

SR 520 Bridge Net Toll Revenue Report 2018 Update

March 29, 2019

Prepared for:
**Washington State
Department of Transportation**

Prepared by:
WSP USA



**Washington State
Department of Transportation**



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Disclaimer

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

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This report does not constitute a recommendation on the part of WSP or WSDOT.

Acronyms and Abbreviations

| | |
|-------|---|
| ACH | Automated Clearing House |
| ADA | Americans with Disabilities Act |
| AFS | Accounting and Financial Services |
| CPR | Customer Program for Resolution |
| CSC | Customer Service Center |
| DES | Department of Enterprise Services |
| DOL | Department of Licensing |
| ETL | Express Toll Lane |
| FTE | full time equivalent |
| GTC | General Toll Consultant |
| HOV | High Occupancy Vehicle |
| IT | Information Technology |
| LES | Law Enforcement Systems |
| NOCP | Notice of Civil Penalty |
| OEO | Office of Equal Opportunity |
| RTS | Roadside Toll System |
| SR | State Route |
| STA | Short Term Account |
| TNB | Tacoma Narrows Bridge |
| WSDOT | Washington State Department of Transportation |
| WSTC | Washington State Transportation Commission |
| YOE | Year of Expenditure |

1 | Introduction and Key Forecast Changes

Background and Purpose

This report documents the preparation of the “November 2018 forecast” of net toll revenues for the State Route (SR) 520 Bridge across Lake Washington. The forecasts presented herein reflect the current toll rates and policies adopted by the Washington State Transportation Commission (WSTC), with the most recent changes going into effect on July 1, 2017. This *SR 520 Net Toll Revenue Report—2018 Update* builds upon previous annual forecasts, including the most recent “November 2017 forecast” and accompanying *SR 520 Bridge Net Toll Revenue Report—2017 Update*, dated February 8, 2018. Commencing with the 2017 update, WSDOT’s statewide traffic and revenue consultant, Stantec, is contracted to provide traffic and gross toll revenue potential forecasts for the SR 520 Bridge. Currently available 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 2017 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 meet its financial obligations in compliance with the bond covenants in Section 7.02(a) of Master Resolution number 1117, and to support the WSTC should they opt to revise any toll rates or policies beyond those already in place as of July 1, 2017.

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 38 years, extending from FY 2019 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 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 September 2016 final bond sale, 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.

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.

Subsequent amendments to the 2015 traffic and revenue forecasts were completed in March 2016 to capture revised future toll rates and policies proposed and subsequently adopted by the WSTC. Specifically, previously planned step increases in weekday toll rates ranging from 12 to 18 percent by time of day plus a 2.5 percent increase on weekends was replaced with two 5 percent toll increases in FY 2017 and FY 2018, covering both weekdays and weekends. In addition, the night tolling from 11 PM to 5 AM was deferred one year from FY 2017 to FY 2018. Finally, the WSTC opted to maintain the current transit and registered vanpool exemptions, but not extend a toll exemption to carpools with three or more occupants, as originally assumed when the new floating bridge with HOV lanes opened in April 2016. The net revenue projections were similarly amended on March 25, 2016 and provided in support of toll rate setting activities and an update to the SR 520 financial plan.

November 2016 Forecast

CDM Smith’s 2016 traffic and gross toll revenue projections capture a number of minor refinements, including updated population and employment forecasts, actual patterns that reflect slight shifts in traffic by time of day and day of week, updated construction closure assumptions for FY 2017, the addition of impacts due to construction closures on the parallel I-90 bridge, and a slight reduction in the *Good To Go!* account share of total transactions. Overall, these changes result in lower traffic and revenue through FY 2025, and slightly higher values thereafter.

November 2017 Forecast

In early 2017, the State contracted with Stantec to provide the November 2017 SR 520 traffic and revenue forecast. Stantec provided the updated traffic and revenue forecasts in late October 2017, and these forecasts form the basis for the net revenue projections documented in the *SR 520 Bridge Net Toll Revenue Report—2017 Update*. Stantec’s traffic and gross toll revenue potential forecasts are based on their proprietary traffic and revenue forecasting tools and processes and reflect different sources of information and assumptions for population and employment forecasts, users’ values of time, and toll payment method shares for *Good To Go!* account transponder pass and Pay By Plate transactions as well as Pay By Mail transactions. Compared to the previous November 2016 forecast prepared by CDM Smith, Stantec’s November 2017 forecast had slightly lower toll transactions over the full forecast horizon and lower gross toll revenue potential estimates in most years, with the exceptions of FY 2019 where the number of construction closure days was revised downward, and the four years at the end of the horizon, FYs 2053-56.

November 2018 Forecast

Stantec’s 2018 traffic and gross toll revenue projections reflect revised socioeconomic and demographic projections and model adjustments to more accurately align with recent actual experience, including payment splits and differentials in average toll rates between payment methods. The change in payment split assumptions and revisions to the construction schedule to reflect an additional year of restricted capacity in FY 2027 due to expected delays in the completion of the Portage Bay Bridge and I-5 Connector, partially offset the revenue gains attributed to higher average toll rates and increased traffic. Overall, these changes result in higher traffic and gross toll revenue potential in all years of the forecast period.

Collectively, the amended traffic and gross toll revenue forecasts and accompanying net toll revenue projections are referred to as the “November 2018 forecast.” Exhibit 1 below 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

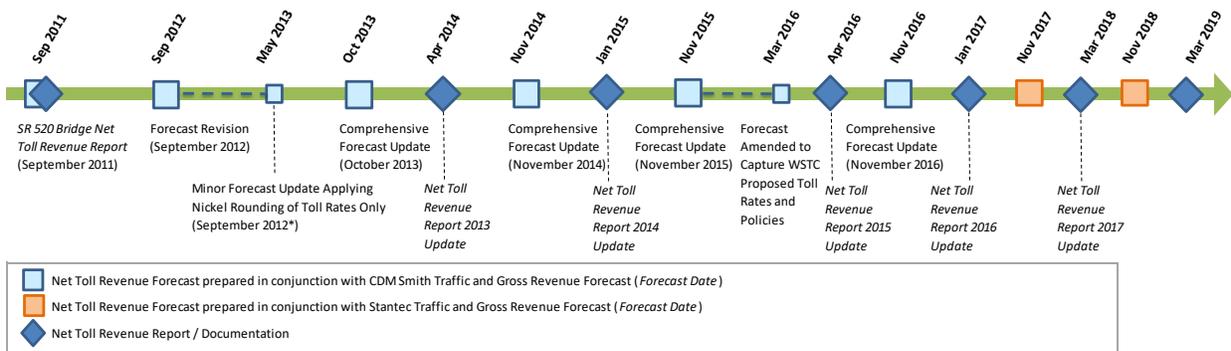


Exhibit 2 shows the weekday two-axle vehicle *Good To Go!* pass toll rate schedules over time, including the last WSTC rate increases that went into effect for FY 2018 on July 1, 2017. Exhibit 3 provides the corresponding weekend toll rates for the same time periods.

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

2.5% Increases + Sequential Nickel Rounding through FY 2016 | 5% Increases in FY 2017 & FY 2018 | Night Tolling in FY 2018

| 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 | \$0.00 |
| FY 2013 | +2.5% (No Rounding) | \$1.64 +2.5% | \$2.87 +2.5% | \$3.59 +2.6% | \$2.87 +2.5% | \$2.31 +2.7% | \$2.87 +2.5% | \$3.59 +2.6% | \$2.87 +2.5% | \$2.31 +2.7% | \$1.64 +2.5% | \$0.00 |
| FY 2014 | +2.5% with Nickel Rounding | \$1.70 +3.7% | \$2.95 +2.8% | \$3.70 +3.1% | \$2.95 +2.8% | \$2.35 +1.7% | \$2.95 +2.8% | \$3.70 +3.1% | \$2.95 +2.8% | \$2.35 +1.7% | \$1.70 +3.7% | \$0.00 |
| FY 2015 | +2.5% with Nickel Rounding | \$1.75 +2.9% | \$3.00 +1.7% | \$3.80 +2.7% | \$3.00 +1.7% | \$2.40 +2.1% | \$3.00 +1.7% | \$3.80 +2.7% | \$3.00 +1.7% | \$2.40 +2.1% | \$1.75 +2.9% | \$0.00 |
| FY 2016 | +2.5% with Nickel Rounding | \$1.80 +2.9% | \$3.10 +3.3% | \$3.90 +2.6% | \$3.10 +3.3% | \$2.45 +2.1% | \$3.10 +3.3% | \$3.90 +2.6% | \$3.10 +3.3% | \$2.45 +2.1% | \$1.80 +2.9% | \$0.00 |
| FY 2017 | +5.0% with Nickel Rounding | \$1.90 +5.6% | \$3.25 +4.8% | \$4.10 +5.1% | \$3.25 +4.8% | \$2.55 +4.1% | \$3.25 +4.8% | \$4.10 +5.1% | \$3.25 +4.8% | \$2.55 +4.1% | \$1.90 +5.6% | \$0.00 |
| FY 2018+ | +5.0% and Night Tolling with Nickel Rounding | \$2.00 +5.3% | \$3.40 +4.6% | \$4.30 +4.9% | \$3.40 +4.6% | \$2.70 +5.9% | \$3.40 +4.6% | \$4.30 +4.9% | \$3.40 +4.6% | \$2.70 +5.9% | \$2.00 +5.3% | \$1.25 |

Note: • Pay By Mail toll rates are higher than the *Good To Go!* rates above, ranging from \$1.50 in FY 2012 to \$2.00 higher for FY 2017 and beyond.

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

2.5% Increases + Sequential Nickel Rounding through FY 2016 | 5% Increases in FY 2017 & FY 2018 | Night Tolling in FY 2018

| 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 | \$0.00 |
| FY 2013 | +2.5% (No Rounding) | \$1.13 +2.7% | \$1.69 +2.4% | \$2.26 +2.7% | \$1.69 +2.4% | \$1.13 +2.7% | \$0.00 |
| FY 2014 | +2.5% with Nickel Rounding | \$1.15 +1.8% | \$1.75 +3.6% | \$2.30 +1.8% | \$1.75 +3.6% | \$1.15 +1.8% | \$0.00 |
| FY 2015 | +2.5% with Nickel Rounding | \$1.20 +4.3% | \$1.80 +2.9% | \$2.35 +2.2% | \$1.80 +2.9% | \$1.20 +4.3% | \$0.00 |
| FY 2016 | +2.5% with Nickel Rounding | \$1.25 +4.2% | \$1.85 +2.8% | \$2.40 +2.1% | \$1.85 +2.8% | \$1.25 +4.2% | \$0.00 |
| FY 2017 | +5.0% with Nickel Rounding | \$1.30 +4.0% | \$1.95 +5.4% | \$2.50 +4.2% | \$1.95 +5.4% | \$1.30 +4.0% | \$0.00 |
| FY 2018+ | +5.0% and Night Tolling with Nickel Rounding | \$1.40 +7.7% | \$2.05 +5.1% | \$2.65 +6.0% | \$2.05 +5.1% | \$1.40 +7.7% | \$1.25 |

Note: • Pay By Mail toll rates are higher than the *Good To Go!* rates above, ranging from \$1.50 in FY 2012 to \$2.00 higher for FY 2017 and beyond.
• The weekend toll schedule will apply on the following holidays when occurring on a weekday: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

The November 2018 forecast assumes all of the same toll rates and policies of the previous forecast, including the financial planning assumption that there would be no further planned toll increases over the forecast horizon. While WSTC may opt to revise the toll schedule or policies at a future date between now and FY 2056, the SR 520 financial plan does not require any further toll increases if the net revenue projections are met.

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 West Connection Bridge Project;
- 4) West Approach Bridge North; and
- 5) I-5 to Lake Washington (Rest of the West), which includes the West Approach Bridge South.

The total program cost is currently estimated at \$4.51 billion, all of which is now funded. The final element of the \$2.90 billion portion of the program that includes toll funding — the West Approach Bridge North — was completed in late summer of 2017, and with the bike/pedestrian connection completed in December 2017. Essentially, these program components with toll funding have replaced the existing four-lane floating bridge and upgraded 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 included \$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 \$24 million balance of needed funding as \$14 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, primarily during weekend and night periods between 11:00 PM and 5:00 AM through operational completion.

Exhibit 4: SR 520 Bridge Replacement and HOV Program Map



Note: this Project Map does not identify the cities of Aberdeen, Kenmore, and Tacoma elsewhere in the state where pontoon development and construction previously occurred under the SR 520 Floating Bridge design-build contract.

WSDOT 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

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)

variable tolling was implemented to manage congestion on the corridor, using all-electronic tolling with no toll booths.

More information including costs, benefits, 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 2018 Net Revenue Projections

This section highlights the key changes to the November 2018 net revenue forecast results compared with the previous November 2017 and initial September 2011 projections, measured over a common forecast horizon from FY 2019 through FY 2056. Exhibit 5 compares the primary components of the November 2018 forecast with the initial September 2011 forecast.

Exhibit 5: Gross to Net Revenue Comparison—September 2011 vs November 2018 (FY 2019-56)

| Forecast Category (#) = T&R table column reference | Sep 2011 Forecast (\$ millions) | Nov 2018 Forecast (\$ millions) | Variance (\$ millions) | Variance (%) |
|---|------------------------------------|------------------------------------|---------------------------|-----------------|
| Total Toll Transactions (8) | 1,346.6 | 1,420.6 | 74.0 | +5.5% |
| Gross Toll Revenue Potential (11) | 4,730.4 | 4,903.3 | 172.9 | +3.7% |
| Subtotal: Revenue Adjustments | (68.7) | (69.9) | (1.2) | +1.8% |
| Subtotal: O&M Costs | (1,410.8) | (1,453.0) | (42.2) | +3.0% |
| Net Toll Revenue (26) | 3,250.9 | 3,380.4 | 129.5 | +4.0% |
| Subtotal: R&R Costs + Deferred Sales Tax | (357.6) | (570.0) | (212.4) | +59.4% |
| Total after Deferred Sales Tax and R&R | 2,893.3 | 2,810.3 | (82.9) | -2.9% |

Exhibit 6 compares the primary components of the November 2018 forecast with the most recent November 2017 forecast.

Exhibit 6: Gross to Net Revenue Comparison—November 2017 vs November 2018 (FY 2019-56)

| Forecast Category (#) = T&R table column reference | Nov 2017 Forecast (\$ millions) | Nov 2018 Forecast (\$ millions) | Variance (\$ millions) | Variance (%) |
|---|------------------------------------|------------------------------------|---------------------------|-----------------|
| Total Toll Transactions (8) | 1,336.8 | 1,420.6 | 83.9 | +6.3% |
| Gross Toll Revenue Potential (11) | 4,613.2 | 4,903.3 | 290.1 | +6.3% |
| Subtotal: Revenue Adjustments | (63.8) | (69.9) | (6.1) | +9.5% |
| Subtotal: O&M Costs | (1,290.0) | (1,453.0) | (163.0) | +12.6% |
| Net Toll Revenue (26) | 3,259.3 | 3,380.4 | 121.0 | +3.7% |
| Subtotal: R&R Costs + Deferred Sales Tax | (562.4) | (570.0) | (7.6) | +1.4% |
| Total after Deferred Sales Tax and R&R | 2,697.0 | 2,810.3 | 113.4 | +4.2% |

Traffic and Gross Revenues

- Total toll transactions for Stantec’s current November 2018 forecast over a comparable FY 2019-56 forecast horizon are 5.5 percent higher than the CDM Smith forecast projected in September 2011 and 6.3 percent higher than the previous Stantec November 2017 forecast.
 - Over the forecast horizon, Pay By Mail transactions are 1.3 percent lower, while *Good To Go!* account transactions are 6.4 percent higher, than the previous forecast.
- Over the near-term (FY 2019-32), the current toll transaction forecast is 5.9% above the November 2017 forecast. Gross toll revenue potential for the current November 2018 forecast is 3.7 percent higher than the initial September 2011 forecast, compared with 6.3 percent higher than the previous November 2017 forecast over the forecast horizon.
- Additional information regarding the changes in the November 2018 traffic and gross toll revenue potential forecasts can be found in Stantec’s report, *SR 520 Bridge Traffic and Revenue Study Update*, dated March 26, 2019.

Revenue Adjustments

- Revenue adjustments in the November 2018 forecast total \$69.9 million, which is \$1.2 million or 1.8 percent higher over the forecast horizon than the initial September 2011 forecast, and \$6.1 million or 9.5 percent less than the November 2017 forecast.
- The share of *Good To Go!* account holders using the Pay By Plate option in FY 2020 was estimated in the September 2011 forecast to be 8.5 percent of *Good To Go!* transactions, providing approximately \$0.46 million in Pay By Plate fees. Updates since the September 2011 forecast include a significant increase in the number of *Good To Go!* account holders using the Pay By Plate option and corresponding revenue generated from the \$0.25 Pay By Plate fee. The Pay By Plate shares of total annual transactions were further revised upwards in the November 2018 forecast to better align with actual experience, with a projected *Good To Go!* Pay By Plate share of 22.7 percent of total transactions, up from 21.5 percent in the 2017 forecast, and 26.5 percent of all *Good To Go!* transactions in FY 2020. In dollar terms, Pay By Plate fees are expected to total \$1.45 million in FY 2020, or more than three times as much as originally estimated in the September 2011 forecast.
- The November 2018 forecast includes an increase in the assumption for uncollectible revenue (leakage) associated with revenue not recognized due to unreadable license plates over the November 2017 forecast, and no change in the assumed rate of unidentified owners/addresses. The forecast adjustment in unreadable license plate leakage accounts for recent actual experience and includes a revision to the reduction in leakage previously assumed with the new customer service center (CSC) vendor contracts for both systems software and operations. The following assumptions were applied in the November 2018 forecast.
 - The percentage share of unreadable license plates is assumed to be 7.0 percent in FY 2019, 6.5 percent in FY 2020, and 6.0 percent in FY 2021 and beyond with full transition to the new CSC vendors. The previous November 2017 forecast assumed a rate of 5.5 percent in FY 2019, decreasing to a steady state of 4.5 percent by FY 2021. The higher rate of assumed leakage in the 2018 forecast is a result of higher reported rates of leakage through FY 2018 and the nature of the leakage which is increasingly attributed to license plate image capture

- issues with the lane-side equipment, such as sun glare/shadows distorting the license plate images, rather than CSC vendor performance.
- In working with the equipment vendor, WSDOT has seen improvements in plate image readability in recent months, and if the trend continues over the course of a full year, those trends may inform future leakage forecasts.
 - The percentage share of unidentified owners/addresses remains the same as in the November 2018 forecast. The FY 2019 rate is expected to be maintained at the FY 2018 level of 10.5 percent, consistent with actual FY 2018 rates under the current CSC vendor. With transition to the new CSC vendors, the rate is expected to drop to 7.5 percent in FY 2020, and then 4.5 percent thereafter, which is more aligned with industry best practices. The current assumptions remain below the 15 percent unidentified owners/addresses rate assumed in the September 2011 forecast.
 - Miscellaneous pledged revenues, which for the current forecast are limited to interest earnings, are \$34.0 million or 111.0 percent higher than forecast in November 2017 due to a combination of higher account balances over the forecast horizon resulting from the higher net toll revenue forecast, and an increase in the assumed earnings interest rate from 0.5 to 0.9 percent per year.
 - The miscellaneous pledged revenues forecast does not include any revenue anticipated from the sale of the Aberdeen Pontoon Casting Basin property that was in final negotiation but was not completed at the time the November 2018 forecast was finalized.
 - With completion of the sale contract, payments commenced in January 2019 and will be \$32,139.73 per month for principal and interest for 240 months, to be captured in future forecast updates.

Operating and Maintenance Costs

- Compared to the September 2011 forecast, overall O&M costs in the November 2018 forecast are \$42.2 million higher (3.0 percent) over the forecast horizon. Key changes include:
 - Higher state operations costs
 - Higher bridge insurance premiums
 - Higher CSC vendor costs
- Compared to the November 2017 forecast, overall O&M costs for the November 2018 forecast including insurance and credit card fees, are \$163.0 million (12.6 percent) higher over the forecast horizon, with the following changes noted:
 - Increased share of systemwide costs allocated to SR 520 due to higher SR 520 traffic and revenue forecasts and lower forecasts on other facilities
 - Higher CSC vendor costs
 - Higher state costs
 - Higher state costs, and vendor pass-through costs
 - Increased cost for bulk rate mail sorting for toll bills and fewer toll transactions per toll bill, increasing the volume of mailings
 - Higher negotiated rates by the new CSC vendor for out-of-state vehicle owner name and address license plate lookups than had previously been anticipated

- Increased share of CSC vendor costs allocated to toll collection activities funded from tolling rather than civil penalty adjudication activities funded from civil penalty fees and exclude from the definition of net toll revenues for SR 520
- Higher bridge insurance premiums
- Higher credit card fees due to higher processing costs and higher forecasted revenues

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 2018 forecast for net toll revenues is \$3.38 billion over the forecast horizon.
 - This is 4.0 percent (\$129.5 million) higher than the original September 2011 forecast.
 - Compared to the November 2017 forecast, the current forecast is 3.7 percent (\$121.0 million) higher over the FY 2019-56 forecast horizon.

