates set by the capital markets. As explained earlier, this finance plan employs a financing structure consisting of TIFIA and State-backed Toll Bonds and assumes an interest rate 50 basis points above the applicable rates on August 30, 2013. A sensitivity analysis of the financing assumptions is provided later in this sub-section. The detailed calculations of the borrowing program are shown in Appendix E, Exhibit 8).

B. Toll Funding Capacity for Finance Plan

A summary of the toll revenue borrowing program employed in the finance plan is shown below in Table 2-8A. A summary of sources and uses of toll revenues and toll-backed borrowing is shown in Table 2-8B.

Table 2-8A: Summary of Toll Revenue Borrowings

In Millions of Dollars

Sources	2015	2016	2017	2018	2019	2020	2021	Total
Current Interest Bonds Issued (1)	\$0.0	\$0.0	\$0.0	\$0.0	\$10.9	\$83.1	\$214.0	\$308.0
Capital Appreciation Bonds Issued (1)	\$0.0	\$0.0	\$0.0	\$0.0	\$37.8	\$8.8	\$11.4	\$58.0
TIFIA Loan Drawdowns (2)	\$145.9	\$215.0	\$243.5	\$219.6	\$76.0	\$0.0	\$0.0	\$900.0
	\$145.9	\$215.0	\$243.5	\$219.6	\$124.8	\$91.9	\$225.4	\$1,266.1

(1) These are total proceeds, a portion of which is used to pay issuance costs, capitalized interest, and, if applicable, reserves.

(2) This amount is net of accreted interest added to loan principal.

Table 2-8B

Sources and Uses of Toll Funding

Sources	\$ Millions
TIFIA	\$1,119.5
Current Interest Bonds	\$308.0
Capital Appreciation Bonds	\$58.0
Pre-Completion Toll Proceeds-Pay-Go	\$229.6
Total Sources	\$1,715.2
Uses	\$ Millions
Issuance Cost	\$2.9
Capitalized Interest	\$21.7
Accreted Interest (Added to TIFIA Principal)	\$219.5
Net Project Capital Funding Capacity	\$1,471.1
Total Uses	\$1,715.2

C. Sensitivity Analysis

An analysis was performed to assess the sensitivity of the toll funding capacity to interest rates. Table 2-8C shows the total net funding available from tolls under the same assumptions except for interest rates.

Table 2-8C
Sensitivity of Toll Funding Capacity to Changes in Finance Structure/Assumptions
In \$ Millions

Finance Structure	Current Rates (as of 8/30/13)	Current + 50 BPS	Added Capacity if Rates 50 BPS Lower	Current + 100 BPS	Reduced Capacity if Rates 50 BPS Higher
TIFIA and State-Backed Bonds	\$1,586.9	\$1,471.2	\$115.7	\$1,373.5	(\$97.7)
TIFIA and Toll Revenue Bonds	\$1,479.8	\$1,388.3	\$91.4	\$1,308.1	(\$80.3)
Reduced Capacity w/Toll Revenue Bond	(\$107.1)	(\$82.9)	n/a	(\$65.4)	n/a

As shown, if interest rates on toll bonds are 50 basis points lower than current rates when the toll bonds are issued, the net funding capacity from tolls could be \$115 million more than the base assumption; and as much as almost \$98 million less if interest rates are 50 basis points higher. If bonds are issued without state-backing, the net proceeds from tolls could be \$65 million to \$107 million less than the base assumption.

2.4.4.9 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 full replacement 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 continue to fund prudent reserves. However, residual toll revenues not needed for repair and replacement costs or reserves could be used to repay ODOT funds used to cover cost overruns.

2.5 The Capital Finance Plan

2.5.1 Cash Flow Plan

In order to ensure that the appropriate funds are matched with applicable costs, the capital finance plan was prepared on a cash-flow basis separately (but coordinated) for the FFGA and highway portions of CRC-PP. A detailed month-by-month build-up of the capital finance plan for each of these components and the overall integrated, multi-modal plan is provided in Appendix E, Exhibit 9. Table 2-9A summarizes the capital finance plan for CRC-PP and Table 2-9B shows the plan for CRC-FFGA. The cash-flow requirements in both plans 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.

Table 2-9A
CRC-PP Funding Plan by State Fiscal Year
In Millions of Year-of-Expenditure Dollars

Costs below, revenues on following page

COST	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Professional Services & Program Management	\$19.5	\$31.3	\$23.4	\$24.6	\$5.6	\$6.4	\$5.6	\$4.9	\$4.9	\$4.9	\$4.9	\$4.9	\$0.8		\$141.8
Permitting - Columbia River Bridges					\$8.4	\$17.1									\$25.5
Permitting – Other					\$6.9	\$21.8	\$1.8								\$30.5
Right of Way					\$37.6	\$144.4	\$9.4								\$191.4
River Xing and Approaches					\$19.1	\$217.4	\$233.9	\$280.3	\$233.5	\$75.6	\$9.5				\$1,069.3
Hayden Is. Interchange								\$12.6	\$20.1	\$14.2					\$46.9
SR-14 Interchange							\$10.5	\$19.8	\$32.4	\$37.2	\$9.4				\$109.3
Demolition											\$38.3	\$40.2			\$78.5
Mainland Connector							\$22.6	\$42.4	\$24.3						\$89.3
Marine Drive Interchange									\$31.3	\$72.7	\$72.9	\$72.7	\$7.6		\$257.2
Washington North															
LRT Guideway and Support Facilities				\$0.9	\$5.2	\$33.2	\$76.6	\$74.4	\$60.9	\$2.3					\$253.5
LRT System										\$55.7	\$14.4				\$70.2
Park-and-Ride						\$11.7	\$87.1	\$63.3							\$162.0
LRV							\$54.8	\$21.3	\$14.6						\$90.8
Interest: TriMet Interim Borrow Repaid w/New Starts						\$0.1	\$1.3	\$6.6	\$8.7	\$7.0	\$4.7	\$1.5	\$0.6	\$0.5	\$30.9
Interest: ODOT Interim Borrow Repaid w/ Toll Bonds												\$16.3			\$16.3
Interest: ODOT Interim Borrow Repaid w/ New Starts														\$15.9	\$15.9
Finance Costs: CAPI, Issuance, Reserves												\$32.7			\$32.7
Total	\$19.5	\$31.3	\$23.4	\$25.5	\$82.8	\$452.0	\$503.6	\$525.6	\$430.5	\$269.6	\$154.1	\$168.4	\$9.0	\$16.4	\$2,711.8

PLAN REVENUES ARE SHOWN ON FOLLOWING PAGE

CRC-PP REVENUES

REVENUE	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Spent: ODOT - Federal Funds	\$8.8	\$14.1	\$10.5	\$11.1	\$8.0										\$52.5
Spent: ODOT - State Funds	\$1.1	\$1.7	\$1.3	\$1.3											\$5.4
Spent: WSDOT - Federal Funds (1)	\$6.1	\$9.8	\$7.3	\$8.6											\$31.7
Spent: WSDOT - State Funds	\$3.6	\$5.8	\$4.3	\$4.5											\$18.2
ODOT Appropriation - Federal					\$13.7	\$9.0									\$22.7
TriMet					\$3.4	\$25.0	\$16.0	\$1.3							\$45.7
ODOT GO Bond	\$0.0	\$0.0	\$0.0	\$0.0	\$49.7	\$295.2	\$36.7								\$381.6
TIFIA							\$162.3	\$242.3	\$219.6	\$131.5	\$73.5	\$65.3	\$5.4		\$900.0
Toll Bonds												\$174.5			\$174.5
Pre-Completion Toll Proceeds: Pay-Go							\$7.1	\$32.4	\$45.5	\$49.0	\$51.1	\$41.8	\$2.7		\$229.6
New Start Funds (Shown when Used)						\$48.9	\$151.1	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0	\$50.0	\$850.0
ODOT Interim Borrow Repaid w/ Toll Bonds					\$7.9	\$73.9	\$64.4					\$146.3			\$0.0
ODOT Interim Borrow Repaid w/ New Starts							\$5.8	\$78.0	\$68.6	\$22.8	\$3.7	-\$57.2	-\$100.0	-\$21.7	\$0.0
TriMet Interim Borrow Repaid w/New Starts						\$0.0	\$60.2	\$71.7	-\$3.1	-\$33.7	-\$74.2	-\$9.7	\$0.8	-\$11.9	\$0.0
TOTAL	\$19.5	\$31.3	\$23.4	\$25.5	\$82.8	\$452.0	\$503.6	\$525.6	\$430.5	\$269.6	\$154.1	\$168.4	\$9.0	\$16.4	\$2,711.8

(1) Matched with Toll Credits

Table 2-9B
CRC-FFGA Funding Plan by State Fiscal Year
In Millions of Year-of-Expenditure Dollars

Costs below, revenues on following page

COST	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Professional Services & Program Management	\$6.0	\$9.6	\$7.2	\$7.6	\$1.5	\$1.5	\$1.5	\$1.5	\$1.5	\$1.5	\$1.5	\$1.5	\$0.2		\$42.6
Permitting - Columbia River Bridges					\$2.2	\$4.5									\$6.7
Permitting – Other					\$3.1	\$9.9	\$0.8								\$13.9
Right of Way					\$6.9	\$26.5	\$1.7								\$35.1
River Xing and Approaches					\$6.1	\$69.4	\$69.6	\$74.4	\$54.5	\$6.3					\$280.4
Hayden Is. Interchange								\$2.3	\$3.7	\$2.6					\$8.5
SR-14 Interchange							\$0.6	\$1.1	\$10.2	\$13.7	\$3.5				\$29.1
Demolition											\$13.0	\$13.7			\$26.7
Mainland Connector							\$10.6	\$19.9	\$11.4						\$41.9
Marine Drive Interchange															
Washington North															
LRT Guideway and Support Facilities				\$0.9	\$5.2	\$33.2	\$76.6	\$74.4	\$60.9	\$2.3					\$253.5
LRT System										\$55.7	\$14.4				\$70.2
Park-and-Ride						\$11.7	\$87.1	\$63.3							\$162.0
LRV							\$54.8	\$21.3	\$14.6						\$90.8
Interest: TriMet Interim Borrow Repaid w/New Starts						\$0.1	\$1.3	\$6.6	\$8.7	\$7.0	\$4.7	\$1.5	\$0.6	\$0.5	\$30.9
Interest: ODOT Interim Borrow Repaid w/ Toll Bonds												\$16.3			\$16.3
Interest: ODOT Interim Borrow Repaid w/ New Starts														\$15.9	\$15.9
Finance Costs: CAPI, Issuance, Reserves												\$32.7			\$32.7
Total	\$6.0	\$9.6	\$7.2	\$8.5	\$25.1	\$156.8	\$304.6	\$264.8	\$165.5	\$89.1	\$37.1	\$65.8	\$0.8	\$16.4	\$1,157.2

PLAN REVENUES ARE SHOWN ON FOLLOWING PAGE

CRC-FFGA Finance Plan Continued

REVENUE	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Spent: ODOT - Federal Funds															
Spent: ODOT - State Funds															
Spent: WSDOT - Federal Funds (1)	\$6.0	\$9.6	\$7.2	\$8.5											\$31.3
Spent: WSDOT - State Funds															
ODOT Appropriation – Federal					\$13.7	\$9.0									\$22.7
TriMet					\$3.4	\$25.0	\$16.0	\$1.3							\$45.7
ODOT GO Bond															
TIFIA												\$4.5			\$4.5
Toll Bonds												\$174.5			\$174.5
Pre-Completion Toll Proceeds: Pay-Go							\$7.1	\$13.8			\$7.6				\$28.5
New Start Funds (Shown when Used)						\$48.9	\$151.1	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0	\$100.0	\$50.0	\$850.0
ODOT Interim Borrow Repaid w/ Toll Bonds					\$7.9	\$73.9	\$64.4					-\$146.3			\$0.0
ODOT Interim Borrow Repaid w/ New Starts							\$5.8	\$78.0	\$68.6	\$22.8	\$3.7	-\$57.2	-\$100.0	-\$21.7	\$0.0
TriMet Interim Borrow Repaid w/New Starts						\$0.0	\$60.2	\$71.7	-\$3.1	-\$33.7	-\$74.2	-\$9.7	\$0.8	-\$11.9	\$0.0
TOTAL	\$6.0	\$9.6	\$7.2	\$8.5	\$25.1	\$156.8	\$304.6	\$264.8	\$165.5	\$89.1	\$37.1	\$65.8	\$0.8	\$16.4	\$1,157.2

(1) Matched with Toll Credits.

2.6 Local Match

The finance plans for CRC-PP and CRC-FFGA have been structured to maintain a minimum 20 percent cumulative local match each month throughout the plan. The federal funds provided by WSDOT for preliminary engineering purposes between December 2009 and June 2013 were matched with toll credits. From June 2013 forward, the local funding sources incorporated with the finance plan include (i) ODOT's funding contribution except for the portion funded with federal funds, (ii) toll bond proceeds and interim borrowing repaid with toll bond proceeds, (iii) pre-completion toll revenues employed on a pay-go basis, and (iv) TriMet funds. TIFIA loan proceeds are not a source of local match; they are considered a federal contribution by USDOT.

2.7 Contingency

As explained earlier there is substantial contingency in the capital cost estimates for CRC-PP and CRC-FFGA. The cost of CRC-PP includes about \$339 million (2013\$) of allocated contingency and \$37 million (2013\$) of unallocated contingency. The \$376 million (YOES) total contingency represents an 18.2% contingency rate for CRC-PP. The capital cost estimate for CRC-FFGA includes about \$142.9 million (2013\$) of allocated contingency and \$22.8 million (2013\$) of unallocated contingency. The \$165.7 million (2013\$) total contingency represents a 20.2% contingency rate for CRC-FFGA.

2.8 Bridge Height Mitigation Cost

As explained earlier, bridge height mitigation costs are, for the time being, viewed as detached from the project capital to facilitate local deliberations regarding how to fund the bridge height mitigation costs. These deliberations have considered using toll revenues/proceeds and/or additional ODOT funds to fund height mitigation costs.

The base finance plan is capable of funding the project including the bridge height mitigation costs without additional ODOT funds. The finance plan incorporates \$1.304 billion in project funding from toll revenues; this includes TIFIA loans, toll bonds, and pre-completion toll revenues on a pay-go basis. The actual funding capacity of the toll revenues under the base assumptions (interest at 50 BPS over current rates, \$900 million TIFIA, and state-back bonds) is \$1.471 billion; \$167 million more than required. Accordingly, under the proposed finance plan with base assumptions, height mitigation costs can be funded without additional ODOT funds and still have about \$80 million of additional capacity for potential cost overruns, if any. Even if interest rates increase 100 basis points above current rates, the finance plan would be capable of paying about 80% of the bridge height mitigation costs with toll-related revenues.

2.9 Risk Mitigation

The project capital plan is built on assumptions and incorporates opportunities to mitigate the likelihood and reduce the impacts of unanticipated cost-revenue imbalances, as outlined in the subsections that follow.

- No Reliance on On-Going Toll Rate Increases: While toll rates are anticipated to increase over time, the debt repayment plan does not require any toll rate increase after the replacement bridge fully opens to traffic operations (2021). This conservative assumption makes it likely that additional toll revenues will be available, but this finance plan does not rely on them, so any such funds could be available for unanticipated cost-revenue imbalances. Regardless, covenants will be provided requiring toll rates to be adjusted if required to meet all obligations related to borrowings.
- Necessary Deductions Taken from Gross Revenues to Reflect Net Revenues: Net revenues reflect deductions from gross revenues to account for uncollectible accounts, facility O&M costs, toll collection O&M costs, credit card fees, bridge failure and business disruption insurance, and reserve account contributions.
- Adequate Coverage Provided: The financial plan assumes 1.3X coverage for state-backed toll bonds (to protect the state general fund) and 1.15X coverage (on aggregate debt) for the TIFIA loan.
- Headroom Retained on Assumed Toll Rates: The assumed toll rates are significantly below the rates at which toll revenue is maximized; providing over 75% “headroom” should rates have to be increased to cover unanticipated shortfalls.
- Finance Plan based on Dependable Capital Cost Estimating Methodology: WSDOT has developed a nationally recognized, comprehensive risk management program. The cornerstone of the risk management program is the Cost Estimate Validation Process (CEVP). CEVP uses subject matter experts in a workshop format to identify and quantify risks and opportunities relating to project costs and schedule. CEVP then applies statistical models and mathematical simulations to arrive at a probability distribution of costs. Cost estimating risk has been mitigated by extensive soil and pile driving testing to better assess bridge foundation requirements and their associated costs. In addition, contingency levels for CRC-FFGA are consistent with FTA risk-informed expectations for contingency at this level of project development.
- Some Cost Risk to be shifted to Private Contractors: Major components of CRC-PP/CRC-FFGA will be delivered under a Design-Build contract that will include a Guaranteed Maximum Price (GMP); shifting risks to the selected private firm.
- Extensively Vetted Traffic and Toll Revenue Forecasts: While not yet quite investment-grade (the initial investment grade study is currently planned for December 2013), the traffic and revenue analysis underlying the finance plan was extensive, prepared by major firms involved in investment grade analyses.
- Finance Plan Addresses Operating and Maintenance Costs and Reserves: By state statutes¹⁰ toll rates must be set and kept at levels that meet (i) operating, maintenance, preservation, administration and enforcement costs; (ii) the timely payment of debt service and other financing costs, (iii) reserve requirements, (iv) minimum debt coverage, (v) all other covenants in the borrowing documents, and (vi) any other financial obligation related to the tolled facility. A covenant to this effect will be incorporated in applicable borrowing agreements. In addition, toll revenues will be entirely dedicated to the project; use of project

¹⁰ ORS 383.004.

toll revenues for other projects or general expenses will be prohibited. The finance plan incorporates reserves to cover toll revenue shortfalls, including: (i) a Revenue Stabilization Reserve to fund shortfalls during the time period when toll rate increases are being processed, (ii) an Operations and Maintenance Reserve to cover insurance, credit card fees, tolling O&M, and facility O&M costs, and (iii) a Repair and Replacement Reserve. The finance plan also incorporates bridge failure and business disruption insurance.

- **Strong Market Condition**: The I-5 Interstate Bridges exhibit long-term, growing demand, except for limited downturns during economic recessions. The I-205 Glenn Jackson Bridge is the only other bridge providing bi-state connectivity in the Portland region; the next closest bridges are over 40 miles away. The I-205 Bridge is reaching its practical capacity and is not an attractive alternative for most origins and destinations in the I-5 corridor. Depending on direction, 68-75 percent of trips crossing the I-5 bridges access and/or egress I-5 within the five-mile study area. Diversion of these trips to I-205 requires substantial out of direction travel; illustrating why I-5 is the route of choice for many trips. Projections show significant growth in the amount of trade passing through the Port terminals and airport. In addition, the amount of daily commuter traffic (i.e. work trips) between Washington and Oregon is expected to grow. Thus, long-term market demand for the I-5 bridges appears stable.

2.10 Capital Reserves

The finance plan incorporates a capital reserve capacity that could be used to pay cost overruns, if any.

- The proposed finance plan with base assumptions provide sufficient funding capacity to pay all project costs (including all bridge height mitigation costs) and offer an additional capital funding capacity of about \$80 million. The additional funding capacity would be about \$280 million (after height mitigation costs) if interest rates are at current levels; and no material reserve capacity if interest rates are 100 basis points above current rates.
- Under the current finance plan, repayment of the TIFIA loan and toll bonds does not rely on any increases in Post-Completion toll rates. This does not mean Post-Completion Toll rates will remain unchanged; just that those increases are not built into the current funding capacity. In a sensitivity test of the TIFIA with toll revenue bonds finance structure it was determined that a toll rate increase of 5% every five years (on average 1 percent per year) would yield \$55 million more net funding capacity than without consideration of the increases. The yield would be materially greater if the toll bonds were state-backed.
- The current finance plan does not use the residual toll revenues remaining each year after payment of all O&M and debt service costs. For example, in the first ten years of Post-Completion Tolling the annual residual toll revenue ranges between \$4.5 million and \$9.5 million per year. These ten years of residual revenues have a capitalized value of about \$54 million at a 4.5% discount rate.
- As explained earlier, there is substantial headroom in the toll rates. Even relatively small increases in the off-peak rates can yield material amounts of additional project funding, if necessary.

- The construction schedule includes improvements that are (a) not slated to start construction until the latter years of the construction schedule and (b) not necessary to have a functional CRC-FFGA project. These improvements can be deferred if necessary.

3.0 TRIMET AGENCY-WIDE OPERATING FINANCE PLAN

Key Changes Since 2012 New Starts Report: TriMet's financial condition has improved since 2012. Tax revenues continue to recover from recession lows. TriMet prevailed in its previous labor arbitration with the ATU. A result of the change to medical benefits was much improved medical benefit costs. While the previous labor arbitration just recently ended, the term of that contract is expiring. TriMet is now re-engaged in labor negotiations with ATU. This forecast is based on the offer proposed in those negotiations by TriMet management. Generally the offer reflects for union employees the benefit package currently provided non-union employees. TriMet executed an agreement with C-TRAN wherein each party committed their funding shares for CRC LRT O&M costs. The CRC LRT O&M costs and revenues in this plan reflect the C-TRAN-TriMet agreement. The previous plan assumed implementation of the additional payroll tax authority granted to TriMet; this current plan does not. New payroll tax revenues are shown in the current plan, but only those from the phase-in of the payroll tax rate increase approved by the Board in 2004.

3.1 Background

The TriMet Agency-Wide Operating Finance Plan begins with TriMet's FY14 Adopted Budget. The plan forecasts all TriMet system operating and capital revenues and expenditures through FY31. The expenditure forecast includes the:

- Cost of operating and maintaining the existing transit system
- Projected increases in those costs
- Projected increases in fixed route bus and rail service
- Projected costs of ADA complementary paratransit service
- Operating cost of service expansions such as the CRC-LRT extension
- Capital expenditures from the Capital Improvement Program
- Debt service expense and projected increases

This section details the revenue and expenditure assumptions and provides an explanation of each line of the 20-year agency-wide cash-flow table shown in Appendix A, Table 1.

3.1.1 Forecast Preparation

The financial forecast is consistent with FTA guidance for finance plans submitted for New Starts purposes; it generally was prepared as follows:

- Revenues and expenditures are projected on a fiscal year basis based on the assumptions described below.
- Annual costs are subtracted from the annual revenues for each fiscal year to determine that year's General Fund Result.
- The General Fund Result for each fiscal year is added to or subtracted from TriMet's Beginning Restricted and Unrestricted Cash Reserves to estimate Beginning Restricted and Unrestricted Cash Reserves for the subsequent fiscal year.
- Unrestricted Cash Reserves are calculated by subtracting Debt Service from Restricted and Unrestricted Cash Reserves.

- Funds in Unrestricted Cash Reserves are expressed as a Percent of Total Expenditures Net of Debt Service.
- At a minimum, the Plan must demonstrate an Unrestricted Cash Reserve of at least 12%.

