TOLL DIVISION OPERATIONAL REVIEW

NOVEMBER 2013
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CHAPTER 1

Study Purpose

The 63rd State Legislature passed a budget proviso requiring the Washington State Department of Transportation (WSDOT or the Department) to conduct a review of the Department’s toll operations and maintenance program in order to identify and eliminate inefficiencies and redundancies, incorporate lessons learned, and analyze opportunities to conduct operations more effectively. The Legislature further directed the Department to use the results of the state audit and the Cost of Service Study as the basis for a “Lean” review. Using Lean management principles, the WSDOT Toll Division examined opportunities to eliminate waste, standardize processes, and foster a culture of continuous improvement.

Lean management is a culture that organizations use to eliminate waste and reduce costs while improving quality. It is a process of continuous improvement that examines individual processes with high potential to be more effective and less costly and to incrementally improve over time. WSDOT is in the beginning stages of implementing Lean management, and has already made an early identification of the three operational processes to improve as discussed in Chapter 6.

In order to fully describe WSDOT’s tolling program, organization, and cost structure, this report contains a broader range of topics. It addresses the Toll Division’s management approach and use of resources in order to consider efficiencies at a broader level, while describing costs that are fixed or could increase over time.

Inside you will find the following:

- Chapter 1, Introduction, introduces the Toll Division Operational Review and describes its purpose and context including the State Auditor’s Office (SAO) performance audit and cost of collection study.
- Chapter 2, Evolution of the Toll Division, describes the cost-reducing decision to include the Toll Division within WSDOT, the reasons it makes practical sense to be integrated into the Department and the evaluation of the Toll Division within the Department.
- Chapter 3, Future Tolling Direction, discusses possible directions and considerations for the future of tolling in Washington as well as to give an overview of the upcoming work and the challenges the Toll Division will need the capacity to address.
- Chapter 4, Roles and Responsibilities, discusses applicable roles and responsibilities of the Toll Division. Roles and responsibilities determine our working relationships within WSDOT and are the context for understanding our resource needs.
- Chapter 5, Resource Requirements, describes the resources required to operate the Good To Go! toll program, including state staff, consultant and vendor support, and other ongoing costs. It identifies the Toll Division’s business model and funding sources, and how they affect toll rates.
- Chapter 6, Lean Management, describes the Lean management process that has been adopted within the Toll Division, possible efficiencies, and quality improvements currently being evaluated.
- Chapter 7, Key Findings and Next Steps, describes the results of the operational review, as well as policy issues that require further discussion.
State Auditor’s Office Performance Audit

Focus
In August 2013, the State Auditor’s Office released its performance audit of the Department’s implementation of the statewide all-electronic toll system on SR 520 and the back-office system. The audit was designed to evaluate what lessons could be learned from WSDOT’s development and implementation of statewide all-electronic tolling for application to future projects. The performance audit focused on the following elements:

- Identification of cost savings related to project delays;
- Analysis of the roles and functions of the Department, including recommendations to change or eliminate Departmental roles or functions related to clarifying Department roles and responsibilities for future projects;
- Analysis of Departmental performance, data measures, and self-assessment systems; and
- Identification of best practices.

Although the SAO Report focused on development activities, not operations, many of the recommendations are transferrable and will be used to make improvements throughout the Toll Division.

Recommendations
The auditors recommended that to improve WSDOT’s management of future tolling projects and to minimize the risk of project delays the following actions be taken:

- “The Secretary [of Transportation] ensure roles, responsibilities, and decision-making authority are clear for projects managed by the Toll Division.
- The Assistant Secretary, Toll Division, to establish policies and procedures to guide the development and implementation of tolling projects.”

WSDOT Response
WSDOT’s formal response has been detailed in the document entitled “Official State Cabinet Agency Response to the Performance Audit on Washington’s Tolling Program: Lessons Learned from Project Delays” dated August 1, 2013. WSDOT responses, action steps and time frames are outlined below.

Recommendation 1: The Secretary should clarify the roles, responsibilities, and decision-making authority for future tolling projects.

The concerns expressed by SAO regarding roles and responsibilities, relates to interactions of the Toll Division with other divisions within WSDOT.

RESPONSE
The roles, responsibilities, and decision-making authority within WSDOT will be reviewed to ensure that future tolling projects directed at improving the major urban transportation corridors across the state are implemented efficiently and effectively.
Action Steps and Time Frame
The Toll Division is coordinating with WSDOT executive management and those organizations impacted by this finding to clearly define roles, responsibilities, and decision making authority. Roles and responsibilities have been a key consideration in the Division’s organizational realignment work.

- The Secretary’s Office will issue an executive order that officially establishes the roles and responsibilities of the Toll Division and addresses cross-functional relationships across WSDOT divisions. (December 31, 2013)

- The Secretary’s Office will issue an updated executive order for delegation of authority to clearly define the decision-making authority of the Toll Division. (December 31, 2013)

While the final executive orders are not due until late 2013, the organizational realignment work done as part of the Toll Division Operational Review considered roles and responsibilities, cross-functional relationships, and decision making authority. The initial assessment is outlined in Chapter 4, Toll Division Roles and Responsibilities, as well as in Chapter 5, Organization Structure Changes. This work will be finalized in the executive orders issued late this year.

Recommendation 2: The Assistant Secretary, Toll Division, should establish policies and procedures to manage future tolling projects.

In April 2012 the Division established the Toll Policy Team, made up of WSDOT executive management and cross-functional senior management and led by the Assistant Secretary, Toll Division. The team evaluates and recommends statewide policy. In November 2012, the Toll Division started developing Standard Operating Procedures to document fundamental Toll Division activities.

RESPONSE
WSDOT supports the recommendation to further establish policies and procedures, as they will further strengthen the Toll Division’s ability to coordinate future toll projects. To establish a solid framework for strengthening standards and processes, the Toll Division is establishing a program management organization (PMO). The PMO is a group within the Toll Division to define and maintain project management standards, as well as working to standardize processes and introduce economies of repetition in the execution of projects. Additionally, the PMO will be the source of documentation, guidance, and metrics for project management. The Toll Division’s goal for the PMO is to ensure the success of each project, standardize project management practices (including change management, risk assessments, and mitigation strategies), and lower overall costs. As part of this effort, the Toll Division will continue to work with other divisions in WSDOT who have a part in supporting toll project delivery to establish the processes and procedures for how cross-functional units will work with the Toll Division to meet project needs and requirements.
Action Steps and Time Frame

- The PMO structure and practices have been developed and the PMO was officially initiated in August 2013. The Toll Division held the first monthly PMO meeting in September 2013. The Charter and Procedures documentation is under final revision.
- As part of the PMO, the Toll Division will work with other divisions in WSDOT to produce a project management guide outlining the tools, best practices, and documentation required for project management within the Toll Division and its cross-functional efforts within WSDOT (to be completed by March 31, 2014)
- The Toll Division will work with other divisions in WSDOT to establish standards, processes, and procedures for cross-functional efforts within WSDOT (to be completed by March 31, 2014)

Process standardization across the Toll Division, as well as clearly defined roles and responsibilities related to risk governance, change management, and project reporting are key benefits of the new PMO. The PMO support team will be responsible for developing the project management guide. In addition, ongoing Lean Initiatives will be monitored using the new PMO structure.

With clearly defined roles and responsibilities, the Toll Division will be able to work with the other WSDOT divisions on cross-functional standards, processes and procedures to ensure consistent and predictable results for current and future projects.

Cost to Collect

Background
In 2009 the Joint Transportation Committee Toll Operations Cost Expert Review Panel\(^1\) recommended the Department “determine fixed and variable costs of *key customer service account and payment method activities* and establish a management process to report on the same as performance indicators and other information that can be used to modify business rules.” In response to that recommendation, in 2010 the Toll Division hired Louthan Consulting to perform a baseline study of costs (Cost of Service Study.) This was particularly important as the Toll Division realized that a number of upcoming changes would result in varied results for subsequent analysis including (i) the impending addition of SR 520, (ii) new payment methods and (iii) a change in the customer service center vendor.

In 2012 and 2013 Louthan Consulting performed a model update and refresh of the Cost of Service Study. Changes to the model including:
- Incorporation of overhead expenses;
- Addition of the SR 520 facility;

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\(^1\) The Joint Transportation Committee of the Washington State Legislature contracted with AECOM to form an expert review panel for the purpose of reviewing costs and strategies for electronic toll collection in the state of Washington and, in particular, review WSDOT’s plans for implementing the all-electronic-toll-collection project for SR 520.
• Addition of new transaction types (Pay By Plate, Short Term Account, Pay By Mail, Notice of Civil Penalty);
• Removal of the violations transaction type;
• Split of cash collection analysis into cash only and credit/debit card;
• Inclusion of adjudication process; and
• Changes in the back office vendor from TransCore to Electronic Transaction Consultants Corporation (ETCC).

Uses
The purpose of the Cost of Services analysis was to understand cost drivers to allow WSDOT to better evaluate its business model and the effects of its business rules. Additionally, it was believed that the work conducted under the Cost of Service Study would help inform current and future Toll Division processes and studies, including:
• Budget preparation;
• Rate setting;
• Review of fees and discounts;
• Pay By Mail differential;
• Financial forecasting;
• Lean reviews;
• Ferry Integration Study; and
• Improvements to business rules and processes.

Flexibility in Analysis
The 2010 Cost of Services Study evaluated toll expenses paid with toll dollars. The 2013 analysis was established to allow WSDOT to evaluate all expenses, regardless of the funding source. The model has the flexibility to:
• Analyze all facility costs;
• Analyze cost of collection only;
• Analyze toll program expenses only;
• Analyze facility level costs; and
• Analyze cost by payment method.

Results
This analysis established a new baseline for the Cost of Service and, while directionally accurate, reflects the appropriated Toll Division expenses rather than the actual costs to collect incurred by the vendor. The reasons for this are related to the nature of the ETCC contract: first, this is a services only contract and WSDOT does not have insight into the vendor’s actual expenses; second, the Department has been informed by the vendor that their actual expenses exceed the value of the original contract terms; and finally, due to a settlement agreement, the actual vendor payments have been reduced from the original contract terms.

The following tables summarize the cost of service analysis for FY 2013, quarters one through four (July 2012 through June 2013) for the SR 16 Tacoma Narrows Bridge, SR 167 High Occupancy Toll Lanes, and SR 520 Bridge respectively. The results of the cost of service analysis highlight areas requiring further examination, such as cash collection on the Tacoma Narrows Bridge and the use of Short Term Accounts. These items are further described in Chapter 6.
### SR 16 Tacoma Narrows Bridge

<table>
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<tr>
<th>Transaction Type</th>
<th>Transaction Count</th>
<th>Cost to Operate and Maintain²</th>
<th>Cost to Collect³</th>
<th>Cost to Operate and Maintain²</th>
<th>Cost to Collect³</th>
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<td>All Funding Sources</td>
<td>Toll Funding Only</td>
<td>All Funding Sources</td>
<td>Toll Funding Only</td>
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<tr>
<td>Good To Go! Pass</td>
<td>9,093,586</td>
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<td>Tollbooth</td>
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<td>Pay By Mail</td>
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<td>Pay By Plate</td>
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<td>Non-Revenue</td>
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<td>Short Term Account</td>
<td>563</td>
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*Table 1: Tacoma Narrows Bridge FY 2013 Q1-Q4 Cost to Collect Analysis*

1. Transaction counts for this analysis have been adjusted to represent final disposition.
2. Cost to Operate and Maintain excludes debt payments, transponder costs, capital outlays for software, and adjudication costs.
3. Cost to Collect is a subset of Cost to Operate and Maintain and additionally excludes insurance, supporting roadway expansion, maintaining bridges/roads, providing ongoing bond support, patrol services, and services rendered by other state agencies or government.

### SR 167 High Occupancy Toll Lanes

<table>
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<th>Transaction Type</th>
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<th>Cost to Collect³</th>
<th>Cost to Operate and Maintain²</th>
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<td>All Funding Sources</td>
<td>Toll Funding Only</td>
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<td>$1.12</td>
<td>$0.71</td>
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<td>Non-Revenue</td>
<td>26,877</td>
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<td>Pay By Plate</td>
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<td>N/A</td>
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</tr>
<tr>
<td>Short Term Account</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Pay By Mail</td>
<td>N/A</td>
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<td>Tollbooth</td>
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<td>Weighted Average</td>
<td>1,032,232</td>
<td>$1.11</td>
<td>$0.71</td>
<td>$0.99</td>
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*Table 2: SR 167 FY 2013 Q1-Q4 Cost to Collect Analysis*

1. Transaction counts for this analysis have been adjusted to represent final disposition.
2. Cost to Operate and Maintain excludes debt payments, transponder costs, capital outlays for software, and adjudication costs.
3. Cost to Collect is a subset of Cost to Operate and Maintain and additionally excludes supporting roadway expansion, maintaining bridges/roads, patrol services, and services rendered by other state agencies or government.
**Table 3: SR 520 FY 2013 Q1-Q4 Cost to Collect Analysis**

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<th>Cost to Collect&lt;sup&gt;3&lt;/sup&gt;</th>
<th>Cost to Operate and Maintain&lt;sup&gt;2&lt;/sup&gt;</th>
<th>Cost to Collect&lt;sup&gt;3&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All Funding Sources</td>
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<td>Good To Go! Pass</td>
<td>14,094,962</td>
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<td>$0.31</td>
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<td>Pay By Mail</td>
<td>3,214,463</td>
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<td>Pay By Plate</td>
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<td>Non-Revenue</td>
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<td>Short Term Account</td>
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<td>Tollbooth</td>
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<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
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<td>$0.57</td>
<td>$0.43</td>
<td>$0.53</td>
<td>$0.40</td>
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</table>

1 Transaction counts for this analysis have been adjusted to represent final disposition.

2 Cost to Operate and Maintain excludes debt payments, transponder costs, capital outlays for software, and adjudication costs.

3 Cost to Collect is a subset of Cost to Operate and Maintain and additionally excludes insurance, supporting roadway expansion, maintaining bridges/roads, providing ongoing bond support, patrol services, and services rendered by other state agencies or government.

Going forward the Toll Division plans to limit the Cost of Services work to annual updates and bring the analysis in-house to reduce costs and streamline the evaluation process.

**Agency Cost to Operate and Maintain Comparisons<sup>2</sup>**

While it is difficult to compare costs between agencies due to the varied facility types, business models, and organizational structures; the following chart provides peer information based on the agencies’ published financial statements. This evaluation of peer agencies in Figure 1 demonstrates that WSDOT’s cost per transaction is reasonable.

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<sup>2</sup> Peer agency comparisons are based on agencies’ published financial statements from 2013; those marked with an asterisk are from 2012. WSDOT information shown in blue is from the FY 2013 financial statements, and shown in green is the averaged cost to operate and maintain from the 1st-4th Quarter Cost of Service analysis. Only FTE and Ohio Turnpike report interest expenses under Operating Expenses; all other agencies report interest expenses under Non-Operating Revenue (Expenses), so interest expenses have been removed from the analysis.
**Peer Agency Cost to Operate and Maintain**

![Figure 1: Peer Agency Cost per Transaction to Operate and Maintain](image)

**Lean Review**

In December 2012, the Toll Division started working with the Statewide Customer Service Center vendor to identify process improvement opportunities. Upon legislative direction to conduct a review of the Toll Division operations using Lean principles, a foundation was established to identify and eliminate waste. This, along with other concurrent efforts described in this report, will ensure the Toll Division is positioned for long-term financial and operational sustainability.