Other Project Uses of Toll Revenues

- The original projection for total deferred sales tax to be repaid with toll revenues was \$124.2 million in the September 2011 forecast, to be paid in 10 equal installments starting with FY 2022. 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, bringing the total to \$159.4 million for the November 2013 and 2014 forecasts. The November 2015 forecast revised the 10-year payment schedule for deferred sales tax payments, deferring the first payment by one additional year to FY 2023. This change accounts for a revised completion schedule for the toll-funded West Approach Bridge North, with no change in the amount (deferred sales tax payments begin in the fifth full year following operational completion). There were no further changes for the November 2016, 2017, or 2018 forecasts.
- Periodic facility repair and replacement (R&R) costs for the items specifically identified to be paid from toll revenues in the November 2018 forecast total \$302.6 million over the forecast horizon. This represents an increase of 40 percent (\$86.2 million) from the original September 2011 forecast, and a no change scenario compared to the previous November 2016 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.
 - There are no changes to the facility R&R estimates from the November 2017 forecast.
- The November 2018 forecast for toll collection R&R costs totals \$108 million, which is \$91 million higher than the original September 2011 and about 7.6 percent higher than the November 2017 forecast.
 - A revised assumption since the initial September 2011 forecast has the State costs for periodically procuring, testing, and transitioning to new CSC systems software, CSC operations, and Roadway Toll Systems (RTS) vendor contracts paid from tolls (shared across all toll facilities), and accounts for the \$91 million of the forecast period increase since September.

- Upward revisions to SR 520's periodic procurement costs, due to revised cost allocation shares for the systems software and operations CSC vendor contracts, account for the 7.6 percent or \$7.6 million forecast period increase compared with the November 2017 forecast.

Summary of Changes in Projected Net Revenue

Exhibit 7 below compares the current November 2018 forecast, item by item, with the previous November 2017 forecast over the 38-year forecast horizon. Starting with gross toll revenue potential, the table lists the period totals for each revenue adjustment and expenditure deduction that collectively yield net toll revenue. Each component in the table includes its column number reference (#) in the November 2018 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 7: Net Revenue Component Comparison—November 2017 / November 2018 (FY 2019-56)

| Forecast Category (#) = T&R table column reference | Nov 2017 Forecast (\$ millions) | Nov 2018 Forecast (\$ millions) | Variance (\$ millions) | Variance (%) |
|---|------------------------------------|------------------------------------|---------------------------|-----------------|
| Gross Toll Revenue Potential (11) | 4,613.2 | 4,903.3 | 290.1 | +6.3% |
| Toll Payment Discounts and Fees (12) | 71.9 | 87.3 | 15.4 | +21.5% |
| Revenue Not Recognized (13) | (135.0) | (181.7) | (46.8) | +34.6% |
| Unpaid Toll Revenue (14) | (228.2) | (232.8) | (4.7) | +2.1% |
| Recaptured Tolls at <i>Good To Go!</i> Rates (15) | 30.7 | 29.5 | (1.1) | -3.7% |
| Miscellaneous Pledged Revenues (17) | 30.7 | 64.7 | 34.0 | +110.9% |
| Transponder Sales Revenue (18) | 53.0 | 48.3 | (4.6) | -8.8% |
| Pay By Mail Rebilling Fees (19) | 67.0 | 68.5 | 1.4 | +2.2% |
| Tolls Recovered at Pay By Mail Rates (20) | 46.1 | 46.3 | 0.2 | +0.5% |
| Subtotal: Revenue Adjustments | (63.8) | (69.9) | (6.1) | +9.5% |
| Credit Card Fees (22) | (90.3) | (104.2) | (13.9) | +15.4% |
| Toll Collection O&M (23) | (912.7) | (1,038.8) | (126.1) | +13.8% |
| <i>Transponder Purchase and Inventory Costs (23a)</i> | <i>(53.0)</i> | <i>(48.3)</i> | <i>4.6</i> | <i>-8.8%</i> |
| <i>State Operations Costs (23b)</i> | <i>(396.0)</i> | <i>(450.3)</i> | <i>(54.3)</i> | <i>+13.7%</i> |
| <i>Customer Service Center (CSC) Vendor Costs (23c)</i> | <i>(420.7)</i> | <i>(497.2)</i> | <i>(76.5)</i> | <i>+18.2%</i> |
| <i>Roadway Toll Systems (RTS) Costs (23d)</i> | <i>(43.0)</i> | <i>(43.1)</i> | <i>(0.0)</i> | <i>+0.1%</i> |
| Routine Facility O&M Costs (24) | (156.1) | (156.1) | - | - |
| Bridge Insurance Premiums (25) | (130.9) | (153.9) | (23.0) | +17.5% |
| Subtotal: O&M Costs | (1,290.0) | (1,453.0) | (163.0) | +12.6% |
| Net Toll Revenue (26) | 3,259.3 | 3,380.4 | 121.0 | +3.7% |
| Deferred Sales Tax (27) | (159.4) | (159.4) | - | - |
| Periodic Facility R&R (28) | (302.6) | (302.6) | - | - |
| Periodic Toll Equipment and CSC R&R (29) | (100.3) | (108.0) | (7.6) | +7.6% |
| Total after Deferred Sales Tax and R&R | 2,697.0 | 2,810.3 | 113.4 | +4.2% |

Over the forecast horizon, the current net revenue projections are 3.7 percent higher than the previous forecast. Downstream uses of net revenue are \$7.6 million higher, with a slight increase in CSC procurement costs associated with the increase in the assumed overlap between vendors as part of future procurements and a higher cost allocation to SR 520 due to its higher share of overall systemwide transactions in the November 2018 forecast.

2 | Traffic and Revenue Overview

Toll Traffic and Gross Toll Revenue Potential

Annual toll traffic and gross toll revenue potential projections were prepared by Stantec based on the completed floating bridge and Eastside projects with six lanes (one HOV and two general purpose lanes in each direction) plus a phased schedule for constructing the Rest of the West, which would complete six lanes from the floating bridge through the Montlake interchange and west to I-5 in FY 2028, one year later than was assumed in the November 2017 forecast. 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.

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 8 illustrates Stantec’s projected toll transactions for the November 2018 forecast, compared to the previous November 2017 forecast.

The annual forecast detail for the November 2018 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 8: Stantec Toll Transaction Forecast Comparison (FY 2019-56)

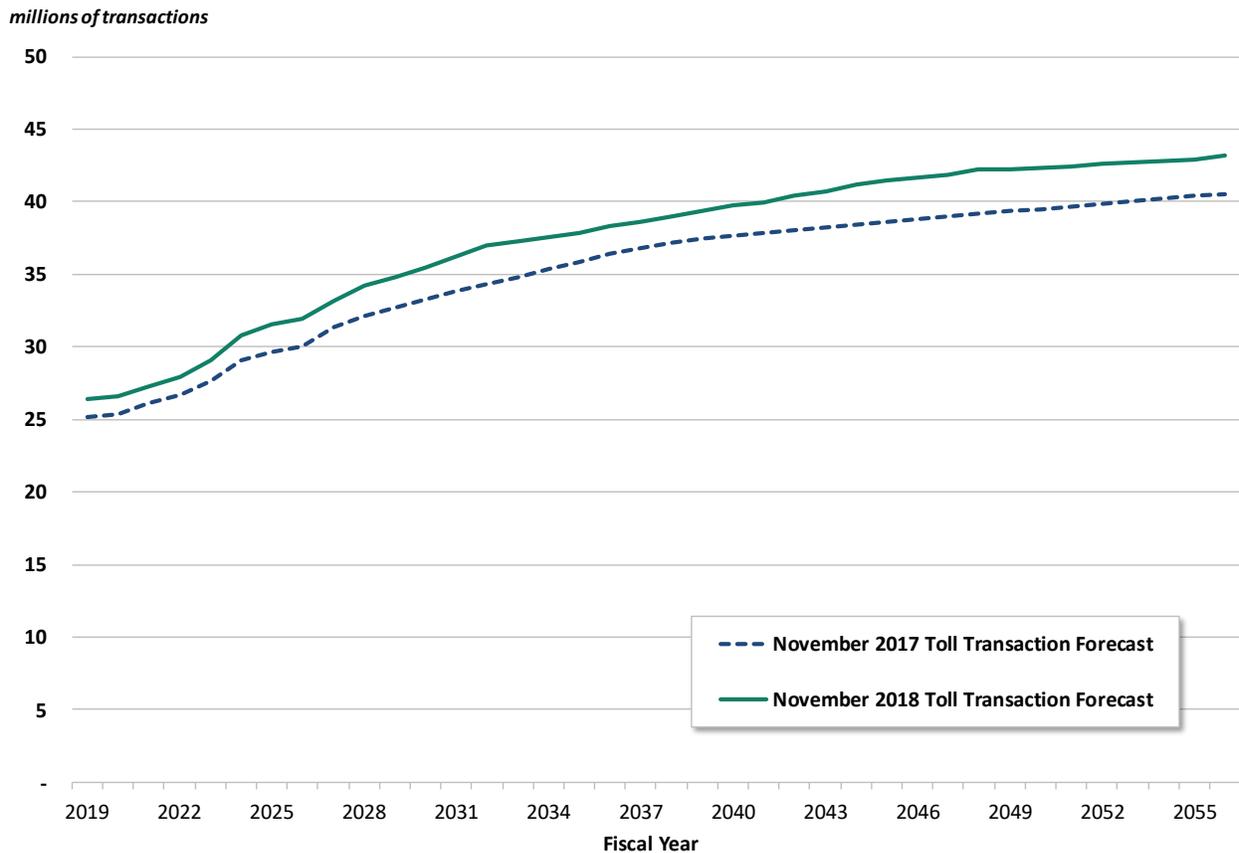
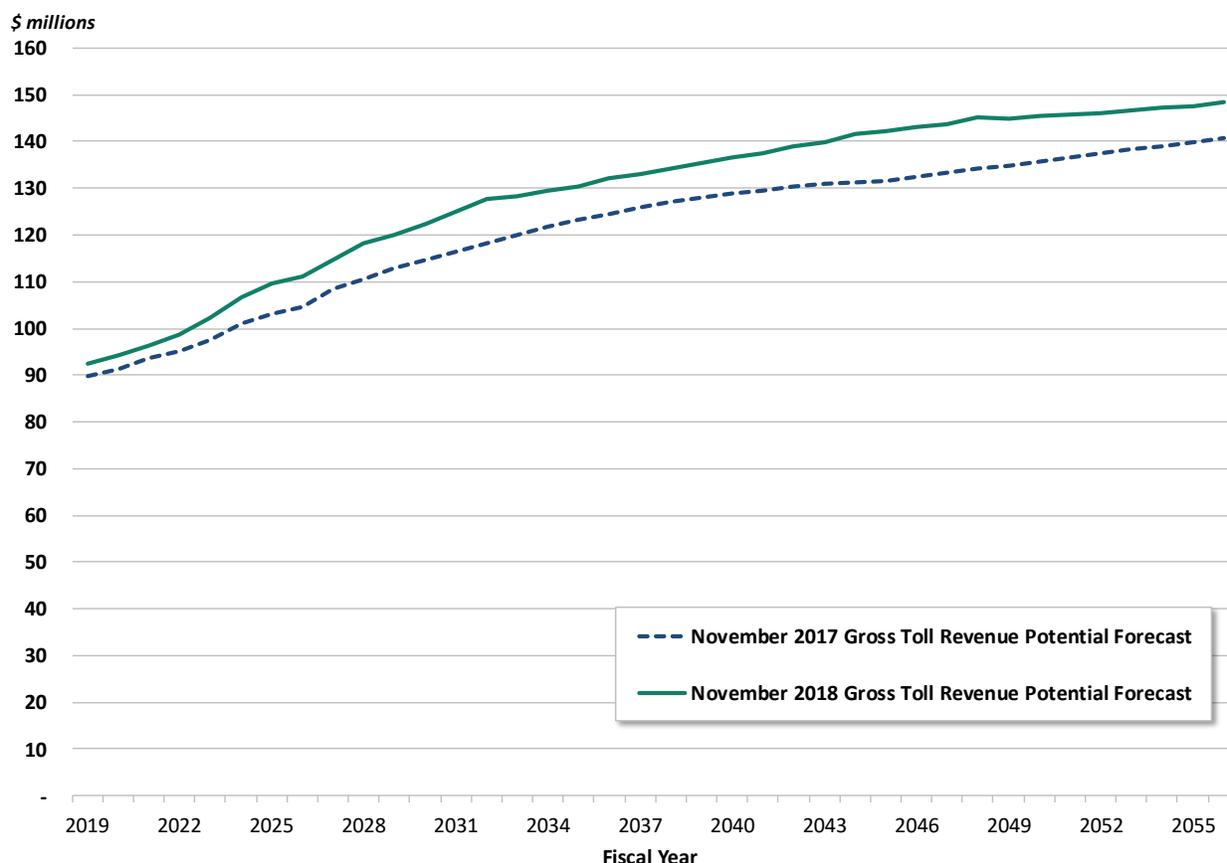


Exhibit 9 illustrates the corresponding gross toll revenue potential trends through FY 2056 for the same two forecasts.

Exhibit 9: Stantec Gross Toll Revenue Potential Forecast Comparison (FY 2019-56)



Payment and Toll Transaction Types

The second key input received from Stantec is the output distribution of traffic (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. Stantec prepares forecasts for three main categories of customers: prepaid *Good To Go!* account-holders using transponder passes or license plates (Pay By Plate), and non-account, Pay By Mail customers.

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.

Currently, 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. Replenishment can either be

tied to a credit or debit card, or direct withdrawal from a checking or savings account. 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.

Beginning in FY 2020, concurrent with the full transition to new CSC vendors, WSDOT will give customers the option of having a “zero balance account”. This option will still require an automatic method to collect toll payment, but rather than maintaining a balance, toll charges will be allowed to accrue until a certain threshold dollar amount or time has elapsed, at which point the credit/debit card or bank account will be debited.

Pay By Mail / 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 be 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. The Washington State Transportation Commission gradually increased this increment, and in 2016, adopted a step up to \$2.00 for two axle vehicles, consistent with the previous forecast assumption. Like the base *Good To Go!* toll, the Pay By Mail increment is also a multiple of the number of the number of axles for vehicles with three or more axles. The Pay By Mail toll increment is assumed to remain unchanged 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. 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. In FY 2020 with transition to the new CSC vendors the current \$0.50 discount for the Short-Term Account payment method will be discontinued. In its place, a new option will allow a customer to pre-register their vehicles' license plates to a *Good To Go!* account without requiring an initial deposit or maintaining a minimum account balance, the aforementioned zero balance account. It is unknown at this time what the incremental cost of collection or leakage rates will be for this option. Once sufficient data from actual experience is available, adjustments in projected payment method splits and associated leakage assumptions may be required.

Projected Gross Toll Revenue and Transactions by Payment Type

Projections for the percentage shares of *Good To Go!* and non-account toll transactions provided in Stantec's forecast are shown for representative years in Exhibit 13 in the next section. Over time, it is

estimated that the share of *Good To Go!* account customers will increase to an assumed ceiling of 88.5 percent — 1.2 percent higher than the November 2017 forecast — while the share of non-account (Pay By Mail) 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.

As part of the estimation of toll payment fees and discounts described later in this report, the Stantec projected market shares by payment method include several sub-categories. *Good To Go!* transactions are subdivided into transponder pass transactions and Pay By Plate transactions, as shown in Exhibit 13 on page 28, with their percentage shares relative to total transactions. For *Good To Go!* accountholders, transponder pass usage is forecasted to comprise between 68 and 74 percent of all *Good To Go!* transactions, with the remaining transactions attributed to Pay By Plate.

Though not shown in Exhibit 13, 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 through the end of FY 2019.

Gross to Net Toll Revenue

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

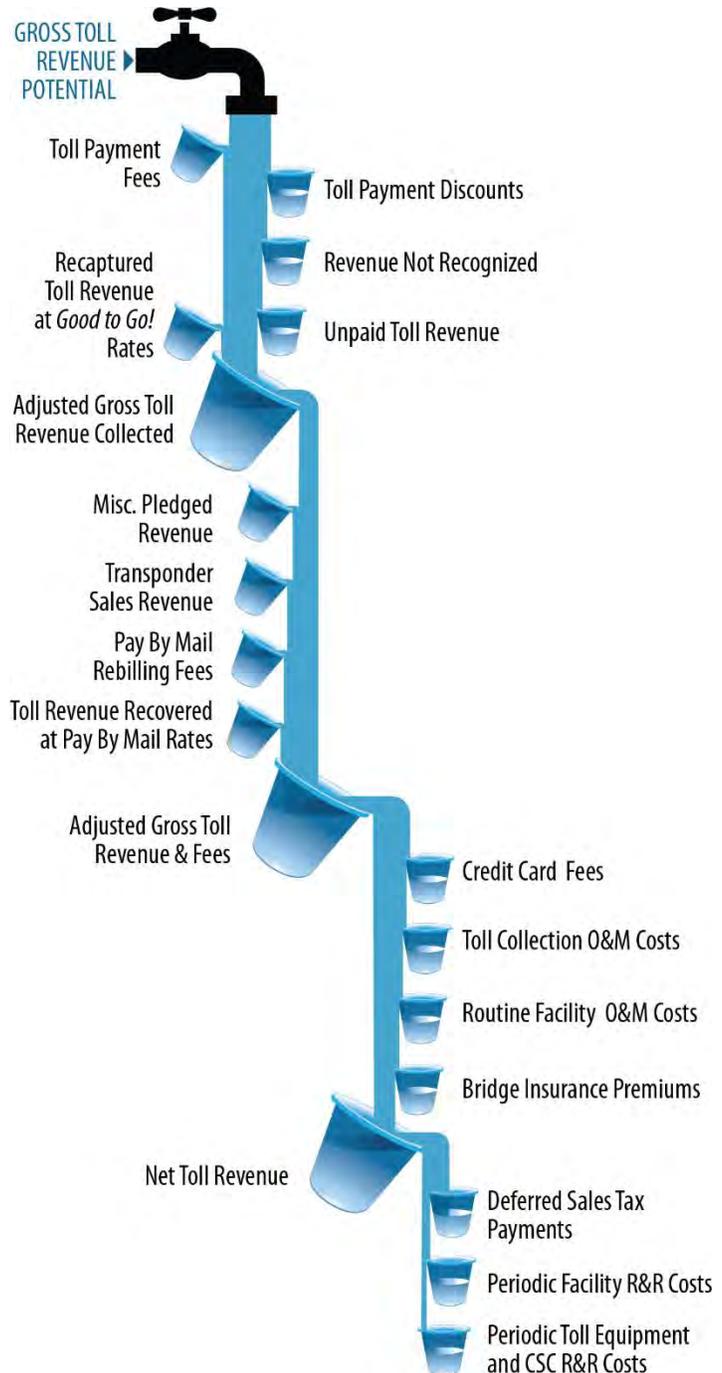
Exhibit 10 to the right illustrates the flow of funds or “waterfall” of revenue adjustments and expenditures that are projected to occur in transitioning from gross toll revenue potential to the net revenues available to support project financing.

The 2018 net toll revenue report is organized around this waterfall by 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 2019-56 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 account for annual contributions to debt service and various reserve accounts.

Exhibit 10: Net Revenue Waterfall



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3 | Actual Net Revenue Performance in FY 2018

Exhibit 11 compares the actual performance in FY 2018, the sixth full fiscal year of operations, with the comparable forecast data from the previous November 2017 forecast.

Exhibit 11: Actual Revenue and November 2017 Forecast Comparison for FY 2018

| Category | Forecast vs. Actual Comparison for Net Revenue Items | | | |
|--|--|----------------------------|------------------------|--------------------------|
| | (\$ millions) | | | % Variance from Forecast |
| | Nov 2017 Forecast | Actual Values ¹ | Variance from Forecast | |
| Gross Toll Revenue Potential | 87.3 | 90.3 | 3.0 | +3.5% |
| Toll Payment Discounts and Fees | 1.3 | 1.5 | 0.2 | +15.6% |
| Revenue Not Recognized | (4.2) | (4.4) | (0.2) | +3.7% |
| Unpaid Toll Revenue | (4.9) | (4.9) | 0.1 | -1.8% |
| Recaptured Toll Revenue at Good To Go! Rates | 0.6 | 0.6 | 0.0 | +3.3% |
| Subtotal: Adjusted Gross Toll Revenue Collected | 80.0 | 83.2 | 3.2 | +4.0% |
| Miscellaneous Pledged Revenues | 0.4 | 1.0 | 0.5 | +126.5% |
| Transponder Sales Revenue | 0.8 | 0.9 | 0.0 | +4.6% |
| Pay By Mail Rebilling Fees & Miscellaneous Fees ² | 1.3 | 1.3 | (0.0) | -1.1% |
| Recovered Toll Revenue | 1.0 | 1.0 | - | - |
| Credit Card Fees | (1.7) | (1.7) | (0.1) | +4.0% |
| Toll Collection O&M Costs ³ | (12.6) | (11.9) | 0.7 | -5.6% |
| Routine Facility O&M Costs | (2.5) | (1.7) | 0.8 | -30.7% |
| Bridge Insurance Premiums | (2.5) | (2.5) | - | - |
| Net Toll Revenue | 64.3 | 69.5 | 5.2 | +8.0% |

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 are not forecasted.