Detailed results illustrating TriMet system-wide, year-by-year operating and maintenance costs and revenues and capital costs in year of expenditure dollars are provided in Appendix A, Table 1. The worksheet labeled Table 1 in Appendix A contains three sub-tables:

- General Fund Cash Flow
- Statistics
- Capital and Operating Projects Cash Flow

Historical operating and capital cost and revenue data (beginning with FY86) can be seen in in Appendix A, Table 1 ('unhide' columns in Excel spreadsheet to view these historical data in Table 1.) These data are expressly shown in Appendix C Exhibit 1, Appendix D, Exhibits 1-8, and 12. Further data is provided in the TriMet supplemental information in Appendix I.

3.1.2 Agency-wide Plan and Stress Test Forecasts

The primary forecast presented is TriMet's Agency-wide Plan Forecast (Appendix A, Tables 1-11). Two stress test forecasts are also presented (Appendix B, Tables 1 and 2).

The following sections describe the variables and assumptions for each line of the Agency-wide Plan Forecast shown in Appendix A, Table 1.

3.2 Revenues

The sources of operating revenues shown in Rows 1 through 10 (as numbered in Column A of the spreadsheet) on Table 1 in Appendix A are described below.

3.2.1 Passenger Revenues (Appendix A, Table 1, Line 1)

At about 24% of total operating revenue, passenger revenue is TriMet's second largest revenue source. During the last ten years, passenger revenues grew at an average annual rate of 6.8%. This strong growth is the result of growing ridership, multiple service improvements, and a continuous program of fare increases during this period.

Line 1 in Appendix A, Table 1 shows annual estimates of passenger revenues from the entire system, both from service existing at the start of the planning period and from new service put in place during the planning period. The forecast of future passenger revenue in Line 1 reflect the recent fare policy changes, including the elimination of the TriMet fare zone system in favor of a flat-fare system, as well as the elimination of Fareless Square and the Free Rail Zone. The elimination of the fare zone system had the effect of raising the fares for certain trips, and resulted in an additional \$8.7 million in farebox revenues. The simplified fare system will also facilitate a smooth transition to an electronic fare payment system ("E-Fare"), a project already underway with full implementation anticipated by FY2017. The forecast also assumes by

FY2017 the implementation of a “fare reciprocity agreement” with Portland Streetcar Inc. (PSI); that results in on-going reduced farebox revenue to TriMet of about \$1.5 million per year.

The passenger revenue forecast is derived from forecasts of ridership and fares on bus, MAX, WES commuter rail, and LIFT paratransit services. Passenger revenue is estimated by multiplying the average fare for each mode by the estimated ridership for that mode.

A detailed year-by-year forecast of passenger revenues is provided in Appendix A, Table 2.

The following subsections detail the forecast. Section 3.2.1.1 describes the assumptions underlying the forecast of transit fares. Section 3.2.1.2 describes the assumptions underlying ridership forecasts.

3.2.1.1 Forecast of Average Transit Fares

In 1990, TriMet first implemented a policy of regularly increasing fares with inflation. In addition, TriMet has occasionally approved ‘special’ fare increases to offset spikes in diesel fuel costs or to increase service. Recently the TriMet Board approved a revamped fare structure beginning in FY13 that (i) eliminated the fare zone system and replaces it with a \$2.50 flat fare with proportionate increases in passes and (ii) terminated fareless square for rail trips.

Passenger revenues were also affected by an agreement between TriMet, City of Portland, and Portland Public Schools (PPS) regarding monthly passes for high school students. The forecasts assumes that TriMet receives \$1.15 million from Portland and PPS in FY2013, causing it to absorb \$1.8 million in foregone fare revenues due to the agreement. This agreement is assumed to end in FY2014, when TriMet begins to receive regular fares from PPS students. The forecast also assumes that TriMet will continue the low-income subsidy, which shows as an annual \$1.0 million expense under the general and administration line item.

In the forecast, fares generally increase by the CPI. However, the forecast assumes implementation of electronic fare collection in FY2017, which results in a net fare increase of about a 2.5-cent increase above CPI.

The calculations of the passenger revenues are detailed in Appendix A, Table 2 and summarized in Appendix A, Table 1, Line 1. Table 3-1, below, summarizes the past and future fare increases.

**Table 3-1
TriMet Fare increases**

Year	Passenger Revenue 000s	Reason for Fare Increase		
		Regularly Scheduled	Special	Diesel Fuel
FY02	\$53,191		\$0.05	
FY03	\$52,746			
FY04	\$55,664	\$0.05		
FY05	\$59,487	\$0.05		\$0.05
FY06	\$68,484	\$0.05		\$0.05, \$0.15
FY07	\$75,931	\$0.05		
FY08	\$80,861	\$0.05		
FY09	\$90,017	\$0.05		\$0.20
FY10	\$92,806	\$0.00		
FY11	\$96,889	\$0.05		
FY12	\$102,240	\$0.05		
FY13	\$113,352	\$0.10-\$0.40		
FY14	\$121,553	\$0.00		
FY15(1)	\$125,525	\$0.00		

(1) FY17 and beyond, average fare is assumed to grow with inflation.

3.2.1.2 Ridership Forecasts

A. FY2012 Ridership

The forecast of passenger revenues is based in part on forecasts of ridership. FY2013 ridership is the starting point for the ridership forecast.

FY2013 annual fixed route boardings: In fiscal year 2013, a total of 99.3 million boardings were carried on TriMet’s fixed route system – a decrease of 2.8% from FY12. FY13 ridership losses reflect the loss of (mostly free) MAX rides in the former Rail Free Zone, the effects of the fall 2012 fare increase, and, during the second half of the fiscal year, more moderate gas prices than in FY12.

FY2013 MAX boardings: During fiscal year 2013, MAX carried a total of 39.1 million boardings, down 7.3% from FY12. MAX averaged 121,000 weekday (+2.6%), 88,000 Saturday (-8.3%) and 63,300 Sunday (-7.3%) rides. MAX patronage growth began slowing late in FY12, due to increased fare enforcement and the loss of the free riders in the former Fareless Rail Zone.

FY2013 annual bus boardings: Buses carried a total of 59.7 million boardings in FY13, an increase of 0.2% from the FY12 level. Despite the September 2012 fare increase, bus rides were up consistently through most of the fiscal year, bus rides were down in the last quarter. In FY12, local gas prices spiked in the fourth quarter spring, while in FY13 they were generally \$.30-\$.40 per gallon below the price of the prior year.

FY2013 annual WES boardings: WES carried a total of 442,120 boardings in FY13 and averaged 1,700 daily rides (+6.3%). WES patronage was up each month of the fiscal year.

FY2013 LIFT rides: For FY13, LIFT carried a total of 1,037,700 rides, a decrease of 2.4% from the prior year. In FY13 rides declined by 2.4%, while LIFT and cab vehicle miles fell by 2.0%

B. Ridership Growth: Existing MAX Lines (Blue, Red, Yellow and Green Lines)

As modeled, MAX ridership growth consists of: (i) underlying growth on the existing (at the time of this report) MAX lines plus (ii) additional ridership on new MAX lines, including the CRC LRT line. This subsection focuses on ridership growth on existing MAX lines; ridership on new lines is discussed in subsections F and G, below.

Future ridership on the existing MAX lines is projected to grow by on average 3.3% per year throughout the forecast period, consistent with the historic trend. The forecast incorporates rail service increases needed to meet forecasted rail ridership. Specifically, the forecast assumes that throughout the forecast period rail vehicle hours for the existing MAX lines (in the aggregate) will grow at 1.5% in FY2015 and thereafter at 0.5% per year (Appendix A, Table 2C) and rail miles will grow 1.25% in FY2015 and thereafter at 0.5% per year (Appendix A, Table 2E) to accommodate peak ridership growth on these lines (Added O&M Cost shown in Appendix A, Table 1, Line 30).

C. Ridership Growth: Bus Service

Bus ridership growth consists of (i) estimating underlying bus ridership growth on existing service, (ii) adding supplemental bus ridership growth due to service increases, and (iii) deducting bus ridership diverted to new MAX lines. Bus ridership on existing services is forecast to grow during the forecast period at 0.8% per year, in line with historical trends, employment growth, and increasing congestion.

Annual bus service increases are incorporated in the forecast to meet peak hour ridership demand and maintain schedule reliability. Bus service hours are assumed to increase on average at 0.8% per year throughout the forecast period (Appendix A, Table 2D, Line 5 (added O&M costs shown in Appendix A, Table 1, Line 29). These service increases are assumed to generate 23 boardings per vehicle hour added. The additional passenger revenue that results from this increased ridership and the increased operating costs that result from the service increase are included in the forecast.

It is estimated that about 4,500 daily bus boardings will be diverted to the Portland-Milwaukie Light Rail Line. The resulting loss in bus passenger revenue is accounted for in the forecast. The TriMet share of the CRC light rail extension does not have a material impact on TriMet bus ridership or passenger revenue.

D. Ridership Growth: Westside Express Service (WES)

WES ridership is projected to grow at 5% in FY14, 4% in FY15, and 3.5% per year in FY16 and beyond.

E. Ridership Growth: ADA Paratransit or “LIFT”

The forecast of growth in LIFT ridership is based on the state’s population forecast for the tri-county region – which is done by age cohort. About 30% of LIFT trips are made by riders over age 70. Their LIFT ridership is assumed to grow at the same rate as the State of Oregon’s forecasted growth rate for elderly population. About 70% of LIFT trips are made by riders under age 70. Their ridership is assumed to grow at the same rate as the State of Oregon’s forecasted growth rate for total population.

Consistent with Ordinance 321, approved by the Board in February 2012, the LIFT ADA transit cash fare is projected to increase in 30-cent annual increments over three years until it reaches the same level as the non-LIFT cash fare. Once the LIFT cash fare and non-LIFT cash fare are at the same level, they would increase at the same rate going forward. LIFT passes are priced at approximately 29 cash trips per month. LIFT fares increase with CPI in future years. This planned increase in LIFT fares reduces projected demand for LIFT ridership incorporated into the Accessible Transportation Program (ATP or LIFT) forecast, as explained in Section 3.3.9.

LIFT ridership was forecasted on a year-by-year basis through FY2017 (see Appendix A, Table 6), and afterwards at 2.4% per year through FY2019, 2.0% per year through FY2024, and at 1.6% per year thereafter.

F. Ridership Growth: Portland-Milwaukie Light Rail Project: Currently Under Construction

The forecast incorporates passenger revenues and operating costs for the planned Portland-Milwaukie Light Rail Project (PMLRT). PMLRT is projected to carry 17,000 average weekday boardings in FY16, the opening year, then grow 3.5% in FY17 and FY18, and at 1.82% per year thereafter. Annual ridership is calculated by multiplying forecast weekday boardings by 327 (TriMet’s historic annualization rate for MAX ridership). It is estimated that about 4,500 daily bus boardings will be diverted to PMLRT. The resulting bus passenger revenue loss is accounted for in the forecast of passenger revenues.

G. Ridership Growth: Columbia River Crossing Light Rail

Ridership for the CRC LRT was forecasted, using the Metro regional travel demand model, for the opening year of revenue service and the planning horizon year (FY30). A preliminary estimate of passenger revenues was then made by multiplying the ridership forecast by average MAX fare, and interpolating for the intervening years. However, as part of the discussion between C-TRAN and TriMet regarding CRC LRT O&M issues, it was decided to take a conservative approach by limiting passenger revenues to amounts calculated by capped farebox recovery rates. The current farebox recovery rate on the Yellow Line (which is the line extended by CRC LRT) is 52%, which was used as the cap to determine passenger revenues in 2030 – and

that the recovery rate would escalate from a starting level of 40% in 2019. These calculations are shown in Appendix A, Tables 14-14H, in particular Table 14H.

Under the terms of the agreement between C-TRAN and TriMet, all passenger revenues, whether initially collected by TriMet or C-TRAN would be conveyed to TriMet to pay certain CRC LRT O&M expenses. Thus all of the CRC LRT revenues are shown in the TriMet cash flow, and none are shown in the C-TRAN cash flow. Passenger forecasts shown in Appendix A, Table 14H are added to the passenger forecasts in Appendix A, Table 2; and then linked to Table 1.

H. Conclusions

The result of the above assumptions is an average annual passenger revenue growth rate of 5.1% per year between FY12 and FY31. This growth rate reflects annual fare adjustments for inflation, passenger revenue from the yet-to-open Portland-Milwaukie Light Rail and the proposed Columbia River Crossing light rail service, annual increases in bus and rail service, and the recent fare policy change to a flat-fare system.

3.2.2 Other Operating Revenues (Appendix A, Table 1, Line 2)

Other Operating Revenue (Line 2) includes a variety of smaller continuing funding sources. A detailed forecast of these revenues is provided in Appendix A, Table 3.

Most sources of Other Operating Revenue are estimated to increase between 2%-3% throughout the forecast period. Notable revenue sources in this line item include:

- Revenues from TriMet's current reciprocal fare agreement with C-TRAN. Under the agreement (i) C-TRAN pays TriMet for C-TRAN pass fares used on TriMet's system and (ii) TriMet pays C-TRAN for TriMet pass fares used on C-TRAN's system. The revenues shown are a net result reflecting the fact that there are more C-TRAN pass fares on TriMet than TriMet pass fares on C-TRAN. These estimates do not include the revenue sharing for CRC LRT, which is addressed separately. (Appendix A, Table 3, Line 1)
- Advertising Revenues. Advertising revenues are guaranteed by a contract with an advertising vendor through FY13 under the terms of TriMet's advertising contract. In future years, advertising revenues increase 2.5% per year. (Appendix A, Table 3, Line 2)
- Fiber Optic Lease Revenue is assumed to be flat during the forecast period (Appendix A, Table 3 Line 3).
- City of Wilsonville contributions for WES operations. Under the *Intergovernmental Funding Agreement for the Wilsonville to Beaverton Commuter Rail Project*, this contribution is capped at \$300,000 a year for the first five years of operation and prorated for a partial first year; the contribution increases with CPI beginning FY14. (Appendix A, Table 3, Line 4)
- Portland Mall Maintenance reimbursement (PMMI). These payments are as agreed to with the City and are assumed to grow 3.0% per year thereafter. Costs are included in Facilities Maintenance department. (Appendix A, Table 3, Line 5)

- City of Milwaukie’s installment payment plan for its share of the Portland-Milwaukie LRT Project is shown in Appendix A, Table 3, Line 6. This is in accordance with the intergovernmental agreement between Milwaukie and TriMet.
- As an employer that provides a prescription benefit to Medicare eligible retirees, TriMet is eligible for Medicare Part D Drug Reimbursement. These revenues are assumed to grow at 2% per year during the forecast period. (Appendix A, Table 3, Line 7)
- City of Portland reimbursement for Streetcar personnel costs. TriMet’s annual payment to Portland Streetcar, Inc. for TriMet’s share of Streetcar’s operating cost is included in the TriMet Streetcar budget. (Appendix A, Table 3, Lines 8)
- C-TRAN payments for CRC LRT O&M (excluding farebox revenues). These revenues are as stated in the executed agreement between C-TRAN and TriMet for CRC LRT O&M, and as calculated in Appendix A, Table 14.
- Miscellaneous Revenues include a variety of revenues from year to year, generating \$2.0-\$2.5 million a year on average. TriMet received a one-time \$750,000 settlement from its payment card bank, which increased FY12 revenues. These revenues are assumed to grow at 3% per year. (Appendix A, Table 3, Line 10)

3.2.3 Payroll Tax Revenues (Employer and Municipal) (Appendix A, Table 1, Line 3 and Appendix A, Table 3A)

3.2.3.1 Tax Rate

Payroll taxes are TriMet’s primary source of revenue for operations. As of January 1, 2013 the tax rate is 0.7118% tax (\$7.118 per \$1,000) on the gross payrolls of private businesses and municipalities within the district. The payroll tax is dedicated to TriMet. The employer/municipal payroll tax accounts for approximately 50% of continuing operating revenues.

The Oregon Legislature (HB 3037) gave the TriMet Board the authority to increase the payroll tax for employers and self-employed individuals from 0.6218% to 0.7218% over a ten-year period. The TriMet Board approved the increase at their August 11, 2004 meeting. The payroll tax rate will be increased 1/100th of a percent each year between January 1, 2005 and January 1, 2014. Thus on January 1, 2014 the payroll tax rate will rise to 0.7218%. The forecast shown in this report assumes no further payroll tax increases throughout the planning period.

In its 2009 session, the Oregon Legislature (SB 34) gave the TriMet Board the authority to increase the payroll tax rate for employers and self-employed individuals from 0.7218% to 0.8218%. The legislation specifies that the increase must be phased in over ten years, no annual increase can exceed 0.02%, and the TriMet Board must first determine that the economy in the district has recovered to an extent sufficient to warrant the increases. The forecast shown in this report does not include revenue from this phased rate increase to 0.8218%.

Payroll tax revenues in the forecast are the cash receipts received between July 1 and June 30 of each year. These are different from what is reported in the audited financial statement. Audit

basis payroll tax revenues are recognized in the period they are earned (first quarter fiscal year cash receipts are earned/recognized in the fourth quarter of the prior fiscal year, etc.) and include an estimate of revenues earned but not received (receivables) during that period.

3.2.3.2 Revenue Forecast

The payroll tax is a stable and growing revenue source. On average, payroll tax revenues escalate at a rate that exceeds the rate of inflation. During recessions, payroll tax revenues decline as employment declines. However, in non-recessionary years this source has grown at a rate greater than inflation, supplying on average real growth in revenues.

The underlying growth of payroll tax revenues is directly related to growth in employer payrolls within the district, which in turn is caused by employment growth and wage inflation. The economics consulting firm ECO Northwest provides TriMet with a payroll tax revenue and economic forecast for the current fiscal year and the next three years. ECO Northwest produces two TriMet forecasts 1) an unadjusted statistical fit forecast that is built econometrically from historical data and 2) a risk adjusted forecast. ECO Northwest believes that downside risks continue to dominate the economy. Therefore, ECO Northwest recommended adopting the risk adjusted forecast. Their risk-adjusted forecast uses a one standard deviation reduction in payroll tax revenue growth rates relative to the unadjusted model's predicted growth rates.

The forecast assumes ECO Northwest's projection of payroll tax growth in FY15 and FY16. In subsequent years, the forecast assumes 1.2% annual employment growth, 0.8% annual real wage growth, and 2.7% annual inflation. These assumptions are based on average growth rates of employment, inflation, and real wage growth of the last fifteen years in the Portland region. These growth factors yield a 4.76% annual payroll tax growth

$1.012 \text{ (projected regional employment growth)} \times 1.027 \text{ (inflation)} \times 1.008 \text{ (productivity)} = 1.0476$
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Recall that the above information relates to the underlying growth, not growth from increasing the tax rates. New revenues from increased payroll tax rates are discussed in Section 3.2.11.

3.2.4 Self-Employment Tax Revenues (Appendix A, Table 1, Line 4)

In addition to the payroll tax, TriMet levies a 0.7118% (as of January 1, 2013) tax on the net income earned within its district by self-employed individuals. Revenues from this source were about \$11.3 million in FY13, making up about 4.5% of total payroll tax revenues. Revenues from this tax are shown in the forecast on a cash basis. These are different from what is reported in the audited Financial Statements.

Self-employment transit tax revenues tend to increase at very high rates during times of economic growth and decrease more than the employer payroll tax during recessions.

Self-employment tax receipts increased 19.8% in FY06 (up \$2 million) and 21.3% in FY07 (up another \$2 million) after growth of 4.0% in FY04 and 5.0% in FY05. Self-employment tax

revenues decreased 2.7% in FY08, decreased 7.7% in FY09, increased 1.7% in FY10 (a 0.2% decline net of the tax rate increase, decreased 0.7% in FY11 (a 1.8% decline net of the tax rate increase) and increased 8.3% in FY12 as the local economy began to recover. TriMet has adopted the federal definition of net earnings from self-employment. Changes in federal tax law in 2010, which allow “a deduction for health insurance costs for self-employed individuals” likely contributed to the decline of self-employment revenues in FY11.

ECO Northwest is forecasting underlying growth in self-employment tax proceeds of 7.0% in FY14, 6.0% in FY15, and 3.7% per year thereafter.

Similar to that discussed above for payroll tax revenues, added revenues from the increases in the self-employment tax rate are discussed in Section 3.2.11.

3.2.5 State In-Lieu-of-Tax Revenues (Appendix A, Table 1, Line 5)

State in lieu revenues were \$2.7 million in FY13. State of Oregon government offices located within TriMet’s district boundaries are not subject to the employer/municipal payroll tax. Instead, they make “in lieu of” tax payments to TriMet based on 0.6218% of their gross payrolls.

Between FY83 (when the program was instituted) and FY95 the growth rate of state in lieu receipts was 8.24% per year. In the next two fiscal years there were substantial decreases in these receipts due to the conversion of Oregon Health & Science University (OHSU) one of Oregon’s largest employers, from a State agency paying in-lieu of tax to a local government employer paying payroll tax. State-in-lieu of revenues grew at an average annual rate of 4.0% last ten years.

ECO Northwest projects state in lieu revenues increasing 4.6% in FY14. In subsequent years, state in-lieu revenues grow 4.0% per year.

3.2.6 Operating Grants and Capital Project Reimbursements (Appendix A, Table 1, Line 6 and Appendix A, Table 3B)

A detailed buildup of the forecast of these grants is provided in Appendix A, Table 3B - Grants and Capital Project Reimbursements, which includes a variety of grant reimbursements from local, state, and federal sources, such as:

Federal Grants: Federal formula funds in total constitute about 15% of TriMet’s continuing resources for operations. In addition to almost \$52 million of Section 5307 Urbanized Area and Section 5337 State of Good Repair funds, TriMet receives \$14 million dollars a year in federal highway program funds through the Surface Transportation Program (STP) and Congestion Mitigation Air Quality (CMAQ) Program to support the regional rail program, passenger amenity improvements, and Regional Transportation Options.

MAP-21 retained TriMet’s State of Good Repair (SGR) funding authorization (the old Fixed Guideway Modernization program) with an addition of \$4.6 million in FY13 and in FY14 over FY12’s Fixed Guideway Modernization appropriation of \$11.8 million. Additional SGR

revenues will be used to cover additional rail capital maintenance that had not been previously incorporated into the forecast so will not improve the bottom line. The forecast assumes the higher SGR revenue and a like amount of offsetting additional expenditures for rail SGR continue throughout the forecast growing 2% per year. Also under MAP-21 TriMet will receive funds for bus purchases on a formula basis (Section 5339 Bus and Bus Facilities Grant); TriMet's first six month appropriation of funds is \$1.3 million. The forecast assumes an additional \$2.6 million in FY13 and FY14 to help fund the FY14 bus order. The Job Access Reverse Commute (JARC) program, which provided approximately \$600,000 a year to TriMet via formula to provide transportation for low-income individuals, has been eliminated. TriMet is reviewing which programs funded by JARC to recommend continuing. The New Freedom program has been folded into an expanded 5310 Elderly and Disabled Transportation program, which funds service improvements that address the transportation needs of persons with disabilities. TriMet had been receiving about \$400,000 a year from New Freedom to provide community-based transportation services for elders and people with disabilities through Ride Connection. MAP-21 increased this allocation to about \$1.2 million a year.