Craig Stone, Assistant Secretary, Toll Division, is the Toll Division Lean sponsor and during a recent Toll Division meeting stated, “We have a huge ramp up of additional work and this is a great period of time for continuous improvement. This is the time to get things stabilized and establish a foundation to build off of going forward”.

**Lean Organization**

The Toll Division Lean team was organized around a core team of specialists, called the “Lean Process Team”. The Lean Process Team is made up of representatives from each functional group within the Toll Division, as well as members-at-large providing management and oversight. Functional area leads (Lean Leads) were identified who are responsible to facilitate the Lean work in their specific areas,
coordinating with subject matter experts (SMEs) and end-users for the Lean reviews. The “Lean Leadership Team” includes the Lean Sponsor (Assistant Secretary, Toll Division) and the management and oversight members from the Lean Process Team. The Lean Leadership Team meets regularly to discuss progress, issues, and next steps. Finally, there is an outside guiding body called the “Lean Advisory Board”, described below. Upon submittal of this report the Lean Advisory Board and Lean Leadership Team will be dissolved and those coordination efforts will be assumed by the PMO. The Lean Process Team will remain intact.

**Lean Advisory Board**

As part of the Lean structure, the Toll Division has solicited the support of a Lean Advisory Board (LAB) consisting of four industry experts from around the country to oversee and guide the direction of the Lean process. The LAB meets monthly (or as needed) to receive updates from the Lean Leads on the work that is being done, then reports back to the Lean Leadership Team on next steps. The LAB consists of:

- **Dave Kristick**, Deputy Executive Director/Director of Operations, E-470 Public Highway Authority. Mr. Kristick has extensive toll operations and customer service center experience and in 2008 deployed a Lean culture within his own agency and their customer services vendor contract.

- **Jennifer Crosson**, Toll Program Manager, Jacobs. Ms. Crosson is a CPA, specializing in toll operations and accounting. She previously worked for the Transportation Corridor Agencies and currently consults for several toll authorities across the country.

- **Jorge Figueredo**, Toll Business Sector Manager, Atkins. Mr. Figueredo is the former executive director for the North Texas Tollway Authority. He has a diverse background with vast experience in operations, customer service, organizational development, and communications.

- **Dennis Lakey**, Six Sigma Black Belt, Jacobs. Mr. Lakey has conducted numerous Lean events and workshops for industrial and manufacturing clients. He has seven years of practical, hands-on experience in manufacturing and Lean experience and knowledge in a variety of business environments including pulp and paper, chemical, manufacturing, accounting, administrative, and construction.

**Lean Training**

In order to competently lead the Lean process, WSDOT sent three Toll Division staff and Jacobs Engineering (the “General Tolling Consultant” (GTC) for the Toll Division) sent four staff to “Green Belt” training through the University of Washington’s Professional Development Center during the summer of 2013. Green Belt is the initial training on Lean. These individuals received 40 hours of in-class instruction and were required to conduct a Lean review project. The course culminated in a presentation of the Lean review results in order to receive Green Belt certification. There are two additional WSDOT Lean Process Team members who will attend Green Belt Training. Further, two of the Green Belt certified GTC staff have registered for more advanced Black Belt training. Ultimately, it is the intent to have one WSDOT Toll Division staff trained as a Black Belt.

To ensure a culture of Lean and develop a knowledge base within the Toll Division, “brown bag” training was developed for Toll Division staff. To date, five training sessions have been held: two introductory classes, two intermediate classes, and a “Gallery Walk” presentation to show the results of two Lean projects. These classes have been well attended and well received by staff. 36 Toll Division staff and consultants have attended at least one of the Lean classes and 19 have attended both classes. There are plans to develop further training in the future.
With the additional Black Belt training to occur in December, the group of Green Belts, and the internal training being conducted for the remaining staff, the Toll Division will have a solid foundation rooted in Lean processes focused on the identification and elimination of waste with an eye towards creating maximum value for the Department and the public.

**Customer Experience Survey**

The first skill in developing a Lean culture and effectively applying Lean tenets and tools is to understand “value” from the customer’s perspective. Therefore, the first step in the Lean process was to conduct a “Customer Experience Survey.” The goal of the Customer Experience Survey (Survey) was to understand customer expectations, specifically for those activities that were considered valuable to the customer, and the associated customer satisfaction with those activities. The Survey was fielded from July 30 to August 30, 2013. The Survey was a statistically valid, stratified random sample by payment type of 24,077 customers with a recent interaction with WSDOT’s Good To Go! customer service center, either paying a toll via a Good To Go! Pass or by contacting the customer service center within 90 days prior to the launch of the Survey. There were 2,815 Survey responses; 2,567 were completed online and 248 were returned by mail. The results of the Survey were used as part of the data analysis for the two Kaizen events found in Appendix B and Appendix C.

**Survey Results**

*Most respondents responded that knowledgeable and respectful representatives are the most important factors of customer service.*

Respondents were asked to consider any person-to-person interactions with Good To Go! customer service, and then asked to rate how important and satisfied they were with specific factors. Generally all aspects of customer service were ranked as “important” and “very important” by respondents, but the following were the most highly ranked customer service factors (indicated on a scale of 1 to 4, where 1 is not at all important and 4 is very important):

- Representatives are knowledgeable and able to answer my questions (82 percent)
- Representatives provide respectful service in a friendly manner (77 percent)
- Any issue or dispute I have is resolved the first time I call (74 percent)
- Representatives spend a sufficient amount of time to help me resolve my issue (71 percent)

*Regarding service received, respondents indicated most satisfaction with the representative’s respectful manner and having their issue resolved by one representative.*

As with importance, respondents generally rated all aspects of customer service as “satisfied” to “very satisfied”, but respondents are the most satisfied with the following customer service factors (Indicated on a scale of 1 to 4, where 1 is not at all satisfied and 4 is very satisfied):

- Representatives provide respectful service in a friendly manner (69 percent)
- My issue is resolved by one representative rather than being transferred to several (65 percent)
- Representatives spend a sufficient amount of time to help me resolve my issue (64 percent)
- Representatives are knowledgeable and able to answer my questions (63 percent)

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<sup>3</sup> Kaizen is a method for accelerating process improvement. This process typically requires dedicated teams work full-time for 3 to 5 days versus the typical approach of spreading the work over 3 to 6 months. This is feasible for well-defined projects with data that is readily available.
Having an issue or dispute resolved the first time someone calls has the largest service gap between importance and satisfaction.

Gaps in customer service can be calculated by taking the average importance score minus the average satisfaction score. These gaps can indicate where customer service is exceeding or not meeting respondents’ expectations. No customer service factors exceeded respondent expectations and gaps where service did not meet expectations were small. Using Lean principles, these gaps are opportunities to make improvements. The factors with the largest gaps in meeting respondents’ expectations were:

- Any issue or dispute I have is resolved the first time I call
- Email to customer service is responded to within 24 hours or less
- Representatives are knowledgeable and able to answer my questions

Most customers are satisfied.

When asked to rate their level of satisfaction with Good To Go! customer service on a 4-point scale, more than four-fifths (88 percent) indicated they were “satisfied” or “very satisfied” (54 percent satisfied and 34 percent very satisfied.) Only 12 percent indicated they were dissatisfied or very dissatisfied.

This customer satisfaction input was used as a key input tool in the next Lean steps. The survey results are included in Appendix A.

Lean in Action

Workshops

Equipped with their newly acquired skills, the team of Lean Green Belts conducted workshops for each of the four functional areas in the Toll Division to brainstorm a broad range of possible improvement projects. The potential projects identified through the workshops were diverse and included everything from simple solutions, such as the elimination of redundancies in how timesheets are processed, to issues that are very complex and costly to address, such as the review systems and processes for image-based transactions. Each functional group produced a work plan describing their possible projects and the potential benefits associated with improving those specific processes. Table 4 below lists the total number of projects that were identified in the individual functional workshops. The Lean Process Team is working to identify synergies among functional areas and identify projects with the highest impact potential for implementation.

<table>
<thead>
<tr>
<th>Functional Group</th>
<th>Potential Lean Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy and Development</td>
<td>26</td>
</tr>
<tr>
<td>Operations</td>
<td>15</td>
</tr>
<tr>
<td>Communications</td>
<td>4</td>
</tr>
<tr>
<td>Finance and Budget</td>
<td>25</td>
</tr>
<tr>
<td>Toll Division Total</td>
<td>70</td>
</tr>
</tbody>
</table>

Table 4: Potential Lean Projects
Currently, each functional group is working to prioritize these Lean projects and develop action plans for the high-priority projects. The Lean leads are using Lean tools\(^4\) to identify the root cause issues and measure the non-value added activities. Once the root cause is identified, the team will develop improvements and calculate the potential savings. Once the improvements are made and the waste is eliminated, the team will monitor the improvements to assure desired results are achieved. These projects will be scheduled as resources allow throughout this biennium.

**Top Priority Improvements**
Of all the potential Lean projects that were identified, three operations projects were identified as priorities. The three projects are: (1) $0.25 Pay by Plate Fee Reversal Process, (2) Escalated Customer Inquiry Procedures, and (3) Image Review of Photo Enforced Transactions (see Appendix D). The first two projects were identified because they are reasonably easy to implement and yield a relatively high payoff. The third project was previously identified as a longer-term improvement, but has been incorporated into the first round Lean process as a significant potential for waste elimination and increased revenue. These specific projects are discussed in Chapter 6, Toll Division Efficiencies.

**General Process**
The Toll Division Lean reviews utilized the well-established Six Sigma process known as DMAIC as shown below:

![DMAIC Process](image)

**Figure 2: DMAIC Process**

- **Define Phase:** Clearly articulate the nature of the project.
- **Measure Phase:** What is the current state of the process?
- **Analyze Phase:** Conduct analysis and present findings
- **Improve Phase:** Consider alternatives and present recommended solutions
- **Control Phase:** Monitor and control the implementation of recommended solutions

For each of the top priority projects under review, the Toll Division is in the final stages of the Analyze Phase, having not yet implemented any of the proposed improvements. The plan is to bring the proposed process changes to a regularly scheduled PMO meeting this fall for approval. Once approved, the process improvements will be implemented and observed to ensure the expected efficiencies have been realized and to calculate the cost savings or revenue increases that have resulted.

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\(^4\) Lean Tools include approaches such as: PICK chart analysis which categorizes projects into four categories: (1) Possible, (2) Implement, (3) Challenge, (4) Kill; fishbone diagrams, also known as the cause and effect diagram, used for quality defect prevention by identifying potential factors causing overall effect; and the 5 Whys, an iterative question-asking technique that is used to explore the cause-and-effect relationships underlying a particular problem with the primary goal of determining the root cause.
CHAPTER 2

Evolution of Modern Tolling Within WSDOT

History and Overview
Washington State has a long history of tolling that was interrupted by the interstate highway program, which provided substantial federal funds to build the Interstate system with tax funds. As the Interstate program wound down and federal funding for transportation diminished, states across the country reintroduced tolls as an increasingly important source of transportation funding. The introduction of electronic toll collection has allowed agencies to also use tolling for traffic management.

WSDOT’s re-entry into the business of tolling began with the Tacoma Narrows Bridge project which opened in 2007, which evolved from a public-private project. WSDOT assumed the toll vendor contract originally established by the private firm. The toll vendor, TransCore, was originally managed by the Tacoma Narrows Bridge Project Office, but later oversight responsibility moved to the WSDOT Headquarters Traffic Operations Division.

In 2008 WSDOT opened the SR 167 High-Occupancy Toll (HOT) Lanes Pilot Project, which converted existing SR 167 High-Occupancy Vehicle (HOV) lanes to HOT Lanes (tolling single occupancy vehicles while HOV vehicles travel at no cost) to make better use of the available space in the HOV lanes. While new equipment was installed in the lanes of SR 167 by ETCC, transaction processing was supported by TransCore, the same toll vendor who was processing the transactions on Tacoma Narrows Bridge.

Once it became apparent tolling would be needed to complete the SR 520 Bridge Replacement and HOV project, it was determined the existing customer service center for the Tacoma Narrows Bridge and SR 167 could not adequately support the addition the SR 520 facility due to the fact that this project required the introduction of all-electronic tolling (no toll booths) and post-payment options (Pay By Mail and Short Term Accounts).

2006 Transportation Commission Tolling Study
Prior to moving forward with the Tacoma Narrows Bridge project, at the direction of the Legislature, the Washington State Transportation Commission conducted an extensive two-part study of the potential for tolling in Washington in 2006, and then again in 2008. These studies concluded that tolling could play a significant role in transportation funding, and they proposed governance and implementation guidelines.

A background paper produced for the “2006 Transportation Commission Tolling Study” assessed toll agency governance and organization models nationally, and recommended two potential organizational approaches to tolling in Washington. The two models differed based on whether regional agencies would have a role in advancing and selecting toll projects vs. locating project selection authority
centrally for the entire state. In both models, WSDOT would design and operate toll systems statewide. The report provides the following basis for that recommendation:

Recently enacted tolling organizations have selected an organization and governance model that allows the merging of strengths from an existing multipurpose transportation agency alongside a new organization focused solely on tolling opportunities. The reasons for selecting this approach have included:

- The desire to use available technical resources from an existing agency rather than create duplicate capabilities. In this manner, only tolling-specific skills need to be added within the new organization.
- The desire to develop greater synergy in integrating long-range goals and transportation system improvements.
- The desire to have greater control from a centralized transportation agency rather than a more independent agency, whether statewide or regional in nature.
- Providing a means of funding start-up activities, from administrative to project feasibility assessment.

2008 Legislation Created Tolling Framework in Washington State

In 2008, the Legislature passed legislation providing a framework for tolling in Washington, establishing the purposes of tolling, governance roles, and guidelines for use of toll revenues. By law, “it is the policy of the state of Washington to use tolling to provide a source of transportation funding and to encourage effective use of the transportation system.” The legislature reserves authority over the establishment of new tolls on state facilities, and over how toll revenues may be used. The Transportation Commission is delegated authority to set toll rates, exemptions, and fees. WSDOT is the designated agency to plan, implement, and operate toll facilities on state highways.

WSDOT “Virtual” Toll Organization

When tolling was limited to the Tacoma Narrows Bridge, the single bridge toll operation was managed from the Headquarters Traffic Operations Division. Once it was known that tolling could provide funding for the SR 520 project, I-405 Express Toll Lanes, I-5 Columbia River Crossing and potentially other megaprojects under consideration, WSDOT began evolving toward a statewide toll program by using matrix management to staff toll-related projects from various work groups into a “virtual” toll organization.

Development of new toll systems for SR 520 and a statewide customer service center was managed from the Seattle-based Urban Corridors Office, which oversaw megaprojects funded through the legislature’s 2003 and 2005 fuel tax increases. In 2008, Toll Operations was consolidated into the Urban Corridors Office to provide a unified approach to tolling statewide.

As a new tolling agency beginning a major project to implement tolls on SR 520, WSDOT engaged consulting assistance to bring industry experience and expertise in-house. WSDOT began developing an

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integrated team approach with a variety of consultants to assist in all aspects of tolling. WSDOT has also benefitted from including active advice and expertise from peer agencies through FHWA’s peer-to-peer program, as well as membership in the International Bridge Tunnel and Turnpike Association.

