



Washington State  
Department of Transportation

# SR 520 Bridge Replacement and HOV Program



## SR 520 Bridge Net Toll Revenue Report 2013 Update

Prepared for

**Washington State Department of Transportation**

Lead Author

**Parsons Brinckerhoff**

in association with the

**SR 520 General Engineering Consultant Team**

April 2, 2014



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## Disclaimer

This report was prepared by Parsons Brinckerhoff as a member of the SR 520 General Engineering Consultant (GEC) Team in accordance with an agreement with the Washington State Department of Transportation (WSDOT). This report is subject to the terms and conditions of that agreement, and is meant to be read as a whole and in conjunction with this disclaimer.

Information and statements contained in this report are based on information provided to Parsons Brinckerhoff by, and obtained from, WSDOT, WSDOT's General Toll Consultant (GTC), and other sources. In the preparation of this report and the opinions contained herein, Parsons Brinckerhoff, in collaboration with WSDOT and the GTC, makes certain assumptions with respect to such conditions that may exist or events that may occur in the future that are subject to change. Unless a source is otherwise noted, these assumptions are attributable to WSDOT, the GTC, and/or the SR 520 GEC Team.

While Parsons Brinckerhoff believes that the projections or other forward-looking statements contained within the report are based on reasonable assumptions and correctly represent the inputs and estimates provided by WSDOT and the GTC as of the date of the report, such forward looking statements involve risks and uncertainties that may cause actual results to differ materially from the results predicted.

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This report does not constitute a recommendation on the part of Parsons Brinckerhoff, the GEC, the GTC or WSDOT.

# Introduction

## Background and Purpose

This report documents the preparation of the October 2013 net toll revenue projections for State Route (SR) 520 Bridge across Lake Washington. It serves as an update to the *SR 520 Bridge Net Toll Revenue Report*, dated September 7, 2011, which accompanied the *SR 520 Bridge Investment Grade Traffic and Revenue Study*, dated August 29, 2011 and prepared by CDM Smith (formerly known as Wilbur Smith Associates). Together, these previous documents provided information about future traffic, toll revenues, and related operating and maintenance expenditures that served as the foundation for securing project financing, which was initiated by the sale of Motor Vehicle Fuel Tax General Obligation Bonds with tolls as the first pledge in October 2011. This updated report serves to describe the changes in key assumptions and influences of operating experience on the net toll revenue projections since the initial projections in 2011.

The net toll revenue projections capture the various revenue adjustments as well as operations and maintenance cost deductions that are made to the potential gross toll revenue forecasts from tolling the SR 520 Bridge. These projections represent the operating cash flow that would be available to pay debt service on toll financing, pay deferred sales tax on construction, and contribute to various reserve accounts, including one for periodic capital repair and replacement of facility and toll collection components. All annual amounts in this document are expressed in terms of the state fiscal year (FY), which runs from July 1 to June 30.

## September 2011 Forecast

For purposes of this document and related materials, the initial CDM Smith investment grade traffic and gross toll revenue forecasts and accompanying net toll revenue projections referenced in the two aforementioned documents are collectively referred to as the “September 2011 Forecast”.

## September 2012 Forecast

In September 2012, as part of ongoing financial planning and the negotiation of a loan from the United State Department of Transportation (USDOT) Transportation Infrastructure Finance and Innovation Act (TIFIA) program, CDM Smith completed a revised traffic and gross toll revenue forecast, and accompanying net revenue projections were also prepared, along with a memoranda covering these revisions. During their subsequent toll rate setting process, the Washington State Transportation Commission (WSTC) adopted a regulation to round toll rates to the nearest nickel (\$0.05) for planned toll increases in FY 2014, FY 2015 and FY 2016. This minor revision to the toll rate schedule for FY 2014 was adopted by the WSTC on May 22, 2013.

For purposes of this document and related materials, the traffic and gross toll revenue forecasts, along with the net toll revenue projections — inclusive of the minor revision for nickel rounding in FYs 2014-16 — are collectively referred to as the “September 2012 Forecast”. Where appropriate,

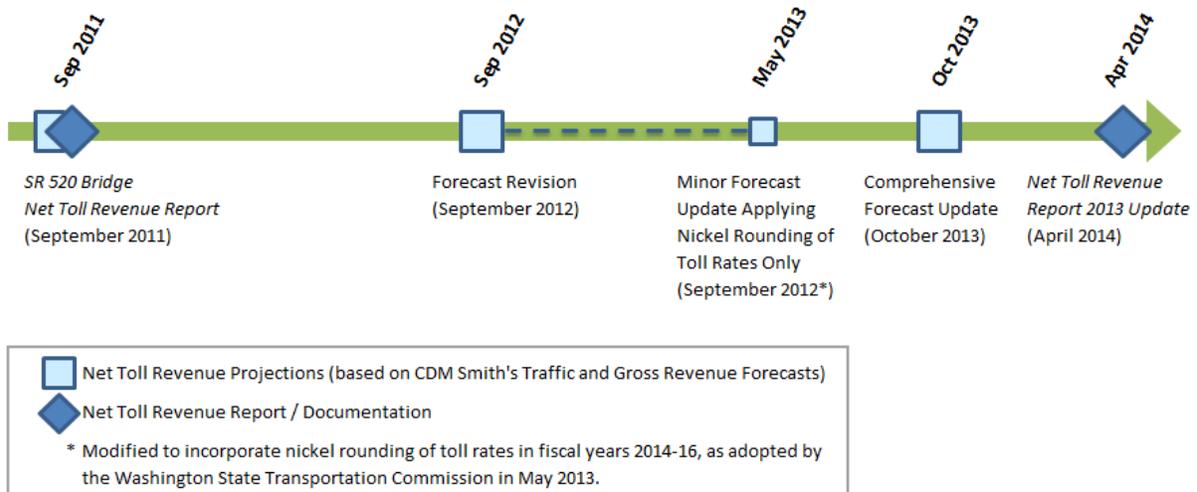
this reference is also footnoted to indicate that the forecast values are inclusive of the minor revision for nickel rounding of toll rates.

## October 2013 Forecast

CDM Smith performed a comprehensive traffic and gross toll revenue forecast update in 2013. Detailed updates to the facility operations and maintenance (O&M) costs, toll collection O&M costs, and revenue adjustments were also prepared in late summer 2013 to yield updated net revenue projections. Collectively, these traffic and gross toll revenue forecasts, along with the net toll revenue projections, are referred to as the “October 2013 forecast”.

Exhibit 1 illustrates the timeline for the initial and subsequent SR 520 investment grade traffic and gross revenue forecasts and accompanying net revenue projections.

EXHIBIT 1: TIMELINE OF SR 520 TRAFFIC, GROSS REVENUE, AND NET REVENUE FORECASTS



## Project Description

The SR 520 corridor stretches nearly 13 miles between I-5 in Seattle to the west and SR 202 to the east, crossing I-405 at about the halfway point, and serving various Eastside communities, including Bellevue, Kirkland and Redmond. The SR 520 Bridge Replacement and HOV Program is a corridor-wide effort comprised of three major components, with the third divided into two primary stages.

- 1) Pontoon Construction;
- 2) Medina to SR 202 Eastside Transit and HOV (“Eastside”); and
- 3) I-5 to Medina: Bridge Replacement and HOV (“I-5 to Medina”):
  - a) Evergreen Point Floating Bridge and Landings (FB&L) and West Approach; and
  - b) Seattle Stage.

The total program cost is currently estimated at \$4.30 billion, part of which is funded. The \$2.89 billion funded portion of the program authorized by the Washington State Legislature includes the Pontoon Construction, Eastside, Floating Bridge and Landings, and West Approach. Essentially, the funded program replaces the existing four lane floating bridge and upgrades the corridor to six lanes

(two general purpose lanes and one high occupancy vehicle lane in each direction) between the Montlake Boulevard interchange in Seattle and the I-405 interchange on the Eastside.

EXHIBIT 2: SR 520 BRIDGE REPLACEMENT AND HOV PROGRAM MAP

-  **Pontoon Construction** – Includes construction of the pontoons needed for bridge replacement
-  **Floating Bridge** – Replaces the SR 520 floating bridge and landings (1.46 miles)
-  **Eastside Transit and HOV** – Completes and improves the transit and HOV system from Evergreen Point Road in Medina to the SR 202 interchange in Redmond (8.8 miles)
-  **West Approach Bridge** – Constructs a new approach bridge to serve westbound traffic (1.48 miles)
-  **Unfunded Seattle Stage**



*Note: this Project Map also identifies the cities of Kenmore and Tacoma. These are two additional locations where development occurs under the Floating Bridge design-build contract.*

The Washington State Department of Transportation began tolling the existing SR 520 Bridge across Lake Washington in late December, 2011 to help pay for a replacement floating bridge across the lake and other corridor improvements. Time of day variable tolling was implemented to manage congestion on the corridor, using all-electronic tolling with no toll booths.

More information about the vulnerability of the existing structures, the project elements, costs and benefits, and a series of maps and photos can be found on the SR 520 Bridge Replacement and HOV Program website: <http://www.wsdot.wa.gov/Projects/SR520Bridge/>.

## Key Changes in the October 2013 Net Revenue Projections

The following highlights a few key changes to the net revenue forecast results, measured over the entire forecast horizon from FY 2014 through FY 2056.

### Traffic and Gross Revenues

- Toll transactions and gross toll revenue potential as projected by CDM Smith for the October 2013 forecast are 1.6 percent and 4.4 percent lower, respectively, than the September 2011 forecast over the forecast horizon.
- Compared with the September 2012 forecast, the current forecast for transactions is 1.0 percent higher while gross toll revenue potential is 2.2 percent lower.

- The October 2013 traffic and gross toll revenue potential forecasts reflect revisions to underlying socioeconomic projections, a higher share of weekday trips paying the lower toll associated with *Good To Go!* prepaid accounts, a reduction in forecasted truck volumes, higher weekend traffic forecasts paying lower weekend tolls, and an increased number of weekend closures due to construction between FY 2014 and FY 2017. The increase in expected construction closures is primarily to accommodate the new west approach bridge that will serve westbound traffic.

### Revenue Adjustments

- The October 2013 forecast for uncollectible revenue (leakage) associated with revenue not recognized and unpaid toll revenue is 25 percent higher than projected in September 2011.
- However, this same October 2013 forecast represents a 14 percent decrease over the even higher September 2012 forecast.
- The initial September 2011 forecast overestimated the share of non-account customers, underestimated the accuracy of reading these customers' license plates, but overestimated the rate of customer payment of first and second toll invoices.
  - Preliminary data led to upward revisions to leakage assumptions for September 2012, even when factoring in higher *Good To Go!* use.
  - The current October 2013 forecast has included further leakage rate revisions based on additional operating experience that reflects improved license plate image readability, improved rate of vehicle owner identification, and fewer returned toll invoices due to a bad address.

### Operating and Maintenance Costs

- Toll collection O&M costs in the October 2013 forecast decreased by \$196.1 million or 18.5 percent over the forecast horizon compared to the September 2011 forecast, due to:
  - Lower long-term projections for Customer Service Center (CSC) vendor costs (though higher than projected in the September 2012 forecast);
  - Lower printing and postage costs for pay by mail invoices; and
  - Lower transponder purchase and inventory costs.
- However, transponder costs are forecasted to have an equal and offsetting sales revenue projection, which mitigates any effect transponder costs would otherwise have on net revenues.
  - This reduces the increase to net revenues resulting from lower toll collection costs from \$200 million down to about \$150 million over the forecast horizon.
- Routine facility O&M costs over the forecast horizon decreased by over 11 percent between the September 2011 and October 2013 forecasts due to revised cost assumptions estimated

by a WSDOT maintenance task force convened in 2013, which incorporated reductions attributable to the final design specifications within the released-for-construction (RFC) plans and associated elimination of contingency amounts.

### Net Revenues

- As a result of changes in traffic and gross revenues as well as revisions to the revenue adjustments and operating costs, the October 2013 forecast of \$3.53 billion in net toll revenues over the forecast horizon is about 0.5 percent (\$17 million) lower than the original September 2011 forecast.
- Compared to the September 2012 forecast, the October 2013 projection for net revenues is 1.6 percent (\$57 million) lower over the forecast horizon.

### Other Project Uses of Toll Revenues

- The projected total deferred sales tax to be repaid with toll revenues increased from \$124.2 million in the September 2011 forecast to \$143.6 million in the September 2012 forecast, reflecting an increase in the project scope to include a new west approach bridge for westbound traffic, bringing the funded project cost to \$2.89 billion.
- The cost of the funded project increased by \$170 million in early 2014, thereby increasing the projected deferred sales tax to be repaid with toll revenues by \$15.8 million to a total of \$159.4 million for the October 2013 forecast.
- Periodic facility repair and replacement (R&R) costs for the items specifically identified to be paid from toll revenues in the October 2013 forecast increased by nearly 25 percent from September 2011.
  - Changes in facility R&R from September 2011 to both subsequent forecasts are due to:
    - The addition of federally required standard bridge inspections;
    - Higher projected costs for anchor cable replacement; and
    - Added costs for the West Approach Bridge structure, which is an expansion of the funded project relative to 2011.
  - Further changes in facility R&R from September 2012 to October 2013 are due to additional revisions by the 2013 WSDOT maintenance task force, which accounts for about 5 percentage points of the nearly 25 percent overall forecast period increase over September 2011.
- Toll collection R&R costs have increased in the October 2013 forecast, with the majority of the increase attributable to a new assumption that the state costs associated periodically procuring, testing, and transitioning to new CSC and Roadway Toll Systems (RTS) vendors would be shared proportionately by each toll facility; this amounted to \$31 million increase over the forecast horizon.

## Traffic and Revenue Overview

### Toll Traffic and Gross Toll Revenue Potential

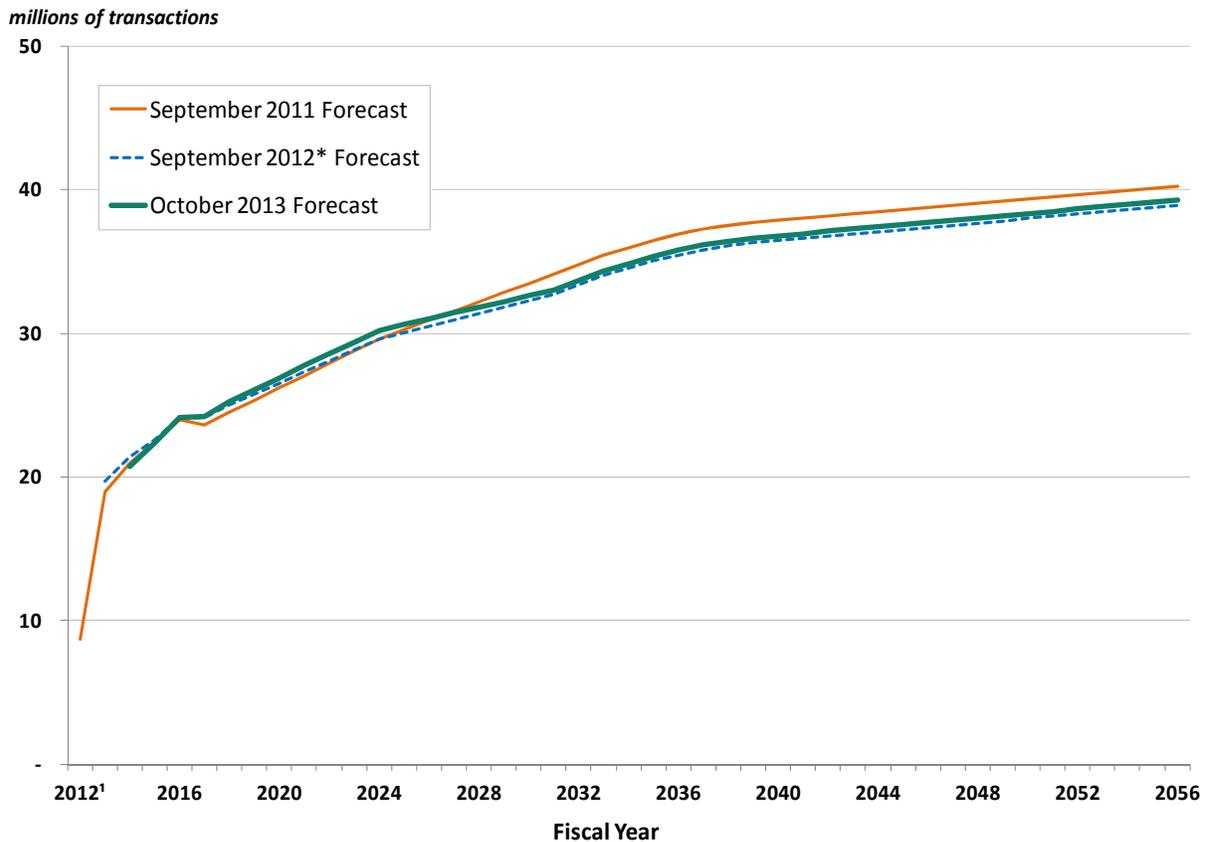
Annual toll traffic and gross toll revenue potential projections were prepared by CDM Smith, based on the corridor configuration for the funded \$2.89 billion set of improvements. These annual traffic and gross toll revenue potential forecasts through FY 2056 serve as inputs to the estimation of net toll revenues. The following summarizes the key assumption changes for the September 2012 and October 2013 forecasts that impact the net revenue projections.

- The September 2012 forecast included CDM Smith updates of the underlying assumptions to account for actual performance in FY 2012 during the first six months of toll operations and minor revisions to employment, population, and other socioeconomic factors.
  - Ramp-up factor removed for FY 2013, based on higher than expected share of actual trips using the *Good To Go!* account payment method.
  - Time shifting during weekdays from the peak to off-peak periods reduced to up to 10 percent from up to 20 percent.
  - The number of weekend bridge closures due to construction activity increased from 11 to 17 between FY 2013 and FY 2017.
  - *The initial Good To Go!* account-based transaction share increased from 72 percent to 80 percent in FY 2013, escalating to 89 percent by FY 2023 and then holding to approximately that level thereafter, based on higher transponder use.
  - The proportion of trucks is consistent with 2011 forecast, escalating from a 5 percent share in FY 2012 to 8 percent in FY 2031.
- For the current October 2013 forecast, CDM Smith included updates of the underlying assumptions to account for actual performance during FY 2012 and FY 2013 and also made revisions to weekend traffic assumptions, truck traffic, employment, population, and other socioeconomic factors relative to the September 2012 forecast.
  - Time shifting during weekdays from the peak to off-peak periods was removed.
  - The number of weekend bridge construction closures remaining from FY 2014 forward increased from 10 to 16.
  - The *Good To Go!* account-based transaction share increased to 82 percent in FY 2014, escalating to 86 percent by FY 2024, and flat thereafter, making the current forecast share about 3 percent lower than in September 2012 due to higher weekend traffic with less account use.
  - The truck share of the traffic forecast was revised significantly lower, from 5 percent to 1 percent in FY 2013, and growing more slowly to 2 percent by FY 2024, a revision based on having more actual truck data than was previously available.

