Washington State Department of Transportation

SR 520 Bridge Replacement and HOV Program

# SR 520 Bridge Net Toll Revenue Report 2015 Update

*Prepared for:*

**Washington State Department of Transportation**

*Lead Author:*

**WSP | Parsons Brinckerhoff**

*in association with the*

**SR 520 General Engineering Consultant Team**

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# 1 | Introduction

## Background and Purpose

This report documents the preparation of the "November 2015 forecast" of net toll revenues for the State Route (SR) 520 Bridge across Lake Washington. The forecasts presented herein reflect the changes to forecast period toll rates and policies proposed by the Washington State Transportation Commission (WSTC) in March 2016 for subsequent adoption in May 2016, with changes going into effect on July 1, 2016 and July 1, 2017. This *SR 520 Net Toll Revenue Report—2015 Update* builds upon previous annual forecasts, including the most recent "November 2014 forecast" and accompanying *SR 520 Bridge Net Toll Revenue Report—2014 Update*, dated January 30, 2015. As with the previous forecast cycles, updated investment-grade traffic and gross toll revenue potential forecasts prepared by CDM Smith are key inputs to the November 2015 net toll revenue projections. New information about future traffic, toll revenues, expenditures, and various revenue adjustments are incorporated into the updated net revenue projections. This report documents the updated projections, describing the changes in key assumptions, inputs, and influences of operating experience compared to the previous November 2014 forecast, with select comparisons back to the initial projections from September 2011.

The net toll revenue projections are used to update the project's financial plan and 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 other reserve accounts, including one for periodic capital repair and replacement of facility and toll collection components. Specifically, the projections are used to demonstrate that tolls on the SR 520 Bridge are predicted to produce revenues in each fiscal year of the forecast in amounts sufficient for the state to comply with the covenants in Section 7.02(a) of Master Resolution number 1117.

All annual amounts in this document are expressed in terms of the state fiscal year (FY), which runs from July 1 to June 30. The SR 520 forecast horizon covers 41 years, extending from FY 2016 through FY 2056.

### September 2011 Forecast

For purposes of this document and related materials, the initial CDM Smith investment-grade traffic and gross toll revenue potential forecasts and accompanying net toll revenue projections that were used to support the initial October 2011 bond financing 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 States Department of Transportation (USDOT) through the Transportation Infrastructure Finance and Innovation Act (TIFIA), CDM Smith completed a revised traffic and gross toll revenue potential forecast. Accompanying net revenue projections were also prepared, along with memoranda covering these revisions. During their subsequent toll rate setting process, the Washington State Transportation Commission (WSTC) opted to round toll rates to the nearest nickel ($0.05) for the July 1, 2013 (FY 2014) and future planned toll increases.

For purposes of this document and related materials, the traffic and gross toll revenue potential forecasts, along with the accompanying net toll revenue projections—inclusive of the minor revision for nickel rounding—are collectively referred to as the "September 2012 forecast."

## 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."

## November 2014 Forecast

CDM Smith performed another comprehensive traffic and gross toll revenue forecast update in 2014. As in 2013, a detailed review of the facility O&M costs, toll collection O&M costs, and revenue adjustments were made in the summer and fall of 2014, ultimately leading to revised inputs and assumptions to select forecast components. Collectively, these current traffic and gross toll revenue forecasts, along with the accompanying net toll revenue projections, are referred to as the "November 2014 forecast."

## November 2015 Forecast

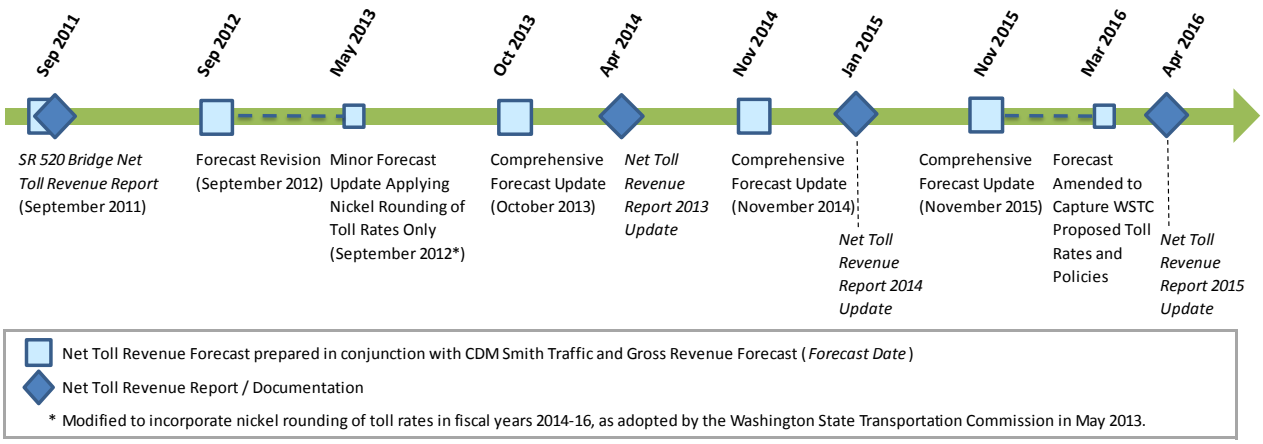
In preparation for the upcoming toll-supported bond sale in 2016, another comprehensive traffic and gross toll revenue forecast update was prepared by CDM Smith in 2015. Their update incorporates new socio-economic forecasts, additional model years, traffic and tolling performance trends to date, and a revised construction closure schedule and roadway configuration related to the newly funded SR 520 "Rest of the West" improvements. Subsequent amendments to the 2015 traffic and revenue forecasts were completed in March 2016 to capture revised future toll rates and policies proposed by the WSTC.

In the same manner as in previous forecasts, a detailed review of revenue adjustments, facility O&M and repair and replacement (R&R) costs, and toll collection O&M and R&R costs were made in the latter half of 2015, resulting in revised inputs, assumptions, and net toll revenue projections. The resulting net revenue projections were similarly amended in March 2016 to reflect the Commission's proposal for changes to toll rates and polices.

Collectively, the amended traffic and gross toll revenue forecasts and accompanying net toll revenue projections are referred to as the "November 2015 forecast."

Exhibit 1 on the following page illustrates the timeline for the series of SR 520 net toll revenue projections

**Exhibit 1: Timeline of SR 520 Traffic, Gross Revenue, and Net Revenue Forecasts**




The new WSTC toll rates and policies for FY 2017 and FY 2018, concurrent with the opening of the new floating bridge, represent the first substantive change for the forecast period toll rates since the original project financial plan and September 2011 forecast. The changes reflect weekday toll rates, weekend toll rates, and toll exemptions as summarized below.

- Weekday *Good To Go!* pass toll rates are set to increase by 10 percent plus nickel rounding, spread over two years as approximately 5 percent in FY 2017, and another 5 percent in FY 2018, with the addition of overnight tolling delayed until FY 2018.
    - Previously, weekday tolls were assumed to increase between 12 and 18 percent (a 15 percent weighted-average increase over all tolling hours) in FY 2017 along with the addition of overnight tolling.
- Weekend *Good To Go!* pass toll rates are also set to increase by 10 percent plus nickel rounding, with the increase divided equally between FY 2017 and FY 2018, plus the addition of overnight tolling delayed until FY 2018.
    - Previously, weekend tolls were assumed to increase by 4 percent during the 11 AM – 6 PM time slot only (a 2 percent weighted-average increase over all tolling hours) in FY 2017 along with the addition of overnight tolling.
- The Pay By Mail toll increment above the *Good To Go!* rate is set to increase to $2.00 in FY 2017.
    - Previously, the Pay By Mail toll increment was assumed to be $1.70 in FY 2017.
- Toll exemptions are to be offered to transit buses and registered vanpools only, consistent with the policy that has been in place since tolling began in FY 2012.
    - Previously, toll exemptions were assumed to be extended in FY 2017 to carpools with three or more occupants traveling in the HOV lane.

Note that the November 2015 forecast does not include any further toll increases beyond FY 2018. While the WSTC may opt to revise the toll schedule or policies at a future date, if current net revenue projections are met, the SR 520 financial plan does not require any further toll increases.

Exhibit 2 shows the weekday two-axle vehicle *Good To Go!* pass toll rate schedules over time, including the WSTC proposed rate increases in FY 2017 and FY 2018. Exhibit 3 provides the corresponding weekend rates for the same time periods.

### Exhibit 2: Weekday *Good To Go!* Pass Toll Rate Schedules by Fiscal Year

2.5% Increases FY 2013 through FY 2016 | 5% Increase in FY 2017 | 5% Increase + Night Tolling in FY 2018 | Two Axle Vehicle Rates

| Time Period | Actual and Planned Rate Assumptions | 5–6 AM | 6–7 AM | 7–9 AM | 9–10 AM | 10 AM–2 PM | 2–3 PM | 3–6 PM | 6–7 PM | 7–9 PM | 9–11 PM | 11 PM–5 AM |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FY 2012 | Opening Rates | $1.60 | $2.80 | $3.50 | $2.80 | $2.25 | $2.80 | $3.50 | $2.80 | $2.25 | $1.60 | |
| FY 2013 | +2.5% | $1.64 | $2.87 | $3.59 | $2.87 | $2.31 | $2.87 | $3.59 | $2.87 | $2.31 | $1.64 | |
| | | *+2.5%* | *+2.5%* | *+2.6%* | *+2.5%* | *+2.7%* | *+2.5%* | *+2.6%* | *+2.5%* | *+2.7%* | *+2.5%* | |
| FY 2014 | +2.5% with Nickel Rounding | $1.70 | $2.95 | $3.70 | $2.95 | $2.35 | $2.95 | $3.70 | $2.95 | $2.35 | $1.70 | |
| | | *+3.7%* | *+2.8%* | *+3.1%* | *+2.8%* | *+1.7%* | *+2.8%* | *+3.1%* | *+2.8%* | *+1.7%* | *+3.7%* | |
| FY 2015 | +2.5% with Nickel Rounding | $1.75 | $3.00 | $3.80 | $3.00 | $2.40 | $3.00 | $3.80 | $3.00 | $2.40 | $1.75 | |
| | | *+2.9%* | *+1.7%* | *+2.7%* | *+1.7%* | *+2.1%* | *+1.7%* | *+2.7%* | *+1.7%* | *+2.1%* | *+2.9%* | |
| FY 2016 | +2.5% with Nickel Rounding | $1.80 | $3.10 | $3.90 | $3.10 | $2.45 | $3.10 | $3.90 | $3.10 | $2.45 | $1.80 | |
| | | *+2.9%* | *+3.3%* | *+2.6%* | *+3.3%* | *+2.1%* | *+3.3%* | *+2.6%* | *+3.3%* | *+2.1%* | *+2.9%* | |
| FY 2017 | +5% Proposed with Nickel Rounding | $1.90 | $3.25 | $4.10 | $3.25 | $2.55 | $3.25 | $4.10 | $3.25 | $2.55 | $1.90 | |
| | | *+5.6%* | *+4.8%* | *+5.1%* | *+4.8%* | *+4.1%* | *+4.8%* | *+5.1%* | *+4.8%* | *+4.1%* | *+5.6%* | |
| FY 2018 | +5% Proposed with Nickel Rounding | $2.00 | $3.40 | $4.30 | $3.40 | $2.70 | $3.40 | $4.30 | $3.40 | $2.70 | $2.00 | $1.25 |
| | | *+5.3%* | *+4.6%* | *+4.9%* | *+4.6%* | *+5.9%* | *+4.6%* | *+4.9%* | *+4.6%* | *+5.9%* | *+5.3%* | |

**Note:** • Pay By Mail toll rates are $2.00 higher than the Good To Go! toll rates shown above.

### Exhibit 3: Weekend *Good To Go!* Pass Toll Rate Schedules by Fiscal Year

2.5% Increases FY 2013 through FY 2016 | 5% Increase in FY 2017 | 5% Increase + Night Tolling in FY 2018 | Two Axle Vehicle Rates

| Time Period | Actual and Planned Rate Assumptions | 5–8 AM | 8–11 AM | 11 AM–6 PM | 6–9 PM | 9–11 PM | 11 PM–5 AM |
|---|---|---|---|---|---|---|---|
| FY 2012 | Opening Rates | $1.10 | $1.65 | $2.20 | $1.65 | $1.10 | |
| FY 2013 | +2.5% | $1.13 | $1.69 | $2.26 | $1.69 | $1.13 | |
| | | *+2.7%* | *+2.4%* | *+2.7%* | *+2.4%* | *+2.7%* | |
| FY 2014 | +2.5% with Nickel Rounding | $1.15 | $1.75 | $2.30 | $1.75 | $1.15 | |
| | | *+1.8%* | *+3.6%* | *+1.8%* | *+3.6%* | *+1.8%* | |
| FY 2015 | +2.5% with Nickel Rounding | $1.20 | $1.80 | $2.35 | $1.80 | $1.20 | |
| | | *+4.3%* | *+2.9%* | *+2.2%* | *+2.9%* | *+4.3%* | |
| FY 2016 | +2.5% with Nickel Rounding | $1.25 | $1.85 | $2.40 | $1.85 | $1.25 | |
| | | *+4.2%* | *+2.8%* | *+2.1%* | *+2.8%* | *+4.2%* | |
| FY 2017 | +5% Proposed with Nickel Rounding | $1.30 | $1.95 | $2.50 | $1.95 | $1.30 | |
| | | *+4.0%* | *+5.4%* | *+4.2%* | *+5.4%* | *+4.0%* | |
| FY 2018 | +5% Proposed with Nickel Rounding | $1.40 | $2.05 | $2.65 | $2.05 | $1.40 | $1.25 |
| | | *+7.7%* | *+5.1%* | *+6.0%* | *+5.1%* | *+7.7%* | |

**Notes:** • Pay By Mail toll rates are $2.00 higher than the Good To Go! toll rates shown above.
• The weekend toll schedule will apply on the following holidays when observed on a weekday: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

## 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 includes the portion of the corridor between I-5 and I-405, and is comprised of five major components, the first four of which include construction funding supported by tolls:

1) Pontoon Construction;
2) Eastside Transit and HOV Project;
3) Floating Bridge and Landings (FB&L) Project;
4) West Approach Bridge North; and
5) I-5 to Lake Washington, including the West Approach Bridge South

The total program cost is currently estimated at $4.56 billion, all of which is now funded. The $2.90 billion portion of the program that includes toll funding is currently complete or under construction and includes the Pontoon Construction (complete), Eastside (complete), Floating Bridge and Landings (nearly complete except for removal of the old bridge), and West Approach Bridge North (under construction). Essentially, these program components with toll funding replace the existing four lane floating bridge and upgrade the corridor to six lanes (two general purpose lanes and one high occupancy vehicle lane in each direction) between the west approach to the floating bridge in Seattle and the I-405 interchange on the Eastside.

In mid-2015, the State Legislature passed legislation establishing new transportation revenue (the Connecting Washington account) and appropriated $1.64 billion in funding to complete SR 520's planned improvements between I-5 and the western shore of Lake Washington, referred to as the "Rest of the West."[1] Additionally, the SR 520 Corridor Program received the $25 million balance of needed funding as $15 million authorized in 2015 and $10 million in existing agency resources authorized in 2014.[2] The Rest of the West improvements are not assumed to include any toll funding; however, construction activity associated with these improvements will lead to additional lane and full bridge closures through the projected completion of the corridor in FY 2026. These closures are accounted for in the traffic and revenue forecasts, including overnight closures that previously did not have a revenue impact but will cause a slight decrease in gross toll revenues when night tolling commences between 11:00 PM and 5:00 AM starting in FY 2018.

**Exhibit 4: SR 520 Bridge Replacement and HOV Program Map**


*Note: this Project Map does not identify the cities of Kenmore and Tacoma where pontoon development and construction has also occurred under the SR 520 Floating Bridge design-build contract.*

[1] See Chapter 44, Washington Laws of 2015 (2ESSB 5987) and Chapter 43, Washington Laws of 2015 (2ESSB 5988). Annual appropriated amounts can be found here: http://leap.leg.wa.gov/leap/Budget/Detail/2015/cTLEAPDoc2015NL-1_0629.pdf, project M00400R on page 8.

[2] See Chapter 10, Washington Laws of 2015 (2ESHB 1299) and Chapter 222, Washington Laws of 2014 (ESSB 6001)

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 November 2015 Net Revenue Projections

This section highlights the key changes to the November 2015 net revenue forecast results compared with the previous November 2014 and initial September 2011 projections, measured over a common forecast horizon from FY 2016 through FY 2056. Exhibit 5 compares the primary components of the November 2015 forecast with the initial September 2011 forecast.

**Exhibit 5: Gross to Net Revenue Comparison—September 2011 vs November 2015 (FY 2016-56)**

| Forecast Category (#) = T&R table column reference | Sep 2011 Forecast ($ millions) | Nov 2015 Baseline Forecast ($ millions) | Variance ($ millions) | Variance (%) |
|---|---|---|---|---|
| **Total Toll Transactions (8)** | **1,418.7** | **1,446.9** | **28.2** | **+2.0%** |
| **Gross Toll Revenue Potential (11)** | **4,989.8** | **4,892.1** | **(97.7)** | **–2.0%** |
| Subtotal: Revenue Adjustments | (76.4) | (93.2) | (16.9) | +22.1% |
| Subtotal: O&M Costs | (1,475.0) | (1,241.3) | 233.8 | –15.8% |
| **Net Toll Revenue before R&R (25)** | **3,438.4** | **3,557.6** | **119.2** | **+3.5%** |
| Subtotal: R&R Costs + Deferred Sales Tax | (357.6) | (558.9) | (201.3) | +56.3% |
| Net Revenue after Deferred Sales Tax and R&R (29) | 3,080.8 | 2,998.7 | (82.0) | –2.7% |

Exhibit 6 compares the primary components of the November 2015 forecast with the most recent November 2014 forecast.

**Exhibit 6: Gross to Net Revenue Comparison—November 2014 vs November 2015 (FY 2016-56)**

| Forecast Category (#) = T&R table column reference | Nov 2014 Forecast ($ millions) | Nov 2015 Baseline Forecast ($ millions) | Variance ($ millions) | Variance (%) |
|---|---|---|---|---|
| **Total Toll Transactions (8)** | **1,408.6** | **1,446.9** | **38.3** | **+2.7%** |
| **Gross Toll Revenue Potential (11)** | **4,714.8** | **4,892.1** | **177.3** | **+3.8%** |
| Subtotal: Revenue Adjustments | (112.0) | (93.2) | 18.8 | –16.8% |
| Subtotal: O&M Costs | (1,236.8) | (1,241.3) | (4.5) | +0.4% |
| **Net Toll Revenue before R&R (25)** | **3,366.0** | **3,557.6** | **191.6** | **+5.7%** |
| Subtotal: R&R Costs + Deferred Sales Tax | (472.1) | (558.9) | (86.8) | +18.4% |
| Net Revenue after Deferred Sales Tax and R&R (29) | 2,893.9 | 2,998.7 | 104.8 | +3.6% |

### Traffic and Gross Revenues

- Total toll transactions for CDM Smith's November 2015 forecast over the FY 2016-56 forecast horizon are 2.0 percent higher than projected in September 2011 and 2.7 percent higher than the previous November 2014 forecast.

- Gross toll revenue potential for the November 2015 forecast is 2.0 percent lower than the initial September 2011 forecast, compared with 3.8 percent higher than the November 2014 forecast over the forecast horizon.
- Compared to the initial forecast, the November 2014 and November 2015 traffic and revenue forecasts assume fewer trucks, which pay higher multiples of the base two-axle toll. This is a key factor for why the two most recent forecasts produce less gross toll revenue potential, despite having higher overall forecast horizon traffic, than the initial forecast.
- Much of the upward revision in forecasted traffic for November 2015 relative to the previous forecast is attributed to the elimination of the assumed exemption for carpools with three or more occupants after FY 2017, with slightly lower weekday toll rates also contributing.
- A key factor for the November 2015 forecast contributing to revenue growth that exceeds traffic growth compared with the previous forecast is the assumed $0.30 upward revision in the Pay By Mail toll increment for two axle vehicles, from $1.70 to $2.00.
- The November 2015 traffic and gross toll revenue potential forecasts incorporate slightly higher future population and employment forecasts over the forecast horizon, lifting overall transactions slightly. Offsetting that in the near term are downward adjustments attributed to new Connecting Washington funding to complete the Rest of the West, which extend the period of 4-lane operations between the bridge and the Montlake Boulevard interchange through FY 2021 and the period with periodic night and weekend construction closures through FY 2026.
- Other factors contributing to CDM Smith's higher gross toll revenue potential forecast are modeling refinements using current traffic counts and characteristics that assign more of the forecasted traffic to peak periods when there are higher tolls, and slower growth toward reaching the 88 percent *Good To Go!* share of total transactions, which yields a slightly higher share of Pay By Mail transactions through FY 2030 paying tolls that are $2.00 higher than the base *Good To Go!* rate.

## Revenue Adjustments

- Revenue adjustments in the November 2015 forecast total $16.9 million or 22.1 percent more over the forecast horizon than the initial September 2011 forecast, and $18.8 million or 16.8 percent less than the November 2014 forecast.
- Updates since the September 2011 forecast include a significant increase in the number of *Good To Go!* accountholders using the Pay By Plate option and corresponding revenue generated from the $0.25 Pay By Plate fee. The Pay By Plate share of total transactions was further revised upwards in the November 2015 forecast to better align with actual experience on the facility.
- The November 2015 forecast for uncollectible revenue (leakage) associated with revenue not recognized due to unidentified owners/addresses increased for FY 2016 to 10 percent of readable license plates, tapering to 8 percent by FY 2020 to capture actual experience reflecting some interfacing issues between different software systems impacting the successful resolution of Pay By Mail transactions into toll bills. In FY 2021, this assumption is dropped to 4 percent to align with industry standards, concurrent with the implementation of

a new Customer Service Center (CSC) systems software and vendor with enhanced capabilities. This trend compares to 15 percent unidentified owners/addresses assumed in the September 2011 forecast and the 3.6 percent assumed in the November 2014 forecast.

- Miscellaneous pledged revenues associated with interest earnings and known vendor contract liquidated damages with negotiated deferred (near term) payments were not previously provided in the net revenue forecasts. The November 2015 forecast includes a miscellaneous revenue projection.

## Operating and Maintenance Costs

- Overall O&M costs in the November 2015 forecast are $233.8 million lower (15.8 percent) over the forecast horizon compared to the September 2011 forecast. Key changes include:
  - Lower toll collection O&M costs, particularly for CSC vendor costs, printing and postage costs for Pay By Mail invoices, and transponder purchase and inventory costs.
  - Lower credit card fees.
  - Lower facility O&M costs.
- Overall O&M costs for the November 2015 forecast are $4.5 million higher (0.4 percent) over the forecast horizon compared to the November 2014 forecast, with changes including:
  - A higher SR 520 share of system-wide toll collection costs primarily due to more deliberate assumptions that exclude any consideration of future toll facilities or proxies for them if such future facilities have not yet been authorized for tolling by the legislature.
  - Higher toll-funded general and administrative costs adding 2.5 full time equivalent (FTE) staff and related personal services consultant contract costs, previously assumed to be funded from non-toll sources.
  - A decrease in FTEs assumed to be required for new facilities coming online this decade, down from 4.0 in the previous forecast to 2.0 in the November 2015 forecast based on preliminary actual experience with the I-405 Express Toll Lanes start-up in September 2015 (FY 2016).
  - Lower CSC systems software costs associated with ongoing maintenance and betterments of the current system resulting from procuring a new software system every 10 years, the cost for which is included in the R&R projections.
  - Lower facility O&M costs which account for revisions to unit prices based on actual experience to date.

## Net Revenues

- As a result of changes in the traffic and gross toll revenue potential forecasts as well as revisions to the revenue adjustments and O&M costs, the November 2015 forecast for net toll revenues before R&R is $3.56 billion over the forecast horizon, or 3.5 percent ($119.2 million) higher than the original September 2011 forecast.

- Compared to the November 2014 forecast, the November 2015 projection for net revenues before R&R is 5.7 percent ($191.6 million) higher over the forecast horizon.

## Other Project Uses of Toll Revenues

- The projected total deferred sales tax to be repaid with toll revenues was $124.2 million in the September 2011 forecast. This value was subsequently revised to reflect changes in the project scope due to addition of a new West Approach Bridge North for westbound traffic in 2012 and additional pontoon costs in 2013. The November 2014 forecast of $159.4 million in deferred sales tax remains unchanged in the November 2015 projections. However, the November 2015 forecast revises the 10-year schedule for deferred sales tax payments, pushing it out one year to FY 2023-32 to account for a revised schedule for completion of the toll-funded West Approach Bridge North (deferred sales tax payments begin in the fifth full year following operational completion.)
- Periodic facility repair and replacement (R&R) costs for the items specifically identified to be paid from toll revenues in the November 2015 forecast total $311.6 million over the forecast horizon. This represents an increase of 44 percent ($95.2 million) from the original September 2011 forecast, or 19 percent ($49.8 million) more than the November 2014 forecast.
    - Changes in facility R&R estimates from the September 2011 forecast to subsequent forecasts are due to updates to required standard bridge inspections, higher projected costs for anchor cable replacement, and added costs for the aforementioned increase in project scope adding the West Approach Bridge North structure.
    - The November 2015 forecast also reflects re-evaluation of R&R components and unit prices to include mobilization, sales tax, preliminary engineering, construction engineering, contingencies, and miscellaneous costs which were excluded in prior forecasts.
- The November 2015 forecast for toll collection R&R costs totals $87.9 million, which is significantly higher than both the original September 2011 and previous November 2014 forecasts. A revised assumption that the State costs for periodically procuring, testing, and transitioning to new CSC and Roadway Toll Systems (RTS) vendors would be paid from tolls (shared across all toll facilities) accounts for the increases, with refined estimates also causing 2015 to exceed 2014. Overall, the November 2015 forecast is 416 percent ($70.9 million) higher than the September 2011 forecast over the 41 year forecast period, and 72 percent ($36.9 million) higher than the November 2014 forecast.
    - The $36.9 million additional increase from the November 2014 to November 2015 forecast incorporates significant changes that were made to the underlying assumption on CSC systems software requirements. Current cost estimates now assume a new system, as opposed to continual enhancement to the existing system, to allow for transaction processing improvements and also to allow for back office integration with other WSDOT divisions, such as Washington State Ferries.