MTIP and STIP Funds: The following operating funds, which are incorporated in the finance plan, were provided to TriMet by Metro, the Metropolitan Planning Organization (MPO) through the Metropolitan Transportation Improvement Program (MTIP). MTIP funds are Highway Program funds, either Congestion Mitigation or Air Quality (CMAQ) or Surface Transportation Program (STP) funds, which by law can be "flexed" for use in transit programs.

June 2011, TriMet issued \$155.66 million in Capital Grant Receipt Revenue Bonds. As provided by the "*Revised and Restated Intergovernmental Agreement to Provide Flexible Funds for the Milwaukie LRT, Commuter Rail, Portland-Lake Oswego Transit and Southwest Corridor Projects*" (IGA) the bonds are secured by a stream of Metropolitan Transportation Improvement Program (MTIP) funds pledged to TriMet by Metro for the listed projects. TriMet pays the local match at no additional cost to the district with a preventive maintenance fund exchange.

Metro provides CMAQ funds (and the related expenses) for TriMet's Transportation Demand Management program, through the Metropolitan Transportation Improvement Program (MTIP) process.

BABs subsidy payments: TriMet issued \$49.550 million of bonds October 2009. Most of the bond proceeds were used to reimburse TriMet for past expenditures on Commuter Rail and the 2009 bus purchase. The bond proceeds will also be used to partially pay for the replacement of the bus and rail communications system. For a portion of the borrowing, TriMet issued Build America Bonds (BABs). Unlike the tax-exempt interest associated with traditional municipal bonds, interest paid by the issuer of Build America Bonds is treated as taxable income to holders of the bonds. But state and local government issuers can use one of two tax benefit options for their Build America Bonds. By issuing Direct Payment BABs, TriMet will receive periodic payments from the federal government in an amount equal to 35.0% of the interest paid to bondholders. The forecast includes a reduction in the amount of the BABs subsidy due to sequestration.

Funds from the state Special Transportation Fund (STF) discretionary grant program for elderly and disabled transportation are assumed for RideWise program, growing 3.0% per year.

TriMet uses its federal formula grants for preventive maintenance. However, there are many other grants that are awarded to TriMet expressly for capital improvements and purchases. A partial list includes:

3.2.7 Capital Grants (Appendix A, Table 9)

TriMet uses its federal formula grants for preventive maintenance (Appendix A, Table 3B). TriMet employs a variety of other grants for capital improvements and purchases. These are enumerated on Appendix A, Table 9 and partially in Table 3C; these include:

- \$38 million of American Recovery and Reinvestment Act (ARRA) funds for capital and operating projects (FY10 and FY11). This source is not anticipated in the future. (Appendix A, Table 3C)
- Appropriations from the ODOT's Special Transportation Fund (STF) Discretionary Grant program for Accessible Transportation (LIFT) vehicles. (Table 10, line 2). The Special Transportation Fund Discretionary Grant program has provided funding through the Oregon Department of Transportation for the vehicle and other capital needs of elderly and disabled transportation programs throughout the state. In the 2009 legislative session, an additional \$10 million of Surface Transportation Program funds were transferred to the program by HB 5548. The \$10 million are distributed statewide via a population-based formula. The tri-county area receives 37.0% or \$3.7 million a biennium. At the local level, the funds are again distributed to community-based, private non-profit providers and five public transit providers. Through this process TriMet receives funds for LIFT vehicle replacements. TriMet expects to receive about \$1.9 million a year for LIFT vehicle replacements or LIFT preventive maintenance in the future, declining 2.0% per year throughout the forecast period. These funds are shown in the forecast on Appendix A, Table 9, Line 2
- Annual CMAQ/STP grants for bus stops and streamline improvements through the MTIP process. These funds are offset by the program's costs shown in Appendix A, Table 8. Should the region decide in the future to not continue funding this program, the expenditures would be cut back. (Appendix A, Table 9).
- Department of Homeland Security funds for TriMet system security improvements included in the Capital Improvement Plan. Through FY09, Department of Homeland Security funds do not require local match, but agencies electing not to match DHS funds must reduce their FY08 and FY09 DHS awards by 20%. TriMet has elected to take the reduction. (Appendix A, Table 9).

Year-by-year forecasts of capital program grants are provided in Appendix A, Table 9.

3.2.8 Interest Earnings (Appendix A, Table 1, Line 7)

TriMet is anticipated to earn on its investments (excluding pension and deferred compensation) 0.5% in FY14, 2.5% in FY15, 3.5% in FY16, and 4.5% thereafter. Interest earnings do not include earnings on the local share light rail project revenues, which are restricted in use to capital expenditures. Interest earnings on bond revenues are contributed to the bonded project's costs.

3.2.9 Accessible Transportation Program (ATP) Funds (Appendix A, Table 1, Line 8)

Funds incorporated in this line item come from state and federal sources and are dedicated to ADA paratransit (LIFT). (See Appendix A, Table 3D). ODOT allocates state cigarette tax and other fund proceeds appropriated to the Special Transportation Fund (STF) to transit districts and counties by formula. These are an estimated \$470,000 in FY13. This source of funds is forecast to decline 5% per year throughout the forecast. In addition TriMet receives ATP funding from a variety of other contracts. These revenues are projected to remain flat throughout 2016 and increase at 2.8% per year thereafter. These revenues support many private non-profit organizations under the Ride Connection consortium that provide rides to elderly and people with disabilities.

3.2.10 One-Time-Only Revenues and DMAP Reimbursement (Appendix A, Table 1, Line 9 and Table 3C)

TriMet receives a variety of one-time and other specialized funding, which are detailed in Appendix A, Table 3C and summarized in Table 1, Line 9. These funding sources consist of:

- Medical Transportation Program (DMAP) and Waivered Non-Medical Transportation revenues: DMAP revenues are used to fully pay the costs for the state's Medicaid funded Medical Transportation Program (DMAP). These revenues fully offset TriMet's costs so do not contribute to TriMet's general operating cash flow. Both revenues and expenditures grow 3.5% per year.
- This line also includes Title XIX funds and state Cigarette Tax funds TriMet receives to provide "waivered non-medical" rides on LIFT on behalf of Multnomah County Aging and Disability Services. These are door-to-door paratransit rides to services and activities for case-managed individuals who would otherwise be in a nursing home. All of the individuals in this program would be ADA paratransit eligible, so the program pays for rides that would otherwise be paid for by TriMet. Ride Connection operates the same program for Washington County and Clackamas County operates its own program.
- Occasionally, TriMet participates in funding exchanges that are approved by the region and the TriMet Board. Funding exchange revenues have no financial impact on the district as funds are offset by a cost of the same amount. Funding exchanges, which primarily support Metro's Transit Oriented Development (TOD) program, are assumed each year of the forecast, as is the expenditure.

- Project Funds reimburse TriMet for project expenses incurred by TriMet operating departments, such as Startup and Force Account costs, pension and OPEB costs attributable to Project employees. Startup and Force Account costs are offset by additional expense so they do not impact the TriMet General Fund.
- Columbia River Crossing: TriMet staff provides planning and design services to the Columbia River Crossing Project, which are fully reimbursed by the Project.
- Southwest Corridor Alternatives Analysis: With Metro as the lead, TriMet staff provides planning and design services to the Southwest Corridor Project, for which Metro reimburses TriMet.
- Also included are various settlements and refunds.

3.2.11 Additional System Revenue: Payroll Tax Rate Increase (Appendix A, Table 1, Line 10)

As explained earlier, in addition to underlying increases in payroll tax and self-employment tax revenues (which are shown in Appendix A, Table 1, Lines 3 and 4), these revenues are forecast to increase due to the phased-in increase in applicable tax rates. The Oregon Legislature gave the TriMet Board the authority to increase the payroll tax for employers and self-employed individuals from 0.6218% to 0.7218% over a 10-year phase-in period. The TriMet Board approved the increase at their August 11, 2004 meeting. The payroll tax rate has been increasing at 1/100th of a percent each year for 10 years beginning January 1, 2005. The added revenues are shown in Table 1, Line 10. The revenues shown in Appendix A, Table 1, Line 10 for a subject year include the cumulative added revenues from the cumulative payroll tax and self-employed tax rate increases. It also includes the underlying escalation in those revenues.

In its 2009 session, the Oregon Legislature (SB 24) gave the TriMet Board the authority to increase the payroll tax rate for employers and self-employed individuals from 0.7218% to 0.8218%. The legislation specifies that the increase must be phased in over ten years, cannot be implemented before January 1, 2010, no annual increase can exceed 0.02% and the TriMet Board must first determine that the economy in the district has recovered to an extent sufficient to warrant the increases. This plan does **not** include the increase in the tax rate to 0.8218%.

3.2.12 Total Revenues (Appendix A, Table 1, Line 11 and 12)

Based on the assumptions above, continuing revenues, including the revenues resulting from the payroll tax and self-employment tax rate increases, are projected to grow about 4.5% annually between FY12 and FY31. The total of continuing and one-time-only revenues is projected to grow by about 4.3% per year FY12-FY31. By comparison, between FY02 and FY12, a 10-year period that includes five recessionary years (FY02-FY04, FY09, FY10) and the phase-in of the payroll tax rate increase started in January 2005, total continuing revenues increased by about 5.7% and total (continuing and one-time-only) operating revenues increased by about 5.6%.

3.3 System Operating, Maintenance and Capital Costs

3.3.1 Overview

System operating, maintenance, and capital costs are forecast in two categories:

- Costs of transit services that currently exist and that continue in the future
- Costs of transit services that are projected to begin in the future

Operating expenses associated with bus and rail services existing at the start of the forecast period are shown in Appendix A, Table 1, Lines 13-28. Operating expenses from new fixed route bus and rail service put in place during the planning period are shown in Table 1, Lines 29-35.

3.3.1.1 Base Year Forecast

The FY14 Adopted Budget provides the base year of the forecast. The forecast of future year expenses start with the base year forecast and are escalated or adjusted as explained below.

3.3.1.2 Collective Bargaining

The forecast is based on the recent rulings by the Employer Relations Board (ERB) and the Labor Arbitrator regarding the labor agreement with the Amalgamated Transit Union (ATU) and based on the TriMet proposal to ATU of September 2013.

3.3.2 Major Assumptions for Forecasting Future System Operating Costs

3.3.2.1 Cost Inflation

The forecast a general annual cost inflation rate of 2.7% is assumed. Payroll tax and passenger fares (75% of TriMet's revenues) grow at rates that assume an underlying rate of inflation of 2.7% as well. Higher rates of inflation are applied health benefits costs (6.5-7.5%) and security (5%).

3.3.2.2 Wages and Salaries

A year-by-year forecast of labor costs is provided in Appendix A, Table 7. Management wages are projected to increase 0% in FY14, 2% in FY15, and 2.7% per year thereafter. Union wages are projected to increase 1% in FY14, 2% in FY15, and 2.7% per year thereafter.

3.3.2.3 Health Plans

The detailed build-up of medical benefit costs is shown in Appendix A, Table 7, and its feeder tables.

While TriMet management substantially prevailed in the labor agreement and following appeals, TriMet is required to repay union employees for health insurance premium costs incurred by the

employees during the labor negotiation freeze. The FY13 expenditure forecast includes \$3.7 million to meet this obligation. The labor agreement expired in November 2012, and TriMet and the ATU are currently once again involved in labor negotiations. As part of these negotiations, TriMet management has proposed that starting January 1, 2014 the union employees receive the same health benefits as the non-union employees currently receive. This proposal underlies the financial plan.

TriMet union employees and retirees in the PPO plan pay a 10% co-insurance and deductibles of \$150 employee/\$450 family. Employees' prescription costs are \$10/25%. Union employees and retirees pay 0% of the monthly cost of health benefits. In comparison, TriMet non-union employees and retirees in the PPO plan pay a 20% co-insurance and deductibles of \$300 employee/\$900 family. Non-union employees' prescription costs are \$10/25%. All non-union employees and retirees pay 6% of the monthly cost of health benefits.

Based on these policies, the plan forecasts -0.7% and -2.3% reductions in union health benefit costs in FY14 and FY15; followed by a 7.0% per year increase throughout the remainder of the forecast period. The non-union health benefit costs are forecasted to increase by 14% in FY14, 3.5% in FY15, and 6.5% per year thereafter (Appendix A, Table 7).

3.3.2.4 Pensions

TriMet is one of the few public sector agencies in Oregon not in the Public Employee Retirement System (PERS) managed by the State of Oregon. The management Defined Benefit (DB) and union Defined Benefit pension plans provide benefits to TriMet employees with 30 years of service are roughly comparable to PERS Tier 2 or Tier 3 with the exception of the retiree-medical benefits offered by TriMet, which are far more generous than state retiree health benefits.

The union Defined Benefit plan payment to retirees is calculated based on years of service for all union employees, regardless of pay rate or earnings. The management Defined Benefit plan is based on final average salary and years of service. In 2003, TriMet closed its management defined benefit plan to new employees. Non-union employees hired after April 27, 2003 are part of a defined contribution plan to which TriMet contributes 8.0% of salary. As of August 1, 2012, the union DB plan is closed to new employees. Also as of August 1, 2012, the union DB plan cost of living increase (COLA) is tied to inflation for already retired employees and is 90% of CPI for new retirees (management retirees receive 90% of CPI). New employees are in a fully funded Defined Contribution (DC) plan, with the same features as non-union employees' DC pension plan.

Current annual required contribution (ARC) to the union DB pension plan is \$35 million; of this, \$24 million/year is to pay down unfunded liabilities. To insure full funding of the union pension, the plan increases the annual pension contribution by \$6 million, phased in over FY13-FY15, continuing at that level until the unfunded liability is fully paid by FY29.

As management and union employees retire, their replacements are in the defined contribution plan and DB plan normal costs decrease commensurately. The forecast incorporates the

retirement of 19 management employees per year, replaced with 19 management employees in the DC plan. The additional costs of the DC plan are included in the forecast. The forecast uses the “Milliman” forecast of union DB plan retirees and benefit payments. As union employees retire, they are replaced with a like number of employees in the union DC plan. The additional costs of the union DC plan are included in the forecast.

The calculations of pension costs are detailed in Appendix A, Table 7 and its feeder tables.

3.3.2.5 Diesel Fuel

Due to downward pressure on diesel fuel price growth due to new technologies and increased U.S. production of oil, unit costs of diesel fuel increase with CPI throughout the forecast.

3.3.2.6 Electricity and Other Utilities

Electricity costs are projected to increase 2.7% per year with inflation throughout the forecast based recent trends in energy prices.

3.3.2.7 Other Materials and Services

Other materials and service costs are projected to increase with general cost inflation. The result of all of the above forecast assumptions is a weighted average personal services and materials and services inflation rate each year. Excluding retiree medical cost growth, capital and debt service, this rate averages 4.3% per year.

3.3.3 Bus Operations: Existing Services (Appendix A, Table 1, Line 13)

Line 13 includes costs for Bus Transportation and Bus Maintenance, including diesel fuel, for existing bus services; the cost associated with implementing additional bus service to meet capacity/reliability requirements is shown in Appendix A, Table 1, Line 29.

The FY13 Bus Operations cost estimate is based on TriMet’s FY13 Adopted Budget. To project expected Bus Operations costs for FY14 and future years, increases and reductions in personnel and materials and services costs are estimated based on the above. This process is repeated for each year in the forecast period. A multi-year forecast of materials and services needed for bus component replacement (overhauls) is incorporated in the capital and operating project forecast.

3.3.4 Light Rail Operations: Existing Services (Appendix A, Table 1, Line 14)

Line 14 includes costs for Rail Transportation, Equipment Maintenance, and Maintenance of Way (MOW) for existing rail service. The costs associated with implementing (i) additional rail service to meet capacity requirements are shown in Appendix A, Table 1, Line 30, (ii) Portland-Milwaukie LRT is shown in Line 31, and (iii) CRC LRT is shown in Line 35.

Light Rail Operations existing services budget includes costs for Rail Transportation, Equipment Maintenance, and Maintenance of Way (MOW). The FY13 Rail cost estimate is based on TriMet's FY13 Adopted Budget. To calculate expected Rail Operations costs for FY14 and future years, changes in personnel and materials and services costs based on the above-described inflation assumptions were made. This process is repeated for each year of the forecast. Long term capital and operating maintenance are forecast to 2030 by Rail Equipment Maintenance and MOW engineers and incorporated in the forecast.

Light rail vehicle rehabilitation and overhaul costs are included in this line. TriMet's rail vehicles are maintained in "as-new" condition throughout their life with a progressive overhaul program. Unlike most other rail agencies, TriMet's rail vehicles will not be removed from service for an extensive period for overhaul. The overall LRV maintenance program consists of continual program of preventive maintenance, running repairs, component rebuilds, progressive overhaul, modifications (product improvements) and equipment engineering analysis and training. These six programs require about 1,000 labor hours per year per vehicle. Mechanics are added to the forecast in FY14, FY19, FY20, and FY21 to accommodate overhaul requirements to the fleet ages.

A multi-year forecast of materials and services needed for light rail vehicle (LRV) component replacement (overhauls) is incorporated in the capital and operating project forecast with \$3.5 million added in FY14 and \$3.5 million added in FY15 to correct the backlog of overhauls.

Most of the maintenance of way (MOW) preventive maintenance, corrective maintenance, and overhaul needed to maintain the light railway in "as new" condition are included in the operating budget. Track is maintained as prescribed by the industry for a Class 4 Railroad. Signal equipment is replaced and maintained to Federal Railroad Administration rules/regulations and Oregon PUC requirements. Overhead centenary system is maintained to IEEE (International Electrical and Electronics Engineers), industry standards, and equipment manufacturer requirements. Substations are maintained to industry standards and equipment manufacturer requirements. As forecast by MOW, one MOW mechanic is added to the forecast each year FY13-FY20 to address additional maintenance requirements as the system ages.

Light rail capital maintenance of way such as rail grinding and surfacing, maintenance and repair of rail operating and customer facilities, which is not included in the Rail Maintenance operations, is included in the Capital Improvement forecast shown in Appendix A, Table 8.

3.3.5 Commuter Rail Operations (Appendix A, Table 1, Line 15)

Appendix A, Table 1, Line 15 forecasts the operations costs of the WES Commuter Rail line, which opened for service February 2009. Responsibility for operations of the Commuter Rail line is divided as follows between TriMet and the Portland & Western Railroad, a short-line rail operator providing freight service in the Commuter Rail corridor:

- TriMet maintains vehicles and facilities (i.e. stations; park and rides).
- Portland & Western Railroad operates Commuter Rail trains, provides dispatch functions, and maintains the right-of-way.

Commuter Rail fuel costs are consistent with the diesel fuel cost forecast. Commuter Rail operations forecast includes the cost of heightened maintenance as the system ages. Portland & Western Railroad provided the cost estimates. A breakdown of Commuter Rail costs is shown in Appendix A, Table 5, and Table 5A. Annual escalation on the various cost components of Commuter Rail range from 2.6% to 5.0% per year. Overall over the forecast period the average annual increase in total commuter rail costs is forecast to be about 3.9% per year.

3.3.6 Streetcar Operations (Appendix A, Table 1, Line 16)

The Streetcar Operations budget in Line 16 includes the cost of TriMet operations, mechanics, and superintendents for Portland Streetcar. It also includes TriMet's \$3.9 million annual contribution to the City of Portland for Streetcar operations. The City of Portland reimburses TriMet for these costs. The reimbursement is included in Other Operating Revenue.

As of FY13, TriMet pays Portland Streetcar \$3.9 million a year for operations to West and East Streetcar operations, roughly one-half of operating costs. Future costs grow with CPI. Over the forecast period, TriMet's streetcar operation costs increase on-average at about 4.8% per year.

3.3.7 Field Services: Road and Rail Supervision, Dispatch and Control, Fare Inspection (Appendix A, Table 1, Line 17)

Appendix A, Table 1, Line 17 includes costs for the Field Services department, which combines bus dispatch, rail control, and bus and rail supervisors. The FY13 Field Services cost estimate is based on TriMet's FY13 Adopted Budget. To calculate expected Field Services costs for future fiscal years, increases and reductions in personnel and materials and services costs based on the above-described assumptions were made. Over the forecast period, field services costs increase on-average at about 3.9% per year.

3.3.8 Facilities (Appendix A, Table 1, Line 18)

Appendix A, Table 1, Line 18 includes costs for the Facilities department. The FY13 Facilities cost estimate is based on TriMet's FY13 Adopted Budget. To calculate expected Facilities costs for FY14 and beyond, increases and reductions in personnel and materials and services costs based on the above-described assumptions were made. Over the forecast period, facilities costs increase on-average at about 2.7% per year.

3.3.9 Accessible Transportation Program (ATP or "LIFT") (Appendix A, Table 1, Line 19)

The ATP line item includes the transportation and maintenance costs of paratransit services provided for people with disabilities. The ADA paratransit service (LIFT) provides door-to-door transportation for individuals who are unable to access fixed route services due to a disability. The ATP forecast includes the cost of current LIFT service levels and the cost of estimated LIFT service growth. Because ADA paratransit rides are individually scheduled, demand for paratransit is proportional to increases in costs. For FY14 and beyond, costs are the product of the resulting rate of growth of ridership and the inflation rate applicable to the costs of such

services. Incorporated in the LIFT cost forecast are the following measures and their impact on ridership growth and service costs:

- September 1, 2012 TriMet reduced the evening and weekend LIFT ADA paratransit service to more closely complement actual fixed route service evening and weekend service. This saves \$400,000 a year.
- TriMet is increasing the LIFT ADA paratransit fare in increments of \$0.30 a year until the fare reaches the fixed route adult cash fare. LIFT passes are priced at 29 cash trips per month. LIFT fares increase with CPI in future years.
- TriMet is implementing trip by trip eligibility over time for ADA paratransit riders beginning FY13. This reduces LIFT ridership 6.2% over five years between FY11 and FY15.
- In addition, LIFT ADA paratransit demand moderates due to the implementation of ADA paratransit in-person assessments.
- Details on the build-up of ATP costs are shown in Table 6 and 6A.

The FY13 estimate of ATP costs are based on TriMet's FY13 Adopted Budget. Future LIFT growth is based on the state's population forecast by age for the tri-county area. About 30% of LIFT trips are made by individuals who are over age 70; their ridership is assumed to increase at the same rate of growth in elderly population as forecast by the State of Oregon. About 70% of LIFT trips are made by riders who are under age 70. Their ridership is assumed to grow with the growth in total population as forecast by the State of Oregon. The forecast of ATP riders through FY17 is detailed in Appendix A, Table 6B. LIFT ridership beyond FY17 grows at 1.5-2.4% per year as shown in Table 6.

Overall these assumptions result in about a 5.6% per year increase in LIFT costs over the forecast period.