- Weekend toll traffic assumptions were increased over the forecast horizon to account for higher reported weekend use and reduced user sensitivity to weekend toll rates.

As documented herein, both the volume of toll transactions and amount of gross toll revenue potential impact certain cost estimates, and thus, the net revenue projections. Exhibit 3 illustrates projected toll transactions. Exhibit 4 illustrates the corresponding gross toll revenue potential trends through FY 2056 for the three different forecasts. Estimates for the September 2011 forecast assumed three months of operations, with tolling to have begun in April 2011. The actual start date was delayed until December FY 2011.

EXHIBIT 3: CDM SMITH TOLL TRANSACTION FORECAST

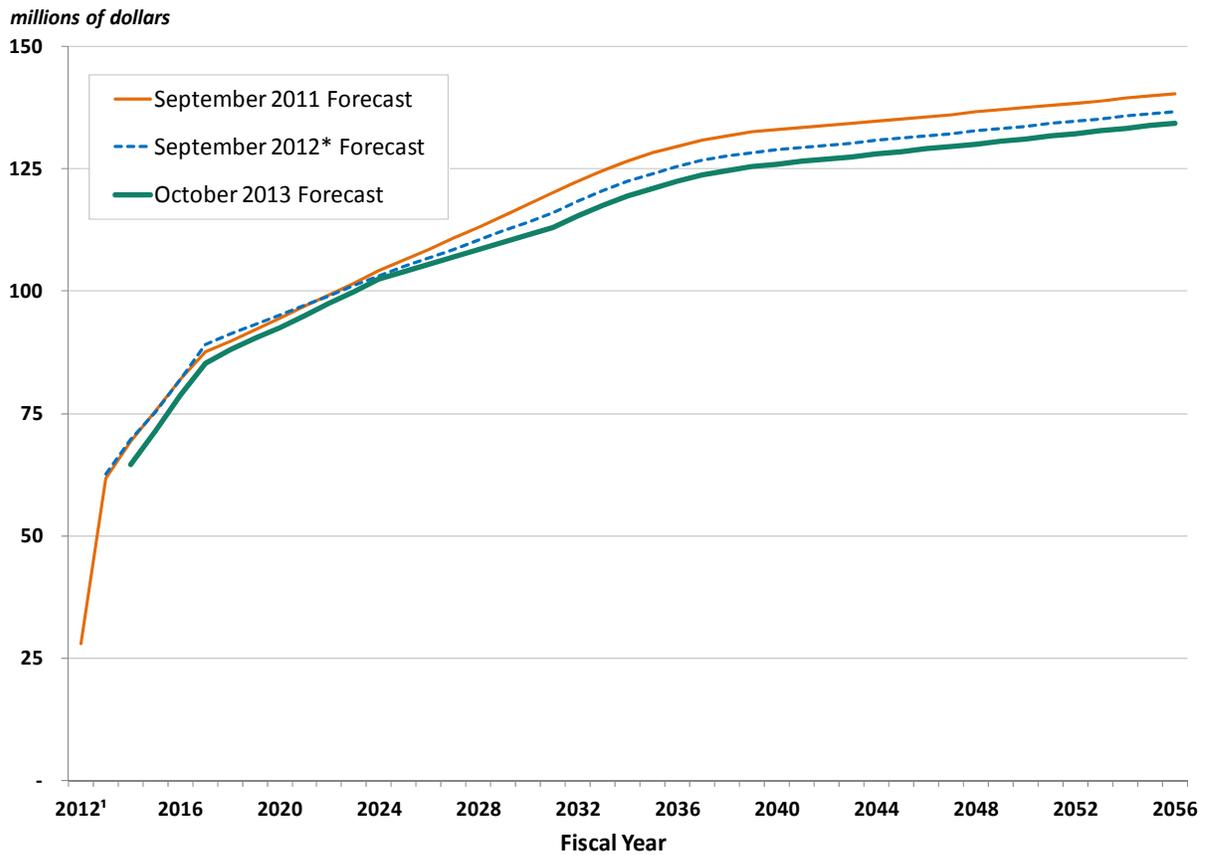


\* Forecast values correspond to the September 2012 Net Revenue forecast update, modified to incorporate nickel rounding of toll rates in fiscal years 2014-16, as adopted by the Washington State Transportation Commission in May 2013.

<sup>1</sup> September 2011 Forecast assumed 6 months of revenue in FY 2012 with tolling starting 1/1/2012; actual start date was 12/29/2011.

Source: CDM Smith

EXHIBIT 4: CDM SMITH GROSS TOLL REVENUE POTENTIAL FORECAST



\* Forecast values correspond to the September 2012 Net Revenue forecast update, modified to incorporate nickel rounding of toll rates in fiscal years 2014-16, as adopted by the Washington State Transportation Commission in May 2013.

<sup>1</sup> Note: September 2011 Forecast assumed 6 months of revenue in FY 2012 with tolling starting 1/1/2012; actual start date was 12/29/2011. Source: CDM Smith

The annual forecast detail for the October 2013 traffic and gross toll revenue potential by fiscal year can be found in columns 2-11 of the T&R table in Appendix A.

## Payment and Toll Transaction Types

The second key input received from CDM Smith is the output distribution of travel (toll transactions) and revenue by toll payment method. This information is used to estimate the costs of collection that differ between user types, as described later in this report. Forecasts have been prepared for two main categories of customers: prepaid *Good To Go!* account-holders and non-account customers. Within each of these categories are additional payment options, described in further detail below.

### *Good To Go!* Account Transactions

When *Good To Go!* customers set up a prepaid account, they have two options for how to pay their toll: they can purchase a pass (transponder) for their vehicle(s), and/or they can enroll in “Pay By

Plate” in which a picture of the vehicle’s license plate is captured and linked to their account for payment, with an additional \$0.25 processing fee.

The *Good To Go!* pass and Pay By Plate payment options require a minimum opening balance of \$30.00; all accounts established on-line are automatically enrolled in auto-charge account replenishment. When an account reaches a minimum threshold, the account is replenished to a pre-selected amount of at least \$30.00, typically using automatic replenishment. Manual customer-initiated replenishment is an option.

### Non-Account Transactions

Customers who do not have a *Good To Go!* account will be billed for their toll using a photo tolling system and Pay By Mail billing process. Vehicles passing through the toll facility that are not associated with a *Good To Go!* Account (via a transponder pass or license plate number) will initiate the Pay By Mail billing process. Using a photo of the license plate, the plate number will be read and matched with vehicle registration data to obtain an owner name and mailing address from the Washington State Department of Licensing (DOL) or from a contracted vendor in the case of other states. A bill will then be mailed to the registered owner for the applicable Pay By Mail toll rate plus any additional fees incurred. Pay By Mail customers will have 80 days and two invoice cycles from the time of travel to pay their toll before the transaction becomes subject to a civil penalty. The Pay By Mail toll rate was initially \$1.50 higher than the applicable *Good To Go!* rate for each time of day. Currently, the differential ranges from \$1.55 to \$1.60. The increment is projected to increase to an even \$1.70 by FY 2017, with no further increases assumed thereafter.

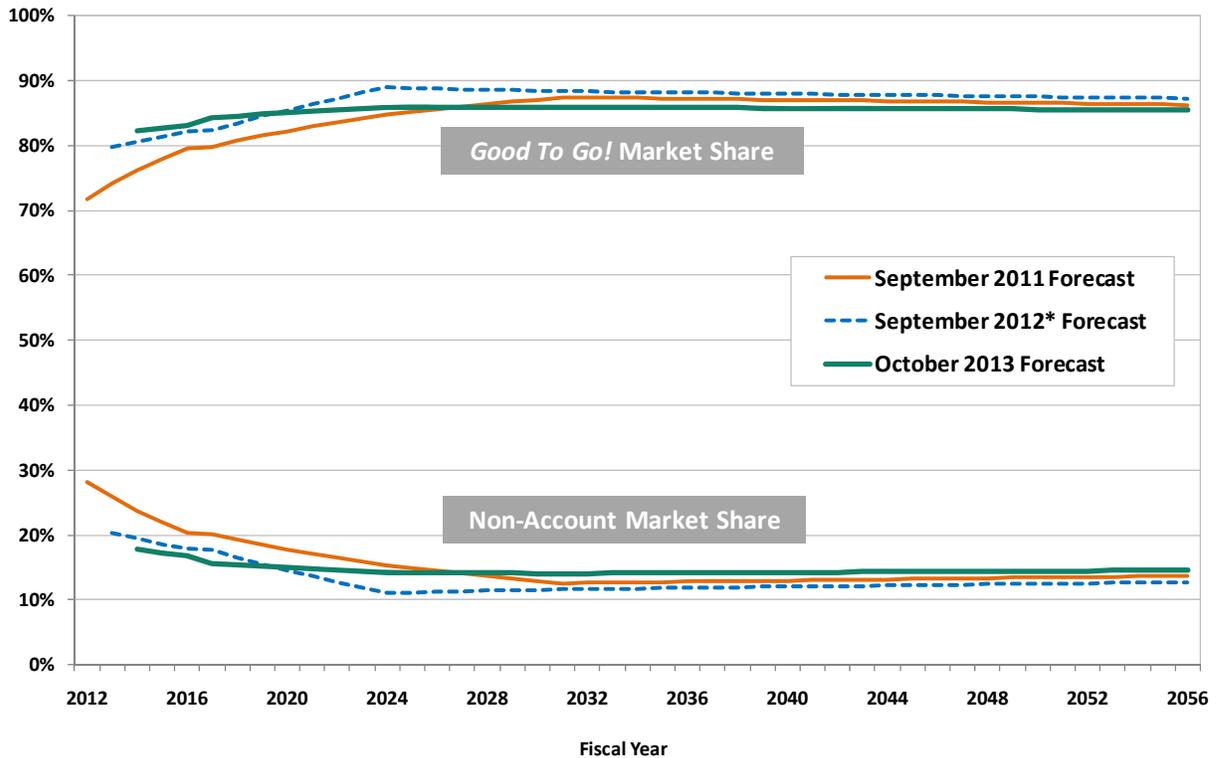
It is possible for customers without a *Good To Go!* account to self-initiate toll payment before or after travel via opening a Short-Term Account prior to receiving a bill in the mail. Such customers will receive a \$0.50 discount off the Pay By Mail toll rate. This process effectively allows the user to establish a temporary account valid for up to 14 days. A Short Term Account may be opened up to 10 day prior to, or up to three days after the first travel day.

The vast majority of toll trips by customers without a *Good To Go!* are projected to be processed as Pay By Mail transactions in which the customer waits for a bill in the mail to pay their toll, rather than by a Short-Term Account.

### Projected Gross Toll Revenue and Transactions by Payment Type

Projections for the percentage shares of *Good To Go!* and non-account toll transactions provided by CDM Smith are shown in Exhibit 5. Over time, it is estimated that the share of *Good To Go!* account customers will increase, while the share of non-account customers will decrease, until the current forecast’s ceiling rate of 86 percent is reached. Marketing efforts, the expansion of tolling to other WSDOT facilities, technology advancements, and customer incentives (the lower toll rate for account-based toll payments) are among the factors that will influence the market share distribution between account and non-account customers.

EXHIBIT 5: PROJECTED MARKET SHARES BY PAYMENT METHOD (FY 2012-56)



\* Forecast values correspond to the September 2012 Net Revenue forecast update, modified to incorporate nickel rounding of toll rates in fiscal years 2014-16, as adopted by the Washington State Transportation Commission in May 2013.

Source: CDM Smith

## Gross to Net Toll Revenue

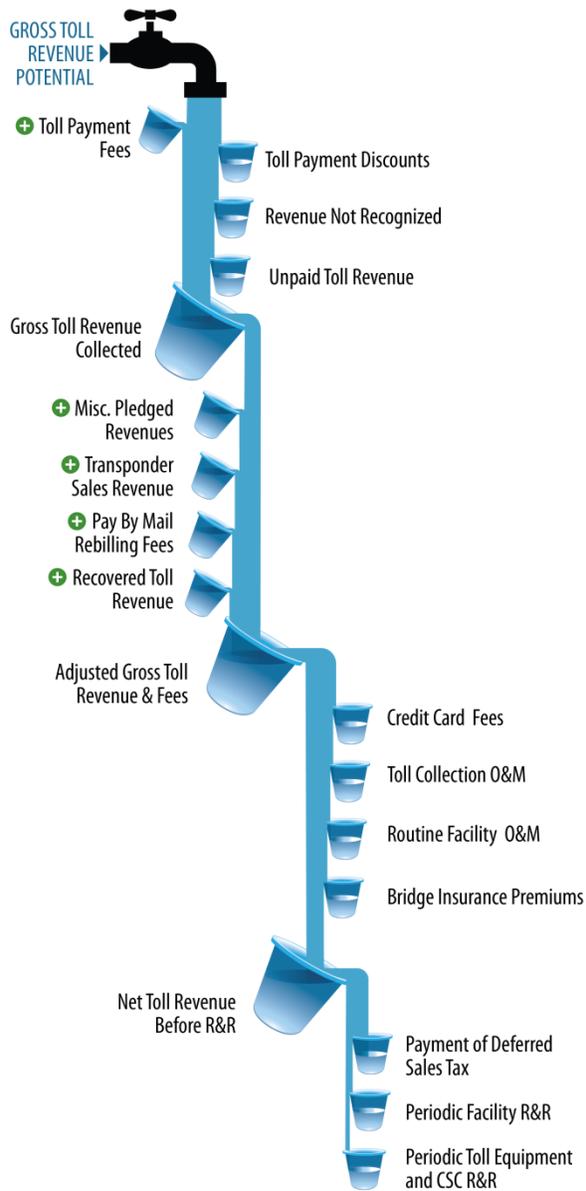
Toll transactions by payment type and gross toll revenue potential forecast values provided by CDM Smith are the initial inputs used in the net revenue forecasts.

Exhibit 6 on the following page illustrates the flow of funds or “waterfall” of revenue adjustments and expenditures that are projected to occur in transitioning from gross toll revenue potential to the net revenues available to support project financing.

This net toll revenue report update is organized around this waterfall in presenting the revisions to assumptions and values each “bucket”. Consistent with the toll traffic and gross revenue forecasts, the projections for the revenue adjustments and O&M expenditure items that yield net revenues were prepared for the FY 2014-56 forecast horizon.

A detailed traffic and revenue (T&R) table located in Appendix A provides the annual toll transactions and the annual dollar projections for each of the waterfall elements listed in Exhibit 6, shown in numbered columns. As the sections of this report cover the net revenue components in the waterfall diagram, reference is made to annual values for each component in the Appendix A T&R table by their column number.

EXHIBIT 6: NET REVENUE WATERFALL



Note that while the waterfall follows the structure of the T&R table, the subsequent uses of the net toll revenues in the bottom three buckets actually follow a separate flow of funds in the financial plan that accounts for annual contribution to debt service and various reserve accounts.

## Actual Net Revenue Performance for Fiscal Year 2013

Tolling operations on SR 520 officially commenced on December 29<sup>th</sup> 2011. Exhibit 7 compares the actual performance in FY 2013, the first full fiscal year of operations, with the comparable forecast data from the September 2012 forecast. The (#) references in Exhibit 7's row titles indicate the corresponding column numbers for this information in the Appendix A T&R table.

EXHIBIT 7: ACTUAL REVENUE AND SEPTEMBER 2012 FORECAST COMPARISON FOR FY 2013

Category (#) = T&R table column reference	Forecast vs. Actuals for Net Revenue Items			
	(\$ millions)			% Variance from Forecast
	Sep 2012* Forecast	Actual** Values	Variance from Forecast	
<b>Total Gross Toll Revenue Potential (11)</b>	<b>62.59</b>	<b>61.30</b>	<b>(1.29)</b>	<b>-2.1%</b>
Toll Payment Discounts and Fees (12)	0.73	0.67	(0.05)	-7.4%
Revenue Not Recognized (13)	(1.64)	(1.52)	0.12	-7.1%
Unpaid Toll Revenue (14)	(4.03)	(5.01)	(0.98)	+24.3%
<b>Subtotal: Gross Toll Revenue Collected (15)</b>	<b>57.65</b>	<b>55.44</b>	<b>(2.20)</b>	<b>-3.8%</b>
Miscellaneous Pledged Revenue (16)	-	0.24	0.24	N/A
Transponder Sales Revenue (17)	1.33	0.47	(0.87)	-65.0%
Pay By Mail Rebilling, NSF, Statement, & Transaction Fees (18)	1.91	1.38	(0.53)	-27.6%
Recovered Toll Revenue (19)	0.19	-	(0.19)	N/A
Credit Card Fees (21)	(1.40)	(0.91)	0.48	-34.6%
Toll Collection O&M Costs (22)**	(10.09)	(7.16)	2.93	-29.0%
Bridge Insurance Premium (24)	(2.47)	(2.43)	0.04	-1.6%
<b>Total Net Revenue Before R&amp;R (25)</b>	<b>47.12</b>	<b>47.02</b>	<b>(0.10)</b>	<b>-0.2%</b>

\* Forecast values correspond to the September 2012 Net Revenue forecast update, modified to incorporate nickel rounding of toll rates in fiscal years 2014-16, as adopted by the Washington State Transportation Commission in May 2013.

\*\* Actual values calculated from the Unbilled Transactions Report and Monthly Toll Business Report; actual Toll Collection O&M Costs include transponder and inventory costs but exclude \$0.40 million funded by a one-time Urban Partnership Grant contribution.

The following bullets summarize the key differences between the forecast and actual performance.