Development of the Toll Division

2009 WSDOT Strategic Toll Organization Development Report

WSDOT was directed to dissolve its Urban Corridors Office to reduce overhead. To maintain continuity and focus on tolling functions, WSDOT engaged consultants to build on the earlier Transportation Commission work, assess organizational models at peer agency toll entities, and propose an organization structure for a new Toll Division. The resulting consultant report identified strengths and weaknesses of locating tolling within WSDOT and recommended that “if toll authority for SR 520 is enacted by the legislature during this session, the organizational shifts to create the Washington State Toll Division within WSDOT should begin immediately. Most of the changes to form this division can come from existing staff and facilities, focusing on efficiencies and with reassignment of duties.”

The report proposed near-term, intermediate, and long-term organization structures. In the near term, the consultants proposed that the following functional groups be established within the new division: toll planning, toll project development, toll finance, and toll operations. WSDOT established the Toll Division in July of 2009.

2009 JTC Independent Expert Review Panel

During the 2009 session the Legislature authorized tolling on SR 520. As WSDOT prepared to contract for the new statewide customer service center, the Joint Transportation Committee (JTC) of the Legislature convened an expert review panel (ERP) to advise them in their oversight role to review costs and strategies for introducing all-electronic tolling on SR 520. The five-member ERP represented a variety of toll-related disciplines, and all members brought recent industry experience and familiarity with emerging trends. They interviewed staff, consultants, and policymakers; and reviewed materials to help understand WSDOT’s upcoming vendor procurements. Their report was issued to the JTC in December of 2009.

The ERP report covered several topics, and resulted in several refinements to the procurement process. As part of their review they also advised the JTC on organizational models. The ERP reviewed WSDOT’s “Strategic Toll Organization Development” report and other documents; as well as interviewed staff, consultants, vendors, and policy-makers. In their report, the ERP discussed efficiencies from being integrated with a state DOT and the need for bond agencies to have confidence in financial skills and information being presented by the toll agency. The following is an excerpt from the ERP Report:

[Excerpt from ERP Report]

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6 Strategic Toll Organization Development, PBS&J, January 2009
The ERP recommends that WSDOT focus the new Tolls Division as a business unit responsible for the operations of revenue producing projects, including the following functions:

- toll project planning
  - project planning
  - operational feasibility
- financial strategy and operations
  - traffic and revenue projections
  - financial planning and feasibility
  - coordination and advice on bond issuance and reporting
  - responsible for revenue collection and accounting
  - total project cost accounting and overhead allocation toll
- systems development and procurement
  - procurement of toll related services
  - hardware and software development, maintenance and interface to DOT systems
  - toll technology standards
  - toll operating reports and statistics
- toll operations management
  - day-to-day operation support
  - staffing and training
  - business rule development
  - marketing and communications

The Toll Division current organizational structure is consistent with these four major functional areas of responsibility and reports to the Deputy Secretary and Chief Operating Officer on the same level as a District operation. This is consistent with the structure adopted by most Departments of Transportation that house a turnpike or tolling function within their organizational structure. As compared to DOT districts, rather than a geographical area of responsibility, these toll organizations become involved only as revenue producing projects are conceptualized across the state.

To provide support to WSDOT and to access the body of knowledge in the industry, the ERP recommended the acquisition of a general engineering consultant specializing in toll operations and systems integration. They indicated that hiring a general engineering consultant that has “hands on” knowledge of other ETC [Electronic Toll Collection]) and AETC [All ETC] applications and that stays aware of technological advances in the industry will bring state-of-the-art knowledge to WSDOT. The consultant will be able to advise WSDOT on an as-needed basis, assist with training, and provide support to the relationships with rating agencies and others. These services will be especially worthwhile in the first 2-3 years of the start-up of the Toll Division.”

It is typical along similar toll organizations within state DOTs to employ a general engineering consultant. The Toll Division selected a general tolling consultant in mid-2010.
2011 Return of the Expert Review Panel

The delivery by the customer service center vendor (ETCC) required for the implementation of SR 520 was problematic. ETCC was not able to deliver the customer service center to meet the planned opening date, and the existing customer service center provided by TransCore could not be expanded. For this reason ETCC simultaneously developed its new tolling system while also developing an interim system to replicate the existing TransCore operation – intended to be in place for a very short time, but extended as the implementation date for SR 520 tolling continued to be deferred. Errors and inadequacies of this interim operation caused significant concern among customers, legislators and the press, and raised questions within WSDOT about how much hands-on testing and supervision would be needed before accepting the new customer service center system. As a result of the challenges encountered, the Secretary of Transportation requested the ERP return to assist WSDOT.

The Toll Division and its consultants worked diligently to find the best solutions to address these issues. As part of this, WSDOT contracted directly with the previous ERP for a second independent study to assess readiness to open the SR 520 toll facility. Minor changes were made to the ERP membership. The second ERP again convened in Seattle, reviewed materials, and interviewed staff, consultants, and policymakers. As a part of their review, the panel revisited its organizational recommendations. After interviewing staff and reviewing records from an independent quality assessment team WSDOT retained during the procurement process, the ERP concluded that the Toll Division Director lacked adequate authority in the Department to make timely decisions and deliver projects within scope and schedule.

In their Final Report8, the ERP recommended stronger authority be provided to the Toll Division based on a review of challenges experienced during the SR 520 toll system and customer service procurement process:

“The authority for full decision-making has never been given to the Toll Division. ... The current organization was adequate to successfully deliver tolling to the SR 520 but opportunities for improvement exist. The ERP strongly suggests that the long-term success of the toll systems will require that the Toll Director position be strengthened to allow for the level of decision-making shown needed. Additionally, incorporating the finance/accounting and IT elements into the tolling organization is also our recommended solution, but we realize that this is not a short-term adjustment.”

Legislative Direction on Tolling

To date the legislature has authorized tolling on six highways and has directed toll studies on four additional routes. Tolling has become an important part of the Moving Washington transportation strategy, as well as an important part of the central Puget Sound’s transportation vision through 2040. The legislatively-authorized facilities and studies are shown on the map below.

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8 Expert Review Panel for WSDOT Tolling: Final Report, AECOM, June 2012
Figure 3: Toll Division Work Plan
**Toll Program Growth**
When tolling began on the Tacoma Narrows Bridge in 2007, it was a standalone turnkey operation which processed 13 million transactions generating $30 million in revenue. In FY2013 the Toll Division handled 35 million transactions with revenue of $115 million. By FY 2017, if all authorized toll facilities are operational it is projected that the division will process 65 million transactions with $190 million in revenue.

**Toll Division Projected Transactions and Revenue through FY 2017**

![Figure 4: Toll Division Projected Transactions and Revenue](image)

The WSDOT Toll Division is still in a ramp-up phase for toll project development requiring a much higher level of resources than agencies that are in a “steady state” of operating existing facilities. This places WSDOT in a unique situation for resourcing, when compared to other toll agencies in the U.S. WSDOT has adopted a strategy of outsourcing the toll operations just like many other growing toll operations such as the Florida Turnpike Enterprise and the Texas Department of Transportation. Texas is the only state DOT that has a rapidly growing program of new toll projects in the pipeline. However, Texas has opted to develop many of these projects as public-private partnerships meaning a much greater portion of the work for delivery of the projects is placed on the private sector.

During FY 2011-2013 the Toll Division focused on the development of the SR 520 project, the subsequent ramp-up of SR 520 operations and started the transition to steady state operations. The FY
2013-2015 biennium is bringing another surge of development activities for the Toll Division, as well as another ramp up for toll operations activities associated with the I-405 Express Toll Lanes and SR 99 Tunnel projects. Concurrently, at the direction of the legislature, the Toll Division is planning for other new facilities such as the SR 509/I-5/SR 167 Gateway project, I-90 tolling, and possible coordination with the State of Oregon for interoperability as they potentially continue work on the I-5 Columbia River Crossing project.

Tolling is a transportation tool utilized in 30 states across the country. The table below shows the annual toll revenue, transactions and staffing of peer agencies.

<table>
<thead>
<tr>
<th>Agency</th>
<th>Tolling Since</th>
<th>Toll Revenue¹</th>
<th>Transactions¹</th>
<th>Agency Staff</th>
<th>Consultant Staff</th>
<th>Business Model for Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-470</td>
<td>1991</td>
<td>$120,064,437</td>
<td>53,965,816</td>
<td>76</td>
<td>On Call</td>
<td>Outsource</td>
</tr>
<tr>
<td>MdTA</td>
<td>1940</td>
<td>$578,197,000</td>
<td>133,691,562</td>
<td>1,790</td>
<td>On Call</td>
<td>In-house staff except CSC</td>
</tr>
<tr>
<td>FTE</td>
<td>1957</td>
<td>$608,800,000</td>
<td>664,300,000</td>
<td>420</td>
<td>Embedded staff</td>
<td>Outsource</td>
</tr>
<tr>
<td>Ohio Turnpike</td>
<td>1955</td>
<td>$252,544,000</td>
<td>49,804,000</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>In-house staff</td>
</tr>
<tr>
<td>TxDOT²</td>
<td>2006</td>
<td>$75,694,706</td>
<td>90,031,603</td>
<td>18</td>
<td>TOD Planning + TOD Operations (Embedded Staff of 14)</td>
<td>Outsource &amp; P3</td>
</tr>
</tbody>
</table>

Table 5: Annual Toll Revenue, Transactions and Staffing of Peer Agencies

¹ Toll revenue and transaction information is based on agencies' published financial statements.
² Toll Operations Only.

**Comparing Agencies**

When the governance decision was reached to establish the Toll Division as part of WSDOT, it was based on the following: (1) the acknowledgement of the value of being able to leverage the technical resources of an existing agency, (2) the ability to assure optimal synergies in integrating long-range goals and transportation system improvements, and (3) maintaining control from a centralized transportation agency to make more effective decisions. These are all consistent with Lean principles. Recent trends with other state DOTs throughout the U.S. support this approach as there have been no actions to separate tolling entities from state DOTs and, in many cases, standalone agencies have been incorporated. In Florida, Texas, and North Carolina they started with independent statewide tolling agencies and then incorporated them into the State DOT. In the comparisons described below, several different models are shown for state DOT tolling agencies that are in the process of developing major new toll projects.

**Maryland Transportation Authority**

The Maryland Transportation Authority (MdTA) is one of the state toll agencies that had developed new large projects over the past several years. MdTA is an agency of the state of Maryland and a unit within The Maryland Department of Transportation (MDOT). MDOT has several modal administrations: Aviation, Port, Motor Vehicle, Transit, and the State Highway Administration. MdTA was created in 1971 by the Maryland General Assembly and is responsible for the supervision, financing, construction,
operation, maintenance, and repair of certain revenue-producing facilities. The MdTA is comprised of
the Secretary of Transportation as Chairman, and eight members appointed by the Governor with the
advice and consent of the Maryland Senate.

Unlike WSDOT, MdTA operates largely as an independent entity, although they maintain coordination
with the State Highway Administration on the determination of toll projects. The MdTA maintains a
large in-house organization. The Executive Secretary of MdTA is appointed by, and reports to, the
Secretary of Transportation. The following functions report to the Executive Secretary position: Deputy
Executive Secretary, Office of Audits, Office of legal Counsel, Coordinator for the Intercounty Connector
and Special Projects, Division of Communications, Division of Operations, and the Authority Police.
Reporting to the Deputy Executive Secretary are Capital Planning, Strategic Development, Finance,
Procurement, Engineering, and Construction Management. Other senior leadership positions include:
Chief Financial Officer, Chief Administrative Officer, Director of Procurement and Statutory Compliance,
Director of Strategic Development, Director of Capital Planning, Chief Engineer, Director of
Communications, Principal Counsel, and Chief of Police.

On a day to day basis, MdTA operates independently from the State Highway Administration. They
handle their own administration, finance, operations, and maintenance. They have their own internal
toll transaction auditors in their Division of Finance, but these are primarily focused on cash collection.
Unlike the Florida Turnpike Enterprise described below, MdTA’s approach is to provide their cash
collection operations activities internal to their agency, including housing their own police force. MdTA
has 1,790 authorized positions. They do contract with an outside contractor to provide customer
service center systems, operations, and toll system maintenance. They also employ a large array of
consultants in various on-call contracts to provide expert support.

For many years MdTA was an operation-focused entity operating existing facilities: a turnpike, two
tunnels, and four bridges. In the last five years, however, they have taken on significant debt
responsibilities for two new projects: the new Intercounty Connector Project and the I-95 Express Toll
Lanes. Their facilities include service plazas, restaurants, and service stations.

Unlike WSDOT Toll Division who issues all debt through the State Treasurer, one of the primary
functions served by MdTA is that they are authorized, by statute, to issue 30-year debt. This is a strong
advantage for toll-based projects because the state’s constitution limits MDOT from issuing debt with a
maturity of more than 15 years. MdTA relies solely on revenues generated from its transportation
facilities. The MdTA is authorized to issue their own revenue bonds up to a maximum level of $3 Billion.
As of July 2013, outstanding debt totals $2,268,442,625. Since 2007, they added approximately $1.8
Billion in outstanding bonds. All revenues are pledged to the same system of toll revenues allowing
leverage across their entire system.

Florida Turnpike Enterprise
The Florida Turnpike Enterprise (FTE) turnpike system is expansive - consisting of 460 miles of limited-
access toll facilities. It is financed primarily by toll and service plaza revenues. More than any state in
the U.S., tolling is truly an integral part of transportation financing in Florida. In their current form, FTE
has many similar characteristics to the WSDOT Toll Division. However, FTE is strong evidence that
finding the right structure for a tolling entity within a state DOT is not an easy solution. The entity that is
now known as FTE began life in the early 1950’s as the Florida State Turnpike Authority (Turnpike)
operating independently until it was brought under the purview of the Florida Department of
Transportation (FDOT) in 1969 as the Turnpike District. The Turnpike retained an identity, but decisions

| Comparing Agencies | 21 |
were largely managed by the districts. In 1988, the Turnpike was reorganized as an Office within FDOT. In 1989, major legislation was passed giving FDOT the ability to leverage revenues for the Turnpike’s main line, build new projects, bond projects, and raise toll rates. In 1994, the Turnpike became a standalone district of FDOT and was no longer managed by the districts.

In 2002, the Florida legislature passed HB 261 changing the Turnpike District into the Florida Turnpike Enterprise. One of the major changes under this legislation was exemptions from FDOT policies and procedures. The Legislature made these changes to “fully leverage the Turnpike asset by pursuing innovation and best practices found in the privates sector, especially in the areas of management, finance, organization and operations”. There are seven major functional areas which report to the FTE Executive Director: the Chief Financial Officer, the Director of Communications and Marketing, the Government Affairs Liaison, the Director of Loss Prevention, the Director of Administration, the Director of Transportation Operations, the Director of Transportation Development, and the Director of Toll Systems.

Based on information from their former executive director, FTE was successful within FDOT. He credited this largely to the on-going communication and coordination with the seven other transportation districts within FDOT. FTE works closely with the other districts on broader transportation issues and decisions at monthly meetings with the FTE executive board. Although it operates as an enterprise, FTE is not independent, rather it is a significant part of FDOT as this maximizes coordination and cooperation of projects.

The FTE website describes their organization as follows: An innovative experiment combining the best of both the government and business worlds, Florida’s Turnpike Enterprise utilizes the best practices of the private sector while operating in the public interest. FTE has expanded and increased revenue, while continuing to protect bondholders and improve customer service across the board. The results have been improved efficiency, cost-effectiveness, and timely project delivery.