3.3.10 Accessible Transportation - DMAP (Appendix A, Table 1, Line 20)

Appendix A, Table 1, Line 20 includes the costs of Oregon's Medicaid Transportation and Waivered Non-Medical Transportation assistance program. The expenses are forecast to increase 3.5% per year, as are program revenues. Since these expenses are fully reimbursed by the federal Title XIX program and the State of Oregon, these costs and revenues do not affect TriMet's financial condition.

3.3.11 Security and Operations Support (Appendix A, Table 1, Line 21)

Appendix A, Table 1, Line 21 includes costs for Operations Administration, Operations Support, and Security. The FY13 cost estimate is based on TriMet's FY13 Adopted Budget. To calculate expected Security and Operations Support costs for FY14 and after, increases and reductions in personnel and materials and services costs based on the above-described assumptions were

made. Overall these assumptions result in about a 4.8% per year increase in security and operations support costs over the forecast period.

3.3.12 Capital Projects Development (Appendix A, Table 1, Line 22)

Appendix A, Table 1, Line 22 includes costs for Capital Project Development (the name has been changed in the forecast from Capital Projects to Capital Projects Development to distinguish the department from Capital and Operating Projects (line 27)). The FY13 cost estimate is based on TriMet's FY13 Adopted Budget. Additional one-time costs were added in FY13 for the household travel survey as well as costs associated with the transition of the Center Street Administration facility to a rail control and bus dispatch center and the move of employees Center Street to a leased facility. To calculate expected Capital Projects costs beyond FY13, increases and reductions in personnel and materials and services costs based on the above-described assumptions.

Overall these assumptions result in about a 3.7% per year increase in capital project development costs over the forecast period.

3.3.13 Funding Exchanges (Appendix A, Table 1, Line 23)

TriMet enters into funding exchanges occasionally. These are an exchange of federal STP funds for TriMet General Funds. These vary from year to year and are offset by a like amount of revenue, which are included in Appendix A, Table 1, Line 9.

3.3.14 General Administration (Appendix A, Table 1, Line 24)

Appendix A, Table 1, Line 24 includes costs for the Office of the General Manager, Finance and Administration, Human Resources/Legal Services, Marketing and Customer Service, Operations Administration, Planning and Scheduling. The FY13 cost estimate is based on TriMet's FY13 Adopted Budget. Added to the FY13 Budget is \$1 million for the low income fare program that was not budgeted. Costs of this program are assumed to continue in the future.

To calculate expected General Administration costs for FY14, changes in personnel and materials and services costs based on the above-described assumptions were made. This process is repeated for each year in the forecast period. In FY17, 7 light rail engineers/other staff, currently paid by the Portland –Milwaukie light rail project are incorporated into the General Fund budget as are additional costs of the Harrison Street lease.

Overall these assumptions result in about a 4.2% per year increase in general administration costs over the forecast period.

3.3.15 Other Post Employment Benefit (OPEB) Trust (Appendix A, Table 1, Line 25)

TriMet has created an OPEB trust to fund future retiree-medical disbursements. The amounts deposited annually in the OPEB Trust are based on actuarial calculations. The forecast assumes TriMet contributes the normal cost for new employees who are replacing retirees or new

employees hired to add service beginning in FY12. Since these costs are paid on a pay-go basis, they do not add to the OPEB principal.

TriMet's disbursements for retiree medical costs, also known as OPEB or Other Post-Employment Benefits, increased at an average annual rate of 15% per year for the last ten years. This rate of growth combines the rate of growth of retirees' medical costs and includes both union and non-union plans and both pre and post age 65 benefits for retirees.

TriMet employees are fully vested in retiree medical benefits after 10 years of service at age 55, and the benefits received as an active employee continue after retirement fully subsidized for the employee and dependents. At age 65, union medical benefits are secondary to Medicare, but TriMet reimburses retired employees' for the cost of Medicare Part B monthly. TriMet also provides a Medicare supplement plan for the retiree and spouse.

As of May 1, 2009, new non-union employees who complete ten years of credited service and retire at or after age 55, are eligible for retiree health care benefits comparable to the health care plan offered to active employees but the retiree must pay the entire cost of the coverage provided.

The Annual Required Contribution (ARC) for the District's OPEB liability is an amount actuarially determined in accordance with accounting standards as required under GASB Statement No. 45. The ARC represents a level of funding, which if paid on an ongoing basis, is projected to cover benefits earned (normal costs) each year and amortize any unfunded actuarial liabilities over a period of 30 years. TriMet's FY12 ARC is an estimated \$78 million, of which \$17 million in disbursements was funded from the General Fund. To bring costs in line with TriMet finances, beginning January 1, 2012 the forecast retiree health benefits assumes:

- Current non-union plan (80%/20% coinsurance, 6% premium contribution) for active employees and retirees with plans to further reduce benefit in future contracts
- Retiree medical for new hires limited to 50% of employee cost to age 65 only
- Retiree medical for employees with less than ten years of service limited to 50% of employee cost to age 65 only

The computation of retiree medical costs is detailed in Appendix A, Table 7C, and is summarized in Table 1, Line 25. Overall the retiree medical costs are expected to grow by about a 6.3% per year over the forecast period.

3.3.16 Defined Benefit (DB) Pension Plan/Unfunded Actuarial Accrued Liability (UAAL) Funding (Appendix A, Table 1, Line 26)

Appendix A, Table 1, Line 26 includes the annual amounts required for regular contributions to the defined benefit (DB) pension plan plus the 15-20-year amortization of the unfunded actuarial accrued liability (UAAL) in the pension plan. The back-up computations for this line item are shown in Appendix A, Table 7 and its feeder tables.

3.3.17 Capital and Operating Projects (Appendix A, Table 1, Line 27 and Table 8)

Appendix A, Table 1, Line 27 includes General Fund monies (i.e.; exclusive of debt and grants) to support capital and operating projects. This line includes expenditures for TriMet's Capital Project Replacement and Improvement Program, which generally consists of:

- Committed improvements.
- An on-going vehicle replacement program that replaces fixed route buses and paratransit vehicles and light rail vehicles that have exceeded their economic lives with new vehicles.
- An on-going program of fixed route bus, ATP and LRT equipment and facilities and information technology improvements and replacements.
- The acquisition of additional (non-replacement) fixed route buses, paratransit vehicles, and light rail vehicles to meet the needs of forecast service and ridership increases.

A schedule of specific improvements and vehicle and equipment replacements is included in Appendix A, Tables 8. The vehicle replacement schedule is provided in Appendix A, Table 8. The costs of capital improvements and vehicle replacements are estimated to inflate 3.0% per year throughout the planning period. The following summarizes key elements of the program.

A. Replacement Program

- Buses replaced: TriMet received 51 replacement buses in 2012-2013, and is receiving 70 in 2013. Buses being replaced are between 18 and 20 years old. The purchases are funded with grants, MTIP bond proceeds, and general funds. The plan calls for 60 vehicles replaced in FY14, FY15, and FY16, and 40 per year thereafter. *This plan lowers the weighted average age of the bus fleet to 8 years by FY17.*
- ADA paratransit vehicles replaced at nine years of age.
- \$7 million in FY14 and FY15 for additional light rail vehicle overhaul components sufficient to reduce the vehicle maintenance backlog and insure reliable vehicle operations.
- Fare system modernization: \$21 million for electronic fare payment system FY13-FY18. Savings and new revenue from the system are assumed to pay for its capital costs and on-going operating costs. This project is underway in its early stages.
- Maintenance of Way (MOW) capital maintenance requirements (rail grinding, ties, ballast, and signal materials) for Commuter Rail is included in the annual operating costs of the project. Portland & Western Railroad, the freight operator, has estimated these costs.
- \$930,000 in FY14, growing with inflation, for the replacement and technology upgrade of the original CCTVs.
- MOW engineers forecast annual capital maintenance and replacement requirements as the system ages.
- The cost to replace 24 Type I LRVs at 40 years of age is included in FY27.

B. Additions:

Other additions, FY14 and beyond include:

- Five buses are added to the fleet every two years beginning FY18 to maintain schedules and add peak capacity
- LIFT fleet additions for ridership growth per year as discussed above.
- \$8 million for Positive Train Control systems on the WES cars as required by the Federal Railroad Administration, funded with debt.
- \$18 million for Eastside MAX station renewals and upgrade “Renew the Blue” (partially funded with State of Good Repair funds). The project is completed over five years between FY14 and FY18,
- The cost of eleven additional light rail vehicles forecast to be needed for system growth is included in the forecast in FY27. LRV additions funded with bond proceeds.
- TriMet’s share of Milwaukie LRT construction costs (\$40 million).
- Additional TriMet share of \$20 million for Portland-Milwaukie Light Rail is assumed in FY15. Bonds are issued to fund this project. An additional \$4 million is bonded to fund the City of Milwaukie’s share. Milwaukie is paying TriMet enough to pay debt service on the bonds.
- \$3.4 million for a central Facilities Maintenance and Maintenance of Way building reconstruction, funded with bonds, budgeted in FY13.
- \$6.47 million in FY14 and FY15 to upgrade/retrofit light rail vehicle electronic destination signs and associated communications system
- \$1 million to upgrade Ruby Junction rail facility yard throat track switches, switching appliances and track to ensure proper train movement in the rail yard in FY14.
- \$3 million for needed upgrades to the Center Street Operations Facility. This project will be funded by using Portland Milwaukie Light Rail funds the \$6.47 million light rail vehicle electronic destination signs retrofit project, an eligible PMLR expense.

3.3.18 Debt Service (Appendix A, Table 1, Line 28)

This line item addresses all debt service, both senior lien payroll tax revenue bonds and grant receipt backed bonds. On new debt, issuance costs and fees add 2% to the cost. Interest rates assumed are 4.25%-5.5%. TriMet has the following payroll tax and grant-backed revenue bonds, either outstanding or planned: Appendix A, Table 10 includes Debt Service detail by year

Outstanding Debt

- \$8.4 million in FY13 to pay the remaining debt service and interest on the 2003 revenue bonds for the Eastside MAX line retrofit. The early retirement of this debt will save TriMet \$655,000 in interest payments.

- \$37.5 million senior lien payroll tax revenue refunding bonds for the Airport Light Rail project and \$45 million for the Interstate MAX project. Interstate MAX is composed of \$38.5 million of short and long term debt, \$2.5 million of long term debt for rail retrofits with the balance for reserves (\$4 million). Last year of payments is FY21.
- \$68.5 million of capital grant receipt backed revenue bonds to complete Washington County Commuter Rail and I-205/Portland Mall LRT Project. This cost of debt service is offset by a like amount of STP or CMAQ revenues made available by Metro Council Resolution. An additional \$13.255 million of debt, backed by Section 5307 grant receipts, for the FY06 bus order and other capital, was issued at the same time.
- \$45.333 million senior lien payroll tax revenue bonds issued to pay for TriMet's share of the I-205/Portland Mall LRT project and Commuter Rail. Debt was issued January 2007.
- \$49.55 million senior lien payroll tax revenue bonds to reimburse the General Fund for Commuter Rail cost increases and the FY09 bus order and to partially pay for the bus communications system replacement. \$37.029 million tax-exempt bonds, \$12.53 million Build America Bonds Direct Payment.
- \$142.38 million (par) and \$13.3 million (premium) grant receipt backed revenue bonds, \$119.072 million for Portland-Milwaukie Light Rail construction and \$13.3 million for the bus replacement, \$6 million tax exempt bonds for Lake Oswego and \$6 million taxable bonds for Southwest Corridor Alternatives Analysis and \$10.2 million for capitalized interest. Debt service is structured so that principal and interest can be fully paid with the multi-year commitment of MTIP funds, which begins in FY12 and ends in FY27.
- MBIA Lease. TriMet entered into 11 leases in 1997-1998 and 2005. In these transactions, 100 light rail vehicles and 2 maintenance facilities were sold or leased to private investors. The investors provided TriMet with up-front payments and leased the assets back to TriMet. TriMet invested a portion of the funds received with three insurance companies--MBIA, AIG, and FSA--which guaranteed to make the lease payments. TriMet received a net cash benefit from the leases of \$28 million. The financial crisis that began in 2007 resulted in AIG and MBIA, two of the insurance companies making TriMet's lease payments, receiving ratings downgrades. One of the actions TriMet took in response was to terminate its relationship with MBIA, which resulted in MBIA paying the \$12.6 million to TriMet in FY09. In return, TriMet is responsible for the remaining lease payments. These payments are included in debt service expense. The largest payment is \$7.5 million in FY13.
- \$93.3 million (par) and \$17.4 million (premium) senior lien payroll tax revenue bonds for TriMet's share of Portland-Milwaukie light rail, replacement of fixed route buses, to refurbish fareboxes and ticket vending machines, WES commuter rail positive train control as mandated by the 2008 Rail Safety Act, the Maintenance of Way Central maintenance facility, and the remaining costs of the bus, rail and paratransit

communications systems. TriMet's PMLR share is paid for with increases in payroll tax revenue from the payroll tax rate increases.

Projected Debt

TriMet plans to issue debt every two years for the following projects:

- Additional debt is issued for FY14 bus replacements and each year thereafter (alternatively the Line of Credit may be used for annual purchases, taken out by long term debt issued every other year).
- \$101 million senior lien debt service to pay for eight additional LRVs needed for system growth FY29.
- \$206 million senior lien debt to pay for the replacement of 34 Type I light rail vehicles.

Debt service as a percent of net continuing revenues is below the board's goal of 7.5% through the forecast period.

The next sections address the operating expenses associated with new bus and rail services during the forecast period. Expenses associated with services that existed at the outset of the planning period are accounted in Lines 13-28 above. The expenses from future service are shown in Lines 29 through 35 described below.

3.3.19 Bus Operations: Future Expansion (Appendix A, Table 1, Line 29)

The amounts shown in Appendix A, Table 1, Line 29 represent the cumulative cost of annual increases in bus service to provide peak-capacity and to maintain service reliability as traffic congestion grows. Throughout the forecast period bus hours are assumed to increase by 0.8% per year to meet capacity and reliability needs. The calculation of the annual increase in bus hours is shown in Appendix A, Table 2D.

The cost per bus hour used to estimate the cost of the additional service is inflated each year in accordance with the assumptions discussed earlier, including the growth in health benefit costs for active employees and retirees. While the cost escalation rate increases over time, on average over the forecast period it escalates at about 3.6% per year. The cost shown in each fiscal year in Appendix A, Table 1, Line 29 is the cumulative additional cost since FY13. As shown in Appendix A, Table 8, Line 14, beginning in FY18 an average of five additional buses is purchased every two years to support the bus service increases shown in Table 1, Line 29.

3.3.20 Rail Operations: Added Peak-Capacity Service on Existing Lines (Appendix A, Table 1, Line 30)

Appendix A, Table 1, Line 30 includes costs to increase rail service to meet peak hour demand in the Blue, Red, Yellow and Green MAX Lines. Forecast service increases are based on historic trends in MAX peak hour ridership growth. Rail costs are estimated on the basis of rail miles and

rail hours. As shown in Table 2E, rail miles are estimated to increase at 0.5% per year. As shown in Table 2C, rail hours are estimated to increase at 0.5% per year. The per-hour and per-mile cost multipliers escalate by about 3.6% over the forecast period. The cost shown in each fiscal year in Line 30 is the cumulative additional cost since FY13.

3.3.21 Portland-Milwaukie Light Rail (Appendix A, Table 1, Line 31)

Portland-Milwaukie Light Rail (PMLRT) service is scheduled to begin September 2015. The cost to operate PMLRT, net of the bus costs avoided by operating PMLRT, is shown in Appendix A, Table 1, Line 31. PMLRT service hours are designed to meet Metro model peak load ridership for 2030 target year. Opening year peak service is designed to meet projected peak hour demand. Opening year off-peak service is designed to match the service frequencies of TriMet's Blue, Red, Yellow, and Green lines.

The forecast assumes the service is operated at 2015 levels through FY25 and at 2030 levels thereafter. The detailed calculation of the 2015 O&M costs for PMLRT is shown in Table 11 and for 2030 in Table 11A. Costs shown in the forecast on Table 1 line 31 are net of savings from the bus lines that end at the new Milwaukie Transit Center instead of travelling into downtown Portland.

Other costs that increase as the system ages, such as rail grinding and surfacing, maintenance and repair or rail operating and customer facilities that is not included in Rail Maintenance operations is included in the Capital Improvement forecast, Appendix A, Table 8.

3.3.22 Streetcar OMSI to Lowell (Appendix A, Table 1, Line 32)

The Portland Streetcar will expand to "close the loop" by extending service over the bridge constructed for the Portland-Milwaukie LRT Project , thereby providing service from OMSI to SW Lowell Street. The forecast assumes TriMet pays 50% of the cost of extending this service beginning in FY15.

3.3.23 Bus Frequent Service Restoration (Net of Fares) (Appendix A, Table 1, Line 33)

Between FY09 and FY12 TriMet eliminated some Frequent Bus Service (in the form of longer headways) in response to the revenue shortfalls caused by the 2007-2009 recession. This Line 33 provides revenues to restore this Frequent Bus Service. The costs include phasing in about 6,300 service hours over a four year period. It also includes the cost of six trainers for a total period of two years. This Line 33 includes the on-going costs (escalated) of this restored service, after it is fully phased in. Costs shown are net of fares.

3.3.24 Rail Frequent Service Restoration (Net of Fares) (Appendix A, Table 1, Line 34)

Between FY09 and FY12 TriMet eliminated some Frequent Rail Service in response to the revenue shortfalls caused by the 2007-2009 recession. This Line 34 provides revenues to restore this Frequent Rail Service in FY15. This Line 34 includes the on-going costs (escalated) of this restored service, after it is fully phased in.

3.3.25 Columbia River Crossing (CRC) (Appendix A, Table 1, Line 35)

TriMet and C-TRAN have executed a Project Development and Operations Agreement (the “Agreement”) establishing the responsibilities of C-TRAN and TriMet for operating and maintaining the CRC light rail (CRC LRT), including the allocation CRC LRT O&M costs between TriMet and C-TRAN (See Appendix E, Exhibit 14). The Agreement partitions LRT O&M functions and costs into two categories:

- “District” O&M functions (such as routine maintenance-of-way or park-ride O&M) are performed by each transit agency within its district, and are then paid directly by the applicable transit agency.
- “Mutual” O&M functions (such as: LRV operators or LRV maintenance) are performed by TriMet on behalf of both C-TRAN and TriMet. Mutual O&M costs are shared, with C-TRAN paying about 63% and TriMet about 37%.

The CRC LRT O&M model (shown in Appendix A, Exhibits 14-14H) calculates separately the C-TRAN and TriMet District costs. The model also calculates the Mutual O&M costs, and divides these costs between C-TRAN and TriMet based on the agreed to percentage allocations. For each year, the CRC LRT O&M cost for each transit agency is the sum of its District cost plus its share of the annual Mutual costs.

Operating costs for the CRC LRT were forecast as follows. Ridership forecasts for the CRC LRT were estimated for the opening year of revenue service (2019) and the planning horizon year (2030). Based on these ridership forecasts, TriMet established prototypical schedules and estimated service factors (i.e., vehicle miles, platform hours, and number of vehicles) for the opening and horizon years. The service factors were inputted into the CRC LRT O&M model shown in Appendix A, Exhibit 14-14H. Also inputted into the model were the unit costs (such as MOW per vehicle mile, etc.) derived from TriMet’s Adopted FY2013 Budget. The model then calculates the 2019 and 2030 O&M costs for each district in FY2013 dollars. Finally the dollar escalation values are applied to convert to year-of-expenditure dollars. The CRC LRT O&M costs in the intervening years (2020-2029) were estimated by interpolating between the forecast years

Pursuant to the Agreement, Farebox Revenues from CRC LRT (see Appendix A, Exhibit 14H) are conveyed to TriMet, whether initially collected by TriMet or C-TRAN. Farebox revenues were initially derived for 2019 and 2030 based on forecasted ridership and average fares; these forecasted farebox revenues were then limited by conservative estimates of farebox recovery. Consequently the farebox revenues used in this finance plan are less than those based on the ridership forecasts. Under the C-TRAN-TriMet Agreement, Farebox Revenues are applied to Mutual O&M Costs to the maximum extent possible. The Agreement further specifies that *State of Good Repair* grant funds resulting from the CRC LRT, after becoming available in the eighth year of operations, must also be applied (i.e.; preventive maintenance) to eligible Mutual O&M costs. For each year, the operating subsidy required from each transit agency is calculated as its

district cost plus its share of an amount calculated as the Mutual O&M costs minus the Farebox Revenues minus the State of Good Repair grant funds (See Appendix A, Exhibit 14).

To simplify the integration of the TriMet and C-TRAN cash flows, the results are shown differently in the C-TRAN and TriMet 20-year agency-wide cash-flows. The C-TRAN cash flow shows as its costs related to CRC LRT O&M the C-TRAN District costs plus its share of the operating subsidy related to Mutual O&M costs. The C-TRAN cash flow does not directly incorporate the CRC LRT Farebox Revenues or the *State of Good Repair* funds; but these sources are indirectly addressed by using operating subsidy as the contracted expense rather than operating cost. The TriMet cash flow (shown in Appendix A, Table 1) incorporates:

- TriMet District costs;
- All Mutual O&M costs (notwithstanding how they are ultimately allocated),
- All Farebox Revenues from CRC LRT;
- All *State of Good Repair* grants funds; and
- C-TRAN’s payment for Contracted Services regarding Mutual O&M costs.

The resultant CRC LRT O&M cost and revenues for TriMet are shown below:

TriMet Budget for CRC LRT O&M Costs and Revenues

TriMet Budget for CRC LRT O&M	2019 (1)	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Costs												
Mutual O&M Costs	\$4,576	\$4,947	\$5,347	\$5,780	\$6,248	\$6,754	\$7,298	\$7,885	\$8,520	\$9,205	\$9,946	\$10,746
TriMet District Costs	\$272	\$289	\$307	\$325	\$345	\$366	\$390	\$417	\$444	\$474	\$505	\$539
Total Added O&M Cost to TriMet	\$4,849	\$5,236	\$5,654	\$6,106	\$6,594	\$7,121	\$7,689	\$8,302	\$8,964	\$9,679	\$10,452	\$11,286
Revenues												
Farebox Revenue	\$2,279	\$2,451	\$2,637	\$3,192	\$3,435	\$3,696	\$3,980	\$4,285	\$4,922	\$5,522	\$5,947	\$6,661
State of Good Repair Funds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$459	\$469	\$478	\$488	\$497
C-TRAN Payment for Services	\$1,452	\$1,577	\$1,713	\$1,636	\$1,778	\$1,933	\$2,097	\$1,985	\$1,978	\$2,026	\$2,220	\$2,268
TriMet Operating Funds	\$1,118	\$1,207	\$1,304	\$1,278	\$1,380	\$1,491	\$1,612	\$1,572	\$1,596	\$1,653	\$1,798	\$1,859
Total TriMet Revenues	\$4,849	\$5,236	\$5,654	\$6,106	\$6,594	\$7,121	\$7,689	\$8,302	\$8,964	\$9,679	\$10,452	\$11,286

(1) 2019 costs and revenues assume full year of operations, actual amounts would be pro-rated depending on date on which operations begin.