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# 2 | 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 configuration for the partially completed $2.90 billion corridor components with toll funding and the "Rest of the West" projects recently funded as part of the Connecting Washington revenue package that will complete the six-lane corridor between I-5 and I-405 in FY 2026. These annual traffic and gross toll revenue potential forecasts extend out through FY 2056 and serve as inputs to the estimation of net toll revenues. The following summarizes the key assumption changes for the November 2015 forecast that impact the net revenue projections.

- The November 2015 forecast included CDM Smith updates of the underlying assumptions that account for actual performance through FY 2015, slightly higher population and employment forecasts, revisions to the distribution of travel by time of day and by day of week (weekdays and weekend days), revisions to toll exemption assumptions that no longer add a 3+ carpool exemption in FY 2017, and other operational factors relative to the November 2014 forecast.
    - The projected number of weekend day construction closures of the bridge from FY 2016 through FY 2018 has been revised to 24 days, an increase of 11 days over the previous forecast.
    - The newly funded construction of the "Rest of the West" adds weekend day and weekday night closures through FY 2026, some of which preclude all cross-lake travel on SR 520 and others which are confined to the Portage Bay viaduct between I-5 and the Montlake Boulevard interchange, thus preventing access to and from I-5, but still allowing limited cross-lake travel to/from Montlake Boulevard as follows:
        - 108 weekend day closures from FY 2019 through FY 2026, 63 of which would preclude all cross-lake travel; and
        - 228 weekday night closures from FY 2018 through FY 2026, 134 of which would preclude all cross-lake travel.
    - The *Good To Go!* account-based transaction share came in lower than expected for FY 2015 at 83.4 percent, causing CDM Smith to decrease their forecast share to 84.6 percent in FY 2016, escalating more slowly to a ceiling of 87.7 percent in FY 2031 through FY 2034 and thereby increasing the Pay By Mail share of revenue with higher tolls.
    - The November 2015 forecast assumes the Pay By Mail toll increment above the based *Good To Go!* for 2-axle vehicles increases to $2.00 in FY 2017, compared to $1.70 in prior forecasts.
    - The Commission opted to forgo offering a toll exemption to carpools with three or more occupants starting in FY 2017; transit bus and registered vanpool exemptions remain in force.

- The Commission opted to defer the start of night tolling between 11 PM and 5 AM by one year to FY 2018.

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 7 illustrates CDM Smith's projected toll transactions for the November 2015 forecast, compared to the previous November 2014 forecast. Exhibit 8 illustrates the corresponding gross toll revenue potential trends through FY 2056 for the same two forecasts.

The annual forecast detail for the November 2015 traffic and gross toll revenue potential by fiscal year can be found in columns 2-11 of the Exhibit 28 T&R table in Appendix A.

**Exhibit 7: CDM Smith Toll Transaction Forecast Comparison (FY 2016-56)**

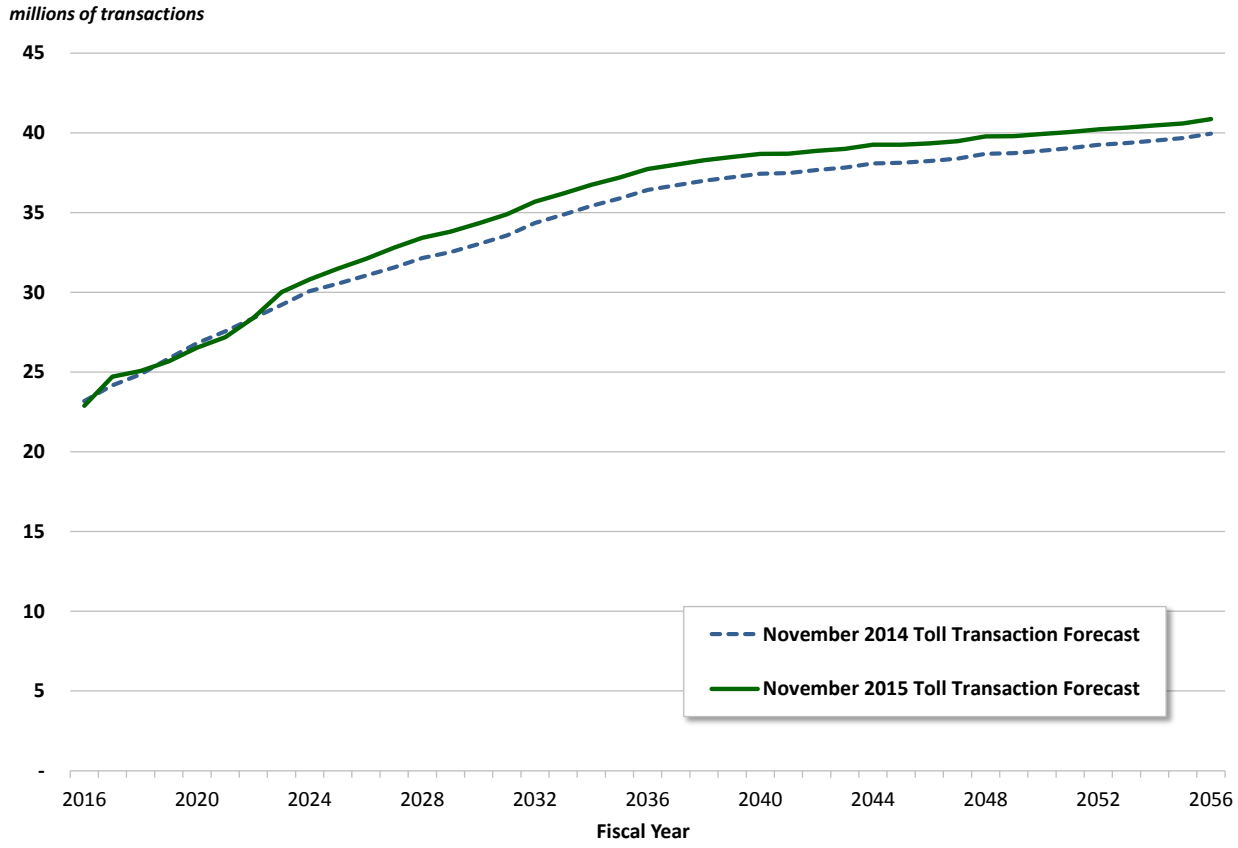
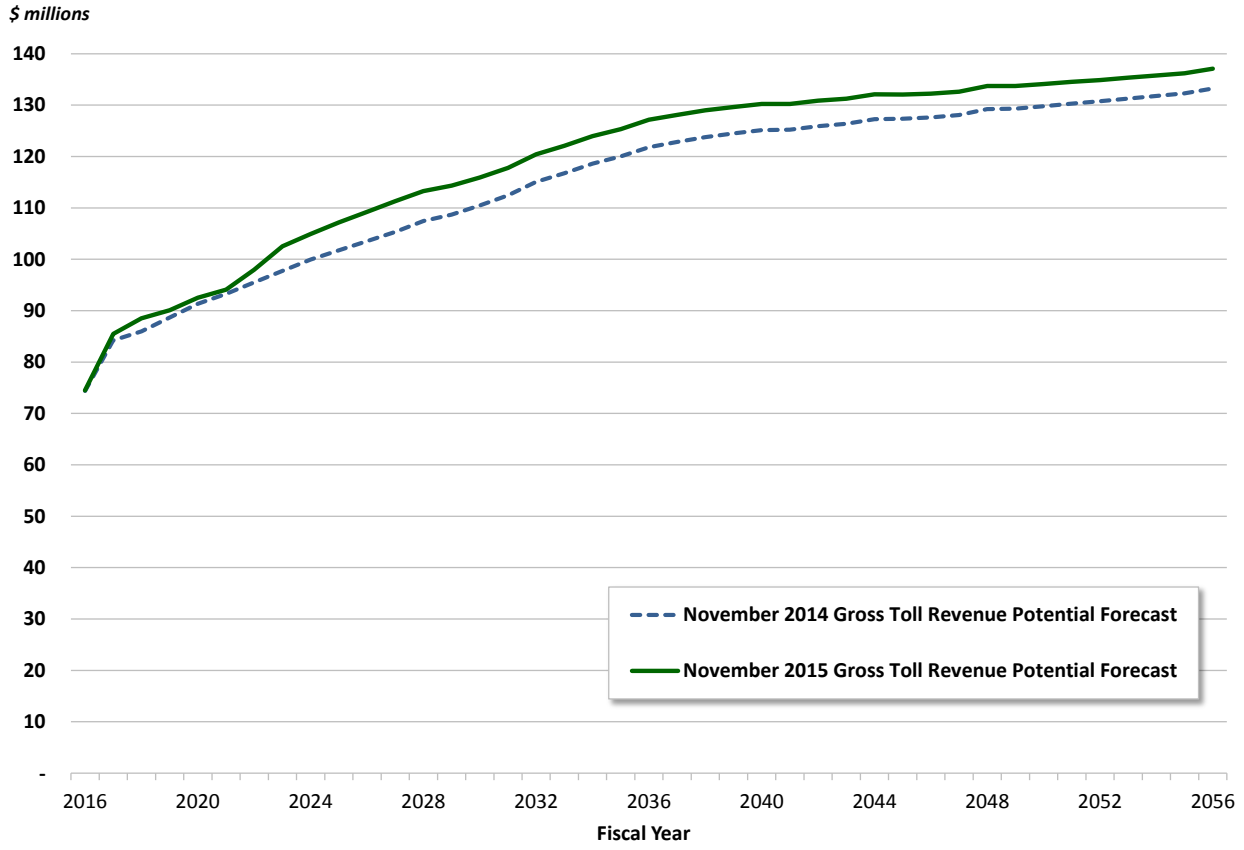


**Exhibit 8: CDM Smith Gross Toll Revenue Potential Forecast Comparison (FY 2016-56)**




## 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.

A *Good To Go!* account requires a minimum opening balance of $30. 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, typically using automatic replenishment. Alternatively, a customer can contact the CSC and arrange for manual replenishment, though this is not common.

## 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 linked to a *Good To Go!* account (via a transponder pass or license plate number) will trigger 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 that may incurred for late payment). Pay By Mail customers will have 80 days and two invoice cycles from the time of travel to pay their toll before the transaction is considered unpaid and becomes subject to a civil penalty. The Pay By Mail toll rate for two axle vehicles was initially $1.50 higher than the applicable *Good To Go!* rate for each time of day. Currently, the differential ranges from $1.60 to $1.65 due to the nickel rounding of toll increases. The increment is assumed to increase to $2.00 in FY 2017, up from $1.70 in previous forecasts, based upon the Washington State Transportation Commission's SR 520 rate proposal that will align this increment with those on other state facilities. Like the base *Good To Go!* toll, the Pay By Mail increment is also a multiple of the number of axles for vehicles with three or more axles. The Pay By Mail toll increment is assumed to remain at $2.00 for the rest of the forecast period.

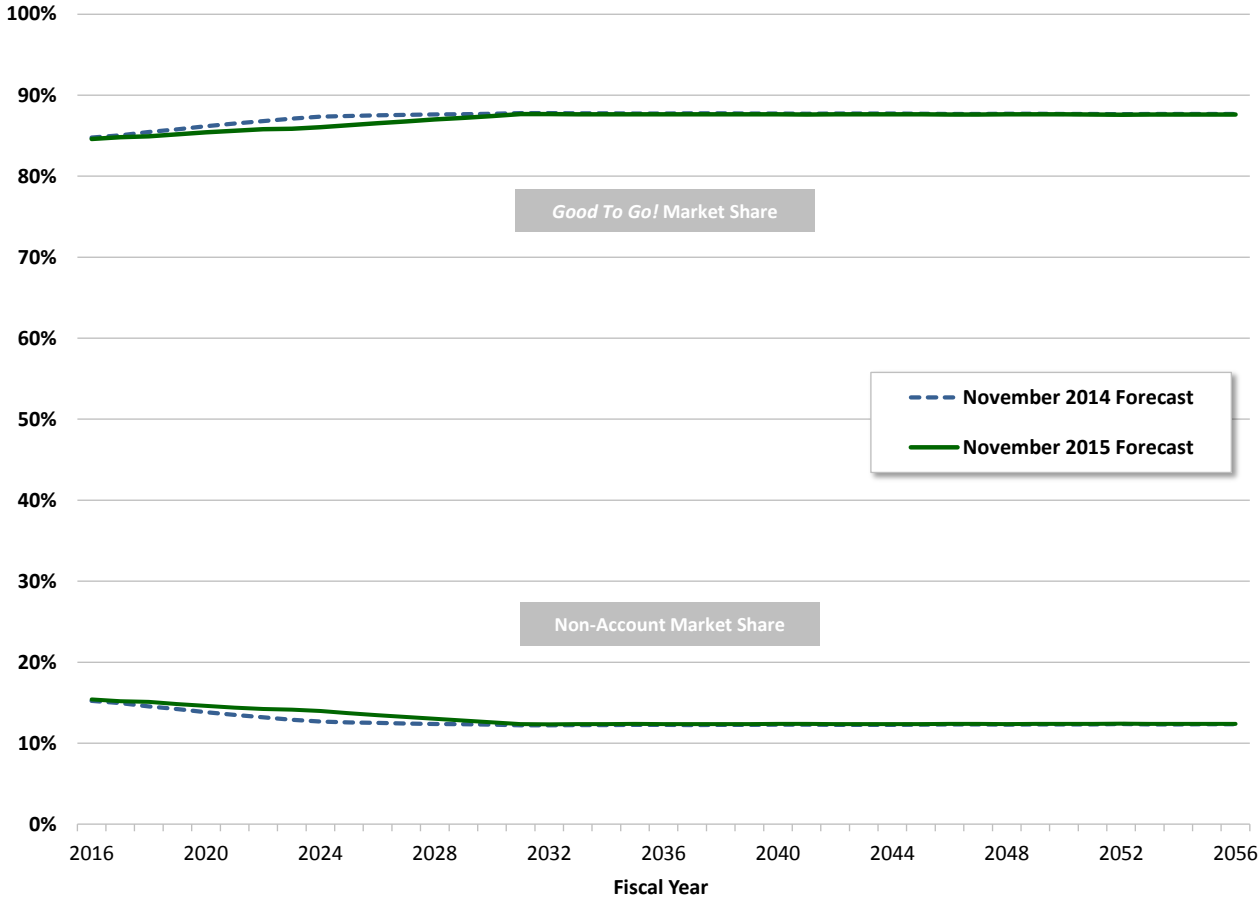
Although the incidence of use is very low, it is possible for customers without a *Good To Go!* account to self-initiate toll payment before or after travel via opening a Short-Term Account prior to receiving a bill in the mail. Customers that do this receive a $0.50 discount off the Pay By Mail toll rate. This process effectively allows the user to establish a 14 day temporary account linked to a credit or debit card, which may be opened up to 10 days prior to, or up to three days after, the first travel day.

Virtually all of the toll trips by customers without a *Good To Go!* account are projected to be processed as Pay By Mail transactions in which the customer responds to a toll bill received in the mail, with less than one percent initiating payment via 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 9. Over time, it is estimated that the share of *Good To Go!* account customers will increase to an assumed ceiling of approximately 88 percent, while the share of non-account customers will decrease. 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 9: Projected Market Shares by Payment Method (FY 2016-56)**




As part of the estimation of toll payment fees and discounts described later in this report, the CDM Smith projected market shares by payment method are further divided into sub-categories. *Good To Go!* transactions are subdivided into transponder pass transactions and Pay By Plate transactions, as shown in Exhibit 14 on page 26, with their percentage shares relative to total transactions. For *Good To Go!* accountholders, transponder pass usage is forecasted to comprise between 76 and 83 percent of all *Good To Go!* transactions.

Though not shown in Exhibit 9 or Exhibit 14 non-account transactions are further subdivided into normal Pay By Mail transactions and Short-Term Account transactions, with the latter comprising less than 0.2 percent of all non-account transactions, or less than 0.03 percent of total transactions.

## Gross to Net Toll Revenue

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

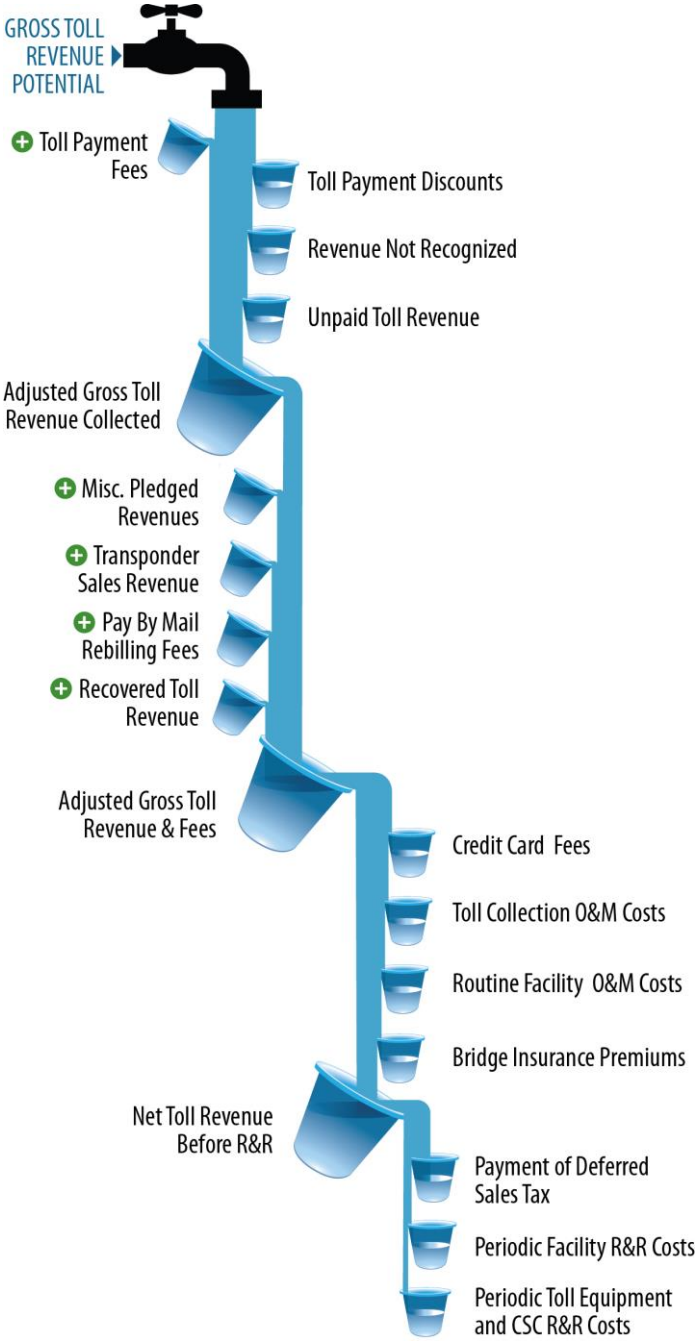
Exhibit 10 to the right illustrates the flow of funds or "waterfall" of revenue adjustments and expenditures that are projected to occur in transitioning from gross toll revenue potential to the net revenues available to support project financing.

This net toll revenue report update is organized around this waterfall in presenting the revisions to assumptions and values for 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 2016-56 forecast horizon.

A detailed T&R table provided as Exhibit 28 in Appendix A provides the annual toll transactions and the annual dollar projections for each of the waterfall elements listed in Exhibit 10, 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, Exhibit 28 T&R table by their column number.

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 contributions to debt service and various reserve accounts.

**Exhibit 10: Net Revenue Waterfall**



# 3 | Actual Net Revenue Performance in FY 2015

Exhibit 11 compares the actual performance in FY 2015, the second full fiscal year of operations, with the comparable forecast data from the November 2014 forecast.

**Exhibit 11: Actual Revenue and November 2014 Forecast Comparison for FY 2015**

| Category | Forecast vs. Actual Comparison for Net Revenue Items ($ millions) | | | |
|---|---|---|---|---|
| | Nov 2014 Forecast | Actual Values[1] | Variance from Forecast | % Variance from Forecast |
| **Gross Toll Revenue Potential** | **69.00** | **69.38** | **0.39** | **+0.6%** |
| Toll Payment Discounts and Fees | 0.81 | 1.02 | 0.21 | +26.2% |
| Revenue Not Recognized | (1.70) | (3.82) | (2.12) | +124.7% |
| Unpaid Toll Revenue | (3.68) | (2.64) | 1.05 | –28.4% |
| **Subtotal: Adjusted Gross Toll Revenue Collected** | **64.42** | **63.95** | **(0.47)** | **–0.7%** |
| Miscellaneous Pledged Revenues | - | 0.51 | 0.51 | - |
| Transponder Sales Revenue | 0.58 | 0.55 | (0.03) | –5.1% |
| Pay By Mail Rebilling Fees & Miscellaneous Fees[2] | 1.61 | 1.60 | (0.01) | –0.8% |
| Recovered Toll Revenue | 1.64 | 0.89 | (0.75) | –46.0% |
| Credit Card Fees | (1.08) | (1.20) | (0.13) | +11.8% |
| Toll Collection O&M Costs[3] | (9.84) | (9.16) | 0.68 | –6.9% |
| Bridge Insurance Premiums | (2.22) | (2.22) | (0.00) | - |
| **Net Toll Revenue before R&R** | **55.12** | **54.91** | **(0.21)** | **–0.4%** |

[1] Actual values calculated from CSC Data, the Unbilled Transaction Report, and Monthly Toll Business Report.

[2] Miscellaneous fees include NSF, account statement, and bank transaction fees, and were not forecasted in the Nov 2014 projections.

[3] Toll Collection O&M costs includes CSC and RTS vendor costs, State operations costs (printing/postage, accounting, marketing, vendor oversight, and transponders).

The following bullets summarize the key differences between actual FY 2015 performance and the November 2014 forecast.

- Both Transactions and **Gross Toll Revenue Potential** came in 0.6 percent above CDM Smith's November 2014 forecast.
- **Adjusted Gross Toll Revenue Collected** was 0.7 percent below the November 2014 forecast.
    - Toll payment discounts and fees were higher due to higher than anticipated market share of *Good To Go!* Pay By Plate transactions which resulted in higher revenue attributable to the $0.25 fee.
    - Revenue not recognized was higher, in part due to higher overall reliance on license plate payment methods relative to the forecast. In addition, the previous November 2014 forecast, leveraging the best actual data available at the time, did not foresee the recent need for the dismissal of a large number of in-process transactions that were previously thought to be recoverable and/or attributed to non-revenue transit accounts.
    - Unpaid toll revenue was lower than forecasted; this is due in part to some transactions being dismissed instead of identified for a toll bill as noted above, as well as to an

expected adjustment in FY 2016 to account for system outages that resulted in fewer toll bills being sent out during the last four months of FY 2015.

- **Recovered toll revenue** was roughly half of the forecasted amount for FY 2015 despite actual toll revenue recovery via the civil penalty process exceeding forecasts. This is because the actual amount is limited to what the legislature appropriates for transfer back to the SR 520 Corridor Account (16J) from the Civil Penalty Account (17P), which did not end up including the cumulative balance from prior years.
- **Credit Card Fees** — In addition to higher overall toll revenue, more customers are opting to pay their tolls using a credit card, with rates closer to 85 percent compared to a forecast of 80 percent.

Note that the miscellaneous component of "Pay By Mail Rebilling Fees and Miscellaneous Fees" and all of "Miscellaneous Pledged Revenue" were not forecasted in November 2014. Actual amounts for these items are reported in Exhibit 11 and in the T&R table as part of the pledged toll revenues and beginning with the November 2015 forecast, Miscellaneous Pledged Revenues are now being forecasted.

Exhibit 12 compares the performance of the net revenue components in FY 2015 with the initial September 2011 forecast. While there have been many refinements to the inputs, assumptions, and underlying costs since the initial net revenue projections were prepared in September 2011 that have resulted in various puts and takes, the primary reasons why actual net revenues for FY 2015 came in lower than the initial forecast is lower gross toll revenue potential. The September 2011 investment-grade traffic and gross toll revenue potential forecasts predicted a higher share of trucks and Pay By Mail users—both of which pay higher than average tolls—than was actually realized in FY 2015. However, most of this increase was offset by decreases in Toll Collection O&M costs.

**Exhibit 12: Actual Revenue and September 2011 Forecast Comparison for FY 2015**

| Category | Forecast vs. Actual Comparison for Net Revenue Items ($ millions) | | | |
|---|---|---|---|---|
| | Sep 2011 Forecast | Actual Values | Variance from Forecast | % Variance from Forecast |
| **Gross Toll Revenue Potential** | **75.51** | **69.38** | **(6.13)** | **–8.1%** |
| Toll Payment Discounts and Fees | 0.27 | 1.02 | 0.75 | +273.8% |
| Revenue Not Recognized | (3.68) | (3.82) | (0.14) | +3.8% |
| Unpaid Toll Revenue | (1.51) | (2.64) | (1.13) | +75.2% |
| **Subtotal: Adjusted Gross Toll Revenue Collected** | **70.60** | **63.95** | **(6.65)** | **–9.4%** |
| Miscellaneous Pledged Revenues | - | 0.51 | 0.51 | - |
| Transponder Sales Revenue | 1.14 | 0.55 | (0.58) | –51.5% |
| Pay By Mail Rebilling Fees & Miscellaneous Fees[2] | 1.05 | 1.60 | 0.54 | +51.6% |
| Recovered Toll Revenue | 0.31 | 0.89 | 0.57 | +181.6% |
| Credit Card Fees | (1.63) | (1.20) | 0.42 | –26.0% |
| Toll Collection O&M Costs[3] | (15.22) | (9.16) | 6.06 | –39.8% |
| Bridge Insurance Premiums | (0.70) | (2.22) | (1.52) | +217.4% |
| **Net Toll Revenue before R&R** | **55.56** | **54.91** | **(0.65)** | **–1.2%** |

[1] Actual values calculated from CSC Data, the Unbilled Transaction Report, and Monthly Toll Business Report.