One of the key elements that FTE considers as a cornerstone for its success is its approach to outsourcing. Based on information made available in 2004, out of 4,600 individuals employed through the FTE, only 1 in 9 was a FDOT employee. They take seriously the approach of “running like a business” by retaining only a small in-house staff and increasing/decreasing contract staff as necessary. Most contracts are for five-year terms with five-year renewable options. Contract staff perform such FTE responsibilities as toll road concessions, troopers, operations, etc. This outsourcing approach allows the FTE maximum efficiency and flexibility.

Like MdTA, and unlike WSDOT, FTE issues their own toll revenue bonds that are backed by the revenues of the entire system. There remain some original toll facilities that are owned by FDOT, but all toll facilities are operated by FTE. FTE continues to make investments in transportation infrastructure and has a formal planning process for the prioritization and selection of capital projects. Existing cash balances, toll revenues, concessions, and bond proceeds fund FTE’s capital improvement program. Outstanding bonds totaled $2.9 billion at the end of FY 2012 with plans to issue additional “new money” bonds of $1.1 billion during the FY 2013-FY 2017 period. Given the extensive system, the capital funds are planned to be used for new interchanges, widenings, and operational efficiencies as well as two new limited access toll facilities, the First Coast Outer Beltway and the I-4 Connector.
Texas Department of Transportation

Tolling in Texas has also gone through much iteration. In 1953 the Legislature in Texas created the original Texas Turnpike Authority as an independent entity, headquartered in Dallas, with statewide authority to build toll roads and bridges. These facilities were to be financed by revenue bonds issued by the OTTA and supported entirely by tolls collected from its projects. The original Texas Turnpike Authority’s efforts were primarily in the Dallas-Fort Worth metroplex, developing three major toll road projects. Senate Bill 370, passed by the 75th Legislature in 1997, abolished the original Texas Turnpike Authority and created a new division within TxDOT to develop toll roads. The bill also established the regional North Texas Tollway Authority and transferred to it all the original Texas Turnpike Authority assets, rights, and other property located in Collin, Dallas, Denton, and Tarrant counties.

TxDOT’s Texas Turnpike Authority Division (TTA) was given statewide jurisdiction for development of turnpikes, but is not prohibited from pursuing projects within the areas covered by other regional toll authorities. The objective of TTA was to consider the development of turnpike projects in any part of the state where there is a demonstrated need and where a project has been shown to be financially feasible.

There are four major tolling entities in Texas – TxDOT TTA, the North Texas Tollway Authority (NTTA), the Harris County Tollroad Authority (HCTRA), and the Central Texas Regional Mobility Authority (CTRMA). There are also a number of other Regional Mobility Authorities throughout the state in more rural areas.

Since the formation of the original Texas Turnpike Authority within TxDOT, they have morphed through several iterations including no longer having an independent board. Unlike WSDOT, TxDOT now has a major emphasis on public-private partnerships (P3). Most of their toll projects are developed and operated through competitively procured, long-term lease agreements where the private entity issues the debt and takes the revenue risk rather than TxDOT. This emphasis on P3 tolling results in a delivery structure that is substantially different than the approach taken by WSDOT. Currently, all design-build and P3 projects that are delivered through what is known as “comprehensive development agreements” are developed and procured by the Strategic Projects Division (SPD) of TxDOT – this includes all tolling projects. The SPD reports to the Chief Planning and Project Officer for TxDOT. In another substantial variation from Washington, Texas has a number of local toll road agencies and a process must be followed to determine who controls each toll project. Current legislation requires that every toll project that is within the jurisdiction of a local tolling authority must go through a formal “primacy” determination to set whether the local entity or TxDOT will control the project.

SPD has Procurement Engineer consulting contracts that support the development of these projects including the tolling aspects. If it is a toll road that is directly financed by TxDOT, the operations are handled through the Toll Operations Division (TOD). They also provide operations for some projects financed by other public entities. The TOD oversees the development of toll collection operating system services for TxDOT toll roads. This includes toll collection systems integration, customer service center operations, and toll management systems contracting. If it is a P3, the involvement of TxDOT will vary according to the agreement and the location. The TOD has contracts for statewide toll operations, customer service, back office system operations and maintenance, as well as statewide toll system integration and maintenance. They also have consulting contracts to assist in toll planning, toll systems development, and toll operations.
The only toll revenue bonds issued by TxDOT are the Central Texas Turnpike System (CTTS). According to the 2012 CTTS financial statements, there was $1,616,749,809 outstanding in toll revenue bonds plus $1,057,876,656 in TIFIA loans for this project.

North Carolina Turnpike Authority
The North Carolina Turnpike Authority (NCTA) was created in 2002 by the General Assembly in response to concerns about rapid growth, heavy congestion, and dwindling resources. The NCTA is authorized to study, plan, develop, construct, operate, and maintain up to nine projects. They opened the Triangle Expressway in three phases from December 2011 to December 2012, and had five other projects in development.

In 2009, the governor decided to bring NCTA under North Carolina Department of Transportation (NCDOT) to conserve expenditures and improve efficiency. Effective June 1, 2010, NCTA was fully integrated into NCDOT operations. NCTA is shown as an enterprise fund in the NCDOT financial statements. The senior staff at NCTA were then organized to report directly to unit heads within NCDOT instead of a separate reporting structure. Additionally, NCTA staff moved into NCDOT’s headquarters at the Transportation Building in downtown Raleigh.

Even prior to those steps, when NCTA was operating as a separate entity, they relied upon the NCDOT to fund start-up activities, staffing, and project activities until a revenue stream was realized through projects open to traffic. The original NCTA was authorized to have independent staffing, location, and policy board. However, they were required to have its annual budget and work program approved by the NCDOT Board of Transportation. These expenses are to be repaid from toll revenues as soon as possible, subject to operating and debt requirements. NCTA’s original philosophy was a small internal team, use of highly specialized consultants, and outsourcing of toll collection and operations. Procurements were made for the roadside collection system, back office system, and operations services contractor. These projects all collect tolls via all-electronic tolling.

NCTA has revenue bonds outstanding in the amount of $1,256,213,119 as well as a TIFIA loan of $283,508,357 as of the June 2012 financial statements. These were for two projects – the Triangle Expressway and the Monroe Connector. The original Triangle Expressway bonds were issued in 2009 as toll revenue bonds for approximately $623 million and then $10 million for the Monroe Connector in 2011. All other debt issued by NCTA since 2009 have been either State Appropriation Revenue Bonds or Grant Anticipation Revenue Vehicle Bonds. The original two projects were public toll revenue debt with design-build delivery. Both were provided with “gap funding” appropriations for costs not covered by tolls. The third project is being pursued as a P3 and also needs gap funding. The fourth project was also intended as public toll revenue debt with design-build delivery.

E-470 Public Highway Authority
E-470 is a political subdivision of the state of Colorado and is completely independent of the Colorado DOT from a reporting standpoint. They are responsible for financing, operation, and maintenance of the E-470 toll road. They operate the ExpressToll customer service center, which currently provides all transponder-based processing for the toll roads in Colorado including those owned by the Northwest Parkway Public Highway Authority and the High Performance Transportation Enterprise (HPTE), housed within the Colorado Department of Transportation. E-470’s has a board and the members are representatives from the cities and counties who are members of the public highway authority. E-470’s jurisdiction is limited to the geographic area of their members, unless specifically requested to provide
services by other entities. They generally follow an outsourcing philosophy and contract for customer service center operations and all maintenance contracts.

E-470 is used as a comparison with WSDOT for purposes of assessing per transaction costs. However, as they are not part of, or associated with, the Colorado DOT, and do not have a statewide jurisdiction, they are not an appropriate comparator for organization and DOT coordination.

Additional Context on Tolling Structures

The choice to locate tolling with WSDOT is supported by the following primary factors:

- The Washington State Legislature has developed a statutory tolling framework that retains authority to authorize individual toll facilities rather than delegate authority to state or regional toll entities;
- As highway construction costs have increased nationally, tolls alone can no longer fully support major projects, so tolls and other state revenues must often be integrated in toll facility financial plans;
- Washington’s urban highways form a network that is tightly interconnected and has little redundancy, favoring an integrated highway management by a single agency; and
- There are economies of scale in using existing engineering and organizational resources to build and maintain toll facilities rather than to develop separate and redundant capabilities in separate agencies.

For reference, other tolling entities associated with state Departments of Transportation and their structures are identified below:

- Prior to the NCTA, the most recent merger of a separate turnpike entity into the state DOT was in Massachusetts where MassPike was officially folded into the Highway Division of the state department of transportation on November 1, 2009.
- Indiana had a Toll Road Commission until 1981 when the Indiana Toll Road (ITR) was turned over to the Indiana DOT, but toll operations were retained as a separate division. However, since mid-2006, the ITR has been operated by a concessionaire under a P3 agreement that provided $3.8 billion to the state in return for a 75-year lease and the right to collect toll revenues for that period.
- New Hampshire is structured as part of the New Hampshire DOT with a Bureau of Turnpikes and staff reporting to a Bureau administrator within the state DOT.
- Delaware Turnpike and the DE-1 tollroad are both operated by Delaware DOT, thoroughly integrated into the DOT organization.
- In California there are no state tolling entities. Although Caltrans is the owner of seven toll bridges, in the San Francisco Bay Area they are operated by the Bay Area Transportation Authority. The major independent toll authority is Orange County’s Transportation Corridor Agencies. Tolling is also conducted by the Orange County Transportation Authority, operating SR91, and the San Diego Association of Governments, operating Southbay Expressway. The latter two gained their toll facilities by purchasing them from private entities.
- In Virginia, the DOT transferred their main toll road asset, the Dulles Toll Road, to the Metropolitan Washington Airports Authority, but retain two smaller facilities and still run the customer service center. There is also the stand-alone Richmond Metropolitan Authority.
• In addition to FTE, Florida has a wide variety of separate toll authorities including: Miami Dade Expressway, Orlando Orange County Expressway Authority, Osceola Parkway Authority, and Tampa Hillsborough Expressway Authority.

• Colorado houses the High Performance Transportation Enterprise within the Colorado DOT, which operates the I-25 Express Lanes and is building the US36 Managed Lanes. The E-470 Public Highway Authority provides back office services to HPTE. Both of these facilities are expected to be transferred to operation by a private concessionaire if financial close is completed this year.

**WSDOT Unique Characteristics**

Some of the unique characteristics of WSDOT tolling that vary from any of the agencies described above and therefore impact their organizational and staffing needs include the following:

• WSDOT is still in a “ramp-up” mode of delivering new facilities on a statewide basis.
• Each facility must be accounted for separately and has its own constituency. Consequently, there is no opportunity to leverage funding on a network basis.
• Planning for possible new facilities must come from non-tolling funding sources.
• Proceeds from civil penalties are accounted for in a separate fund for SR 520, but are combined with toll revenue for Tacoma Narrows Bridge.
• All financing is conducted by the state Treasurer’s office and, to-date, no debt issued has been non-recourse toll revenue debt.
• Vendor accounting requirements include an unprecedented level of real-time transaction recording along with daily transaction reconciliation.
CHAPTER 3

**Future Tolling Direction**

There are several factors that need to be considered when evaluating the Department’s Toll Program including: legislative direction, the Toll Division work program, long-range planning needs, and funding trends.

**Legislative Direction**

The direction for tolling in Washington State is provided in statute. ESSHB 1773, now in RCW 47.56. This statute, passed by the Legislature in 2008, provides the framework for tolling, eligible use of revenues, and governing rules.

It defines that:
- The legislature authorizes toll facilities, designates toll corridors, and specifies the use of toll revenues;
- The Washington State Transportation Commission sets toll rates, policies, fees, and exemptions; and
- WSDOT plans, implements, and operates toll collection systems, as well as collects tolls.

**Current and Proposed Toll Projects**

The toll projects described below have been authorized by legislative action.

**I-405/SR 167 Eastside Corridor Express Toll Lanes**

The first phase of the I-405/SR 167 Express Toll Lanes project is currently under construction between Bellevue and Lynnwood, and the design of the toll systems is underway. The I-405 Bellevue to Lynnwood Widening and Express Toll Lanes project began construction in February 2012 and will open to traffic in mid-2015. Crews will build one new northbound and southbound lane on I-405 between NE 6th Street in Bellevue and SR 522 in Bothell that will be paired with the existing carpool lane and operate as a two-lane express toll lane system. Additionally, the existing carpool lane on I-405 from SR 522 to I-5 in Lynnwood will be converted to a single express toll lane. The resulting 17-mile express toll lane system will provide a more reliable trip for transit and those drivers who choose to use them.

Future phases of this project will proceed as funding is available by action of the legislature. Current plans call for widening the section between I-90 and Renton by one lane. The new lane and the existing HOV lane will then be converted into a two-lane express toll facility similar to the current Bellevue to Lynnwood project. A new flyover ramp will connect this facility to the existing SR 167 HOT lane, and the HOT lane will be upgraded to provide a continuous express toll lane facility throughout the I-405/SR 167 Eastside Corridor. Express toll lanes improve traffic performance for all lanes in the corridor because they add capacity and manage demand by using toll rates that adjust in real time according to traffic levels to ensure consistently fast travel times.

**SR 99 Tunnel**

The SR 99 Alaskan Way Viaduct is an aging structure that is at risk of failing during an earthquake. The new SR 99 tunnel, scheduled to open in early 2016, will move the state highway underground through downtown Seattle. This will open more than nine acres of public space for a world-class waterfront area while maintaining a vital transportation route through downtown for people, as well as goods and
services. The current plan calls for tolls to help pay $200 million of the estimated $3.1 billion project. Over the last year, the Toll Division’s efforts have centered on planning support for the SR 99 project team, including working with the team and our statewide roadway toll vendor to coordinate the toll system design.

In Fall 2011, WSDOT and the City of Seattle established the Advisory Committee on Tolling and Traffic Management. The committee is exploring ways to refine tolling of the SR 99 tunnel to minimize traffic diversion, meet funding goals, and investigate strategies to reduce or mitigate diversion. The committee will submit its initial recommendations in 2013 to the Governor, legislature, State Transportation Commission, WSDOT, Seattle Mayor, and the Seattle City Council. The committee will finalize its recommendations in December 2015. It will continue work for up to one year after tolling begins to evaluate its effect on city streets and I-5 traffic.

**SR 509, I-5, and SR 167 Puget Sound Gateway Project**
The SR 509, I-5, and SR 167 Puget Sound Gateway Project will relieve traffic congestion and improve freight mobility by completing the long-planned SR 167 and SR 509 corridor connections to I-5. The Gateway project is key to enhancing the state’s economic competitiveness, both nationally and globally, by connecting the state’s largest ports to key distribution centers in King and Pierce counties, as well as to Eastern Washington. This project is in the initial planning and conceptual design stage. Tolling is part of the funding and phasing concepts to provide a revenue source and to efficiently manage traffic operations.

**I-90 Lake Washington**
The Legislature is considering tolls on I-90 to raise revenue to help fund completion of the SR 520 ridge program and balance traffic across the Cross-Lake Washington Corridor. It is anticipated that tolling I-90 will help alleviate congestion, accommodate regional growth, and provide more reliable transportation on I-90. WSDOT has been instructed to complete an environmental review of tolling I-90 between I-5 and I-405, which will include public outreach, to include coordination with stakeholders, cities, and elected officials to ensure complete findings. The results of the study are due in 2015, upon which the State Legislature will make the decision whether or not to toll I-90. As with all major decisions, the public is invited to learn more about the project and weigh in on the decision-making process by attending public meetings and visiting the project website.