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 2018 performance and the November 2017 forecast.

- **Toll transactions** came in 4.8 percent and **gross toll revenue potential** came in 3.5 percent higher than Stantec’s November 2017 forecast for FY 2018.
An actual value for the forecast metric of gross toll revenue potential is not actually observed; rather it is estimated from adjusted gross toll revenue collected along with actual discounts, fees and unpaid tolls, plus estimates of revenue not recognized.
- **Adjusted gross toll revenue collected** was 4.0 percent above the November 2017 forecast for FY 2018.
 - **Toll payment discounts and fees** were higher due to higher than anticipated market share of *Good To Go!* Pay By Plate transactions of 24.6 percent compared to a forecast value of 21.4 percent, which resulted in higher revenue attributable to the Pay By Plate \$0.25 fee.

- The deduction for **revenue not recognized** was slightly higher, in part due to higher overall reliance on license plate payment methods relative to the forecast, and a slight reduction in transponder reader and camera accuracy resulting from completion of the transition to the permanent lane-side toll equipment and pending resolution of some glare/shadow issues associated with accurately reading license plate images.
- The deduction for **unpaid toll revenue** after 80 days and two invoices was slightly lower in FY 2018 than previously forecasted; this is due in part to higher anticipated leakage from delayed image based transactions that carried over from FY 2017 and early FY 2018. Incremental leakage associated to the delayed transactions was estimated at \$403,000 for the full fiscal year.
- The November 2018 forecast maintains the recategorization of recaptured and recovered toll revenue that was first developed in the November 2016 forecast. Since then, unpaid tolls after 80 days and two invoices that are subsequently collected from mailing a notice of civil penalty (NOCP) are categorized as follows:
 - **Recaptured toll revenue at *Good To Go!* rates** accounts for toll revenue eventually collected from a NOCP transaction at the appropriate Good To Go! toll rate as a result of the Customer Program for Resolution (CPR), with no payment of the \$40 civil penalty. These revenues are associated with payment resolution whereby a new *Good To Go!* account is opened for the customer or a payment issue for an existing account is rectified. The revenue recovered through the CPR program is assumed to flow directly into the SR 520 Toll Account (16J) and is reported in the “Tolling Revenue” line within the SR 520 financial statements
 - **Toll revenue recovered at pay by mail rates** accounts for toll revenue recovered from NOCPs at the Pay By Mail rates, with or without an adjudication hearing or payment of the accompanying civil penalty. These recovered revenues flow into the Civil Penalty Account (17P) and are assumed to be legislatively transferred to the SR 520 Toll Account (16J) in the subsequent biennium, where they are reported as an “Operating Transfer In” within the SR 520 financial statements
- **Miscellaneous pledged revenue** was \$1 million in FY 2018. This substantial increase from the \$400,000 forecasted in November 2017 was largely due to higher initial fund balances and higher than projected interest rates
- **Credit card fees** were higher by 4 percent, tracking with the 4 percent increase in adjusted gross toll revenue collected
- **Toll collection O&M costs** were lower than forecasted, primarily due to lower state staffing costs from unfilled open positions and lower RTS costs due to prolonged acceptance testing during FY 2017, that carried over into FY 2018
- **Routine facility O&M costs** were unchanged from the November 2017 forecast.
- **Net toll revenue** ended up 8.0 percent ahead of forecast due to the combination of higher gross toll revenues and Pay by Plate fees, higher miscellaneous revenue, and lower than expected O&M costs

Exhibit 12 compares the performance of the net revenue components in FY 2018 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 reason why actual net revenues for FY 2018 came in

higher than the initial forecast are due to lower collection costs that more than offset the higher experienced revenue leakage.

Exhibit 12: Actual Revenue and September 2011 Forecast Comparison for FY 2018

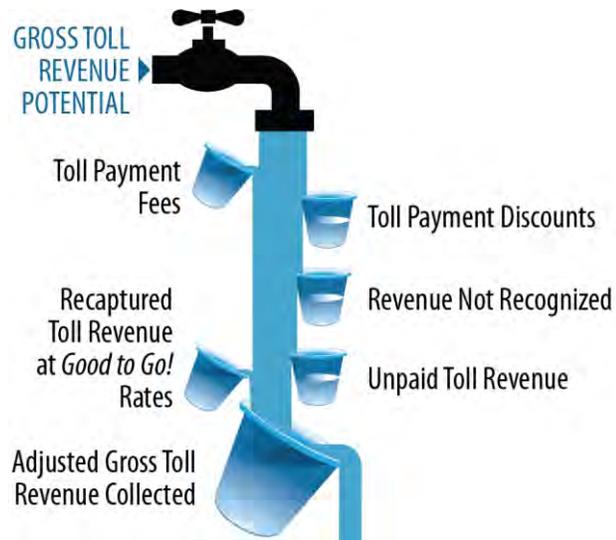
| Category | Forecast vs. Actual Comparison for Net Revenue Items | | | |
|--|--|---------------|------------------------|--------------------------|
| | (\$ millions) | | | % Variance from Forecast |
| | Sep 2011 Forecast | Actual Values | Variance from Forecast | |
| Gross Toll Revenue Potential | 87.6 | 90.3 | 2.7 | +3.1% |
| Toll Payment Discounts and Fees | 0.2 | 1.5 | 1.2 | +535.4% |
| Revenue Not Recognized | (3.9) | (4.4) | (0.5) | +12.3% |
| Unpaid Toll Revenue | (1.6) | (4.9) | (3.2) | +202.5% |
| Recaptured Toll Revenue at Good To Go! Rates | - | 0.6 | 0.6 | - |
| Subtotal: Adjusted Gross Toll Revenue Collected | 82.3 | 83.2 | 0.8 | +1.0% |
| Miscellaneous Pledged Revenues | - | 1.0 | 1.0 | - |
| Transponder Sales Revenue | 1.2 | 0.9 | (0.3) | -26.8% |
| Pay By Mail Rebilling Fees & Miscellaneous Fees ² | 1.1 | 1.3 | 0.3 | +24.3% |
| Recovered Toll Revenue | 0.3 | 1.0 | 0.7 | +206.2% |
| Credit Card Fees | (1.9) | (1.7) | 0.2 | -10.6% |
| Toll Collection O&M Costs ³ | (15.7) | (11.9) | 3.8 | -23.9% |
| Routine Facility O&M Costs | (2.6) | (1.7) | 0.9 | -32.8% |
| Bridge Insurance Premiums | (2.5) | (2.5) | 0.0 | - |
| Net Toll Revenue before R&R | 62.2 | 69.5 | 7.3 | +11.7% |

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4 | Changes to Revenue Adjustments

Exhibit 7 on page 16 summarizes the November 2018 forecast period totals for each element of the gross-to-net revenue projections, the November 2017 forecast values and their variances. This chapter provides detail on the changes to the individual revenue adjustment items, and the following chapter covers the changes in the projections for operations and maintenance expenses.

Revenue adjustments for toll payment discounts and fees, revenue not recognized, unpaid toll revenue, and recaptured toll revenue at *Good To Go!* toll rates can be found in columns 12-15 of the T&R table in Appendix A.



These items have been updated to reflect actual data from FY 2012-18, 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 2018 forecast for Pay By Plate fees was revised \$15.46 million higher than the November 2017 forecast, due to continued higher utilization of Pay By Plate among account-holders, as shown in Exhibit 13 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 over one quarter of all *Good To Go!* transactions, or 24.6 percent of total transactions in FY 2018. There appear to be several contributing factors to this trend.
 - The Customer Program for Resolution (CPR), discussed in more detail on page 32, allows for non-account customers to resolve a notice of civil penalty without payment of the penalty if they open a *Good To Go!* account or resolve insufficient funds with an existing account. Since these transactions are typically handled over the phone, transponder passes are not always sold with these new accounts.

- With tolls on SR 520 having been in operation for seven years now, there is some anecdotal evidence of customers attempting to transfer sticker tag passes to new vehicles (or new windshields on existing vehicles). This often renders the pass non-functional, inadvertently changing the method of payment to Pay By Plate. The \$0.25 incremental fee may not be enough of a financial deterrent for customers to purchase and register a new transponder to an existing account.
- The option of having a zero balance *Good To Go!* account starting in FY 2020 may also encourage more infrequent users to establish an account in the future without acquiring a transponder pass.
- Exhibit 13 shows that Stantec’s projections for the share of customers using Pay By Plate is expected to grow slightly rather than decline over the forecast period, moving from 22.5 percent in FY 2019 to 23.5 percent by FY 2025, and eventually 27.8 percent by the end of the forecast horizon.
- Stantec’s Pay By Plate shares for the current forecast are higher across the board than in the previous forecast. Nonetheless, continued demand for switchable Flex Pass transponders required to receive a carpool exemption on the I-405 Express Toll Lanes, combined with the current marketing campaign following the opening of the SR 99 Tunnel and prior to the commencement of tolling in the late summer of 2019 may increase overall pass use in the region and potentially slow or reverse the projected decline in the overall *Good To Go!* share shown in Exhibit 13.

Exhibit 13: 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 2017 Forecast | Nov 2018 Forecast |
| | Nov 2017 Forecast | Nov 2018 Forecast | Nov 2017 Forecast | Nov 2018 Forecast | Nov 2017 Forecast | Nov 2018 Forecast | | |
| 2012 | 71.6%* | | 11.2%* | | 82.7%* | | 17.3%* | |
| 2013 | 69.7%* | | 14.0%* | | 83.7%* | | 16.3%* | |
| 2014 | 67.8%* | | 16.7%* | | 84.5%* | | 15.5%* | |
| 2015 | 64.9%* | | 19.1%* | | 84.0%* | | 16.0%* | |
| 2016 | 62.9%* | | 21.1%* | | 84.0%* | | 16.0%* | |
| 2017 | 62.9%* | | 21.6%* | | 84.5%* | | 15.5%* | |
| 2018 | 62.9% | 63.0%* | 21.4% | 22.4%* | 84.3% | 85.4%* | 15.7% | 14.6%* |
| 2019 | 62.9% | 63.0% | 21.3% | 22.5% | 84.3% | 85.5% | 15.7% | 14.5% |
| 2020 | 63.2% | 63.0% | 21.5% | 22.7% | 84.7% | 85.7% | 15.3% | 14.3% |
| 2025 | 64.3% | 62.9% | 21.9% | 23.5% | 86.2% | 86.5% | 13.8% | 13.5% |
| 2030 | 64.6% | 62.9% | 21.9% | 24.4% | 86.6% | 87.2% | 13.4% | 12.8% |
| 2035 | 64.8% | 62.6% | 22.0% | 25.1% | 86.8% | 87.7% | 13.2% | 12.3% |
| 2040 | 65.0% | 62.3% | 22.1% | 25.9% | 87.1% | 88.1% | 12.9% | 11.9% |
| 2045 | 65.2% | 61.9% | 22.1% | 26.6% | 87.3% | 88.5% | 12.7% | 11.5% |
| 2050 | 65.2% | 61.3% | 22.1% | 27.2% | 87.3% | 88.5% | 12.7% | 11.5% |
| 2055 | 65.2% | 60.7% | 22.1% | 27.8% | 87.3% | 88.5% | 12.7% | 11.5% |

* Actual values for the *Good To Go!* / Non-Account Transaction split are calculated from CSC data analysis for calendar years 2012-16 and Toll Business Report data fiscal years 2017-2018. 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.

** Pay By Plate percentage shares are modeled by Stantec starting with the Nov 2017 Forecast.

*** 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 \$15.4 million forecast period increase in the combined toll payment fees and discounts shown in Exhibit 7 on

page 16 is attributed to the forecast period increase in Pay By Plate toll traffic, as 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 (STA) by self-initiating payment provisions 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 current short-term account discount is not assumed to escalate with inflation.

Although the WSTC decided to remove the \$0.50 STA discount while leaving this self-initiated payment option in place, this change won't go into effect until FY 2020 when the full transition to the new CSC vendors is complete. With the transition to the new CSC vendors, customers will have a new zero balance *Good To Go!* account payment option that does not require establishing or maintaining an account balance, though will require a linkage to credit/debit card or bank account for payment. With no incremental or account maintenance fees associated with the new account method, it is anticipated that zero balance accounts will be the primary choice for new *Good To Go!* account registrations going forward.

The November 2018 forecast retains the \$0.50 discount for FY 2019 only and does not assume any major changes to revenue leakage or toll collection costs with the new zero balance account payment option. The forecast assumes that 0.2 percent of non-account customers are taking advantage of the STA discount, or less than 0.03 percent of total forecasted transactions.

- The November 2018 forecast of the total value of STA discounts provided to customers has been revised downward by \$0.18 million over the FY 2019-56 forecast horizon, with FY 2019 the final year of the discount.

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.

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 recaptured at *Good To Go!* toll rates or recovered at Pay By Mail rates after a notice of civil penalty is mailed to customers with toll bills more than 80 days past due (see columns 15 and 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 as part of the November 2016 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; these refinements are maintained in the November 2017 forecast, and license plate leakage rates were increased in the November 2018 forecast.

Revenue Not Recognized (Column 13)

Unreadable License Plates

Existing operations experience resulted in an increase in the leakage attributed to unreadable license plates in the November 2018 forecast, which primarily included revisions for the readable share of license plate images from the in-lane cameras, interfacing issues between the lane system vendor and the CSC back-office systems, and their integration with CSC operating procedures for reviewing license plate images. These assumptions include the following.

- The assumed share of total image-based (non-account plus *Good To Go!* Pay By Plate) transactions with readable license plates after manual review is 93 percent in FY 2019 and 93.5 percent in FY 2020, the transition year to the new CSC vendors.
- Thereafter, the forecast reverts to a value closer to but slightly higher than the industry average with the assumption of 94 percent readable plates, with the remaining 6 percent unreadable.
 - A higher level of readable images was expected with the installation of the permanent toll collection system and the forthcoming switchover to new CSC systems software and operations vendor contracts by FY 2020. The new contracts will include more specific requirements and performance indicators to better align with industry best practices and improve image review productivity and accuracy.
 - However, the RTS hardware-related improvements have not yet consistently delivered improved image readability, in part due to sun glare and shadow issues associated with the east-west orientation of the roadway, though in working with RTS vendor and equipment manufacturers, WSDOT has seen improvements in image readability in recent months.
 - This forecast has opted to maintain the lower 94 percent image readability (6 percent unreadable) assumption for the remainder of the forecast horizon. If recent improvement trends are shown to persevere, then the image readability rate may be increased in a future forecast.
- In addition to the short-term increase in the rate of unreadable plates, the dollar value for unreadable plate leakage is higher in the November 2018 forecast due to the new forecast's higher volume of license plate image-based revenue from both increases in Pay By Mail revenue and increases in Pay By Plate transactions among *Good To Go!* customers.
 - Non-account Pay By Mail transactions are projected to be 1.2 percent lower over the forecast horizon, however associated revenue is projected to be 2.8 percent higher primarily due to

- traffic projections that show more travel at higher toll rate times of day, compared to the November 2017 forecast.
- *Good To Go!* Pay By Plate transactions are projected to be about 23.7 percent higher over the forecast horizon, compared to the November 2017 forecast, as a result of the change in payment method shares shown in Exhibit 13, combined with higher traffic projections.

Unidentified Owner/Address

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.

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).

Similar to higher license plate image leakage rates, the expected rate of unidentified owners/addresses from readable license plates is assumed to be higher than typical industry experience as the result of challenges in the current CSC back office, where the tools to properly process license plates may be lacking. This has led to transactions being left in an "in-process" holding pattern until they are ultimately dismissed with the passage of time. While efforts to improve both the rates of license plate image readability and successful processing for owner identification continue, the November 2018 forecast does not assume that any improvement will occur until new CSC systems software and operations vendor contracts are fully executed in FY 2020, instead maintaining the assumptions of the November 2017 forecast as follows.

- An unidentified owner rate of 10.5 percent of image-based transactions with readable license plates will be maintained until FY 2020 when the new CSC vendor contracts will be in place. The unidentified owner rate is assumed to decrease to 7.5 percent for FY 2020, and then stabilizing at 4.5 percent in FY 2021 and beyond. This steady-state rate matches the November 2017 forecast and provides a contingency above industry norms to account for potential local issues related to the inability to identify owners from temporary licenses as well as from Canadian plates.
- The dollar value for unidentified owner leakage is slightly higher in the November 2018 forecast due to a higher volume of license plate image-based transactions from increases in Pay By Plate transactions among *Good To Go!* customers and an increase in Pay By Mail toll revenue, despite a reduction in forecasted transactions.
 - As noted previously, *Good To Go!* Pay By Plate transactions are projected to be about 23.7 percent higher over the forecast horizon, compared to the prior forecast, due to the change in payment method shares shown in Exhibit 13 plus higher traffic projections.
 - Similarly, forecast period Pay By Mail transactions are projected to be 1.2 percent lower and revenue 2.8 percent higher, compared to the November 2017 forecast.

- Increases in gross toll revenue potential are partially offset by higher license plate leakage rates, which reduces the number of transactions that continue on to owner and address verification.

Total Revenue Not Recognized

Incorporating the higher November 2018 forecast values for traffic and revenue and the higher leakage rates for unreadable license plates, results in a forecast period increase in revenue not recognized of \$46.8 million or 34.6 percent higher than 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. This measure excludes the benefits of any recovery efforts after 80 days, which are covered in subsequent sections. The November 2018 forecast for Unpaid Toll Revenue was revised upward by \$4.7 million or 2.1 percent over the 38-year forecast horizon in comparison to the November 2017 forecast. A few factors contribute to this increase.

- The November 2018 forecast for gross revenue potential generated from Pay By Mail customers increased by 2.8 percent over the forecast horizon.
- The increase in Pay By Mail revenue is partially offset by the increase in leakage associated with unreadable license plate images, reducing the number of transactions that go through owner and address verification and are sent a toll bill.

Unpaid toll revenue is shown in column 14 of Exhibit 28 in Appendix A. The Toll Payment Activity Workflow and percentages are shown in Exhibit 29 in Appendix B.

Overall Changes in Uncollectible Revenue (Columns 13 & 14)

Total gross leakage attributed to revenue not recognized and unpaid toll revenue is 14.2 percent (\$51.4 million) higher over the forecast horizon in the November 2018 forecast than projected in the November 2017 forecast.

For the 38-year period of the November 2018 forecast, the overall rate of gross leakage on a transaction basis is projected to be 6.3 percent, with net leakage after recaptured and recovered tolls, projected at 5.1 percent. On a revenue basis, gross leakage is projected 8.3 percent, with net leakage at 6.8 percent after tolls recaptured or recovered via the NOCP process. Revenue leakage is higher than transaction leakage because the vast majority of leakage is linked to Pay By Mail transactions, which pay a \$2.00 higher toll rate that is charged, in part, to offset potential leakage and the additional costs of collection for processing Pay By Mail transactions.

Recaptured Toll Revenue at *Good To Go!* Rates (Column 15)

As with the previous forecast, the November 2018 forecast for revenue recovered in the notice of civil penalty (NOCP) process has been subdivided into two categories as a result of different accounting treatment in the SR 520 financial statements:

- “Recaptured Toll Revenue at *Good To Go!* Rates” (column 15); and
- “Toll Revenue Recovered at Pay By Mail Rates” (column 20), discussed in a later section.

In both cases, most 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 owed. Specifically, 85 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 15 percent dismissed, a slight increase from the 13 percent rate assumed in the November 2017 forecast. The increased percentage of dismissed transactions reflects the latest actual experience specific to SR 520 toll collections.

Customers receiving a NOCP 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. For the November 2018 forecast, the portion of NOCP transactions from which the toll is assumed to be recovered through the Customer Program for Resolution (CPR) or normal civil penalty adjudication processes and subsequent collection efforts has been maintained at 45 percent, consistent with the November 2017 forecast. Revenue attributed to the \$40 NOCP fee is not captured within the net revenue forecast values.

A new policy implemented at the beginning of FY 2016, and assumed to continue indefinitely in the November 2018 forecast, allows for more leniency in the handling of customer who are repeatedly failing to pay their toll bills. Referred to as the Customer Program for Resolution, this policy allows customers to open a new *Good To Go!* account by phone (or in person at the CSC) and resolve their unpaid tolls at the appropriate *Good To Go!* rate without payment of one or more civil penalties. Similarly, customers with existing *Good To Go!* accounts with an insufficient account balance for reason of an expired or changed credit card who end up receiving a NOCP are offered the opportunity to rectify their account and make payment, again without civil penalty.

- The toll revenue recovered through the CPR is assumed to stay in the SR 520 Toll Account (16J) and is reported as “Tolling Revenue” within the SR 520 financial statements.
- Recaptured toll revenue at *Good To Go!* rates is estimated to be 50% of transactions for which the customers received an NOCP in the mail and took some kind of action.
- Toll revenues recaptured at *Good To Go!* rates from the civil penalty process are assumed to be collected 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 resolution of payment.

Annual revenue projections for recaptured toll revenues are provided in column 15 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.