- **Gross Toll Revenue Potential** — 2.1 percent below CDM Smith's September 2012 forecast, but only 0.8 percent lower than the September 2011 forecast.
- **Unpaid Toll Revenue** — although actual values are 24 percent higher than in the September 2012 forecast, the actual values represent a somewhat different measure as the accumulated "allowance for doubtful accounts" balance. This balance includes unpaid toll revenue from the first six months of tolling in FY 2012, as these receivables have not been written off.
- **Toll Collection Operations and Maintenance Costs** — toll collection costs were 29 percent or \$2.9 million below forecast, with two anomalous factors cumulatively accounting for half of the change:
  - The actual toll collection O&M amounts exclude \$0.4 million paid from available remaining grant funds in the project's federal Urban Partnership Agreement, under which WSDOT, as co-recipient, paid for early implementation of tolling on the existing SR 520 Bridge to help manage congestion; and

- Transponder purchase and inventory costs were \$1.0 million (65 percent) lower than predicted, with a nearly offsetting drop in transponder revenues of \$0.87 million.

Note that all but the rebilling fees in “Pay By Mail Rebilling, NSF, Statement, & Transaction Fees (18)” and all of “Miscellaneous Pledged Revenue (16)” are not forecasted. However, these amounts are reported in Exhibit 7 and in the T&R table as part of the pledged toll revenues.

Exhibit 8 compares the performance of the net revenue components in FY 2013 with the original September 2011 forecast.

EXHIBIT 8: ACTUAL REVENUE AND SEPTEMBER 2011 FORECAST COMPARISON FOR FY 2013

Category (#) = T&R table column reference	Forecast vs. Actuals for Net Revenue Items			
	(\$ millions)			% Variance from Forecast
	Sep 2011 Forecast	Actual** Values	Variance from Forecast	
<b>Total Gross Toll Revenue Potential (11)</b>	<b>61.81</b>	<b>61.30</b>	<b>(0.51)</b>	<b>-0.8%</b>
Toll Payment Discounts and Fees (12)	0.29	0.67	0.39	+133.0%
Revenue Not Recognized (13)	(3.54)	(1.52)	2.02	-57%
Unpaid Toll Revenue (14)	(1.45)	(5.01)	(3.56)	246%
<b>Subtotal: Gross Toll Revenue Collected (15)</b>	<b>57.11</b>	<b>55.44</b>	<b>(1.67)</b>	<b>-2.9%</b>
Miscellaneous Pledged Revenue (16)	-	0.24	0.24	N/A
Transponder Sales Revenue (17)	1.33	0.47	(0.87)	-65.0%
Pay By Mail Rebilling, NSF, Statement, & Transaction Fees (18)	0.97	1.38	0.41	+42.9%
Recovered Toll Revenue (19)	0.30	-	(0.30)	N/A
Credit Card Fees (21)	(2.07)	(0.91)	1.16	-55.9%
Toll Collection O&M Costs (22)**	(10.68)	(7.16)	3.52	-32.9%
Bridge Insurance Premium (24)	(0.65)	(2.43)	(1.78)	+274.0%
<b>Total Net Revenue Before R&amp;R (25)</b>	<b>46.31</b>	<b>47.02</b>	<b>0.71</b>	<b>+1.5%</b>

\* Forecast values correspond to the initial investment grade T&R study prepared by CDM Smith.

\*\* Actual values calculated from the Unbilled Transactions Report and Monthly Toll Business Report; actual Toll Collection O&M Costs include transponder and inventory costs but exclude \$0.40 million funded by a one-time Urban Partnership Grant contribution.

## Summary of Changes in the Net Revenue Projections

The following two tables summarize the changes in the net revenue components across the three different forecasts, September 2011, September 2012, and October 2013. The dollar amounts in each column are totals over the forecast horizon from FY 2014 through FY 2056. Where differences exist between the forecast's T&R tables in the categorization of revenue adjustments or O&M expenditures, the values in the following tables have been reported in a manner consistent with the current October 2013 forecast. Each component in the table includes its column number reference (#) in the October 2013 T&R table located in Appendix A. Negative values in parentheses refer to costs or revenue deductions, both of which have the effect of lowering net revenues.

Exhibit 9 below compares the current October 2013 forecast with the original September 2011 forecast.

EXHIBIT 9: NET REVENUE COMPONENT COMPARISON – OCTOBER 2013 / SEPTEMBER 2011 (FY 2014-56)

Forecast Category (#) = T&R table column reference	Sep 2011 Forecast (\$ millions)	Oct 2013 Forecast (\$ millions)	Variance (\$ millions)	Variance (%)
<b>Gross Toll Revenue Potential (11)</b>	<b>5,134.7</b>	<b>4,908.6</b>	<b>(226.1)</b>	<b>-4.4%</b>
Toll Payment Discounts and Fees (12)	3.9	13.9	10.0	+255.8%
Revenue Not Recognized (13)	(162.6)	(90.5)	72.1	-44.4%
Unpaid Toll Revenue (14)	(66.6)	(196.1)	(129.5)	+194.4%
Miscellaneous Pledged Revenues (16)	-	-	-	
Transponder Sales Revenue (17)	83.8	35.7	(48.2)	-57.5%
Pay By Mail Rebilling Fees (18)	46.4	113.9	67.5	+145.5%
Recovered Toll Revenue (19)	13.9	12.5	(1.4)	-10.4%
<b>Subtotal: Revenue Adjustments</b>	<b>(81.2)</b>	<b>(110.7)</b>	<b>(29.5)</b>	<b>+36.4%</b>
Credit Card Fees (21)	(115.4)	(94.1)	21.3	-18.5%
Toll Collection O&M (22)	(1,059.1)	(863.0)	196.1	-18.5%
<i>Customer Service Center (CSC)</i>	<i>(521.1)</i>	<i>(461.1)</i>	<i>59.9</i>	<i>-11.5%</i>
<i>Roadway Toll Systems (RTS)</i>	<i>(53.7)</i>	<i>(35.3)</i>	<i>18.4</i>	<i>-34.3%</i>
<i>State Costs for Toll Bill Printing, Postage, and LES</i>	<i>(221.0)</i>	<i>(160.1)</i>	<i>60.9</i>	<i>-27.6%</i>
<i>State Operations</i>	<i>(179.4)</i>	<i>(170.8)</i>	<i>8.6</i>	<i>-4.8%</i>
<i>Transponder purchase and inventory costs</i>	<i>(83.8)</i>	<i>(35.7)</i>	<i>48.2</i>	<i>-57.5%</i>
Routine Facility O&M Costs (23)	(189.3)	(167.8)	21.5	-11.3%
Bridge Insurance Premiums (24)	(142.1)	(142.1)	(0.0)	+0.0%
<b>Subtotal: O&amp;M Costs</b>	<b>(1,505.8)</b>	<b>(1,267.0)</b>	<b>238.8</b>	<b>-15.9%</b>
<b>Net Toll Revenue before R&amp;R (25)</b>	<b>3,547.6</b>	<b>3,530.8</b>	<b>(16.8)</b>	<b>-0.5%</b>
Deferred Sales Tax (26)	(124.2)	(159.4)	(35.2)	+28.3%
Periodic Facility R&R (27)	(216.4)	(270.1)	(53.7)	+24.8%
Periodic Toll Equipment and CSC R&R (28)	(17.0)	(48.2)	(31.1)	+182.6%
<b>Net Revenue after Deferred Sales Tax and R&amp;R (29)</b>	<b>3,190.0</b>	<b>3,053.2</b>	<b>(136.8)</b>	<b>-4.3%</b>

Exhibit 10 below compares the current October 2013 forecast with the previous September 2012 forecast.

EXHIBIT 10: NET REVENUE COMPONENT COMPARISON – OCTOBER 2013 / SEPTEMBER 2012\* (FY 2014-56)

Forecast Category (#) = T&R table column reference	Sep 2012* Forecast (\$ millions)	Oct 2013 Forecast (\$ millions)	Variance (\$ millions)	Variance (%)
<b>Gross Toll Revenue Potential (11)</b>	<b>5,020.6</b>	<b>4,908.6</b>	<b>(112.0)</b>	<b>-2.2%</b>
Toll Payment Discounts and Fees (12)	30.6	13.9	(16.7)	-54.6%
Revenue Not Recognized (13)	(96.6)	(90.5)	6.1	-6.4%
Unpaid Toll Revenue (14)	(237.5)	(196.1)	41.4	-17.4%
Miscellaneous Pledged Revenues (16)	-	-	-	
Transponder Sales Revenue (17)	74.0	35.7	(38.4)	-51.8%
Pay By Mail Rebilling Fees (18)	100.3	113.9	13.5	+13.5%
Recovered Toll Revenue (19)	10.5	12.5	2.0	+18.7%
<b>Subtotal: Revenue Adjustments</b>	<b>(118.7)</b>	<b>(110.7)</b>	<b>7.9</b>	<b>-6.7%</b>
Credit Card Fees (21)	(112.5)	(94.1)	18.4	-16.4%
Toll Collection O&M (22)	(867.5)	(863.0)	4.5	-0.5%
<i>Customer Service Center (CSC)</i>	<i>(425.8)</i>	<i>(461.1)</i>	<i>(35.3)</i>	<i>+8.3%</i>
<i>Roadway Toll Systems (RTS)</i>	<i>(52.8)</i>	<i>(35.3)</i>	<i>17.5</i>	<i>-33.1%</i>
<i>State Costs for Toll Bill Printing, Postage, and LES</i>	<i>(141.7)</i>	<i>(160.1)</i>	<i>(18.4)</i>	<i>+13.0%</i>
<i>State Operations</i>	<i>(173.2)</i>	<i>(170.8)</i>	<i>2.4</i>	<i>-1.4%</i>
<i>Transponder purchase and inventory costs</i>	<i>(74.0)</i>	<i>(35.7)</i>	<i>38.4</i>	<i>-51.8%</i>
Routine Facility O&M Costs (23)	(190.6)	(167.8)	22.8	-11.9%
Bridge Insurance Premiums (24)	(143.1)	(142.1)	1.0	-0.7%
<b>Subtotal: O&amp;M Costs</b>	<b>(1,313.8)</b>	<b>(1,267.0)</b>	<b>46.8</b>	<b>-3.6%</b>
<b>Net Toll Revenue before R&amp;R (25)</b>	<b>3,588.2</b>	<b>3,530.8</b>	<b>(57.3)</b>	<b>-1.6%</b>
Deferred Sales Tax (26)	(143.6)	(159.4)	(15.8)	+11.0%
Periodic Facility R&R (27)	(256.2)	(270.1)	(13.9)	+5.4%
Periodic Toll Equipment and CSC R&R (28)	(17.0)	(48.2)	(31.1)	+182.6%
<b>Net Revenue after Deferred Sales Tax and R&amp;R (29)</b>	<b>3,171.4</b>	<b>3,053.2</b>	<b>(118.2)</b>	<b>-3.7%</b>

\* Forecast values correspond to the September 2012 Net Revenue forecast update, modified to incorporate nickel rounding of toll rates in fiscal years 2014-16, as adopted by the Washington State Transportation Commission in May 2013.

The sections following these tables describe the revised assumptions and estimates for each of the net revenue components.

## Changes to Revenue Adjustments

Revenue adjustments for toll payment discounts and fees, revenue not recognized, and unpaid toll revenue can be found in columns 12-14 of the T&R table in Appendix A.

These items have been adjusted to capture empirical data from FY 2012-13, with changes made to key assumptions noted in the following descriptions.

### Changes to Toll Payment Fees and Discounts (Column 12)

#### Pay By Plate Fee

WSDOT applies a \$0.25 fee per transaction for *Good To Go!* customers who choose to pay via a pre-registered license plate (“Pay By Plate”) rather than a transponder. This fee is not assumed to escalate with inflation.

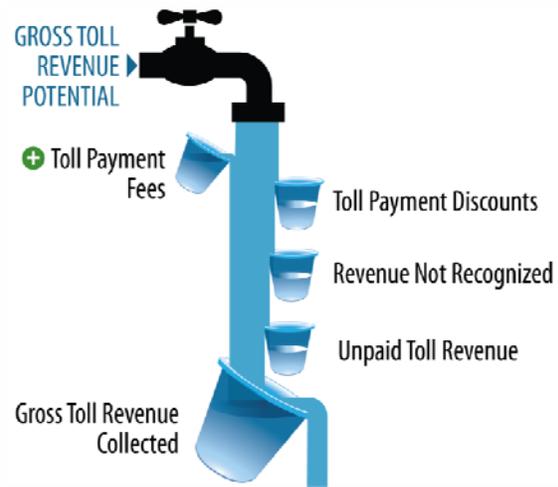
- The October 2013 forecast for Pay By Plate fees was revised lower than the September 2012 forecast, though it remains higher than the September 2011 forecast.
- For October 2013, more recent data shows that fewer *Good To Go!* transactions are Pay By Plate than anticipated in September 2012, and CDM Smith’s traffic forecast has a slightly reduced share of *Good To Go!* transactions overall. The resulting Pay By Plate fee projection is lower than in September 2012, amounting to \$14.1 million over the forecast horizon.
  - In FY 2014, 12 percent of all transactions paid the \$0.25 Pay By Plate fee, or about 15 percent of the *Good To Go!* prepaid account customers.

Pay By Plate fee revenue estimates are provided in column 12 of the T&R table provided in Appendix A, combined with the toll payment discounts described below.

#### Short-Term Account Discounts

WSDOT offers a \$0.50 discount per transaction from the higher Pay By Mail toll rate to non-account customers who set up a short-term account by self-initiating payment prior to or within 72 hours of traveling on SR 520. The reason for offering this discount is to incentivize prompt payment, thereby reducing the number of Pay By Mail transactions and the delay in receiving revenue. The short-term account discount is not assumed to escalate with inflation.

- In the September 2011 forecast, short-term account discounts were forecasted at \$9.4 million over the forecast horizon; this amount was subsequently reduced to \$6.2 million for the September 2012 forecast based on early empirical data that showed less usage and a smaller base of non-account customers.



- The October 2013 forecast of short-term account discounts has been revised significantly lower to only \$0.23 million, based on recent experience that only 0.2 percent of non-account customers with readable license plate images are taking advantage of the discount, even though the CDM Smith traffic projections include a slightly higher non-account share than September 2012.

Annual forecast values for these discounts are part of column 12 of the T&R table in Appendix A.

### Other Fees and Discounts

In addition to the fees described above, WSDOT is authorized to charge miscellaneous customer fees that are not included in the net revenue projections herein, including inactive account and paper statement/reprinting fees. Revenues from these items are not expected to have a material impact on net revenues, and are simply intended to offset administration and processing costs incurred by the state. However, actual revenues from these other fees are shown in column 12 of the T&R table for FY 2012-13. These revenues are not included in future year forecasts.

In 2012, WSDOT offered a one-time incentive program to further encourage local residents and frequent users to establish a prepaid *Good To Go!* tolling account. The incentives provided \$10 worth of free travel to *Good To Go!* customers for each pass (transponder) purchased prior to April 15, 2011. This incentive is non-recurring and the effect of this discount is also captured as actual costs in column 12 of the T&R table in Appendix A for FY 2012-13.

### Changes in Uncollectible Revenue (Columns 13 & 14)

Uncollectible revenue is primarily associated with non-account customers. For the October 2013 forecast, uncollectible revenue is divided into two categories: Revenue Not Recognized and Unpaid Toll Revenue. Revenue Not Recognized occurs when a license plate is unreadable, or when the vehicle owner from a readable license plate cannot be identified. Unpaid Toll Revenue results from the non-payment of toll bills within 80 days and two invoices. A small portion of unpaid toll revenue is estimated to be subsequently recovered through the civil penalty adjudication.

Forecasts for uncollectible accounts have been developed using an activity-based workflow, which estimates the probability that a toll transaction will become uncollectible under a variety of scenarios and points in the process (see Appendix B for transaction workflow with corresponding probability assumptions). For the October 2013 forecast, the payment assumptions have been refined to acknowledge that *Good To Go!* account transactions could ultimately be processed as Pay By Mail with some probability of non-payment if there is a problem with the account, such as insufficient funds due to an expired credit card. Other assumptions throughout the transaction workflow have been refined based on actual data from FY 2012-13, and are noted below.

### Revenue Not Recognized (Column 13)

#### Unreadable License Plates

Recent data indicates that the September 2011 and September 2012 forecasts underestimated the accuracy of reading license plate images. The share of non-account transactions with readable

license plates after manual review has been revised upward to 93 percent for October 2013 based upon actual data from FY 2012-13. For the two previous forecasts, the readable share was 90 percent unreadable. Put another way, unreadable plates have declined from 10 to 7 percent.

#### Unidentifiable Owner

After a license plate number is read, the system initiates the Pay By Mail process and attempts to obtain a valid address for the vehicle owner from the DOL, or for out-of-state plates, from a contracted vendor providing lookup services.

- The original September 2011 forecast utilized WSDOT's experience with violation enforcement cameras at the Tacoma Narrows Bridge, which suggested that 15 percent of license plate look-ups would be returned without a valid address.
- However, actual experience for SR 520 lowered the invalid address lookup value to 5 percent for September 2012
- This was lowered again to 4 percent for October 2013.

Pay By Mail transactions for which the owner cannot be identified from the license plate are deemed as revenue not recognized, and include Canadian license plates, as Canada stopped providing such information as part of their response to the U.S. Patriot Act in 2001.

Revenues not recognized from unreadable plates and unidentified owners are shown in column 13 of the T&R table.

#### **Unpaid Toll Revenue (Column 14)**

Unpaid Toll Revenue is a measure of the Pay By Mail revenue not collected within two billing cycles or 80 days.

- The September 2011 forecast assumed that 13 percent of Pay By Mail customers that are sent toll bills would not pay their first or second invoice.
- The limited experience available at the time of the September 2012 forecast suggested a much higher rate of non-payment, and the assumption was revised to 25 percent.
- More recent experience from FY 2012-13 corroborated the 2012 assumptions and the value for the October 2013 forecast remains at 25 percent non-payment after two invoices, although the rates of payment at each invoice were refined.

Upon non-payment of the two invoices, a notice of civil penalty is sent to the customer and the unpaid revenue is considered uncollectible, as projected in column 14 of the T&R table. The small portion of unpaid toll revenue anticipated to be subsequently recovered through the civil penalty adjudication process is described in "Recovered Toll Revenues" (column 19) below.

#### **Overall Changes in Uncollectible Revenue (Columns 13 & 14)**

Overall uncollectible revenue is 25 percent higher in the current October 2013 forecast than projected in September 2011; however, the current forecast represents a 14 percent decrease over the even higher September 2012 forecast. Preliminary data led to higher toll bill non-payment rates

for September 2012, which were partially dampened by lower rates of non-account customers. The current October 2013 forecast has included further leakage rate revisions based on additional operating experience that reflects improved license plate image readability, improved rate of vehicle owner identification, and fewer returned toll invoices due to a bad address.