**Other Plans and Studies**

**I-5 Columbia River Crossing**
The State of Oregon is now considering whether to fund and construct the Columbia River Crossing, a long-term, comprehensive project to reduce congestion, enhance mobility, and improve safety on I-5 between Vancouver and Portland. WSDOT will monitor this effort to determine what role to play in tolling and other elements of the project, as well as how to provide interoperability with Good To Go! for Washington toll customers.

**PSRC Transportation 2040**
The Puget Sound’s long-range metropolitan transportation plan, Transportation 2040, was adopted by the Puget Sound Regional Council (PSRC) in 2010 with near-unanimous member support. By the end of the coming 30 years, the plan called for development of a highway pricing approach that would both raise revenues and moderate growth in demand for driving. Until that evolution is complete, the plan calls for continued use of tolls to finance major roadway projects and conversion of the region’s HOV lanes into express toll lanes.
Puget Sound Regional Tolling Study
More recently, the King County Executive and eleven King County mayors from bordering cities on Lake Washington wrote to the PSRC Executive Director and WSDOT Secretary requesting a study to consider alternatives to the facility-specific process of designating and implementing tolls in the Puget Sound area. The plan would address alternative approaches to tolling, and alternative paths to phasing the introduction of new toll facilities. The letter proposed a thorough assessment of the effects of current and proposed tolled facilities, examination of other transportation revenue and financing options, and consideration of key policy issues regarding different measures of equity, uses of toll revenues, and the distribution of benefits and costs.

PSRC, WSDOT, and King County are working together to develop a more detailed study plan and working with the Federal Highway Administration to find funding to support the effort. Current discussion envisions a panel of less than 30 state and regional opinion leaders meeting over an 18-month period, making an interim report prior to the 2015 legislative session and a final report by the fall of 2015.

Express Lanes Pre-Design
WSDOT proposed and received a grant to develop a system plan for its Moving Washington plan to evolve HOV lanes in the Puget Sound region into a system of express toll lanes. Express toll lanes would remedy long-standing speed and reliability problems of HOV lanes, while providing an alternative to sitting in congestion for anyone facing an urgent need to arrive on time. The project examined varying user needs for carpools, transit, freight, and potential tolled users; addressed methods that would be applied consistently throughout the express toll lane system; developed a possible conceptual approach to implementation on I-5; and identified possible funding and financing scenarios. The final project report is in development and expected to be completed by the end of 2013.
State Funding Trends
The interest in tolls as a sustainable revenue source and to improve efficient operations of state highways has increased dramatically over the last five years.

Since 2001, state funding for transportation maintenance and operations has declined by 49 percent, while construction costs rose 77 percent. This resulted in a lack of funding to support transportation. The fuel tax rate increases in 2003 and 2005 made it possible to fund specific transportation improvement projects. However, the amount of fuel tax revenues available to support highway preservation, maintenance, and operations has remained relatively flat despite a growing need to resurface many miles of highways and repair bridges.

Purchasing Power of the State Fuel Tax

The fuel tax revenue accounts for the largest share of state transportation funding. The purchasing power of the state fuel tax is declining. The fuel tax is a flat tax on each gallon sold. It is not indexed to inflation, and does not rise as the price of fuel goes up. In addition, Washington residents are driving fewer miles per capita, vehicles are becoming more fuel efficient, and new federal fuel efficiency requirements and the emergence of electric vehicles will accelerate this trend. The November 2011 fuel tax forecast included a revision to the fuel consumption forecast model to better reflect these trends. That forecast change, combined with lower consumption, resulted in a decrease in actual and projected fuel tax revenues of $3.6 billion from 2007-2020. Washington’s gas tax of 37.5 cents per gallon has not been increased in 4 years. Only eight of the 37.5 cents of the state gas tax is available to fund state highways & ferries, including maintenance, preservation, safety improvements, and congestion relief.
**Future State Fuel Tax Revenue**

![Graph](image)

**Figure 6: Reduced forecasts of future state fuel tax revenue**

**National Trends**

A similarly austere situation is present at the Federal level as traditional highway funding sources have decreased dramatically in recent years. Federal fuel taxes, which have not been indexed for inflation, have remained at 18.5 cents per gallon since the previous increase was enacted in the 1990s. The most recent federal transportation bill, Moving Ahead for Progress in the 21st Century (MAP-21), did not contain any increases in Federal fuel tax rates. Since 2008, gas tax expenditures have exceeded receipts, requiring a transfer of $34.5 billion from the general fund to the Highway Trust Fund to pay the bills. With increasing gas prices and greater use of energy efficient and alternative fuel vehicles, and the need to maintain at least the current levels of expenditure, the Highway account of the Highway Trust Fund will be insolvent in early 2015 according to the Congressional Budget Office (CBO).

To generate additional funding for transportation, some states have begun to pursue other options: increase state fuel taxes and fees, impose local taxes and fees, implement tolling, pursue other user-fee charging systems, and restructure fuel tax rates. Virginia became the first state to completely eliminate retail fuel gas taxes. Consumers will no longer pay a per-gallon tax at the pump. Instead, the state fuel tax will be replaced by a 3.5% wholesale tax on gasoline, a 6% tax on diesel fuel, an increase in title registrations, a $100 fee on hybrid and electric cars, and an additional 0.3% general sales tax. Many states are searching for the right solutions moving forward.

Some of the trends being observed have a tolling element or are a tolling by-product and will require that the Toll Division be engaged and able to address these emerging issues, including the following:
**CAFÉ Standards/Alternative Fuel Vehicles**

The Corporate Average Fuel Economy (CAFÉ) mandate was first established in 1975 and until this past April, has changed little since. It’s been years of debate, but finally, the standards have been significantly updated. By model year 2016, the fuel efficiency of the new vehicle fleet sold in the United States will have to average at least 34.1 miles per gallon and 54.5 miles per gallon by model year 2025.

As a transportation community we continue to struggle with the fact that our primary revenue source for transportation has been on a deep downward slide for some time. There is strong resistance to increasing fuel taxes, but even if that were not the case, the “flat tax” approach for fuel taxes has a steadily downward trajectory as CAFÉ Standards are continually increased. This is further complicated by the introduction of alternatively fueled vehicles, including hybrid and electric vehicles. According to one recent study by the American Road and Transportation Builders Association, the new CAFÉ standards alone will result in the loss of more than $65 billion in Highway Trust Fund dollars between 2017 and 2023. A similar study was recently released by CBO. This places even greater emphasis on new revenue sources such as tolling.

**Mileage Based User Fee/Vehicle Miles Traveled Fee**

A mileage based user fee (MBUF), or vehicle miles traveled fee, is a user charge based on miles driven in a specific vehicle as opposed to the current excise tax on fuel consumed. At its simplest, the fee would be cents per mile. More sophisticated systems could assess different mileage fees based on factors like location, congestion, emissions, and type of vehicle. The effort to bolster the user-pays principle for infrastructure improvements—coupled with the search for more stable revenue sources—has led to calls for a MBUF approach. The biggest merit of MBUF is that it brings us much closer to a user-pay system, by charging drivers directly for the miles they travel and the resulting wear and tear on the roads. It also addresses the declining revenue yield from of the gas tax.

While stable revenue is the main motivation behind mileage-based user fees, they can also:

- Distribute the transportation tax burden more equitably based on actual roadway use;
- Apportion revenue by jurisdiction;
- Reduce congestion, emissions, and road wear;
- Provide value-added services to motorists, such as pay-as-you-drive insurance; and
- Collect detailed but anonymous travel data to improve the effectiveness of transportation planning and operations.

Both MBUF and tolling are roadway pricing schemes rooted in the user-pays principle. But unlike tolling, MBUF is a ubiquitous pricing approach, where mileage driven on all public roadways—city, county, state or interstate—are charged a fixed per-mile fee with the proceeds invested broadly across the transportation system. While some limited technology tests have demonstrated that a MBUF could be designed to collect passenger vehicle fees that vary based on roadway segment, time of day or even type of vehicle, to date no such system has been implemented anywhere in the world. The state of Oregon recently approved a Road Usage Charge (a mileage-based fee) that will collect a per-mile fee in lieu of their state gas tax from up to 5,000 volunteers. Oregon’s system will not require drivers to use GPS-based technology, due to concerns about the cost, complexity and potential privacy infringements of a government-mandated GPS device. Without location-detection technology such as GPS, a MBUF system cannot provide the facility or corridor-based pricing approach now served through tolling. The Washington State Transportation Commission has been charged by the legislature to review and develop a set of recommendations for a road user charge system in Washington State. Tolling policies
and technologies and how they could evolve in the future to a road user charge system will need to be evaluated.

**Transportation as a Utility**
In the study “Enterprising Roads: Improving the Governance of America’s Highways” author David Levinson suggests that “the organizations that manage roads should be able to finance road construction and maintenance through the sale of bonds, without requiring direct consent from higher political authorities.” The theory in his paper is that roads should be managed by independent enterprises that are charged with a mission of providing service to customers. One way to achieve this while still maintaining the political control that would prevent abuses of monopoly power is to convert existing government operated road management organizations (such as the state DOTs) into regulated public utilities. The reason this has been suggested is that highway systems do have much in common with other network utilities. Approximately 10% of wastewater utilities, 20% of water utilities, most pipelines, electric utilities, natural gas utilities, and virtually all telecom and cable utilities are investor-owned.

Mr. Levinson discusses a variety of ownership structures, ranging from municipal- or state-ownership to mutual- and investor-ownership. Each structure has its own set of advantages and disadvantages, but he argues they are superior because they “orient the road enterprise away from day-to-day politics and toward providing value to their users.” The New Zealand Transport Agency, for example, has an independent board of directors, an appointed CEO, and works in accordance with a performance agreement negotiated with the New Zealand Ministry of Transport. Management is separated from governance, and service delivery is separated from policy. New Zealand’s approach has delivered large efficiency gains without compromising service levels.

By definition an investor-owned utility is developed using private capital and private-sector expertise. However, due to certain elements of monopoly and the need to protect the public interest, it is necessary to provide regulatory oversight. Therefore a state public utility commission is established which regulates the prices and the rate of return that can be earned by the private entity. By definition, if competition exists then the concern of a monopoly is removed and the PUC-type entity may not be necessary. In the case of toll roads where “tax roads” offer an alternative, then competition is inherent. However, if the transportation facility is being controlled by a private entity there will need to be government oversight.

One possible alternative to the PUC approach occurs when there is a public-private partnership contract involving toll rates where the contract holds the regulatory provisions including items such as a toll structure and associated performance criteria. All provisions of the contract will be provided oversight by the public partner. Tolls are a direct user-pay system that has comparability with the principles of transportation as a utility.

**Multi-modal**
The fastest growing category of toll facilities in the U.S. are Managed Lanes, where priced lanes are added to existing facilities, typically providing free or reduced cost use for HOVs. What have not yet been optimized are the synergies between these priced lanes and express bus service or Bus Rapid Transit. As has been frequently stated by Robert Poole of the Reason Foundation, “a variably priced lane is the virtual equivalent of an exclusive busway, but serves both cars and buses compatibly.” He points out that one of the best examples of this is the I-95 Express Lanes in Miami. “With only the 7 miles of Phase 1 in service to date (and the 14-mile Phase 2 under construction), this formerly gridlocked
commuting route has seen one of the most impressive growth rates in express bus services anywhere in the United States.”

A report on this topic was commissioned by the Florida Department of Transportation ("Integrating Transit with Road Pricing Projects," by the Center for Urban Transportation Research at the University of South Florida). Their recommendations discuss factors that will enhance the combination of new Managed Lanes and transit including first assessing the amount of express bus demand for a corridor and then, what can be added to the project to increase the effectiveness such as Park & Ride lots and direct-access ramps.

**Tolling Interoperability**
Interoperability for non-cash toll collection across the U.S. is one of the largest topics that many toll agencies are considering for the future. MAP-21 requires that all Federal-aid highway toll facilities implement technologies or business practices that provide for the interoperability of electronic toll collection by October 1, 2016 (four years after the enactment of MAP-21’s new tolling requirements). The International Bridge, Tunnel, and Turnpike Association (IBTTA) is the industry association primarily focusing on public toll agencies in the U.S. and that group is attempting to find solutions to address the national interoperability issue. Many agencies have already dealt with this on a regional basis, such as the E-ZPass Interagency Group, which celebrated its 20th anniversary on August 3, 2013. In July 2013, the IBTTA members met in Denver for IBTTA’s 2013 Summit on All-Electronic Tolling, Managed Lanes and Interoperability to focus on just these issues. IBTTA formed an Interoperability Steering Committee in 2010 with a focus on an interoperable systems that would enable customers to drive on any North American toll facility using a single account, and with a choice of payment methods. Regional interoperability may be a first step to national interoperability. WSDOT is engaged in this National Standards debate by providing leadership for the Western Region Interoperability Group consisting of toll agencies in the western states and western Canada.

**Public-Private Partnerships**
States and local entities are struggling to find new solutions as traditional funding sources, like the Federal Highway Trust Fund, continue to diminish. One of the strategies that can be used is P3s; especially those that include a private finance component.

Definitions of P3 can be very broad and cover many types of project delivery, contracting, and financing arrangements between the public and private entity, including design-build procurements. The Federal Highway Administration defines P3s as “a contractual agreement formed between public and private sector partners that allow for greater private sector participation in the delivery and financing of transportation projects.”

**Toll Division Challenges**
This chapter has described a variety of unknowns that make certainty in planning for the future difficult. There are a series of questions and challenges the Toll Division will need to address going forward to be prepared for change and to bring down the cost and complexity of tolling over time. In addition to the issues addressed elsewhere in this report, the following is a list of expected challenges the Toll Division faces in the coming years. For each challenge faced, the Toll Division will use Lean principles to assess the most efficient and effective solution to meet the needs of its customers.
Business Practice Challenges

Vendor Cost and Quality
The 2009 WSDOT Statewide CSC procurement resulted in a contract price much lower than market value. WSDOT has struggled openly with vendor system delays and operating quality issues in its relationship with its statewide customer service vendor (CSC Vendor). While most system functionality is complete, key reports necessary for the required daily accounting reconciliation remain unfinished by the CSC Vendor, as do automated write-offs and collections functionality. At the same time, WSDOT has been informed by the CSC Vendor that their actual expenses exceed the value of the original contract. Errors and customer service shortcomings continue to require additional costs by WSDOT staff and consultants for intervention and support. With the current CSC Vendor contract nearing an end (June 30, 2014), and the potential options for extension, changes to contracting and contract costs are likely, although the nature and timing of these changes cannot be accurately forecasted. While the CSC Vendor system is not complete, work to date has resulted in a system that is closer to meeting WSDOT requirements than is readily available from other vendors in the industry. Still, with the current CSC contract expiring, WSDOT expects an increase in CSC vendor costs.

2009 WSDOT Statewide CSC Bid Comparison

![Graph showing 2009 WSDOT Statewide CSC Bid Comparison](image)

**Figure 7: 2009 WSDOT Statewide CSC Bid Comparisons**

*Figure 7 shows the 2009 bid proposal values and the estimated market correction, to market rates, expected starting in FY 2015.*
Use of Infrequent User Payment Options
The least costly method to collect tolls is through the use of transponders attached to prepaid customer accounts. Collecting cash tolls requires significant labor expense, while “Pay By Mail”, based on recording license plate images, requires issuance of toll bills and accounts receivable that are not always paid. There are two ways to look at infrequent user payment options such as Pay By Mail. On one hand, they raise the average cost per transaction, making that option seem more expensive. Conversely, is that their incremental costs are designed to be covered by higher toll rates paid by the customer. Approximately 70 percent of tolls on the Tacoma Narrows Bridge and 80 percent of tolls on SR 520 are paid with a Good To Go! account. Review of the cost to collect analysis shows that Tacoma Narrows Bridge costs an average of a dime more per transaction than SR 520. Preliminary analysis suggests WSDOT could reduce toll costs on the Tacoma Narrows Bridge by eliminating cash payment, however Good To Go! toll rates on Tacoma Narrows Bridge have been subsidized by other payment methods, including cash collection. The elimination of cash collection would likely result in need to raise the Good To Go! transponder rate.