Miscellaneous Pledged Revenues (Column 17)

Column 17 of the November 2018 forecast T&R table in Appendix A provides actual “miscellaneous pledged revenues” received in FYs 2012-18, and starting with the 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. Forecasted amounts for the November 2018 update are limited to interest earnings only beyond FY 2018. Actual receipts are considered revenues pledged towards debt service in Master Resolution number 1117 governing SR 520 toll revenues.

Miscellaneous Pledged Revenues are 34 million (more than double) higher over the forecast horizon in the November 2018 forecast than projected in the November 2017 forecast. The increase is due to higher forecast period fund balances in the SR 520 toll account (16J), which are the result of higher gross and net toll revenue projections, and a higher earnings interest rate assumption.

For the SR 520 toll account (16J), interest earning projections use a simple interest calculation with an assumed annual earnings rate of 0.9 percent as applied to average annual account balances excluding miscellaneous revenues from the 2018 financial plan originally developed from the November 2017 forecast, and updated by the current revenue and expenditure projections. The 0.9 percent interest rate assumed for the November 2018 forecast is almost twice as high as the 0.5 percent assumed in the November 2017 forecast, but still conservative in comparison to the actual interest rate yields in excess of 1.0 percent.

The annual projections for interest earnings are capped at the level earned in the last year that deferred sales tax is due, FY 2032. This is done 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.

With the exception of a \$50,000 deposit in FY 2019, the November 2018 miscellaneous pledged revenue forecast does not include revenue anticipated for the sale of the Aberdeen Pontoon Casting Basin property that was in final negotiation but was not completed at the time the November 2018 forecast was finalized. The subsequent completion of the sales contract resulted in principal plus interest payments commencing January 2019 of \$32,139.73 per month for 240 months. The total value of the sale is \$8.39 million with the final payment anticipated in mid FY 2039.

Transponder Sales Revenue (Column 18)

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 purchase and inventory costs in every year, making their forecasted impact net revenue neutral.**

- The November 2018 forecast, similar to prior recent forecasts, places transponder sales revenue in column 18, upstream of the “Adjusted Gross Toll Revenue & Fees” subtotal in column 21,



whereas the equally offsetting transponder purchase and inventory costs are embedded in column 23, “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 2018 forecast, projections for system-wide transponder sales reflect a lower cost per unit as recently negotiated with Neology, Inc. the transponder technology vendor starting in FY 2020, with the full cost of \$1.51 per sticker tag transponder and \$15.77 per Flex Pass transponder.
 - The SR 99 program is assumed to cover \$1.8 million for transponder purchase and inventory costs assumed in FY 2019, corresponding with the start of tolling later in 2019. SR 99 is not currently assumed to have carpool exemptions and frequent users are assumed to be more likely to purchase a sticker tag. After the initial offering of transponders in FY 2019, the November 2018 forecast assumes that SR 99 and other toll facilities cover these costs through higher shares of system-wide transponder sales.
 - Consistent with the November 2017 forecast, the November 2018 forecast allocates system-wide transponder revenues across five toll facilities with an assumed toll commencement date for the SR 99 Tunnel in late summer of 2019.
- The overall November 2018 forecast for transponder sales is \$4.64 million or 8.8 percent lower over the forecast horizon compared with the November 2017 forecast, as shown in Exhibit 7.
- Annual projections of transponder sales revenue are provided in column 18 of in Appendix A.

Pay By Mail Rebilling Fees (Column 19)

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 2017 values, the November 2018 forecast for Pay By Mail transactions has been revised downward by 1.2 percent over the forecast horizon, decreasing the total number of potential unpaid first invoices for Pay By Mail.
- The November 2018 forecast assumption of 2.17 toll transactions per mailed invoice was revised lower from the 2.76 value assumed in the previous forecast. The higher value was due to prior forecasts assuming that the number of transactions per toll bill would be higher on SR 520 due to the more likely occurrence of round trips, in contrast to one-way tolling on TNB and existence of both free and tolled options on the I-405 Express Toll Lanes and SR 167 HOT Lanes. However, actual systemwide cost allocations of rebilling fees do not account for the unique operating

characteristics of each facility, and instead use a systemwide average. Based on the systemwide averages, the number of transactions per mailed invoice was 2.17, which is maintained throughout the forecast horizon and has the effect of increasing the number of invoices and late payment fee revenues.

- The November 2018 forecast assumptions regarding first and second toll bill payment rates were unchanged from the November 2017 forecast and supported by actual data through FY 2018, 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, an assumption continued from the prior forecast.
 - 37 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.
 - The November 2018 forecast assumes that 63% of the second Pay By Mail invoices will go unpaid.
 - The overall rate of payment for both invoices is assumed to be 75 percent in the current forecast.
- Of the invoices that go unpaid after 80 days, 85 percent are assumed to be certified for a notice of civil penalty by a WSDOT toll enforcement officer, with the remaining 15 percent dismissed, primarily due to incorrect customer or vehicle identification.
- For the November 2018 forecast, the portion of NOCP transactions from which the toll is assumed to be recovered through the CPR or normal civil penalty adjudication process and subsequent collection efforts are 45 percent, consistent with the November 2017 forecast.
- For the 50 percent of such transactions for which tolls are recovered at the Pay By Mail rate, the \$5 rebilling fee is also assumed to be recovered. For the remaining 50 percent of transactions for which the toll revenue is recaptured at the *Good To Go!* rate via the CPR program, no rebilling fees are assumed to be collected.

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.

Toll Revenue Recovered at Pay By Mail Rates via NOCP (Column 20)

As noted earlier for “Recaptured Toll Revenue at Good To Go! Rates”, “Toll Revenue Recovered at Pay By Mail Rates” represents a subset of the category formerly referred to as “Recovered Toll Revenue”. This change was made starting in the November 2016 forecast as a result of different accounting treatments in the SR 520 financial statements.

In both cases, most 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 owed. Specifically, 85 percent of overdue toll transactions are assumed to be certified for a notice of civil penalty by a WSDOT toll enforcement officer, with the remaining 15 percent dismissed, a slight increase from the prior forecast to reflect actual experience through the end of FY 2018.

Customers receiving a NOCP 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. The November 2018 forecast assumes that 45 percent will take action, and that 55

percent will ignore the NOCP altogether, and will ultimately be subject to hold on the renewal of their vehicle registration. Revenue attributed to the \$40 NOCP fee is not captured within the net revenue forecast values.

- For those customers that take action as a result of a NOCP, 50 percent are assumed to remit the toll due at the Pay By Mail rate.
 - 50 percent of those are assumed make a payment for the civil penalty as well.
 - 50 percent are assumed to only pay the toll and ignore the civil penalty due.
- Among the 45 percent above that take action, the forecast assumes that \$0.80 will be collected for every dollar owed. This assumption captures the possibility that an administrative law judge through the civil penalty adjudication process may reduce or forgive some of the civil penalties due.
- Toll revenues and their associated civil penalties recovered in this manner flow into the Civil Penalty Account (17P). The toll portion of these revenues must be legislatively transferred to the SR 520 Toll Account (16J), which is assumed to occur in the subsequent biennium. Once transferred, the toll revenues are reported as an “Operating Transfer In” within the SR 520 financial statements.
- Civil penalty revenue is not defined as “pledged revenue” in Master Resolution No. 1117 and as such, does not impact the net revenue projections.

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5 | Changes to Operating and Maintenance Costs

This section documents the anticipated uses of Adjusted Gross Toll Revenues & Fees, which are those operating expenses that would be paid from toll revenues upstream of debt service and contributions to various reserve accounts, including those for deferred sales taxes and periodic repair and rehabilitation costs. 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 bridge insurance premiums. Additional details regarding each of these deductions are provided below, with the annual projections provided in columns 21-26 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 2018 and contracted values with vendors over the next biennium. 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 2018-21) agency cost values for consideration based on Decision Package budget requests with adjustments for cost escalation and the inclusion of SR 99 in the allocation of system wide costs starting in 2019.

The assumptions and methods underlying the toll collection and facility O&M are documented in a consolidated memorandum entitled: *2018 Updated Facility and Toll Collection O&M and R&R Assumptions and Costs for the SR 520 Bridge Replacement and HOV Program*. A description of each of cost items is provided below.

Credit Card / Banking Fees (Column 22)

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. Even with the coming of zero balance accounts, credit cards will be charged at some interval greater than daily, thus potentially for a group of transactions that could involve more than one toll facility.

For forecasting purposes, credit card fees attributed to SR 520 are calculated from the specific toll revenues expected to be collected on SR 520 based upon the November 2018 T&R forecast.

Credit and debit 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. In addition, there is an adjustment factor representing a small share

of account-holders closing out their accounts who request account balance refunds. An allowance for this is handled by assuming that credit card fees will also apply to account refunds.

For forecasting purposes, the two fee components were collectively assumed to equate to 2.24 percent of applicable toll revenues in the November 2017 forecast, and remain unchanged in the November 2018 forecast for FY 2019 only. After FY 2019, with the transition to the new CSC vendors in FY 2020, the assumed credit card, equivalent fee rate increases to 2.4 percent, or 2.45 percent after the small allowance for customer account refunds. This revised assumption was based on analysis of new transaction processing costs due to the introduction of a Paypoint fee for enhanced credit card security, which includes the tokenization of transactions and replaces the existing Gateway Authorization fee. The fixed per transaction fee, a component of the total credit card transaction processing fee, will increase from \$0.04 per transaction to \$0.12 per transaction, and accounts for the equivalent fee rate increase from 2.24 to 2.45 percent. This assumption remains unchanged throughout the forecast horizon.

Toll revenues subject to credit card fees include Total Gross Toll Revenue Potential (column 11 of Exhibit 28), adjusted or the tolls actually received after adjusting for short-term account discounts, *Good To Go!* Pay By Plate fees, total leakage, and rebilling fees recovered within 80 days (before the Civil Penalty process). Similar to the prior forecast, the November 2018 forecast assumes credit card fees associated with payments made in the civil penalty process will remain in the civil penalty account (17P) and are not transferred to the SR 520 toll account (16J); this includes the recently added category for recaptured toll revenue at the Good To Go! Rates via CPR. The assumption is based on actual practice to date in which credit card fees related to all payments in the civil penalty adjudication process were not transferred to the toll account. Credit card fees associated with transponder sales are captured in transponder purchase and inventory costs, embedded in toll collection O&M costs in column 23 of Exhibit 28, and equally offset in transponder sales revenue in column 18.

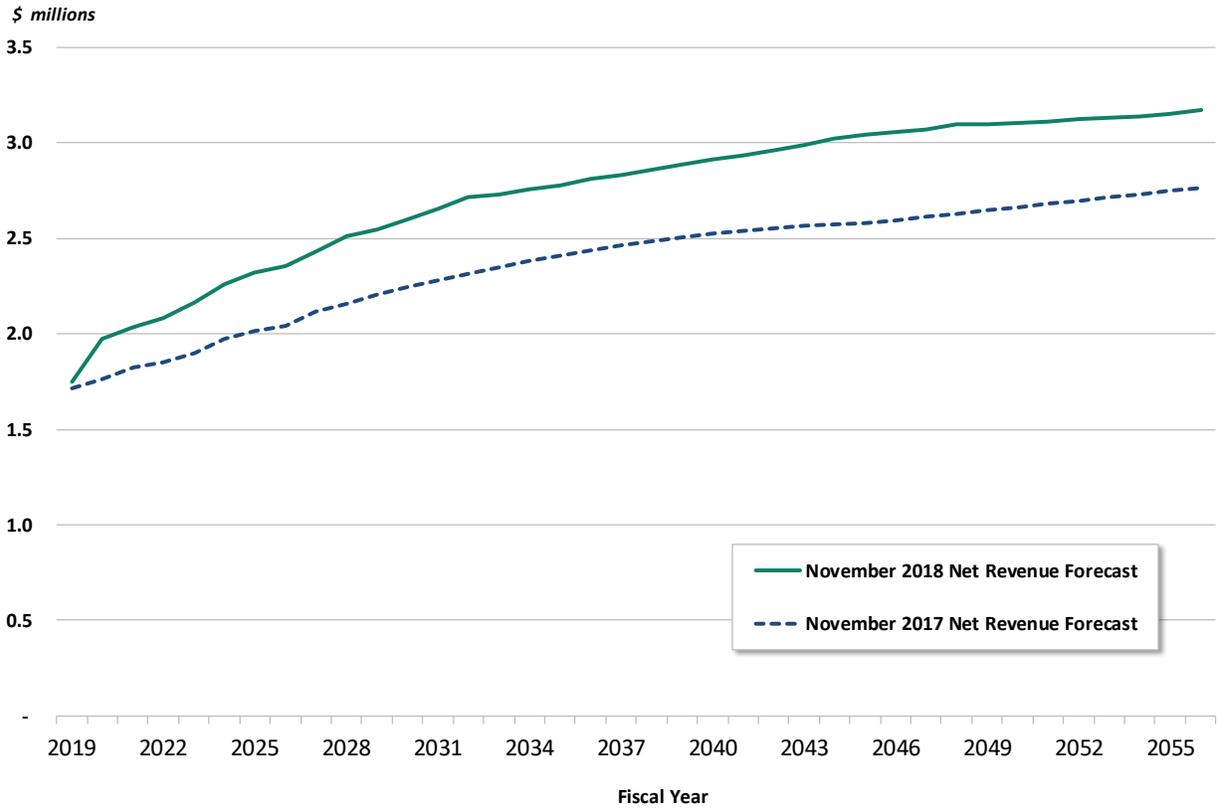
The previous November 2017 toll O&M estimates assumed that the share of toll revenue and fees subject to credit card fees would be a constant 92 percent throughout the forecast period. Recent historical data through the FY 2018 confirms this assumption, which is maintained in the current forecast.

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.

Credit card fees increased by \$13.9 million or 15.4 percent over the forecast horizon from the November 2017 to November 2018 forecasts. The increase in the November 2018 forecast is due to the increase in credit card fee rates in support of enhanced security and the increase in underlying gross toll revenue potential forecast, and thus expected revenue collections.

Exhibit 14 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 22 of Exhibit 28 in Appendix A.

Exhibit 14: Projected Credit Card Fees in YOE \$ (FY 2019-56)



Toll Collection Operations and Maintenance (Column 23)

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 and associated WSDOT Toll Division staff support.

Costs associated with the operating functions noted above have been consolidated within the toll collection O&M cost column (column 23) 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/debit bank card are included in the transponder purchase and inventory costs embedded in column 23 rather than in column 22.

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, this amount excludes toll exempt HOV carpool transactions on the I-405 Express Toll Lanes between Bellevue and Lynnwood, which require a Flex Pass transponder (declarable tag) that allow users to switch the transponder to HOV exemption status.

Consistent with the November 2017 forecast, the November 2018 forecast assumes that the SR 99 program will cover the ramp-up in transponder purchases associated with the tolling of the SR 99 Tunnel, “holding harmless” the other toll facilities. SR 520 was held harmless from bearing any costs associated with the initial surge in transponders sold and/or distributed during the first-year ramp-up periods for the I-405 Express Toll Lanes in FY 2016. A similar “hold harmless” policy is assumed for the ramp-up of the SR 99 tunnel with a dedicated amount of just over \$1.8 million for SR 99-related transponder purchase and inventory costs assumed in FY 2019, corresponding with the start of tolling in late summer 2019. Unlike I-405 which requires a more expensive Flex Pass transponder for HOV carpool declaration to be eligible for toll exemption, SR 99 will not have carpool exemption and frequent users are assumed to be more likely to purchase a sticker tag.

In the November 2018 forecast, projections for system-wide transponder sales reflect a lower cost per unit as recently negotiated with transponder vendor Neology, Inc. starting in FY 2020, with the full cost of \$1.51 per sticker tag transponder and \$15.77 per Flex Pass transponder. Previously in the November 2017 forecast, total transponder costs and associated packaging, mailing, inventory management, CSC processing, and contingency ranged from \$2.62 for a sticker tag sold through a retail partner to \$15.26 for a Flex Pass sold through a Customer Service Center (CSC) location.

After FY 2019, costs related to packaging, mailing, and inventory management 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 unit cost from the manufacturer is assumed to increase by 1.0 percent per year. 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 worldwide.

As transponder sales revenues are forecasted to exactly match transponder purchase and inventory costs, net transponder revenues are expected to be zero in both cases, with no impact on net toll revenues. Recent experience suggests that actual transponder sales are slightly net revenue positive.

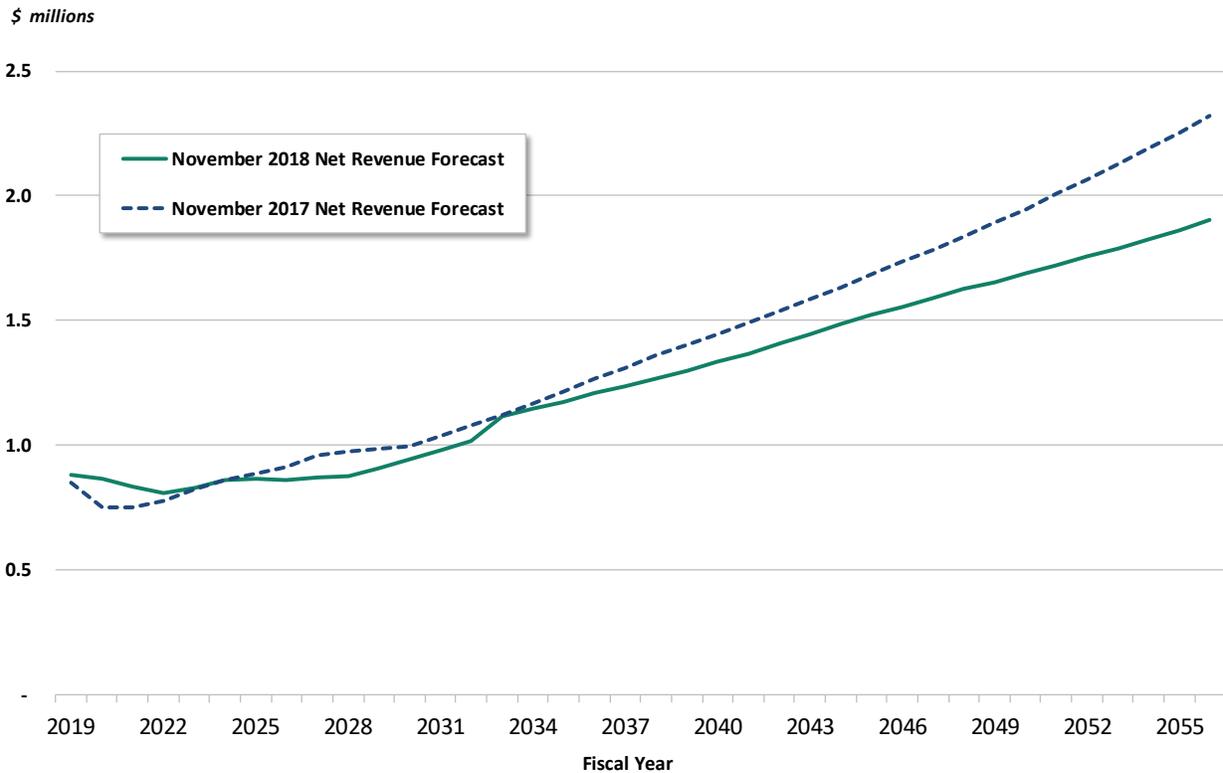
Compared to the November 2017 forecast, transponder sales and inventory cost projections in the November 2018 forecast have been revised downwards to reflect lower than expected transponder unit purchase and inventory costs as a result of new purchase agreements with the manufacturer.

Overall, transponder costs decreased by \$4.6 million or 8.8 percent over the forecast horizon from the November 2017 to November 2018 forecasts. The changes in the November 2018 forecast are primarily due to:

- Reduction in the forecast for transponder sales, which is aligned with the traffic and revenue forecast assumption of higher shares for image-based *Good To Go!* Pay By Plate transactions compared with transponder pass *Good To Go!* account transactions;
- A slight reduction in the percentage share of higher priced Flex Pass transponders compared to sticker tags; and
- Lower unit costs from the manufacturer for both Flex Pass and sticker transponders.

Transponder sales and inventory costs are included within the toll collection costs shown in column 23 of the Exhibit 28 T&R table, in an amount that directly offsets the transponder sales revenue forecast provided in column 18 over the forecast horizon.

Exhibit 15: Transponder Sales and Inventory Costs in YOE \$ (FY 2019-56)



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

The WSDOT Toll Division currently operates four toll facilities: the SR 520 Bridge; the SR 16 Tacoma Narrows Bridge (TNB); the SR 167 High Occupancy Toll (HOT) lanes; and the I-405 Express Toll Lanes (ETLs) between Bellevue and Lynnwood. The SR 99 Tunnel, presently open for traffic, is anticipated to start tolling in late summer 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, handled by the Washington Department of Enterprise Services (DES).

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 budget period (FY 2019-21) 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. Labor costs increased due to the addition of four FTE's representing a communications consultant, contract and agreement manager, transportation engineer, and customer service specialist. The addition of four staff to meet the operational needs of the system was partially offset by a revision in assumed benefits rates which are calculated as a percent of employee salaries. The November 2017 forecast assumed 39 percent compared to a lower rate of 28 percent in the November 2018 forecast. In addition to a reduction in the actual costs, specifically health care related costs, the percentage is based on a weighted average of base salaries, the basis of which also declined slightly in the November 2018 forecast.