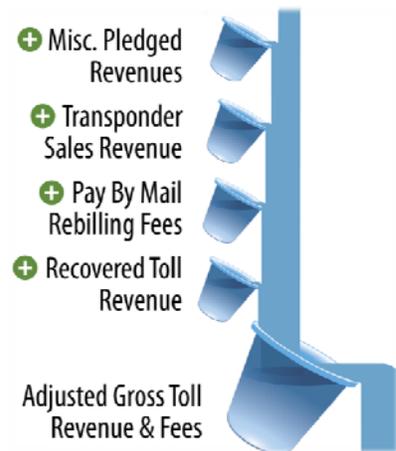
### Miscellaneous Pledged Revenues (Column 16)

The current forecast T&R table in Appendix A includes a new item in column 16 for “Miscellaneous Pledged Revenues” received in FY 2012 and FY 2013. Miscellaneous pledged revenues include operating account interest earnings, liquidated damages, and cash over and short. While these revenues are not forecasted, actual receipts are considered revenues pledged towards debt service in the Master Bond Resolution number 1117.

### Changes in Transponder Sales Revenue (Column 17)

WSDOT purchases, retains, and sells *Good To Go!* transponders directly to customers and through third-party retailers and walk-in centers. **Future transponder sales revenues are assumed to equal transponder purchase and inventory costs in every forecast year.**

- In previous forecasts, the transponder sales revenues were included as an equal cost offset to their purchase and inventory costs within O&M expenditure columns of the T&R table. As such, the sum of all the O&M expenditures was not impacted by changes in transponder revenues and costs.
- For the October 2013 forecast, transponder sales revenue has been moved upstream of the column 20 “Adjusted Gross Toll Revenue & Fees” subtotal to column 17. This change increases this subtotal and also the sum of the O&M expenditures; however, there is no effect on the net revenue projections, as the transponder revenues and costs continue to cancel each other out.



The comparison tables in Exhibits 9-10, starting on page 14, show the two previous forecasts adjusted to conform to this changed categorization. Compared to the first two forecasts, the October 2013 forecast for transponder sales revenue has been revised downward by more than half, reflecting the level of sales and mix of price points in recent sales history.

### Changes in Pay By Mail Rebilling Fees (Column 18)

Pay By Mail customers who do not pay their first invoice are subject to a rebilling fee of \$5.00 with the second invoice. The fee is applied on a per invoice basis when an invoice includes any toll transactions being billed for a second time, and the fee amount does not escalate with inflation. Though rebilling revenue is primarily driven by the volume of Pay By Mail transactions, the changes

in first and second invoice payment rates also contributed to the variance between September 2011 and October 2013.

- The September 2011 forecast assumed that 28 percent of the Pay By Mail customers receiving a first invoice will not pay within the first billing cycle, thus becoming subject to the rebilling fee.
- The September 2012 and October 2013 forecasts increased the assumption for first-invoice non-payment based on actual experience, with the September 2012 forecast assuming 50 percent and the October 2013 forecast at 46 percent.

Pay By Mail rebilling fee projections include those fees expected to be received from customers who pay their second invoice within the 80 day window from travel.

- For the October 2013 forecast, Pay By Mail rebilling fee projections also now include a small portion of the delinquent rebilling fees assumed to be recovered after 80 days through the civil penalty adjudication process or subsequent collection efforts. The recovered portion of these fees was previously included within “Recovered Toll Revenue”.

The comparisons across forecasts noted below and provided in Exhibits 9-10 above, starting on page 14, show the previous forecasts adjusted to conform to this changed rebilling fee grouping.

- The October 2013 forecast horizon value for rebilling fees increased by 14 percent over September 2012 to \$113.9 million due to a slight increase in the number of Pay By Mail transactions and a reduction in the assumed average number of transactions per toll bill, which increases the number of second invoices sent for a given number of Pay By Mail customers.
- The October 2013 value exceeded the September 2011 forecast value of \$46.4 million by 146 percent. The \$100.3 million increase between 2011 and 2012 is due to the aforementioned lower rate of first invoice payment as well as higher delinquent fee recovery.

Annual revenue projections for late payment fees are provided in column 18 of the SR 520 T&R table in Appendix A, and the toll bill payment process is illustrated in the transaction workflow diagram in Appendix B.

## **Changes in Recovered Toll Revenues (Column 19)**

Customers who fail to pay their tolls through the regular two invoice / 80 day billing cycle will receive a notice of civil penalty (NOCP) of \$40 for each delinquent toll due, and will have the opportunity to remit payment for tolls and fees, or request a hearing to avoid having their motor vehicle registration withheld from renewal and their amount due sent to collections. The net revenue projections assume that the toll is recovered for a portion of these delinquent transactions. That assumption was reduced for the September 2012 forecast by two thirds to about 7 percent of delinquent tolls recovered. This conservative assumption was essentially maintained for the October 2013 forecast, pending additional experience and the implementation of a mechanism for

executing the legislative intent that these recovered tolls are returned to the SR 520 operating account (civil penalties are not assumed to be returned).

- For the October 2013 forecast, recovered toll revenues no longer include their corresponding rebilling fees, as those are now included with the rebilling fees paid within 80 days as noted above.

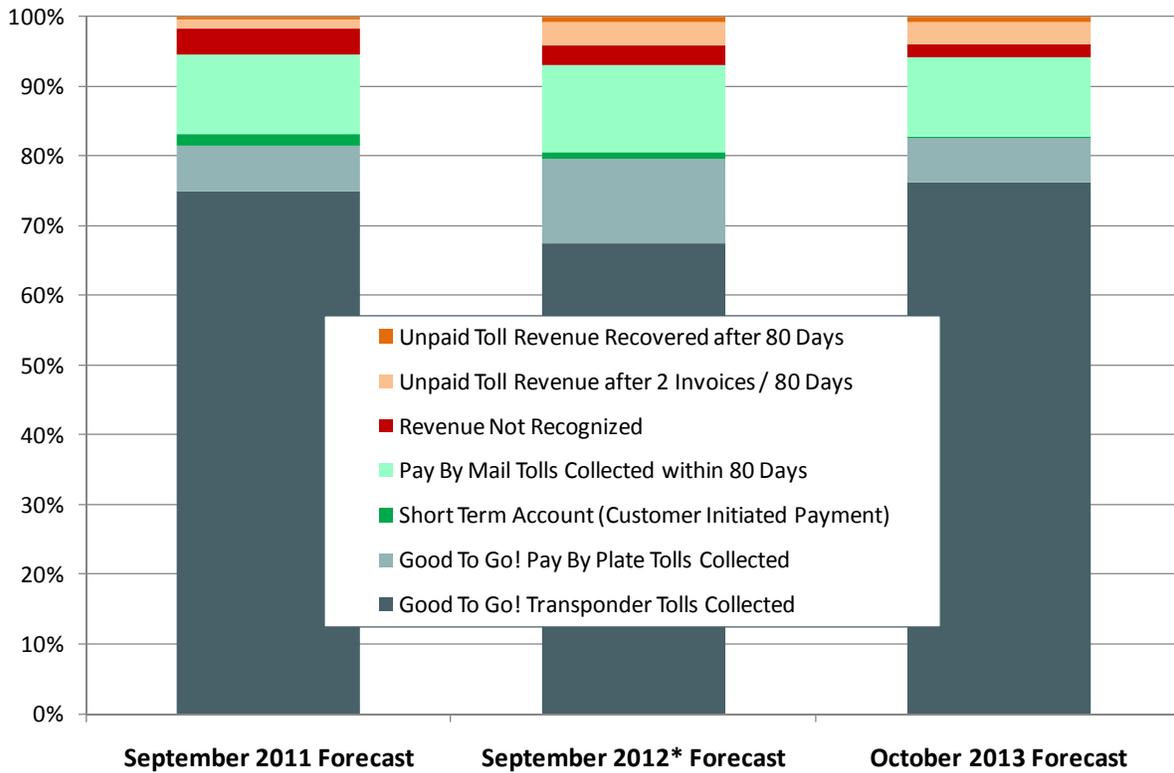
The comparisons across forecasts noted below and provided in Exhibits 9-10 above, starting on page 14, show the previous forecasts adjusted to conform to this changed categorization.

- For the October 2013 forecast, recovered toll revenues were projected to increase by 2.0 million to \$12.5 million over the forecast horizon compared to the September 2012 forecast, due to a higher traffic forecast, a higher Pay By Mail share of that traffic, and a minor revision in the recovery assumptions.
- Compared with the September 2011 forecast, the October 2013 forecast was \$1.4 million lower over the forecast horizon. This is the result of fewer Pay By Mail transactions and a lower recovery rate assumption, largely offset by nearly double the rate of non-payment within 80 days (25 percent of transactions for which toll bills were mailed).

Annual revenue projections for recovered toll revenues are provided in column 19 of the SR 520 T&R table in Appendix A. The transaction workflow diagram in Appendix B also illustrates the process by which toll bills go unpaid after two invoices and 80 days.

Exhibit 11 illustrates the percentage shares of revenue collected by payment method and the disposition of uncollectible revenue for the three forecasts.

EXHIBIT 11: PROJECTED TOLL COLLECTION BY PAYMENT METHODS AND NET UNCOLLECTIBLES BY FORECAST (FY 2021)



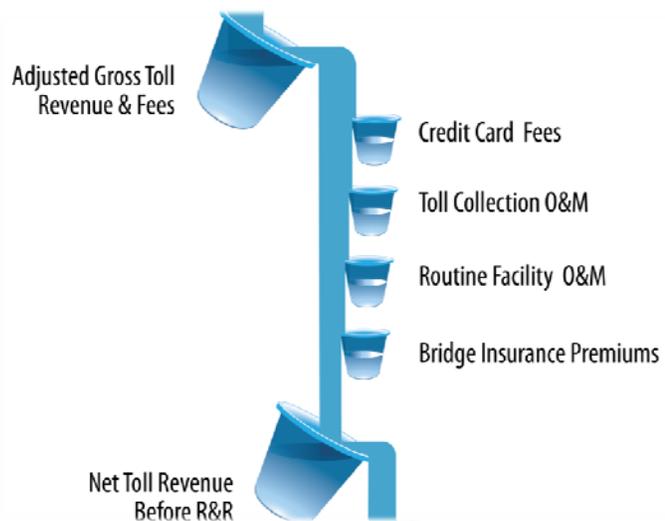
\* Forecast values correspond to the September 2012 Net Revenue forecast update, modified to incorporate nickel rounding of toll rates in fiscal years 2014-16, as adopted by the Washington State Transportation Commission in May 2013.

## Changes to Operating and Maintenance Costs

This section documents the anticipated uses of adjusted gross revenues, or those operating expenses that would be paid from toll revenues upstream of debt service. As shown in the waterfall to the right, the SR 520 operational expenditures include: credit card fees; toll collection O&M costs; facility O&M costs; and insurance premiums. Additional details regarding each of these deductions are provided below, with the annual projections provided in columns 21-24 of the T&R table in Appendix A.

Some of the assumptions have been updated to reflect actual experience for FY 2012 and/or FY 2013. Changes to these assumptions are noted in the descriptions of these revenue adjustments. All costs are in year of expenditure dollars (YOE \$).

The IBI Group Inc. was retained by WSDOT as the “Consulting Engineer”. Master Bond Resolution number 1117 requires the Consulting Engineer to review and prepare a certificate regarding the reasonableness of the assumptions and methods underlying the toll collection and facility O&M costs described below.



### Changes in Credit Card / Banking Fees (Column 21)

As a convenience to customers and to facilitate electronic toll collection, WSDOT accepts credit and debit cards for the payment of tolls on SR 520, as well as for the purchase of *Good To Go!* transponders. For *Good To Go!* pre-paid accounts, credit card fees are tied to periodic account replenishment payments rather than individual toll transactions. Since customers can use any Washington state toll facility with the same *Good To Go!* account, the total credit card receipts resulting in bank fees paid by the state will be allocated back to the individual toll facilities based on their share of system-wide toll revenues. Credit card transactions are processed by a third party vendor which charges a set fee for the service. These banking fees typically involve a fixed amount and a variable component as a percentage of the transaction amount. For forecasting purposes, the two fee components were collectively assumed to be 2.29 percent of applicable toll revenues in the October 2013 forecast. The two previous forecasts assumed credit card fees of 2.5 percent of applicable revenues; however, a reduction was warranted based upon actual experience and current vendor agreements.

Throughout the forecast period, it is anticipated that account balance refunds will be requested by a small share of account-holders closing out their accounts. An allowance for this is handled by assuming that credit card fees will also apply to account refunds (assumed to amount to slightly less than 2 percent of the applicable toll revenues), effectively raising the credit card fee rate to 2.34 percent of applicable toll revenues. A higher refund allowance was assumed for start-up years FY 2012-13 in the September 2011 and 2012 forecasts to account for some customers opening an account and later opting to close it due to limited or no use of active tolled facilities. As customer account activity has now reached a steady state, the October 2013 forecast, which begins with FY 2014, excludes the higher start-up allowance.

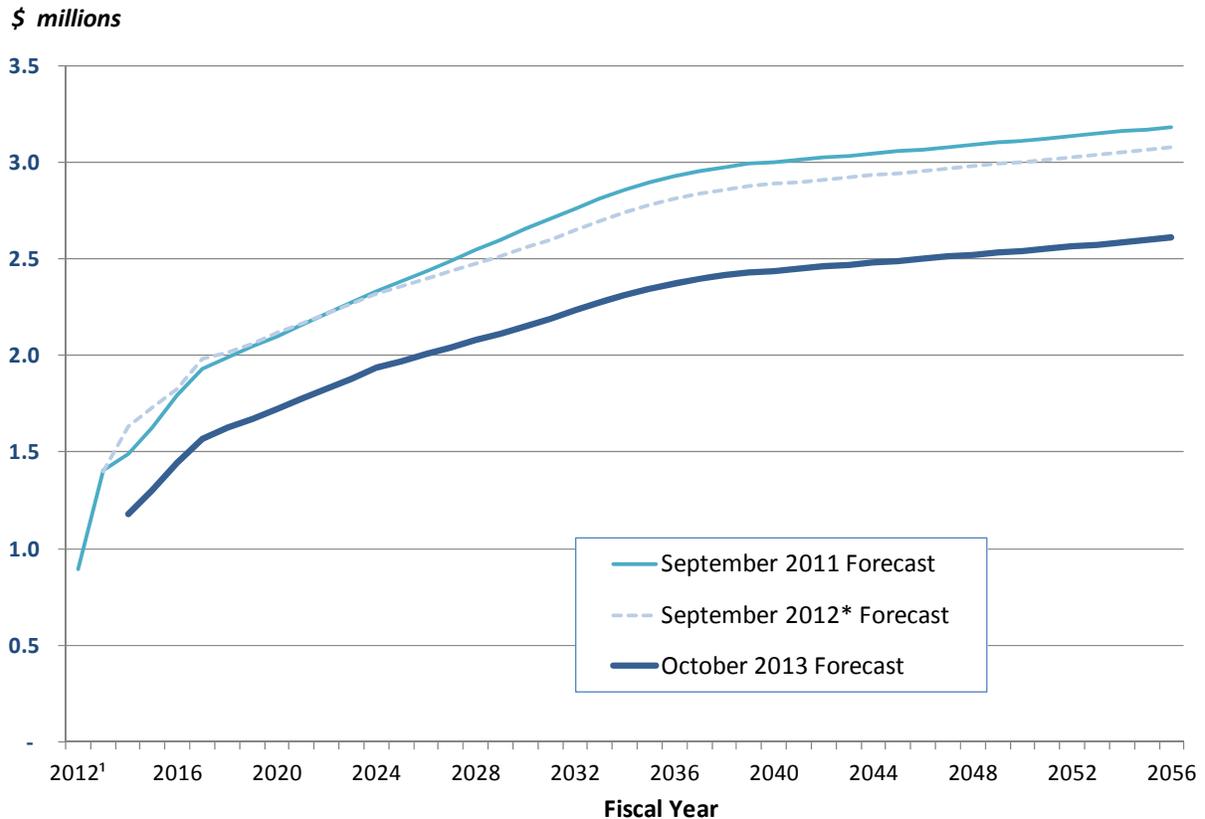
Toll revenues subject to credit card fees include the “gross toll revenue collected” or the tolls actually received after deductions for uncollectible accounts, plus the small share of delinquent toll bills recovered through the civil penalty adjudication process.

The two previous forecasts assumed the share of toll revenue subject to credit card fees would start at 85 percent in FY 2012 and escalate to 90 percent by FY 2017. Based on reported information in FY 2012-13, the October 2013 forecast was revised with a toll revenue share subject to credit card fees of 80 percent in FY 2014, increasing by 0.3 percent annually until reaching 85 percent in FY 2031, with no change thereafter.

WSDOT also accepts automated clearing house (ACH) payments directly from a customer bank account as an alternative means of account replenishment that does not carry the credit card fee. Some customers have opted for this account replenishment method, which contributes to the October 2013 forecast’s reduced assumption for the toll revenue share subject to credit card fees.

In all three forecasts it is assumed that 85 percent of transponder purchases will also be associated with a credit card, causing WSDOT to incur the same banking fees for these purchases. Exhibit 12 illustrates the projected credit card fees by fiscal year over the forecast horizon for the three forecasts. Annual expenditure projections for credit card fees can also be found in column 21 of the T&R table in Appendix A.

EXHIBIT 12: PROJECTED CREDIT CARD FEES IN YOY \$ (FY 2012-56)



\* Forecast values correspond to the September 2012 Net Revenue forecast update, modified to incorporate nickel rounding of toll rates in fiscal years 2014-16, as adopted by the Washington State Transportation Commission in May 2013.

<sup>1</sup> September 2011 Forecast assumed 9 months of revenue in FY 2012 with tolling starting 10/1/2011; actual start date was 12/29/2011.

## Changes in Toll Collection Operations and Maintenance (Column 22)

Toll collection O&M expenditures include all administrative and technical functions required for processing toll transactions and collecting revenue from customers. Beginning with the task of identifying a transaction on the roadway, to recording the transaction, to ultimately collecting payment, the toll collection process requires involvement and coordination by various distinct operating units:

- WSDOT Toll Division / WSDOT Accounting and Financial Services (State Operations) ;
- CSC operations and system software vendor(s); and
- Roadway Toll System vendor (previously referred to as the Toll Collection System (TCS) vendor.