[2] Miscellaneous fees include NSF, account statement, and bank transaction fees, and were not forecasted in the Sep 2011 projections.

[3] Toll Collection O&M costs includes CSC and RTS vendor costs, State operations costs (printing/postage, accounting, marketing, vendor oversight, and transponders).

# 4 | Summary of Changes in Projected Net Revenue

Exhibit 13 below compares the current November 2015 forecast with the previous November 2014 forecast. Starting with gross toll revenue potential, the table summarizes the revenue adjustments and expenditure deductions that yield two measures of net toll revenue. The dollar amounts in each column are totals over the current forecast horizon from FY 2016 through FY 2056. Each component in the table includes its column number reference (#) in the November 2015 T&R table located in Appendix A as Exhibit 28. Negative values in parentheses refer to costs or revenue deductions, both of which have the effect of lowering net revenues.

**Exhibit 13: Net Revenue Component Comparison—November 2015 / November 2014 (FY 2016-56)**

| Forecast Category<br>(#) = T&R table column reference | Nov 2014 Forecast ($ millions) | Nov 2015 Baseline Forecast ($ millions) | Variance ($ millions) | Variance (%) |
|---|---|---|---|---|
| **Gross Toll Revenue Potential (11)** | **4,714.8** | **4,892.1** | **177.3** | **+3.8%** |
| Toll Payment Discounts and Fees (12) | 37.5 | 59.2 | 21.7 | +57.9% |
| Revenue Not Recognized (13) | (92.8) | (123.4) | (30.6) | +33.0% |
| Unpaid Toll Revenue (14) | (213.3) | (224.2) | (10.9) | +5.1% |
| Miscellaneous Pledged Revenues (16) | - | 36.3 | 36.3 | - |
| Transponder Sales Revenue (17) | 24.8 | 23.0 | (1.8) | –7.1% |
| Pay By Mail Rebilling Fees (18) | 87.3 | 76.3 | (11.0) | –12.6% |
| Recovered Toll Revenue (19) | 44.4 | 59.6 | 15.1 | +34.0% |
| Subtotal: Revenue Adjustments | (112.0) | (93.2) | 18.8 | –16.8% |
| Credit Card Fees (21) | (74.0) | (80.8) | (6.8) | +9.2% |
| Toll Collection O&M (22) | (822.8) | (853.6) | (30.8) | +3.7% |
| *Transponder Purchase and Inventory Costs* | *(24.8)* | *(23.0)* | *1.8* | *–7.1%* |
| *State Costs for Toll Bill Printing, Postage, & Lookups* | *(132.6)* | *(130.2)* | *2.3* | *–1.8%* |
| *State Operations* | *(202.5)* | *(244.4)* | *(41.9)* | *+20.7%* |
| *Customer Service Center (CSC)* | *(421.2)* | *(412.5)* | *8.7* | *–2.1%* |
| *Roadway Toll Sytems (RTS)* | *(41.7)* | *(43.4)* | *(1.7)* | *+4.0%* |
| Routine Facility O&M Costs (23) | (202.1) | (169.1) | 33.0 | –16.3% |
| Bridge Insurance Premiums (24) | (137.9) | (137.8) | 0.2 | –0.1% |
| Subtotal: O&M Costs | (1,236.8) | (1,241.3) | (4.5) | +0.4% |
| **Net Toll Revenue before R&R (25)** | **3,366.0** | **3,557.6** | **191.6** | **+5.7%** |
| Deferred Sales Tax (26) | (159.4) | (159.4) | - | - |
| Periodic Facility R&R (27) | (261.8) | (311.6) | (49.8) | +19.0% |
| Periodic Toll Equipment and CSC R&R (28) | (51.0) | (87.9) | (36.9) | +72.5% |
| Net Revenue after Deferred Sales Tax and R&R (29) | 2,893.9 | 2,998.7 | 104.8 | +3.6% |

The forecast-to-forecast changes in the components of net revenue in the above table are described in the following three sections.

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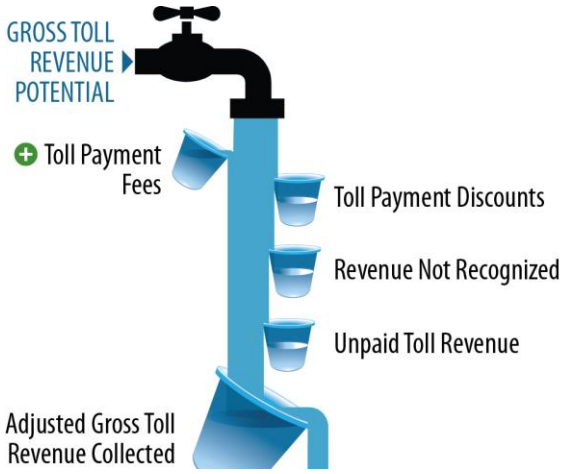
# 5 | Changes to Revenue Adjustments

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 updated to reflect actual data from FY 2012-15, with changes made to key forecast assumptions noted in the following descriptions.




## 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 with a transponder pass. This fee is not assumed to escalate with inflation.

The November 2015 forecast for Pay By Plate fees was revised $21.71 million higher than the November 2014 forecast, due to continued higher utilization of Pay By Plate among account-holders, as shown in Exhibit 14 on the following page.

- Recent data shows that among *Good To Go!* account transactions, there continues to be a higher rate of growth in those using the Pay By Plate payment method than those using a transponder pass, with Pay By Plate use comprising 24 percent of all *Good To Go!* transactions in FY 2015. There appear to be several contributing factors to this trend.
  - During FY 2015, there was a net increase of 65,515 new *Good To Go!* accounts after factoring in account closures, representing 12 percent of the total number of 540,448 accounts outstanding at the end of the fiscal year, with 79 percent of new accounts also purchasing one or more transponder passes.
  - Total transponder sales in FY 2015 exceeded 252,000 units, or an increase of about 89,000 (55 percent) over the 163,000 sold in FY 2014. While 34,000 of the units sold in FY 2015 were the new Flex Pass transponders required to receive a carpool exemption on I-405, a portion of the higher sales of regular (non-Flex Pass) units is also likely attributable to new customers attracted to the option to use the I-405 Express Toll Lanes (ETLs), which opened in late September 2015.
  - Given the growth in transponder sales, the growth in SR 520 Pay By Plate transactions is likely due in part to an increase in the frequency of use by *Good To Go!* customers driving vehicles without passes and/or an overall decrease in the average frequency of use by *Good To Go!* customers in vehicles with passes.

- Exhibit 14 shows that the share of customers using Pay By Plate is expected to taper off in the forecast from a peak of 20 percent in FY 2016 to 15 percent by FY 2019 as more existing and new account customers acquire transponders, in part due to the requirement for a switchable Flex Pass transponder in order to receive a carpool exemption on the I-405 Express Toll Lanes.
- The revision in the November 2015 forecast represents a significant increase in the number of Pay By Plate transactions in comparison to the previous projections over the forecast horizon.

**Exhibit 14: Annual Shares of Total Transactions by Payment method (Selected Fiscal Years)**

| Fiscal Year | *Good To Go!* Account Transactions | | | | | | Non-Account / Pay By Mail Transactions** | |
|---|---|---|---|---|---|---|---|---|
| | Transponder (Pass) | | Pay By Plate | | Total | | | |
| | Nov 2014 Forecast | Nov 2015 Forecast | Nov 2014 Forecast | Nov 2015 Forecast | Nov 2014 Forecast | Nov 2015 Forecast | Nov 2014 Forecast | Nov 2015 Forecast |
| **2012** | **70.8%*** | | **11.9%*** | | **82.7%*** | | **17.3%*** | |
| **2013** | **68.9%*** | | **14.8%*** | | **83.7%*** | | **16.3%*** | |
| **2014** | **66.9%*** | | **17.6%*** | | **84.5%*** | | **15.5%*** | |
| **2015** | 71.1% | **63.6%*** | 13.5% | **20.1%*** | 84.6% | **83.7%*** | 15.4% | **16.3%*** |
| 2016 | 72.1% | 64.6% | 12.7% | 20.0% | 84.8% | 84.6% | 15.2% | 15.4% |
| 2017 | 73.1% | 67.8% | 11.9% | 17.0% | 85.1% | 84.8% | 14.9% | 15.2% |
| 2018 | 74.4% | 68.4% | 11.1% | 16.5% | 85.5% | 84.9% | 14.5% | 15.1% |
| 2019 | 75.5% | 70.2% | 10.3% | 15.0% | 85.8% | 85.2% | 14.2% | 14.8% |
| 2020 | 76.7% | 70.4% | 9.5% | 15.0% | 86.2% | 85.4% | 13.8% | 14.6% |
| 2025 | 78.7% | 71.3% | 8.7% | 15.0% | 87.4% | 86.3% | 12.6% | 13.7% |
| 2030 | 78.9% | 72.4% | 8.8% | 15.0% | 87.7% | 87.4% | 12.3% | 12.6% |
| 2035 | 79.0% | 72.6% | 8.8% | 15.0% | 87.7% | 87.6% | 12.3% | 12.4% |
| 2040 | 79.0% | 72.6% | 8.8% | 15.0% | 87.7% | 87.6% | 12.3% | 12.4% |
| 2045 | 78.9% | 72.6% | 8.8% | 15.0% | 87.7% | 87.6% | 12.3% | 12.4% |
| 2050 | 78.9% | 72.6% | 8.8% | 15.0% | 87.7% | 87.6% | 12.3% | 12.4% |
| 2055 | 78.9% | 72.6% | 8.8% | 15.0% | 87.7% | 87.6% | 12.3% | 12.4% |

* Actual values for the *Good To Go!* / Non-Account Transaction split are calculated from CSC data analysis for calendar years 2012-14 and Toll Business Report data for the first half of calendar year 2015. Actual values for the *Good To Go!* Transponder and Pay By Plate percentages are calculated using 16J-TRAINS Pay By Plate fee revenue divided by the $0.25 fee to yield the number of transactions, adjusted for license plate leakage.

** Includes short term account transactions where customers initiate payment before receiving a bill; represents 0.03% of total transactions.

Pay By Plate fee revenue estimates are provided in column 12 of the Exhibit 28 T&R table provided in Appendix A, combined with the toll payment discounts described below. Virtually all of the $21.7 million forecast period increase in the combined toll payment fees and discounts shown in Exhibit 13 is attributed to increase in toll traffic combined with the higher assumption for Pay By Plate use; the change in the level of short-term account discounts is negligible, as further explained in the next section.

## Short-Term Account Discounts

WSDOT currently 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.

While WSDOT anticipates that the Commission may eventually propose the removal of the $0.50 discount but leave this self-initiated payment option in place, their March 2016 proposal for FY 2017 and FY2018 toll rates did not include this potential revision. As such, the November 2015 forecast retains this $0.50 discount over the forecast period.

- The November 2015 forecast of the total value of Short-Term Account discounts provided to customers has been revised upward by 5.8%, from $0.17 to $0.18 million over the FY 2016-56 forecast horizon.
  - A slight increase in overall share of non-account customers combined with a higher overall traffic forecast contribute to the higher but generally infrequent use of this payment method.
  - The forecast assumes that 0.2 percent of non-account customers are taking advantage of the Short-Term Account discount, or less than 0.03 percent of total forecasted transactions.

Annual forecast values for these discounts are part of column 12 of Exhibit 28 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. 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 within the actual costs shown in column 12 of Exhibit 28 in Appendix A for FY 2012-13.

## Uncollectible Revenue (Columns 13 & 14)

Uncollectible revenue, or "gross" revenue leakage before any overdue toll bill recovery, is divided into two T&R table categories: Revenue Not Recognized (unbillable) and Unpaid Toll Revenue. Revenue not recognized occurs when a license plate is unreadable, or when the vehicle owner and address from a readable license plate cannot be identified. Unpaid Toll Revenue results from the non-payment of toll bills after two invoices within 80 days of travel. Note that uncollectible revenue effectively gets reduced to a "net" revenue leakage measure in the overall net revenue projections after accounting for the portion of unpaid toll revenue recovered through the civil penalty adjudication from toll bills more than 80 days past due, as shown in column 19 of Exhibit 28.

Forecasts for uncollectible revenue are based on an activity workflow model which is refined annually based upon the accumulation of new data. The activity workflow model estimates the probability that a toll transaction will become uncollectible under a variety of scenarios and points in the toll transaction workflow process. Exhibit 29 in Appendix B illustrates the toll transaction workflow and the points in the process where leakage occurs. Other refinements made since the November 2014 forecast resulted in higher rates of unidentified vehicle owners and addresses from readable plates and adjustments to the payment rates of first and second invoices.

## Revenue Not Recognized (Column 13)

Unreadable License Plates

Actual data through the end of FY 2015 continues to validate the previous forecast assumptions regarding the ability to obtain readable license plate images. The assumed share of total image-based (non-account plus *Good To Go!* Pay By Plate) transactions with readable license plates after manual review remains at 95.5 percent in the November 2015 forecast, with the remaining 4.5 percent unreadable. Plate readability may improve slightly when the current toll collection equipment at the temporary location is replaced with new toll equipment at its permanent location once the new bridge is completed in FY 2017; however, the forecasts do not rely on any further improvement in readability.

- Although the 4.5 percent unreadable plate leakage rate remains constant, the annual totals for leakage in the November 2015 forecast increased over the November 2014 forecast due to a higher overall number of image-based (Pay By Plate and Pay By Mail) transactions from which leakage originates, as well as higher Pay By Mail toll rates resulting from an assumed increase in the Pay By Mail toll increment from $1.70 to $2.00.
    - *Good To Go!* Pay By Plate transactions are projected to be 73 percent higher over the forecast horizon, compared to the November 2014 forecast, as a result of the change in payment method shares shown in Exhibit 9 plus higher traffic projections.
    - Non-account Pay By Mail transactions are projected to be 5 percent higher over the forecast horizon, compared to the November 2014 forecast.
    - The $0.30 increase in the Pay By Mail increment from $1.70 to $2.00 increases the average anticipated revenue per transaction by 6.5 percent.

Unidentifiable Owner

After a license plate number is read, the system checks to see if the customer has a *Good To Go!* account, and if so, the account is debited for the toll plus an additional $0.25 administrative fee as a Pay By Plate transaction. If the plate number is not associated with a *Good To Go!* account, then further processing is initiated to obtain a valid owner name and address for the vehicle from the Department of Licensing (DOL) for in-state plates. For out-of-state plates, a contracted vendor provides license plate lookup services to provide the vehicle's owner name and address for all states except Arizona, Hawaii, Iowa, and Utah. WSDOT is working with CSC and license plate lookup vendors to add these four missing states and anticipates their addition in the near future.

Pay By Mail transactions for which the owner cannot be identified from the license plate are deemed as revenue not recognized, and include Canadian and all other out of country license plates (British Columbia, from where nearly all Canadian plates on SR 520 originate, stopped providing vehicle owner information as part of their response to the U.S. Patriot Act in 2001).

- The November 2014 forecast assumed that 3.6 percent of readable license plates would not yield a valid owner name and address, based on actual experience in FY 2014 of 3 percent.

- Upon further review of actual data and the availability of new data reports, it was determined that a large share of the non-account transactions that were categorized as "in-process" were actually not viable, resulting in a much higher rate of unidentified vehicle owners.
    - Previously, the in-process transactions were understood to be primarily mis-categorized non-revenue transactions such as buses or vanpools, with the remaining transactions distributed between viable and not viable for mailing a toll bill in the same proportions as resolved transactions.
    - However, more recent analysis and new data reports show that a large majority of the in-process transactions are toll transactions that were not moving toward resolution because the vehicle owner name and address could not be identified. A CSC systems software interface issue with the Department of Licensing (DOL) system also appears to be preventing such transactions from getting updated as vehicle owner information becomes available, particularly in the case of recently sold vehicles.
    - WSDOT has formed a team that is actively working on rectifying this situation, with the goal of significantly decreasing the number of readable plates for which the vehicle owner is not identified.
    - Based on the above, the near term forecast for unidentified owner name and address as a share of non-account transactions with readable license plates was increased to 10 percent for FY 2016, tapering off to 9 percent for FY 2017, and 8 percent for FYs 2018-20 as system and process improvements are implemented.
    - Longer term, the share of non-account transactions with readable license plates for which the owner name and address cannot be identified is assumed to return to an industry average value of 4%, concurrent with the completed procurement of a new CSC vendor and an enhanced software system starting with FY 2021.
- Similar to unreadable license plate leakage, the annual total dollar amount for unidentifiable owner leakage also increased in the November 2015 forecast due to a 5 percent higher horizon forecast for Pay By Mail transactions, as well as higher Pay By Mail toll rates resulting from an assumed increase in the Pay By Mail toll increment from $1.70 to $2.00.

Total Revenue Not Recognized

Using the November 2015 forecast values for traffic and revenue, maintaining the assumed rates of unreadable license plates, and increasing the rates of unidentified owners from readable plates, most noticeably in the short term, results in total revenue not recognized increasing by $30.6 million or 33.0 percent over the FY 2016-56 forecast horizon in comparison to the previous forecast.

The combined revenues not recognized from unreadable plates and from readable plates with unidentified owners are shown in column 13 of Exhibit 28 in Appendix A.

## Unpaid Toll Revenue (Column 14)

Unpaid Toll Revenue is a measure of the Pay By Mail revenues from toll transactions with readable license plates, identified owners, and thus toll bills mailed that are not collected within two billing cycles or 80 days.

- The November 2015 forecast slightly revises the combined assumption for Pay By Mail toll bills paid on the first or second invoice inside of 80 days from 75 to 76 percent.
    - This latest assumption implies that 24 percent of transactions for which toll bills are mailed to Pay By Mail customers will go unpaid after 80 days, contributing to unpaid toll revenue (before any recovery from the civil penalty adjudication process).
    - Actual experience continues to corroborate this assumption, with unpaid toll bills trending slightly downward to as low as 20 percent of those mailed in some recent months.
- In addition to the aforementioned refinements, the annual total leakage value for unpaid toll revenue increased in the November 2015 forecast over the November 2014 forecast due to a 5 percent higher forecast of Pay By Mail transactions as well as higher Pay By Mail toll rates resulting from an assumed increase in the Pay By Mail toll increment from $1.70 to $2.00, notwithstanding the near term effects of fewer forecasted transactions with an identified owner.

Applying the November 2015 forecast values for traffic and revenue and revisions to the revenue not recognized leakage estimates, total unpaid toll revenue increases by $10.9 million or 5.1 percent over the FY 2016-56 forecast horizon in comparison to the previous forecast.

The unpaid toll revenue is shown in column 14 of Exhibit 28 in Appendix A.

Upon non-payment of the two invoices, the transactions are reviewed for processing as a notice of civil penalty (NOCP) by a WSDOT Toll Enforcement Officer. Approximately 87 percent of unpaid transactions are certified as being associated with a valid owner and transferred to the NOCP process, with the remaining 13 percent dismissed. The 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)

Total leakage attributed to revenue not recognized and unpaid toll revenue is 13.6 percent ($41.5 million) higher over the forecast horizon in the November 2015 forecast than projected in the November 2014 forecast.

## Miscellaneous Pledged Revenues (Column 16)

Column 16 of the November 2015 forecast T&R table in Appendix A provides actual "miscellaneous pledged revenues" received in FYs 2012-15, and starting with this November 2015 forecast, projections for them as well. Miscellaneous pledged revenues include interest earnings on subaccount balances within the SR 520 Corridor Account (16J), SR 520's share of interest earned on the Toll Facilities Account (495) where prepaid *Good To Go!* customer funds are held, contract liquidated damages, sales of surplus property, and cash over and short. Actual receipts are considered revenues pledged towards debt service in Master Resolution number 1117 governing SR 520 toll revenues.


Forecasted miscellaneous pledged revenues are primarily comprised of and limited to the above referenced interest earnings on the various fund balances, plus those received under a negotiated payment plan for liquidated damages in FYs 2016-17 as a result of a settlement agreement with the current CSC vendor.

- Interest earning projections use a simple interest calcuation with an assumed annual earnings rate of 0.5% as applied to average annual account balances excluding miscellaneous revenues from the 2014 financial plan after updating it with the current revenue and expenditure projections. The annual projections for interest earnings are capped at the level earned in the last year that deferred sales tax is due (FY 2031 in the 2014 financial plan). This is to avoid overstating interest in the latter years of the forecast horizon, recognizing that as unrestricted balances begin to accumulate, a portion of them may be programmed elsewhere by the legislature.
- Liquidated damages attributed to the negotiated settlement with the current CSC vendor amount to $255,000 per year for SR 520's share of systemwide annual payments of $400,000 and are set to conclude at the end of FY 2017. Payment of liquidated damages in FY 2017 is contingent upon the anticipated two-year extension through FY 2018 of the current vendor contract which expires at the end of FY 2016 and reflected in the CSC vendor cost projections herein. If the existing contract is not extended beyond FY 2017, then amounts projected for FY 2017 would not be realized.

## 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 total transponder costs in every forecast year, making them net revenue neutral.**

- The November 2015 forecast, like the previous November 2014 forecast, places transponder sales revenue in column 17, upstream of the "Adjusted Gross Toll Revenue & Fees" subtotal in column 20, whereas the equally offsetting transponder purchase and inventory costs are embedded in column 22, "Toll Collection O&M Costs."

- SR 520 is allocated a share of the system-wide transponder sales revenue (and costs) on a proportional transaction basis.
    - In the November 2015 forecast, WSDOT's projections for system-wide transponder sales were extended to FY 2030 from FY 2021, which resulted in lower transponder sales than were previously assumed. This also impacts longer term growth as transponder sales volumes for SR 520 beyond FY 2030 are extrapolated based on the growth trend in transponder transactions, with inflation assumptions factored in to yield sales revenue and cost projections.
    - The November 2015 forecast allocates system-wide transponder revenues across five toll facilities with the addition of the I-405 Express Toll Lanes between Bellevue and Lynnwood in the second quarter of FY 2016 and an assumed opening date for the SR 99 Tunnel in FY 2019. The November 2014 forecast allocated transponder revenues assuming that the I-405 Express Toll Lanes and SR 99 tunnel both opened in FY 2018.
    - SR 520 does not directly share in the revenues or costs expected with the initial surge in transponder sales during the opening of the new I-405 and SR 99 toll facilities.
- Overall, a higher forecast for transponder unit costs due to the addition of higher priced Flex Passes within the mix are more than offset by the longer term reduced transponder sales forecast. The overall November 2015 forecast for transponder sales is $1.8 million or 7.1 percent lower over the forecast horizon compared with the November 2014 forecast, as shown in Exhibit 13.
    - The reduction in transponder sales revenue allocated to SR 520 has an equal offsetting reduction in toll collection O&M costs, such that these changes have no effect on the net revenue projections.
- Annual projections of transponder sales revenue are provided in column 17 of in Appendix A.

## 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. Rebilling fee revenues are primarily driven by the forecasted volume of Pay By Mail transactions and assumed number of transactions per invoice, with secondary effects coming from potential changes in the rate of payment of first and second toll invoices.

The projections for Pay By Mail rebilling fees include the $5.00 fee per unpaid first invoice that is successfully collected on the second invoice before 80 days have elapsed plus a portion of the overdue rebilling fees on the unpaid second invoices that are later assumed to be recovered from the civil penalty adjudication process with an assumed six month average lag.

- Compared to the November 2014 values, the November 2015 forecast for Pay By Mail transactions has been revised upward by 5 percent over the forecast horizon, increasing the total number of potential unpaid first invoices for Pay By Mail.

- The November 2015 forecast assumption of 2.8 transactions per mailed invoice remained unchanged from the November 2014 forecast based on similar findings in actual data through the end of FY 2015.
- The November 2015 forecast assumptions regarding first and second toll bill payment rates were updated from the November 2014 forecast based on actual data through FY 2015 with changes as follows:
    - 40 percent of first toll invoices are assumed to go unpaid, and are thus subject to a rebilling fee on the second invoice, a reduction from 46 percent in the prior forecast.
    - 40 percent of the above unpaid first invoices are assumed to be paid on the second invoice inside of 80 days from the date of travel, thus contributing to rebilling fee revenue, a reduction from 45 percent in the prior forecast.
    - These changes result in an overall slight decrease in the rate of non-payment on both first and second invoices from 25 percent to 24 percent as previously noted.
- Of the invoices that go unpaid after 80 days, 87 percent are assumed to be certified for a notice of civil penalty by a WSDOT toll enforcement officer, with the remaining 13 percent dismissed, primarily due to incorrect customer or vehicle identification. This adjustment was not included in prior forecasts and reflects updated reporting information made available in 2015.
- For the November 2015 forecast, the portion of NOCP transactions from which the toll is assumed to be recovered through the civil penalty adjudication process or subsequent collection efforts has been increased to 30 percent, up from approximately 20 percent in the November 2014 forecast. This increase is based upon recent experience in which observed recovery rates have exceeded 35 percent, primarily in the final months of FY 2015 with the new Civil Penalty Reduction (CPR) program.
    - When factoring in the 87 percent certification rate for a NOCP, the 30 percent recovery rate on NOCP transactions translates to a 26 percent recovery rate on overall transactions unpaid after 80 days, compared to 20 percent in the previous forecast.
    - The $40 civil penalty per trip and the $5 rebilling fee per invoice are assumed to be recovered on 85 percent of the NOCP transactions for which the tolls are recovered, previously assumed to be 95 percent.
    - The reduction in the rebilling fee recovery rate is attributed to a new policy in which the administrative law judges are able to dismiss the civil penalty under more circumstances for customers who contest it. When this is done, the rebilling fee is also waived and only the toll is recovered.
- In summary, a higher forecast for Pay By Mail transactions is more than offset by a lower overall assumption for the share of transactions that receive and pay a second invoice with a rebilling fee, a lower share of those don't pay the second invoice and make it into the civil penalty process, and a lower share of civil penalty transactions where the rebilling fee is recovered despite a higher toll recovery rate. As a result, the November 2015 forecast for Pay By Mail rebilling fees is $11.0 million (12.6 percent) lower over the forecast horizon, as shown in Exhibit 13.