Longer term forecast projections are based on budgeted staff levels, both filled and unfilled, assumed in through FY 2021 as the basis staff levels starting in FY 2022. Changes in staffing level after FY 2022 are primarily driven by the addition or removal of toll facilities from the system. Increased staffing levels are only assumed for facilities that have received legislative authorization for tolling, currently only the SR 99 Tunnel, and decreased staffing is attributed to the only facility assumed to be removed from the system, the Tacoma Narrows Bridge, where tolls may be discontinued after FY 2032 when the project's debt and deferred sales taxes are repaid. 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 forecast includes 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). The capital programs for the toll facilities under construction share the cost for general management and administrative items. However, as these projects begin to transition to operations, the management and administration costs are assumed to be paid by toll revenues, with costs allocated to each individual toll facility based on transaction levels.

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. The November 2018 forecast includes the existing four facilities — SR 520, Tacoma Narrows Bridge, I-405 Express Toll Lanes between Bellevue and Lynnwood and SR 167 HOT Lanes plus the forthcoming SR 99 Tunnel in downtown Seattle. The forecast allocates system-wide Toll Division staff and related costs by each facility's percentage share of the total number of toll paying transactions.

Exhibit 16 on the following page shows the system-wide annual transaction forecasts and the respective cost allocation shares by toll facility, comparing the current November 2018 forecast with the prior November 2017 forecast for FY 2025 and FY 2035. As previously noted, the increase in SR 520's November 2018 forecast for traffic, combined with unchanged or lower projections on the other facilities results in lower system-wide transaction forecasts compared to November 2017. Collectively, these two effects increase SR 520's share of system-wide costs. Note that the cost allocation for FY 2035 excludes the Tacoma Narrows Bridge, under the current assumption that it will not be part of the system after FY 2032 when tolls may be removed following the repayment of outstanding debt and deferred sales taxes.

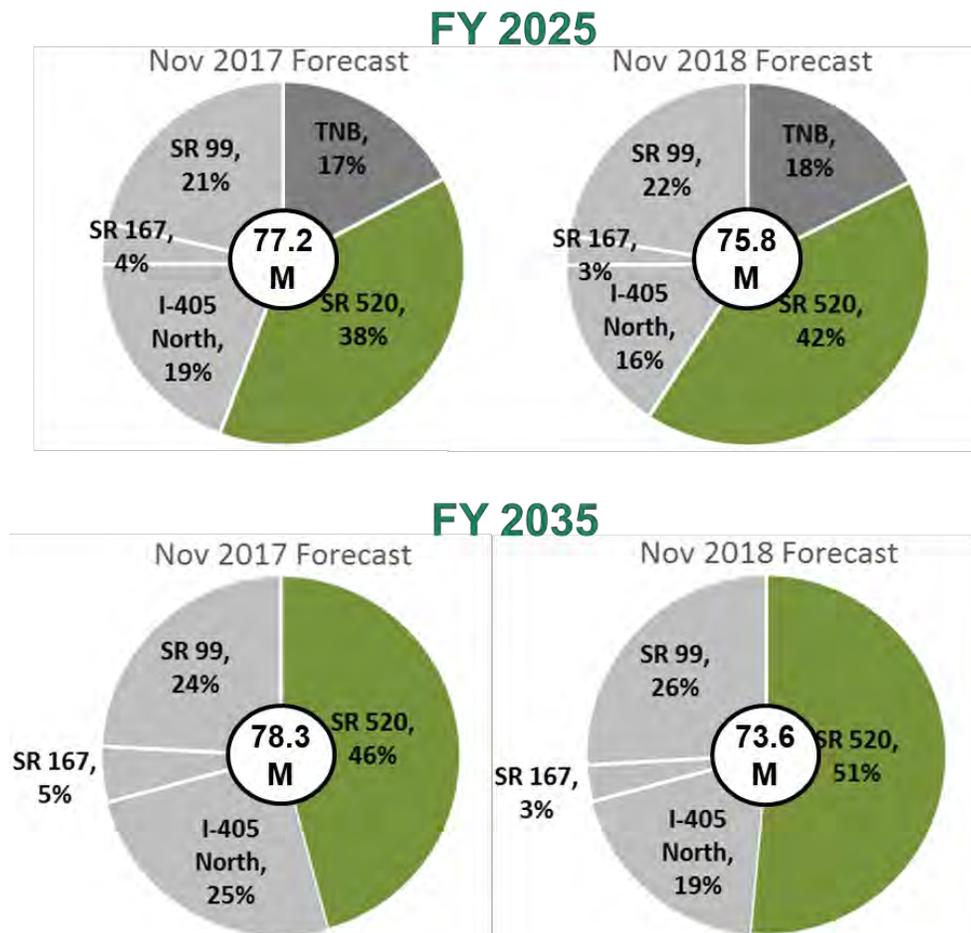
The Connecting Washington revenue package referenced earlier provides funding for three new toll facilities set to open in the next decade: a new segment of the I-405 Express Toll Lanes between Renton and Bellevue, the SR 167 Completion Project in Pierce County, and the SR 509 Completion Project in

south King County. These additional facilities are anticipated to create some economies of scale that will reduce SR 520’s share of projected state operations costs when the legislature authorizes them for tolling.

The November 2018 forecast for State Operations Costs (state FTE’s, allocation of system-wide costs, and forecasting activities) increased by 26.5 million (5.9 percent) over the forecast horizon compared to the November 2017 forecast. The increase in State Operations Costs, excluding printing and postage and license plate lookup costs, can be attributed to:

- Increase in SR 520 share of total system-wide costs from 37 percent in the November 2017 forecast to 40 percent in the November 2018 forecast for FY 2025, and 46 percent in the November 2017 forecast to 51 percent in the November 2018 forecast for FY 2035 when TNB is no longer considered in the allocation of costs, represents an increase in costs of \$28 million or 13.9 percent;
- An increase in the number of systemwide State FTE’s by four additional staff in support of increased operations with the addition of SR 99; and
- An offsetting reduction in costs as the result of a lower assumed benefit adjustment factor, decreasing from 39 percent of employees’ salary in the November 2017 forecast to a rate of 28 percent in the November 2018 forecast, combined with the additional FTEs State labor costs decreased by \$1.5 million or -0.7 percent.

Exhibit 16: Transaction-based Cost Allocation Shares for WSDOT Toll Facilities



The November 2018 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 2018 forecast – SR 520 Values

| Cost Item | Key Assumptions |
|--|---|
| Salaries & Wages | SR 520's share includes the standard cost for 24.0 FTEs by job classification in FY 2019, including 5.3 FTEs for general administrative and management costs, decreasing to approximately 16.7 total FTEs by FY 2022. Centralized general administration and management costs were previously covered by a combination of other motor vehicle funding sources and tolls. Starting with the 2015 estimates, all costs are assumed to be paid out of toll revenues. |
| Benefits | 28 percent of Salaries & Wages, revised from previous estimate of 39 percent to reflect state standard staff calculation tool |
| Personal Services / Consulting | Toll consultants support CSC operations, RTS operations, and operational results analysis and reporting. As tolling matures and WSDOT moves from a development and construction phase into a tolling operational phase, toll consultant support tasks will be transferred to WSDOT staff. By FY 2021, toll consultant support will be reduced by 50 percent to a core staff who will primarily support the analysis and implementation of toll program changes and continual improvement initiatives. |
| Office Supplies / Materials | Standard cost of \$500 per year, per FTE. |
| Rent | Assumes Goldsmith building location in Seattle, including part of the third floor and fourth floor for approximately \$32,000 per month. |
| Printing and Postage | Cost of \$0.76 per mailing in FY 2019 (includes cost of \$0.068 per envelope, printing costs of \$0.214, bulk postage rate of \$0.373 per mailing, \$0.065 for insert processing, and \$0.043 for presort processing. Consumable and other mailing costs account for mailings not associated with toll bills. Similar cost per mailing of \$0.76 assumed with an additional cost of \$0.004 per mailing for consumables. |
| Out of State License Plate Lookup Cost | Assumed that 11.5% 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 \$1.00 per plate with escalation starting in FY 2020. The revised lower value remains above the \$0.50 per plate charge incurred by other toll agencies for similar services. |
| Computers and Equipment | Standard cost of \$5,000 per year, per FTE, in addition to facility specific equipment costs as provided by WSDOT. |
| Phone and Communications | Standard cost of \$6,800 per year, per FTE. |
| Vehicles Operations | Standard cost of \$1,000 per year, per FTE. |
| Record Retention ¹ | Standard cost of \$1,000 per year, per FTE. |

Note: FTE = full time equivalent employee

¹ 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.

Exhibit 18: State Operations Escalation Assumptions in the November 2018 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 prior CSC vendor agreement, the state was 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 customers opting to receive *Good To Go!* account statements by mail. In 2016 the role of printing and postage for Pay By Mail customer toll bills as well as providing customer opt-in *Good To Go!* account statements by mail was transferred to the Washington State Department of Enterprise Services (DES). Although these costs were anticipated to be lower under DES, anticipated cost savings have not been realized, primarily due to increases in printing and postage rates in FY 2017 and increases in presorting costs required for the bulk postage rate in FY 2018. For the current forecast, the following presents the revised printing and postage assumptions:

- The November 2018 forecast base assumptions were updated in order to reflect actual experience in which the average cost to process and mail an invoice is assumed to be \$0.76 in 2018 dollars, inflated by 2.5 percent per year.
- The November 2018 forecast assumes a systemwide average of 2.16 transactions per invoice for SR 520, aligned with actual system-wide data for FY 2018. Previously, the number of toll transactions per invoice was assumed to average 2.76, which was also based on reported results for FY 2012-17 at a systemwide level, but also reflected an upward adjustment specific to SR 520 reflecting a higher frequency of customer usage reflecting its bi-directional toll collection and propensity for round-trip travel behavior.
- Comparing the November 2017 to the November 2018 forecast, revisions to state costs for toll bill printing and postage resulted in an increase of \$19.4 million or 14.2 percent due to the above factors.

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 out-of-state plate inquiry. In the November 2018 forecast, it is assumed that 11.5 percent of readable license plates will require an out-of-state lookup over the forecast period, consistent with the November 2017 forecast.

The November 2018 forecast continues the November 2017 forecast assumptions, with the unit cost per out-of-state plate lookup of \$1.25 in FY 2019 under the current CSC vendor agreement. Beginning in FY 2020 following the transition to new CSC vendors, the unit cost per out-of-state plate lookup is assumed to decrease to \$1.00 per lookup, though this is higher than the November 2017 forecast assumption of

\$0.77 per transaction. Similar to the prior forecast, the November 2018 forecast assumes annual 2.5% inflation which is applied in the November 2018 forecast beginning in FY 2021. A short survey of industry market pricing for plate lookup services ranged from \$0.50 to \$0.90 per plate, so \$1.00 plus inflation is at the conservative end of this range.

- Overall, the increase in lookup costs combined with fewer transactions per invoice, place the license plate lookup costs at \$5.0 million, or 59.2 percent higher over the forecast horizon, compared to the November 2017 forecast.

Collectively state operations costs including printing and postage and license plate lookup costs increased by \$54.3 million or 13.7 percent over the forecast horizon from the November 2017 to November 2018 forecasts.

State toll collection costs are included as part of column 23 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 independently, and these system-wide costs are allocated to SR 520 based on its share of total transactions, excluding cash transactions on TNB which are processed under a separate, facility-specific contract. 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 Transactions Consultants (ETC), provides these operational functions and also provides and maintains the systems software that process toll transactions. WSDOT is currently in the process of transitioning from ETCC to two new CSC vendors, ETAN for systems software and AECOM for operations. Contracts for these new vendors were awarded in 2017 and 2018, respectively, and anticipated to be completed by the beginning of FY 2020 (July 1, 2019).

The November 2018 forecast reflects further refinements in the allocation of CSC vendor costs vendor costs, between the following two items:

- Toll collection activities which are paid from tolls and affect the net toll revenue projections; and
- Activities engaged in processing delinquent transactions for which notices of civil penalty (NOCPs) are sent and adjudicated, the costs for which are paid from civil penalty fees collected and not toll revenues, thus not impacting net toll revenues.

Two financial accounts are maintained keeping the costs and revenues associated with these activities separate. Delinquent toll bills that are subsequently recovered via the adjudication process are deposited into the civil penalty account, and are typically transferred from there to the SR 520 toll and fee revenue account through legislative authorization at the end of each fiscal year. The amount of time the CSC vendor spends supporting the two activities determines how the costs are allocated between the two accounts.

The aforementioned Customer Program for Resolution (CPR) alternative payment option, implemented in mid-2015, allows customers who receive a notice of civil penalty but call or visit a customer service center to waive the \$40 civil penalty fee, up to two times. When the CPR process is used to recapture toll revenue, the amount recaptured is automatically transferred into the SR 520 toll and fee revenue account, denoting the CSC vendor activities as toll collection-related. The first customer-initiated request typically

results in both fees and penalties being waved, the second request requires *Good To Go!* account holders to bring their account back to good standing and non-account holders to open a *Good To Go!* account. Further requests for civil penalty fees to be waved requires a hearing with an Administrative Law Judge. While helping to improve the rate of toll collection in the NOCP process, the waiver of \$40 fees payable has resulted in a noticeable decrease in civil penalty fee revenue.

The previous November 2017 forecast assumed that the rate of CPR use would rapidly decline after the first year of the program, as Pay By Mail customers benefiting from the CPR converted to *Good To Go!* accounts, with remaining NOCP transactions going through the normal adjudication process with any recovered tolls transferred back to the SR 520 account by legislative authorization at the end of each fiscal year. This previous forecast assumption supported a 24 percent CSC vendor cost allocation to civil penalty processing and adjudication activities, with 76 percent of the costs associated with toll collection and paid from tolls.

However, CPR use continues to steadily increase three years after the program was implemented. In consideration of this trend and further evaluation of available data, the November 2018 forecast has revised downward the share of CSC vendor costs associated with processing NOCPs to 18 percent, with 82 percent of CSC vendor costs allocated to toll collection and paid from tolls. This change acknowledges that increasing numbers of delinquent tolls recovered via CPR without the \$40 civil penalty fee to assist in defraying what otherwise would be classified as NOCP transaction processing costs.

In the prior forecast, ETCC's contract was set to expire in February 2019. The November 2018 forecast reflects another ETCC contract extension by five months to the end of FY 2019, providing for longer and smoother transition to the new systems software and operations vendors. SR 520's share of this allocated cost is \$1.4 million, representing an increase in FY 2019 costs.

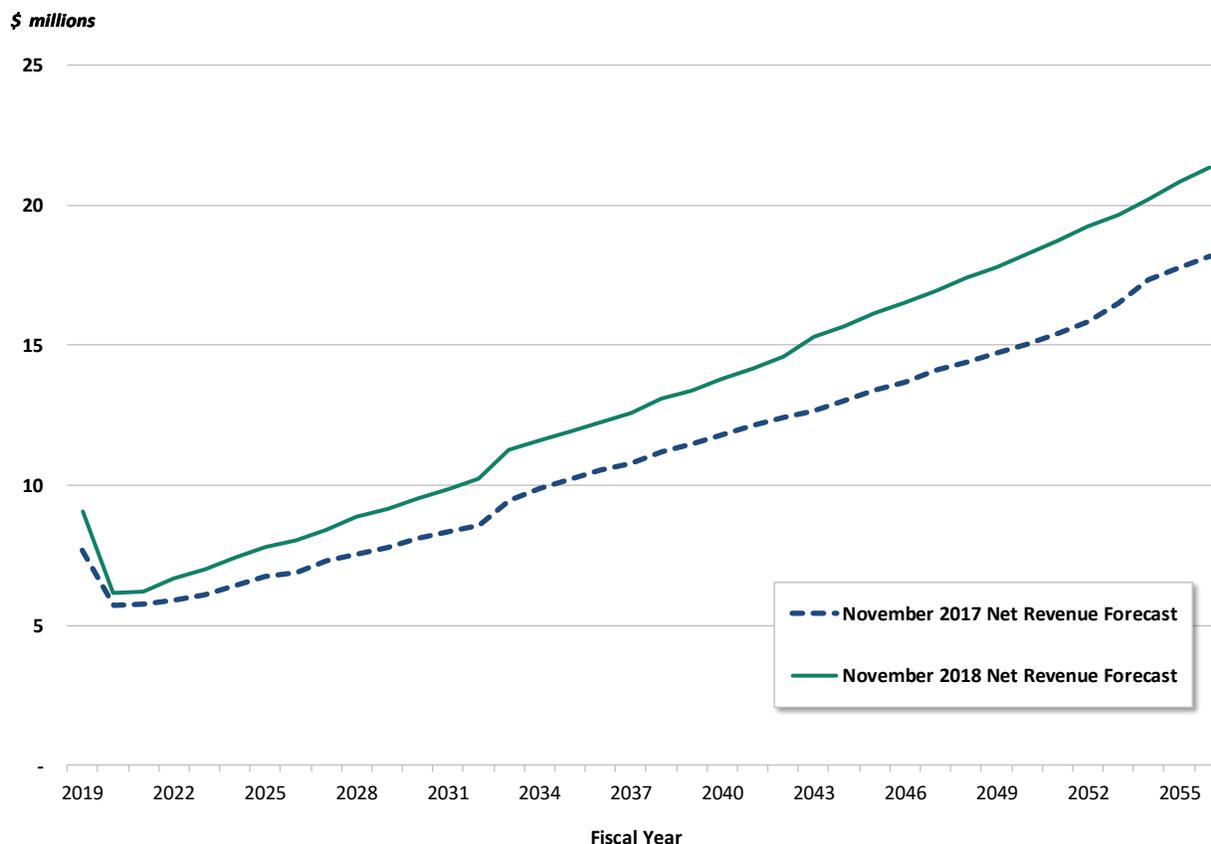
Starting with FY 2020, future CSC vendor costs for FYs 2020-29 were based off an average of initially proposed costs from the shortlisted CSC operations vendors and similar expectations for the systems software vendors. CSC operations vendor costs for FY 2030 and beyond are estimated using a bottom-up system-wide cost analysis reflecting current market rates for all CSC operating and systems software functions, consistent with having separate vendors provide these functions, plus the addition of a five percent risk contingency.

The following summarizes the primary factors contributing to increased CSC vendor costs in the November 2018 forecast.

- The November 2018 forecast for CSC vendor costs is \$76.5 million or 18 percent higher than the prior forecast, as a result of the following three effects.
 - A decrease in the share of CSC vendor costs associated with civil penalty transaction processing and collections efforts from 24 percent of total monthly vendor costs in the prior forecast to 18 percent in the current forecast results in a cost increase to SR 520 of \$59.6 million or 14.9 percent over the forecast horizon.
 - Similar to system-wide State Operations costs, CSC vendor costs are allocated on a transaction basis across the existing four facilities plus the forthcoming SR 99 Tunnel in downtown Seattle, with a higher SR 520 share in every year in the November 2018 forecast (see Exhibit 16 for allocation shares by facility). The revised allocation shares of system-wide CSC costs represent an increase in SR 520 costs of \$14.6 million or 3.2 percent.
 - The remaining \$1.4 million CSC cost increase for SR 520 is attributed to the CSC vendor contract extension in FY 2019.

Exhibit 19 illustrates the forecast horizon CSC costs for the November 2018 and November 2017 forecasts. CSC costs are included as part of the toll collection costs in column 23 of Exhibit 28 in Appendix A.

Exhibit 19: SR 520 Share of CSC Cost Projection in YOY \$ (FY 2019-56)



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 that the system is functioning properly.