In addition to costs associated with the operating functions noted above, the Appendix A T&R table for the October 2013 forecast now includes the transponder purchase and inventory costs in the toll collection O&M cost column (column 22). **Projected transponder purchase and inventory costs are assumed to equal transponder sales revenues in every forecast year.**

- In the previous forecasts, transponder purchase and inventory costs and sales revenues were provided separately in adjacent columns within the O&M section of the T&R table, such that they did not have a net impact on the total O&M costs.
- For the October 2013 forecast, transponder sales revenues have been moved to the revenue adjustments section in column 17 and transponder costs are now combined with the other toll collection O&M costs in column 22.

The comparison tables provided in Exhibits 9-10 above, starting on page 14, show an adjusted presentation of the two previous forecasts' values to be consistent with the changed categorization of transponder revenues and costs in the October 2013 forecast.

- Inclusive of transponder purchase and inventory costs, toll collection O&M costs for the October 2013 forecast decreased by \$4.5 million or less than 1 percent over the forecast horizon compared to September 2012, or a decrease of nearly 19 percent compared to September 2011.
  - However, this is masked by transponder costs that were reduced by 12 percent from 2011 to 2012, and again by more than half from 2012 to 2013, with equally offsetting sales revenue projections similarly reduced.
  - **Excluding transponder costs, the October 2013 forecast for toll collection O&M expenditures is \$33.8 million, or 4 percent higher than September 2012, and \$148.0 million, or 15 percent lower than September 2011.**

Further detail regarding the toll collection cost activities and changes in their cost assumptions are provided below. In addition, the annual total toll O&M cost projection is provided in column 22 of the T&R table in Appendix A.

### **WSDOT Toll Division / WSDOT Accounting and Financial Services (State Operations)**

The Washington State Toll Division supports three toll facilities: the SR 520 Bridge; the SR 16 Tacoma Narrows Bridge (TNB); and the SR 167 high occupancy toll lanes. The Toll Division is responsible for general management, vendor oversight, marketing, information technology (IT), out-of-state license plate lookup costs, and also payment of the printing and postage costs associated with Pay By Mail transactions. In addition, the WSDOT Accounting and Financial Services group supports the Toll Division by providing accounting and auditing functions for all toll facilities. Because these collective state operations services are provided on a system-wide basis, costs are allocated according to the projected share of total toll transactions at each facility, which varies slightly year to year due to differences in each facility's traffic forecasts. In the October 2013 forecast, FY 2014 toll transactions result in a distribution between SR 520, TNB, and SR 167 of 58, 40, and 2 percent, respectively.

SR 520's share of estimated system-wide transactions is calculated based upon CDM Smith's toll traffic volume forecasts. The addition of two legislatively authorized toll facilities later this decade—the SR 99 Tunnel and the I-405 Express Toll Lanes—is expected to increase total state operations costs, thereby decreasing the SR 520 share of the total, and through economies of scale, reduce the total annual cost allocated to SR 520. However, the state toll collection O&M costs allocated to SR

520 in the projections documented herein do not assume that any additional, new toll facilities are added to the system, and thus the SR 520 cost projections exclude any economy of scale benefits.

Toll collection costs associated with state / Toll Division operations and activities in the October 2013 forecast are provided in Exhibit 13 with escalation assumptions provided in Exhibit 14.

**EXHIBIT 13: STATE OPERATIONS ASSUMPTIONS IN THE OCTOBER 2013 FORECAST – SR 520 VALUES**

Cost Item	Key Assumptions
Salaries & Wages	Standard cost of 13.4 FTEs (pro-rated) at job classifications
Benefits	30% of salaries & wages
Private Sector Consulting	Quarterly forecasting, marketing, baseline assessments, and traffic operations
Office Supplies / Materials	Office supplies for 13.4 FTEs
Rent	Office space for 13.4 FTEs, \$23 per square foot per year
Printing / Postage	Printing and postage costs for marketing materials and transponders, based on reported actuals for FY 2012 and FY 2013: \$0.57 per mailing in 2012/FY 2013 dollars (includes cost of \$0.03 per envelope, printing costs of \$0.084 first page + \$0.025 additional pages assumes 2.45 sheets per mailing, bulk postage rate of \$0.39 per mailing, transponder mailing adjustment of \$0.03 for higher postage costs of \$1.10 per mailing)
Computers / Equipment	Computer equipment for 13.4 FTEs
Phone / Communications	Phone system for 13.4 FTEs
Vehicle Operations	Vehicle operating costs for 2 vehicles (fuel, maintenance, etc.)
Record Retention	Includes WSDOT time to copy, catalog, and prepare documents for archiving, coordination with staff to get files, organization of files once received, a paper and organizational supplies, etc.
Miscellaneous Goods / Services	Other goods/services costs incurred for SR 520 operations

Note: FTE = full time equivalent employee

**EXHIBIT 14: STATE OPERATIONS ESCALATION ASSUMPTIONS IN THE OCTOBER 2013 FORECAST**

Cost Item	Escalation per Period	Period in Years
Rent	10.0%	5
Telephone	2.5%	1
Printing/Postage/Office Supplies/Computers	2.5%	1
Consultants/Contracted Services	2.5%	1
2 Vehicles + Operations + Parking	5.0%	1
Records Management	10.0%	2
CSC System Management	2.5%	1

Under the current agreement and assumed for future CSC vendor agreements, the state is responsible for reimbursing the CSC vendor for the actual printing and postage costs related to processing and mailing Pay By Mail toll bills and related account statements.

- In the October 2013 forecast, the average cost to process and mail an invoice is assumed to be \$0.57 in 2012 dollars, inflated by 2.5 percent per year. The number of toll transactions per invoice is assumed to average 2.4 in the October 2013 forecast based on reported results for FY 2012-13.
- From September 2011 to September 2012, revisions to state costs for toll bill printing and postage resulted in a decrease of \$79 million, or a decrease of 36 percent due to:
  - A lower forecast of Pay By Mail transactions (and thus invoices) throughout the forecast horizon;
  - A reduction in the unit cost per invoice to be more consistent with actual experience, including the use of bulk mailing rates; and
  - A modest increase from an assumed 2.7 to 3.3 transactions per bill.
- For the October 2013 forecast, printing and postage costs have increased by \$18 million or 13 percent over the September 2012 forecast, due to:
  - A higher Pay By Mail transaction forecast;
  - The lower, 2.4 average number of transactions per bill assumption based on recent experience; and
  - Partially offsetting impacts from a drop in the unit mailing cost and a slightly higher payment rate on first invoices (reduces the number of second invoices mailed).

Excluding printing and postage, state operations costs decreased \$6.2 million or 3.4 percent from September 2011 to September 2012, and another \$2.4 million or 1.4 percent for the October 2013 forecast, over the forecast horizon. The changes in the October 2013 forecast are due to minor revisions in the underlying assumptions related to the number of full time employees (14.2 in previous forecasts down to 13.4 in the current forecast). Note that in the short-term, state costs are higher, reflecting additional consultant operations support needed for FY 2014-15.

State toll collection costs are part of column 22 in the Appendix A T&R table.

### Customer Service Center

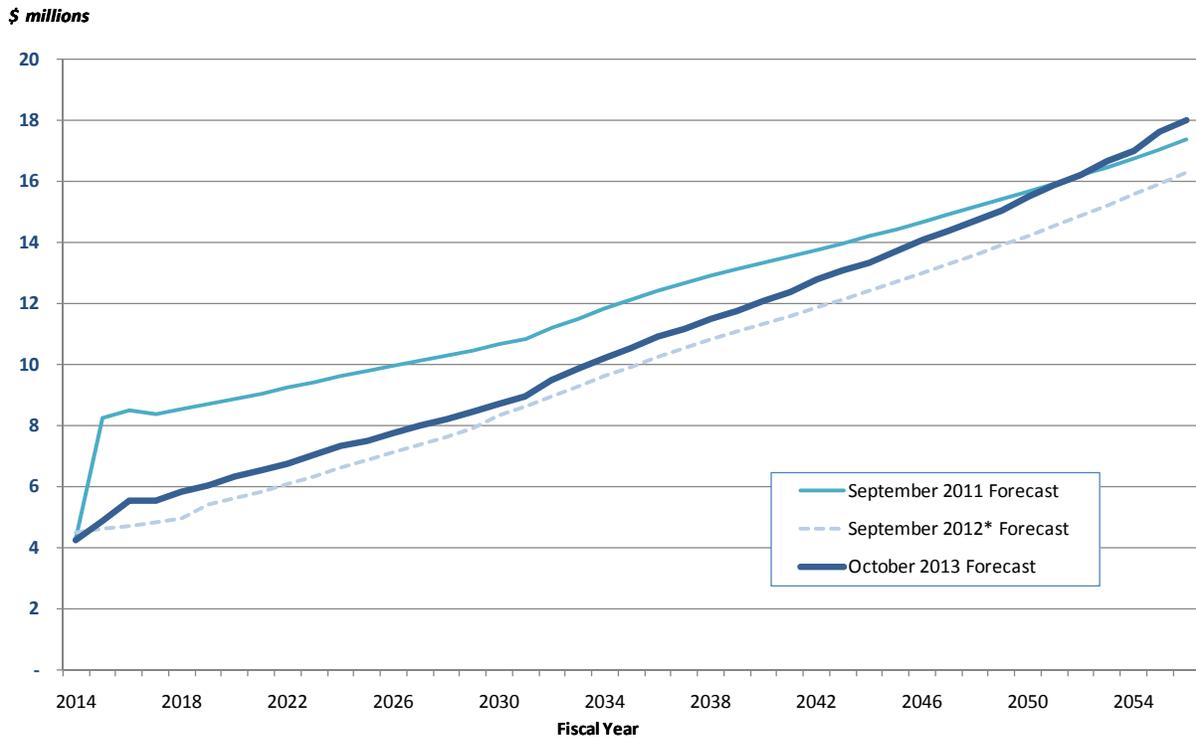
Customer service center vendor costs have been forecasted for both the CSC software systems and operations components, and these system-wide costs are allocated to SR 520 based on its share of total transactions. The CSC is responsible for processing toll transactions, collecting toll revenue, maintaining customer accounts, and interfacing with customers via telephone and at *Good To Go!* walk-in centers. Currently, the CSC vendor, Electronic Transaction Consultants Corporation (ETCC), is responsible for providing the system that processes toll transactions for payment and to provide

customer service center operations. ETCC’s contract expires at the end of FY 2014 but includes an option for renewal. With no decision yet made to continue with ETCC, starting in FY 2015, the October 2013 forecast employs a revised CSC cost forecast that is based upon a bottom-up system-wide estimate at current market rates to provide the various CSC systems software and operating functions consistent with having separate vendors for these functions and also includes a five percent risk contingency. While they have been revised, the future CSC cost assumptions remain similar to those in the previous forecasts over the forecast horizon. The key difference between the October 2013 forecast and the previous September 2012 forecast is that the current forecast is higher in the short-term, as it does not assume that the ETCC contract with its relatively low pricing will be extended through FY 2018. Specifically, the revised October 2013 CSC vendor cost projections are \$3.1 million higher through FY 2019 .

Over the forecast horizon, refinements to the bottom-up CSC cost model in the September 2012 forecast lowered the CSC costs by \$95 million, or 18 percent. The October 2013 forecast revisions, which include additional risk contingency amounts associated with potentially having separate systems and operations CSC vendors, increases the CSC cost by \$35 million, or 8 percent. However, the current CSC cost forecast is still lower than the original September 2011 forecast by \$60 million or 12 percent.

Exhibit 15 illustrates the forecast horizon CSC costs across the three forecast cycles. CSC costs are included in column 22 of the T&R table in Appendix A.

EXHIBIT 15: SR 520 SHARE OF CSC COST PROJECTION IN YOY \$ (FY 2014-56)



\* Forecast values correspond to the September 2012 Net Revenue forecast update, modified to incorporate nickel rounding of toll rates in fiscal years 2014-16, as adopted by the Washington State Transportation Commission in May 2013.

## Roadway Toll Systems

Roadway Toll Systems (RTS) include all equipment and software required to identify a toll transaction and transmit data about that transaction to the customer service center for processing. Sometimes referred to as “lane systems,” this equipment includes transponder readers, cameras, and other communication devices that need regular maintenance to ensure the system is functioning properly.

RTS operations and maintenance activities are performed by a private contractor, Telvent (recently acquired by Schneider Electric), in conjunction with WSDOT maintenance staff. The vendor contract specifies that Telvent will provide ongoing maintenance of the toll collection equipment through the contract period. WSDOT will perform any necessary maintenance to equipment gantries or other roadside equipment. After the contract expires, the state will have the option to re-bid the contract or assume responsibility for all RTS maintenance functions. Examples of these duties include:

- Realigning / recalibrating cameras and transponder readers;
- Cleaning camera lenses;
- Maintaining equipment data connections; and
- Monitoring / auditing equipment performance.

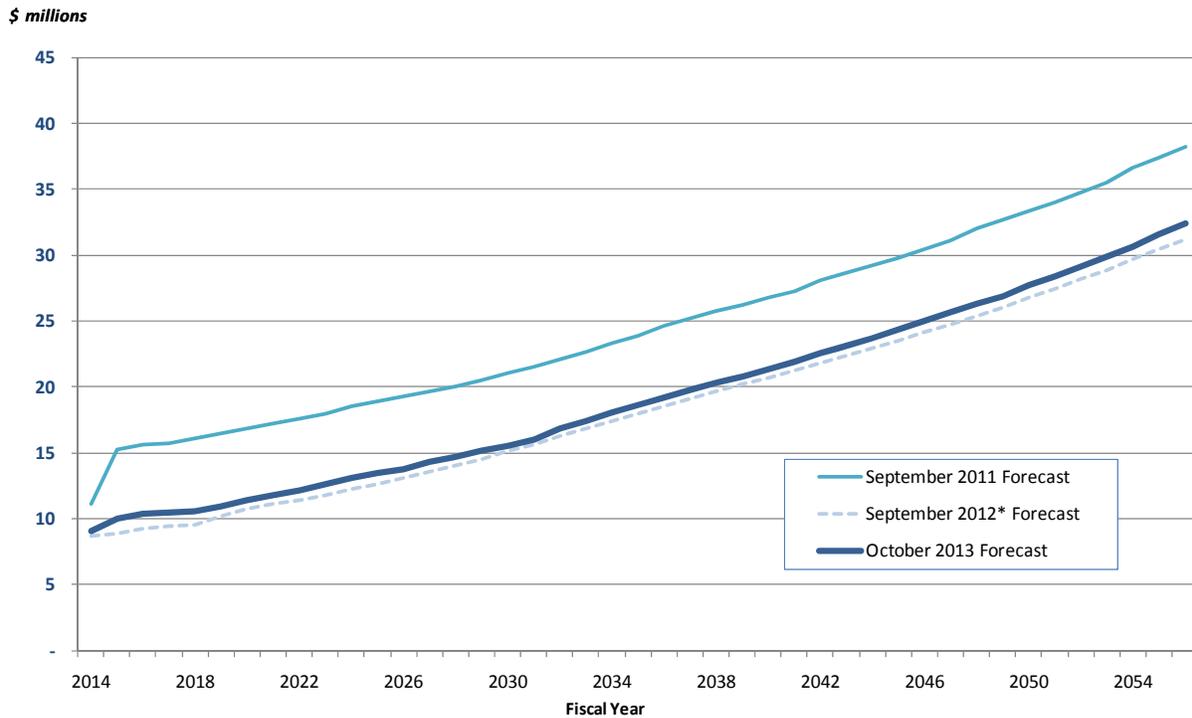
Because tolling of the existing bridge will only be in place until completion of the new facility, RTS equipment will need to be installed before the traffic switches over to the replacement bridge in FY 2015. All costs associated with this transition are included in the projected RTS vendor costs.

Between the September 2011 and September 2012 forecasts, the estimates for RTS costs were essentially unchanged, with just a small downward revision of \$1 million, or 1.8 percent over the forecast horizon. For the October 2013 forecast, RTS costs have been revised downward by \$18 million or 33 percent. The revision in the October 2013 forecast reflects a more accurate estimate based on:

- 1) The actual pricing from a new 10-year, state-wide vendor contract with Telvent that ends in FY 2025 and is subsequently replicated with inflation;
- 2) Elimination of consulting services for RTS functions; and
- 3) Removal of a previously applied 50 percent contingency on long-term vendor cost estimates.

In addition to routine maintenance, periodic capital rehabilitation and replacement (R&R) of tolling equipment will be required. These costs are detailed in a later section. The RTS costs are also included in column 22 of the T&R table.

EXHIBIT 16: TOTAL TOLL COLLECTION O&M COSTS IN YOE \$ (FY 2014-56)



\* Forecast values correspond to the September 2012 Net Revenue forecast update, modified to incorporate nickel rounding of toll rates in fiscal years 2014-16, as adopted by the Washington State Transportation Commission in May 2013.

## Changes in Routine Facility Operations and Maintenance (Column 23)

Routine operation and maintenance of the SR 520 physical assets are critical to providing continuous, uninterrupted toll revenue generation. Proper maintenance of the facility also ensures that the expected level of service is provided to motorists. Typically, facility O&M activities include lane restriping, lighting maintenance, routine bridge repairs, pothole and pavement repair, traffic operations, signage, litter pickup, etc. These activities help to preserve safety and travel reliability along the corridor. A more detailed list of facility maintenance activities is provided in Appendix C.

All O&M costs are provided in year of expenditure dollars, with no change to the previous assumption for annual escalation at 2.5 percent.

After the selection of a preferred design alternative in 2010, WSDOT convened a task force of engineering, maintenance, and design staff to conduct a full review the Program’s projected O&M costs. The findings from this initial task force were the basis for the September 2011 forecast. The September 2012 forecast was essentially unchanged except that tolls were assumed to begin covering facility O&M costs in mid FY 2016 rather than at the start of FY 2017. In 2013 a new task force was convened to review and update the facility O&M cost estimates.