These costs and revenues have been linked to the appropriate line items in Appendix A, Table 1 and its predecessor tables. Appendix A, Table 1, Line 35 shows TriMet’s share of operating costs for the planned Columbia River Crossing (CRC) Light Rail Project. The C-TRAN share of CRC LRT O&M costs are included in the C-TRAN agency-wide analysis shown in Section 4.

3.4 System Cash Flow Analysis

3.4.1 Overview

The total of all the assumptions enumerated above represents TriMet’s agency-wide operating plan. This Section 3.4 focuses on the annual results of the cash flow provided in Appendix A, Table 1.

3.4.2 Total Continuing Expenditures (Appendix A, Table 1, Line 36)

This line item represents the total of all system operating expenditures, minus Accessible Transportation - DMAP (Appendix A, Table 1, Line 20) and Funding Exchanges (Appendix A, Table 1, Line 23). DMAP and Fund Exchange expenses have offsetting revenues. On average during the forecast period the total continuing expenditures increases at about 4.2% per year.

3.4.3 Total Expenditures (Appendix A, Table 1, Line 37)

Appendix A, Table 1, Line 37 is the sum of all system operating expenditures from Line 13 through 35, Table 1. On average during the forecast period the total expenditures increases at about 4.2% per year.

3.4.4 General Fund Results (Appendix A, Table 1, Line 38)

The annual General Fund Results shown in Appendix A, Table 1, Line 38 is calculated by taking Total Revenues (Line 12) and subtracting Total Expenditures (Line 37). A negative number means that expenses exceeded revenues for that year. As shown, positive general fund results are anticipated throughout the forecast period except in FY14, FY20, FY21, FY25 and FY26, primarily due to large one-time-only purchases of capital equipment and the final MTIP bond payment (which occurs in the fiscal year following the last payment from Metro).

3.4.5 Beginning/Ending Cash Restricted and Unrestricted (Cash Reserves) (Appendix A, Table 1, Lines 39-44)

TriMet classifies cash into restricted and unrestricted funds. Restricted cash includes cash set aside each week throughout the year to pay interest and principal on debt. Unrestricted cash is cash available to meet cash flow requirements throughout the year plus additional cash for contingency.

Line 39 shows the total of cash restricted for debt service and unrestricted cash and cash equivalents as of the beginning of the fiscal year. Line 40 shows the Beginning Unrestricted Cash which differs from Line 39 Restricted and Unrestricted Cash minus by excluding the amount of cash that would be difficult to access in the event it is needed. Line 41 shows the amount of Unrestricted Cash available at the end of the fiscal year, which represents the amount available at the beginning of the subsequent fiscal year.

Line 42, translates the Unrestricted Cash Reserves at the beginning of the fiscal year into the number of months of operations it could pay for. It is calculated as the Beginning Unrestricted Cash in Line 38 divided by the total expenditures (in Line 37) minus annual debt service (Line 28), and that result divided by twelve.

Line 43 is similar to line 42 except it views beginning unrestricted cash as a percent of annual operating costs. Line 44 is similar to Line 43 except it views all cash (restricted and unrestricted) as a percent of annual operating costs.

TriMet conducts monthly cash forecast to insure that it has sufficient unrestricted cash funds for operations throughout the year. Unrestricted cash is highest after federal formula funds are received, usually spring of each year. Due to the mismatch between monthly revenues and expenditures (expenditures are monthly, payroll tax revenues are quarterly, federal revenues are largely annual), TriMet estimates that beginning unrestricted cash reserves should be above 1.5 months of expenditures (minus debt service) to cover expenses without short term borrowing.

3.5 Agency-wide Plan Forecast Results

The cash flow forecast shows that under the base agency-wide finance plan TriMet can fund its share of CRC-LRT operations, meet all other agency capital and operating requirements, and maintain adequate reserves. As shown below, the amount of beginning year unrestricted cash equals or exceeds 1.5 months of operating expenses each year throughout the forecast period.

Over the forecast period, the amount of unrestricted cash available at the beginning of the fiscal year averages 2.9 months of operations. The total amount of beginning of year cash (restricted and unrestricted) averages about 31% over the forecast period.

**Beginning Year Unrestricted Cash Balances
For the Agency-Wide Finance Plan**

Year	Unrestricted Cash in Months of Operations	Unrestricted Cash as Percent of Operations	Total Cash as Percent of Operations	Year	Unrestricted Cash in Months of Operations	Unrestricted Cash as Percent of Operations	Total Cash as Percent of Operations
FY2012	2.5	20%	27%	FY2022	2.5	20%	28%
FY2013	2.7	21%	31%	FY2023	2.6	20%	28%
FY2014	3.8	30%	40%	FY2024	2.7	21%	28%
FY2015	2.8	22%	33%	FY2025	2.6	21%	28%
FY2016	2.8	22%	32%	FY2026	2.4	19%	25%
FY2017	2.8	21%	31%	FY2027	2.4	18%	25%
FY2018	2.7	21%	31%	FY2028	2.9	22%	29%
FY2019	2.8	21%	30%	FY2029	3.4	26%	33%
FY2020	2.7	21%	29%	FY2030	4.0	31%	37%
FY2021	2.6	20%	28%	FY2031	4.4	35%	41%

3.6 Sensitivity Analysis

This section addresses risks to the agency-wide operating finance plan. In the near term, lower employment growth and lower payroll tax growth rates are TriMet’s greatest risks. One additional noteworthy risk is fuel price. The forecast assumes that TriMet, like other transit agencies, will pass increased fuel costs to their customers through fare increases.

In this section, two sensitivity analyses (the “Conservative Forecast” and the “Pessimistic Forecast”) are presented illustrating forecast results given different near term economic scenarios. These are adverse forecasts to illustrate the challenges TriMet might face as it develops CRC-LRT and how TriMet might address the challenges.

A. Conservative Forecast

The Conservative Forecast assumes that the growth in payroll and self-employment tax revenues during the intermediate term (FY14-FY18) is 10% lower than anticipated in the Agency-wide Plan. The table below compares the underlying growth rates in payroll tax revenues (excluding increases due to tax rate increases) for the agency-wide plan versus the Conservative forecast.

**Comparison of Annual Payroll Tax Growth Rates between
The Plan and the Conservative Scenario**

Year	Plan Payroll Tax Growth	Conservative Payroll Tax Growth Rate	Year	Plan Payroll Tax Growth	Conservative Payroll Tax Growth Rate
FY2014	1.058	1.052	FY2023	1.048	1.048
FY2015	1.058	1.052	FY2024	1.048	1.048
FY2016	1.048	1.043	FY2025	1.048	1.048
FY2017	1.048	1.043	FY2026	1.048	1.048
FY2018	1.048	1.043	FY2027	1.048	1.048
FY2019	1.048	1.048	FY2028	1.048	1.048
FY2020	1.048	1.048	FY2029	1.048	1.048
FY2021	1.048	1.048	FY2030	1.048	1.048
FY2022	1.048	1.048	FY2031	1.048	1.048

Absent a management response to the lower intermediate tax revenue growth, the amounts of unrestricted cash available at the beginning of the fiscal year in the outer years of the forecast period would be below the minimally desired 1.5 months of operating expense. Three illustrative scenarios to address these shortfalls were assessed:

- Conservative Plan-Scenario A would delay to FY19 the restoration of frequent bus and rail service lost as a result of the 2007-2009 recession. All other factors remained as in the Agency-wide Plan.
- Conservative Plan-Scenario B would, beginning in FY16 and compared to the Agency-wide Plan grow bus platform hours at 0.7% per year instead of 0.8% per year, grow rail platform hours and miles at 0.4% per year instead of 0.5% per year, and in FY18 incorporate a one-time-only special \$0.05 fare increase (in addition to the 2.6% average annual fare increase in the Agency-wide Plan). All other factors remained as in the Agency-wide Plan.

- Conservative Plan-Scenario C would increase the average annual fare increase to 3.1% compared to 2.6% in the Agency-wide Plan. All other factors remained as in the Agency-wide Plan.

The tables that follow show that each of these scenarios result in a cash flow in which beginning year unrestricted cash reserves equal or exceed 1.5 months of operations throughout the forecast period.

**Beginning Year Unrestricted Cash Balances
For the TriMet Conservative Plan - Scenario A**

Year	Unrestricted Cash in Months of Operations	Unrestricted Cash as Percent of Operations	Total Cash as Percent of Operations	Year	Unrestricted Cash in Months of Operations	Unrestricted Cash as Percent of Operations	Total Cash as Percent of Operations
FY2012	2.5	20%	27%	FY2022	2.4	19%	27%
FY2013	2.7	21%	31%	FY2023	2.3	18%	26%
FY2014	3.8	30%	40%	FY2024	2.3	17%	25%
FY2015	2.8	22%	33%	FY2025	2.1	17%	23%
FY2016	2.8	22%	33%	FY2026	1.8	14%	20%
FY2017	2.9	22%	32%	FY2027	1.6	12%	19%
FY2018	3.0	23%	32%	FY2028	1.9	14%	21%
FY2019	3.0	23%	32%	FY2029	2.2	17%	24%
FY2020	2.8	21%	30%	FY2030	2.7	21%	27%
FY2021	2.6	20%	28%	FY2031	3.0	24%	30%

**Beginning Year Unrestricted Cash Balances
For the TriMet Conservative Plan - Scenario B**

Year	Unrestricted Cash in Months of Operations	Unrestricted Cash as Percent of Operations	Total Cash as Percent of Operations	Year	Unrestricted Cash in Months of Operations	Unrestricted Cash as Percent of Operations	Total Cash as Percent of Operations
FY2012	2.5	20%	27%	FY2022	2.3	18%	26%
FY2013	2.7	21%	31%	FY2023	2.4	19%	26%
FY2014	3.8	30%	40%	FY2024	2.5	19%	27%
FY2015	2.8	22%	32%	FY2025	2.5	19%	26%
FY2016	2.7	21%	31%	FY2026	2.3	18%	24%
FY2017	2.6	20%	30%	FY2027	2.3	17%	24%
FY2018	2.5	19%	28%	FY2028	2.8	21%	28%
FY2019	2.5	19%	28%	FY2029	3.3	26%	32%
FY2020	2.4	19%	27%	FY2030	3.9	31%	37%
FY2021	2.3	18%	26%	FY2031	4.4	35%	41%

**Beginning Year Unrestricted Cash Balances
For the TriMet Conservative Plan - Scenario C**

Year	Unrestricted Cash in Months of Operations	Unrestricted Cash as Percent of Operations	Total Cash as Percent of Operations	Year	Unrestricted Cash in Months of Operations	Unrestricted Cash as Percent of Operations	Total Cash as Percent of Operations
FY2012	2.5	20%	27%	FY2022	2.1	16%	24%
FY2013	2.7	21%	31%	FY2023	2.1	16%	24%
FY2014	3.8	30%	40%	FY2024	2.2	17%	24%
FY2015	2.8	22%	32%	FY2025	2.2	17%	24%
FY2016	2.7	21%	31%	FY2026	2.0	15%	22%
FY2017	2.6	20%	30%	FY2027	1.9	15%	22%
FY2018	2.5	19%	29%	FY2028	2.5	19%	26%
FY2019	2.4	19%	28%	FY2029	3.1	24%	30%
FY2020	2.3	18%	26%	FY2030	3.7	29%	35%
FY2021	2.2	17%	25%	FY2031	4.3	34%	40%

B. Pessimistic Forecast

The Pessimistic Forecast assumes that the growth in payroll and self-employment tax revenues during the long-term (FY14-FY31) is 10% lower than anticipated in the Agency-wide Plan. The table below compares the underlying growth rates in payroll tax revenues (excluding increases due to tax rate increases) for the Agency-wide Plan versus the Pessimistic forecast.

**Comparison of Annual Payroll Tax Growth Rates between
The Agency-wide Plan and the Pessimistic Scenario**

Year	Plan Payroll Tax Growth	Pessimistic Payroll Tax Growth Rate	Year	Plan Payroll Tax Growth	Pessimistic Payroll Tax Growth Rate
FY2014	1.058	1.052	FY2023	1.048	1.043
FY2015	1.058	1.052	FY2024	1.048	1.043
FY2016	1.048	1.043	FY2025	1.048	1.043
FY2017	1.048	1.043	FY2026	1.048	1.043
FY2018	1.048	1.043	FY2027	1.048	1.043
FY2019	1.048	1.043	FY2028	1.048	1.043
FY2020	1.048	1.043	FY2029	1.048	1.043
FY2021	1.048	1.043	FY2030	1.048	1.043
FY2022	1.048	1.043	FY2031	1.048	1.043

The protracted period of lower payroll tax revenue growth of the Pessimistic Forecasts requires a more extensive management response than outlined above for the Conservative Forecast. Two illustrative scenarios to address these shortfalls were assessed:

- Pessimistic Plan-Scenario A would delay to FY19 the restoration of frequent bus and rail service lost as a result of the 2007-2009 recession and would increase fares at 3.1% per year instead of 2.6% per year as in the Agency-wide Plan. All other factors remained as in the Plan.
- Pessimistic Plan-Scenario B would increase fares at 3.1% per year instead of 2.6% per year as in the Agency-wide Plan, and in FY18 incorporate a one-time-only special \$0.05 fare increase (in addition to the 3.1% average annual fare increase. All other factors remained as in the Plan.

The tables that follow show that these scenarios result in a cash flow in which beginning year unrestricted cash reserves equal or exceed 1.5 months of operations throughout the forecast period.

**Beginning Year Unrestricted Cash Balances
For the TriMet Pessimistic Plan - Scenario A**

Year	Unrestricted Cash in Months of Operations	Unrestricted Cash as Percent of Operations	Total Cash as Percent of Operations	Year	Unrestricted Cash in Months of Operations	Unrestricted Cash as Percent of Operations	Total Cash as Percent of Operations
FY2012	2.5	20%	27%	FY2022	2.6	20%	28%
FY2013	2.7	21%	31%	FY2023	2.5	20%	27%
FY2014	3.8	30%	40%	FY2024	2.5	19%	26%
FY2015	2.8	22%	33%	FY2025	2.3	18%	25%
FY2016	2.8	22%	33%	FY2026	1.9	15%	22%
FY2017	2.9	22%	32%	FY2027	1.7	13%	20%
FY2018	3.0	23%	33%	FY2028	2.0	16%	22%
FY2019	3.1	24%	33%	FY2029	2.4	18%	25%
FY2020	2.9	22%	31%	FY2030	2.8	22%	28%
FY2021	2.7	21%	29%	FY2031	3.1	24%	30%

**Beginning Year Unrestricted Cash Balances
For the TriMet Pessimistic Plan - Scenario B**

Year	Unrestricted Cash in Months of Operations	Unrestricted Cash as Percent of Operations	Total Cash as Percent of Operations	Year	Unrestricted Cash in Months of Operations	Unrestricted Cash as Percent of Operations	Total Cash as Percent of Operations
FY2012	2.5	20%	27%	FY2022	2.4	19%	27%
FY2013	2.7	21%	31%	FY2023	2.5	19%	27%
FY2014	3.8	30%	40%	FY2024	2.6	20%	27%
FY2015	2.8	22%	32%	FY2025	2.5	20%	27%
FY2016	2.7	21%	31%	FY2026	2.3	18%	25%
FY2017	2.6	20%	30%	FY2027	2.2	17%	24%
FY2018	2.5	19%	29%	FY2028	2.7	21%	27%
FY2019	2.6	20%	29%	FY2029	3.2	25%	31%
FY2020	2.5	19%	28%	FY2030	3.7	29%	35%
FY2021	2.5	19%	27%	FY2031	4.2	33%	38%

It should be noted that while the assumed management responses to the Conservative and Pessimistic forecasts included slowing the rate of service growth and/or deferring the restoration of past service cuts; neither required any reduction in existing service. There are many other methods and permutations of methods, beyond those assumed in the above scenarios, available

for TriMet to respond to lower than expected revenues or higher than expected costs. As a general conclusion, the sensitivity analysis illustrates that the Agency-wide Plan can withstand stresses without fundamentally changing the overall service policies underlying the Agency-wide Plan.

The detailed cash flow analyses of the Conservative and Pessimistic Forecasts are shown in Appendix B, Tables 1 and 2 respectively.

4. C-TRAN AGENCY-WIDE OPERATING FINANCE PLAN

Key Changes Since 2012 New Starts Report: C-TRAN's financial condition has improved since the 2012 New Starts Report was prepared. In April 2012 C-TRAN began collecting the added 2/10th of 1% sales tax rate that was passed by the voters in November 2011. In addition, sales and use tax receipts continue to recover from recession lows due to growth in the underlying sales. Passenger revenues have also grown. With regard to CRC LRT, in the 2012 New Starts Report the C-TRAN plan was to seek voter approval of a 1/10th of 1% sales tax for LRT and BRT operations and maintenance. Since then the plan changed, the plan now is to pay for such costs without a tax rate increase. Moreover, C-TRAN and TriMet executed an agreement regarding cost responsibility for CRC LRT O&M; both C-TRAN and TriMet have now fully committed funding sufficient to operate and maintain the CRC LRT throughout the forecast period.

Because CRC-LRT serves and affects the agency-wide finances of both C-TRAN and TriMet, this report presents the agency-wide finance plan for both districts. This Section 4 focuses on C-TRAN's agency-wide operating finance plan. TriMet's agency-wide plan is discussed in Section 3 of this report.

4.1 Background

The Clark County Public Transportation Benefit Area (C-TRAN) operates the transit system within the project area in the State of Washington. C-TRAN provides fixed-route bus service and demand-responsive paratransit service within the urban growth boundary of Vancouver, Camas-Washougal, and Battle Ground, Washington; and dial-a-ride and connector service using paratransit vehicles in Camas, Ridgefield, and La Center, Washington. C-TRAN is governed by a nine-member Board of Directors comprised of all three Clark County Commissioners; three representatives from the Vancouver City Council; and one representative each from the Camas/Washougal, Battle Ground/Yacolt, and Ridgefield/La Center City Councils.

When C-TRAN was approved by a vote of citizens in 1980, the service and taxing boundary was established county-wide. For almost two decades, C-TRAN was funded through a combination of a 0.3% (3/10^{ths} of 1 percent) "sales and use" tax in its district and matching funds from a Motor Vehicle Excise Tax (MVET) imposed by the State of Washington. In 1999, Washington voters approved Initiative 695, which capped MVET at \$30, eliminating it as a funding source for C-TRAN. While the Washington Supreme Court found Initiative 695 invalid on constitutional grounds (based on the fact that it addressed more than one subject), the Washington legislature effectuated the result through legislation.

This created a funding crisis for C-TRAN. C-TRAN responded by raising fares, focusing service on its productive routes to increase ridership, and diverting reserves designated for capital projects to subsidize services. In anticipation of passage of Initiative 695, C-TRAN had accumulated a sizable reserve fund that would allow it to preserve its operations for a number of years while it charted a new funding base for the district.

Finally, in an effort to avoid major service reductions, C-TRAN asked its voters for a tax increase. On June 1, 2005, the C-TRAN boundary was reduced from the whole of Clark County

to the urbanized portion of Clark County -- an area including only the cities of Vancouver, Camas, Washougal, Ridgefield, La Center, Battle Ground, and Yacolt; and the unincorporated area surrounding Vancouver within the Vancouver Urban Growth Boundary. In September 2005 the voters of the revised C-TRAN district approved an increase of C-TRAN's "sales and use" tax by 0.2% (2/10th of 1 percent), making its total tax rate 0.5%. This stabilized C-TRAN's funding base, and avoided the service cutbacks that would have been necessitated by the loss of MVET funds five years earlier.

Like almost all other local governments throughout the U.S., C-TRAN was affected by the 2007–2009 recession and its aftermath. The economic downturn had a material impact on C-TRAN's sales tax receipts (although they have since bounced back), which required C-TRAN to undertake a modest service cut in 2010. The service cut was significantly less than in most other transit districts.

In November 2011, voters in the C-TRAN district approved a 0.2% (2/10th of 1 percent) increase in the sales and use tax rate, making the total sales and use tax rate for C-TRAN 0.7% (7/10th of 1 percent). The proceeds from this tax increase were reflected in sales and use tax receipts beginning in April 2012.

In September 2013, the C-TRAN Board approved a long-term agreement regarding the roles and responsibilities, including funding shares, between TriMet and C-TRAN for the operations and maintenance of CRC LRT. The C-TRAN Board also adopted a revised financial plan to pay for its funding share, as set forth in the C-TRAN-TriMet agreement, within existing resources. With the agreement being executed, full funding is now committed to the operations and maintenance of CRC LRT.

This history must be taken into account when reviewing the history of C-TRAN's revenues and expenses. For example, the growth in C-TRAN's sales and use tax proceeds is affected by the contraction of the district in 2005. These relationships will be pointed out in the discussion of revenues and expenses that follows.

4.2 Local Economy: C-TRAN District

Clark County, which encompasses the C-TRAN district, is one of the fastest growing sectors of the Portland-Vancouver metropolitan region. As shown in Table 4-1, since 1980 Clark County population has been growing at an average annual rate of about 2.7% per year.

**Table 4-1
Historical Population Growth in Clark County 1980-2010**

	1980	1990	2000	2010	1980-2010 Avg. Annual Growth Rate
Vancouver (3)	42,834	46,380	143,560	158,855	4.47%
Other (Non-Vancouver)	149,393	191,673	201,678	266,508	1.95%
Total Clark County	192,227	238,053	345,238	425,363	2.68%

Source:

(1) Data for 1980-2000 from the "2010-2014 Clark County Consolidated Housing and Community Development Plan";

(2) Data for 2010 from the 2010 Census

(3) Note: Vancouver annexed a significant area and population in the 1990s, causing the disparity in population growth between the City and the rest of the county between 1990 and 2000

Clark County's population growth is mirrored by an enlarging economy. As shown in Table 4-2, since 1980 the number of jobs in the County has grown at an average annual rate of 3.0%, including the job losses caused by the 2007-2009 recession. The Portland-portion of the region remains a key employment area for County residents.

**Table 4-2
Historical Total Non-Farm Employment in Clark County 1980-2010**

	1980 (1)	1990 (1)	2000 (1)	2010 (2)	1980-2010 Avg. Annual Growth Rate
Total Clark County Jobs	52,870	80,100	118,310	127,500	3.0%
Jobs per Person	0.28	0.34	0.34	0.30	

Source of Employment Estimates:

(1) 2010-2014 Clark County Consolidated Housing and Community Development Plan, January 2009

(2) Washington Employment Security Division, for December 2010

As shown in Table 4-3, until 2007 taxable sales and use growth had been strong, as retail businesses and construction grew in response to population and job growth in the County. From 1980-2006, taxable sales and use grew at a 7.6% average annual rate. However, the economic recession of 2007-2009 caused a major slowdown in this activity, in particular due to the slowdown in construction. 2012 marked a positive turnaround in retail sales, as total county sales increase by about 6.2%. The trend is continuing into 2013, with first quarter retail sales in 2013 showing a 7.8% increase over 2012 levels.