Annual projections of late payment fees are provided in column 18 of Exhibit 28 in Appendix A, and the toll bill payment process is illustrated in the transaction workflow diagram as Exhibit 29 in Appendix B.

## Recovered Toll Revenues (Column 19)

Customers who fail to pay their tolls during the regular two invoice / 80-day billing cycle will receive a notice of civil penalty (NOCP) equal to $40 for each overdue toll due. These customers 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/or have the amount due sent to collections. In addition a new policy allows administrative law judges more leniency in dismissing the $40 penalty as part of a Civil Penalty Reduction (CPR) program which has also led to an increase in the payment rate of tolls in the Civil Penalty process. As with the rebilling fees noted above, 87 percent of invoiced transactions unpaid after 80 days are assumed to be certified for a notice of civil penalty by a WSDOT toll enforcement officer, with the remaining 13 percent dismissed. Of the transactions that are processed for a notice of civil penalty, the portion of toll revenue assumed to be recovered through the civil penalty adjudication process or subsequent collection efforts is assumed to be 30 percent.

- The certification adjustment in which 13 percent of overdue toll bills are assumed to be dismissed rather than receiving a NOCP was not included in prior forecasts and reflects updated reporting information made available in 2015.
- The 30 percent toll recovery rate from NOCPs assumed for the November 2015 forecast represents an increase from the previous November 2014 forecast assumption of 20 percent, based on recent actual recovery rates in excess of 35 percent.
    - When combined with the 87 percent certification rate for a NOCP, the 30 percent toll recovery rate on NOCP transactions translates to a 26 percent recovery rate on overall transactions unpaid after 80 days, which is comparable to the 20 percent in the previous forecast.
    - The recent improvement in toll recovery rates is attributed to a new policy that allows the administrative law judges more leniency in dismissing the $40 civil penalty attached to each unpaid toll transaction. This incentive to pay the overdue toll, along with heightened customer understanding that they will not be able to renew their vehicle registration with prolonged non-payment, has led to a higher rate of payment of tolls, but a lower payment rate on civil penalties due to dismissals.
    - Civil penalty revenue is not defined as pledged toll revenue and does not impact the net revenue projections.
- As with the recovered rebilling fees, toll revenue recovered from the civil penalty process is assumed to be paid partially in the fiscal year of travel and partially in the following fiscal year to account for an average six month lag from the date of travel for toll bill processing, first and second invoice notification, NOCP notification, and subsequent payment of the overdue toll bill.
- In addition, overdue toll revenue recovered in the civil penalty process requires budgetary authorization for transfer to the SR 520 account (16J). An additional lag based on the biennium in which the transfer is requested has been added to the 2015 forecast. As a result,

recovered toll revenue for both years in a biennium is assumed to be transferred equally in the two years of the following biennium.

- For the November 2015 forecast, recovered toll revenues were projected to increase by nearly 14 million over the forecast horizon compared to the November 2014 forecast, as shown in Exhibit 13.
    - This is primarily due to the slightly higher Pay By Mail transaction forecast and the higher 30 percent NOCP transaction toll recovery rate assumption, which offsets the higher first toll bill payment rates and reduction in number of transactions transferred to the civil penalty process, providing a net recovery rate of 26 percent of unpaid toll bills after 80 days.

Annual revenue projections for recovered toll revenues are provided in column 19 of Exhibit 28 in Appendix A. The transaction workflow diagram shown in Exhibit 29 in Appendix B also illustrates the process by which toll bills go unpaid after two invoices and 80 days.

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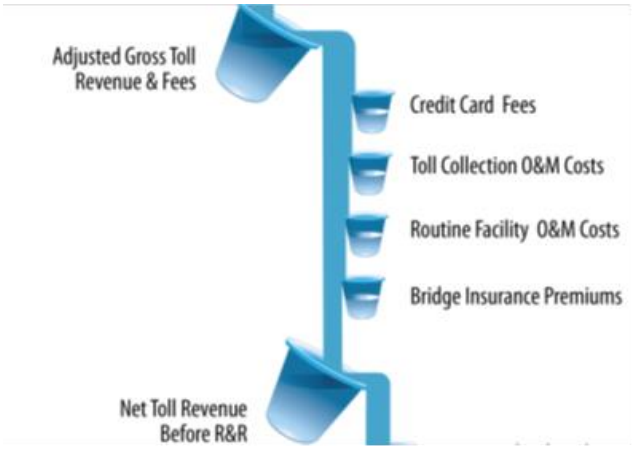
# 6 | Changes to Operating and Maintenance Costs

This section documents the anticipated uses of Adjusted Gross Revenues Collected, or those operating expenses that would be paid from toll revenues upstream of debt service. As shown in the waterfall below, 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, Exhibit 28 in Appendix A.

Some of the assumptions have been updated to reflect actual experience for FY 2012 through FY 2015. Changes to these assumptions are noted in the descriptions of each cost category below. All costs are expressed in year of expenditure dollars (YOE $) except where noted otherwise.




WSDOT Toll Division and GTC staff provided near term (FYs 2016-21) agency cost values for consideration.

The IBI Group Inc. was retained by WSDOT as the "Consulting Engineer." Master 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, as documented in a consolidated memorandum entitled: *Toll Collection O&M and R&R Assumptions and Costs Estimates for SR 520 – 2015 Update.* A description of each of cost item reviewed in detail by the Consulting Engineer is provided below.

## 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. 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 are allocated back to the individual toll facilities based on each facility's share of system-wide toll revenues.

Credit card transactions are processed by a third party vendor which charges a set fee for the service. This bank processing fee typically involves 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 equate to 2.0 percent of applicable toll revenues in the November 2015 forecast, representing no change from the November 2014 forecast.

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 2.04 percent of applicable toll revenues.

Toll revenues subject to credit card fees include Adjusted Gross Toll Revenue Collected (column 15 of Exhibit 28), or the tolls actually received after adjusting for short-term account discounts, *Good To Go!* Pay By Plate fees, and uncollectible revenue in addition to rebilling fees recovered within 80 days, or before the Civil Penalty process. In prior forecasts, overdue toll bills and rebilling fees recovered through the civil penalty adjudication process were included in the revenues subject to credit card fees; however, the November 2015 forecast assumes credit card fees associated with payments made in the civil penalty process will remain in the civil penalty account and are not transferred to the SR 520 toll account. The assumption is based on actual practice to date in which credit card fees related to payments in the civil penalty process were not transferred to the toll account. Credit card fees associated with transponder purchase and inventory costs are captured in transponder purchase and inventory costs, embedded in toll collection O&M costs in column 22 of Exhibit 28, and equally offset in transponder sales revenue in column 17.

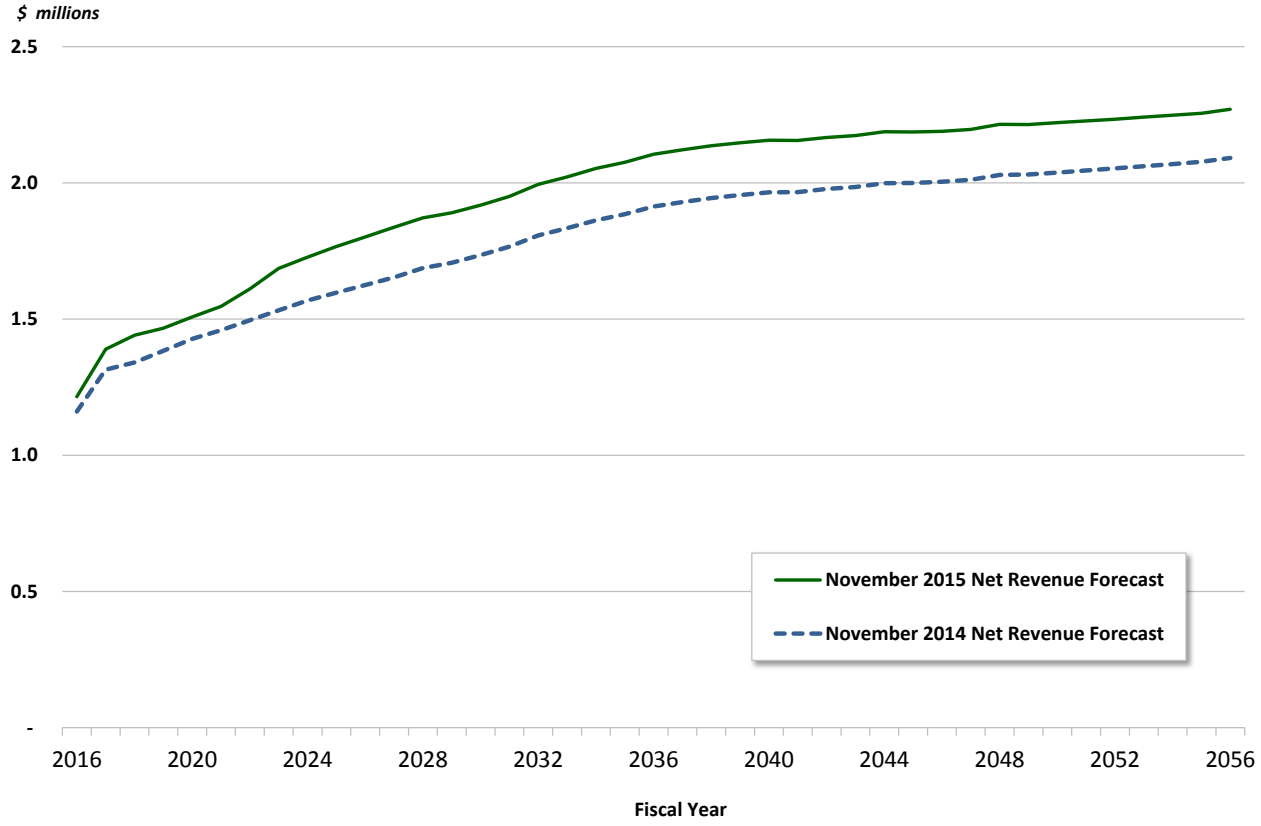
Based on reported information in FY 2012-14, it was not apparent that the associated percentage share of incoming revenue paid via a credit or debit card was exceeding 80 percent, and an 80 percent payment rate was maintained in the November 2014 forecast with no growth in payment rates over the forecast horizon. With an additional year of actual experience for FY 2015, there has been a clearer trend towards higher credit and debit card use for payment, the bank card share for the November 2015 forecast was increased to 85 percent throughout the forecast horizon.

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. The observed increase in the use of credit and debit cards does not appear to be occurring in lieu of customers linking replenishment of their *Good To Go!* account directly via ACH transactions, as the share of payment made via ACH has remained relatively steady at around 4.4 percent of total toll revenue. The assumed increase in payment rates is therefore assumed to be attributed to more customers linking their account to automatic replenishment tied to a credit or debit card rather than using a check, higher rates of credit card payments for non-account customers who call-in or visit a customer service center in person, and reductions in non-customers mailing check payments. The increase in the Pay By Mail toll increment from $1.70 to $2.00, also contributes to this revised assumption.

Credit card fees increased by $6.8 million or 9.2 percent over the forecast horizon from the November 2014 to November 2015 forecasts. The changes in the November 2015 forecast are due to the aforementioned increase in credit card payment rates from 80 percent to 85 percent and the 3.5 percent increase in projected Adjusted Gross Toll Revenue Collected.

Exhibit 15 illustrates the projected credit card fees by fiscal year over the forecast horizon for the two forecasts. Annual expenditure projections for credit card fees can also be found in column 21 of Exhibit 28 in Appendix A.

**Exhibit 15: Projected Credit Card Fees in YOE $ (FY 2016-56)**




## 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, to recording the transaction, to ultimately collecting payment, the toll collection process requires involvement and coordination by various distinct parties across multiple functions:

- Transponder purchase, inventory, and sales, including the coordination with transponder pass manufacturers and third party (non-CSC) resellers;
- WSDOT Toll Division / WSDOT Accounting and Financial Services (State Operations) ;
- Customer service center (CSC) operations and system software vendor(s); and
- Roadway toll system (RTS) vendor.

Costs associated with the operating functions noted above have been consolidated within the toll collection O&M cost column (column 22) of Exhibit 28 T&R table in Appendix A. As previously mentioned, credit card fees associated with direct transponder sales to customers using a credit card are included in the transponder purchase and inventory costs embedded in column 22 rather than in column 21.

Specific details regarding the toll collection cost activities and changes in the cost assumptions included in the annual total toll O&M cost forecast values (column 23 of Exhibit 28) are provided below by cost subcategory.

## Transponder Sales and Inventory Costs

WSDOT purchases, retains, and sells *Good To Go!* transponders directly to customers via online/mail orders, at CSC walk-in locations, and through third-party retailers. Transponder sales revenues are expected to directly offset all transponder purchase and inventory costs in every forecast year. This includes any credit card fees associated with WSDOT direct sales not involving a third party retailer and WSDOT costs associated to transponder testing and administration.

Transponder purchase and inventory costs, as well as associated revenues, are tallied at a system level and allocated to the individual facilities based on the number of *Good To Go!* account transponder transactions generated by each facility. Forecasted transponder sales volume are based on a WSDOT forecast that previously went out to FY 2021 in the November 2014 forecast and was extended to FY 2030 in the November 2015 forecast. In addition to extending the forecast by nine years, the change impacts longer term growth. Beyond the WSDOT forecast period ending in FY 2030, transponder sales units are extrapolated based on growth in the number of transponder transactions, with inflation assumptions noted below also factored in to the revenue and cost projections. In addition the state forecast assumes the availability of new Flex Pass transponders (declarable tags), which will allow users to switch the transponder to HOV exemption status for use on the I-405 Express Toll Lanes between Bellevue and Lynnwood and the similar SR 167 High Occupancy Toll lane (HOT) facilities.

Previous SR 520 forecasts assumed that a carpool exemption would be offered starting in FY 2017; however, absent a determination for how the exemption would be administered, a Flex Pass requirement to receive the exemption was not assumed. The November 2015 forecast, as amended to capture the Commission's March 2016 proposed toll rates and policies, assumes that the current transit bus and registered vanpool exemptions will remain but no further exemption for 3+ carpools will be offered in FY 2017 with completion of the new floating bridge.

Flex Pass transponders will be valid for toll payment on all state toll facilities. Transponder purchase and inventory costs and their offsetting sales revenue forecasts assume that the higher priced Flex Pass transponders will increase the weighted-average unit cost of all transponders sold, and thus, the SR 520 share of those costs. It is assumed that Flex Passes are already being purchased by some existing SR 520 users who may occasionally want to use the I-405 ETLs as an exempt carpool. In addition, it is anticipated that as vehicles (or windshields) are replaced, or vehicle titles transferred, some of the existing sticker tag transponders will be replaced with Flex Pass transponders.

The additional surge in transponders sold during the first year ramp-up periods for the I-405 ETLs and SR 99 Tunnel facilities are assumed to be purchased by users of the new facilities. These first year incremental costs are directly charged to these new facilities, and are thus excluded from the system-wide cost allocation until the second year of each facility's operations. This means that the estimated SR 520 share of transponder demand volumes, purchase and inventory costs, and associated sales revenues are estimated in such a way as to hold SR 520 "harmless" from the initial surge in transponder inventory purchases attributed specifically to the addition of I-405 in FY 2016 and SR 99 in FY 2019, in a manner consistent with how those costs are expected to be allocated after the fact. As such, FY 2020 represents the first full fiscal year when all system-wide transponder purchase and inventory costs and

associated offsetting sales revenue are allocated across all five of the then active facilities. However, even with the "harmless" factor in place, the projected SR 520 allocated share of transponder costs reflect the higher average unit prices, higher credit card fees, and the post ramp-up share of transponder volumes from the point at which the Flex Pass transponders went on sale for the I-405 Express Toll Lanes in late FY 2015.

Total transponder costs and associated packaging, mailing, inventory management, CSC processing, and contingency range from $2.11 for a sticker tag sold through a retail partner to $15.26 for a Flex Pass sold through a CSC location. The weighted-average transponder unit retail price is forecast to be $9.23 as of FY 2016 based on the expected mix of various transponder types and sales channels. After FY 2016, costs related to packaging, mailing, inventory management, and testing and administrative costs are assumed to escalate by 2.5 percent per year, consistent with other cost escalation assumptions. The portion of the retail price that represents the weighted-average unit cost from the manufacturer is assumed to increase by 1.0 percent per year to account for an anticipated gradual increase in the number of higher price Flex Pass purchases as a share of total sales going forward. This will raise the weighted-average unit selling price for a mix of hardware, for which the cost of each individual transponder type has typically remained flat or decreased over time, rather than increasing with general inflation. The declining real cost of transponder technology is the result of improvements in technology and reductions in production costs as the volume of production increases with the growth in toll facilities nationally and worldwide.

As transponder sales revenues are expected to exactly offset transponder purchase and inventory costs, net transponder revenues are expected to be zero in both cases, with no impact on net toll revenues.

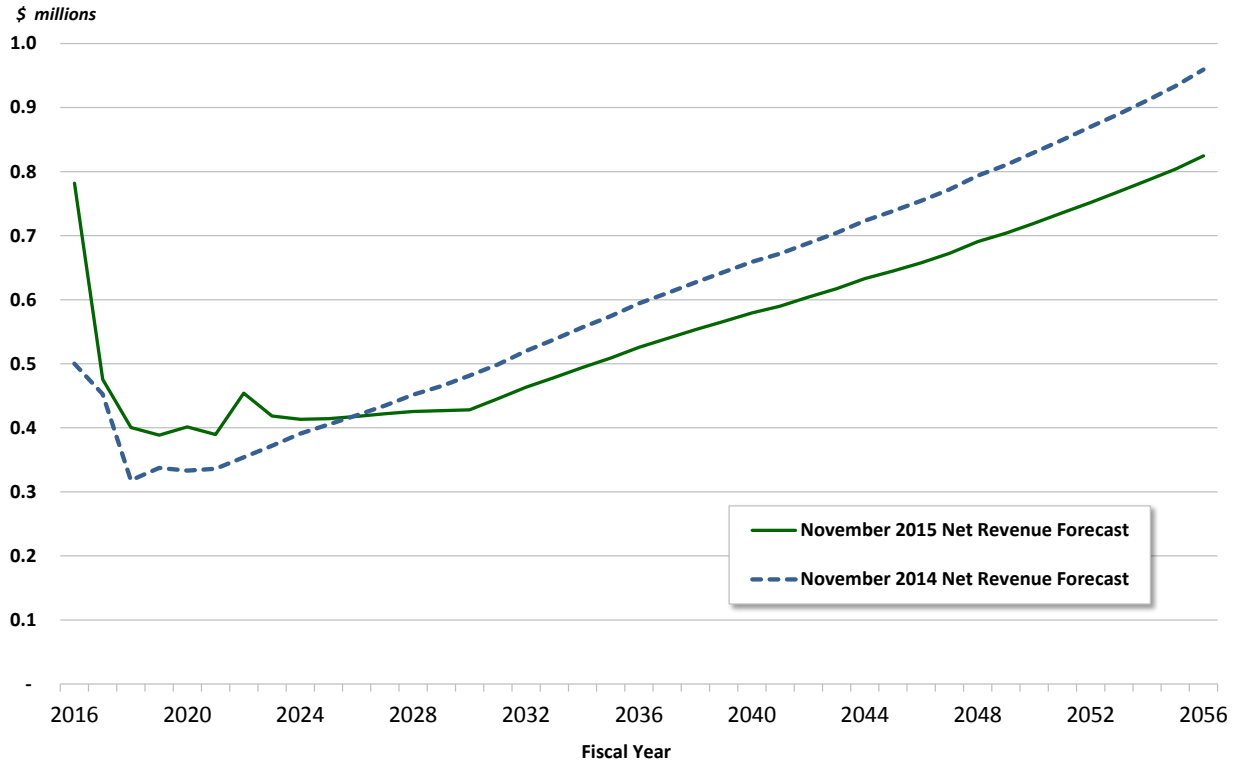
Compared to the November 2014 forecast, transponder sales and inventory cost projections in the November 2015 forecast have been revised upwards in the near term due to inclusion of testing and administrative costs and a higher average retail price. However, beyond FY 2025, the revised transponder pass forecasts result in lower costs compared with the November 2014 forecast.

Overall, transponder costs decreased by $1.8 million or 7.1 percent over the forecast horizon from the November 2014 to November 2015 forecasts. The changes in the November 2015 forecast are primarily due to:

- Higher near term followed by lower longer term costs due to the extension of the underlying WSDOT transponder forecast out to FY 2030 and corresponding changes due to cost escalation afterwards; and
- Inclusion of testing and state administrative costs in the November 2015 forecast, excluded from previous projections.

The transponder sales and inventory costs are also included within the toll collection costs shown in column 22 of the Exhibit 28 T&R table, in an amount that directly offsets the transponder sales revenue forecast provided in column 17 over the forecast horizon.

**Exhibit 16: Transponder Sales and Inventory Costs in YOE $ (FY 2016-56)**




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

The Washington State Toll Division currently operates four toll facilities: the SR 520 Bridge; the SR 16 Tacoma Narrows Bridge (TNB); the SR 167 high occupancy toll lanes; and the recently opened I-405 Express Toll Lanes (ETLs) between Bellevue and Lynnwood. The SR 99 Tunnel, currently under construction, is anticipated to open in FY 2019. The Toll Division is responsible for general management, vendor oversight, marketing, information technology (IT), and pass through payments from the Customer Service Center (CSC) vendor of out-of-state license plate lookup costs and printing and postage costs associated with Pay By Mail transactions.

Normal salary and benefits associated with state full time equivalent employees (FTEs) include finance and program management, government relations, CSC operations, RTS operations, and WSDOT headquarters Accounting and Financial Services (AFS) group support. The costs for these FTEs are allocated to existing and proposed facilities using two separate methodologies, one for the near term period (FY 2016-21) and one for the longer term forecast period (FY 2022-56). Near term budget period FTEs are based on actual experience and WSDOT Toll Division budgetary requests, using the percentage share of time each employee charges to the toll program, the total of which is then allocated based on each facility's share of total transactions. Starting with FY 2018, state system-wide FTE assumptions are based on a set 42.5 FTEs attributed to the existing four toll facilities. The total number of FTEs increases to 46.5 in FY 2019 with the addition of a financial analyst and customer service representative attributed to the addition of the SR 99 tunnel plus the transfer of two system development staff to be funded from toll revenues (previously funded from non-toll sources). In the near term forecast, current salaries and wages are escalated by recently agreed upon state wage rate increases while the long term forecast assumes salaries and wages will escalate by 2.5 percent per year to account for inflationary increases in compensation.

As part of the above salaries and benefits, the November 2014 forecast included centralized toll operation, management, and administrative expenses (toll division assistant secretary, executive assistant, strategic direction and planning, additional government relations, traffic and revenue analysis, toll rate setting, and payroll and human resource management). These additional cost items were previously excluded as they were assumed to be funded from non-toll sources. Specifically, the capital programs for the toll facilities under construction shared the cost for these general management and administrative items. However, as these projects begin to transition to operations, the management and administration costs are now assumed to be paid by toll revenues, with costs allocated to each individual toll facility based on transaction levels. In particular, the November 2014 cost forecast assumptions were revised to include the allocation of 7.0 FTEs distributed across the tolled facilities based on each facility's forecasted share of total system-wide transactions. Costs for 2.5 additional FTEs — for financial compliance and budgeting — were assumed to continue to be paid for from non-toll funding sources within the state's toll program oversight budget. In the November 2015 forecast, costs associated with 2.5 additional FTEs as well as additional centralized personal service contract expenses were assumed to be allocated proportionately across the 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 for each facility, which varies slightly year to year due to differences in each facility's traffic forecasts. SR 520's share of estimated system-wide transactions is calculated based upon CDM Smith's toll traffic volume forecasts. Both the November 2014 and November 2015 forecasts allocate system-wide Toll Division staff and related costs by each facility's percentage share of the total number of toll paying transactions.

Like the November 2014, the November 2015 forecast includes the existing three facilities — SR 520, Tacoma Narrows Bridge, and SR 167 HOT Lanes — plus the recently opened I-405 Express Toll Lanes between Bellevue and Lynnwood, and the forthcoming SR 99 Tunnel in downtown Seattle. However, the November 2015 forecast applies revised timing assumptions, accelerating the I-405 ETLs from FY 2018 to their actual start date in FY 2016, and delaying SR 99 startup of from FY 2018 until FY 2019 due to tunneling construction delays.

In addition, the November 2015 forecast does not assume that tolls on the Tacoma Narrows Bridge will be part of the system after FY 2032 when its debt and sales tax deferral amounts have been completely repaid. In previous forecasts, the TNB transactions after FY 2032 were maintained as a proxy for other future new facilities; now a more deliberate assumption is being made not to account for the economies of scale arising from additional facilities until they have been legislatively authorized. The recently passed Connecting Washington revenue package discussed earlier provides funding for three new toll facilities set to open in the next decade: a new segment of the I-405 Express Toll Lanes between Renton and Bellevue, the SR 167 extension in Pierce County, and the SR 509 extension in south King County. These additional facilities will create economies of scale that will reduce SR 520's share of projected state operations costs when the legislature authorizes them for tolling.