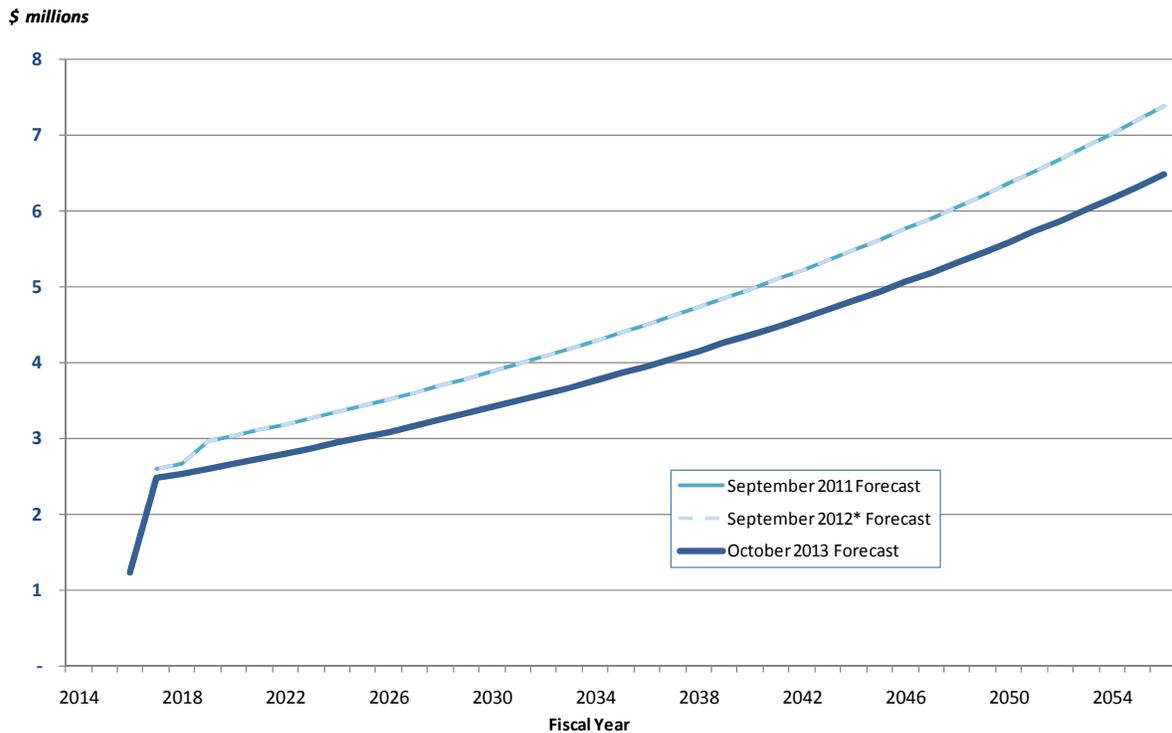
### SR 520 Maintenance Task Force

In the summer of 2013, the WSDOT SR 520 Project Team—in collaboration with the WSDOT Toll Division and Northwest Region maintenance staff—established a Maintenance Task Force (“task

force”) to review, revise, prepare, and report updated facility O&M cost estimates. The task force findings refined the previous estimates by using design information from four segments along the SR 520 corridor. The scope of the funded project elements for which toll revenues would pay facility O&M costs increased for the October 2013 forecast. A new west approach bridge for westbound traffic was added to the scope of the \$2.89 billion funded project, which will contribute an additional \$22 million in O&M expenses to be covered by tolls over the forecast horizon through FY 2056. However, this cost increase was more than offset by reduced estimates for O&M on the replacement floating bridge and on the Eastside roadway between the bridge and I-405. Over the forecast horizon, the maintenance task force estimated a net decrease in the facility O&M costs between the September 2012 and October 2013 forecasts of \$23 million or 12 percent based on more refined estimates tied to the advancement of the project’s design.

Annual routine facility O&M costs are provided in column 23 of the T&R table in Appendix A.

EXHIBIT 17: PROJECTED FACILITY O&M COSTS FOR THE \$2.89 BILLION PROGRAM



\* Forecast values correspond to the September 2012 Net Revenue forecast update, modified to incorporate nickel rounding of toll rates in fiscal years 2014-16, as adopted by the Washington State Transportation Commission in May 2013.

### Changes in Bridge Insurance (Column 24)

Bridge insurance premium estimates are provided by WSDOT. The current premium forecast estimates were based on WSDOT’s limited discussions with insurance underwriters, augmented with the initial two years of premium experience for the SR 520 corridor. Coverage includes business interruption insurance for up to one year with a 10 day deductible, as well as coverage for property damage losses caused by forces of nature, component failure, or acts of terrorism. In the case of an

earthquake there is a \$10 million sublimit on damage. Current insurance coverage during corridor construction includes property damage on the west approach and Portage Bay bridge structures for a total value of \$240 million, and business interruption coverage. Property damage coverage excludes the floating bridge, as its replacement is currently being constructed. The forecast assumes that post-completion coverage includes business interruption as well as property damage on all bridge structures.

For the October 2013 forecast, the construction period and initial post-completion insurance premium estimates have not changed. However, because the premiums are assumed to escalate with the growth in gross revenues (after FY 2021), the forecast horizon total is 1.0 million lower due to revised revenue growth rates in CDM Smith's October 2013 forecast for gross toll revenues. The September 2012 forecast revised the horizon insurance costs upward by \$1.0 million or less than one percent, relative to the September 2011 forecast. The revisions were focused in the early years and were based on actual premium experience.

Annual insurance premium forecasts are provided in column 24 of the T&R table in Appendix A.

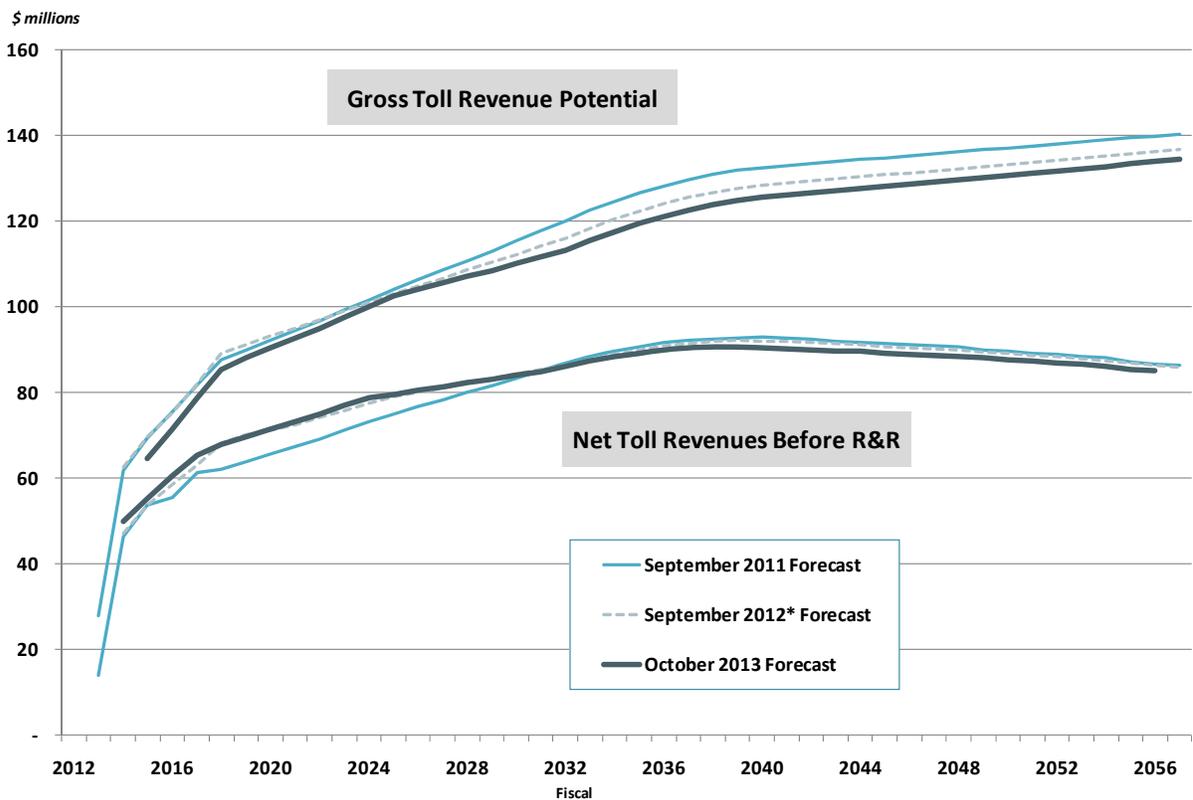
## Other Project Uses of Toll Revenues

### Total Net Revenue Before R&R (Column 25)

Starting with CDM Smith’s Gross toll Revenue Potential in the T&R table column 11, the addition and subtraction of the various revenue adjustments in columns 12-19 and the O&M expenditures in columns 21-24 results in the total net revenue available to support financing and other project uses. The annual net revenue projections can be found in column 25 of the T&R table in Appendix A.

Exhibit 18 illustrates the spreads between the gross and net revenue over the forecast horizon for the September 2011, September 2012, and October 2013 forecasts. The differences in the sums of the annual values over the forecast horizon are shown in Exhibits 9-10 above, starting on page 14.

EXHIBIT 18: PROJECTED GROSS AND NET TOLL REVENUES (FY 2012-56)



\* Forecast values correspond to the September 2012 Net Revenue forecast update, modified to incorporate nickel rounding of toll rates in fiscal years 2014-16, as adopted by the Washington State Transportation Commission in May 2013.

Other downstream uses of net revenues include deferred sales tax, periodic facility R&R, and periodic toll-related R&R as shown in the waterfall at the right. In the SR 520 financial plan, these items are paid downstream of debt service from coverage revenues via reserve accounts that are pre-funded with annual contributions. Descriptions for these other uses of tolls are provided below.



## **Changes in Deferred Sales Tax on Construction (Column 26)**

The 2008 Washington State Legislature, through ESHB 3096 codified as RCW 47.01.412, granted the SR 520 Program the ability to defer a portion of the state and local sales tax payable on construction until five years after substantial completion. At this future date, the sales tax must be paid in 10 equal annual installments. The timing is based upon the expected completion of the overall \$2.89 billion funded program components, which currently puts the first payment in FY 2022. Excess toll revenues are assumed to be used to make the 10 annual payments through fiscal year 2031.

The State is deferring sales tax on almost the entire construction program, with the exception of sales tax paid in Grays Harbor County that applies to the floating bridge pontoon construction site development. The October 2013 forecast updated the total estimate of deferred sales tax to \$159.4 million from \$143.6 million in the September 2012 forecast and \$124.2 million in the September 2011 forecast. Deferred sales tax is repaid in ten equal annual installments of \$15.9 million beginning in FY 2022. The increase from the September 2011 estimate was due to increased construction expenditures related to adding the west approach bridge to the funded project. The October 2013 deferred sales tax forecast increase to \$159.4 million is based upon a projected \$170 million cost increase for the funded project related to pontoon construction, bringing the total cost up to \$2.89 billion.

## **Changes in Periodic Facility Repair and Replacement Costs (Column 27)**

The IBI Group Inc. was retained by WSDOT as the “Consulting Engineer”. Master Bond Resolution number 1117 requires that the Consulting Engineer review and prepare a certificate including the reasonableness of the assumptions and methods underlying the facility R&R costs described below.

Costs associated with periodic facility R&R activities are assumed to be funded from a combination of WSDOT preservation program (“P program”) funds and toll revenues. Periodic facility costs typically involve major capital upgrades and improvements. Major costs include replacement of anchor cables, replacement of strip seal expansion joints, surface rehabilitation, painting, and related capital rehabilitation. Cost estimates for periodic R&R are dependent upon several design characteristics of the facility, including the type of construction materials and structural attributes.

The aforementioned 2013 WSDOT maintenance task force for SR 520 also reviewed and revised the costs for R&R activities. Similar to O&M costs, R&R projections were prepared by roadway segment and cost category. A map illustrating the roadway segments in the SR 520 corridor is provided in Exhibit 2 on page 3.

For the purpose of these projections, it was previously determined that toll revenues would be used to fund all facility R&R expenditures for the bridge structures within the \$2.89 billion funded program components and that the WSDOT’s preservation program funds would be used for the funded at-grade highway section between the floating bridge and I-405. An exception to this geographic limitation is for the traffic management and data systems R&R costs, which are expected to be funded by toll revenues across all SR 520 corridor segments.

- In the September 2012 forecast, periodic facility R&R costs for the items specifically identified to be paid by tolls increased by 18 percent, or \$40 million over the forecast horizon, primarily due to:
  - The addition of federally required standard bridge inspections;
  - Higher projected costs for anchor cable replacement; and
  - The added costs for the West Approach Bridge North structure, which is an expansion of the funded project relative to the September 2011 forecast.

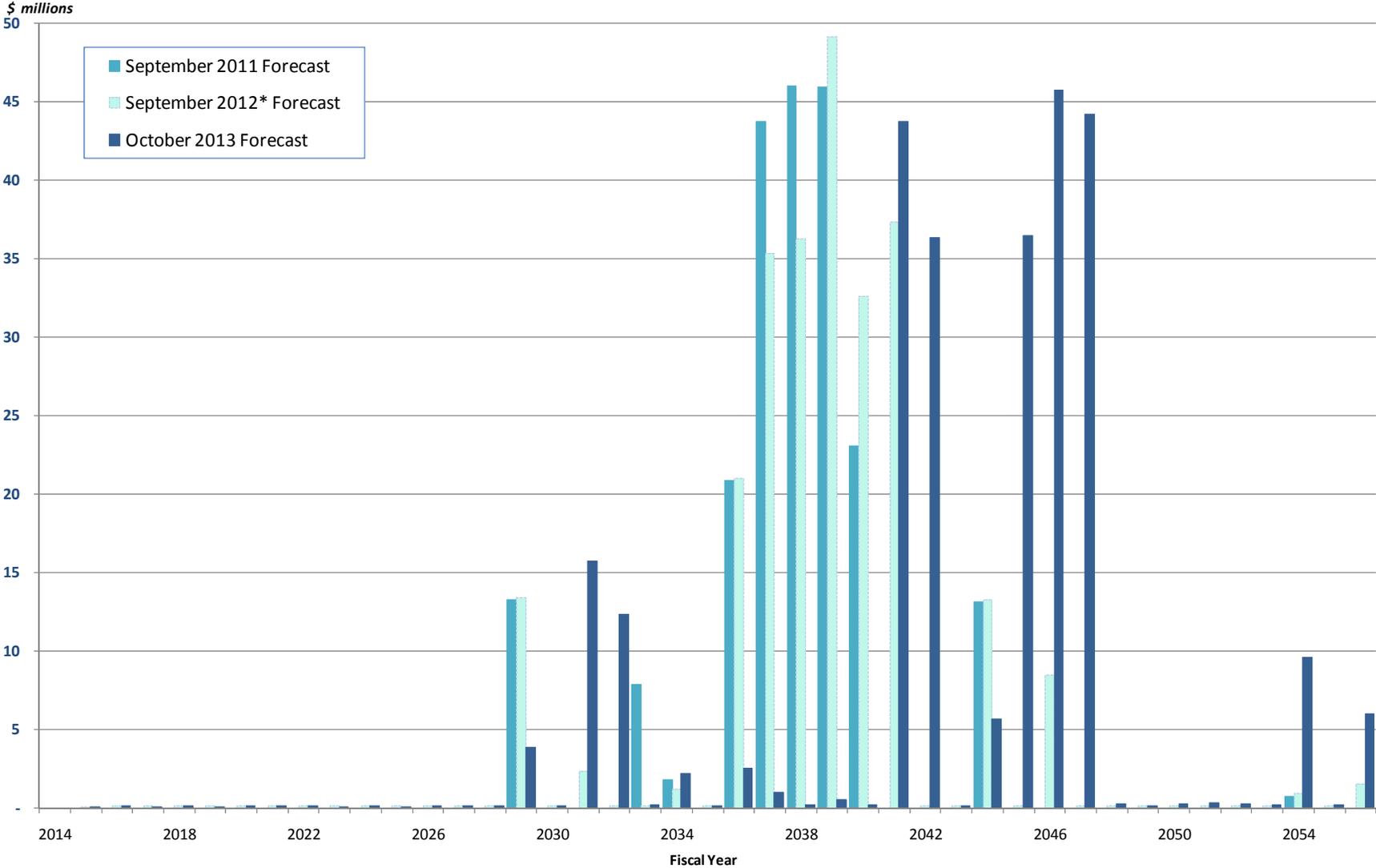
Further revisions are based on results provided by the 2013 WSDOT maintenance task force.

- For the October 2013 forecast, the task force's revised estimates represent a net increase of 5 percent, or \$14 million in the toll-funded R&R costs over the forecast horizon, bringing the toll-funded facility R&R estimate to \$270 million.

Per the estimates of the 2013 maintenance task force, toll revenues are proposed to contribute approximately an 82 percent share of the total facility R&R expenses of \$329 million over the forecast horizon. This is an increase from the 76 percent share assumed in the September 2011 forecast, and the 78 percent assumed in the September 2012 forecast.

Facility costs funded by toll revenues are shown in column 27 of the T&R table for the October 2013 forecast. Annual amounts for all three forecasts are depicted in Exhibit 19 on the following page.

EXHIBIT 19: TOLL-FUNDED FACILITY REPAIR AND REPLACEMENT COST ESTIMATES BY FORECAST IN YOY \$ (FY 2014-56)



## Changes in Toll-Related Repair and Replacement Costs (Column 28)

As previously noted for periodic facility R&R costs, Master Bond Resolution number 1117 requires the Consulting Engineer review and prepare a certificate including the reasonableness of the assumptions and methods underlying the periodic toll-related R&R costs described below.

Periodic toll-related R&R costs includes the periodic repair, rehabilitation, and replacement of the roadway toll system (RTS) hardware and equipment. These costs have been included in all three forecasts from September 2011 through October 2013.

New for the October 2013 forecast is the SR 520 share for the system-wide administrative and technical-related costs incurred by WSDOT to periodically re-procure both the RTS and CSC vendors as well as implement and test their new systems and hardware. Since SR 520 had already contributed to the procurement of the current RTS and CSC vendors, re-procurement costs were previously assumed to be borne by the next toll facility coming online. However, the WSDOT Toll Division recently decided to allocate these costs across all operating facilities each time it is necessary to re-procure a new vendor.

Additional detail on toll-related R&R and vendor re-procurement costs is provided below, and the annual cost projections in year of expenditure dollars are provided in column 28 of the T&R table in Appendix A.