**Table 4-3
History of Taxable Sales and Use for Clark County
All Industries**

Year	Taxable Sales and Use	Avg. Annual Growth Rate (1)
1980	\$717,465,283	
1985	\$975,231,457	6.3%
1990	\$1,637,258,010	10.9%
1995	\$2,543,535,428	9.2%
2000	\$3,312,943,000	5.4%
2005	\$4,581,235,929	6.7%
2006	\$4,866,777,344	6.2%
2007	\$4,849,742,747	-0.4%
2008	\$4,548,933,138	-6.2%
2009	\$3,893,050,313	-14.4%
2010	\$4,283,718,525	10.0%
2011	\$4,197,332,776	-2.0%
2012	\$4,456,683,103	6.2%

Source: Washington State Dept. of Revenue, Quarterly Business Review

(1) Growth rates shown for 1985-2005 represent average annual rate over previous five years.

While the population growth rate in Clark County is forecasted to slow compared to historic rates, it is still anticipated to be robust, averaging around 1.9% per year over the next two decades. Job growth over the next two decades is also anticipated to be robust growing at 3.4% per year, as Clark County continues to evolve into a strong economic center within the Portland region. The forecasts shown in Table 4-4 are the most current, and may be adjusted in future forecasts to reflect the impacts of the recent recession.

**Table 4-4
Population and Employment Growth in Clark County**

	2007 (1)	2024 (1)	2030 (2)	2007-24 Avg. Annual Growth Rate	2007-30 Avg. Annual Growth Rate
Population	415,000	584,310	639,337	2.0%	1.9%
Employment	131,000	230,000	283,875	3.4%	3.4%

(1) Clark County Comprehensive Plan, 2004-2024, updated September 2007

(2) Southwest Washington Regional Transportation Council, Metropolitan Transportation Plan for Clark County, amended July 2008

4.3 C-TRAN Operations Revenues (Appendix G, Table 1)

NOTE: The C-TRAN fiscal year is on a calendar basis; while TriMet's is July 1-June 30.

The C-TRAN agency-wide cash-flow plan shown in Appendix G, Table 1 provides the forecast of all C-TRAN operating and capital revenues over a 20-year period. The following sections

explain historic trends and forecast assumptions for each of the operating revenue sources included in the 20-year plan. The table referenced in the heading of each section below is where the detailed forecast for the named revenue source is documented.

4.3.1 Passenger Revenues (Appendix G, Table 2)

4.3.1.1 History

Passenger fares, C-TRAN’s second largest revenue source (accounting for over \$8.05 million in 2012), are shown in Table 4-5. The annual average growth rate in passenger revenues over the past decade was almost 8.6 percent. Considering only the past five years, the rate was 8.1 percent.

**Table 4-5
C-TRAN Passenger Revenues (1)**

Year	Passenger Fares	% change
2002	3,700,670	2.9%
2003	3,780,406	2.2%
2004	3,997,897	5.8%
2005	4,766,441	19.2%
2006	5,060,166	6.2%
2007	5,580,409	10.3%
2008	6,613,085	18.5%
2009	6,938,258	4.9%
2010	7,177,151	3.4%
2011	7,692,734	7.2%
2012	8,051,052	4.7%

Note: Passenger fares shown in this table are from NTD data, which includes bus advertising revenues in this category. The 20-year forecast model segments advertising revenues from passenger revenues.

4.3.1.2 Forecast

The forecast of passenger revenues assumes there will be a \$0.05 annual increase in fares in 2012 through 2015 and annual fare increases of \$0.10 thereafter. It is further assumed that each \$0.05 increase in the fare yields only about a \$0.02 increase in the average fare when all discounts are accounted for. The 20-year plan forecast of passenger revenues also assumes:

- Bus ridership per platform hour on regular fixed route bus service would grow at one-half of average population growth, or between 0.5% - 0.7% per year.
- BRT ridership was forecasted for 2035 and interpolated back to opening year.
- Riders per platform hour on innovative/connector routes would increase at one-half of average population growth, or about 0.5%-0.7% per year.
- Paratransit (ADA) ridership per platform hour would increase at 1% per year up to a maximum of 2.5 boardings per hour in FY2014, and flat thereafter.
- Express bus ridership would increase at one-half of the rate of population growth; or between 0.5% - 0.7% per year.

- TriMet and C-TRAN have executed an agreement on the operations and operation cost obligations of each district and the distribution of farebox revenues from CRC LRT (See Appendix E, Exhibit 14). In the agreement all farebox revenues from the CRC LRT are conveyed to TriMet, whether initially collected by C-TRAN or TriMet. The financial model includes all such revenues in the TriMet cash flow, and does not include such revenues in the C-TRAN cash flow. The CRC LRT O&M expenses in the C-TRAN model reflect the subsidy amounts paid to TriMet by C-TRAN net of farebox revenues, and also reflect the District costs of C-TRAN.

The specifics of the passenger revenue forecast are shown in Appendix G, Table 2. The net result of these assumptions over the period between 2012 through 2030 is an annual average growth rate for passenger revenues of about 6.4%.

4.3.2 Sales and Use Tax (Appendix G, Table 3, Lines 11 and 12)

4.3.2.1 History

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.¹¹ Currently C-TRAN levies a 0.7% (7/10^{ths} of 1 percent) sales and use tax; with voter approval C-TRAN could impose an additional 0.2% (2/10th of 1 percent) tax under its PTBA authority. C-TRAN has an additional sales and use tax authority under the HCT Act (RCW 81.104), which provides C-TRAN the possibility of up to another 0.9% (9/10^{ths} of 1 percent) for a HCT Systems Plan, provided the requirements of RCW 81.104 are met.

The sales and use tax is C-TRAN’s largest revenue source, accounting for about \$30.8 million in 2012. The recent history of C-TRAN’s sales and use tax receipts is shown in Table 4-6. Until January 2006, C-TRAN levied a 0.3% sales and use tax and C-TRAN’s district boundary encircled the urbanized portions of Clark County and a substantial portion of the rural areas. In 2005 the C-TRAN boundary was contracted to the urbanized and urbanizable areas of the county. In September 2005 the district voters approved a 0.2% increase in the sales and use tax rate. In November 2011 C-TRAN district voters approved a 0.2% increase in the sales and use tax rate, raising the total tax rate to 0.7% (7/10th of 1 percent). The tax rate was put into effect beginning April 1, 2012.

¹¹ 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.

Table 4-6
C-TRAN Sales and Use Tax History

Year	Sales Tax	% change	Rate	Amount per 0.1%
2002	\$11,939,105	0.2%	0.30%	\$3,979,702
2003	\$12,972,872	8.7%	0.30%	\$4,324,291
2004	\$14,583,396	12.4%	0.30%	\$4,861,132
2005	\$16,287,514	11.7%	0.30%	\$5,429,171
2006 (1)	\$26,086,132	60.2%	0.50%	\$5,217,226
2007	\$25,852,664	-0.9%	0.50%	\$5,170,533
2008	\$24,256,572	-6.2%	0.50%	\$4,851,314
2009	\$21,179,904	-12.7%	0.50%	\$4,235,981
2010	\$22,008,102	3.9%	0.50%	\$4,401,620
2011	\$22,724,638	3.3%	0.50%	\$4,544,978
2012	\$30,836,746	35.7%	(2)	\$4,713,859

(1) The C-TRAN district was contracted in January 2006, the reduced sales and use tax receipts in years 2006 and later reflect the smaller district.

(2) Sales and Use tax rate increased by 2/10th of 1% on April 1, 2012 from 5/10th of 1% to 7/10th of 1%. Amount per 0.1% shown in table for 2012 adjusts for the tax rate changeover.

The right-most column of Table 4-6 shows the tax receipts on a normalized (1/10th of 1 percent) basis; thus controlling for the different rates during the 10-year period. From 2000 through 2005, with the original C-TRAN district, receipts from a 0.1% sales and use tax receipts grew at the compound growth rate of 6.6%. The decline in receipts per 1/10th of 1 percent tax rate between 2005 and 2006 results from the change in the size of the district. Receipts began dipping in 2007 due to the slowing economy. However, sales tax receipts began to recover in 2010. That trend is continuing. The 2012 sales tax receipts exhibit about a 4% increase over 2011 levels on a per 1/10th of 1 percent basis. Preliminary monthly data in 2013 gives an early indication that sales tax proceeds may jump about 8%-9% between 2012 and 2013.

4.3.2.2 Forecast

The 20-year cash flow plan employs an underlying (i.e.; excluding growth caused by higher tax rates) annual growth rate for sales and use tax proceeds per 0.1% of tax rate of 4.0% per year in 2013 (notwithstanding early data indicating much greater growth in 2013) and thereafter.

The finance plan incorporates the sales and use tax rate increase approved in November 2011 and which started being collected in April 2012. Unlike previous forecasts no sales tax increase is planned for BRT and CRC LRT operations. The plan accounts for the extraordinary sales tax receipts C-TRAN will receive from the construction of the CRC Project itself and anticipates a vote in 2020 on a 0.2% increase under C-TRAN's PTBA authority. Revenues from the sales and use tax are anticipated to grow on average at about 5.8% per year over the forecast period, in part due to the increased tax rate. The forecast of Sales and Use tax revenues is shown in Appendix G, Table 3.

4.3.3 Other Operating Revenues (Appendix G, Table 3)

4.3.3.1 History

Other operating revenues include advertising, rent of C-TRAN rooms for private uses, and other minor revenues; advertising makes-up the vast majority of these revenues. As shown in Table 4-7 these sources do not contribute a great deal of revenue.

Table 4-7
History of Other Operating Revenues

	2006	2007	2008	2009	2010	2011	2012
Advertising	\$274,122	\$358,437	\$486,798	\$362,500	\$375,000	\$368,750	\$346,678
Miscellaneous/Rents	\$20,420	\$15,016	\$13,260	\$38,193	\$17,430	\$65,732	\$84,790
Total Other Operating Revenues	\$294,542	\$373,453	\$500,058	\$400,693	\$392,430	\$434,482	\$431,468

4.3.3.2 Forecasts

The forecast of advertising revenues is based on the current advertising contract until it expires at the end of 2016. After 2016 advertising revenues are forecast to escalate in proportion to the increase in the size of the bus fleet multiplied by the CPI growth rate. Miscellaneous revenues are escalated by the CPI growth rate. In total, Other Operating Revenues are anticipated to grow on average at about 3.9% per year over the forecast period, primarily as a result of increased advertising revenues resulting from the expanded transit presence.

In addition, C-TRAN would receive other revenues as a result of the CRC LRT extension. A significant portion of the construction costs of the CRC Project will occur in the C-TRAN district; as a result C-TRAN will receive a one-time (although over several years) windfall in sales tax receipts. Details on the calculation of these windfall revenues are shown in Table 3A. C-TRAN will manage the park-and-ride garages in Washington that were developed as part of the CRC Project; as a result C-TRAN will receive lease revenues from the commercial spaces in the garages. Details on the calculation of these revenues are provided in Table 3B. C-TRAN and TriMet are negotiating with funding partners to receive cash and/or in-kind services creating a \$400,000 per year (escalating) contribution toward CRC LRT O&M costs. If the negotiations are not successful, C-TRAN and TriMet have each contractually obligated themselves to share equally in providing this amount.

The forecast of Other Operating revenues is detailed in Appendix G, Table 3. Further details are provided in Appendix G, Table 3A-3C.

4.3.4 Operating and Maintenance Grants (Appendix G, Table 4)

4.3.4.1 History

This section addresses operating grants; capital grants are addressed below in Section 4.5.1. C-TRAN has received a variety of grants from state and federal sources that can be used for operations or for preventive maintenance. These include, among others:

- Section 5307 Grants
- Jobs Access Reverse Commute (repealed under MAP-21 and functions made eligible for Section 5307 funding) and New Freedom Grants (which were repealed under MAP-21 and merged into Section 5310 Enhanced Mobility Grants)
- WSDOT Special Needs and Regional Mobility Grants

The Portland-Vancouver metropolitan area receives an allocation of Section 5307 urbanized area formula grants, which is then divided, based on the same factors used in the national apportionment, among TriMet, C-TRAN, and SMART (the three urban transit districts within the metropolitan region). Section 5307 funds may be used for preventive maintenance and for capital projects. Through 2008 C-TRAN used all or virtually all of its Section 5307 funds for capital projects. Since then C-TRAN has used all of Section 5307 grant funds for preventative maintenance. The forecast anticipates that C-TRAN will continue to use its Section 5307 grant for preventative maintenance.

Table 4-8 shows the history of receipts of these revenues by C-TRAN. On average over the past ten years, C-TRAN's annual apportionment of Section 5307 funds grew at an annual rate of 2.4% per year.

**Table 4-8
C-TRAN 5307 Grant History**

Year	5307 Grant	% change
2002	\$3,540,061	4.9%
2003	\$3,479,997	-1.7%
2004	\$3,699,266	6.3%
2005	\$3,830,630	3.6%
2006	\$4,121,131	7.6%
2007	\$4,006,082	-2.8%
2008 (1)	\$3,907,473	-2.5%
2009 (2)	\$5,456,820	39.7%
2010	\$4,668,148	-14.5%
2011	\$4,775,151	2.3%
2012	\$4,504,622	-5.7%

(1) Portion of allocation used in 2009

(2) Higher than normal due to ARRA and partial allocation of 2008 funds

4.3.4.2 Forecast

C-TRAN's allocation of Section 5307 funds is projected to increase at 1% per year throughout the forecast period; these revenues are applied to preventative maintenance. C-TRAN also anticipates receiving other federal operating grants (such as grants Enhanced Mobility of Seniors and Individual with Disabilities program under MAP-21). These grant funds are anticipated to grow at the CPI throughout the forecast period. WSDOT Special Needs other operating grants are also anticipated to grow from FY2012 levels at the CPI throughout the forecast period.

The forecast of grant revenues is detailed in Appendix G, Table 4.

4.3.5 Interest Income (Appendix G, Table 1, Line E and F)

Interest income includes short-term and medium-term interest earnings on reserve funds. The cash flow analysis assumes that an amount of reserve funds equivalent of three months of operating costs is invested at short term rates, and the remaining reserve funds, if any, are invested at medium-term rates. Short and medium term interest rates start at current rates and respectively increase by about 3.5 and 3.3-basis points per year through 2019, and are held constant thereafter.

4.3.6 Total Operating Revenues (Appendix G, Table 1, Line G)

4.3.6.1 History

Total operating revenues is the sum of passenger revenues, sales and use tax revenues, MVET revenues (prior to 2001), other operating revenues, grants, and interest income. The history of total operating revenues is shown in Table 4-9. The average annual increase in total operating revenues over the past ten years was about 8.1% per year; in large part due to the recent increase in sales and use tax revenues and passenger revenues.

Table 4-9

C-TRAN Total Operating Revenue History

Year	Total Op Revenues	% change
2002	\$20,880,131	-8.8%
2003	\$21,334,864	2.2%
2004	\$23,230,400	8.9%
2005	\$27,346,204	17.7%
2006	\$35,141,452	28.5%
2007	\$35,475,796	0.9%
2008	\$34,169,077	-3.7%
2009	\$35,363,617	3.5%
2010	\$35,950,271	1.7%
2011	\$36,522,433	1.6%
2012	\$45,332,377	24.0%

The 8.8% loss of operating revenues in 2002 primarily resulted from reduced interest earnings as C-TRAN began to spend-down its reserve funds to fill the gap created by the loss of MVET. The 28.5% increase in total operating revenues in 2006 results from the 0.2% increase in sales and use tax rate that went into effect that year. The 2007 through 2009 amounts reflect the dip in sales tax revenues caused by the economic recession, but additional grant receipts dampened the decline. Since 2009 sales tax receipts have steadily grown although still below pre-recession highs. Preliminary 2013 data show significant growth from 2012, as receipts further approach pre-recession highs on a per 1/10th of 1 percent basis.

4.3.6.2 Forecast

The forecast of total operating revenues reflects the assumptions described above for the individual revenue sources. In sum, the assumptions lead to an average annual growth rate in total operating revenues of 5.5% per year between 2012 and 2030. This growth rate is driven in part by the approved and planned increases in the sales tax rate, the increase in passenger revenues from the planned fare increases, growth in ridership due to service expansion, and the additional revenues C-TRAN collects from/for CRC LRT operations.

4.4 C-TRAN Operating Expenses

The C-TRAN agency-wide cash-flow plan shown in Appendix G, Table 1 provides the forecast of all C-TRAN operating expenses over a 20-year period. It also addresses all capital expenses, which are explained in Section 4.6, below. The following sections explain historic trends and forecast assumptions for each of the operating expenses included in the 20-year plan. The table referenced in the heading of each section below is where the detailed forecast for the named expense is documented.

4.4.1 Salary and Wages (Appendix G, Table 5)

4.4.1.1 History

Salary and wages are C-TRAN's largest expense category, comprising about 52% of all operating expenses, excluding depreciation expenses, in 2012. Table 4-10 shows the recent history of C-TRAN's Salary and Wage costs.

**Table 4-10
History of C-TRAN
Salary and Wage Costs**

Year	Wages	Annual Growth
2002	12,135,853	5.2%
2003	12,587,992	3.7%
2004	13,196,932	4.8%
2005 (1)	12,810,823	-2.9%
2006 (2)	13,711,512	7.0%
2007	15,468,416	12.8%
2008	17,191,229	11.1%
2009	20,507,186	19.3%
2010	20,038,835	-2.3%
2011	20,033,985	0.0%
2012	20,379,548	+1.7%

(1) Reflects salary freeze in 2005

(2) In 2006 and after, vacation and sick leave are counted in the forecast model as a wage cost rather than a benefit, as was done in 2005 and earlier.

In reviewing Table 4-10, note that C-TRAN changed how it classifies vacation, sick leave, and holiday costs in the forecast model. These were Benefit costs prior to 2006 and Salary and Wage costs since. Looking at the period after this change (2006-2012), the average growth in total annual Salary and Wages was about 6.5% per year in large part due to service increases supported by sales and use tax rate increases that began in 2006.

Wage and Salary growth results from two factors: (i) service hour increases and (ii) increases in hourly Salary and Wages. These factors differ between C-TRAN's fixed route system and demand responsive system; the change in hourly rates also differs between fixed cost and variable cost elements. Table 4-11 shows the recent history of growth in hourly rates. The blended average hourly rates shown in the last row of Table 4-11 adds the hourly rates of the fixed route service with those of the demand responsive system in proportion to their relative total costs.

In reviewing Table 4-11, once again the data reflects the change made in 2006 on how vacation, sick leave, and holidays are classified. The average annual growth rate in the blended Salary and Wage costs per platform hour was 2.3 % per year between 2006, when the change was made, and 2012.

**Table 4-11
History of Salary and Wages per Platform Hour**

	2002	2003	2004	2005	2006 (1)	2007	2008	2009	2010	2011	2012
Fixed Route Services:											
Salary and Wages per Platform Hour: Variable Costs	\$24.44	\$25.61	\$26.61	\$27.10	\$31.99	\$33.60	\$33.38	\$36.55	\$38.85	\$40.72	\$41.13
Salary and Wages per Platform Hour: Fixed Costs	\$13.11	\$13.97	\$14.71	\$15.69	\$21.13	\$22.12	\$20.70	\$16.69	\$15.81	\$14.70	\$14.91
Total Salary and Wages per Platform Hour	\$37.55	\$39.59	\$41.32	\$42.80	\$53.12	\$55.72	\$54.08	\$53.24	\$54.66	\$55.42	\$56.04
Demand Responsive Services											
Salary and Wages per Platform Hour: Variable Costs	\$16.80	\$18.12	\$19.13	\$20.29	\$23.75	\$25.16	\$26.86	\$29.18	\$30.83	\$30.56	\$32.19
Salary and Wages per Platform Hour: Fixed Costs	\$9.64	\$8.72	\$8.68	\$5.60	\$7.53	\$7.34	\$7.47	\$19.35	\$21.29	\$20.81	\$19.47
Total Salary and Wages per Platform Hour	\$26.45	\$26.83	\$27.81	\$25.89	\$31.28	\$32.50	\$34.33	\$48.53	\$52.12	\$51.37	\$51.65
Blended Average Hourly Rates											
Average Blended Salary and Wages per Platform Hour	\$35.25	\$36.73	\$38.17	\$38.68	\$47.88	\$50.11	\$49.50	\$52.20	\$54.08	\$54.50	\$55.01

(1)The data reflects a change in accounting that began in 2006 that incorporates sick leave, holidays, and vacation as salary expenses instead of benefits.

4.4.1.2 Forecast

The current labor agreement between C-TRAN and ATU directs a 3.5% year-over-year escalation in wage rates. The wage scale for operators includes 5-6 steps (for fixed route and paratransit operators respectively) before the final “senior” wage rate is reached. It takes 3-5 years (for fixed route and paratransit operators respectively) to reach the “senior” level. Each wage step increases the wage rate by about 4%-5%. The cash flow plan employs an average wage rate per platform hour that was calculated at a time when a vast majority of C-TRAN employees were at the “senior” rate. This means that most employees will only receive the annual 3.5% cost escalation; there will be little wage increases due to progressing through the steps.

However, as senior drivers retire and newer drivers take their positions, the wages of the newer drivers, while escalating at a faster rate, are lower in absolute terms. Salary and Wages are

forecasted by multiplying a cost per platform hour factor by the applicable number of platform hours. This cost per platform hour factor addresses the total cost of the entire driver pool. Thus with the growth in senior drivers' wages maxed-out at 3.5% and the agency-wide salary and wage total being somewhat lowered by turn-over, an overall growth rate for Salary and Wages of about 3.5% would be anticipated.

The build-up of the Salary and Wage forecast is detailed in Appendix G, Table 5. The cash flow plan assumes that the average hourly Salary and Wage cost for fixed route and demand responsive services will increase at 3.5% per year throughout the forecast period. The forecast of total agency-wide Salary and Wages, which addresses the hourly cost in conjunction with the growth in platform hours) results in a 5.3% per year average annual growth rate through 2030; this does not reflect the salary and wage growth of C-TRAN employees working on CRC LRT or the contracted services with TriMet, which are shown in separate line items in the cash flow plan.¹²

4.4.2 Benefits (Appendix G, Table 6)

4.4.2.1 History

Benefit costs represent the second largest expense category at C-TRAN. Table 4-12 shows C-TRAN's history of Benefit costs over the past decade. As was the case with the history of wage costs shown above, the data in Table 4-12 must be understood in the context of the change in classifying vacation, sick leave, and holiday costs as a wage expense rather than a benefit. While wage costs saw a sharp increase in 2006 due to this change, benefit costs saw a reciprocal decline. Since the change (2006-2012), C-TRAN experienced an average annual growth rate in Benefit costs of about 10% per year, reflecting the increase in service hours resulting from the sales and use tax increase that also occurred in 2006.