- Inclusion of the I-405 ETLs between Bellevue and Lynnwood and the SR 99 Tunnel within the system-wide cost allocation increases the total number of system-wide FTEs required, with two additional FTEs assumed for each new facility in the November 2015 forecast, compared with four FTEs for each facility assumed in the November 2014 forecast. The reduction reflects the actual experience with the start of operations on the I-405 ETLs.

- As a conservative approach, there is no reduction in FTEs assumed with removing tolls on the Tacoma Narrows Bridget after FY 2032.
- Under the current forecast assumptions, SR 520's transaction-based share of system-wide costs decreases from 54 percent in FY 2016 to 41 percent in FY 2019 with the start of SR 99 tolling, and increases to 51 percent with the removal of TNB in FY 2033.

The November 2015 forecast of toll collection costs associated with state operations and activities performed or overseen by the Toll Division are provided in Exhibit 17 with escalation assumptions listed in Exhibit 18.

**Exhibit 17: State Operations Assumptions in the November 2015 forecast – SR 520 Values**

| Cost Item | Key Assumptions |
|---|---|
| Salaries & Wages | SR 520's share includes standard costs for 19.6 FTEs @ job classifications in FY 2016 with an additional 1.5 FTEs for general administrative and management costs, decreasing to 19.7 total FTEs (inclusive of general administrative and management costs) by FY 2021. Centralized general administration and management costs were previously covered by a combination of other motor vehicle funding sources and tolls. Now with the 2015 estimates, all costs are assumed to be paid out of toll revenues. |
| Benefits | 30% of salaries and wages |
| Personal Services / Consulting | Toll operations, technical oversight, and forecasting/certificate consultant contracts. |
| Office Supplies / Materials | Standard cost of $245 per year, per FTE |
| Rent | $23 per square foot per year, assumes 153 square feet per FTE in forecast years. |
| Printing and Postage | Cost of $0.57 per mailing is unchanged from 2014 (includes cost of $0.03 per envelope, printing costs of $0.084 first page + $0.025 additional pages, assuming 2.8 sheets per mailing, bulk postage rate of $0.402 per mailing). Consumable and other mailing costs were added to the current forecast estimates to account for mailings not associated with toll bills. Similar cost per mailing of $0.57 assumed with an additional cost of $0.02 per mailing for consumables. Total costs are based on sending 0.007 mailings per total annual toll transactions. |
| Out of State License Plate Lookup Cost | Assumed that 9% of readable license plates with valid registration and owner information will require an out of state license plate lookup at a cost of $1.25 per plate inquiry (mailed invoice) base cost plus escalation. The assumption is revised to a lower rate of $0.75 per plate without escalation starting in FY 2019. The revised lower value remains above the $0.50 per plate charge incurred by other toll agencies for similar services.<br>Additional license plate vehicle owner address lookup costs for the states of Arizona (AZ) and Iowa (IA) by WSP staff were removed from the 2015 forecast as the cost associated with these additional efforts were determined to be higher than the potential for revenue recovery. |
| Computers and Equipment | Standard cost of $5,000 per year, per FTE, in addition to facility specific equipment costs. |
| Phone and Communications | Standard centralized cost of approximately $167,000 per year |
| Vehicles Operations | Cost for the operations and maintenance of 2 vehicles of approximately $23,000 per year |
| Record Retention | Includes WSDOT time to copy, catalog, and prepare documents for archiving, coordination with staff to get files, organization of files once received, paper and organizational supplies, etc. Standard cost of approximately $23,000 per year |

Note: FTE = full time equivalent employee

**Exhibit 18: State Operations Escalation Assumptions in the November 2015 Forecast**

| Cost Item | Escalation per Period | Period in Years |
|---|---|---|
| Salaries and Benefits | 2.5% | 1 |
| 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 CSC vendor agreement, and assumed for future CSC operations vendor agreements, the state is responsible for reimbursing the CSC vendor for the actual printing and postage costs related to mailing Pay By Mail customer toll bills as well as for customer opting to receive *Good To Go!* account statements by mail.

- The November 2015 forecast base assumptions were not changed from the November 2014 forecast, as these values still align with actual experience in which the average cost to process and mail an invoice is assumed to be $0.57 in 2014 dollars, inflated by 2.5 percent per year. The number of toll transactions per invoice is assumed to average 2.76 in the November 2015 forecast based on reported results for FY 2012-15, also unchanged from the November 2014 forecast.
- From the November 2014 to the November 2015 forecast, revisions to state costs for toll bill printing and postage resulted in an increase of $2.0 million or 1.6 percent due to a higher forecast of Pay By Mail transactions (and thus invoices) throughout the forecast horizon that was partially offset by fewer first toll bills being mailed as a result of higher unidentified owner leakage assumptions, especially through FY 2020, and a lower volume of second invoices being sent due to higher payment rates on first toll invoices.

In addition to printing and postage, additional license plate lookups are often required for out-of-state license plates to acquire the vehicle owner's name and address for mailing toll bills to non-account customers. The current CSC vendor has a contract for this service with a separate vendor, Law Enforcement Systems (LES), which administers a fixed cost of $1.25 per plate inquiry. It is assumed that 9 percent of readable license plates will require an out-of-state lookup over the forecast period, down from 10.5 percent in the November 2014 forecast. Additional license plate vehicle owner address lookup costs for the states of Arizona and Iowa by WSP staff were added in the November 2014 forecast and subsequently removed from the November 2015 forecast, as the cost associated with these additional efforts were determined to be higher than the potential for revenue recovery. At the time it was also understood that the states of Arizona and Iowa would only provide license plate lookup data to law enforcement personnel. However, recent queries indicate that policy changes in these two states now include provisions under which non-government vendors such as LES can extract vehicle owner and address data upon receipt of authorization from the recipient state agency.

The November 2015 forecast continues the November 2014 forecast assumptions with the unit cost per out-of-state plate lookup reduced from a fixed $1.25 to $0.75 plus annual 2.5% inflation in conjunction with the assumption of a new two year CSC operations vendor contract or revised contract with the existing vendor, beginning in FY 2019. The current two year vendor contract extension being negotiated for FY 2016 and FY 2017 assumes the current rates. A short survey of industry market pricing for plate lookup services ranged from $0.50 to $0.90 per plate with costs stable rather than inflating, so $0.75 plus inflation errs toward the conservative end of the range. While the unit cost assumption is unchanged, a reduction in the assumed rate of correctly identified vehicle owners and addresses, primarily in the near term as previously discussed, combined with the elimination of WSP activities to retrieve Arizona and Iowa vehicle owner data, lowers the forecasted cost of out-of-state license plate lookups.

- Overall, license plate lookup costs are $4.3 million, or 38 percent lower over the forecast horizon, compared to the November 2014 forecast.
- Collectively, the state costs for printing, postage and license plate lookups (both of which are passed through by the CSC vendor) decreased by $2.3 million or 1.8 percent.

State operations costs excluding printing and postage and license plate lookup costs increased by $39 million or 19 percent over the forecast horizon from the November 2014 to November 2015 forecasts. The primary reason for the increases in the November 2015 forecast are the additional FTEs and associated costs related to centralized general administration and management costs, plus the removal of the Tacoma Narrow Bridge from system-wide cost allocation starting in FY 2033.

State toll collection costs are included as part of column 22 in Exhibit 28 within Appendix A, with additional subcomponent detail in the Excel electronic version of this table.

## Customer Service Center

Customer service center vendor contract 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 operations vendor 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. The current CSC vendor, Electronic Toll Transactions Consultants (ETCC), provides these operational functions and also provides and maintains the systems software that process toll transactions, though these functions are anticipated to be provided by separate vendors in the future.

ETCC's original contract expired at the end of FY 2014 and was renewed through FY 2016, with an additional contract extension currently being negotiated for two more years through the end of FY 2018. One more contract extension for FY 2019-20 is anticipated, at least for the systems software component, and possibly for the operations component as well, though conceivably, WSDOT could elect to procure a new CSC operations vendor to start in FY 2019. When the existing contract extension expires at the end of FY 2016, the CSC cost forecast values are based on an updated, higher system-wide projection with an additional contingency factor based on expected requests from the current vendor. Starting with the FY 2019 vendor contract cost projections, a bottom-up system-wide estimate is employed reflecting current market rates for all CSC systems software and operating functions,

consistent with having separate vendors provide these functions, plus the addition of a five percent risk contingency.

In addition to the assumed extension of the current CSC vendor contract through FY 2016, the November 2015 forecast differs from the November 2014 forecast as a result of adjustments to the system CSC cost allocation methodology. Previous cost allocation formulas recognized that tolls on the Tacoma Narrows Bridge would likely be removed when the construction bonds and deferred sales tax were repaid by the end of FY 2032, but continued to include TNB in the cost allocation as a proxy for one or more future facilities that would likely be in place by that time. As described in more detail in the earlier section on State Operations costs, a more deliberate assumption is now being made to exclude TNB's toll transactions from the system-wide cost allocations starting in FY 2033 without factoring in any reduction in Toll Division FTEs, and to hold off on including the economies of scale from adding three new facilities planned for tolling under the recently passed Connecting Washington revenue package until they become authorized for tolling by the state legislature. This more conservative assumption increases SR 520's allocation share of system costs beyond FY 2032.

- Similar to system-wide State Operations costs, the November 2015 forecast allocates CSC vendor costs across the existing three facilities — SR 520, Tacoma Narrows Bridge, and SR 167 HOT Lanes — plus the recently opened I-405 Express Toll Lanes between Bellevue and Lynnwood, and the forthcoming SR 99 Tunnel in downtown Seattle. However, the November 2015 forecast applies revised timing assumptions, accelerating the I-405 ETLs from FY 2018 to their actual start date in FY 2016, and delaying startup of SR 99 from FY 2018 until FY 2019 due to tunneling construction delays.
- Inclusion of the I-405 ETLs between Bellevue and Lynnwood and the SR 99 Tunnel within the system-wide cost allocation increases the total number of system-wide FTEs required, with two additional FTEs assumed for each new facility in the November 2015 forecast, compared with four FTEs for each facility assumed in the November 2014 forecast. The reduction reflects the actual experience with the start of operations on the I-405 ETLs.
- Under the current forecast assumptions, SR 520's transaction-based share of system-wide costs decreases from 58 percent in FY 2016 to 43 percent in FY 2019 with the start of SR 99 tolling and increases to 51 percent with the removal of TNB tolls in FY 2033.

The November 2014 forecast for CSC systems software vendor costs included annual costs of about $1 million plus annual escalation to account for software system enhancements, in addition to system betterments costs that were captured in the CSC procurement costs as a periodic repair and replacement (R&R) item. The assumption at the time was that the current, first generation systems software would remain in place long term even as the vendor changed, thus requiring the vendor to make continuous, annual system enhancements to maintain and prolong the systems software's functionality. WSDOT has since revised this approach such that the November 2015 forecast now assumes that an upgraded, second generation systems software would be replaced every 10 years, and that procurement of the corresponding new CSC systems software vendor would be in alignment, effectively increasing this cycle from nine years in the previous forecast.

The new 10-year systems software and corresponding vendor contract values captured in the CSC R&R costs are assumed to cover ongoing system betterments at the midway point of each 10-year vendor contract. While increasing R&R costs, this approach reduces annual O&M costs associated with

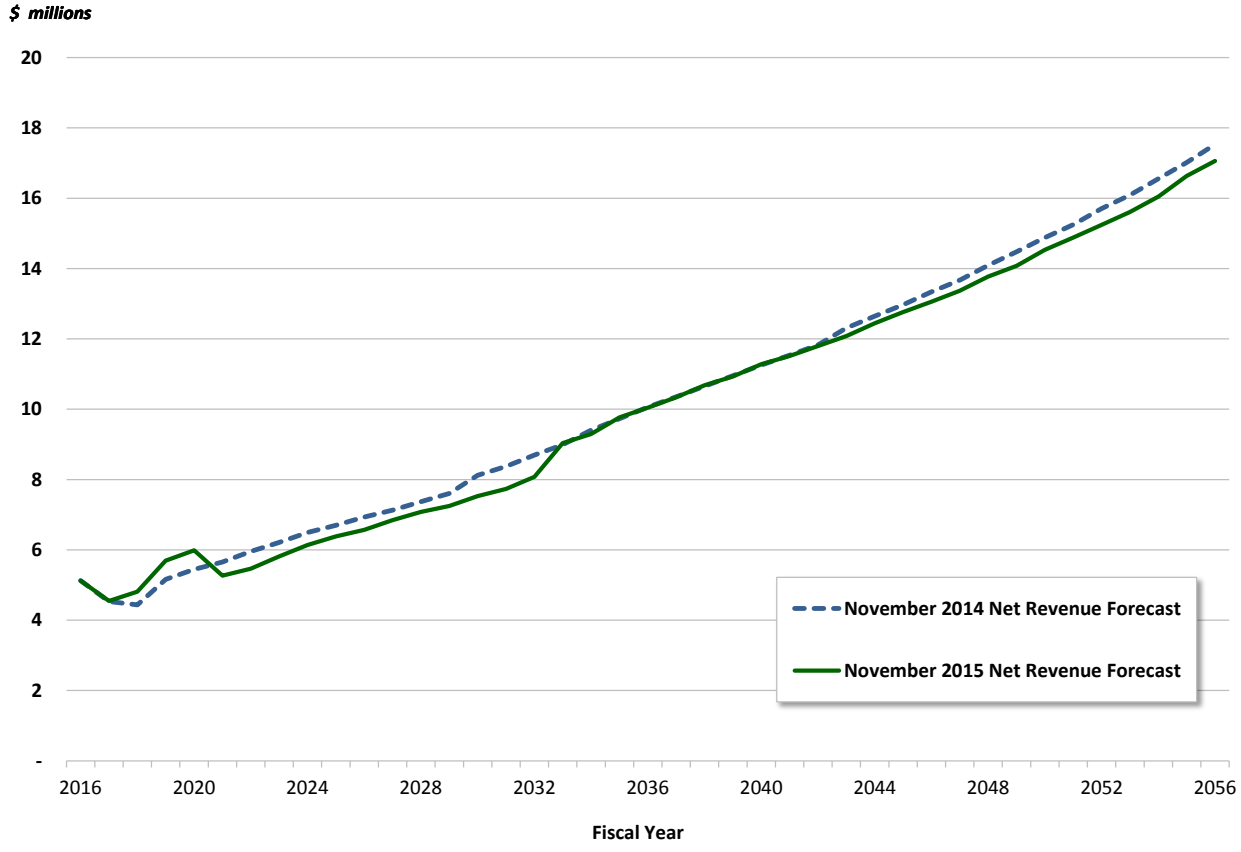
software enhancements to prolong the first generation legacy systems included in the previous November 2014 forecast.

The following points summarize the key changes in the CSC vendor assumptions and costs:

- The November 2015 forecast values for CSC operations vendor costs are very similar to the previous forecast except for differences in allocation shares to SR 520 based upon the timing other facilities entering and leaving the system.
- The November 2015 forecast values for CSC systems software vendor costs reflect a new approach in which the systems are replaced every 10 years which reduces annual O&M costs associated with continuous enhancements to prolong the existing system, but at the expense of higher periodic procurement costs classified as R&R. Systems software vendor costs also reflect the transition to market rate costs two years earlier, now in FY 2017.
- Overall, the revised November 2015 forecast for CSC systems software and operations vendors is $8.7 million (2.1 percent) lower over the forecast horizon than the November 2014 forecast even though the SR 520 share of these system costs are projected to be higher after the tolls are removed on TNB at the end of FY 2032.

Exhibit 19 illustrates the forecast horizon CSC costs for the November 2015 and November 2014 forecasts. CSC costs are included as part of the toll collection costs in column 22 of Exhibit 28 in Appendix A.

**Exhibit 19: SR 520 Share of CSC Cost Projection in YOE $ (FY 2016-56)**



## 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, Schneider Electric (formerly known as Telvent at the time of contracting), in conjunction with WSDOT maintenance staff. The vendor contract specifies that Schneider Electric will provide ongoing maintenance of the toll collection equipment through the contract period. There are actually two contracts, an SR 520-specific contract that lasts until the permanent toll collection system is installed on the new bridge, and a 10-year system-wide RTS contract for all facilites. WSDOT will perform any necessary maintenance to equipment gantries or other roadside equipment. After the RTS system-wide vendor 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 2016. All costs associated with this transition are included in the projected RTS vendor costs.

For the November 2015 forecast, RTS costs have been revised upward by $1.7 million or 4 percent over the full forecast horizon compared to the November 2014 forecast. The revision in the November 2015 forecast reflects changes in two areas as noted below.

***WSDOT and Consultant Provided Services***

- The November 2015 forecast estimates are lower in FY 2016 and higher in the remaining forecast horizon years compared with the November 2014 estimates.
    - The decreases in costs for ramp-up year FY 2016 are attributed to reductions in the estimated costs for the WSDOT Traffic Management Center and the Signals Shop, based on updated actual experience.
    - Communication services costs increased slightly based on actual experience as well as network equipment costs, which are now based on the latest contract signed with the communications vendor, Century Link, for FY 2016.
    - The primary changes in cost values can be attributed to the inclusion of ITS network maintenance and additional Information Technologies Division (ITD) support in the minor system enhancement and emergency response category, and a reduction in the assumed FTE requirement for ramp-up of NW Region Traffic Management Center and Signals Shop costs assumed in FY 2016. The reductions in FY 2016 during ramp-up are more than offset by increases in assumed FTE requirements during subsequent steady state operations over the forecast horizon.

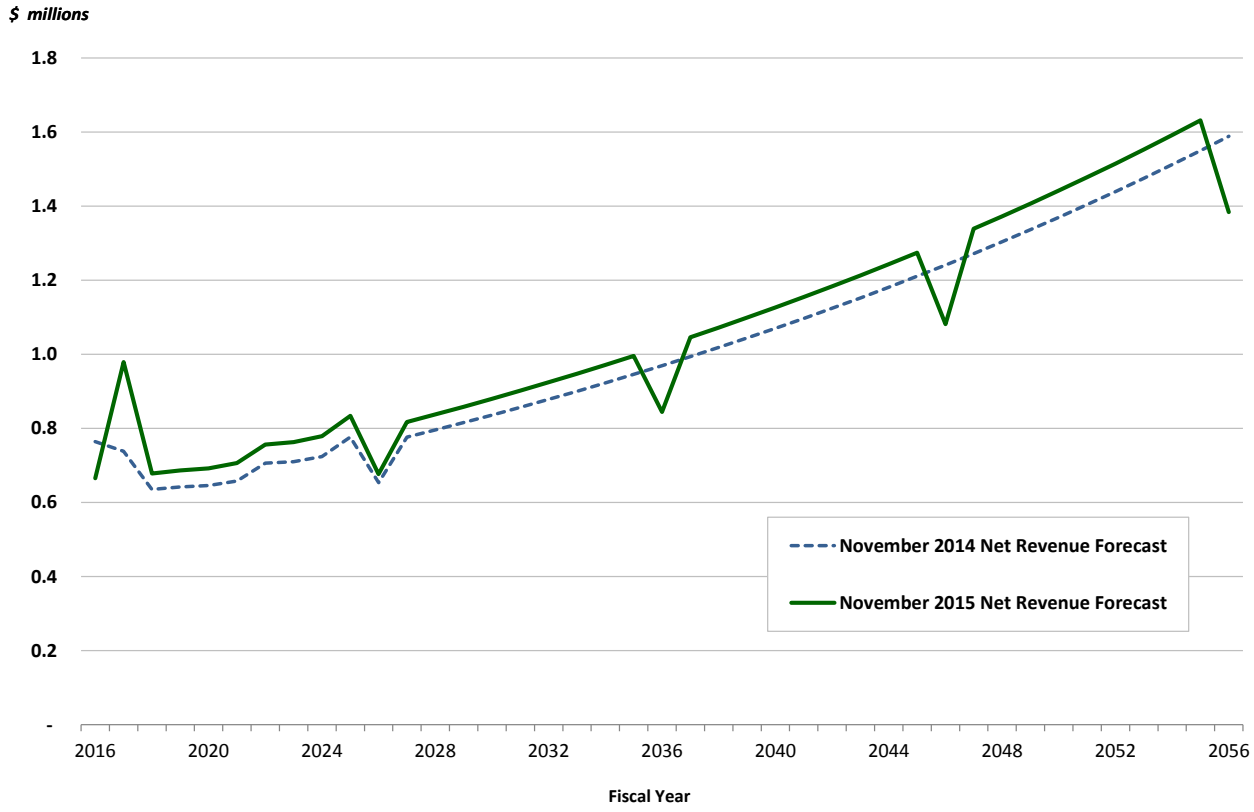
- The November 2015 forecasts of RTS O&M costs including revised costs for WSDOT, consultant, and contractor O&M items are 9 percent higher than the November 2014 forecast estimates over the full forecast horizon.

***Vendor Provided Services***

- The November 2015 forecast of RTS vendor O&M cost estimates are slightly higher in comparison to the November 2014 forecast estimates. Similar to the WSDOT costs, the communications services and network equipment costs increased slightly based on actual experience. Specifically, the vendor share of costs for minor system enhancement and emergency response increased slightly due to the inclusion of ITS network maintenance and additional ITD support. In the near term, the vendor annual Service Organization Controls (SOC) 1 audit cost has been removed in transition year FY 2016 when the temporary toll collection system infrastructure is implemented, consistent with the stated methodology that excludes this cost during the final year of a contract in which the system is to be replaced, whereby the audit activities are assumed to be covered under vendor transition and implementation and testing costs, categorized as R&R.
- In FY 2017 the vendor costs increased by $240,000, primarily to account for a four month transition overlap period between the temporary toll collection system and the permanent RTS toll collection infrastructure to be implemented once the new bridge is open. The cost of operating the temporary system in parallel with the new system during a transition period was excluded in the previous forecast. Paying to operate both systems in parallel allows for adequate confidence testing and operational experience before removing the temporary toll collection system equipment.
- In the mid-to-long term, the primary difference between the two forecasts is the result of an increase in the annual SOC-1 audit costs based on actual experience and the redistribution of annual audit costs to remove costs from the final year of each 10-year vendor contract. Except for minor escalation differences, redistributing the audit costs to remove costs in the final contract year is generally consistent with the prior forecasts because the nine audits had previously been uniformly distributed over each 10 year contract period in the forecast.

The RTS cost projections are also included within the annual toll collection costs in column 22 of the Exhibit 28 T&R table. In addition to routine maintenance, periodic capital repair and replacement of RTS equipment will be required. These costs are detailed in a later section.

**Exhibit 20: Roadway Toll Systems O&M Costs in YOE $ (FY 2016-56)**




## 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 as Exhibit 30.

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 established a Maintenance Task Force (MTF) of engineering, maintenance, and design staff to conduct a full review the Program's projected facility O&M costs. The findings from this initial MTF were the basis for the September 2011 forecast. Since the September 2011 forecast the MTF has been reconvened on an annual basis.

### *SR 520 Maintenance Task Force*

In the summer of 2015, the WSDOT SR 520 Project Team—in collaboration with the WSDOT Toll Division and Northwest Region maintenance staff—reconvened the facility MTF to review, revise, prepare, and report updated facility O&M cost estimates. The task force findings refined the previous estimates by using the latest design and construction information from the toll funded construction segments along

the SR 520 corridor. The revised O&M (and R&R) cost estimates from the toll funded and non-toll funded facility MTF are documented in the consolidated memorandum entitled *2015 Updated Facility and Toll Collection O&M and R&R Assumptions and Costs for the SR 520 Bridge Replacement and HOV Program*.

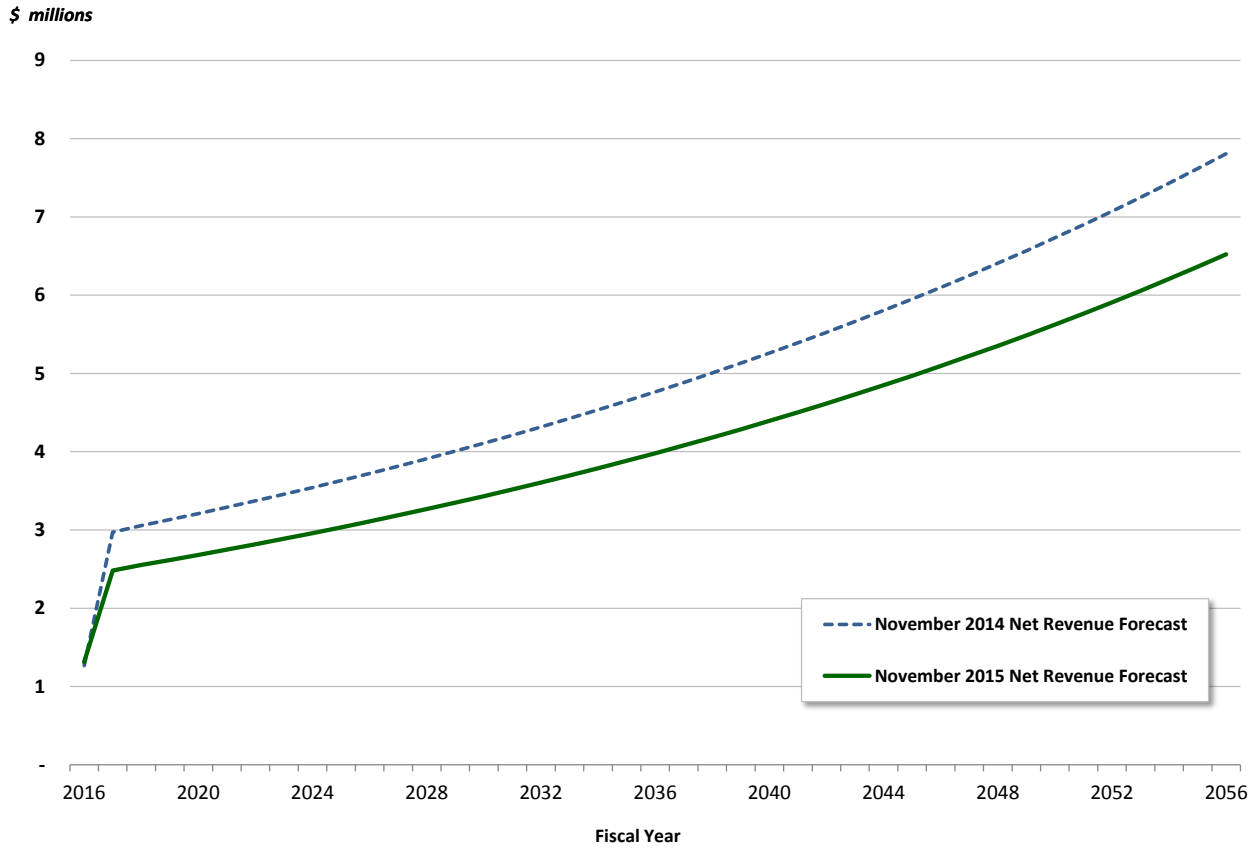
As described in the Introduction, the SR 520 corridor program is comprised of five major components, the first four of which include construction funding supported by tolls. The facility O&M costs for these four components with toll funding are assumed to be paid from future tolls in the current and previous forecasts. The fifth component, the section from I-5 to Lake Washington, including the West Approach Bridge South (referred to as the "Rest of the West") was assumed to be unfunded in previous forecasts, with O&M costs for the existing roadway paid from non-toll motor vehicle revenue sources. Nonetheless, the previous facility cost estimates alluded to the idea that tolls would eventually pay for all of the corridor O&M costs, contingent upon the tolling of the I-90 Bridge to fund the Rest of the West, thereby completing the full corridor program. However, the 2015 Legislature authorized $1.64 billion in other non-toll funding for the Rest of the West improvements between I-5 to Lake Washington via the Connecting Washington transportation revenue package. As a result of this action to construct the Rest of the West using motor vehicle revenues, WSDOT assumes that the O&M costs for this fifth component will continue to be funded from motor vehicle revenues rather than from tolls.