### Roadway Toll Systems Repair and Replacement Costs

RTS vendor R&R costs include upgrades to, or replacement of, cameras and transponder readers, networking equipment, and fiber optic communication lines. While it may be possible to get more than 10 years out of some hardware components and/or for WSDOT to extend the contract for an established RTS vendor, the cost projections conservatively assume that the RTS vendor and entire RTS system will be replaced every 10 years. This periodic re-procurement is next scheduled for FY 2025, with the process starting in advance and including one year for procurement of a state-wide vendor to provide the entire roadway toll system, followed by two years of implementation and testing of each facility to allow for a smooth transition to a new vendor and/or new equipment.

The RTS vendor R&R costs increased slightly from \$17 million in both the September 2011 and 2012 forecasts to \$19.8 million for the October 2013 forecast over the forecast horizon.

SR 520's share of WSDOT and vendor costs specifically related to the periodic re-procurement of a new state-wide RTS vendor and hardware are now assumed to be paid from SR 520 tolls in the October 2013 forecast. The WSDOT RTS re-procurement costs cover deploying and accepting a new (or replacement) system, starting from drafting the request for proposals (RFP) and proceeding to vendor selection, implementation and acceptance testing, and finally transfer of operations and maintenance to the new vendor.

WSDOT re-procurement cost assumptions are based on experience gained from the recent procurement of Telvent as the new state-wide RTS vendor under a 10 year contract. Because the re-procurement of the system applies to all facilities, the total estimated re-procurement costs are

allocated across all of the existing facilities plus the addition of the I-405 Express Lanes and the SR 99 bored tunnel, which are expected to start operations in FY 2016 and FY 2017, respectively. Re-procurement costs are allocated based on each facility's forecasted toll transactions in the year the costs are projected to be incurred. Implementation and testing costs are facility-specific and based on the amount of equipment required for operations in each corridor. Re-procurement, implementation, and testing costs are assumed to escalate at an annual rate of 2.5 percent to account for inflation.

The SR 520 share of total RTS re-procurement, implementation, and testing costs are estimated at \$10.2 million over the forecast horizon in the October 2013 forecast.

With the addition of re-procurement costs, the overall RTS R&R costs have increased to \$30 million for the October 2013 forecast, compared with \$17.0 million for the two previous forecasts.

### **Customer Service Center Repair and Replacement Costs**

Similar to RTS re-procurement costs, the periodic costs to re-procure the CSC systems software and operations vendor(s) along with implementation and testing are being included for the first time in the October 2013 forecast. The revised assumption allocates future state costs for the CSC vendor(s) re-procurement across the three existing facilities, plus the I-405 Express Lanes and the SR 99 Tunnel, which are assumed to start operations in FY 2016 and FY 2017 respectively. Re-procurement costs are allocated based on each facility's forecasted toll transactions in the years the costs are projected to be incurred. Re-procurement costs are estimated in a manner consistent with the possibility that the CSC systems software and operations functions may be provided by two different vendors.

Both the vendor and WSDOT incur costs associated with procurement, implementation, and testing. During procurement, WSDOT drafts the RFP document, solicits it to potential bidders, and negotiates the final contract. During implementation and testing, WSDOT facilitates the transition between vendors and performs user acceptance testing. The vendor incurs costs associated with implementation and testing, including data migration, factory acceptance testing, and the drafting of business plans and standard operating procedures.

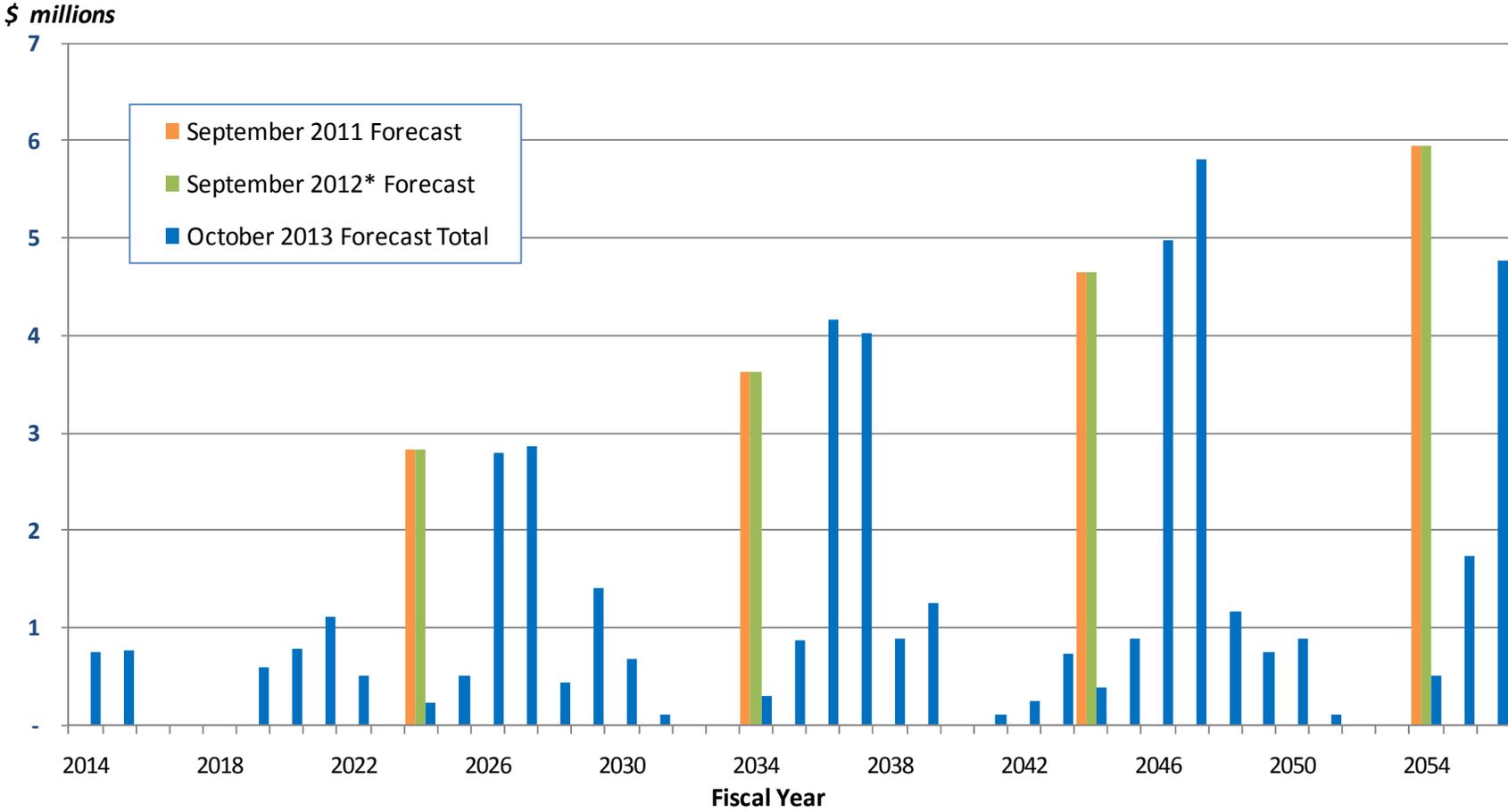
The October 2013 forecast for CSC re-procurement costs includes contingency amounts if the state were to contract with separate systems and operations vendors, and the assumption is made that a new vendor for one or both CSC functions will be procured in FY 2015. Re-procurement of the CSC operations vendor is assumed to occur every seven years inclusive of one year of re-procurement followed by one year for implementation and acceptance testing of the new operations. Re-procurement of the CSC systems software vendor is assumed to occur every nine years with two subsequent years used for implementation and acceptance testing of the new system. These assumptions are based on comparable industry experience and WSDOT guidelines for vendor contracts.

Non-routine system betterments for the CSC System Software have been added as an additional periodic cost item that would fall midway through the nine year replacement intervals (every five years) and are used to fund likely, but unscheduled, system changes that often arise from policy decisions made regarding payment, billing, and other processes. These costs are forecasted for both the CSC system vendor and WSDOT. All CSC R&R costs were estimated in 2012 dollars and are escalated at 2.5 percent annually. The total CSC R&R costs for periodic vendor re-procurement and system betterments amount to \$18.2 million over the forecast horizon in the October 2013 forecast.

Collectively, the periodic RTS and CSC R&R costs total \$48.2 million over the forecast horizon, an increase of \$31.1 million or 183 percent. The annual amounts are shown in column 28 of the T&R table.

Exhibit 20 illustrates the temporal patterns of the total toll-related R&R costs for each of the three forecasts. Not only have the patterns changed for the October 2013 forecast, but the total R&R costs are higher with the addition of the RTS and CSC periodic re-procurement costs to the RTS R&R costs. Exhibit 21 further illustrates these changes by showing the composition of the October 2013 forecast divided by the above three components.

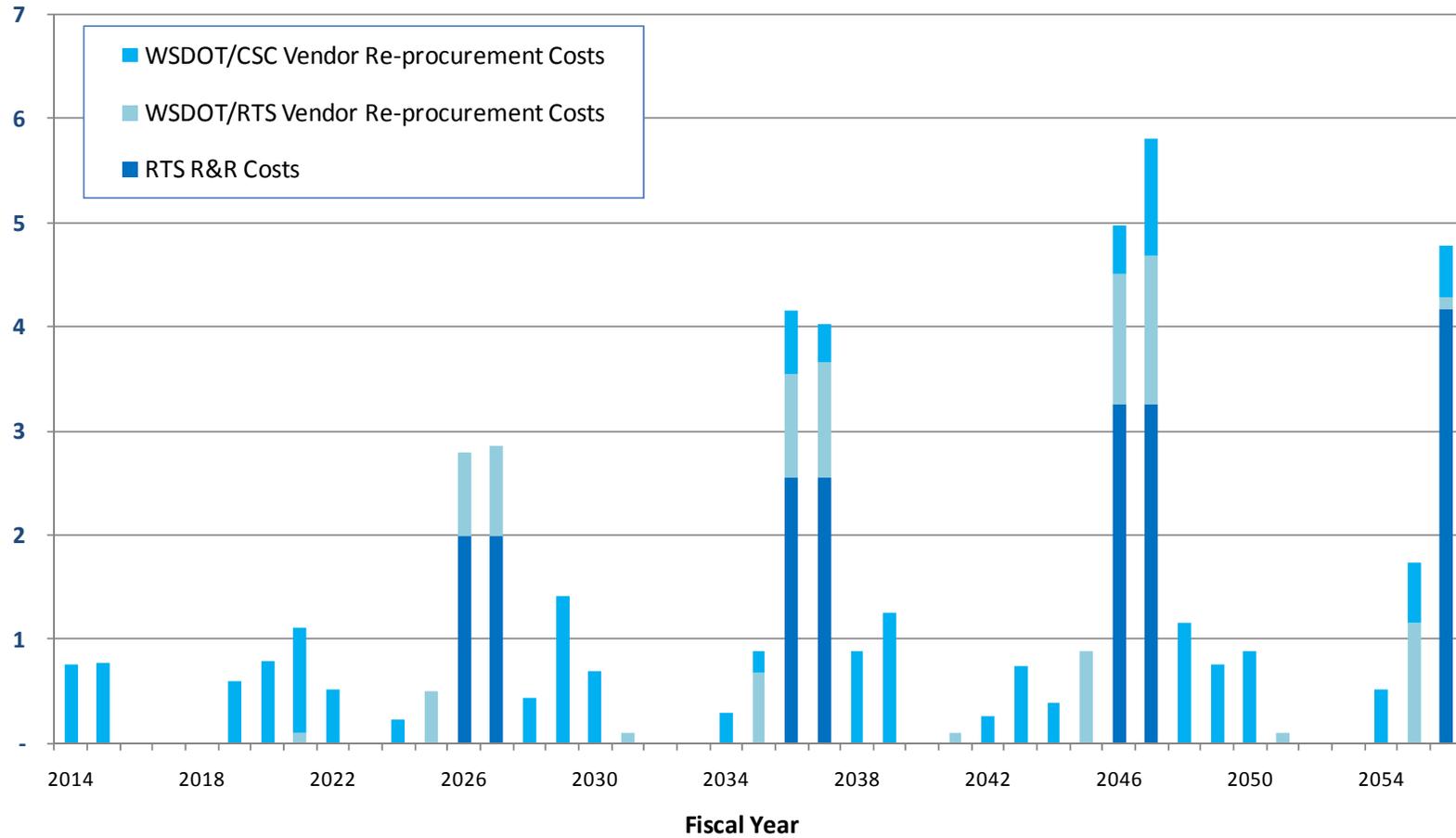
EXHIBIT 20: TOLL COLLECTION R&R ESTIMATES BY FORECAST IN YOY \$ (FY 2014-56)



\* Forecast values correspond to the September 2012 Net Revenue forecast update, modified to incorporate nickel rounding of toll rates in fiscal years 2014-16, as adopted by the Washington State Transportation Commission in May 2013.

EXHIBIT 21: OCTOBER 2013 FORECAST FOR TOLL COLLECTION R&R BY COMPONENT IN YOY \$ (FY 2014-56)

\$ millions



## **Appendix A: Annual Toll Traffic & Revenue Projections**

The T&R table on the following page of this appendix shows the adjustments, additions, and reductions to CDM Smith’s Gross Toll Revenue Potential forecast that yield the net toll revenue cash flow available for debt service and other downstream uses. Some aspects of the table format and order of the revenue adjustments and O&M costs have been revised with each successive forecast from September 2011 to September 2012 to October 2013.

Key changes and additions to T&R table columns by forecast are shown in the table below with (#) representing the column number.

EXHIBIT 22: CHANGES IN THE T&R TABLE FORMAT ACROSS THE THREE FORECASTS

September 2011	September 2012*	October 2013
Gross Toll Revenue (11)	Gross Toll Revenue Potential (11)	<i>No change</i>
Free Trip Incentive (12)	<i>No Change</i>	<i>Included in actuals for Toll Payment Discounts &amp; Fees (12)</i>
Self-Initiated Payment Incentives (13)	<i>No Change</i>	<i>Included in Toll Payment Discounts &amp; Fees (12)</i>
<i>Good To Go! Pay By Plate Fees (14)</i>	<i>Good To Go! Pay By Plate Surcharge (14)</i>	<i>Included in Toll Payment Discounts &amp; Fees (12)</i>
Late Payment Fees (15)	<i>No change</i>	Pay By Mail Rebilling Fees (18)
N/A	N/A	Gross Toll Revenue Collected (15)
Uncollectible Transactions/Leakage (16)	Uncollectible Accounts (16)	Revenue Not Recognized (13), Unpaid Toll Revenue (14)
N/A	N/A	Misc. Pledged Revenues (16)
Recovered Toll & Fee Revenue (17)	<i>No change</i>	Recovered Toll Revenue (19), <i>recovered fees included in Pay By Mail Rebilling Fees (18)</i>
Adjusted Gross Toll Revenues (18)	<i>No change</i>	Adjusted Gross Toll Revenue & Fees (20)
Transponder Sales Revenue (19)	<i>No change</i>	Transponder Sales Revenue (17)
Transponder Purchase & Inventory Cost (20)	<i>No change</i>	<i>Included in Toll Collection O&amp;M (22)</i>
Routine Toll Collection O&M Costs (22)	Toll Collection O&M Costs (22)	Toll Collection O&M Costs (22), <i>now includes Transponder Purchase &amp; Inventory Cost</i>
N/A	N/A	Periodic Toll Equipment and CSC Repair & Replacement Costs (28)
Remaining Net Toll Revenues After R&R/Deferred Sales Tax (28)	Net Toll Revenue After Deferred Sales Tax and Periodic R&R (28)	Total Net Toll Revenue After Deferred Sales Tax and Periodic R&R (29)

\* Forecast values correspond to the September 2012 Net Revenue forecast update, modified to incorporate nickel rounding of toll rates in fiscal years 2014-16, as adopted by the Washington State Transportation Commission in May 2013.