Reducing Uncollected Tolls and Improving Enforcement
Since electronic tolls were introduced in Washington, a small percentage of toll customers have chosen not to pay their Pay By Mail toll bills. Preliminary estimates show that 98% of tolls on the Tacoma Narrows Bridge and 95% of tolls on SR 520 are resolved; the remaining tolls are pursued through enforcement methods. With transponders and other prepaid accounts, almost all transactions are collected immediately. With Pay By Mail photo tolling, where cameras and optical character recognition equipment read customer license plates, a portion of those plates cannot be accurately translated into valid Washington State license plate numbers. Pay By Mail customers do not have accounts and, even with a license plate number, some of these customers cannot be traced to a valid address. A key question being explored by the Toll Division is how much transaction loss can be reduced by strategies such as more aggressively marketing transponders or working with the Department of Licensing to provide transponders to all Washington vehicle owners through the licensing process.

Interoperability
As described above, Federal law requires states to develop toll technologies and practices that will ultimately allow toll payment in every state using a single account. Several competing models for interoperability are under consideration nationally, including the non-proprietary “6C” transponder standard used in Washington. Washington is an active participant in these discussions, which will become more urgent if Oregon institutes tolling on the Columbia River Crossing of I-5. Should that happen, we may find that residents in King, Pierce, and Snohomish Counties will have accounts with WSDOT’s Good To Go! program, and residents in Clark County and southwest Washington will establish accounts with the state of Oregon. This strays from the goal to have a single statewide system and the concept of one. If a federal standard is mandated, WSDOT may be required to invest in different technologies and business practices to comply with this unfunded mandate.

Carpool Recognition
For toll facilities with special toll treatment for carpools, such as on express toll lanes, WSDOT will need to determine a method to identify eligibility. WSDOT defines carpools based on the number of people in a vehicle, which cannot currently be determined by cameras or electronic detection. At present, even if an electronic option were available, there is no legislation available to enforce on that basis. WSDOT is examining two options for customers to indicate their carpool status, both of which require visual inspection by Washington State Patrol officers to enforce. The first method would require customers to purchase a transponder with a two-position switch to indicate their carpool eligibility; the second
method allow customers to use any one of the current transponder types offered, but would require customers to register their carpool status through a smart phone application, over the phone, or on the internet prior to making a trip.

Carrying Pre-paid Customer Accounts or Bank-backed Payments
Technology for payments of all types is rapidly evolving and many customers now prefer to control payments using mobile applications. While new technologies are under development to allow customers to use smart phones in place of a toll transponder, the attraction to mobile payment would instead be the ability to make a payment in real time rather than to maintain a prepaid account or receive a bill. One of the issues that WSDOT will need to consider is whether to allow tolls to be paid similar to the Apple iTunes model on a pay-as-you-go basis, rather than requiring customers to establish a pre-paid account with WSDOT. Under this new model customers would provide a debit or credit card number that tolls could be batched and processed on a daily basis. Another option is to expand WSDOT’s retail program to provide more in-person account replenishment locations for customers, reducing the need for walk-in customer service centers, which are expensive to operate.

Planning and financial challenges

Toll Administration and Overhead
During the start-up period for the Toll Division, the majority of work was to develop and install capital facilities for tolling, funded in part by WSDOT megaprojects. Over time as tolling matures, funding for administrative positions within the Toll Division will need to shift to operating funds. However, as described in the new trends and challenges discussed in this section, the tolling systems and approaches are constantly evolving and there is a continual need for investment in new systems and equipment.

Plans for Express Toll Lanes
WSDOT has been developing plans over the past decade which call for evolving the current HOV lanes into a network of express toll lanes. However, this planning direction has not been formally established within the agency or recognized by the Legislature. At some point a decision will be needed whether to transition HOV lanes system-wide, similar to the adoption of a Core HOV Program in the 1990’s.

Use of Toll Revenue
Traditional tolling has focused on repaying bonds used to fund large capital projects such as bridges and tunnels where construction cannot be effectively staged over a longer period. Increasingly, however, WSDOT faces funding shortages for basic needs such as operations, maintenance, safety, and preservation. Additionally, other agencies face shortfalls maintaining and operating transit and local streets. Consideration could be given to the use of toll revenues for maintenance and preservation, corridor improvements, transit, or local transportation facilities.

Equity and Acceptability
Tolling introduces questions of equity. Perceptions of value and equity are often critical to public acceptance of tolling. Equity concerns arise when planning for when and where toll projects are implemented.

Tolls on Existing Highways
PSRC’s Transportation 2040 Plan suggests eventual tolling of all Puget Sound highways to moderate traffic growth and provide significant transportation revenues. This approach has not been endorsed by the Legislature and would likely require new federal legislation, yet it could be a key ingredient in meeting projected transportation system needs in the Puget Sound’s regional plan.
Use of Tolls for System Planning and Development
WSDOT relies on the Legislature to fund development of transportation plans and toll proposals, but the Legislature has been reticent to fund studies until convinced that a proposal has support. To conduct preliminary planning and assess feasibility of new tolling projects or approaches WSDOT has relied primarily on federal grants that are no longer available. To develop and test future toll proposals, WSDOT will require funding.
CHAPTER 4

Roles, Responsibilities and Toll Division Workplan

A key finding of the State Auditor Office (SAO) report was that for implementation of SR 520 tolling, “WSDOT’s Toll Division lacked the executive support, decision-making authority, and the policies and procedures needed to develop the statewide all-electronic tolling system and start tolling the SR 520 Bridge on schedule. These management challenges were magnified by an ambitious project, uncertainty about its demands, and a tight deadline.” The SAO recommended that “the Secretary should clarify the roles, responsibilities, and decision-making authority for future tolling projects.” In response, the Secretary will issue executive orders establishing the roles and responsibilities of the Toll Division, addressing cross-functional relationships, and delegating authorities to clearly define the decision-making authority for the Toll Division by December 31, 2013.

As a new organization within WSDOT in 2009, the Toll Division needed to quickly settle into an established organizational structure that was itself evolving. The Urban Corridors Office, formed to deliver high cost and high profile megaprojects funded by two legislative fuel tax increases, was in the process of being dismantled. The Toll Division needed to quickly develop new state-of-the-art tolling capability for SR 520 funded chiefly by the federal Urban Partnership Program under the condition that tolls be instituted on a very short deadline. Additionally, it needed to develop a working relationship with the civil engineering projects that tolls would finance and be installed on, and with WSDOT support groups (particularly in accounting and information technology) that play key roles in toll operations.

The Toll Division and its organizational context have continued to evolve since the time period examined by the SAO. The Toll Division is now led by an Assistant Secretary who has broad responsibility for the planning and operation of the division. The decision making authority vested in this position is being reviewed and clarified to ensure alignment with the responsibilities listed in the section below. A Secretary of Transportation Executive Order will be issued by the end of 2013 to provide this clarification.

Roles and Responsibilities Clarification

The Toll Division benefits from being embedded into the larger Department of Transportation. Availability of many organizational resources provides efficiencies and scale economies, while integration with traffic operation and civil design and construction programs helps ensure coordination and the best use of resources.

In response to the SAO Report, WSDOT will review roles and responsibilities using Lean principles, focusing specifically in the areas of:

- Contracts
- Financial Planning
- Financial Reporting

Functions of the Toll Program

Consistent with the principles above, the Assistant Secretary, Toll Division, is accountable for the leadership, policy, planning, development, implementation, education, operations, and performance of
toll roads, toll bridges, and tunnels, and express toll lanes. The Assistant Secretary will be held accountable for the success or failure of these activities.

Specific responsibilities should include the following:

- Develop, contract, and operate toll road and bridge roadway and back office systems;
- Develop, contract, and operate express toll lane roadway and back office systems;
- Conduct traffic and revenue estimating and reporting;
- Report on toll program performance, including financial plans;
- Advocate and promote advancement of tolling/pricing;
- Communicate with toll customers, stakeholders, and the public;
- Collect all forms of roadway pricing (tolls, VMT, congestion pricing, etc.);
- Develop long-range planning for tolling;
- Evaluate impacts of toll facility proposals;
- Support the Washington State Transportation Commission rate setting and policy work;
- Determine toll payment methods, practices and technologies;
- Establish operating concepts and set standards for design and maintenance of toll systems;
- Establish business rules and operate the Good To Go! Program;
- Manage a toll enforcement program to maximize collection of toll revenues; and
- Establishing toll agreements with other agencies including FHWA.

Shared Roles and Authorities

While the Assistant Secretary, Toll Division, has ultimate responsibility for tolling outcomes, the Toll Division shares authority with other groups within the agency. In some cases, the Toll Division is the lead, and will seek concurrence of others where appropriate; in other cases, the Toll Division plays a support role and will set appropriate standards. As a result of the SAO report, WSDOT will review the following areas of responsibility:

- **Financial planning:** Headquarters Financial Planning is responsible for ensuring that toll-backed bond financing analyses and plans will comply with state financial policies and meet the needs of bond agencies and the Office of the State Treasurer. Their concurrence is required for financial plans for any project when bond sales are pending, and for any deliverable or communication with Office of the State Treasurer.

- **Accounting:** While the Toll Division is accountable for the content of accounting statements for tolled facilities (the financial performance of tolling), it relies upon Headquarters Accounting and Financial Services for toll customer accounting, financial reconciliation, and to produce accurate and compliant financial statements.

- **Information Technology (IT), contracting, purchasing:** Support groups within WSDOT have established standards and guidelines to which the Toll Division must adhere. However, because tolling was not anticipated when regulations and standards were developed, sometimes changes or departures will be requested to accommodate unique tolling requirements (for example, contracts that combine IT functions with operating services or with public works activities on the highway).

- **Toll-funded Projects:** Project Directors for toll-funded engineering and construction projects are accountable for all elements of project delivery. The Toll Division will seek concurrence on toll system design elements that will affect the civil construction project design, cost, or schedule. The Toll Division will develop standards for toll collection systems to aid in project planning.
• **Region traffic and maintenance:** When toll projects are complete, the regions assume operation and maintenance of the roadway as well as other non-tolling related facility improvements. The Toll Division will seek concurrence from region traffic and maintenance on any issue that affects traffic operation or toll contributions to meet operation and maintenance requirements as well as roadway performance regulations in the future.

• **System Planning:** Where tolling is an essential element in order to be financially feasible or meet traffic management objectives the Toll Division supports system planning for the projects. This involvement is a concurrence role, providing strategic input and resources for determining revenues, tolling costs, as well as financial strategies and plans. Alternatively, for studies where tolling strategies or practices are the primary consideration, with project chartering required to establish participation roles by other WSDOT units, the Toll Division takes the lead. For express toll lanes, where tolling is the primary method of managing traffic and providing customer value, the Toll Division is lead for coordinating the development of concepts of operation and system policies.

• **Program Management:** When both tolls and other state funds are applied to finance a project, the Toll Division is accountable for preparing financial plans. With these projects the Toll Division will seek concurrence from the Region or megaproject program management and quality control and concurrence from WSDOT Headquarters Budget and Financial Analysis group. Region or megaproject program management offices are accountable for developing staging plans and the Toll Division plays a concurrence role.

### Avoiding and Resolving Conflicts

WSDOT has successful models for managing overlapping roles and authorities in its traditional engineering program. For example, while WSDOT regions and project managers are responsible for delivering engineering and construction projects, they must work within design guidance and constraints defined in the Headquarters Design group, which has authority to assess and grant design deviations. Similarly, the Toll Division must meet established requirements of service providers such as the WSDOT IT and accounting services.

As is true for engineering decisions, on occasion deviations will be requested from support groups when tolling needs differ from other customers, or when it is not cost-effective to comply and less costly, yet effective, approaches are available. Additionally, when regulations or standard procedures have not been issued, the Toll Division will work with these organizations to develop appropriate standards.

Some standard principles and practices are successfully used throughout WSDOT for managing overlapping authority that apply equally to tolling:

- **Develop charters and agreements** that spell out roles, authorities, communication, decision-making, and conflict resolution processes between work groups or within projects.

- **Solve problems early** by establishing teams that include affected interests and coordination processes that keep all informed of issues and timelines.

- **Publish standard requirements and deviation processes** to clarify expectations and approaches to make cost-effective decisions about non-standard situations.

- **Elevate conflicts** that require a program or policy-level viewpoint or where peers are at an impasse. Do not let elevated issues go unsettled.
Define concurrence roles to clarify exactly what decision roles are played by an office or individual, and the interests they represent at the table.

Concurrence is limited in scope to specific areas of authority. The Toll Division will develop service level agreements with other groups to define the process for working together and resolving differences. The Toll Division will continue to seek a collaborative approach to decision making that aims to settle differences early and at the lowest organization levels. Where changes or deviations are needed from established policies, they will be evaluated and documented, similarly to engineering design exceptions. In all cases, a binding process will be in place to elevate issues when agreement is not forthcoming.

**Toll Division Work Program**

The Division’s work program for 2013-15 identifies key activities to be performed by division staff and consultants. To show why these work items were selected and what they are intended to accomplished, they are arranged to address the primary division goals they are intended to address.

**Toll Division Interim Goals**

The Department’s strategic plan is currently in development. The following interim goals were used to develop the Division’s work program, with work items organized according to the goals they primarily address. These interim goals will be revisited and revised to fit into a broader agency-wide strategic framework once the WSDOT strategic plan is issued. At that point, more specific performance measures will also be added.

Each of the following goals is explained more fully on the following pages:

- Sustainable funding and performance
- Deliver as promised
- Customer service quality
- Transparency and credibility
- Strategic vision
- Communication and leadership

**Goal: Sustainable funding and performance**

Enable stable and growing funding for transportation in a way that improves system performance.

*Objective:*

Accurate traffic and revenue studies and financial plans are completed for all authorized toll facilities that support project financing on favorable terms.

*Strategies:*

- Complete authorized traffic and revenue studies and financial plans
- Document consistent statewide T&R assumptions and procedures

*Initiatives:*

- **SR 520 Traffic and Revenue Update:** CDM Smith is updating its traffic and revenue analysis for SR 520 to incorporate new information from early tolling to aid in financial planning for current
and future projects in the Lake Washington travel corridor. Parsons Brinckerhoff is updating its Net Revenue analysis to incorporate new information from early tolling as well as market adjustments in forward looking costs of operations.

- **SR 99 Traffic and Revenue Analysis:** An investment-grade traffic and revenue analysis and revised financial plan will be completed prior to adoption of initial toll rates for the SR 99 tunnel. Work will begin in early 2014 in preparation for rate-setting in early 2015.