The scope of the funded project elements for which toll revenues would pay facility O&M costs decreased in the November 2015 forecast by $33 million over the FY 2016-2056 forecast period. The following items contributed to the decrease in the current forecast.

- Unit prices were revised from a 2009 basis plus inflation in the November 2014 forecast to 2013 unit prices plus inflation to year of expenditure dollars in the November 2015 estimate. The availability of historic cost data for 2013 that was lower than the 2009 data plus four years of inflation helped to bring down annual projections for facility O&M costs.
- National Pollutant Discharge Elimination System (NPDES) cost estimates for the maintenance of catch basins, inlets, storm water best management practices, and water quality treatment facilities were revised in the November 2015 forecast with actual NPDES costs from portions of the SR 520 corridor that have been constructed the since previous cost estimates were prepared for the November 2014 forecast. The updated NPDES cost estimates lower the facility O&M cost projections in the current forecast.
- Similar to the NPDES costs above, existing Maintenance Program costs for the November 2015 estimate were updated with actual cost information for portions of the SR 520 corridor that were not yet completed at the time that the previous estimates were prepared. The revised Maintenance Program costs increase the facility O&M cost projections in the current forecast.

Annual facility O&M cost projections are illustrated in Exhibit 21 on the next page, with forecast values provided in column 23 of Exhibit 28 in Appendix A.

**Exhibit 21: Projected Facility O&M Costs for the toll funded segments in YOE $ (FY 2016-56)**




## Bridge Insurance (Column 24)

Bridge insurance premium quotes are provided by the Department of Enterprise Services Office of Risk Management (DES/ORM) with annual coverage commencing on July 1 of each year. The current FY 2016 pre-completion premium forecast estimates were based on the actual premium payment that occurred in August 2015 and SR 520's estimated share of state brokerage fees. Coverage includes business interruption insurance for up to one year with no 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 $100 million sublimit on damage. Current insurance coverage during corridor construction includes property damage on the west approach, Portage Bay bridge structures, east approach, the floating bridge, and business interruption coverage for the total insured value of $696 million with a $400 million all risk limit. Current and future insurance policies cover various risks, including earthquake, flood, and boiler and machinery failure, as well as sub-limits on coverage for increased cost of construction, course of construction, business interruption, service interruption, and terrorism.

Current insurance costs also include SR 520's share of brokerage fees to obtain insurance policies covering other facilities and assets. The brokerage fees included in the SR 520 insurance cost allow the state to obtain competitive insurance policies covering other facilities and assets including: auto liability (Materials Lab), aviation, fidelity bond (Torts Claims and Records Management Division), foreign liability (Torts Claims and Records Management Division), master property (Information Technology), rental

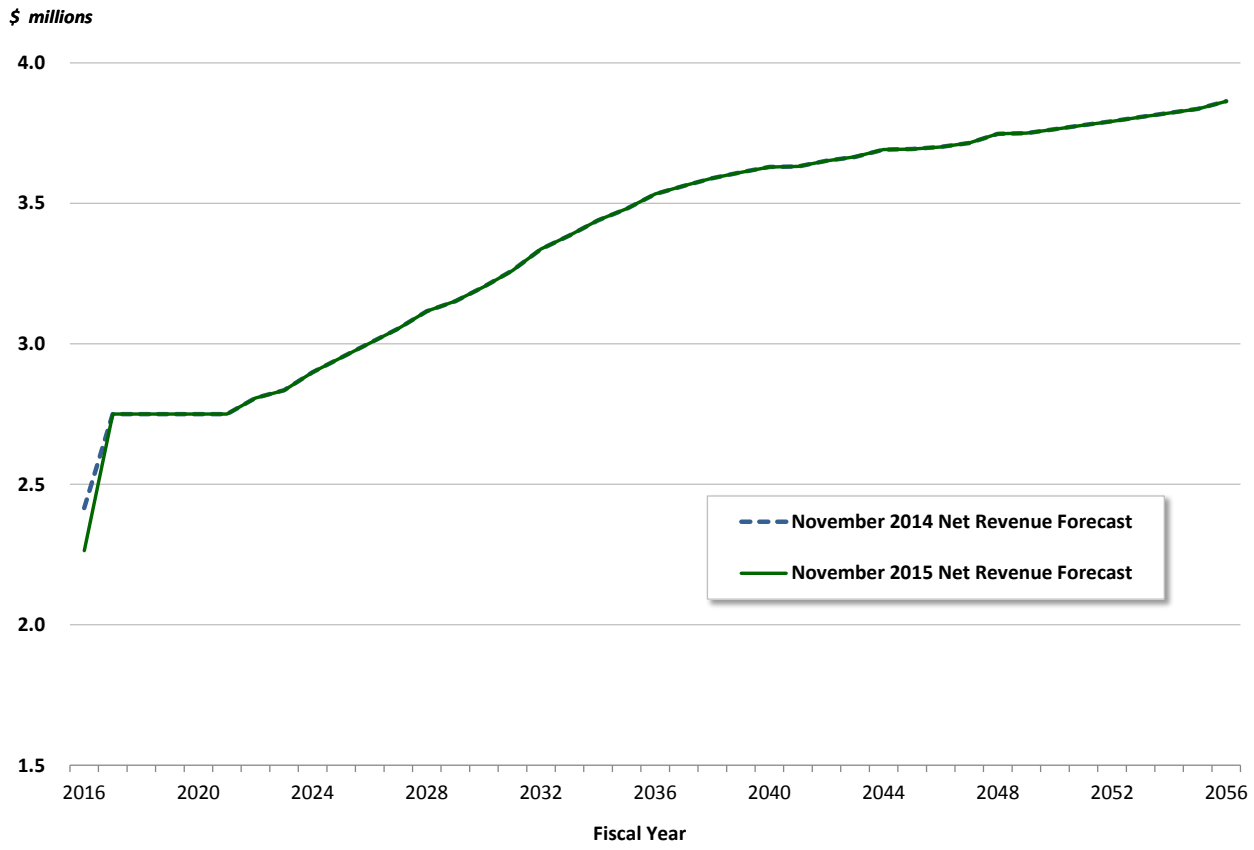
liability (Maintenance Division), Tacoma Narrows Bridge (Toll Facility), and Washington State Ferries. SR 520's estimated share of the total state brokerage fee in FY 2016 is 39.1 percent, based on SR 520's premium as a percentage share of the total state premiums to be paid in FY 2016 of $136,092.

Post-completion coverage from FY 2017 forward is assumed to include business interruption as well as property damage on all SR 520 bridges and structures between I-5 and I-405 as well as SR 520's share of statewide brokerage fees.

Because it is still too early to obtain a detailed premium estimate for the post-completion conditions, the post-completion values are placeholder estimates prepared by WSDOT with input from risk management staff, and are assumed to be inclusive of any brokerage fees. Absent any new information, the post-completion insurance premium estimates from FY 2017 forward remain unchanged from their November 2014 forecast values over the 40 year period from FY 2017 to FY 2056. Note that the previous post completion bridge insurance premiums were forecasted to increase at the rate of annual growth in the November 2014 forecast for gross toll revenue potential so as to be indexed with the measure of the revenue that would need to be replaced by the business interruption insurance coverage. As such, the only change in the insurance premium forecasts was in FY 2016 to reflect the actual premium cost and anticipated share of state brokerage costs, which resulted in a net reduction of $0.15 million in both FY 2016 and over the full forecast horizon.

Annual insurance premium forecasts are provided in column 24 of Exhibit 28 in Appendix A.

**Exhibit 22: Projected Insurance Costs in YOE $ (FY 2016-56)**



# 7 | Changes to 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 12-20 and the O&M expenditures in columns 21-24 result in the total net revenue available to support financing, contribute to required reserves, and provide for other project uses. The annual net revenue projections can be found in column 25 of Exhibit 28 in Appendix A.

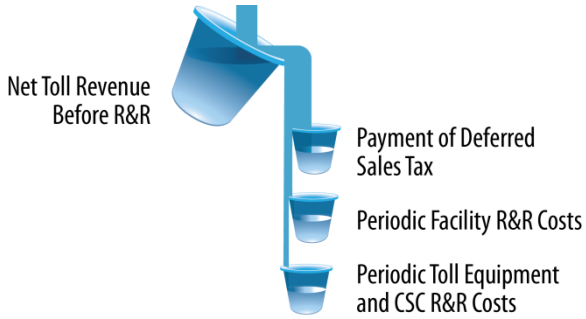
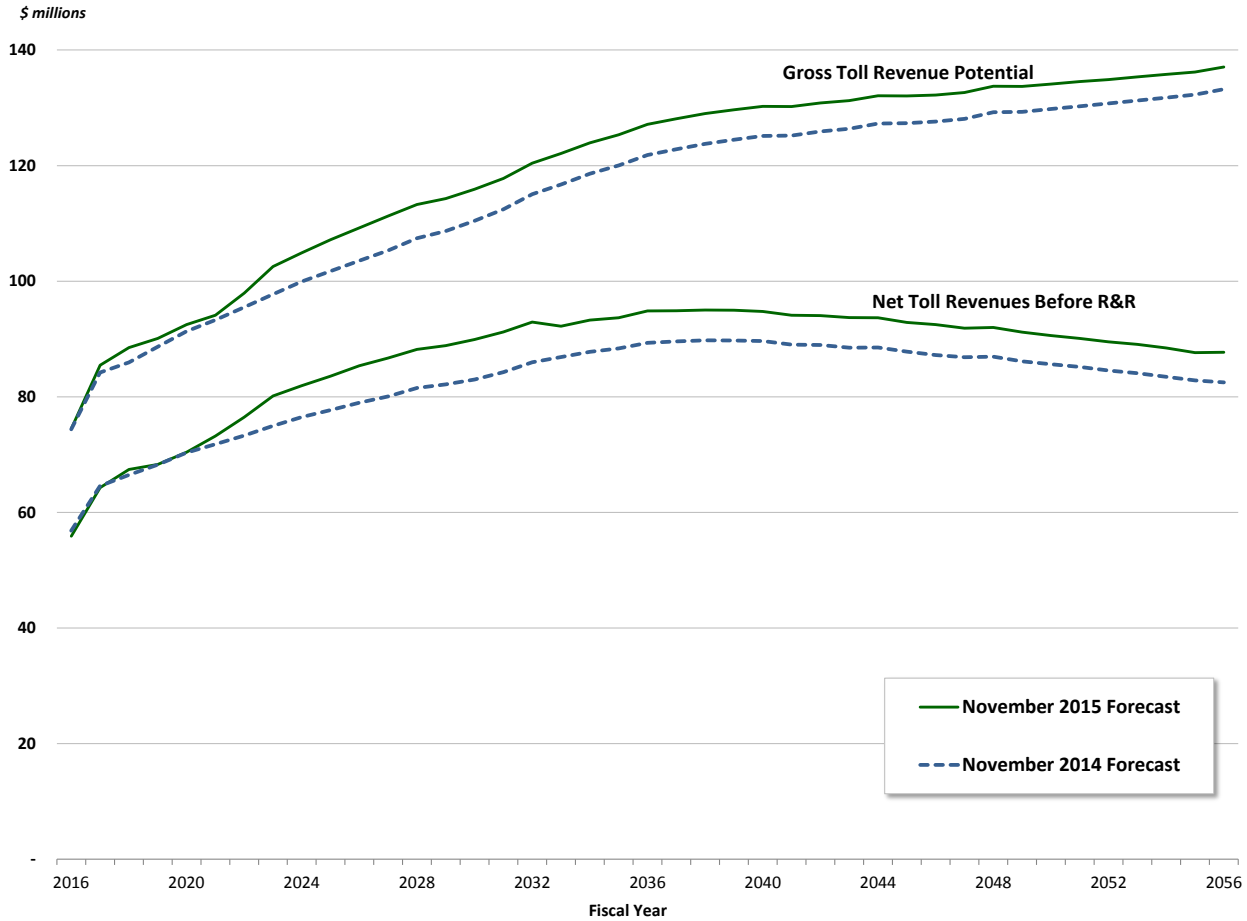



Exhibit 23 illustrates the spreads between the gross and net revenue over the forecast horizon for the November 2014 and November 2015 forecasts. The differences in the sums of the annual values over the forecast horizon are shown in Exhibit 13 on page 23.

**Exhibit 23: Projected Gross and Net Toll Revenues (FY 2016-56)**



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 on the previous page. In accordance with the SR 520 financial plan flow of funds, net revenues before R&R are used to pay debt service first, with annual reserve account contributions for deferred sales tax and R&R coming downstream from coverage revenues. Descriptions for these other uses of tolls are provided below.

## 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 the replacement bridge is constructed and open to traffic. Specifically, the first of 10 equal annual installments are due on December 31st of the fifth calendar year after the certified date by which the program components with toll funding are operationally complete.

The final program component with toll funding, the West Approach Bridge North, is now expected to be completed in mid 2017, which would make the first deferred sales tax payment due on December 31, 2022, midway through FY 2023. This is one fiscal year later than assumed in the November 2014 forecast. Toll revenues are assumed to be the source of funding used to make the 10 annual payments through FY 2032.

The State is deferring sales tax on almost all of the corridor program components with toll funding support, with the exception of sales tax paid in Grays Harbor County that applied to the floating bridge pontoon construction site development. Aside from the timing, the November 2015 forecast values, shown in column 26 of Exhibit 28 in Appendix A, are unchanged from the November 2014 forecast of $159.4 million over the forecast horizon.

## Periodic Facility Repair and Replacement Costs (Column 27)

Master Resolution number 1117 requires that WSDOT's Consulting Engineer, currently the IBI Group Inc., review and prepare a certificate regarding the reasonableness of the toll collection and facility cost assumptions and methods. This review includes the facility R&R costs described below.

Costs associated with periodic facility R&R activities are assumed to be funded in the WSDOT preservation program ("P program") using toll revenues and other non-toll sources. Periodic facility costs typically involve major capital upgrades, renewal, and improvements, including replacement of anchor cables, replacement of strip seal expansion joints, surface rehabilitation, painting, and related capital rehabilitation. Cost estimates for periodic R&R items are dependent upon several design characteristics of the facility, including the type of construction materials and structural attributes.

The aforementioned 2015 SR 520 Maintenance Task Force 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 as Exhibit 4 in the Introduction on page 9.

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 and related components with toll funding,

such as replacement of expansion joints, bridge decking, and anchor cables. In addition, toll revenues would pay for the traffic management and data systems R&R costs throughout the SR 520 corridor.

In contrast, WSDOT's non-toll funding from the Preservation Program would be used for non-bridge program components with toll capital funding, primarily the at-grade highway section between the floating bridge and I-405. R&R costs not paid from tolls in this section would include pavement grinding and resurfacing and roadway lighting.

The previous facility cost estimates alluded to the idea that tolls would eventually pay for a majority of the full corridor R&R costs, contingent upon the tolling of the I-90 Bridge to fund the Rest of the West, completing the corridor program. However, the 2015 Legislature authorized $1.64 billion in funding for the Rest of the West improvements between I-5 to Lake Washington via the Connecting Washington transportation revenue package. As a result of this action taken by the State Legislature to construct the fifth and final component of the SR 520 corridor program using motor vehicle tax revenues, WSDOT assumes that the R&R costs for the Rest of the West will continue to be funded from non-toll motor vehicle revenues sources within the Preservation Program.

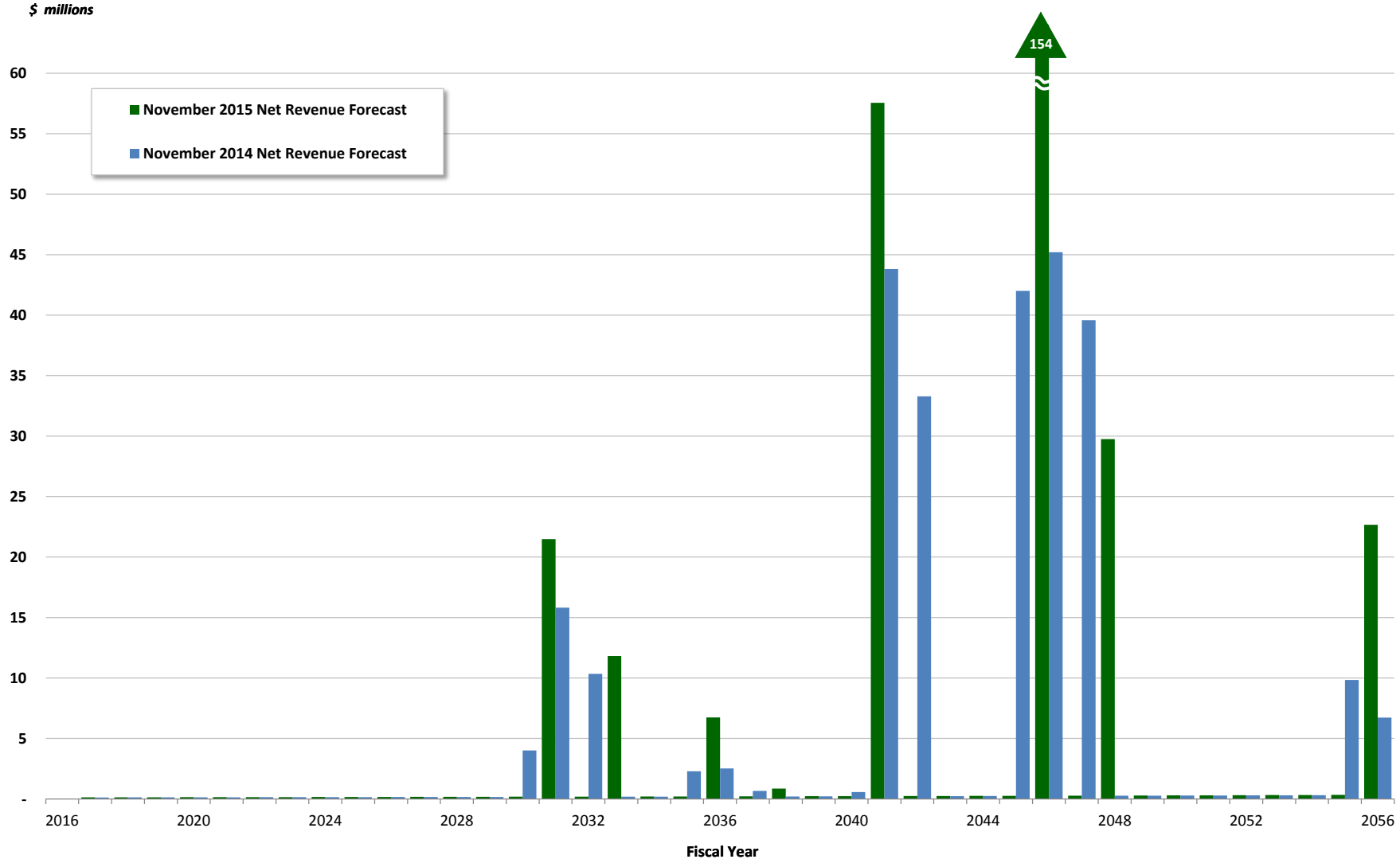
The scope of the program elements with toll funding for which toll revenues would pay facility R&R costs increased for the November 2015 forecast by $50 million over the FY 2016-2056 forecast period. There are two primary factors contributing to the increase in facility R&R costs over the November 2014 forecast.

- The cost estimates from prior years did not include factors for mobilization, preliminary engineering, construction engineering, contingencies, and sales tax.
- Bridge surface rehabilitation unit costs were re-evaluated and updated, leading to an increase in projected costs on the SR 520 floating bridge and approach structures.

The previous forecast assumed that in specific forecast years when there is anticipated to be significant costs incurred related to replacement activities, the costs would be allocated over multiple adjacent years to smooth out and reduce single year expenditures made from the R&R reserve fund. The adjustments were intended to more accurately reflect likely construction schedules which, given the nature of the significant replacement work, may likely occur over multiple years. The November 2015 forecast does not assume these allocation or "smoothing" adjustments of costs over multiple adjacent years, thus providing more deliberate timing intervals for R&R activities, which results in significant shifting around of facility R&R costs in various forecast years, specifically between FY 2041 and FY 2048 when over $240 million will be required among just three years. In practice, regular annual deposits to an R&R reserve account will allow sufficient balances to accrue to cover annual R&R expenditure spikes that may otherwise exceed excess net revenues available.

Facility R&R costs funded by toll revenues are shown in column 27 of the Exhibit 28 T&R table for the November 2015 forecast. Annual amounts for all three forecasts are depicted in Exhibit 24 on the following page.

## Exhibit 24: Toll-Funded Facility Repair & Replacement Costs by Forecast in YOE $ (FY 2016-56)



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

Toll-related R&R costs include the periodic repair, rehabilitation, and replacement of the RTS hardware and equipment. In addition to hardware and equipment, the R&R cost forecast includes SR 520's share of the system-wide administrative and technical-related costs incurred by WSDOT to periodically procure both the RTS and CSC vendor contracts as well as implement and test new systems software and toll collection equipment hardware. As with the facility R&R costs, Master Resolution number 1117 requires that WSDOT's Consulting Engineer also review the toll-related R&R costs as part of their certification process.

Additional detail on toll-related R&R and vendor procurement costs is provided below, and the annual cost projections in year of expenditure dollars are provided in column 28 of Exhibit 28 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 procurement is next scheduled to commence in FY 2024, and includes up to one year for procurement of a state-wide vendor to provide the entire roadway toll system, followed by implementation and testing of each facility to allow for a smooth transition to a new vendor and/or new equipment.

Allocation of system-wide RTS procurement costs are calculated using the total number of active toll facilities to avoid concerns of over-allocation of primarily fixed costs to the I-405 Express Toll Lanes and the SR 167 HOT lanes, each with multiple toll points. The November 2015 forecast assumes an equal distribution of RTS procurement costs across facilities, with one-fourth of the total system-wide procurement costs allocated to SR 520 through FY 2018, dropping to one-fifth or 20 percent in FY 2019 with the inclusion of the SR 99 Tunnel and increasing back to one-fourth in FY 2033 with removal of tolls on TNB. In both the November 2014 and November 2015 forecasts, the costs for the last procurement cycle are omitted as the benefits from that vendor procurement would occur beyond the FY 2056 forecast horizon. In addition, it is conceivable that one or more vendor procurements may be concluded by choosing the same systems or operations vendor to continue to provide services. This would likely result in procurement, implementation and testing cost savings. Acknowledging this, it is most conservative to assume that any cost savings or exclusions occur at the end of the forecast horizon.

The November 2015 forecast incorporates the increase in allocated RTS vendor procurement costs that occurs with the removal of tolls on TNB starting with FY 2033, plus adjustments to implementation and testing costs, and the addition of new forecasted cost items.

- The removal of tolls from TNB results in an increase of approximately $0.62 million in allocated RTS procurement costs to SR 520 over the remainder of the forecast horizon,
- Implementation and testing costs were reduced by approximately $0.24 million over the forecast horizon based on updated baseline cost estimates which use actual experience from

FY 2015 compared to FY 2012 information that was used as the basis for the November 2014 estimates.

- Newly captured RTS R&R costs account for an increase of $1.3 million over the forecast horizon compared to the November 2014 forecast values, and include the following items:
  - Integration and acceptance testing of the back-office vendor in conjunction with RTS vendor replacement;
  - The Toll Division's share of the traffic management system (TMS) software and services including toll rate modules; and
  - The cost of replacing dynamic and static portions of toll rate signs.

In summary, the November 2015 forecast for RTS R&R items, inclusive of additional cost items and revisions to allocations to account for removal of TNB, results in a total increase of nearly $1.7 million or 5.9 percent over the forecast horizon in comparison to the November 2014 forecast estimates.