**EXHIBIT 23: SR 520 TRAFFIC AND REVENUE TABLE – OCTOBER 2013 FORECAST**

**Annual Transactions, Gross Revenue, and Net Revenue FY 2012-56 — Revised Net Revenue Projections based on Updated Investment Grade Traffic and Revenue Forecasts**

Revised 3/21/2014

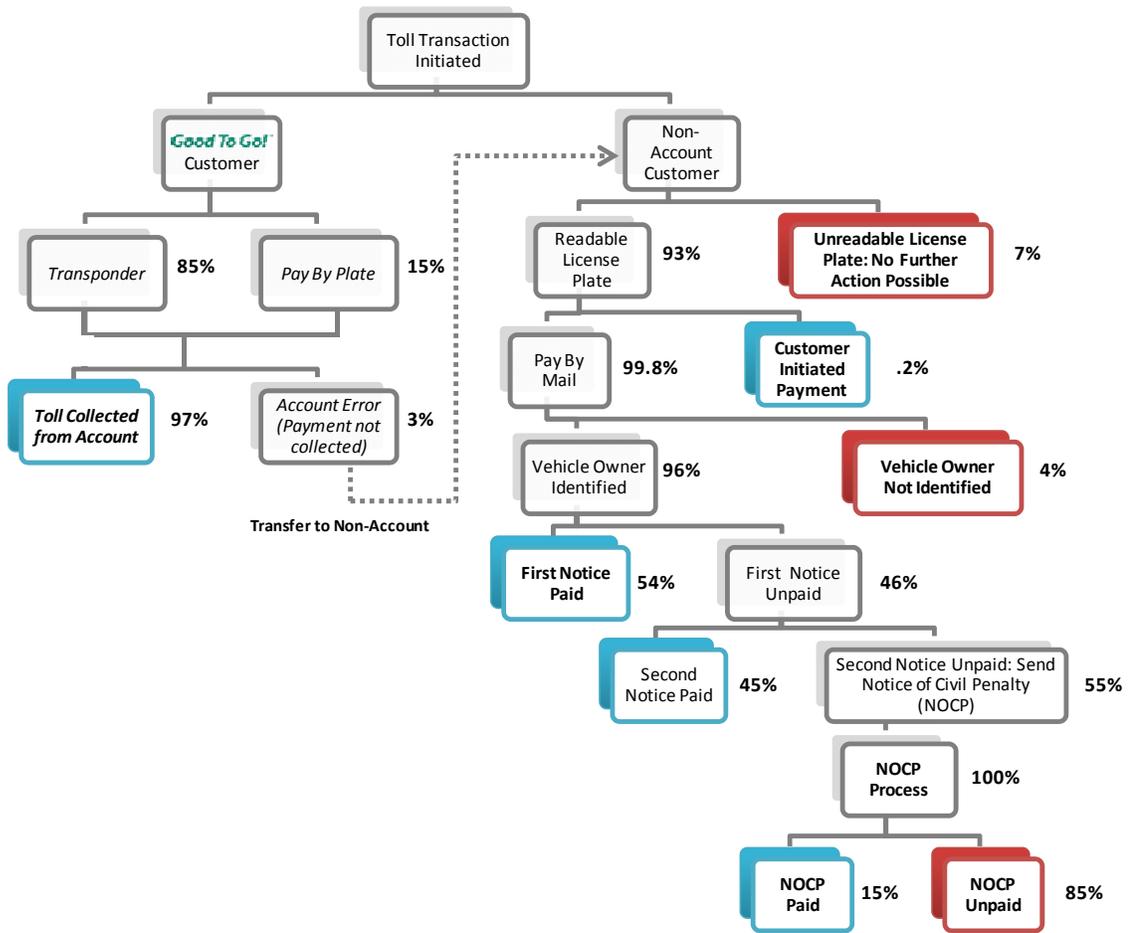
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Fiscal Year	Good To Go! Accounts			Pay By Mail / No Account			Total Toll Transactions (millions) <sup>4</sup>	Toll Revenue Potential			Total Gross Toll Revenue Potential (\$ millions) <sup>4</sup>	Plus (Less): Toll Payment Discounts and Fees (\$ millions) <sup>7,8,9</sup>	Less: Revenue Not Recognized (\$ millions) <sup>10</sup>	Less: Unpaid Toll Revenue (\$ millions) <sup>11</sup>	Subtotal: Gross Toll Revenue Collected (\$ millions)	Plus (Less): Misc. Pledged Revenues (\$ millions) <sup>12</sup>	Plus: Transponder Sales Revenue (\$ millions) <sup>13</sup>	Plus: Pay By Mail Rebilling Fees (2nd Invoice & Later Recovery) (\$ millions) <sup>14,15</sup>	Plus: Recovered Toll Revenue (\$ millions) <sup>16</sup>	Subtotal: Adjusted Gross Toll Revenue & Fees (\$ millions)	Less: Credit Card Fees (\$ millions) <sup>17</sup>	Less: Toll Collection O&M Costs (\$ millions) <sup>18</sup>	Less: Routine Facility O&M Costs (\$ millions) <sup>19</sup>	Less: Bridge Insurance Premium (\$ millions) <sup>20</sup>	Total Net Toll Revenue Before R&R (\$ millions)	Less: Payment of Deferred Sales Tax (\$ millions) <sup>21</sup>	Less: Periodic Facility Repair & Replacement (R&R) Costs (\$ millions) <sup>22</sup>	Less: Periodic Toll Equipment and CSC Repair & Replacement (R&R) Costs (\$ millions) <sup>23</sup>	Total Net Toll Revenue After Deferred Sales Tax and Periodic R&R (\$ millions)
	Wtd. Average Bridge Toll Rate (one-way) <sup>1</sup>	Annual Bridge Toll Transactions (millions) <sup>2</sup>	Pass Car Equiv (PCE) Bridge Volumes (millions) <sup>3</sup>	Wtd. Average Bridge Toll Rate (one-way) <sup>1</sup>	Annual Bridge Toll Transactions (millions) <sup>2</sup>	Pass Car Equiv (PCE) Bridge Volumes (millions) <sup>3</sup>		Good To Go! Pre-Paid Accounts (\$ millions) <sup>5</sup>	Pay By Mail / No Account (\$ millions) <sup>6</sup>	Good To Go! Pre-Paid Accounts (\$ millions) <sup>5</sup>																			
2012			7.78			1.83	9.61	21.39	6.67	28.06	(0.21)	(0.69)	(1.05)	26.10	2.00	1.32	0.83			30.25	(0.43)	(6.97)	-	(1.64)	21.22	-	-	-	21.22
2013			16.58			3.64	20.22	47.28	14.02	61.30	0.67	(1.52)	(5.01)	55.44	0.24	0.47	1.38			57.53	(0.91)	(7.16)	-	(2.43)	47.02	-	-	-	47.02
2014	\$2.81	17.04	17.28	\$4.28	3.68	3.76	20.73	48.56	16.10	64.66	0.62	(1.43)	(3.24)	60.61		0.48	1.96	0.19		63.24	(1.18)	(9.54)	-	(2.51)	50.02	-	-	(0.75)	49.26
2015	\$2.88	18.52	18.76	\$4.37	3.87	3.96	22.38	54.09	17.28	71.37	0.56	(1.53)	(3.44)	66.96		0.48	2.07	0.21		69.72	(1.30)	(10.45)	-	(2.75)	55.22	-	(0.01)	(0.77)	54.44
2016	\$2.95	20.09	20.35	\$4.45	4.07	4.19	24.17	60.09	18.62	78.71	0.47	(1.65)	(3.66)	73.87		0.50	2.18	0.23		76.77	(1.44)	(10.89)	(1.24)	(2.75)	60.46	-	(0.12)	-	60.34
2017	\$3.24	20.45	20.73	\$4.65	3.80	3.91	24.25	67.14	18.20	85.34	0.48	(1.68)	(3.75)	80.39		0.51	2.07	0.24		83.20	(1.57)	(11.01)	(2.47)	(2.75)	65.40	-	(0.07)	-	65.33
2018	\$3.20	21.35	21.68	\$4.63	3.91	4.02	25.25	69.43	18.62	88.05	0.48	(1.72)	(3.82)	82.98		0.52	2.12	0.24		85.87	(1.62)	(11.10)	(2.53)	(2.75)	67.86	-	(0.11)	-	67.75
2019	\$3.18	22.11	22.49	\$4.62	3.97	4.08	26.08	71.46	18.85	90.31	0.47	(1.74)	(3.86)	85.18		0.53	2.16	0.25		88.12	(1.67)	(11.50)	(2.60)	(2.75)	69.60	-	(0.07)	(0.60)	68.92
2020	\$3.16	22.87	23.30	\$4.60	4.04	4.15	26.91	73.54	19.09	92.63	0.47	(1.76)	(3.90)	87.43		0.55	2.20	0.25		90.43	(1.72)	(11.93)	(2.66)	(2.75)	71.36	-	(0.12)	(0.78)	70.46
2021	\$3.14	23.64	24.11	\$4.59	4.10	4.21	27.73	75.68	19.32	95.01	0.46	(1.78)	(3.95)	89.74		0.56	2.24	0.25		92.79	(1.77)	(12.30)	(2.73)	(2.75)	73.23	-	(0.16)	(1.11)	71.97
2022	\$3.13	24.40	24.92	\$4.58	4.16	4.27	28.56	77.89	19.56	97.45	0.45	(1.81)	(3.99)	92.09		0.57	2.28	0.25		95.20	(1.83)	(12.77)	(2.80)	(2.81)	75.00	(15.94)	(0.13)	(0.51)	58.43
2023	\$3.12	25.16	25.72	\$4.57	4.23	4.34	29.39	80.16	19.80	99.95	0.43	(1.83)	(4.04)	94.51		0.59	2.32	0.26		97.68	(1.88)	(13.20)	(2.87)	(2.83)	76.90	(15.94)	(0.08)	-	60.88
2024	\$3.11	25.92	26.53	\$4.55	4.29	4.40	30.22	82.49	20.03	102.52	0.42	(1.86)	(4.09)	96.99		0.60	2.36	0.26		100.21	(1.94)	(13.69)	(2.94)	(2.91)	78.74	(15.94)	(0.13)	(0.23)	62.44
2025	\$3.11	26.27	26.93	\$4.56	4.34	4.46	30.62	83.68	20.33	104.01	0.40	(1.89)	(4.13)	98.39		0.62	2.39	0.26		101.65	(1.97)	(14.10)	(3.01)	(2.95)	79.62	(15.94)	(0.09)	(0.51)	63.09
2026	\$3.11	26.62	27.32	\$4.57	4.40	4.52	31.02	84.87	20.63	105.50	0.37	(1.91)	(4.17)	99.79		0.63	2.41	0.27		103.11	(2.01)	(14.42)	(3.09)	(2.99)	80.60	(15.94)	(0.15)	(2.79)	61.71
2027	\$3.11	26.97	27.71	\$4.58	4.45	4.57	31.42	86.08	20.93	107.01	0.35	(1.93)	(4.21)	101.21		0.65	2.44	0.27		104.57	(2.04)	(14.93)	(3.16)	(3.03)	81.40	(15.94)	(0.17)	(2.86)	62.43
2028	\$3.11	27.33	28.10	\$4.58	4.50	4.63	31.82	87.29	21.23	108.52	0.32	(1.96)	(4.25)	102.63		0.67	2.47	0.27		106.03	(2.08)	(15.35)	(3.24)	(3.08)	82.29	(15.94)	(0.15)	(0.44)	65.76
2029	\$3.11	27.68	28.49	\$4.59	4.55	4.69	32.23	88.51	21.54	110.04	0.30	(1.98)	(4.29)	104.07		0.68	2.49	0.27		107.51	(2.11)	(15.81)	(3.32)	(3.12)	83.15	(15.94)	(3.85)	(1.41)	61.95
2030	\$3.11	28.03	28.89	\$4.60	4.60	4.75	32.63	89.73	21.84	111.57	0.27	(2.01)	(4.34)	105.50		0.70	2.52	0.28		109.00	(2.15)	(16.28)	(3.41)	(3.16)	84.00	(15.94)	(0.15)	(0.69)	67.21
2031	\$3.11	28.38	29.28	\$4.61	4.65	4.81	33.03	90.96	22.15	113.11	0.25	(2.03)	(4.38)	106.95		0.72	2.54	0.28		110.49	(2.19)	(16.77)	(3.49)	(3.21)	84.84	(15.94)	(15.75)	(0.10)	53.04
2032	\$3.11	28.95	29.88	\$4.61	4.76	4.91	33.70	92.77	22.65	115.42	0.25	(2.07)	(4.47)	109.12		0.73	2.60	0.28		112.73	(2.23)	(17.54)	(3.58)	(3.27)	86.11	-	(12.36)	-	73.75
2033	\$3.10	29.47	30.42	\$4.61	4.85	5.01	34.32	94.42	23.10	117.52	0.25	(2.11)	(4.55)	111.10		0.75	2.65	0.29		114.79	(2.27)	(18.21)	(3.67)	(3.33)	87.31	-	(0.20)	-	87.11
2034	\$3.10	29.94	30.92	\$4.61	4.93	5.10	34.87	95.90	23.52	119.41	0.25	(2.15)	(4.63)	112.88		0.77	2.69	0.29		116.64	(2.31)	(18.81)	(3.76)	(3.39)	88.38	-	(2.21)	(0.30)	85.87
2035	\$3.10	30.35	31.35	\$4.61	5.01	5.18	35.36	97.20	23.89	121.09	0.26	(2.18)	(4.70)	114.45		0.79	2.73	0.30		118.28	(2.34)	(19.38)	(3.85)	(3.43)	89.27	-	(0.11)	(0.88)	88.28
2036	\$3.10	30.71	31.73	\$4.61	5.08	5.25	35.79	98.32	24.22	122.54	0.26	(2.21)	(4.76)	115.82		0.81	2.77	0.30		119.70	(2.37)	(20.03)	(3.95)	(3.47)	89.88	-	(2.52)	(4.16)	83.20
2037	\$3.10	31.01	32.05	\$4.61	5.14	5.31	36.15	99.26	24.50	123.76	0.26	(2.24)	(4.81)	116.97		0.83	2.80	0.31		120.90	(2.39)	(20.55)	(4.05)	(3.51)	90.40	-	(1.00)	(4.02)	85.38
2038	\$3.09	31.26	32.31	\$4.61	5.18	5.36	36.44	100.00	24.74	124.74	0.26	(2.26)	(4.86)	117.89		0.85	2.83	0.31		121.88	(2.41)	(21.15)	(4.15)	(3.54)	90.62	-	(0.19)	(0.89)	89.54
2039	\$3.09	31.44	32.51	\$4.61	5.22	5.40	36.66	100.56	24.93	125.49	0.26	(2.27)	(4.89)	118.58		0.87	2.85	0.31		122.62	(2.43)	(21.69)	(4.25)	(3.56)	90.68	-	(0.57)	(1.26)	88.85
2040	\$3.09	31.56	32.64	\$4.61	5.25	5.44	36.81	100.92	25.08	126.00	0.26	(2.28)	(4.91)	119.06		0.90	2.86	0.31		123.13	(2.44)	(22.28)	(4.36)	(3.57)	90.48	-	(0.20)	-	90.28
2041	\$3.09	31.68	32.78	\$4.61	5.28	5.47	36.96	101.28	25.22	126.51	0.26	(2.30)	(4.94)	119.53		0.92	2.88	0.32		123.64	(2.45)	(22.87)	(4.47)	(3.59)	90.26	-	(43.74)	(0.10)	46.42
2042	\$3.09	31.80	32.91	\$4.61	5.31	5.50	37.11	101.65	25.37	127.02	0.26	(2.31)	(4.96)	120.00		0.94	2.89	0.32		124.15	(2.46)	(23.55)	(4.58)	(3.60)	89.96	-	(36.32)	(0.25)	53.39
2043	\$3.09	31.93	33.05	\$4.62	5.34	5.53	37.26	102.01	25.52	127.53	0.25	(2.32)	(4.99)	120.48		0.96	2.91	0.32		124.67	(2.47)	(24.12)	(4.70)	(3.62)	89.77	-	(0.13)	(0.74)	88.90
2044	\$3.08	32.05	33.19	\$4.62	5.37	5.56	37.42	102.38	25.67	128.05	0.25	(2.33)	(5.01)	120.96		0.99	2.92	0.32		125.19	(2.48)	(24.73)	(4.81)	(3.63)	89.54	-	(5.65)	(0.39)	83.50
2045	\$3.08	32.18	33.33	\$4.62	5.40	5.59	37.57	102.75	25.82	128.57	0.25	(2.34)	(5.04)	121.44		1.01	2.94	0.32		125.71	(2.49)	(25.38)	(4.93)	(3.65)	89.26	-	(36.45)	(0.88)	51.92
2046	\$3.08	32.30	33.46	\$4.62	5.43	5.63	37.73	103.12	25.97	129.09	0.25	(2.36)	(5.06)	121.93		1.04	2.95	0.32		126.24	(2.50)	(26.08)	(5.06)	(3.66)	88.94	-	(45.75)	(4.98)	38.22
2047	\$3.08	32.43	33.60	\$4.62	5.46	5.66	37.88	103.49	26.12	129.61	0.25	(2.37)	(5.09)	122.41		1.06	2.97	0.33		126.77	(2.51)	(26.71)	(5.18)	(3.68)	88.69	-	(44.19)	(5.81)	38.68
2048	\$3.08	32.55	33.74	\$4.62	5.49	5.69	38.04	103.87	26.27	130.14	0.25	(2.																	



## **Appendix B: Toll Payment Activity Workflow**

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EXHIBIT 24: SR 520 TOLL PAYMENT ACTIVITY WORKFLOW WITH PERCENTAGE DISTRIBUTIONS BY DISPOSITION – OCTOBER 2013 FORECAST



Note: The percentage distribution of toll transactions between Good To Go! Customers and Non-Account Customers will vary by forecast year. For FY 2017, this distribution is 84% Good To Go! and 16% Non-Account.

## **Appendix C: List of Facility Maintenance Activities**

**EXHIBIT 25: SR 520 MAINTENANCE CATEGORIES AND ACTIVITIES**

Maintenance Activity	Unit of Measure
Pavement Patching, Repair & Crack Sealing	Lane Mile
Shoulder Maintenance	Shoulder Mile
Sweeping and Cleaning	Shoulder Mile
Maintain Ditches	Linear Feet of Ditch
Maintain Culverts	Each
Maintain Catch Basins and Inlets	Each
Maintain Detention/Retention Basins	Stormwater Treatment Facility (Each)
Litter Pickup	Shoulder mile
Noxious Weed Control	Acres (25% of Roadside Restoration)
Landscape Maintenance (3 yr plant establish.)	Acres
Bridge Deck Repair	Square Feet of Bridge Deck
Structural Bridge Repair	Square Feet of Bridge Deck
Bridge Cleaning	Square Feet of Bridge Deck
Movable and Floating Bridge Operations	Bridges (Each)
Urban Tunnel Systems Operations	Urban Tunnel Systems (Each)
Snow and Ice Control Operations	Lane Mile
Pavement Striping Maintenance	Lane Mile (*future & immediate)
Raised/Recessed Pavement Marker Maintenance	
<i>Raised</i>	<i>Each (*25% immediate &amp; 75% future)</i>
<i>Recessed</i>	<i>Each</i>
Pavement Marking Maintenance	Each
Regulatory Sign Maintenance	Each
Guide Sign Maintenance	Each
Guidepost Maintenance	Each
Guardrail Maintenance	
<i>Cable Guardrail</i>	<i>Linear Feet of Cable Guardrail</i>
<i>Beam Guardrail</i>	<i>Linear Feet of Beam Guardrail</i>
<i>Concrete Barrier</i>	<i>Linear Feet of Concrete Barrier</i>
<i>Attenuator</i>	<i>Each</i>
Traffic Signal Systems Operations	Each (*75% immediate & 25% future)
Highway Lighting Systems Operations	Lighting System/Electrical Service(*85/15)
Intelligent Transportation Systems Operations	(*60% immediate and 40% future)
<i>Ramp Meter</i>	<i>Each</i>
<i>Closed Circuit Television</i>	<i>Each</i>
<i>Variable Message/Changeable Sign</i>	<i>Each</i>
<i>Highway Advisory Radio Transmitter/Sign</i>	<i>Each</i>
<i>Express Lane Gate/Sign/Barrier</i>	<i>Each</i>
<i>Roadway Weather Information Station</i>	<i>Each</i>
<i>Data Station System</i>	<i>Each</i>
<i>HUB (fiber optic)</i>	<i>Each</i>
<i>Weigh Station/Weigh in Motion System</i>	<i>Each</i>
<i>Emergency Phone</i>	<i>Each</i>
<i>Radio Rebroadcast System</i>	<i>Each</i>
Rest Area Operations	Rest Area (Each)
3rd Party (unknown) Damages	Lane Mile
Roadside Restoration	Acres (*Future-next biennium)
Wetland Mitigation Sites	Acres (*Future-10 years later)