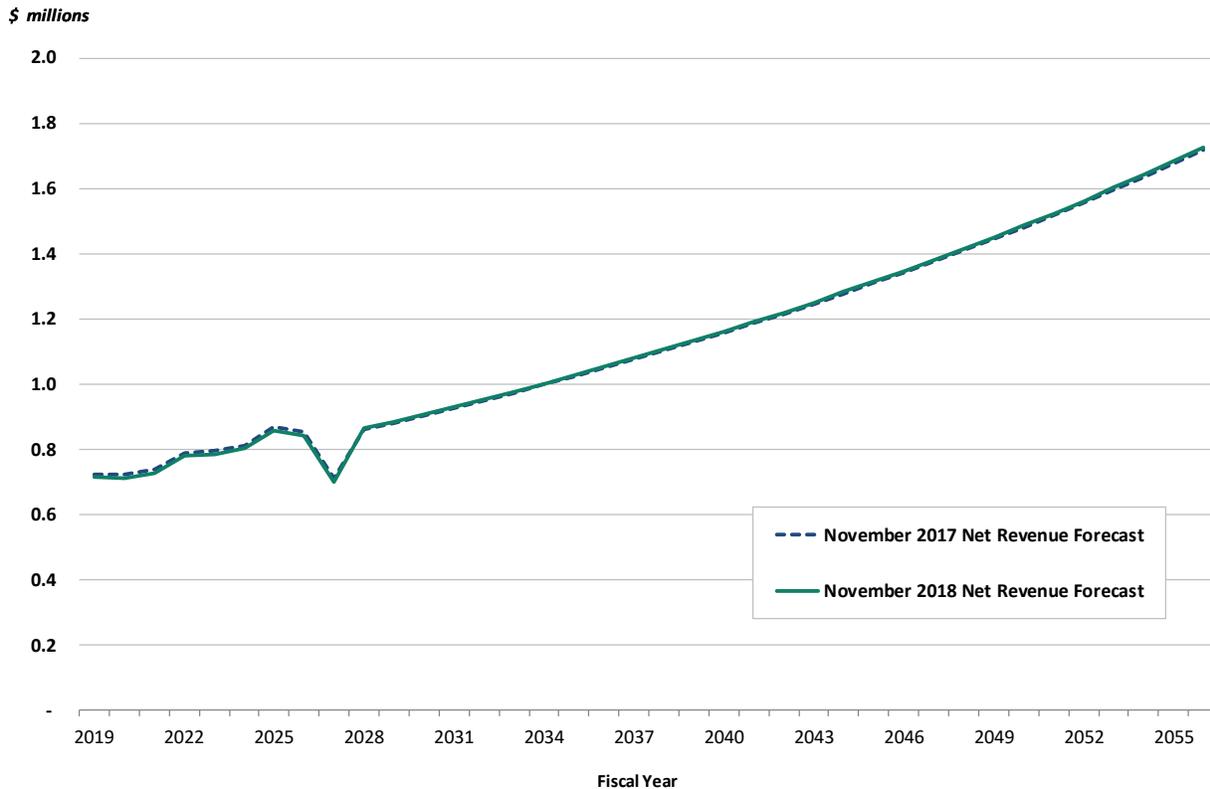
RTS operations and maintenance activities are performed by a private contractor, Kapsch (formerly Schneider Electric), in conjunction with WSDOT maintenance staff. The vendor contract specifies that Kapsch will provide ongoing maintenance of the toll collection equipment through the contract period. The 10-year system-wide RTS contract for all facilities began in FY 2017 with the installation of the permanent toll collection system on SR 520. 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.
- For the November 2018 forecast, RTS costs are less than one percent higher over the full forecast horizon compared to the November 2017 forecast. This minor increase is a result of a combination of decreased WSDOT costs and increased costs for vendor provided services.
 - Decreased WSDOT costs are due to a combination of lower network equipment maintenance support costs, based on actual experience, and slightly lower labor cost assumptions associated with the Signals Shop service level agreement with Northwest Region.
 - Increased costs for vendor provided services is associated with assumed cost escalation on lane vendor annual performance testing, starting with the next assumed vendor contract in FY 2028. The increase in annual SOC-1 audit costs is based on actual experience, and beginning in FY 2028, the uniform redistribution of the previous nine annual audit costs over each 10-year contract period in the forecast to remove the previously assumed permanent one year audit gap during the tenth-year vendor implementation, which is retained only until FY 2027.

The RTS cost projections are also included within the annual toll collection costs in column 23 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 2019-56)



Routine Facility Operations and Maintenance (Column 24)

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's SR 520 project office established a maintenance task force of engineering, maintenance, and design staff to conduct a full review of the Program's projected facility O&M costs.

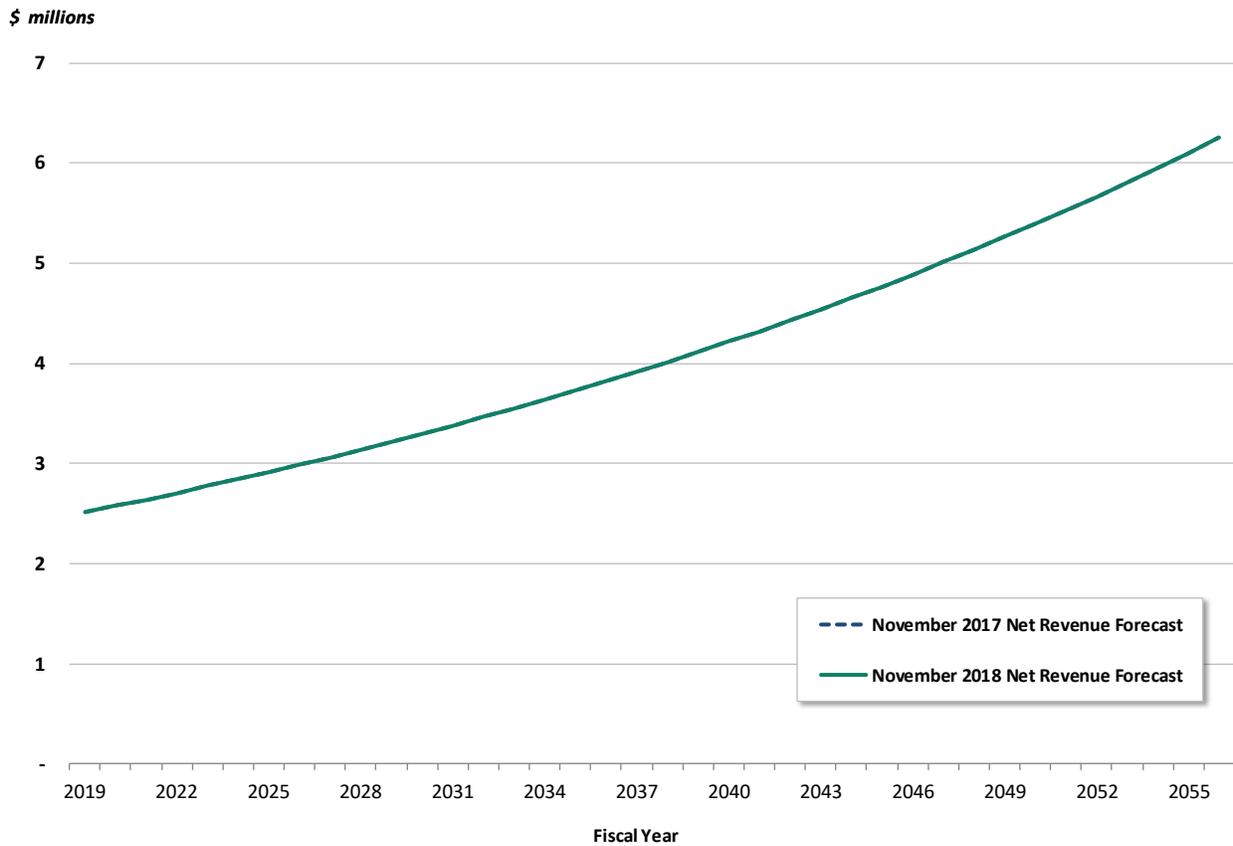
During 2017, WSDOT's Northwest Region maintenance staff took over responsibility for reviewing, revising, preparing, and documenting the updated facility O&M cost estimates, with support from the SR 520 project office and the WSDOT Toll Division. Collectively, WSDOT refined the previous estimates by 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 are documented in the consolidated memorandum entitled *2017 Updated Facility and Toll Collection O&M and R&R Assumptions and Costs for the SR 520 Bridge Replacement and HOV Program*.

For the November 2018 forecast, the facility O&M costs remain unchanged from the November 2017 forecast estimates. An update of the facility O&M and R&R cost projections is anticipated as part of the November 2019 forecast update.

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 capital costs for 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") — are funded solely from the Connecting Washington transportation revenue package as passed by the legislature in 2015 and funded with motor vehicle fuel taxes. Because the Rest of the West does not include any toll funding, WSDOT assumes that the O&M costs for the existing and reconstructed roadway and structures comprising this fifth component will continue to be paid from motor vehicle revenues other than tolls.

Annual facility O&M cost projections are illustrated in Exhibit 21 on the next page, with forecast values provided in column 24 of Exhibit 28 in Appendix A.

Exhibit 21: Projected Facility O&M Costs for the toll funded segments in YOE \$ (FY 2019-56)



Bridge Insurance (Column 25)

Current insurance premium and coverage information for SR 520 is provided by the Washington State Department of Enterprise Services Office of Risk Management (DES/ORM). Coverage commences annually on July 1, in alignment with the state fiscal year. The current FY 2019 premium forecast estimates were based on the actual premium payment that occurred in July 2018 and SR 520’s estimated share of state brokerage fees.

Current and future insurance policies cover various risks to bridge structures, including property damage losses caused by forces of nature, such as earthquakes, floods, and boiler/machinery failure, acts of terrorism, as well as sub-limits on coverage for demolition/ increased cost of construction, course of construction, business interruption, and service interruption. The coverage is procured under an Aggregate Property Insurance Policy that bundles SR 520 with other assets, though this aggregate policy excludes the Tacoma Narrows Bridge.

Unchanged for FY 2019, the annual insurance policy covers both completed and under construction bridge components of the SR 520 corridor between I-5 and I-405, including property damage losses for the Portage Bay bridge structures, the west approach viaduct structures, the floating bridge, and the east approach, caused by forces of nature, component failure, or acts of terrorism. The all-risk loss coverage limit is \$400 million, though in the case of an earthquake or flood loss, there is a \$100 million sublimit on damage. All property damage loss coverage is subject to a \$10 million deductible.

In addition, business interruption coverage replaces lost revenue for up to one year with no deductible and a \$100 million policy limit when associated with a covered loss. Should a non-covered loss occur, such as damage to a bridge, overpass or lid within a 20-mile radius of the center of the floating bridge, then the contingent business interruption coverage with a \$10 million, 30-day limit would apply to replace lost toll revenues in cases where the damage results in restricted access to the bridge by a military or civil authority.

The November 2018 forecast reflects risks and insured values for the covered assets that were re-evaluated in 2018. As a result, the total premium cost for FY 2019, including SR 520's share of statewide administrative and brokerage fees, has increased from \$2.54 to \$2.83 million for assets with a total insured value that increased from \$1.38 to \$1.43 billion, though the coverage retained the \$400 million all-risk limit per incident. Note that the administrative and brokerage fees included in the SR 520 insurance cost allow the state to obtain competitive insurance policies covering other facilities and assets.

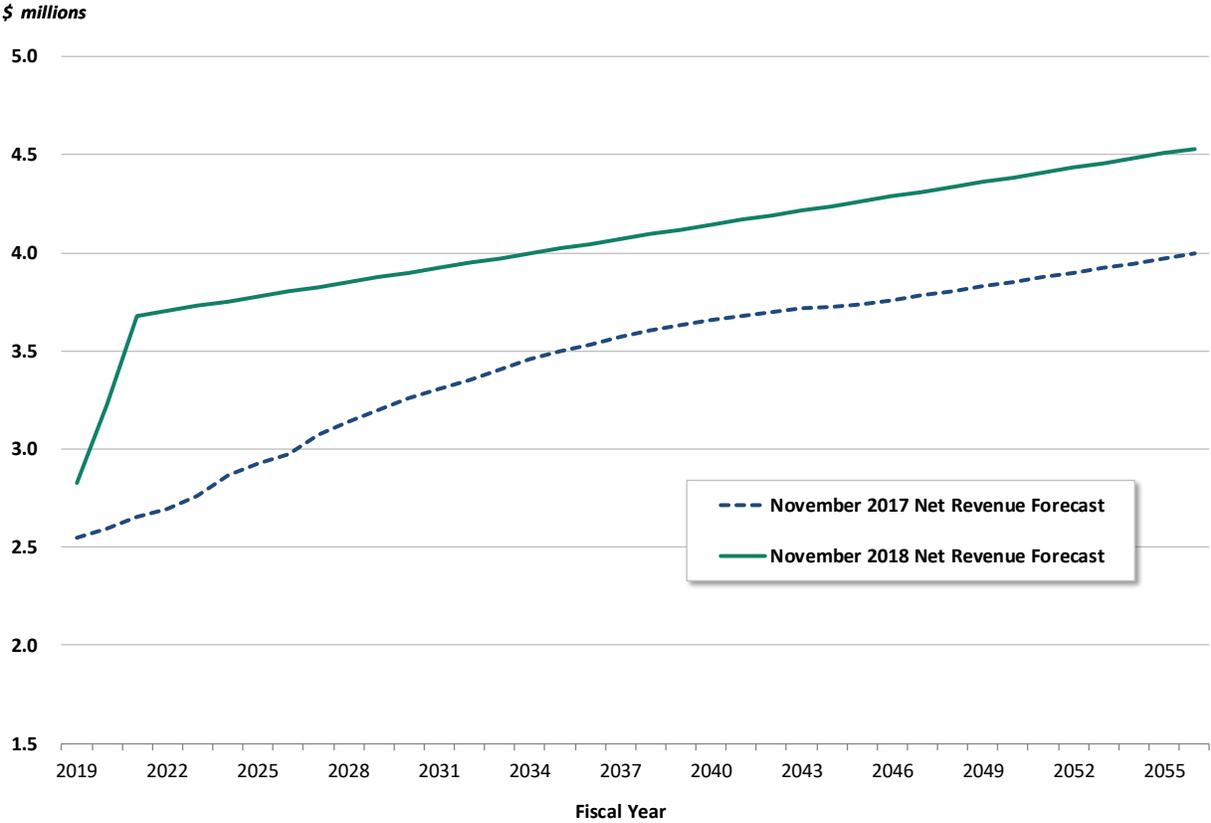
Future insurance coverage from FY 2020 forward is assumed to continue to cover property damage as well as business interruption in the same manner as the current FY 2019 policy, with costs assumed to include both premiums and SR 520's share of statewide brokerage fees. The consideration of a proposed policy rider for cyber-terrorism liability coverage has not been included within the SR 520 coverage, though the State has a policy with a \$5 million limit covering all agencies.

Since the West Side components of the program won't be completed until well into the next decade, it is premature to obtain a detailed premium estimate for the final completed corridor. Future year premiums could be higher if the State opts to insure for a higher limit due to higher replacement costs once construction has finished, higher construction replacement cost inflation, and/or faster toll revenue growth, but could also be lower as risks are reduced with the replacement of the original West Side structures with new ones designed to better withstand risk factors such as a seismic event.

Given these potentially countervailing influences on premium costs, the forecast for insurance premiums have been projected to grow at 14 percent per year for the next two years followed by a constant increase of just over \$24,000 per year over the remainder of the forecast horizon to align with prior cost escalation assumptions based on the growth in adjusted gross toll revenue potential. The current escalation is higher in all years compared with the November 2017 forecast as a result of the two years of assumed high growth in the insurance premiums that were not included in the previous forecasts. In the November 2017 forecast the FY 2018 premium and fee amount of \$2.48 million was projected to escalate at an average rate of 2.4 percent over 10 years (FY 2019-28), with individual annual rates as high as 3.8 percent and as low as 1.4 percent, depending on the annual revenue growth, which is also slightly influenced by night and weekend construction closures during this period.

Annual insurance premium forecasts are provided in column 25 of Exhibit 28 in Appendix A.

Exhibit 22: Projected Insurance Costs in YOE \$ (FY 2019-56)



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6 | Changes to Other Project Uses of Toll Revenues

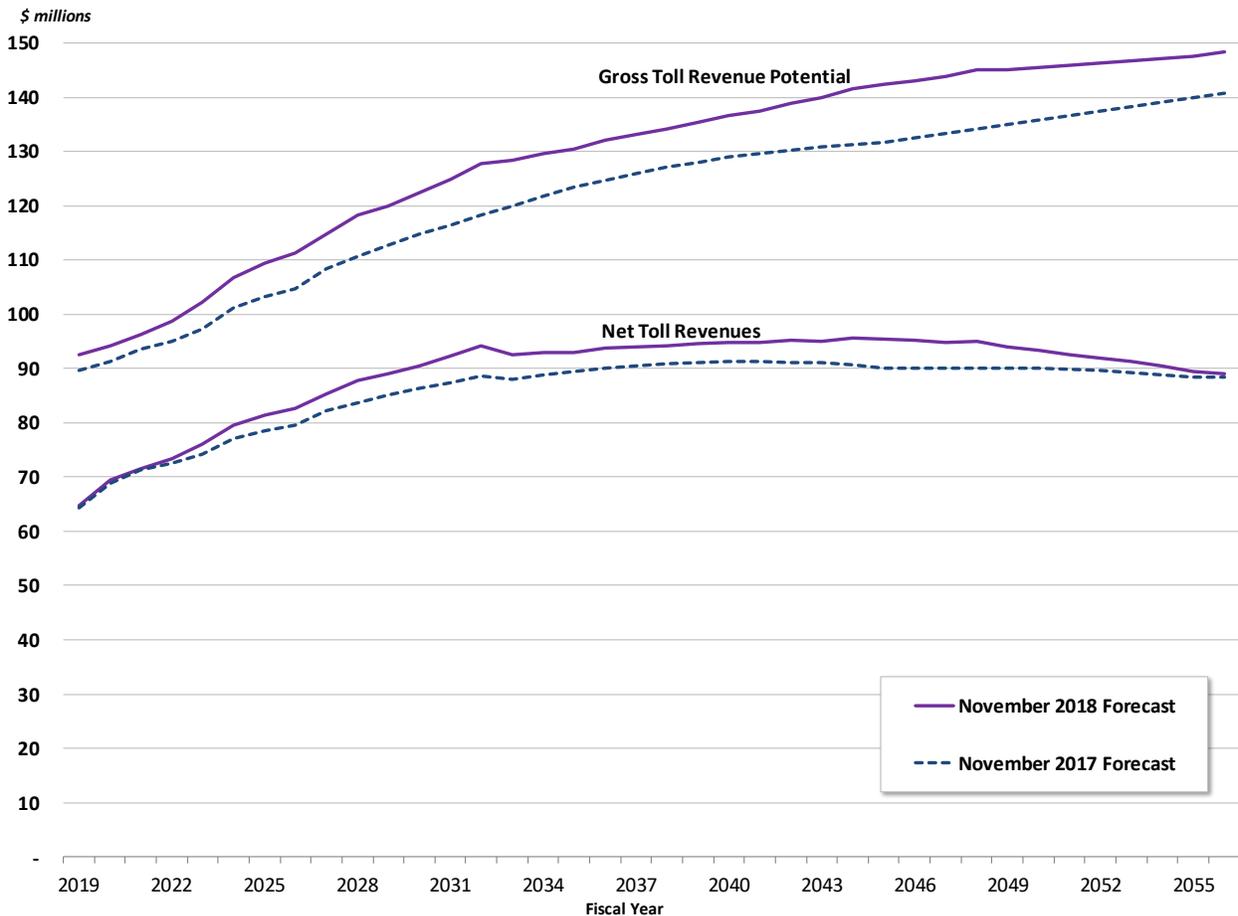
Total Net Revenue (Column 26)

Starting with Stantec’s Gross Toll Revenue Potential in the T&R table column 11, the addition and subtraction of the various revenue adjustments in columns 12-21 and the O&M expenditures in columns 22-25 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 26 of Exhibit 28 in Appendix A.



Exhibit 23 illustrates the spreads between the gross and net revenue over the forecast horizon for the November 2017 and November 2018 forecasts. The differences in the sums of the annual values over the forecast horizon are shown in Exhibit 7 on page 16.

Exhibit 23: Projected Gross and Net Toll Revenues (FY 2019-56)



Other downstream uses of net toll revenues include deferred sales tax, periodic facility R&R costs, and periodic toll-related R&R costs as shown in the waterfall on the previous page. In accordance with the SR 520 financial plan flow of funds, net revenues 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 27)

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, was completed in mid-2017, which would make the first deferred sales tax payment due on December 31, 2022, midway through FY 2023. 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. The November 2018 forecast values, shown in column 27 of Exhibit 28 in Appendix A, are unchanged from the November 2017 forecast of \$159.4 million over the forecast horizon.

Periodic Facility Repair and Replacement Costs (Column 28)

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.

As with facility O&M costs, WSDOT’s Northwest Region maintenance staff has responsibility for reviewing, revising, preparing, and documenting the costs for R&R activities. As with the O&M costs, R&R projections were prepared by roadway segment and cost category and there have been no changes to the November 2017 forecast values. A map illustrating the roadway segments in the SR 520 corridor is provided as Exhibit 4 in the Introduction on page 11.

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.