## Customer Service Center Repair and Replacement Costs

In addition to costs related to RTS vendor procurement, implementation, and testing, the periodic costs to procure the CSC systems software and operations vendor(s) along with implementation and testing are also included in the toll equipment and CSC R&R cost forecast. A USDOT Urban Partnership Agreement grant covering SR 520 paid for the initial procurement of the current Customer Service Center vendor, including implementation, and testing. Going forward, future state costs associated with procuring one or more CSC vendors will be allocated across all the operating facilities.

For the November 2015 forecast, system-wide CSC vendor(s) procurement costs are allocated across the four existing facilities, plus the SR 99 Tunnel, assumed to be included in the allocation of system-wide costs starting in FY 2019. In addition, tolls are assumed to be removed from the Tacoma Narrows Bridge at the end of FY 2032, thus removing it from the cost allocation starting with FY 2033. The previous forecast assumed that the I-405 ETLs and the SR 99 tunnel would both come online in FY 2018 and also kept tolls in place on TNB through FY 2056 as a proxy for one or more future new facilities with similar or greater transaction values that would be online by the time tolls on TNB are removed. Procurement costs are allocated based on each facility's forecasted toll transactions in the years the costs are projected to be incurred, with the exception of the next procurement cycle between FY 2016-2021, described in more detail below. Procurement costs are estimated in a manner consistent with the possibility that the CSC systems software and operations functions may be provided by the same or two different vendors. In both the November 2014 and November 2015 forecasts, the costs for the last procurement cycle are omitted as the benefits from that vendor procurement would occur beyond the FY 2056 forecast horizon. In addition, it is conceivable that one or more vendor procurements may be concluded by choosing the same systems software or operations vendor to continue to provide services. Should this occur, it would likely result in procurement, implementation and testing cost savings. Acknowledging this, it is most conservative to assume that any cost savings or exclusions occur at the end of the forecast horizon.

The current CSC vendor contract with ETCC, which includes both the systems software as well as the back office and customer facing operations, has been extended through June 30, 2016, and WSDOT may opt to negotiate one or two, two-year contract extensions through either FY 2018 or FY 2020. In

January 2014, a report was released in response to the legislation passed in 2013 directing the WSDOT to study the feasibility of a single account-based system for toll facility and ferry users.[3] The recommendations in the report recognized that both the Washington State Ferries (WSF) ticketing system and the Toll Division CSC systems software will either be near the end of its lifecycle or at the end of its contract term in by the conclusion of FY 2018.

The existing CSC vendor was contracted to provide hosted software capable of account management, transponder inventory management, website administration, image reviews, adjudication management, pay-by-mail invoice generation and distribution, collection oversight and accounting. The deployed software is referred to as a first generation (Gen 1) system in customer toll transactions processing for WSDOT. With the potential integration of *Good To Go!* toll technology as an alternative payment method for the WSF, the use of the toll technology would be expanded into a second generation (Gen 2) systems software for toll transaction processing and customer relationship management. In addition the Gen 2 system would address other concerns with the existing system including:

- Issues related to inadequate key performance indicators which would address customer website enhancement for account management, CSC phone systems, and support for routine and ad hoc reporting;
- Frequent changes to operating rules creating an unstable environment;
- Inadequate training of customer-facing staff to deliver information to customers;
- Enforcement of established policies and procedures which are not always followed; and
- Addressing the slow response to recognizing and resolving issues related to transaction processing and customer service, including resolving in-process transactions to minimize those with unidentified owner names/addresses.

The November 2014 forecast assumed the continuation of the current Gen 1 system with higher annual O&M costs associated with continuous system maintenance and enhancements in order to prolong its viability. The November 2015 forecast for procurement costs assume that the systems software with the enhanced Gen 2 capabilities and associated vendor contract would be procured anew every 10 years. While this reduces the annual O&M costs for maintaining and prolonging the existing systems software, it increases the R&R costs associated with procurement, implementation and testing each decade.

For this November 2015 forecast, the WSDOT Toll Division has assumed two separate vendor contracts for a CSC systems software vendor and for a CSC operations vendor providing back and front office customer service operations. Nothing precludes the selection of the same vendor for both contracts.

- CSC Systems Software — The back office systems software is integrated with the roadway toll systems (up to three separate vendors), WSDOT's accounting system (TRAINS), the Washington State Department of Licensing, and an out-of-state license plate look-up vendor, the latter two for identifying Pay By Mail customer names and addresses for mailing toll bills.
    - The CSC systems software vendor and the system itself is assumed to be procured every 10 years, with the first procurement cycle completed by the beginning of FY 2021.

[3] See Chapter 306, Laws of 2013 PV (ESSB 5024)

  - The previous forecast assumed that only the vendor (and not the systems software) would be replaced on a nine year interval.

- CSC Operations — The CSC operations vendor is primarily responsible for the staff performing the front and back office customer service operations tasks. These would include call center operations, back office processing, image review, toll bill printing and mailing, transponder inventory management, adjudication management, collection oversight, and retail front office services.
  - The CSC operations vendor is assumed to be procured every six years, though the contract duration would likely be three years, with, on average, one contract extension assumed. The first replacement cycle could be completed as soon as the beginning of FY 2019, though it is anticipated it might be better to wait to bring on the new operator at the same time as the Gen 2 systems software.
  - The previous forecast assumed a seven year operations contract interval.
  - In addition, WSDOT can evaluate what services may remain with the operator or brought in-house on a task by task basis in order to optimally leverage each group's areas of expertise.

To successfully procure, award, develop, test, and implement a new Gen 2 systems software vendor, WSDOT would need to extend the existing contract with ETCC through FY 2020 for at least the systems software functions, if not also the CSC operations. This would likely be preferable to contracting with another vendor to keep the existing systems software up and running under a short term contract until the changeover to a new system in FY 2021. WSDOT anticipates funding the new systems software procurement effort in FY 2018 to allow for the new system to be ready for production on July 1, 2020, the first day of FY 2021.

System-wide costs related to the first cycle of CSC systems and operations vendor procurement assumed in the November 2015 forecast include the following, with the amounts provided in current dollars before annual adjustments for cost escalation to year of expenditure dollars (at an assumed rate of 2.5 percent) and before allocation to each toll facility in the system.

- RFP Development – WSDOT and consultants would work with stakeholders to determine most appropriate combination of roles and responsibilities.
  - Systems software cost of $830,000 spread over two years
  - Operations cost of $161,000
- Vendor Solicitation – Solicitation of a vendor would be conducted through an open bid process administered by WSDOT and consultants.
  - Systems software cost of $328,000
  - Operations cost of $236,000
- Start-up, develop, design, and install — Systems software development, design, and installation costs would be incurred by WSDOT, consultants and the vendor for developing and bringing on new back-office systems software for toll processing.

  - Systems software development costs of $13 million over two years (includes full rights to system software)
  - Operations cost of $729,000 to extend current vendor or procure new vendor at market rates, and $1 million for future vendor procured at the time of new systems software vendor procurement

- Transition support – Costs would be incurred by WSDOT, consultants, and the existing and future vendor for managing the handover of operations and systems functions.
  - Systems software costs of $94,000
  - Operations costs of $62,000

For the allocation of system-wide costs in the first Gen 2 systems software vendor replacement cycle to each toll facility, 11 years (FYs 2015-25) of forecasted transactions for the existing four facilities (SR 520 Bridge, Tacoma Narrows Bridge, SR 167 HOT lanes, and I-405 ETLs between Bellevue and Lynnwood) and SR 99 starting in FY 2019, were used to estimate each facility's share of total procurement costs without any year-to-year variations. This methodology accounts for the benefits that the new facilities derive from the new system even prior to tolling (in the case of SR 99) or during the assumed demand ramp-up period (in the case of I-405). After the current vendor procurement cycle, costs for future procurement cycles are allocated to each facility's forecasted transactions by year, with the Tacoma Narrows Bridge assumed to end tolls after FY 2032, and thus removed from the allocation formula. Although the forecast assumes a Gen 2 system capable of back office integration with WSF, WSF is not yet assumed to be part of the operations, and thus, costs for that customization are excluded since WSF doesn't contribute to procurement or operational costs.

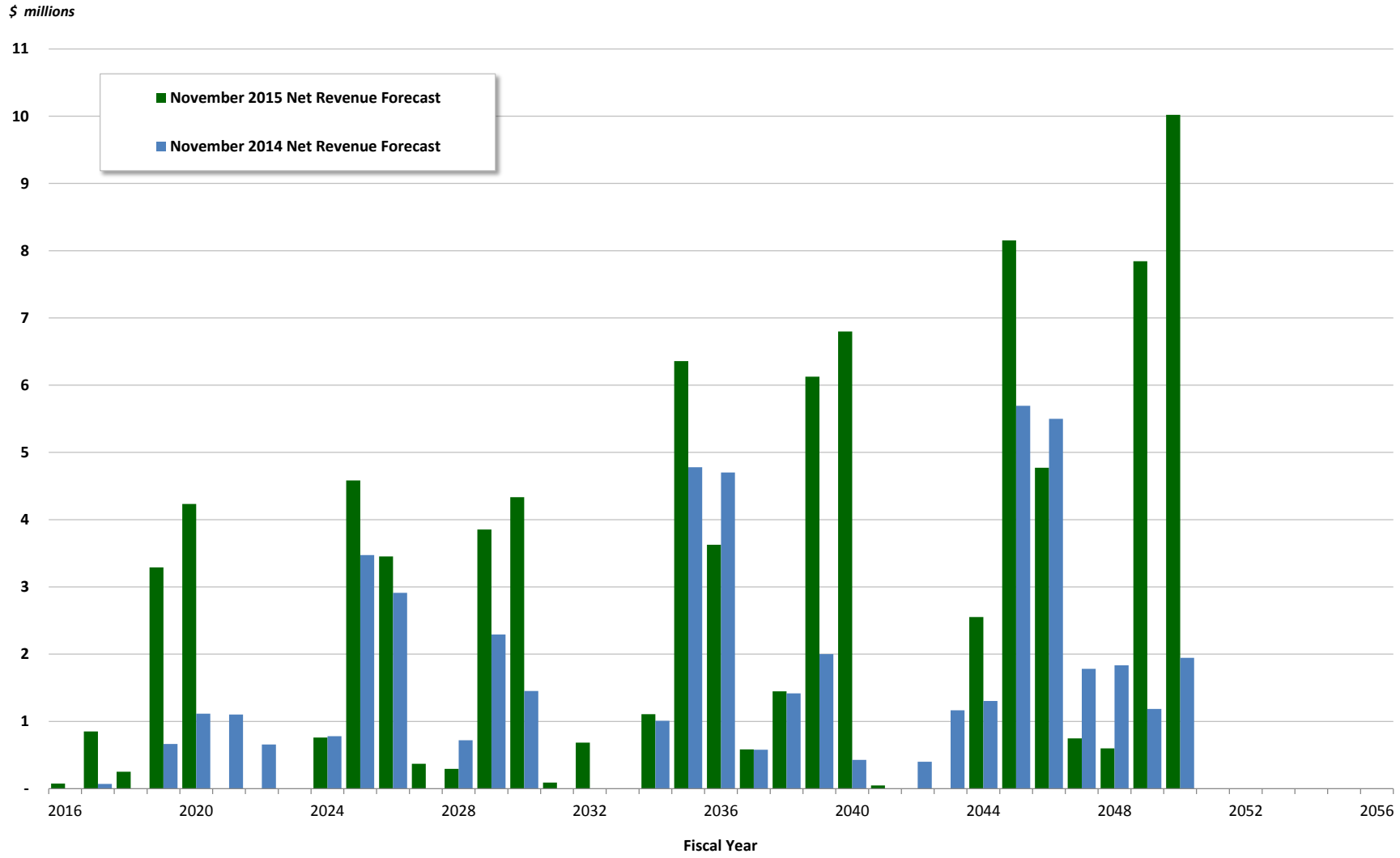
The vendor procurement cycle is expected to be repeated on a periodic basis throughout the forecast horizon, with different frequencies for systems software (10 years) and operations vendors (up to 6 years), as previously noted.

After the current procurement cycle, system betterments associated with systems software upgrades and enhancements are expected to be incurred periodically as R&R costs. Betterments can be associated with both improvements or upgrades requested by WSDOT or enhancements offered by the vendor. Based on historical experience, it is expected that costs associated with betterments will include WSDOT, WSDOT consultants and the system vendor, through change orders. Betterments are assumed to be $2.2 million in current dollars based on existing experience related to change-orders and system enhancements, occurring midway or five years into each 10 year systems software vendor contract. Costs are assumed to escalate by 2.5 percent per year to account for inflation.

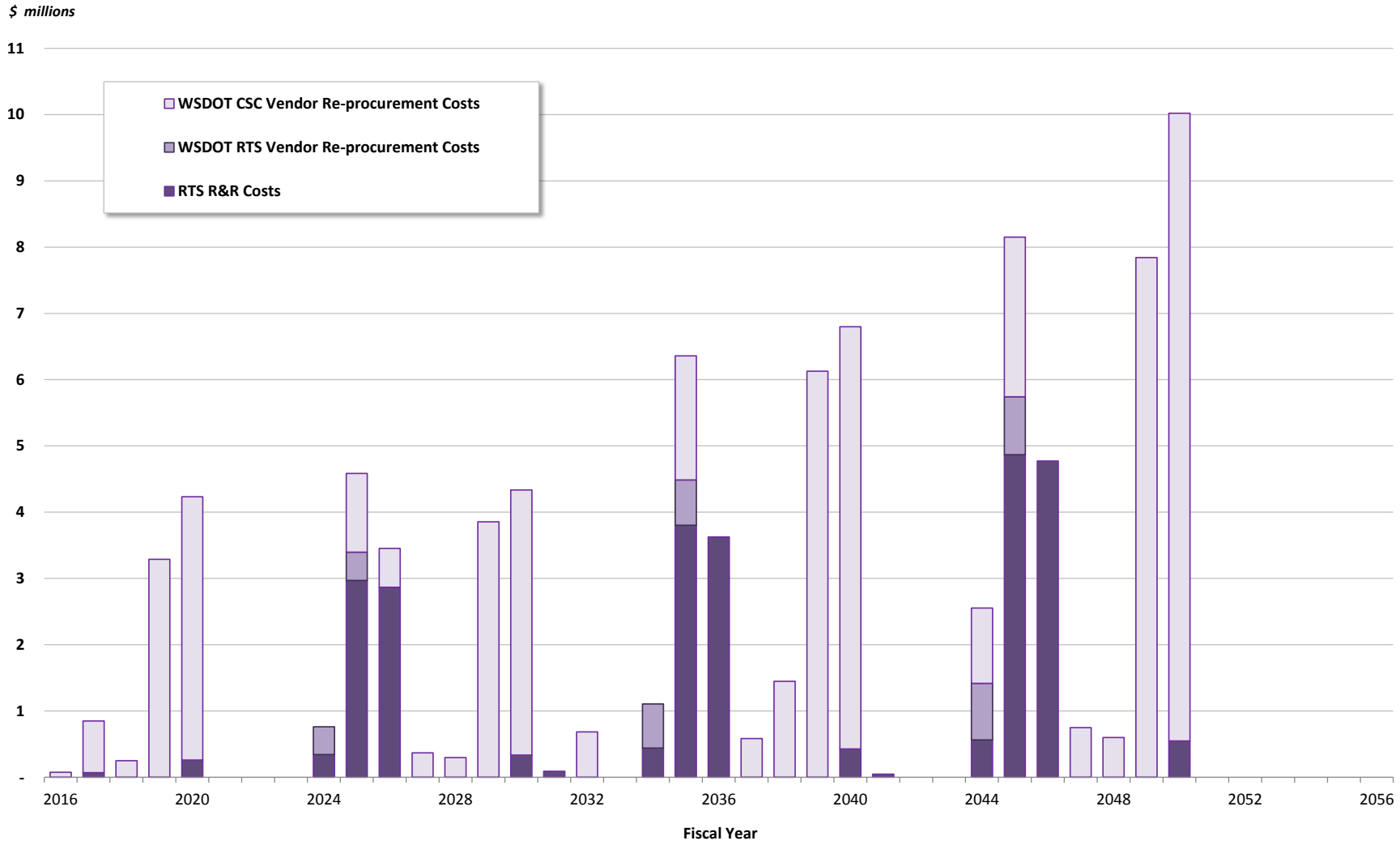
In summary, the November 2015 forecast for CSC R&R items, inclusive of revisions to the underlying procurement assumptions and revisions to allocations to account for removal of tolls on TNB starting in FY 2033, results in a total increase of $35 million over the forecast horizon in comparison to the November 2014 forecast estimates.

Exhibit 25 illustrates the total toll-related R&R costs for the November 2015 and previous November 2014 forecasts. Exhibit 26 further illustrates the composition of the November 2015 forecast values by the three categories of toll-related R&R costs.

## Exhibit 25: Toll Collection Repair and Replacement Cost Estimates by Forecast in YOE $ (FY 2016-56)



## Exhibit 26: November 2015 Forecast for Toll Collection Repair & Replacement Costs by Component in YOE $ (FY 2016-56)



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# Appendix A: Annual Toll Traffic & Revenue Projections

The T&R table provided on the following page as Exhibit 28 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. The table format for the November 2015 forecast varies slightly from the previous forecasts to account for a change in the treatment of credit card fees on transponders.

Key changes and additions to T&R table columns by forecast are shown in Exhibit 27 below, with (#) representing the table column number.

**Exhibit 27: Changes in the T&R Table Format across the Five Annual Net Revenue Forecasts**

| SEPTEMBER 2011 | SEPTEMBER 2012* | OCTOBER 2013 AND NOVEMBER 2014 | NOVEMBER 2015 |
|---|---|---|---|
| Gross Toll Revenue (11) | Gross Toll Revenue Potential (11) | *No change* | *No change* |
| Free Trip Incentive (12) | *No Change* | *Included in actuals for* Toll Payment Discounts & Fees (12) | *No change* |
| Self-Initiated Payment Incentives (13) | *No Change* | *Included in* Toll Payment Discounts & Fees (12) | *No change* |
| *Good To Go! Pay By Plate Fees (14)* | *Good To Go! Pay By Plate Surcharge (14)* | *Included in Toll Payment Discounts & Fees (12)* | *No change* |
| *Late Payment Fees (15)* | *No change* | *Pay By Mail Rebilling Fees (18)* | *No change* |
| *N/A* | *N/A* | *Gross Toll Revenue Collected (15)* | *No change* |
| *Uncollectible Transactions/Leakage (16)* | *Uncollectible Accounts (16)* | *Revenue Not Recognized (13), Unpaid Toll Revenue (14)* | *No change* |
| *N/A* | *N/A* | *Misc. Pledged Revenues (16)* | *No change* |
| *Recovered Toll & Fee Revenue (17)* | *No change* | *Recovered Toll Revenue (19), recovered fees included in Pay By Mail Rebilling Fees (18)* | *No change* |
| *Adjusted Gross Toll Revenues (18)* | *No change* | *Adjusted Gross Toll Revenue & Fees (20)* | *No change* |
| *Transponder Sales Revenue (19)* | *No change* | *Transponder Sales Revenue (17)* | *No change* |
| *Credit Card Fees (21)* | *Credit Card Fees (22)* | *Credit Card Fees (21)* | *Credit Card Fees (21): now excludes credit card fees from transponder sales* |
| *Transponder Purchase & Inventory Cost (20)* | *No change* | *Included in Toll Collection O&M (22)* | *Included in Toll Collection O&M (22); now includes credit card fees on transponder sales* |
| *Routine Toll Collection O&M Costs (22)* | *Toll Collection O&M Costs (22)* | *Toll Collection O&M Costs (22), now includes Transponder Purchase & Inventory Cost* | *No change* |
| *N/A* | *N/A* | *Periodic Toll Equipment and CSC Repair & Replacement Costs (28)* | *No change)* |
| 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) | *No change* |

* 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.

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# EXHIBIT 28: SR 520 TRAFFIC AND REVENUE TABLE – NOVEMBER 2015 FORECAST