Table 4-12
History of C-TRAN Benefit Costs

Year	Benefits	Annual Growth
2002	\$6,033,534	2.50%
2003	\$6,671,326	10.60%
2004	\$6,934,125	3.90%
2005	\$7,060,784	1.80%
2006 (1)	\$5,476,473	-22.40%
2007	\$6,712,397	22.60%
2008	\$8,028,889	19.60%
2009	\$8,226,736	2.50%
2010	\$8,421,387	2.37%
2011	\$8,773,312	4.18%
2012	\$9,770,004	11.4%

(1) From 2006 and after vacation and sick leave are counted as a wage cost rather than a benefit, as in 2005 and earlier.

¹² This does not account for C-TRAN's share of the salary and wage costs of the CRC LRT extension, which embedded in the *Contract* cost (with TriMet) in the cash flow plan rather than a Salary cost.

The growth in Benefits cost is a function of two variables: (i) service hour increases and (ii) increases in hourly Benefits costs. These factors differ between C-TRAN's fixed route system and demand responsive system. Table 4-13 shows the recent history of the composition of Benefit costs for the fixed route system on an annual basis. As shown, medical benefits comprise the largest component of benefits costs and were the fastest growing component. Table 4-14 shows the same for C-TRAN's demand responsive system.

**Table 4-13
History of Fringe Benefits: Fixed Route Service**

Fixed Route	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
FICA	\$923,630	\$975,455	\$1,014,018	\$1,000,745	\$1,053,281	\$1,184,788	\$1,311,812	\$1,133,382	\$1,211,010	\$1,212,287	\$1,322,307
PERS	171,729	178,228	178,558	304,280	419,159	886,169	1,257,463	1,013,941	878,809	945,537	1,167,561
Medical	1,558,824	1,807,245	1,947,532	2,011,516	2,263,735	2,615,954	3,068,050	3,221,289	3,361,210	3,639,488	4,019,427
Dental	294,012	326,022	333,192	323,325	345,895	381,695	423,146	413,863	412,479	377,436	386,526
Life	30,613	30,823	33,707	31,711	33,987	36,793	40,494	37,000	30,614	29,761	30,000
Disability	51,998	53,599	55,747	54,688	59,544	65,177	71,385	61,989	65,660	64,308	65,272
Unemployment	45,813	25,697	25,915	(142,118)	47,707	53,423	60,435	130,239	104,420	104,027	106,567
Workers' Comp	234,147	257,728	240,098	203,219	254,772	296,079	387,014	323,550	318,068	311,869	260,501
Sick Leave	373,114	468,342	458,349	711,235	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Holiday	407,104	420,913	494,861	443,726	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Vacation	932,869	1,010,175	959,203	1,005,905	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Other Paid Leave	47,095	45,935	33,964	124,772	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Uniforms	74,800	68,969	72,995	78,238	68,975	75,620	97,765	82,264	55,169	59,141	61,188
Tuition,Vision,Auto	17,282	23,431	20,852	19,828	15,310	22,475	35,385	23,577	47,955	46,163	49,075
Distribution	(84,114)	(121,045)	(135,489)	(109,407)	(147,058)	(156,509)	(168,026)	(34,665)	(9,640)	(10,361)	(10,431)
Total	5,078,916	5,571,517	5,733,502	6,061,663	4,415,307	5,461,664	6,584,923	6,406,429	6,475,754	\$6,779,656	\$7,457,993
Cost per Hour	\$18.72	\$21.08	\$21.76	\$24.24	\$17.38	\$20.01	\$21.20	\$21.10	\$22.80	\$23.99	\$26.27

(1) Reflects accounting changing moving vacation, sick leave, and holiday costs from Benefits to Salary and Wages.

**Table 4-14
History of Fringe Benefits: Demand Responsive Service**

Demand Responsive	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
FICA	\$149,321	\$159,788	\$175,595	\$165,867	\$178,143	\$201,173	\$228,252	\$289,756	\$337,725	\$329,123	\$386,556
PERS	27,692	28,230	30,646	40,958	70,414	150,211	213,185	253,101	246,842	256,112	356,221
Medical	323,318	381,044	423,505	390,159	470,045	527,534	611,981	950,941	1,048,460	1,115,964	1,270,300
Dental	69,927	74,187	74,312	66,018	75,676	78,978	84,709	124,695	133,073	120,514	130,457
Life	5,785	5,910	5,717	5,719	5,407	5,621	6,144	10,284	9,372	9,081	9,388
Disability	8,437	8,777	9,128	8,276	8,540	9,059	10,003	16,085	18,877	18,369	19,051
Unemployment	11,835	22,622	25,165	(61,263)	8,170	8,923	10,399	33,704	29,170	29,386	30,049
Workers' Comp	51,474	57,676	54,839	48,395	60,522	70,283	92,180	89,149	93,581	87,009	80,155
Sick Leave	48,153	54,954	72,438	53,922	41,713	43,953	21,741	(1)	(1)	(1)	(1)
Holiday	65,275	68,837	81,328	71,286	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Vacation	100,228	110,849	111,305	102,654	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Other Paid Leave	6,394	6,882	3,458	4,456	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Uniforms	18,136	16,971	19,462	15,659	13,116	17,517	20,590	18,980	17,093	17,268	18,074
Tuition,Vision,Auto	1,197	1,498	641	121	126	144	1,668	4,892	11,300	10,702	11,423
Distribution	67,446	101,584	113,084	86,894	129,294	137,337	143,114	28,722	140	129	334
Total	\$954,618	\$1,099,809	\$1,200,623	\$999,121	\$1,061,166	\$1,250,733	\$1,443,966	\$1,820,307	\$1,945,633	\$1,993,656	\$2,312,008
Cost per Hour	\$13.46	\$14.39	\$14.96	\$12.41	\$13.24	\$14.40	\$15.40	\$21.12	\$23.33	\$24.15	\$26.72

(1) Reflects accounting changing moving vacation, sick leave, and holiday costs from Benefits to Salary and Wages.

Table 4-15 summarizes the history of Benefits cost per platform hour for both C-TRAN's fixed route and demand responsive systems. It also shows the blended average of the fixed route and demand responsive hourly Benefits cost. Since the classification change in how vacation, holiday, and sick leave is accounted for (2006-2012), the blended hourly Benefits cost grew at an average annual rate of 8.4 % per year

**Table 4-15
History of Benefit Costs per Platform Hour**

Type	2002	2003	2004	2005	2006 (1)	2007	2008	2009	2010	2011	2012
Fixed Route	\$18.72	\$21.08	\$21.76	\$24.24	\$17.38	\$20.01	\$21.20	\$21.10	\$22.80	\$23.99	\$26.45
Demand Responsive	\$13.46	\$14.39	\$14.96	\$12.41	\$13.24	\$14.40	\$15.40	\$21.12	\$23.33	\$24.15	\$26.72
Blended	\$17.63	\$19.58	\$20.18	\$21.36	\$16.39	\$18.66	\$19.85	\$21.11	\$22.92	\$24.03	\$26.52

(1) Reflects accounting changing moving vacation, sick leave, and holiday costs from Benefits to Salary and Wages.

4.4.2.2 Forecast

The cash flow plan assumes that the Benefit cost per platform hour for both the fixed route and demand responsive systems will grow at first at 7% per year, stepping down in increments to 4% per year at the end of the forecast period. When applied to the service plan, this yields about 7.0% per year growth in total agency-wide Benefit costs; due to the service increases assumed. The forecast of Benefit costs is detailed in Appendix G, Table 6.

The forecasted growth rates anticipate that C-TRAN will continue to work with its union to find ways to mitigate the growth in Benefits cost. For example, C-TRAN and the ATU have a contract that establishes a cost sharing formula on health insurance, and contained a provision capping annual medical insurance increases at 9.5% per year. If premiums are increased by more

than 9.5%, either the coverage must be renegotiated to bring the increase beneath the cap, or the employees must pay the differential between the increase and the cap.

4.4.3 Services (Appendix G, Table 7)

4.4.3.1 History

Table 4-16 shows the build-up of fixed route system Services costs for the period 2001 through 2011. Table 4-17 shows the same for the demand responsive system. While Service Costs fluctuate depending on the particular needs in a year, they generally follow a trend, although 2009 demand responsive system service costs were particularly high due to certain special expenses in that year.

Table 4-18 shows history of the Service Costs per Platform Hour for the fixed route and demand responsive systems, and a blended rate. The blended Service Cost per Platform Hour grew at the average annual rate of 2.6% between 2002 and 2012.

**Table 4-16
History of Expenses for Services: Fixed Route**

Services: Fixed Route	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Prof. & Tech. Svcs	\$648,912	\$505,851	\$485,633	\$271,482	\$678,500	\$468,831	\$639,165	\$400,280	\$387,670	\$451,840	\$595,367
Temporary Help	7,469	5,944	8,881	130,019	4,790	31,129	42,140	30,490	1,151	1,078	37,066
Contract Maint Serv	225,121	201,908	253,142	254,172	227,226	246,750	669,143	673,103	797,500	659,669	699,633
Custodial Services	103,748	103,493	99,353	104,155	105,636	117,457	119,558	98,159	76,347	74,690	87,203
Security Services					231,560	237,449	192,867				-
Printing	111,332	122,225	92,273	138,919	126,588	201,560	190,027	110,473	105,298	92,871	78,730
Taxi Subsidy											
Security-Police Services	32,124	31,345	50,652	1,342							
Security-Private Services	301,929	297,997	130,887	166,735	2,080	2,230	1,925	226,237	184,611	186,376	172,531
Other Services	0	0	10,457	34,377	82,521	95,912	185,956	213,747	94,772	143,727	84,009
	\$1,430,635	\$1,268,763	\$1,131,278	\$1,101,201	\$1,458,901	\$1,401,318	\$2,040,781	\$1,752,489	\$1,647,349	\$1,610,251	\$1,754,539

**Table 4-17
History of Expenses for Services: Demand Responsive**

Services: Demand Responsive	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Prof. & Tech. Svcs	\$46,406	\$42,813	\$18,599	\$16,719	\$18,447	\$22,889	\$29,585	\$12,553	\$122,247	\$136,429	\$186,434
Temporary Help	4,218	0	0	0	0	0	0	2,460	363	332	11413
Contract Maintenance	26,947	27,097	45,157	44,794	49,648	33,377	71567	200,267	194,366	201,753	216,467
Custodial Services	0	0	0	0	0	0	0	23,983	24,041	23,346	26,862
Security Services	0	0	0	0	0	0	0				-
Printing	5,526	9,593	5,515	3,855	4,511	3,684	8,207	28,270	33,262	29,358	24,478
Taxi Subsidy	2,220	2,675	3,178	2,682	3,441	4,815	4,794	3,232	24	-	-
Security-Police Services	0	0	0	0	0	0	0				-
Security-Private Services	0	0	0	0	0	0	0	63,220	57,803	57,930	53,144
Other Services	0	0	0	0	0	0	1370	250,019	29,673	44,465	25,860
Total	\$85,317	\$82,178	\$72,449	\$68,050	\$76,048	\$64,765	\$115,523	\$684,003	\$461,779	\$493,612	\$544,658

**Table 4-18
History of Service Costs per Platform Hour**

Service Cost per Platform Hour	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Fixed Route	\$5.27	\$4.80	\$4.29	\$4.40	\$5.74	\$5.13	\$6.57	\$5.77	\$5.80	\$ 5.70	\$ 6.22
Demand Response	\$4.43	\$3.97	\$3.50	\$3.54	\$4.59	\$4.07	\$5.33	\$7.94	\$5.54	\$ 5.98	\$ 6.29
Blended	\$4.84	\$4.37	\$3.89	\$3.96	\$5.15	\$4.59	\$5.93	\$6.25	\$5.74	\$ 5.76	\$ 6.24

4.4.3.2 Forecast

The forecast of Service costs is detailed in Appendix G, Table 7. The forecast assumes for the fixed route system and demand responsive system that the Service cost per platform hour grows at 2.5% per year, higher than recent historical trends. Taking service increases into account, Service costs are forecasted to increase at 4.3% per year over the forecast period.

4.4.4 Fuel Costs (Appendix G, Table 8)

4.4.4.1 History

The history of C-TRAN fuel costs by type of service is shown in Table 4-19

**Table 4-19
History of Fuel Costs**

Fixed Route	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Fuel Costs	\$714,838	\$862,362	\$1,155,780	\$1,510,333	\$1,728,874	\$2,041,838	\$3,157,695	\$1,765,967	\$2,132,651	\$2,923,708	\$3,133,442
Fuel Cost per Platform Hour	\$2.63	\$3.26	\$4.39	\$6.04	\$6.80	\$7.48	\$10.17	\$5.82	\$7.51	\$10.35	\$11.11
Demand Response	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Fuel Costs	\$97,392	\$136,092	\$194,914	\$275,652	\$349,712	\$394,339	\$580,609	\$309,395	\$406,759	\$500,668	\$559,337
Fuel Cost per Platform Hour	\$1.37	\$1.78	\$2.43	\$3.42	\$4.36	\$4.54	\$6.19	\$3.59	\$4.88	\$6.06	\$6.46
Total Blended	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Fuel Costs	\$812,230	\$998,454	\$1,350,694	\$1,785,985	\$2,078,586	\$2,436,177	\$3,738,304	\$2,075,361	\$2,539,410	\$3,424,376	\$3,692,779
Fuel Cost per Platform Hour	\$2.37	\$2.93	\$3.93	\$5.40	\$6.22	\$6.77	\$9.24	\$5.32	\$6.91	\$9.38	\$10.02

4.4.4.2 Forecast

The forecast of fuel costs applies a fuel cost per platform hour factor for each of the fixed route and demand responsive systems to the applicable number of platform hours. A 2013 per-platform-hour-cost of fuel for each of the Fixed Route and Demand Responsive systems was estimated by averaging the applicable per-platform-hour-cost of fuel for the three previous years. The forecast escalates the 2013 fuel cost per platform hour rates for the fixed route and demand responsive system by 2.5% per year throughout the forecast period. The forecast also assumes that buses will continue to get more efficient with regard to fuel. The Research and Innovative Technology Administration (RITA) of the U.S.D.O.T reported that fuel efficiency in diesel buses grew at 0.3% per year between 2001 and 2011. Fuel cost-efficiency will also grow as the bus fleet shifts from diesel to alternative fuels such as CNG and biodiesel. To account for this growing efficiency due to changes within technologies and between technologies, the forecast assumes a 1% per year growth in fuel efficiency. The forecast is shown in Appendix G, Table 8.

4.4.5 Supplies Other than Fuel Costs (Appendix G, Table 9)

4.4.5.1 History

Table 4-20 and 4-21 show the recent history of Supplies costs, other than fuel costs. For the fixed route system total annual Supplies (excluding fuel) costs grew at an average annual rate of 4.8% over the past ten years. On a per platform hour basis, Supplies (other than fuel) costs for the fixed route system grew at 4.4% per year.

For the demand responsive system total annual Supplies (excluding fuel) costs grew at an average annual rate of 6.9% over the past ten years. On a per platform hour basis, Supplies (other than fuel) costs for the demand responsive system grew at 4.8% per year.

**Table 4-20
History of Supplies (Other than Fuel): Fixed Route Service**

Fixed Route	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Tires & Tubes	\$168,894	\$79,086	\$108,221	\$126,600	\$100,598	\$149,536	\$158,694	\$117,505	\$116,352	\$149,765	\$125,350
Part & Materials	651,567	781,808	744,468	774,657	1,074,267	1,082,816	1,268,505	1,304,419	1,147,043	1,513,821	1,508,470
Lubricants	62,191	43,490	41,712	39,348	77,057	62,295	75,917	65,922	19,234	86,933	16,672
Operating Supplies	176,301	208,301	129,246	173,200	189,971	155,885	180,393	90,758	75,374	68,503	110,722
Small Tools & Equip	125,049	48,098	45,101	25,560	56,220	72,168	155,399	140,890	101,530	120,665	166,079
Office Supplies	35,052	32,061	35,821	32,675	37,520	53,503	50,052	49,892	16,304	18,468	17,964
Total Supplies (exc. Fuel)	\$1,219,054	\$1,192,844	\$1,104,569	\$1,172,040	\$1,535,633	\$1,576,203	\$1,888,960	\$1,769,386	\$1,475,837	\$1,958,156	\$1,945,257
Other Supply Cost/Hour	\$4.49	\$4.51	\$4.19	\$4.69	\$6.04	\$5.77	\$6.08	\$5.83	\$5.197	\$6.93	\$6.90

**Table 4-21
History of Supplies (Other than Fuel): Demand Responsive Service**

Demand Responsive	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Tires & Tubes	\$33,978	\$5,373	\$10,285	\$19,202	\$30,705	\$33,440	\$28,586	\$26,565	\$31,462	\$27,632	\$44,242
Part & Materials	126,935	121,445	101,602	122,732	168,511	187,713	197,749	198,601	190,563	198,036	251,961
Lubricants	7,831	5,504	5,103	5,708	8,411	9,662	11,207	14,511	2,682	1,796	1,510
Operating Supplies	3,012	9,991	11,370	3,085	6,221	3,478	2,370	15,771	11,366	11,393	22,184
Small Tools & Equip	3,256	273	0	446	892	3,399	141	54,715	31,415	19,045	28,443
Office Supplies	7,638	6,812	6,970	3,512	4,032	5,606	5,246	16,903	6,391	7,357	7,196
Total Supplies (exc. Fuel)	\$182,650	\$149,398	\$135,330	\$154,685	\$218,772	\$243,298	\$245,299	\$327,067	\$273,879	\$265,259	\$355,535
Other Supply Cost per Hour	\$2.57	\$1.95	\$1.69	\$1.92	\$2.73	\$2.80	\$2.62	\$3.80	\$3.28	\$3.21	\$4.11

4.4.5.2 Forecast

The build-up of the forecast of Supplies (excluding fuel cost) cost is shown in Appendix G, Table 9. These costs are forecast by applying per platform hour costs for the demand responsive and fixed route systems to the applicable platform hours each year. A 2013 per-platform-hour-cost of Supplies for each of the Fixed Route and Demand Responsive systems was estimated by averaging the applicable per-platform-hour-cost of Supplies for the three previous years. The forecast then assumes for the fixed route system and demand responsive system that the Supplies cost per platform hour grows at 2.5% per year. The Supplies costs associated with CRC LRT extension are incorporated in the CRC LRT O&M contract costs, and are not in Table 9.

4.4.6 Utility Expenses (Appendix G, Table 10)

4.4.6.1 History

Table 4-22 shows the recent history of Utility Expenses for all services (fixed route and demand responsive). During the past ten years period, total Utility Expenses grew by an average annual growth rate of 2.7%. Utility Cost per platform hour increased by an average annual rate of 1.9%.

**Table 4-22
History of Utility Expenses: All**

Agency wide Utilities	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Electricity	\$100,870	\$116,408	\$109,867	\$110,514	\$119,570	\$124,656	\$121,242	\$139,127	\$121,551	\$113,666	\$115,413
Natural Gas	\$21,390	\$17,986	\$27,114	\$24,866	\$34,024	\$43,419	\$32,716	\$42,018	\$29,816	30,505	19,686
Communications	\$184,989	\$186,619	\$196,614	\$203,935	\$210,885	\$212,972	\$232,254	\$232,459	\$253,125	247,457	234,594
Postage/Delivery	\$25,379	\$28,767	\$37,443	\$39,675	\$4,687	\$4,389	\$6,538	\$286	\$53,055	42,139	42,919
Water	\$15,979	\$16,018	\$17,841	\$14,982	\$17,573	\$17,296	\$20,516	\$20,322	\$10,132	13,984	20,100
Sewer	\$13,428	\$14,419	\$19,821	\$27,960	\$34,621	\$38,319	\$34,609	\$36,575	\$37,186	37,620	40,723
Garbage	\$20,393	\$22,173	\$23,531	\$20,183	\$23,277	\$24,865	\$21,237	\$25,580	\$23,319	26,403	25,310
Hazmat Disposal	\$6,357	\$11,036	\$6,651	\$9,257	\$8,726	\$6,051	\$7,295	\$6,332	\$6,246	5,204	9,258
Total Utilities	\$388,785	\$413,426	\$438,882	\$451,372	\$453,363	\$471,967	\$476,407	\$502,699	\$534,430	\$516,978	\$508,003
Cost per Hour	\$1.14	\$1.21	\$1.28	\$1.37	\$1.36	\$1.31	\$1.18	\$1.29	\$1.45	\$1.42	\$1.38

4.4.6.2 Forecast

The build-up of the forecast of Utilities cost, which is based on applying per platform hour costs to the platform hours provided each year, is shown in Appendix G, Table 10. The forecast uses a blended utility cost per platform hour rate for both the fixed route and demand responsive system, which is assumed to grow at 2.5% per year. Over the forecast period, total Utility costs are estimated to grow on average at 4.3% per year, taking into account the service increases. The propulsion (electricity) costs for the CRC LRT are not included in Table 10, but rather are embedded in the operating subsidy cost for CRC LRT shown in Contract Services.

4.4.7 Insurance, Tax, Lease, and Miscellaneous Expenses (Appendix G, Tables 11 - 14)

4.4.7.1 History

C-TRAN maintains several insurance policies, including fleet physical damage subject to \$60,000 deductible on coaches and \$5,000 on service vehicles, building and contents, public liability, excess liability with a \$2,000,000 deductible, and others. All other risks arising from vehicle accidents are retained by C-TRAN. The Board of Directors each year sets aside \$1,000,000 of investments for self-insurance to cover deductibles and other uncovered claims.

Miscellaneous expenses include advertising, training, bad debt, and other miscellaneous expenses. Pre-2006 taxes included the use tax on transit services; this tax no longer applies. The remaining tax expenses include license fees, including the license fee on underground storage tanks. Lease expenses include facility and equipment leases, and are primarily driven by a lease for administrative facility space.

Table 4-23 shows the recent history of these expenses; as shown they have fluctuated based in large part on varying insurance needs and the amount of leased space required each year.