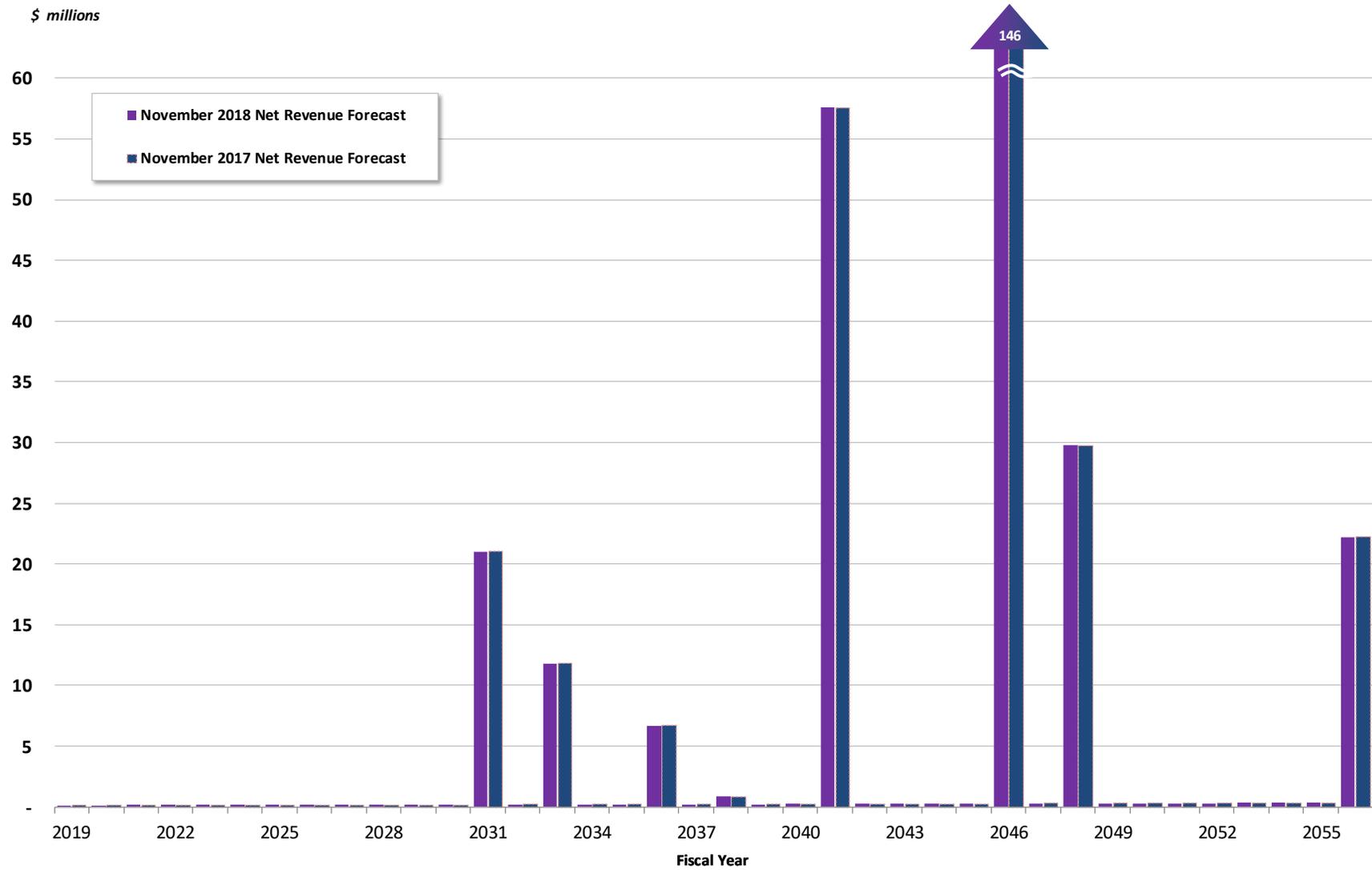
In contrast, WSDOT’s non-toll funding from the Preservation Program would be used for non-bridge program components with toll capital funding, primarily the at-grade highway section between the floating bridge and I-405. R&R costs not paid from tolls in this section would include pavement grinding and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

The 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 only motor vehicle tax revenues other than tolls, 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, as well as the estimates, remain unchanged for the November 2018 forecast. The November 2019 forecast update will incorporate the findings from an updated review of underlying unit cost assumptions and timing for major repair and rehabilitation projects being evaluated by WSDOT Northwest Region staff.

Facility R&R costs funded by toll revenues are shown in column 28 of the Exhibit 28 T&R table for the November 2018 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 2019-56)



Toll-Related Repair and Replacement Costs (Column 29)

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.

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 29 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 2018 forecast is unchanged from the November 2017 forecast and assumes an equal distribution of RTS procurement costs across facilities, with 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. The costs for the last procurement cycle are omitted in the forecast 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 2018 forecast is unchanged from the November 2017 forecast.

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 vendors along with implementation and testing are also included in the Periodic Toll Equipment and CSC R&R column in the net revenue table as provided in Exhibit 28. 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 costs associated with procuring one or more CSC vendors will be allocated across all the authorized toll facilities based on each facility's share of total system wide transactions.

As with the November 2017 forecast, periodic system-wide CSC vendor(s) procurement costs are allocated across the four existing facilities. The SR 99 Tunnel is included in the initial round of procurement as the process is being accelerated to accommodate the addition of SR 99, with the new systems in place by the time the tunnel is completed and begins tolling in 2019. In addition, tolls are

assumed to be removed from the Tacoma Narrows Bridge at the end of FY 2032, thus removing it from CSC vendor procurement cost allocation starting with FY 2033.

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 initial procurement cycle anticipated to be completed in FY 2020, 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. As noted above for RTS R&R costs, the costs for the final forecast horizon 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 vendor contract extension expires at the end of FY 2019, by which time the transition to two new CSC vendors — one for systems software (ETAN) and one for operations (AECOM) — will have been completed with the new CSC vendors anticipated to be operational at the beginning of FY 2020. While the same vendor could potentially be selected for both the systems software and operations functions in future procurement cycles, the contracts for these functions will remain separate.

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 (transferred to WA Department of Enterprise Services in 2016), 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 account management. In addition, the Gen 2 system would address other concerns with the existing system including:

- Existing contract key performance indicators (KPIs) do not adequately measure some of the things which would add immediate value to the customer service delivery, such as the customer website for account management, the CSC phone system, and support for routine and ad hoc reporting;
- Frequent changes to operating rules create an unstable environment where operational consistency is difficult to achieve;
- Training does not adequately prepare customer-facing staff to deliver consistent information and service to customers;
- Established policies and procedures impacting good customer service are not always followed; and
- Recognition and resolution of transaction processing and customer service issues have been slow.

The forecast for procurement costs assume that the systems software with enhanced capabilities and associated vendor contract would be procured anew every 10 years.

Following the current two-vendor procurement, the WSDOT Toll Division allows for the two CSC vendor procurement model going forward, with separate contracts for a CSC systems software vendor and

for a CSC back and front office customer service operations vendor. However, separate CSC vendor RFPs do not preclude 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 anticipated to be functionally completed by the end of FY 2019, approximately concurrent with the start of tolling on SR 99 in the late summer of 2019.
- 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 transaction processing, image review, transponder inventory management, adjudication management, collection oversight, and retail front office services. Toll bill printing and mailing, recently transferred from the CSC back office vendor to WA Department of Enterprise Services, could potentially be added back to the scope of work for a future CSC operations vendor procurement.
 - The CSC operations vendor is assumed to be procured every eight years. This is assumed to be composed of a six-year base contract combined with one two-year contract extension, assumed to allow for the transition to a new vendor. Revised from the November 2017 forecast, the November 2018 forecast effectively removes one year from the assumed vendor cycle to account for a full year of vendor overlap. Each cycle of vendor contract is still assumed to consist of a base six-year contract with one two-year contract extension, but procurement would now have the new vendor under contract during the second year of the existing vendor’s two-year contract extension period.
 - 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.

System-wide costs related to the first cycle of CSC systems and operations vendor procurement remained constant in the November 2018 forecast, maintaining the overall enterprise assumption of \$28 million dating back to the November 2016 forecast.

Total system-wide vendor procurement costs are broken out by the following primary categories, with the amounts provided in current dollars before annual adjustments for cost escalation to year of expenditure dollars (at an assumed 2.5 percent) and before allocation of these costs to SR 520 and the other toll facilities in the system.

- System RFP Development, Vendor Solicitation, Start-Up and Transition, System Development and Design, and Installation – WSDOT and consultants will work with the vendor to transition the current system to a new system within the current procurement cycle with costs allocated over two years:
 - WSDOT share of costs for management oversight of \$1,887,000.
 - Consultant share of costs for management oversight and Independent Verification and Validation of \$3,239,000.
 - Vendor share of costs for system development and implementation of \$17,156,000.

- Operations RFP Development, Vendor Solicitation, Start-Up and Transition, and Development and Design – WSDOT and consultants will work with the vendor to transition a new operation vendor or updated contract with the existing vendor within the current procurement cycle with costs allocated over two years:
 - WSDOT share of costs for management oversight of \$629,000.
 - Consultant share of costs for management oversight of \$560,000.
 - Vendor share of costs for design and testing, onboarding transition plan, and additional CSR training of \$982,000.
- CSC Facilities Transition — Costs incurred by WSDOT for managing the transition to a new CSC facility in FY 2019:
 - Lease Improvements cost of \$350,000.

In addition to the lease improvements, facility lease costs are included in CSC O&M within the expected new vendor contract costs and WSDOT staff costs.

- Transition Support – Costs incurred by the existing and future vendor for managing the handover of operations and systems software functions in FY 2019 of \$850,000.
- Data Warehouse – WSDOT and consultants are working with the new systems software vendor to develop a data warehouse over two years, with costs as follows:
 - WSDOT share of costs for IT Management and Data Analyst Involvement of \$191,000.
 - Consultant share of costs for data specialist support of \$221,000.
 - Vendor share of costs for developer staff, database analysis, implementation of tools and licenses, and server and hardware installation of \$1,860,000.

In addition to the initial development costs for software and hardware, maintenance and technical support are included in the routine WSDOT and Consultant staff costs and Vendor contract costs discussed in their respective sections.

Ten year totals of forecasted transactions (FYs 2020-29) for the existing four facilities (SR 520 Bridge, Tacoma Narrows Bridge, SR 167 HOT lanes, and I-405 ETLs between Bellevue and Lynnwood) plus the soon to be tolled SR 99 tunnel were used to calculate the facility allocation shares for system-wide costs in the initial systems software and operations vendor procurement cycle. After the current vendor procurement cycle, costs for future procurement cycles are allocated by 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. The system is designed to be capable of adding new toll facilities though these facilities are not included in the cost allocation until they have been authorized for tolling by the state legislature. Although the forecast assumes a 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 (six-year base contract with an optional two-year contract extensions), as previously noted.

For the November 2018 forecast, SR 520's transaction allocated share of the unchanged system-wide CSC R&R cost estimates has increased, resulting in a total forecast period cost increase of \$7.6 million or 11.0 percent relative to the November 2017 forecast.

- The November 2018 forecast assumes an increase in SR 520 share of total system-wide costs from 38 percent in the November 2017 forecast to 42 percent in the November 2018 forecast for FY 2025, and 46 percent in the November 2017 forecast to 51 percent in the November 2018 forecast for FY 2035 when TNB is no longer considered in the allocation of costs, as shown in Exhibit 16.

Exhibit 25 illustrates the total toll-related R&R costs for the November 2018 and previous November 2017 forecasts. Exhibit 26 further illustrates the composition of the November 2018 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 2019-56)

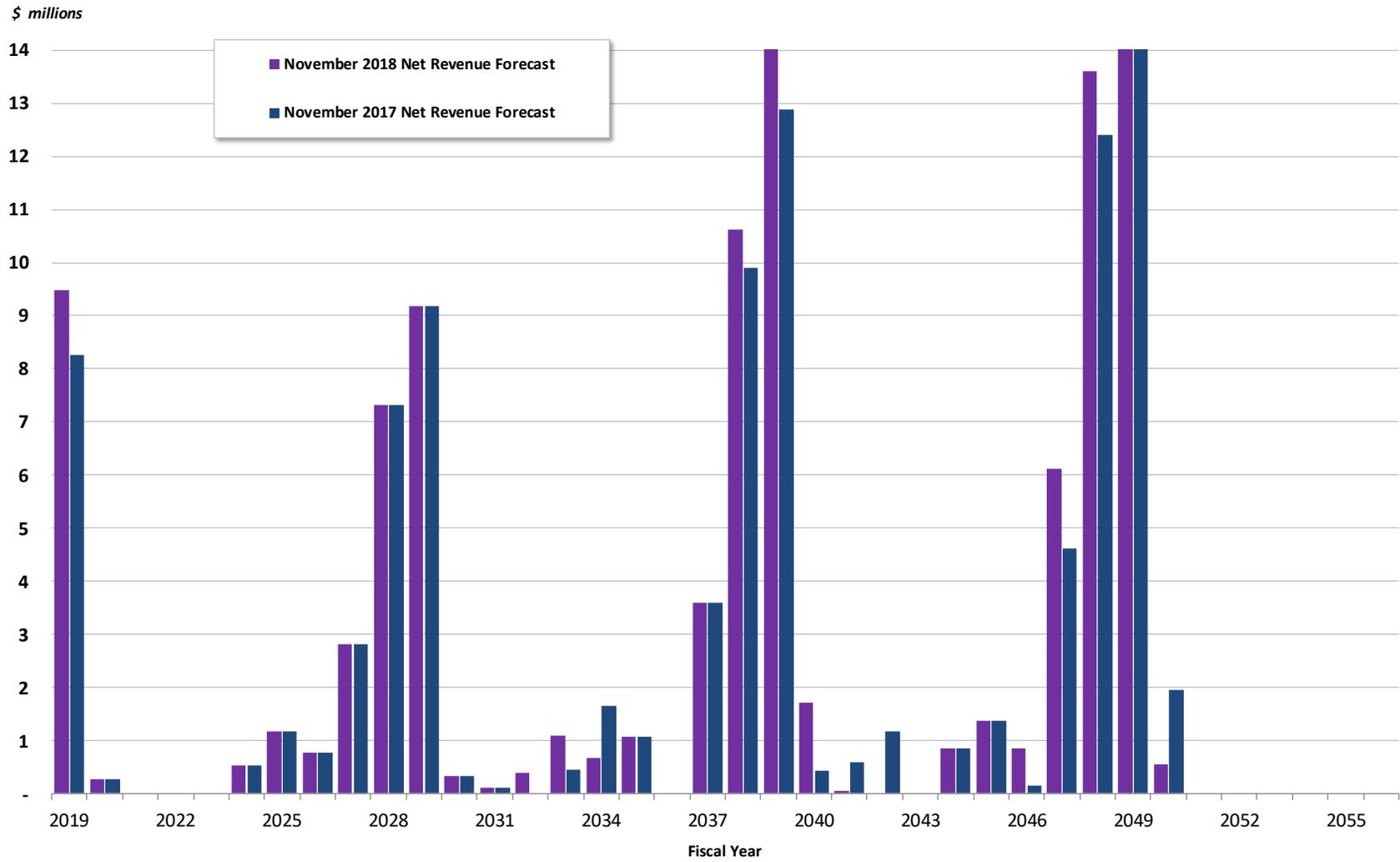
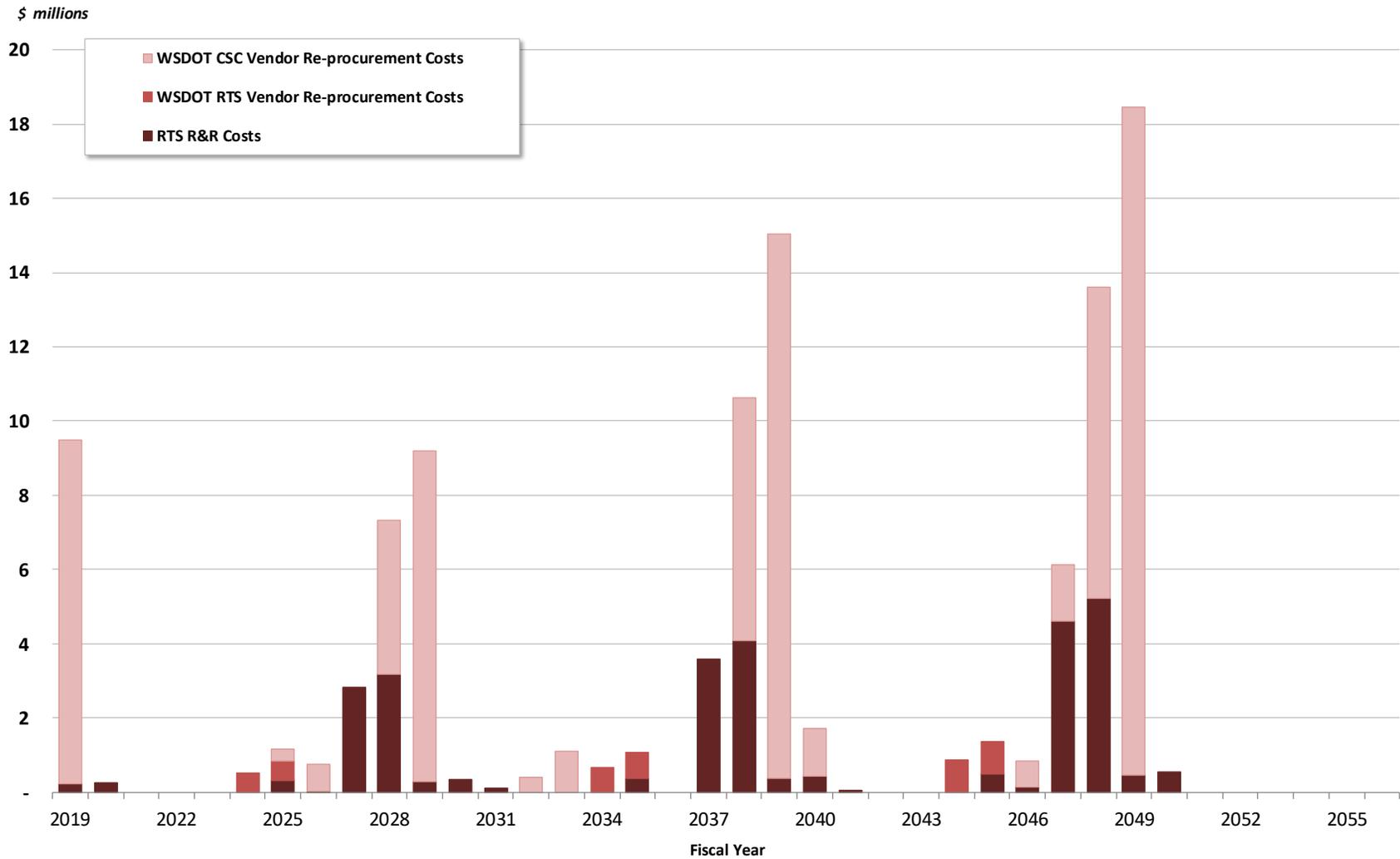


Exhibit 26: November 2018 Forecast for Toll Collection Repair & Replacement Costs by Component in YOE \$ (FY 2019-56)



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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 Stantec's Gross Toll Revenue Potential forecast that yield the net toll revenue cash flow available for debt service and other downstream uses.