## Annual Transactions, Gross Revenue, and Net Revenue FY 2012-56

**Revised 3/25/2016**

| | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | *Good To Go!* Accounts | | | Pay By Mail / No Account | | | | Toll Revenue Potential | | | Plus (Less): | Less: | Less: | | Plus (Less): | Plus: | Plus: | Plus: | | Less: | Less: | Less: | Less: | | Less: | Less: | Less: | |
| | Fiscal Year | Wtd. Average Toll per PCE Transaction (one-way)[1] | Annual Bridge Toll Transactions (millions)[2] | PCE Bridge Volumes (millions)[3] | Wtd. Average Toll per PCE Transaction (one-way)[1] | Annual Bridge Toll Transactions (millions)[2] | PCE Bridge Volumes (millions)[3] | Total Toll Transactions (millions)[4] | *Good To Go!* Pre-Paid Accounts ($ millions)[5] | Pay By Mail / No Account ($ millions)[6] | Total Gross Toll Revenue Potential ($ millions)[4] | Toll Payment Discounts and Fees ($ millions) [7, 8, 9] | Revenue Not Recognized ($ millions) [10, 11] | Unpaid Toll Revenue ($ millions) [10, 12] | Subtotal: Adjusted Gross Toll Revenue Collected ($ millions) | Misc. Pledged Revenues ($ millions) [13] | Transponder Sales Revenue ($ millions) [14] | Pay By Mail Rebilling Fees (2nd Invoice & Later Recovery) ($ millions) [15, 16] | Recovered Toll Revenue ($ millions) [17] | Subtotal: Adjusted Gross Toll Revenue & Fees ($ millions) | Credit Card Fees ($ millions) [18] | Toll Collection O&M Costs ($ millions) [19] | Routine Facility O&M Costs ($ millions) [20] | Bridge Insurance Premium ($ millions) [21] | Total Net Toll Revenue Before R&R ($ millions) | Payment of Deferred Sales Tax ($ millions) [22] | Periodic Facility Repair & Replacement (R&R) Costs ($ millions)[23] | Periodic Toll Equipment and CSC Repair & Replacement (R&R) Costs ($ millions)[24] | Total Net Toll Revenue After Deferred Sales Tax and Periodic R&R ($ millions) |
| Pre-Completion | 2012 | $2.66 | 7.95 | 8.05 | $3.96 | 1.66 | 1.69 | **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 | $2.78 | 16.92 | 17.01 | $4.19 | 3.30 | 3.35 | **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 | $2.85 | 17.69 | 17.77 | $4.23 | 3.27 | 3.31 | **20.96** | 50.57 | 14.02 | **64.59** | 0.86 | (1.68) | (3.27) | **60.50** | 0.21 | 0.50 | 1.51 | - | **62.72** | (1.08) | (7.98) | - | (2.52) | **51.14** | - | - | - | **51.14** |
| | 2015 | $2.93 | 18.43 | 18.52 | $4.19 | 3.59 | 3.62 | **22.02** | 54.21 | 15.17 | **69.38** | 1.02 | (3.82) | (2.64) | **63.95** | 0.51 | 0.55 | 1.60 | 0.89 | **67.49** | (1.20) | (9.16) | - | (2.22) | **54.91** | - | - | (0.35) | **54.56** |
| | 2016 | $3.00 | 19.36 | 19.47 | $4.50 | 3.53 | 3.58 | **22.89** | 58.42 | 16.07 | **74.49** | 1.19 | (3.13) | (3.49) | **69.07** | 0.57 | 0.78 | 1.33 | 0.82 | **72.56** | (1.21) | (11.86) | (1.31) | (2.26) | **55.90** | - | (0.01) | (0.08) | **55.82** |
| New Floating Bridge Operations | 2017 | $3.16 | 20.96 | 21.08 | $4.97 | 3.75 | 3.80 | **24.72** | 66.55 | 18.91 | **85.46** | 1.11 | (3.37) | (4.14) | **79.06** | 0.60 | 0.48 | 1.43 | 0.82 | **82.38** | (1.39) | (11.48) | (2.48) | (2.75) | **64.28** | - | (0.13) | (0.85) | **63.30** |
| | 2018 | $3.23 | 21.28 | 21.41 | $5.03 | 3.78 | 3.84 | **25.07** | 69.22 | 19.30 | **88.52** | 1.10 | (3.21) | (4.41) | **81.99** | 0.37 | 0.40 | 1.46 | 1.01 | **85.24** | (1.44) | (11.06) | (2.55) | (2.75) | **67.44** | - | (0.13) | (0.25) | **67.05** |
| | 2019 | $3.21 | 21.87 | 22.01 | $5.01 | 3.81 | 3.87 | **25.68** | 70.72 | 19.37 | **90.09** | 1.04 | (3.18) | (4.47) | **83.48** | 0.41 | 0.39 | 1.47 | 1.01 | **86.77** | (1.47) | (11.64) | (2.62) | (2.75) | **68.30** | - | (0.14) | (3.29) | **64.87** |
| | 2020 | $3.19 | 22.66 | 22.81 | $4.99 | 3.87 | 3.94 | **26.53** | 72.85 | 19.66 | **92.50** | 1.07 | (3.23) | (4.54) | **85.81** | 0.45 | 0.40 | 1.50 | 1.20 | **89.36** | (1.51) | (12.00) | (2.68) | (2.75) | **70.42** | - | (0.14) | (4.23) | **66.05** |
| | 2021 | $3.17 | 23.28 | 23.44 | $4.97 | 3.91 | 3.98 | **27.19** | 74.31 | 19.79 | **94.10** | 1.10 | (2.44) | (4.78) | **87.99** | 0.51 | 0.39 | 1.58 | 1.20 | **91.67** | (1.55) | (11.43) | (2.75) | (2.75) | **73.20** | - | (0.14) | - | **73.05** |
| | 2022 | $3.16 | 24.36 | 24.54 | $4.95 | 4.04 | 4.11 | **28.39** | 77.58 | 20.37 | **97.95** | 1.15 | (2.52) | (4.92) | **91.66** | 0.60 | 0.45 | 1.63 | 1.25 | **95.60** | (1.61) | (11.88) | (2.82) | (2.81) | **76.48** | - | (0.15) | - | **76.33** |
| | 2023 | $3.13 | 25.77 | 25.96 | $4.91 | 4.25 | 4.33 | **30.01** | 81.27 | 21.25 | **102.53** | 1.22 | (2.63) | (5.15) | **95.96** | 0.66 | 0.42 | 1.72 | 1.25 | **100.00** | (1.69) | (12.46) | (2.89) | (2.83) | **80.14** | (15.94) | (0.15) | - | **64.04** |
| | 2024 | $3.12 | 26.50 | 26.71 | $4.90 | 4.30 | 4.39 | **30.80** | 83.43 | 21.48 | **104.91** | 1.25 | (2.67) | (5.20) | **98.29** | 0.69 | 0.41 | 1.75 | 1.35 | **102.50** | (1.73) | (12.98) | (2.96) | (2.90) | **81.94** | (15.94) | (0.15) | (0.76) | **65.08** |
| | 2025 | $3.13 | 27.17 | 27.39 | $4.89 | 4.32 | 4.41 | **31.48** | 85.61 | 21.56 | **107.17** | 1.28 | (2.70) | (5.22) | **100.53** | 0.73 | 0.41 | 1.76 | 1.35 | **104.78** | (1.77) | (13.45) | (3.03) | (2.95) | **83.58** | (15.94) | (0.16) | (4.58) | **62.90** |
| | 2026 | $3.13 | 27.78 | 28.02 | $4.89 | 4.32 | 4.42 | **32.10** | 87.63 | 21.60 | **109.22** | 1.30 | (2.72) | (5.24) | **102.57** | 0.76 | 0.42 | 1.77 | 1.42 | **106.93** | (1.80) | (13.64) | (3.11) | (3.00) | **85.38** | (15.94) | (0.16) | (3.45) | **65.82** |
| | 2027 | $3.12 | 28.45 | 28.70 | $4.88 | 4.34 | 4.45 | **32.80** | 89.61 | 21.68 | **111.29** | 1.33 | (2.75) | (5.27) | **104.60** | 0.81 | 0.42 | 1.78 | 1.42 | **109.03** | (1.84) | (14.24) | (3.19) | (3.05) | **86.71** | (15.94) | (0.17) | (0.37) | **70.24** |
| | 2028 | $3.12 | 29.08 | 29.34 | $4.87 | 4.35 | 4.45 | **33.42** | 91.59 | 21.69 | **113.28** | 1.36 | (2.77) | (5.28) | **106.59** | 0.88 | 0.43 | 1.79 | 1.44 | **111.11** | (1.87) | (14.66) | (3.27) | (3.12) | **88.20** | (15.94) | (0.17) | (0.30) | **71.79** |
| | 2029 | $3.12 | 29.47 | 29.75 | $4.86 | 4.33 | 4.44 | **33.80** | 92.75 | 21.56 | **114.31** | 1.37 | (2.77) | (5.26) | **107.65** | 0.94 | 0.43 | 1.79 | 1.44 | **112.24** | (1.89) | (15.00) | (3.35) | (3.15) | **88.85** | (15.94) | (0.17) | (3.85) | **68.88** |
| | 2030 | $3.12 | 30.00 | 30.29 | $4.85 | 4.32 | 4.43 | **34.32** | 94.42 | 21.51 | **115.93** | 1.39 | (2.78) | (5.26) | **109.28** | 0.99 | 0.43 | 1.79 | 1.45 | **113.94** | (1.92) | (15.47) | (3.43) | (3.20) | **89.92** | (15.94) | (0.18) | (4.33) | **69.47** |
| | 2031 | $3.12 | 30.58 | 30.88 | $4.85 | 4.31 | 4.43 | **34.88** | 96.31 | 21.46 | **117.76** | 1.42 | (2.79) | (5.25) | **111.13** | 1.01 | 0.45 | 1.79 | 1.45 | **115.83** | (1.95) | (15.88) | (3.52) | (3.26) | **91.22** | (15.94) | (21.48) | (0.09) | **53.70** |
| | 2032 | $3.12 | 31.28 | 31.59 | $4.85 | 4.40 | 4.53 | **35.68** | 98.50 | 21.94 | **120.43** | 1.45 | (2.85) | (5.37) | **113.66** | 1.01 | 0.46 | 1.83 | 1.45 | **118.40** | (1.99) | (16.52) | (3.61) | (3.34) | **92.94** | (15.94) | (0.19) | (0.68) | **76.13** |
| | 2033 | $3.12 | 31.72 | 32.03 | $4.85 | 4.47 | 4.59 | **36.19** | 99.85 | 22.26 | **122.10** | 1.47 | (2.90) | (5.45) | **115.23** | 1.01 | 0.48 | 1.85 | 1.45 | **120.02** | (2.02) | (18.70) | (3.70) | (3.39) | **92.21** | - | (11.81) | - | **80.40** |
| | 2034 | $3.12 | 32.21 | 32.53 | $4.85 | 4.54 | 4.66 | **36.75** | 101.35 | 22.60 | **123.95** | 1.49 | (2.94) | (5.53) | **116.97** | 1.01 | 0.49 | 1.88 | 1.48 | **121.84** | (2.05) | (19.27) | (3.79) | (3.44) | **93.28** | - | (0.20) | (1.11) | **91.98** |
| | 2035 | $3.11 | 32.59 | 32.91 | $4.84 | 4.60 | 4.73 | **37.19** | 102.45 | 22.89 | **125.34** | 1.51 | (2.98) | (5.61) | **118.27** | 1.01 | 0.51 | 1.91 | 1.48 | **123.17** | (2.08) | (20.07) | (3.88) | (3.48) | **93.66** | - | (0.20) | (6.36) | **87.10** |
| | 2036 | $3.11 | 33.06 | 33.39 | $4.84 | 4.67 | 4.79 | **37.73** | 103.92 | 23.21 | **127.14** | 1.53 | (3.02) | (5.68) | **119.97** | 1.01 | 0.53 | 1.94 | 1.52 | **124.96** | (2.11) | (20.49) | (3.98) | (3.53) | **94.86** | - | (6.74) | (3.63) | **84.49** |
| | 2037 | $3.11 | 33.31 | 33.64 | $4.84 | 4.70 | 4.82 | **38.01** | 104.73 | 23.37 | **128.10** | 1.54 | (3.04) | (5.72) | **120.88** | 1.01 | 0.54 | 1.95 | 1.52 | **125.91** | (2.12) | (21.25) | (4.08) | (3.56) | **94.89** | - | (0.21) | (0.58) | **94.09** |
| | 2038 | $3.11 | 33.55 | 33.88 | $4.84 | 4.73 | 4.86 | **38.28** | 105.46 | 23.54 | **129.00** | 1.56 | (3.06) | (5.76) | **121.73** | 1.01 | 0.55 | 1.96 | 1.56 | **126.82** | (2.14) | (21.89) | (4.18) | (3.59) | **95.03** | - | (0.86) | (1.45) | **92.72** |
| | 2039 | $3.11 | 33.73 | 34.06 | $4.84 | 4.76 | 4.89 | **38.48** | 105.99 | 23.66 | **129.65** | 1.56 | (3.08) | (5.79) | **122.34** | 1.01 | 0.57 | 1.98 | 1.56 | **127.46** | (2.15) | (22.43) | (4.29) | (3.61) | **94.98** | - | (0.22) | (6.13) | **88.63** |
| | 2040 | $3.11 | 33.90 | 34.23 | $4.84 | 4.79 | 4.92 | **38.68** | 106.44 | 23.80 | **130.24** | 1.57 | (3.09) | (5.83) | **122.89** | 1.01 | 0.58 | 1.99 | 1.59 | **128.05** | (2.16) | (23.11) | (4.39) | (3.63) | **94.77** | - | (0.23) | (6.80) | **87.74** |
| | 2041 | $3.11 | 33.90 | 34.23 | $4.84 | 4.79 | 4.92 | **38.69** | 106.40 | 23.81 | **130.21** | 1.57 | (3.09) | (5.83) | **122.86** | 1.01 | 0.59 | 1.99 | 1.59 | **128.03** | (2.16) | (23.62) | (4.50) | (3.63) | **94.13** | - | (57.56) | (0.05) | **36.52** |
| | 2042 | $3.11 | 34.07 | 34.40 | $4.84 | 4.81 | 4.94 | **38.87** | 106.96 | 23.89 | **130.85** | 1.58 | (3.11) | (5.85) | **123.48** | 1.01 | 0.60 | 2.00 | 1.60 | **128.69** | (2.17) | (24.21) | (4.62) | (3.65) | **94.04** | - | (0.24) | - | **93.80** |
| | 2043 | $3.11 | 34.18 | 34.51 | $4.84 | 4.82 | 4.95 | **39.00** | 107.28 | 23.97 | **131.25** | 1.58 | (3.12) | (5.87) | **123.85** | 1.01 | 0.62 | 2.00 | 1.60 | **129.09** | (2.17) | (24.81) | (4.73) | (3.67) | **93.71** | - | (0.25) | - | **93.46** |
| | 2044 | $3.11 | 34.40 | 34.74 | $4.84 | 4.85 | 4.98 | **39.25** | 107.97 | 24.12 | **132.09** | 1.59 | (3.13) | (5.90) | **124.65** | 1.01 | 0.63 | 2.01 | 1.61 | **129.92** | (2.19) | (25.53) | (4.85) | (3.69) | **93.66** | - | (0.25) | (2.55) | **90.86** |
| | 2045 | $3.11 | 34.41 | 34.74 | $4.84 | 4.86 | 4.99 | **39.26** | 107.93 | 24.13 | **132.06** | 1.60 | (3.13) | (5.91) | **124.62** | 1.01 | 0.64 | 2.02 | 1.61 | **129.90** | (2.19) | (26.18) | (4.97) | (3.69) | **92.87** | - | (0.26) | (8.15) | **84.46** |
| | 2046 | $3.10 | 34.47 | 34.80 | $4.83 | 4.87 | 5.01 | **39.34** | 108.02 | 24.20 | **132.22** | 1.60 | (3.14) | (5.92) | **124.76** | 1.01 | 0.66 | 2.02 | 1.62 | **130.07** | (2.19) | (26.59) | (5.09) | (3.70) | **92.50** | - | (153.85) | (4.77) | **(66.12)** |
| | 2047 | $3.10 | 34.58 | 34.92 | $4.83 | 4.89 | 5.02 | **39.47** | 108.35 | 24.28 | **132.63** | 1.60 | (3.15) | (5.94) | **125.14** | 1.01 | 0.67 | 2.03 | 1.62 | **130.48** | (2.20) | (27.47) | (5.22) | (3.71) | **91.87** | - | (0.27) | (0.75) | **90.85** |
| | 2048 | $3.11 | 34.86 | 35.20 | $4.84 | 4.92 | 5.05 | **39.78** | 109.29 | 24.44 | **133.73** | 1.62 | (3.17) | (5.98) | **126.19** | 1.01 | 0.69 | 2.04 | 1.63 | **131.57** | (2.21) | (28.27) | (5.35) | (3.75) | **91.98** | - | (29.75) | (0.60) | **61.63** |
| | 2049 | $3.10 | 34.87 | 35.20 | $4.84 | 4.92 | 5.06 | **39.79** | 109.25 | 24.45 | **133.70** | 1.62 | (3.18) | (5.98) | **126.16** | 1.01 | 0.70 | 2.04 | 1.63 | **131.55** | (2.21) | (28.92) | (5.49) | (3.75) | **91.18** | - | (0.29) | (7.84) | **83.05** |
| | 2050 | $3.10 | 34.98 | 35.32 | $4.84 | 4.94 | 5.07 | **39.92** | 109.58 | 24.53 | **134.11** | 1.62 | (3.19) | (6.00) | **126.55** | 1.01 | 0.72 | 2.05 | 1.64 | **131.97** | (2.22) | (29.78) | (5.62) | (3.76) | **90.59** | - | (0.29) | (10.02) | **80.27** |
| | 2051 | $3.10 | 35.10 | 35.44 | $4.83 | 4.96 | 5.09 | **40.05** | 109.92 | 24.61 | **134.53** | 1.63 | (3.20) | (6.02) | **126.94** | 1.01 | 0.74 | 2.06 | 1.64 | **132.39** | (2.23) | (30.51) | (5.76) | (3.78) | **90.10** | - | (0.30) | - | **89.80** |
| | 2052 | $3.10 | 35.22 | 35.56 | $4.83 | 4.99 | 5.13 | **40.21** | 110.14 | 24.75 | **134.89** | 1.63 | (3.21) | (6.05) | **127.26** | 1.01 | 0.75 | 2.07 | 1.65 | **132.74** | (2.23) | (31.30) | (5.91) | (3.79) | **89.51** | - | (0.31) | - | **89.20** |
| | 2053 | $3.10 | 35.33 | 35.67 | $4.83 | 4.99 | 5.13 | **40.32** | 110.59 | 24.77 | **135.36** | 1.64 | (3.22) | (6.06) | **127.73** | 1.01 | 0.77 | 2.07 | 1.65 | **133.23** | (2.24) | (32.06) | (6.06) | (3.81) | **89.07** | - | (0.32) | - | **88.75** |
| | 2054 | $3.10 | 35.45 | 35.79 | $4.83 | 5.01 | 5.14 | **40.46** | 110.92 | 24.85 | **135.78** | 1.64 | (3.23) | (6.08) | **128.12** | 1.01 | 0.79 | 2.08 | 1.66 | **133.66** | (2.25) | (32.92) | (6.21) | (3.82) | **88.46** | - | (0.32) | - | **88.13** |
| | 2055 | $3.10 | 35.57 | 35.91 | $4.83 | 5.03 | 5.16 | **40.59** | 111.26 | 24.93 | **136.20** | 1.65 | (3.24) | (6.10) | **128.51** | 1.01 | 0.80 | 2.09 | 1.66 | **134.08** | (2.26) | (33.97) | (6.36) | (3.84) | **87.66** | - | (0.33) | - | **87.32** |
| | 2056 | $3.10 | 35.80 | 36.14 | $4.83 | 5.06 | 5.19 | **40.86** | 111.98 | 25.09 | **137.07** | 1.66 | (3.26) | (6.13) | **129.34** | 1.01 | 0.82 | 2.10 | 1.67 | **134.94** | (2.27) | (34.59) | (6.52) | (3.86) | **87.70** | - | (22.67) | - | **65.04** |
| **Totals FY 2012-16** | | | 80.35 | 80.82 | | 15.34 | 15.55 | **95.70** | 231.87 | 65.95 | **297.82** | 3.53 | (10.84) | (15.46) | **275.06** | 3.51 | 3.62 | 6.65 | 1.70 | **290.55** | (4.85) | (43.13) | (1.31) | (11.07) | **230.19** | - | (0.01) | (0.42) | **229.75** |
| **Totals FY 2017-46** | | | 889.96 | 897.98 | | 132.62 | 135.85 | **1,022.58** | 2,807.10 | 662.55 | **3,469.65** | 41.70 | (88.20) | (160.41) | **3,262.74** | 25.58 | 14.78 | 54.35 | 42.27 | **3,399.71** | (57.28) | (531.92) | (109.29) | (97.63) | **2,603.59** | (159.40) | (256.71) | (68.62) | **2,118.86** |
| **Totals FY 2016-56** | | | 1,261.07 | 1,272.58 | | 185.85 | 190.47 | **1,446.92** | 3,966.81 | 925.31 | **4,892.12** | 59.20 | (123.36) | (224.23) | **4,603.74** | 36.26 | 23.02 | 76.31 | 59.55 | **4,798.88** | (80.8) | (853.6) | (169.1) | (137.8) | **3,557.61** | (159.40) | (311.57) | (87.91) | **2,998.73** |

***Footnotes***

[1] Reflects the average revenue per passenger car equivalent (PCE) based on time-of-day variable weekday and weekend toll structures.

[2] Estimate prepared by CDM Smith; annual volume of vehicles subject to tolls in each travel direction; includes autos and trucks.

[3] Estimate prepared by CDM Smith; converts trucks with 3+ axles and vehicles with trailers to their passenger car equivalent (PCE) based on an axle-count multiple of the auto toll (e.g., 4 axles = 2x the auto toll).

[4] Total toll traffic and gross toll revenue potential projections (and components by payment method) are inclusive of proposed closures for construction and toll equipment installation in the corridor (FY 2016-25); actual gross toll revenue potential for FY 2015 may be subject to change with final audited financial statements.

[5] Estimate prepared by CDM Smith; gross toll revenue potential from pre-paid Good To Go! accounts before any adjustments for uncollectible revenue, fees, and credits.

[6] Estimate prepared by CDM Smith; gross toll revenue potential from customers w/o prepaid accounts before adjustments as noted above. Forecast period Pay By Mail toll increment is $2.00.

[7] Actual values include one-time toll incentive credits for FY 2012 with a carry-over amount into FY 2013.

[8] Actual and forecast values include a $0.50 short-term account discount for non-*Good To Go!* account customers who self-initiate payment prior to the mailing of a toll bill.

[9] Includes the $0.25 per transaction fee charged for pre-paid *Good To Go!* Pay By Plate transactions; fee assumed to be constant with no annual escalation.

[10] Actual leakage refects classification methods in place at the time of reporting, with Good To Go! leakage transactions currently valued at the Pay By Mail rate.

[11] Accounting policies do not recognize potential revenue from transactions for which the vehicle owner and address cannot be identified, including unreadable license plates.

[12] Recognized revenue for toll bills that remain unpaid after 80 days (two billing cycles) from the travel date and prior to any later recovery via the Civil Penalty adjudication process.

[13] Miscellaneous pledged revenues include contractual liquidated damages (LDs), interest earnings, and surplus property sales. Only interest earnings and known LDs are forecasted.

[14] Anticipated revenues from transponder sales; forecast values are set equal to transponder purchase, inventory, and testing costs plus credit card fees included within column 22 costs.

[15] Late payment rebilling fee of $5 per invoice assessed to Pay By Mail customers who fail to pay first invoice; includes fees recovered through civil penalty process with a six-month average recovery lag assumed; no annual escalation assumed.

[16] Actual values also include statement and $30 NSF fees (not forecasted), and exclude misc. pledged revenues, which are shown in column 16.

[17] Toll revenues recovered through Notice of Civil Penalty process with a six-month average recovery lag assumed. Amount recovered within a biennium are appropriated in the following biennium, equally distributed over two years. FY's 2015-17 include actual and anticipated transfers of accumulated recovered tolls from FY's 2012-15.

[18] Credit card fees estimated at 2% of applicable gross toll revenues collected via bank card; additional factor included for fees related to account refunds.

[19] CSC and RTS vendor costs, State operations costs (printing/postage, accounting, marketing, vendor oversight, and transponders).

[20] Facility O&M costs are partialy paid from tolls in FY 2016 and fully paid from tolls thereafter. Facility O&M costs covered by the existing maintenance program prior to FY 2017 are not shown.

[21] Insurance coverage includes property damage on all bridge structures and business interruption coverage (for lost revenues), plus SR 520's share of statewide brokerage fees.

[22] Reflects the payment of construction sales tax on the Floating Bridge and Eastside plus West Approach Bridge projects deferred during construction.

[23] Includes facility R&R costs for the floating bridge structures, ATM equipment, federal required bridge inspections, and other periodic activities and excludes amounts for typical highway costs on the at-grade portion of the corridor from the east bridge landing to I-405 (i.e., roadway repaving), which would be funded from the WSDOT Preservation ("P") Program.

[24] Includes periodic vendor re-procurement, system testing and acceptance, and toll equipment replacement costs; amounts assumed to be fully funded by tolls.

***General Notes***

– Revised Traffic and Gross Revenue Projections prepared by CDM Smith (CDMS), dated 3/2/2016.

– Tolling started December 29, 2011 (mid FY 2012).

– Weekday and weekend toll rates were escalated at 2.5% per year through FY 2016, including nickel rounding of all toll rates starting with FY 2014.

– A 5% toll increase is assumed in FY 2017, followed by another 5% plus night tolling in FY 2018 in order to meet forecast period financial plan requirements.

– FY 2016-21 O&M and R&R cost values may differ from the WSDOT proposed decision package budget requested amounts due to updated T&R forecasts and cost allocation assumptions.

– Table values include more precision than displayed.

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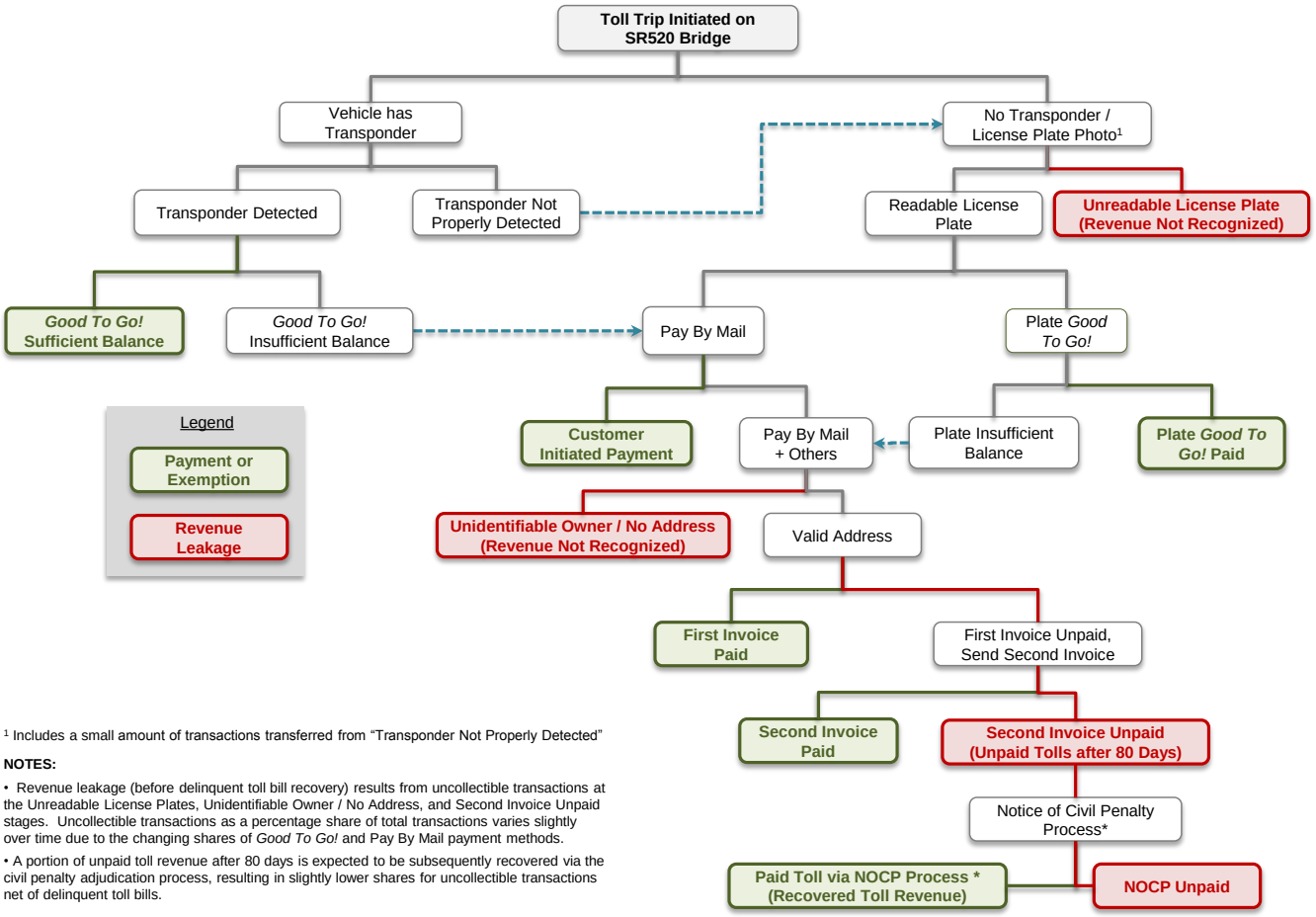
# Appendix B: Toll Payment Activity Workflow

### Exhibit 29: SR 520 Toll Transaction Activity Workflow—November 2015 Forecast




[1] Includes a small amount of transactions transferred from "Transponder Not Properly Detected"

**NOTES:**

- Revenue leakage (before delinquent toll bill recovery) results from uncollectible transactions at the Unreadable License Plates, Unidentifiable Owner / No Address, and Second Invoice Unpaid stages. Uncollectible transactions as a percentage share of total transactions varies slightly over time due to the changing shares of *Good To Go!* and Pay By Mail payment methods.
- A portion of unpaid toll revenue after 80 days is expected to be subsequently recovered via the civil penalty adjudication process, resulting in slightly lower shares for uncollectible transactions net of delinquent toll bills.

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# Appendix C: List of Facility Maintenance Activities

**Exhibit 30: 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 | Storm water Treatment Facility (Each) |
| Litter Pickup | Shoulder mile |
| 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 |
| Raised/Recessed Pavement Marker Maintenance | |
| *Raised* | *Each* |
| Pavement Marking Maintenance | Each |
| Regulatory Sign Maintenance | Each |
| Guide Sign Maintenance | Each |
| Guardrail Maintenance | |
| *Concrete Barrier* | *Linear Feet of Concrete Barrier* |
| Highway Lighting Systems Operations | Each |
| Toll Equipment Power | Annual Lump Sum |
| Under-Lid Lighting Operations | Annual Lump Sum |
| Intelligent Transportation Systems Operations | |
| *Closed Circuit Television* | *Each* |
| *Variable Message/Changeable Sign* | *Each* |
| *Data Station System* | *Each* |
| 3rd Party (unknown) Damages | Lane Mile |
| Wetland Mitigation Sites | Acres |
| ATM Sign Structures | Each |
| Static Sign Structures | Each |
| Noise Walls | Linear Feet |
| Fish Culverts | Each |
| Sidewalk | Linear Feet |
| Locates (all disciplines) | Each |
| Retaining Wall | Linear Feet |

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