**Objective:**
Toll rates are managed to meet funding requirements and improve traffic.

**Strategies:**
- Provide thorough, transparent support for SR 520 and SR 16 toll rate decisions
- Update and maintain traffic and revenue models to reflect trends and anticipated changes

**Initiatives:**
- **Policy Development for I-405 Financial Planning:** Key decisions are needed prior to rate-setting for I-405 Express Toll Lanes scheduled to open in mid-2015. Assess alternative payment policies and toll collection methods to inform WSDOT executives, corridor stakeholders, and the Transportation Commission, and describe their effects. Decisions made for I-405 Express Toll Lanes could set a precedent for other future express toll facilities.

- **Rate-setting support:** The Transportation Commission is responsible for setting toll rates. WSDOT supports the Commission’s rate-setting decision and rule-making process by providing analysis, public information, and staff support.
  - **I-405 and SR 99 Initial Rates:** The Transportation Commission will set initial toll rates and exemptions for I-405 Express Toll Lanes in 2014 and the SR 99 Tunnel toll rates in 2015. Work includes presentation of financial plans and assumptions, evaluation of policy options, preparation of baseline and alternative rate scenarios, support for Commission public outreach, and preparation of WAC rules for issuance by the Transportation Commission.
  - **SR 520:** Support the Transportation Commission to set toll rates annually on SR 520, and facilitate independent certifications needed to meet Master Bond Resolution requirements. If the Commission takes no action, tolls will automatically be adjusted upwards by 2.5% in July 2014 and 2015. If analysis shows that a 2.5% increase will be insufficient, WSDOT will recommend a new toll rate proposal and prepare alternative rates scenarios as requested by the Commission.
  - **SR 16 Tacoma Narrows Bridge:** Support annual Citizen Advisory Committee (CAC) and Transportation Commission rate deliberations, including presentations, responses to questions, and preparation of baseline and alternative toll rate scenarios. Prepare a rate-setting guide for CAC members to explain the financial plan and answer key questions. If the Transportation Commission takes no action, rates will be raised by 25 cents automatically in July of 2014.
  - **WAC rules, sign changes and outreach:** The Toll Division coordinates efforts within the Department to implement toll rate changes, including preparation of Washington Administrative Code rule changes for filing by the Transportation Commission, outreach efforts to inform the press and the public, and sign changes needed on each facility.
**Goal: Deliver as promised**
Design, procure, install and maintain reliable, interoperable toll systems on time and budget.

**Objective:**
Toll system projects are completed on schedule and budget, without adding cost or delay to civil construction projects.

**Strategies:**
- Expand and adapt Customer Service Center systems to support the new toll facilities
- Implement toll systems for I-405 Express Toll Lanes, the new SR 520 Bridge, and SR 99 Tunnel
- Prepare for the timely implementation of I-90 toll systems, if authorized

**Initiatives:**
- **I-405 toll system:** Install roadside toll system for the first stage of the I-405 Express Toll Lanes between downtown Bellevue and I-5 in Lynnwood. Infrastructure to support the toll system will be designed and constructed by the civil design-builder. Statewide Roadside Toll System vendor, Telvent, will design, install, test, and operate the express toll lane system on I-405. Northwest Region Traffic is preparing software to integrate with its traffic management system software, including a pricing algorithm. The Toll Division will coordinate and oversee all phases of work. Planned opening is Summer/Fall 2015.

- **SR 99 toll system:** The Toll Division is coordinating design of toll collection systems with the Alaskan Way Viaduct replacement project. Telvent, will design, install, test, and operate the toll lane system on SR 99. Tolling is scheduled to start as early as 2016, with public outreach starting in early 2015.

- **SR 520 New Bridge toll systems:** The current SR 520 Bridge toll system is installed in a temporary location on the existing bridge and must be moved in two steps to its final location on the new bridge that will open in 2016. Telvent will design, install, test, and operate each toll system. The Toll Division will facilitate coordination between the design-builder and Telvent.
  - **Interim Toll System:** Transition to the interim toll point may occur in late 2015, depending on the civil contractor’s schedule.
  - **Final Toll System:** The transition to the final toll point may occur in the summer of 2016, depending on the civil contractor’s schedule.

- **SR 167 toll system upgrade and extension:** Extend the existing HOT lanes toll system concurrent with construction of new HOT lane segments between 8th Street E and S 277th Street. Contract with a toll vendor to develop, install, test, and operate the extended portion of the toll system. This work may assess whether and when to upgrade the existing SR 167 toll system to support photo tolling consistent with I-405 Express Toll Lanes plans.

- **Customer Service Center (CSC) planning for new facilities:** Toll Division is developing plans related to bringing on new toll facilities. This work will include business rule analysis, back office system upgrades, updating standard operating procedures, estimating staffing and space needs with associated costs, and developing a roll-out strategy.
**Goal: Customer service quality**
Use Lean management and technological innovation to deliver excellent and consistent customer service, improving value and lowering cost over time.

**Objective:**
Continuous improvement to customer satisfaction while reducing toll collection cost.

**Strategies:**
- Identify key toll processes and performance measures
- Identify and improve inefficient processes to reduce cost or add value
- Evaluate operations options and implement new approach

**Initiatives:**
- **Toll Division Lean program and B Program Operations Review Report:** ESSB 5024 requires the Toll Division to review toll operations using Lean management principles to eliminate inefficiencies and redundancies, and incorporate lessons learned from the State Auditor’s Performance Audit Report and WSDOT Cost of Service Study. The report will review operation of the entire Toll Division and develop an ongoing Lean management program within the Toll Division, including its vendors. Following submittal of the report to the Office of Financial Management and the House and Senate Transportation Committees, the Toll Division will continue to examine processes and opportunities for continuous improvement.

- **Tolling Manual:** Document standard operating procedures (SOP's) for processes both within the Toll Division, and those involving interfaces between the Toll Division, its vendors, and project offices. Prepare a Tolling Manual including adopted SOP’s, business rules, policies, concepts of operation, and other documents requiring ongoing updates.

**Objective:**
Toll systems are enhanced to provide added value to customers and reduce unbilled and unpaid transactions.

**Strategies:**
- Achieve timely reconciliation
- Fully implement collection and registration hold processes
- Evaluate continuous access to SR 167 HOT Lanes
- Evaluate expansion of Good To Go! to serve ferry customers
- Research and develop innovations to improve customer convenience and interoperability

**Initiatives:**
- **Customer Service Center (CSC) expansion:** Expanding tolling to new corridors will require new functionality, interfaces, and processes for the back office systems and customer service center. Toll Division staff is working with vendors to establish specifications and costs. One key factor
Regarding space and timing will be whether a decision is made to co-locate Toll Division with the CSC Vendor to maintain a strong level of customer service even when the CSC is expanded.

- **CSC Contract Modification and/or Extension**: The first term of the Statewide CSC Contract ends June 30, 2014, and has two, 2-year extension options. Ongoing challenges with the service level provided by the customer service vendor has prompted the Toll Division to review the options and determine whether to extend the contract and/or amend the scope or to re-procure the operations portion of the contract.

- **CSC System Enhancements**: Work with the CSC vendor to implement remaining elements required by contract to provide timely reconciliation of transactions and fully implement other required system features. Work with vendor to implement new services and/or functionality to better serve customers. Initial Lean review findings and the latest customer satisfaction survey data point to the need to invest in CSC system enhancements, such as website improvements and mobile payment options. These enhancements would allow customers to self-service, resulting in operational efficiencies and allowing WSDOT to better meet customer expectations.

- **SR 167 HOT Lane Open Access Demonstration**: Evaluate the effect of providing more open access to SR 167 HOT lanes. This project is funded through the federal Value Pricing program and includes re-striping of the lanes to allow drivers to enter and exit the lanes at more locations along the system, signing changes, public outreach, and a before-and-after evaluation to determine effects on system operations, revenue collection, traffic and transit performance, safety, toll evasion, etc. Public outreach is expected to begin early 2014, and project completion is expected September 2014.

- **Washington State Ferries (WSF) Good To Go! Study**: Consistent with ESSB 5024, evaluate the feasibility and develop a plan to integrate and transition customer service, reservation, and payment systems currently provided by Washington State Ferries into the statewide tolling customer service center. The plan is due to the Office of Financial Management and the Transportation Committees by January 14, 2014, and will assess the feasibility, schedule, cost, and customer and policy tradeoffs.

- **Technology and Innovation Program**: Develop and prioritize research proposals and implement a research program to evaluate possible new practices and/or technologies with potential to provide additional value to customers, reduce toll collection costs or losses, or attain interoperability with toll systems in other states.

### Goal: Transparency and Credibility

Assure accurate and transparent reporting and projections of toll collection costs, toll revenues, and toll facility financial status.

**Objective:**

Toll reporting is accurate, transparent, and complete. Tolling stakeholders including Legislators, the Transportation Commission, and bond agencies understand the Good To Go! program structure, benefits, and costs.
Strategies:
- Complete quarterly and annual reports that address stakeholder interests
- Complete/improve certification documents for master bond agreements
- Formalize/document quality control process for Toll Division deliverables

Initiatives:
- **Internal Audit Report**: WSDOT’s Internal Audit group has services available to the Toll Division. The Toll Division will identify areas for review.
- **On-going Financial Management Reports**: The Finance group is preparing monthly budget to actual expense reports for the B Program to aid in managing toll operations. The reports will be issued in a timely manner and provide sufficient information to answer a multitude of questions and identify trends that require proactive attention.
- **Annual Toll Program Costs Report**: Prepare a comprehensive report describing the cost factors driving toll collection and adjudication costs. Include all direct, indirect, and vendor costs, their funding source, and the allocation of costs to individual toll facilities. Also assess uncollected transactions for each facility. The report will be provided to the Transportation Commission and Tacoma Narrows Bridge Citizen Advisory Committee to assist in their cost oversight role and inform the toll rate-setting process.
- **Annual Revenue and Expense Projections Report**: As part of the biennial budget preparation, the Finance group prepares operational budgets on expenses for the subsequent biennium and two subsequent biennia. The Finance group plans to prepare a report identifying annual revenue and expense projections for current and future facilities.

**Goal: Strategic Vision**
Create toll project and program proposals with clear customer value, and provide full and accurate evaluation to support investment decisions.

Objective:
Proposed toll facilities and/or toll-funded transportation improvements are evaluated to provide decision support for legislative action.

Strategies:
- Prepare EIS and public outreach program for tolling on I-90
- If authorized, develop project toll plans for the SR 167/ I-5 / SR 509 Gateway project
- Develop and propose corridor planning study proposal for I-5 corridor

Initiatives:
- **I-90 Tolling Environmental Impact Statement**: Prepare an environmental impact statement (EIS) assessing potential approaches to managing traffic and providing funding to complete the SR 520 project by tolling I-90 between I-5 and I-405. Conduct extensive outreach to the public, local jurisdictions, and other stakeholders. The Toll Division is coordinating all EIS and public involvement activities, including a second round of scoping in October 2013. Publication of the
EIS is expected in early 2015, leading to a Final EIS during the 2015 legislative session, and a Record of Decision in late Spring of 2015. If the Legislature authorizes I-90 tolling in 2015, WSDOT could implement tolling by late 2016.

- **SR 167/I-5/SR 509 Puget Sound Gateway Project**: WSDOT will coordinate with stakeholders to determine the path forward for the proposed Puget Sound Gateway Project corridors. Work will focus on increasing confidence in the project approach, including a cost estimate validation process (CEVP) and design refinements, economic impact analysis, phased right-of-way acquisition strategies, and strategies for completing new or updated NEPA documents and clearance. WSDOT will assess alternative delivery strategies and staffing to develop work plan for various budget scenarios.

**Objective:**
State and Puget Sound regional elected officials reach agreement on the future role of tolls among transportation revenue tools, and the policy guidelines that will guide equitable and publicly acceptable system development.

**Strategies:**
- Engage regional/state leaders to confirm tolling vision and development plans
- Evaluate system-level policy options and facilitate collaborative process

**Initiatives:**
- **Regional Tolling Implementation Study (pending approval/funding)**: WSDOT and King County will support PSRC to lead this study that will address current and alternative approaches to regional tolling. FHWA has given conditional approval to use of $1.6 million in value pricing funds. The scope, approach, and agency roles are still under discussion. A committee will be formed to consider the value and effects of toll projects, distribution of costs and benefits, uses of toll revenue, alternative finance options, long term vision for tolling, and phasing plans out to 2040. A two phase project is anticipated with an interim report prior to the 2015 legislative session and a final report prior to the PSRC update to Transportation 2040.

- **I-5 express toll lanes system planning and pre-design**: WSDOT received grant funding from the Value Pricing Pilot Program to develop a system concept and policies for converting Puget Sound HOV lanes into an express toll system, and design concepts to implement express toll lanes on I-5. The work is mostly complete. Additional work is needed to review and accept the final project report, and work within the department to determine the next steps towards system planning and implementation.

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**Goal: Communication and Leadership**
Foster broad understanding and acceptance of tolling in Washington by ensuring public awareness of tolling programs, practices, and outcomes for transportation and communities.

**Objective:**
High awareness, acceptance, and participation in the *Good To Go!* program.
Strategies:
- Proactive toll communications program
- Active marketing and education for new and existing toll facilities and programs

Initiatives:
- **External Relations**: Communications staff coordinates outreach for legislatively directed studies such as I-90 tolling and the Gateway Project. For example, the team expects three I-90 tolling EIS scoping meetings in October to be attended by more than 1000 constituents. The team also coordinates Joint Transportation Committee, Governor, and legislative updates; coordinates with local governments; conducts community outreach; leads responses to Toll Division audits; and writes the Toll Division annual report.

- **Constituent Relations**: Most Good To Go! customer questions are handled by our customer center. However, legislators’ offices, the Governor’s Office, the Attorney General’s Office, and the transportation secretary’s office refer customer inquiries to the Toll Division, and communications staff answers them. Communications staff processed 82 of these types of inquiries from January to August 2013. This number will increase as new facilities launch.

- **Customer Relations and Public Education**: The communication team leads outreach efforts to educate the public about changes in facilities through media and customer updates. They coordinate rate setting discussions with the Tacoma Narrows Bridge CAC by reserving venues, notifying the public, compiling data, developing presentation materials, and distributing meeting summaries.

- **Public Outreach**: Communications staff draft presentations to be delivered to partner agencies including the Transportation Commission, local jurisdictions and other interest groups on toll topics. In 2013, the Toll Division will conduct over 25 presentations. This number will grow as new facilities launch. Similar to the SR 520 launch, the staff anticipates holding more than 80 presentations in 2014 as part of new toll facilities outreach.

- **Media**: The Toll Division receives media inquiries every week. Many inquiries are highly technical, requiring extensive data research on toll enforcement, traffic and revenue. Media interest increases as facilities launch. During the SR 520 toll launch, TV, print, radio and online media generated more than 1,900 stories. Earned media is a large part of WSDOT Toll Division and project communications. The team drafts news releases, pitches stories to reporters, maintains a web presence, coordinates with project teams, and manages the Good To Go! Twitter account with 2,200 followers.

- **Educational marketing**: Communications manages the Good To Go! brand development and leads educational marketing campaigns to reach potential customers and increase participation in the Good To Go! program. New launches include:
  - **I-405 Express Toll Lanes**: Introduces Washington’s first tolled facility that charges tolls by segment based on the trip. May require changes to carpool occupancy requirements as well as the introduction of new passes for carpool declaration.
  - **SR 99 Tunnel**: Represents a new market segment because many SR 99 users don’t use SR 520, SR 167, or the Tacoma Narrows Bridge on a regular basis.
CHAPTER 5

**Toll Division Resources**

**Business model**
The WSDOT Toll Division is a small, highly-focused, team-oriented organization. The Toll Division brings a strong owner culture that leverages private sector resources with a performance based approach. The Toll Division includes highly-skilled, specialized consultants and vendors to plan, implement, and operate an integrated toll system. Fundamental to the business model are the Toll Division’s guiding principles:

- Strong Owner – Only the Owner can be the Owner
- Leverage Private Industry
- Be Flexible and Nimble
- Build on Lessons Learned

**Strong Owner – Only the Owner can be the Owner**
Although WSDOT leverages private sector resources with an integrated team of consultants and vendors, there are certain decisions that can only be made by WSDOT. Therefore, key positions are needed within the Toll Division to ensure accountability.