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 Annual Net Revenue Forecasts

| SEPTEMBER 2011 | SEPTEMBER 2012* | OCTOBER 2013 AND NOVEMBER 2014 | NOVEMBER 2015 | NOVEMBER 2016, 2017, AND 2018 |
|--|---|---|--|---|
| Gross Toll Revenue (11) | Gross Toll Revenue Potential (11) | No change | No change | No change |
| Free Trip Incentive (12) | No Change | Included in actuals for Toll Payment Discounts & Fees (12) | No change | No change |
| Self-Initiated Payment Incentives (13) | No Change | Included in Toll Payment Discounts & Fees (12) | No change | 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 | No change |
| Late Payment Fees (15) | No change | Pay By Mail Rebilling Fees (18) | No change | No change |
| N/A | N/A | N/A | N/A | Recaptured Toll Revenue at Good to Go! Rates via CPR (15) |
| N/A | N/A | Gross Toll Revenue Collected (15) | No change | Gross Toll Revenue Collected (16) |
| Uncollectible Transactions/Leakage (16) | Uncollectible Accounts (16) | Revenue Not Recognized (13), Unpaid Toll Revenue (14) | No change | No change |
| N/A | N/A | Misc. Pledged Revenues (16) | No change | Misc. Pledged Revenues (17) |
| Recovered Toll & Fee Revenue (17) | No change | Recovered Toll Revenue (19), recovered fees included in Pay By Mail Rebilling Fees (18) | No change | Toll Revenue Recovered at Pay By Mail Rates via NOCP (20), recovered fees included in Pay By Mail Rebilling Fees (19) |
| Adjusted Gross Toll Revenues (18) | No change | Adjusted Gross Toll Revenue & Fees (20) | No change | Adjusted Gross Toll Revenue & Fees (21) |
| Transponder Sales Revenue (19) | No change | Transponder Sales Revenue (17) | No change | Transponder Sales Revenue (18) |
| Credit Card Fees (21) | Credit Card Fees (22) | Credit Card Fees (21) | Credit Card Fees (21): now excludes credit card fees from transponder sales | Credit Card Fees (22) |
| 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 | Included in Toll Collection O&M (23) |
| Routine Toll Collection O&M Costs (22) | Toll Collection O&M Costs (22) | Toll Collection O&M Costs (22), now include Transponder Purchase & Inventory | No change | Toll Collection O&M Costs (23) |
| N/A | N/A | Periodic Toll Equipment and CSC Repair & Replacement Costs (28) | No change) | Periodic Toll Equipment and CSC Repair & Replacement Costs (29) |
| 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 | Removed |

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

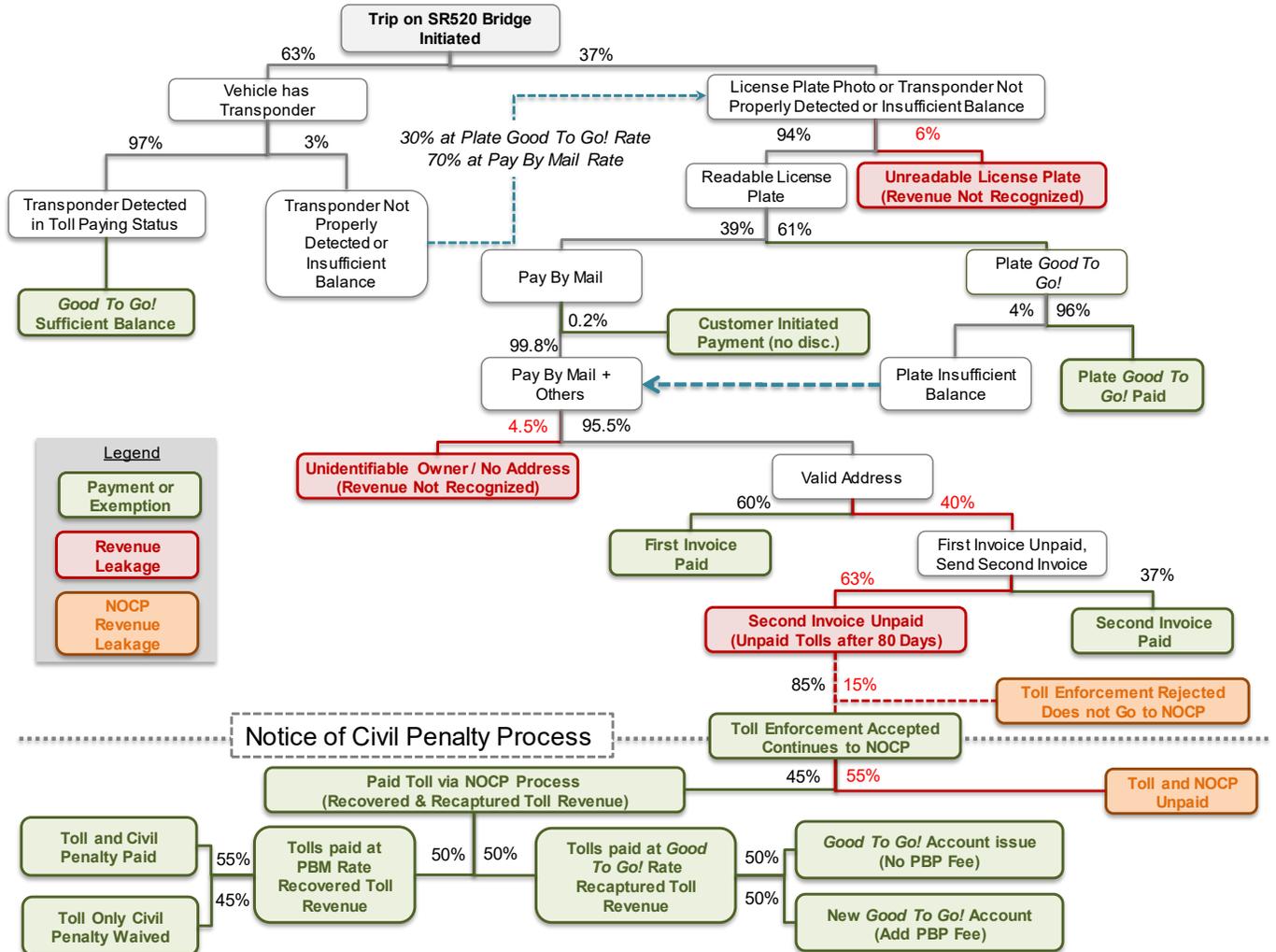
Exhibit 28: SR 520 Traffic and Revenue Table – November 2018 Forecast
Annual Transactions, Gross Revenue, and Net Revenue | FY 2012-56

Updated: 3/13/2019

| Fiscal Year | Good To Go ¹ Accounts | | | Pay By Mail / No Account | | | Total Toll Transactions (millions) ⁴ | Toll Revenue Potential | | Total Gross Toll Revenue Potential (\$ millions) ⁴ | Plus (Less): | | Less: | Less: | Plus: | Subtotal: Adjusted Gross Toll Revenue Collected (\$ millions) | [23a - 23d roll up to column 23] | | | | Less: | Less: | Less: | Total Net Toll Revenue (\$ millions) | Deferred Sales Tax Payments (\$ millions) ²³ | Periodic Facility Repair & Replacement (R&R) Costs (\$ millions) ²⁴ | Periodic Equipment and CSC Repair & Replacement (R&R) Costs (\$ millions) ²⁵ | | | | | |
|-------------|--|---|--|--|---|--|---|--|---|---|--|--|--------|-------|--------|---|---|--|--|---|--------|--------|---------|--------------------------------------|---|--|---|---|--|--|--|--------------------------------------|
| | 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 | | Good To Go ¹ Pre-Paid Accounts (\$ millions) ⁵ | Pay By Mail / No Account (\$ millions) ⁶ | | Toll Payment Discounts and Fees (\$ millions) ^{7, 8, 9} | Revenue Not Recognized (\$ millions) ^{10, 11} | | | | | Unpaid Toll Revenue (\$ millions) ^{10, 12} | Recaptured Toll Revenue at Good To Go ¹ Rates via CPR (\$ millions) ¹³ | Misc. Pledged Revenues (\$ millions) ¹⁴ | Transponder Sales Revenue (\$ millions) ¹⁵ | | | | | | | | Pay By Mail Rebilling Fees (2nd Invoice & Later Recovery) (\$ millions) ^{16, 17} | Toll Revenue Recovered at Pay By Mail Rates via NOCP (\$ millions) ¹⁸ | Credit Card Fees (\$ millions) ¹⁹ | Transponder Purchase and Inventory Costs (\$ millions) | State Operations Costs (\$ millions) |
| 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 | - | - | - | |
| 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) | 0.00 | 55.44 | 0.24 | 0.47 | 1.38 | - | 57.53 | (0.91) | - | - | - | (7.16) | - | (2.43) | 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) | (3.28) | 0.01 | 60.50 | 0.21 | 0.50 | 1.51 | - | 62.72 | (1.08) | - | - | - | (7.98) | - | (2.52) | 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) | (2.69) | 0.06 | 63.95 | 0.51 | 0.55 | 1.60 | 0.89 | 67.49 | (1.20) | - | - | - | (9.16) | - | (2.22) | 54.91 | - | - | (0.35) | |
| 2016 | \$2.93 | 19.77 | 19.86 | \$4.79 | 3.45 | 3.48 | 23.22 | 58.13 | 16.67 | 74.80 | 1.20 | (3.70) | (3.73) | 0.79 | 69.35 | 0.70 | 0.83 | 1.40 | 0.82 | 73.09 | (1.31) | - | - | - | (9.93) | (0.81) | (2.26) | 58.77 | - | - | (0.48) | |
| 2017 | \$3.08 | 20.26 | 20.36 | \$5.10 | 3.72 | 3.75 | 23.97 | 62.79 | 19.13 | 81.91 | 1.26 | (4.54) | (4.29) | 0.63 | 74.98 | 3.77 | 0.85 | 1.14 | 0.82 | 81.55 | (1.56) | - | - | - | (11.54) | (2.35) | (2.24) | 63.87 | - | (0.21) | (0.80) | |
| 2018 | \$3.11 | 22.59 | 22.70 | \$6.15 | 3.19 | 3.22 | 25.79 | 70.52 | 19.83 | 90.35 | 1.47 | (4.40) | (4.85) | 0.62 | 83.18 | 0.98 | 0.87 | 1.31 | 1.00 | 87.35 | (1.73) | - | - | - | (11.94) | (1.75) | (2.48) | 69.46 | - | (0.28) | (2.56) | |
| 2019 | \$3.17 | 22.54 | 22.81 | \$5.21 | 3.83 | 3.87 | 26.37 | 72.40 | 20.17 | 92.58 | 1.41 | (5.24) | (5.00) | 0.55 | 84.29 | 0.95 | 0.88 | 1.35 | 1.00 | 88.46 | (1.75) | (0.88) | (5.95) | (9.08) | (0.71) | (16.62) | (2.51) | (2.83) | 64.75 | - | (0.13) | (9.49) |
| 2020 | \$3.20 | 22.78 | 23.05 | \$5.26 | 3.82 | 3.86 | 26.60 | 73.78 | 20.31 | 94.09 | 1.45 | (4.36) | (4.83) | 0.60 | 86.96 | 0.95 | 0.87 | 1.40 | 0.93 | 91.11 | (1.97) | (0.87) | (6.20) | (6.14) | (0.71) | (13.93) | (2.58) | (3.23) | 69.40 | - | (0.14) | (0.26) |
| 2021 | \$3.20 | 23.38 | 23.66 | \$5.26 | 3.86 | 3.91 | 27.24 | 75.68 | 20.58 | 96.26 | 1.50 | (3.59) | (5.11) | 0.63 | 89.69 | 1.07 | 0.83 | 1.47 | 0.93 | 93.99 | (2.03) | (0.83) | (6.30) | (6.21) | (0.73) | (14.07) | (2.64) | (3.68) | 71.57 | - | (0.14) | - |
| 2022 | \$3.20 | 24.02 | 24.31 | \$5.27 | 3.92 | 3.96 | 27.94 | 77.77 | 20.88 | 98.66 | 1.55 | (3.67) | (5.19) | 0.66 | 92.00 | 1.20 | 0.81 | 1.50 | 0.98 | 96.49 | (2.09) | (0.81) | (6.43) | (6.66) | (0.78) | (14.67) | (2.71) | (3.70) | 73.32 | - | (0.15) | - |
| 2023 | \$3.18 | 25.07 | 25.37 | \$5.25 | 4.03 | 4.08 | 29.10 | 80.77 | 21.42 | 102.19 | 1.62 | (3.79) | (5.34) | 0.67 | 95.34 | 1.29 | 0.83 | 1.54 | 0.98 | 99.98 | (2.16) | (0.83) | (6.71) | (6.99) | (0.79) | (15.31) | (2.77) | (3.73) | 76.01 | (15.94) | (0.15) | - |
| 2024 | \$3.15 | 26.54 | 26.86 | \$5.20 | 4.21 | 4.26 | 30.75 | 84.62 | 22.17 | 106.79 | 1.73 | (3.96) | (5.55) | 0.69 | 99.70 | 1.32 | 0.86 | 1.62 | 1.05 | 104.55 | (2.26) | (0.86) | (7.07) | (7.42) | (0.80) | (16.15) | (2.84) | (3.75) | 79.54 | (15.94) | (0.15) | (0.52) |
| 2025 | \$3.15 | 27.27 | 27.60 | \$5.21 | 4.27 | 4.32 | 31.53 | 87.05 | 22.48 | 109.52 | 1.79 | (4.04) | (5.61) | 0.71 | 102.36 | 1.38 | 0.86 | 1.64 | 1.05 | 107.30 | (2.32) | (0.86) | (7.32) | (7.80) | (0.86) | (16.84) | (2.91) | (3.78) | 81.45 | (15.94) | (0.16) | (1.17) |
| 2026 | \$3.16 | 27.68 | 28.02 | \$5.22 | 4.28 | 4.33 | 31.96 | 88.60 | 22.59 | 111.19 | 1.82 | (4.10) | (5.64) | 0.72 | 104.00 | 1.44 | 0.86 | 1.65 | 1.11 | 109.06 | (2.36) | (0.86) | (7.52) | (8.04) | (0.84) | (17.26) | (2.99) | (3.80) | 82.66 | (15.94) | (0.16) | (0.76) |
| 2027 | \$3.15 | 28.75 | 29.10 | \$5.20 | 4.38 | 4.44 | 33.14 | 91.61 | 23.07 | 114.68 | 1.90 | (4.21) | (5.79) | 0.73 | 107.31 | 1.52 | 0.87 | 1.70 | 1.11 | 112.51 | (2.43) | (0.87) | (7.83) | (8.40) | (0.70) | (17.80) | (3.06) | (3.83) | 85.39 | (15.94) | (0.16) | (2.81) |
| 2028 | \$3.15 | 29.72 | 30.08 | \$5.20 | 4.48 | 4.53 | 34.20 | 94.74 | 23.57 | 118.31 | 1.98 | (4.34) | (5.91) | 0.74 | 110.79 | 1.59 | 0.88 | 1.74 | 1.15 | 116.14 | (2.51) | (0.88) | (8.13) | (8.89) | (0.86) | (18.76) | (3.14) | (3.85) | 87.88 | (15.94) | (0.17) | (7.31) |
| 2029 | \$3.15 | 30.26 | 30.62 | \$5.20 | 4.50 | 4.55 | 34.75 | 96.37 | 23.66 | 120.03 | 2.02 | (4.39) | (5.94) | 0.76 | 112.47 | 1.64 | 0.91 | 1.75 | 1.15 | 117.92 | (2.55) | (0.91) | (8.36) | (9.17) | (0.89) | (19.32) | (3.21) | (3.87) | 88.96 | (15.94) | (0.17) | (9.18) |
| 2030 | \$3.15 | 30.92 | 31.29 | \$5.20 | 4.53 | 4.59 | 35.45 | 98.49 | 23.87 | 122.36 | 2.08 | (4.46) | (6.00) | 0.76 | 114.73 | 1.74 | 0.94 | 1.77 | 1.19 | 120.37 | (2.60) | (0.94) | (8.64) | (9.53) | (0.91) | (20.02) | (3.29) | (3.90) | 90.56 | (15.94) | (0.18) | (0.34) |
| 2031 | \$3.15 | 31.62 | 31.99 | \$5.21 | 4.57 | 4.63 | 36.19 | 100.80 | 24.11 | 124.91 | 2.13 | (4.54) | (6.07) | 0.77 | 117.21 | 1.80 | 0.98 | 1.79 | 1.19 | 122.96 | (2.66) | (0.98) | (8.92) | (9.73) | (0.93) | (20.70) | (3.38) | (3.92) | 92.31 | (15.94) | (21.00) | (0.10) |
| 2032 | \$3.15 | 32.38 | 32.77 | \$5.21 | 4.62 | 4.68 | 37.00 | 103.28 | 24.38 | 127.66 | 2.20 | (4.63) | (6.14) | 0.78 | 119.86 | 1.87 | 1.02 | 1.81 | 1.22 | 125.78 | (2.72) | (1.02) | (9.21) | (10.25) | (0.95) | (21.44) | (3.46) | (3.95) | 94.22 | (15.94) | (0.19) | (0.40) |
| 2033 | \$3.15 | 32.61 | 33.00 | \$5.21 | 4.62 | 4.68 | 37.24 | 104.01 | 24.39 | 128.40 | 2.22 | (4.66) | (6.15) | 0.79 | 120.60 | 1.87 | 1.11 | 1.82 | 1.22 | 126.62 | (2.73) | (1.11) | (10.55) | (11.29) | (0.98) | (23.93) | (3.55) | (3.97) | 92.44 | - | (11.81) | (1.09) |
| 2034 | \$3.15 | 32.95 | 33.34 | \$5.21 | 4.64 | 4.69 | 37.59 | 105.09 | 24.47 | 129.56 | 2.26 | (4.70) | (6.18) | 0.79 | 121.73 | 1.87 | 1.14 | 1.82 | 1.25 | 127.81 | (2.76) | (1.14) | (10.81) | (11.58) | (1.00) | (24.54) | (3.64) | (4.00) | 92.89 | - | (0.20) | (0.67) |
| 2035 | \$3.15 | 33.24 | 33.64 | \$5.21 | 4.65 | 4.70 | 37.89 | 105.96 | 24.51 | 130.47 | 2.29 | (4.73) | (6.20) | 0.79 | 122.63 | 1.87 | 1.17 | 1.83 | 1.25 | 128.75 | (2.78) | (1.17) | (11.11) | (11.93) | (1.03) | (25.24) | (3.73) | (4.02) | 92.98 | - | (0.20) | (1.07) |
| 2036 | \$3.15 | 33.68 | 34.09 | \$5.21 | 4.68 | 4.73 | 38.36 | 107.39 | 24.68 | 132.07 | 2.33 | (4.79) | (6.24) | 0.80 | 124.17 | 1.87 | 1.21 | 1.84 | 1.26 | 130.34 | (2.81) | (1.21) | (11.40) | (12.25) | (1.05) | (25.91) | (3.82) | (4.04) | 93.75 | - | (6.70) | - |
| 2037 | \$3.15 | 33.95 | 34.36 | \$5.22 | 4.68 | 4.74 | 38.63 | 108.32 | 24.72 | 133.04 | 2.36 | (4.82) | (6.26) | 0.80 | 125.12 | 1.87 | 1.24 | 1.85 | 1.26 | 131.33 | (2.84) | (1.24) | (11.67) | (12.60) | (1.08) | (26.59) | (3.91) | (4.07) | 93.92 | - | (0.21) | (3.60) |
| 2038 | \$3.15 | 34.29 | 34.70 | \$5.22 | 4.70 | 4.75 | 38.98 | 109.40 | 24.80 | 134.20 | 2.39 | (4.86) | (6.28) | 0.80 | 126.25 | 1.87 | 1.27 | 1.86 | 1.27 | 132.51 | (2.86) | (1.27) | (11.97) | (13.10) | (1.11) | (27.45) | (4.01) | (4.09) | 94.10 | - | (0.86) | (10.63) |
| 2039 | \$3.15 | 34.62 | 35.04 | \$5.22 | 4.71 | 4.76 | 39.33 | 110.48 | 24.87 | 135.35 | 2.43 | (4.90) | (6.31) | 0.81 | 127.38 | 1.87 | 1.30 | 1.86 | 1.27 | 133.68 | (2.89) | (1.30) | (12.26) | (13.38) | (1.13) | (28.08) | (4.11) | (4.12) | 94.49 | - | (0.22) | (15.03) |
| 2040 | \$3.15 | 35.03 | 35.45 | \$5.22 | 4.73 | 4.79 | 39.76 | 111.72 | 24.98 | 136.70 | 2.47 | (4.95) | (6.34) | 0.81 | 128.69 | 1.87 | 1.34 | 1.87 | 1.28 | 135.05 | (2.92) | (1.34) | (12.61) | (13.78) | (1.16) | (28.89) | (4.21) | (4.14) | 94.89 | - | (0.23) | (1.71) |
| 2041 | \$3.15 | 35.26 | 35.68 | \$5.22 | 4.73 | 4.78 | 39.98 | 112.44 | 24.97 | 137.41 | 2.50 | (4.97) | (6.34) | 0.81 | 129.40 | 1.87 | 1.37 | 1.88 | 1.28 | 135.79 | (2.93) | (1.37) | (12.92) | (14.16) | (1.19) | (29.64) | (4.32) | (4.17) | 94.73 | - | (57.56) | (0.05) |
| 2042 | \$3.15 | 35.64 | 36.06 | \$5.23 | 4.74 | 4.80 | 40.38 | 113.74 | 25.08 | 138.82 | 2.53 | (5.02) | (6.37) | 0.81 | 130.77 | 1.87 | 1.40 | 1.89 | 1.29 | 137.23 | (2.96) | (1.40) | (13.27) | (14.61) | (1.22) | (30.50) | (4.43) | (4.19) | 95.14 | - | (0.24) | - |
| 2043 | \$3.15 | 35.97 | 36.40 | \$5.23 | 4.75 | 4.81 | 40.73 | 114.83 | 25.15 | 139.97 | 2.57 | (5.06) | (6.40) | 0.82 | 131.90 | 1.87 | 1.44 | 1.89 | 1.29 | 138.40 | (2.99) | (1.44) | (13.61) | (15.28) | (1.25) | (31.59) | (4.54) | (4.21) | 95.07 | - | (0.24) | - |
| 2044 | \$3.16 | 36.42 | 36.86 | \$5.23 | 4.78 | 4.84 | 41.20 | 116.31 | 25.29 | 141.59 | 2.61 | (5.12) | (6.44) | 0.82 | 133.47 | 1.87 | 1.48 | 1.91 | 1.30 | 140.03 | (3.02) | (1.48) | (14.00) | (15.68) | (1.28) | (32.45) | (4.65) | (4.24) | 95.67 | - | (0.25) | (0.85) |
| 2045 | \$3.16 | 36.67 | 37.11 | \$5.23 | 4.77 | 4.83 | 41.44 | 117.08 | 25.27 | | | | | | | | | | | | | | | | | | | | | | | |

Appendix B: Toll Payment Activity Workflow

Exhibit 29: SR 520 Toll Transaction Activity Workflow—November 2018 Forecast



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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 | |
| <i>Raised</i> | <i>Each</i> |
| Pavement Marking Maintenance | Each |
| Regulatory Sign Maintenance | Each |
| Guide Sign Maintenance | Each |
| Guardrail Maintenance | |
| <i>Concrete Barrier</i> | <i>Linear Feet of Concrete Barrier</i> |
| Highway Lighting Systems Operations | Each |
| Toll Equipment Power | Annual Lump Sum |
| Under-Lid Lighting Operations | Annual Lump Sum |
| Intelligent Transportation Systems Operations | |
| <i>Closed Circuit Television</i> | <i>Each</i> |
| <i>Variable Message/Changeable Sign</i> | <i>Each</i> |
| <i>Data Station System</i> | <i>Each</i> |
| 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 |