Table 4-23											
History of Insurance, Tax, Lease, and Miscellaneous Expenses											
Fixed Route	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Insurance	\$363,602	\$304,687	\$149,939	\$91,586	\$249,813	\$112,085	\$51,249	\$569,595	\$401,564	\$446,119	\$371,652
Leases	\$399,404	\$395,370	\$322,374	\$303,947	\$291,554	\$248,816	\$194,189	\$163,293	\$179,000	250,934	169,618
Taxes	\$14,383	\$22,494	\$24,651	\$32,422	\$16,520	\$2,941	\$2,177	\$4,034	\$5,746	4,115	5,487
Misc.	\$231,379	\$166,923	\$144,731	\$150,722	\$218,988	\$341,860	\$327,201	\$408,079	\$147,143	165,140	214,037
Total	\$1,008,768	\$889,474	\$641,695	\$578,677	\$776,875	\$705,702	\$574,996	\$1,145,001	\$733,453	\$866,309	\$760,794
F.R Misc. Cost/Hour	\$3.72	\$3.37	\$2.44	\$2.31	\$3.06	\$2.59	\$1.85	\$3.77	\$2.58	\$3.07	\$2.70
Demand Respor	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Insurance	\$69,724	\$8,316	\$116,975	\$12,852	\$70,594	\$88,156	\$85,762	\$43,523	\$189,642	\$96,707	\$99,081
Leases	\$20,249	\$20,327	\$49,193	\$84,008	\$84,398	\$31,341	\$21,617	\$41,175	\$52,332	45,419	46,400
Taxes	\$0	\$30	\$0	\$85	\$55	\$0	\$0	\$1,372	\$1,972	1,281	1,733
Misc.	\$6,377	\$5,498	\$5,824	\$2,805	\$6,491	\$5,969	\$4,049	\$87,312	\$32,436	94,401	92,571
Total	\$96,350	\$34,171	\$171,992	\$99,750	\$161,538	\$125,466	\$111,428	\$173,382	\$276,382	\$237,808	\$239,785
D.R. Misc. Cost/Hour	\$1.36	\$0.45	\$2.14	\$1.24	\$2.02	\$1.44	\$1.19	\$2.01	\$3.31	\$2.88	\$2.77
Total/Blended	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Total Misc. Cost/Hour	\$3.51	\$3.26	\$2.37	\$2.16	\$2.88	\$2.41	\$1.70	\$3.38	\$2.75	\$3.02	\$2.72

4.4.7.2 Forecast

The detailed forecasts of these costs are shown in Appendix G, Tables 11 through 14. The forecast of tax, insurance, miscellaneous, and lease expenses is based on per platform hour factors. All are calculated based on separate per platform hour factors for fixed route and demand responsive services, starting from the 2012 value. The per platform hour cost of each of these factors is assumed to grow at 2.5% per year.

4.4.8 CRC LRT O&M Costs (Appendix G, Table 15; Appendix G, Table 1, Lines T and U; Also See: Appendix A, Tables 14-14G)

As discussed in Section 3, TriMet and C-TRAN have executed a Project Development and Operations Agreement (the “Agreement”) establishing the responsibilities of C-TRAN and TriMet for operating and maintaining the CRC light rail (CRC LRT), including the allocation CRC LRT O&M costs between TriMet and C-TRAN (See Appendix E, Exhibit 14).

The Agreement partitions LRT O&M functions and costs into two categories:

- “District” O&M functions (such as: routine maintenance-of-way or park-ride O&M) are performed by each transit agency within its district, and are the paid directly by the applicable transit agency.
- “Mutual” O&M functions (such as: LRV operators or LRV maintenance) are performed by TriMet on behalf of both C-TRAN and TriMet. Mutual O&M costs are shared, with C-TRAN paying about 63% and TriMet about 37%.

The CRC LRT O&M model (shown in Appendix A, Exhibits 14-14H) calculates separately the C-TRAN and TriMet District costs. The model also calculates the Mutual O&M costs, and allocates these costs between C-TRAN and TriMet based on the agreed to percentage allocations. For each year, the CRC LRT O&M cost for each transit agency is the sum of its District cost plus its share of the annual Mutual costs.

Operating costs for the CRC LRT were forecast as follows. Ridership forecasts for the CRC LRT were estimated for the opening year of revenue service (2019) and the planning horizon year (2030). Based on these ridership forecasts, TriMet established prototypical schedules and estimated service factors (i.e., vehicle miles, platform hours, and number of vehicles) for the opening and horizon years. The service factors were inputted into the CRC LRT O&M model shown in Appendix A, Exhibit 14-14H. Also inputted into the model were the unit costs (such as MOW per vehicle mile, etc.) derived from TriMet's FY2013 Budget. The model then calculates the 2019 and 2030 O&M costs for each district in FY2013 dollars. Finally the dollar escalation values are applied to convert to year-of-expenditure dollars. The CRC LRT O&M costs in the intervening years (2020-2029) were estimated by interpolating between the forecast years

Pursuant to the Agreement, Farebox Revenues from CRC LRT (see Appendix A, Exhibit 14H) are conveyed to TriMet, whether initially collected by TriMet or C-TRAN. Farebox revenues were initially derived for 2019 and 2030 based on forecasted ridership and average fares; these forecasted farebox revenues were then limited by conservative estimates of farebox recovery. Consequently the farebox revenues used in this finance plan are less than those based on the ridership forecasts. Under the C-TRAN-TriMet Agreement, Farebox Revenues are applied to Mutual O&M Costs to the maximum extent possible. The Agreement further specifies that *State of Good Repair* grant funds resulting from the CRC LRT, after becoming available in the eighth year of operations, must also be applied (i.e.; preventive maintenance) to Mutual O&M costs. For each year, the operating subsidy required from each transit agency is calculated as its district cost plus its share of an amount calculated as the Mutual O&M costs minus the Farebox Revenues minus the State of Good Repair grant funds (See Appendix A, Exhibit 14).

To simplify the integration of the TriMet and C-TRAN cash flows, the results are shown differently in the C-TRAN and TriMet 20-year agency-wide cash-flows. The TriMet cash flow (discussed in Section 3 of this report) incorporates the:

- TriMet District costs;
- All Mutual O&M costs (notwithstanding how they are ultimately allocated),
- All Farebox Revenues from CRC LRT;
- All *State of Good Repair* grants funds; and
- C-TRAN's payment for Contracted Services regarding Mutual O&M costs.

The C-TRAN cash flow does not directly incorporate the CRC LRT Farebox Revenues or the *State of Good Repair* funds; but these sources are indirectly addressed by using operating subsidy as the contracted expense rather than operating cost. This is shown in Table 4-24.

**Table 4-24
C-TRAN Operating Subsidy Requirement for CRC LRT O&M**

C-TRAN Operating Subsidy	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
CRC LRT O&M Cost	\$5.70	\$6.13	\$6.59	\$7.09	\$7.63	\$8.21	\$8.84	\$9.52	\$10.25	\$11.04	\$11.89	\$12.81
- Farebox Revenues	\$2.28	\$2.45	\$2.64	\$3.19	\$3.43	\$3.70	\$3.98	\$4.29	\$4.92	\$5.52	\$5.95	\$6.66
- State of Good Repair Grant	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.46	\$0.47	\$0.48	\$0.49	\$0.50
- TriMet Operating Subsidy	\$1.12	\$1.21	\$1.30	\$1.28	\$1.38	\$1.49	\$1.61	\$1.57	\$1.60	\$1.65	\$1.80	\$1.86
C-TRAN Operating Subsidy	\$2.30	\$2.47	\$2.65	\$2.62	\$2.82	\$3.03	\$3.25	\$3.21	\$3.27	\$3.39	\$3.66	\$3.79

Thus, as shown in Table 4-25, the C-TRAN cash flow (shown in this Section 4) includes as expenses:

- C-TRAN’s District LRT O&M costs; and
- C-TRAN’s share of operating subsidy paid to TriMet as *Contracted Services*.

**Table 4-25
C-TRAN Costs for CRC LRT O&M Included in Cash Flow**

Costs	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
C-TRAN District Costs	\$0.85	\$0.89	\$0.94	\$0.99	\$1.04	\$1.09	\$1.16	\$1.22	\$1.29	\$1.36	\$1.44	\$1.52
Contracted Services w/ TriMet (Net of Farebox and Grants)	\$1.45	\$1.58	\$1.71	\$1.64	\$1.78	\$1.93	\$2.10	\$1.98	\$1.98	\$2.03	\$2.22	\$2.27
Total C-TRAN Costs	\$2.30	\$2.47	\$2.65	\$2.62	\$2.82	\$3.03	\$3.25	\$3.21	\$3.27	\$3.39	\$3.66	\$3.79

The C-TRAN cash flow shown in Appendix G, Exhibit 1, shows C-TRAN District costs in Line T and C-TRAN *Contracted Services* cost in Line U. The remainder of CRC LRT O&M costs and revenues are included in the TriMet agency-wide analysis shown in Section 3.

4.4.9 Added BRT O&M Expenses (Appendix G, Table 21) (Appendix G, Table 1, Line R)

Certain costs of BRT O&M that are not picked-up in other line items are addressed in Appendix G, Table 21. These include the costs of ticket vending machine (TVM) O&M, fare inspectors, shelter utilities, start-up marketing, and other additional FTE required for BRT operations. These costs are incorporated in the C-TRAN cash flow plan in Line R of Appendix G, Table 1.

4.4.10 Innovative Programs Expenses (Appendix G, Table 16)

The cash flow plan assumes that C-TRAN will operate several relatively small Innovative Programs, including vanpool operation and other innovative programs such as travel demand options, flexcar, transit oriented development, and travel smart marketing programs. The costs of these programs are anticipated to increase at 3% per year throughout the forecast period. The build-up of the forecast of these costs is shown in Appendix G, Table 16.

4.4.9 Total Operating Expenses (Appendix G, Table 1, Line V)

The Total Operating Expenses shown in Line item V of the cash flow plan (Appendix G, Table 1, Line V) is the cumulative total of the expenses discussed in Sections 4.4.1 through 4.4.10. Table 4-26 shows the recent historic trend in Total Operating Expense, which exhibited an average annual growth rate of 4.8% per year over the past ten years.

**Table 4-26
History of Total Operating
Expenses (1)**

Year	Total Operating Expense
2002	\$25,155,292
2003	\$25,218,426
2004	\$25,934,402
2005	\$25,890,317
2006	\$28,810,798
2007	\$32,076,750
2008	\$37,456,291
2009	\$37,270,754
2010	\$36,639,867
2011	\$38,328,499
2012	\$40,128,129

(1) Excludes depreciation expenses

In comparison to historic trends, the cash flow forecast of Total Operating Expenses (Appendix G, Table 1, Line V) exhibits a 5.6% annual average growth rate through 2030.

4.5 Capital Revenues

4.5.1 Capital Grants (Appendix G, Table 1, Line AH)

4.5.1.1 History

C-TRAN historically used its Section 5307 formula grants funds for capital expenditures (Note: this is no longer the case - the cash flow plan assumes that these formula grant funds would be used for preventative maintenance). In addition, C-TRAN has received Section 5309-Bus grants, CMAQ grants, state Regional Mobility Grants, and state special needs transportation grants.

4.5.1.2 Forecast

The forecast Capital Grants is shown in Appendix G, Table 4. The capital grant funds assume that the BRT would be funded with a 70% Small Starts grant. The plan assumes that rolling stock (new and replacement buses, vanpool vehicles, etc.), equipment, and facilities would be funded on average with 40% grant funds (state and federal) and the remainder with C-TRAN general funds; no borrowing is assumed. No Section 5307 formula federal funds are applied to capital costs; Section 5307 funds are fully allocated to pay for preventative maintenance over the forecast period.

4.5.2 Transfer from General Fund (Appendix G, Table 1, Line AJ)

The capital plan is anticipated to be paid with grants, and “pay-go” cash (i.e.; transfers from the General Fund. General Fund transfers are anticipated to cover about 64% of the program. These transfers are illustrated in Line AJ of Table 1.

4.6 Capital Expenses

Capital expenditures include all agency-wide capital expenses for rolling stock, including vehicle replacement, facilities, and equipment needed to implement the cash flow plan. There are no CRC LRT Capital Costs, which are addressed in Section 2 of this report, in this line item. C-TRAN has no funding obligation for these costs. Table 4-27, on the following page, shows the recent history of C-TRAN's capital program.

4.6.1 Rolling Stock (Appendix G, Table 17)

The capital plan for rolling stock shown in Appendix G, Table 17 includes a continuing program of fixed route and paratransit vehicle acquisition and replacement, an on-going program of vehicle component (i.e. engine, transmission, etc.) replacement; maintenance vehicle replacement, and vanpool vehicle acquisition and replacement. Unit costs for these items are assumed to escalate at 2.5% per year. The calculation of vehicle replacement requirements is shown in Appendix G, Table 17B.

4.6.2 Facilities (Appendix G, Table 18)

The facilities plan shown in Appendix G, Table 18 includes improvements to the maintenance and administrative office facilities, park-and-rides, and other similar improvements. These costs are assumed to escalate at 2.5% per year.

4.6.3 Equipment (Appendix G, Table 19)

The equipment plan shown in Appendix G, Table 19 includes completion of the ITS/VAST program (acquisition and installation of vehicle locators, passenger counters, automated fare collection, maintenance software, and traveler information equipment), computer system upgrades, a program of passenger amenity equipment on buses and buildings, a program of office equipment and computers replacement and upgrades, and other miscellaneous capital repair and replacement. These costs are assumed to escalate at 2.5% per year.

4.6.4 BRT Improvements (Appendix G, Table 20)

C-TRAN's 20-year plan includes development of a BRT line along Fourth Plain Boulevard. This BRT project is described in Appendix H, Exhibit 10. The cash flow requirement of the BRT improvement is shown in Appendix G, Table 20. These costs are assumed to escalate at 3.5% per year.

**Table 4-27
C-TRAN Major Capital Program History (1)**

Major Capital Program Costs	2007	2008	2009	2010	2011	2012
Fixed Route Vehicles		\$11,357,216	\$2,607,372	\$4,257,488		
Paratransit vehicles	\$404,896	\$517,183	\$306,658	\$850,652		
Service Vehicles	\$721,071		\$68,884			\$25,142
Vanpool Vans		\$198,010				\$90,622
Engines and transmissions	\$135,673					
Diesel Retrofit Program	\$417,838	\$426,472				
Intelligent Transportation Project	\$21,965	\$71,420				
Bus Stop Program	\$23,411	\$16				\$71,348
Transit Center Security Project	\$24,700	\$422,011				
Computer Systems	\$87,337	\$1,695,821		\$56,295		
Bus Shelters for Vancouver CBD	\$150,720					
Air conditioning unit	\$31,559					
Cameras for paratransit vehicles	\$32,328					
Fueling system						
Software Upgrade			\$2,149,351	\$779,315		
Misc.	\$86,807	\$47,255		\$524,328		
99th St Transit Center	\$10,014,283		\$219,156			
Salmon Creek Park and Ride			\$142,021			
Data Terminals for Paratransit		\$92,729				
AOM Facility	\$30,802					
Maintenance Equipment				\$19,114		
Fuel Focus System				\$157,482		\$52,048
Maintenance Bus Lifts				\$414,465		
Maintenance Work Canopies				\$66,908		
Diesel Exhaust Fluid System					\$48,430	
Maintenance Utility Trailer					\$11,232	
Distributed Network Recorder					\$32,952	
Real Time Passenger Information					\$172,753	
Interactive Voice Response System (DR)					\$132,962	
Interactive Voice Response System (FR)					\$165,360	
Router (Salmon Creek)					\$13,114	
ASA External Call outs						\$42,034
Cisco Fiber Switch						\$13,984
SAN Upgrade						\$142,741
Total	\$12,183,390	\$14,828,133	\$5,493,442	\$7,126,047	\$576,803	\$437,918

(1) Major capital expenditures as identified in each year's CAFR.

4.7 General Fund Results

4.7.1 Beginning Balance (Appendix G, Table 1, Line AP)

Beginning balance represents the total reserve funds on hand at the start of the fiscal year.

4.7.2 Net Operating Income (Appendix G, Table 1, Line X)

For each year, the Net Operating Income (NOI) represents the difference between Total Operating Revenues and Total Operating Expenses for that year. A negative NOI means that operating costs exceeded operating revenues for that year.

4.7.3 Self-Insurance Reserve Target (Appendix G, Table 1, Line AC)

In addition to insurance policies it purchases (discussed earlier), C-TRAN maintains an insurance reserve equal to \$3 million per year through 2013 and (due to revision in insurance program) thereafter \$1 million per year escalating at 2.5% per year. These funds are only expended if damage awards exceed or are not covered by the purchased insurance coverage.

4.7.4 Working Capital Reserve (Appendix G, Table 1, Line AD)

The Working Capital Reserve target shown in Line AE is equal to 17% of the total O&M costs for the year. C-TRAN considers this the minimum acceptable reserve, and it is highlighted in Line AC. The reserve funds above the amounts shown in Line AD are referred to as the Aggregate Unreserved Fund Balance, which is discussed below and shown in Line AF. The total amount of reserve funds available to C-TRAN is the total of the Working Capital Reserve and the Aggregate Unreserved Fund Balance.

4.7.5 Capital Replacement Fund (Appendix G, Table 1, Line AE)

This line item existed historically, but is no longer used. Funds for capital replacement are directly addressed in the cash-flow.

4.7.6 Beginning Year Working (Cash) Reserve in Months of Annual Operating Costs (Appendix G, Table 1, Line AQ)

The percentages shown in Line AQ are the result of dividing the Beginning Year Cash Reserve in Line AP by the Total Operating Expenses shown in Line V and multiplying by 12 months. It represents the number of months of operating expenses that could be paid with the Working Capital Net of Insurance Reserve for that year.

4.8 Financial Results and Sensitivity Analysis

4.8.1 Analysis of C-TRAN Agency-wide Plan

Table 4-28 shows the yearly working capital, unreserved balance, and total reserves in dollars and months of operations based on all of the assumptions described above.

Table 4-28
Summary of Financial Results in C-TRAN Base Plan

Year	Beginning Year Fund Balance	Total Fund Balance in Months of Operations	Year	Beginning Year Fund Balance	Total Fund Balance in Months of Operations
FY2012	\$45,137,391	13.4	FY2022	\$37,581,339	6.1
FY2013	\$49,654,008	13.9	FY2023	\$42,352,523	6.5
FY2014	\$42,469,680	11.3	FY2024	\$46,756,312	6.8
FY2015	\$31,420,891	7.9	FY2025	\$50,939,595	7.1
FY2016	\$32,740,771	7.8	FY2026	\$54,746,221	7.4
FY2017	\$34,593,921	7.8	FY2027	\$52,814,148	6.8
FY2018	\$35,107,855	7.1	FY2028	\$42,238,947	5.2
FY2019	\$32,911,271	6.3	FY2029	\$45,535,231	5.4
FY2020	\$27,461,809	4.9	FY2030	\$42,375,763	4.7
FY2021	\$32,567,430	5.5			

Thus, each year throughout the forecast period the C-TRAN Base cash flow plan provides for:

- All estimated operating expenses for planned service levels and the C-TRAN share of CRC LRT O&M costs;
- All capital expenses, including an adequate vehicle replacement program; and
- A beginning year fund balance/working reserve capable of paying for at least 3-months of operations.

4.9. Sensitivity Analysis

This section addresses risks to the agency-wide operating finance plan. These risks include such factors as lower-than-expected growth in sales and use tax revenues or higher-than-expected growth in, wages and/or benefit costs. Two sensitivity analyses were performed to examine the potential impact of these risks on C-TRAN’s operating condition.

The purpose of these tests was to determine a representative management response to a poorer than expected operating result. The objective is to determine operating policy changes that would provide a Working Capital Reserve of at least 12% of annual operating expenses. The responses included in the sensitivity test are representative examples of how management could react to a scenario; a large array of other responses is possible.

Two sensitivity scenarios are incorporated in this New Starts analysis. The cash flow tables for each of these sensitivity scenarios are provided in Appendix G, Tables 22 and 23. The following paragraphs describe these sensitivity scenarios and their financial impacts.

Sensitivity Scenario 1

Compared to the Base Plan discussed above, Sensitivity Scenario 1 considers a higher general inflation rate in combination with a lower than anticipated growth in sales tax. Normally one would expect sales tax receipts to escalate in correlation to escalation in inflation rates. But in times of economic distress retail sales can be depressed as prices inflate. Sensitivity Scenario 1 assumes this condition throughout the forecast period. Thus Sensitivity Scenario 1 is viewed as a conservatively-biased stress test. Specifically, Sensitivity Scenario 1 assumes:

- A 10% higher rate of general inflation throughout the forecast period (2.75% per year in Test 1 compared to 2.5% in Base Plan); and
- A 10% slower growth rate for sales and use tax receipts (3.6% per year growth in sales tax receipts per 1/10th of 1% sales tax throughout the forecast period (compared to a 4.0% growth rate in the Base Plan).

In response to these conditions, Sensitivity Scenario 1 assumes the management approach to mitigating adverse conditions would be to reduce service hours uniformly throughout the system by 2.5%. As shown below in Table 4-29, this management response to Sensitivity Scenario 1 conditions would be sufficient to meet operating (including CRC LRT), capital, and vehicle replacement objectives while providing working capital reserve balances in excess of minimally acceptable standards.

**Table 4-29
Summary of Financial Results in C-TRAN Sensitivity Scenario 1**

Year	Beginning Year Fund Balance	Total Fund Balance in Months of Operations	Year	Beginning Year Fund Balance	Total Fund Balance in Months of Operations
FY2012	\$45,137,391	13.9	FY2022	\$39,768,721	6.6
FY2013	\$50,930,061	14.9	FY2023	\$44,566,541	7.1
FY2014	\$43,857,314	12.2	FY2024	\$48,584,267	7.4
FY2015	\$27,747,603	7.3	FY2025	\$52,210,774	7.5
FY2016	\$30,048,431	7.5	FY2026	\$55,014,299	7.6
FY2017	\$32,785,643	7.6	FY2027	\$51,430,223	6.8
FY2018	\$34,538,277	7.3	FY2028	\$38,429,904	4.9
FY2019	\$33,400,290	6.6	FY2029	\$39,151,139	4.8
FY2020	\$28,989,120	5.3	FY2030	\$32,622,194	3.7
FY2021	\$34,533,304	6.0			

Sensitivity Scenario 2

Sensitivity Scenario 2 is another conservatively-biased stress test. Specifically, Sensitivity Scenario 2 assumes:

- A 10% higher rate of Wage escalation and a 10% higher rate of Benefit cost escalation throughout the forecast period (3.85% per year in Test 1 compared to 3.5% in Base Plan); and
- A 10% slower growth rate for sales and use tax receipts (3.6% per year growth in sales tax receipts per 1/10th of 1% sales tax throughout the forecast period (compared to a 4.0% growth rate in the Base Plan).

In response to these conditions, Sensitivity Scenario 2 assumes the management approach to mitigating adverse conditions would be to reduce service hours uniformly throughout the system by 4% and to add \$0.10 fare increases to all types of services in 2020, 2025, and 2030. As shown below in Table 4-30, this management response to Sensitivity Scenario 2 conditions would be sufficient to meet operating (including CRC LRT), capital, and vehicle replacement objectives while providing working capital reserve balances in excess of minimally acceptable standards

Table 4-30
Summary of Financial Results in C-TRAN Sensitivity Scenario 2

Year	Beginning Year Fund Balance	Total Fund Balance in Months of Operations	Year	Beginning Year Fund Balance	Total Fund Balance in Months of Operations
FY2012	\$45,137,391	14.2	FY2022	\$45,459,651	7.6
FY2013	\$51,683,110	15.4	FY2023	\$50,654,951	8.0
FY2014	\$44,743,703	12.7	FY2024	\$55,155,017	8.3
FY2015	\$29,107,912	7.8	FY2025	\$58,789,867	8.4
FY2016	\$32,120,488	8.1	FY2026	\$61,615,354	8.5
FY2017	\$35,501,915	8.4	FY2027	\$58,054,047	7.6
FY2018	\$37,826,869	8.1	FY2028	\$45,282,836	5.7
FY2019	\$37,539,081	7.5	FY2029	\$45,448,105	5.5
FY2020	\$33,545,135	6.2	FY2030	\$38,429,475	4.3
FY2021	\$39,725,821	6.9			