**Leverage Private Industry**
The Toll Division has assembled a group of highly qualified toll industry experts with national experience to help plan, implement, and operate the toll program and systems. This provides access to national and current expertise not available within a state DOT organization, plus the flexibility to switch out resources as priorities and projects change.

**General Tolling Consultant**
The 2009 JTC ERP recommended that “To provide support to WSDOT and to access the body of knowledge in the industry, the ERP recommends the acquisition of a general engineering consultant specializing in toll operations and systems integration.”

In July 2010, WSDOT hired Jacobs Engineering as the GTC. The GTC is part of the integrated team and is co-located with the Toll Division. The GTC provides program management, project development, and project delivery services related to WSDOT toll facilities and customer service center. Specifically, the GTC supports the Toll Division with toll policy development, toll facility and technology planning, standards development, toll payment methods monitoring, toll rate and fee setting, outreach and marketing, toll operations, accounting, reporting, toll industry practices, system and project-level concepts of operations, procurement support, and contract management. In addition, Jacobs is also assisting with toll systems development and implementation on the I-405 Express Toll Lanes, SR 520 All Electronic Toll bridge project (interim toll point and ultimate toll point) and the SR 99 Tunnel project.

**Statewide Customer Service Center**
With legislative direction to toll the SR 520 Bridge, including implementation of all-electronic tolling, WSDOT recognized the need for a Statewide CSC that would provide services beyond that available with the current customer service center.
In December 2009, WSDOT awarded the Statewide CSC to ETCC. This was structured as a “services only contract” that required ETCC to provide the staff, systems, facilities, and supplies necessary to operate and maintain the Statewide CSC in accordance with WDSOT business rules and requirements. The Statewide CSC provides the customer interface for WSDOT toll customers. All customer interactions are handled by the Statewide CSC call center, website, and walk-in centers. In addition, the CSC manages customer accounts, processes all electronic toll transactions, perform image review, interfaces with the Department of Licensing for license plate look-ups to identify the registered owner of vehicles without a Good To Go! account, processes “Pay By Mail” invoices if users are not Good To Go! Customers, produces violation notices, and processes customer payments. Furthermore the Statewide CSC provides adjudication support and facilities necessary to pursue non-payment of tolls. The initial term of the contract expires June 30, 2014.

Tacoma Narrows Bridge Lane System
In 2002, WSDOT contracted with TransCore for a “Toll System Supply and Installation” contract for a toll system on the Tacoma Narrows Bridge. In 2005, WSDOT contracted with TransCore for operations, management, and maintenance of the toll system and toll facilities, including toll collection, violation processing, and revenue handling. Many of these functions were transferred to the new Statewide CSC in February 2011, however, TransCore remains under contract for cash toll collection and to operate and maintain the toll collection equipment and facilities on the Tacoma Narrows Bridge. In spring 2012, WSDOT contracted via change order with TransCore to continue operations and maintenance of toll collection facilities and equipment for Tacoma Narrows Bridge. The contract expires June 30, 2014.

SR 167 Lane System
In spring 2007, WSDOT contracted with ETCC to provide the lane system on the SR 167 HOT Lane Pilot Project. In 2008, WSDOT contracted with ETCC to provide warranty and maintenance of the toll system. As this is a pilot project requiring legislature approval, several contract amendments have been executed between WSDOT and ETCC, subject to renewal of legislative toll authority on the facility. Authorization for the SR 167 Hot Lanes is set to expire on June 30, 2015, without further legislative action.

SR 520 Lane System
In May 2010, WSDOT contracted with Telvent (now Schneider Electric) to supply, install, operate, and maintain an all-electronic tolling lane solution on the existing SR 520 Bridge, as part of the FHWA-funded Urban Partnership Agreement. Additionally, Telvent will install a temporary system needed to facilitate construction activities on the new SR 520 Bridge in preparation for the ultimate toll system.

Statewide Roadside Toll System
With several toll projects underway, in June of 2012 WSDOT contracted with Telvent to supply, install, operate, and maintain three toll systems:
- I-405 Express Toll Lanes (scheduled opening summer 2015)
- SR 99 Tunnel Toll System (scheduled opening fall 2015)
- SR 520 Replacement Bridge Toll System (scheduled opening fall 2016)
In addition, the contract allows for up to four additional toll systems to be added to the contract.

Be Flexible and Nimble
The Toll Division has been structured with a core group of WSDOT staff who are supplemented by consultants and vendors who serve as part of an integrated team. This allows WSDOT to adjust staffing levels based on work efforts and program needs.
Build on Lessons Learned
Each new project provides an opportunity to learn from previous projects. The use of industry experts allows the Division to learn from the experiences of toll agencies around the country.

Current Organizational Structure
As described above, the Toll Division is comprised of WSDOT, vendor, and consultant staff. The current Toll Division organization chart has five departments, including: Policy and Systems Development, Toll Operations, Toll Finance, Tolled Corridors Development, and Communications and External Relations. The departments were established to manage the demanding load required during concurrent project deployments. Four of the departments are led by directors and one is led by a manager. All departments report directly to the Assistant Secretary, Toll Division.

As recommended by the ERP, the Toll Division is supported by a GTC. The GTC provides full-time dedicated positions to WSDOT as well as on call support.

As previously described, the Toll Division has contracts with ETCC, Telvent, and TransCore that provide staff to operate the back office and maintain the roadway toll systems. The ETCC contract for operating the Statewide CSC is currently scheduled to expire in 2014. It is not known at this time if ETCC will be willing to extend the contract and if so at what cost to WSDOT. As such, the Toll Division must be prepared to continue to deliver Statewide CSC services and is in the process of assessing the most efficient and cost effective options for potential reprocurement including if WSDOT should assume the responsibility for a portion of the functions currently performed by the vendor.

A finding in the state audit report that unclear roles and responsibilities and decision making authority within the Toll Division contributed to project delays is being assessed as part of this Lean review. In order to address the concerns raised in the audit report and identify opportunities to operate more effectively and efficiently, the organization structure of the Toll Division has been re-evaluated as further described below.

Review of Organization Structure
As part of the Lean review process, the Toll Division structure was analyzed for potential efficiencies and any redundancies, but also to ensure the structure could meet the needs of a Toll Division that is maturing from an organization focused primarily on development to one that must simultaneously increase emphasis on ongoing operations while still developing new projects. The organizational realignment:

- Aligns departments and positions that are interrelated to create synergy and efficiency;
- Creates a concentric direct reporting relationship to a Deputy Chief position for the departments which impact operations;
- Evaluated each position for true need; and
- Evaluated positions which are currently filled by consultants for transition to WSDOT.

The organizational evaluation assessed current and upcoming staffing needs to address ongoing operations as well as the upcoming development work necessary for the implementation of tolling on the I-405 Express Toll Lanes and the SR 99 Tunnel projects. The results of the organizational assessment are shown in Figure 8 below. The organizational realignment resulted in the overall reduction of four WSDOT FTEs, including a Washington Management System Director (WMS4) position, and three and
The Toll Division will continue to monitor the structure and adjust over time to obtain maximum efficiency to best address program needs.

**Toll Division Table of Organization**

<table>
<thead>
<tr>
<th>Net Staff Reductions</th>
<th>Capital</th>
<th>2.25</th>
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</thead>
<tbody>
<tr>
<td>Operations</td>
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<td></td>
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<tr>
<td>Total</td>
<td>7.25</td>
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</tbody>
</table>

**Toll Program Budget**

The Toll Division is responsible for the following program dollars:

- **B Program (Toll Operations)**
  - B1 – Toll Oversight and Planning - funded by the Motor Vehicle Account
  - B2 – Tacoma Narrows Bridge Toll Operations and Maintenance – funded by toll revenue
  - B3 – High Occupancy Toll Lanes Maintenance and Operations – funded by toll revenue
  - B5 – State Route 520 Toll Operations - funded by toll revenue
  - B5 – SR520 Civil Penalty – funded by civil penalty fee revenue

- **I Program (Capital/Project)**
  - Direct charges to projects for startup
  - Direct project support (MS 6979/80)

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9 Reductions based on current funding levels.
### 2013-15 Biennium Budget

<table>
<thead>
<tr>
<th>Program Funding</th>
<th>Allotted/Approved</th>
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<tbody>
<tr>
<td>B Program</td>
<td>$62,438,000</td>
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<tr>
<td>I Program (Direct Project Support)</td>
<td>$5,268,200</td>
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<td>I Program</td>
<td>$27,014,185</td>
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<tr>
<td></td>
<td>Total</td>
</tr>
</tbody>
</table>

*Table 6: Approved 2013-15 Biennium Budget*

**B Program**

Under the B Program, the Toll Division manages the quality and efficiency of toll operations for state transportation facilities financed through direct user fees or tolls. The Division is forecasted to collect a combined total for all tolled facilities of approximately $287 million in the 2013-15 biennium and $363 million\(^{10}\) in the 2015-17 biennium. For comparison purposes, the Washington State Ferries Division is expected to collect fares of approximately $332 million in the 2015-17 biennium.

Toll Operations is responsible to forecast and analyze traffic, revenue, operations, and maintenance costs for the purpose of recommending toll schedule adjustments to the toll setting authority. It also provides statewide tolling operations, which currently include the Tacoma Narrows Bridge, State Route 167, and State Route 520. In addition to these B Program roadways funded by toll dollars, the Toll Division also administers the B1 subprogram. When established in 2007, the B1 Subprogram was intended to support program development and management for the State’s toll operations program. Funded with gas tax from the Motor Vehicle Account, it was intended to recognize the future growth of the toll program, while not charging operations activities to toll revenue for the current facilities.

During the 2013 legislative session, the enacted budget recognized “the department’s tolling division has expanded to address the demands of administering several newly tolled facilities using emerging toll collection technologies. The legislature intends for the department to continue its good work in administering the tolled facilities of the state, while at the same time implementing controls and processes to ensure the efficient and judicious administration of toll payer dollars.”

**I Program**

The Toll Division is provided funding from the Motor Vehicle Account in support of the capital projects program. These funds are to directly provide toll functions for the mega projects and other projects where tolling is being analyzed, developed, or implemented. Direct program support is also provided through a work order that distributes costs to projects for toll project management. It should be noted, the previous WSDOT Administration directed the Toll Division to plan for self-sufficiency in the 2015-17 biennium.

The Toll Division submits budget requests directly to the capital project directors for expenditures related to toll planning, development, design, implementation, and installation associated with the

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\(^{10}\) Transportation Revenue Council, September 2013 Transportation and Economic Revenue Forecast, Volume II Detailed Forecast Tables.
projects. The Toll Division also submits budget requests directly to the Headquarters Program Management Office for direct project support funding.

**Budget Responsibilities**
The Toll Division is responsible for current and future statewide toll collection operations, including toll account management, customer service, and toll payment enforcement in order to safeguard state assets.

### 2013-15 B Program Budget

<table>
<thead>
<tr>
<th>Subprogram</th>
<th>Enacted Budget</th>
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<tr>
<td>B1 – Toll Oversight and Planning</td>
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<td>B2 – Tacoma Narrows Bridge Toll Operations and Maintenance</td>
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<td>B4 – I-405 Toll Operations</td>
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<td>B5 – State Route 520 Toll Operations</td>
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<td>B5 CP – SR520 Civil Penalty</td>
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<td><strong>Total</strong></td>
<td><strong>$62,438,000</strong></td>
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*Table 7: Approved 2013-15 B Program Budget*

Table 7 reflects the 2013-15 budget, as authorized by the legislature. This budget included a 5 percent reduction in vendor and non-vendor categories. Budget items in the vendor category include; customer service center operation, cash collections on Tacoma Narrows Bridge, and toll collection system operations and maintenance. Budget items in the non-vendor category include; Staffing the Division, consultants and other personal services, insurance, credit card processing, printing and postage, and facility operations and maintenance. As five executed vendor contracts are currently in place and executed, and expenditures for direct payments for non-vendor activities such as credit card fees, postage, printing, and insurance are not able to be reduced. As a result, the remaining expenses that are at the discretion of the Toll Division to reduce have been impacted by approximately 10 percent.

The following summarizes the funds which comprise the Toll Operations and Maintenance Program:

**Tacoma Narrows Bridge Toll Operations and Maintenance**
The Toll Division estimates it will collect more than $136 million from tolls on the Tacoma Narrows Bridge (SR 16) in the 2013-15 biennium, approximately $108 million of which is required for debt service. Additionally, funds are needed for the operations and maintenance expenditures required to support the collection of toll revenues and operation of the adjudication program. In the 2013-15 Enacted Budget, WSDOT was provided $22.31 million with a reserve of $1.3 million to operate and maintain the tolled facility.

**SR 167 HOT Lanes Operations**
Legislative authorization was provided during the 2013 session to continue to toll State Route 167 High Occupancy Toll (HOT) Lanes until June 30, 2015. The Washington State Department of Transportation

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11 Excludes the $250,000 appropriation from the Puget Sound Ferry Operations Account.
estimates it will collect over $2.1 million in toll revenue for the 2013-15 biennium. Funding of approximately $1.9 million was provided to continue to operate the SR 167 HOT Lanes in the 2013-15 biennium.

**SR 520 Toll Operations**
The Toll Division estimates it will collect $145 million from tolls on the State Route (SR) 520 Bridge in the 2013-15 biennium. The toll revenues collected from the SR 520 Bridge are used to pay for debt service, operations and maintenance costs, preservation costs, and up to $1.9 billion in construction funding for the SR 520 corridor. Funds are provided for the operations and maintenance expenditures required to collect the toll revenues. The Enacted Budget provided $26.3 million with a reserve of $6 million for operations and maintenance.

**SR 520 Civil Penalty Process**
If a vehicle uses a toll facility and the vehicle owner does not pay within 80 days from when the facility was used, the owner will receive a notice of civil penalty (NOCP). The NOCP includes a $40 fee per unpaid toll transaction. Unlike Tacoma Narrows Bridge, toll revenues are pledged to support bond financing. Therefore, the revenues and expenses related to operating the SR 520 Civil Penalty process are tracked and reported separately from regular toll operations and maintenance. Funding for the SR 520 Civil Penalty program are expected to be recouped through the $40 NOCP fee. The Enacted budget provided $4.2 million to operate the State Route (SR) 520 civil penalty process in the 2013-15 biennium.

**Future Budget Considerations**
This toll operations review report has evaluated existing operations and future budget needs against the 2013-15 B Program enacted budget and found three areas the Toll Division will need to address, either due to contractual obligations or to facility changes:

- Expected contract commitments with lane vendors, Telvent and TransCore;
- Risk mitigation strategies for CSC operations;
- Cashless study on Tacoma Narrows Bridge; and
- Ramp up activities in advance of starting the I-405 Express Toll Lanes.

**Lane Vendor Commitments**
Toll Division contracts with Telvent for toll collection system operations and maintenance services on the State Route (SR) 520 Bridge. The toll collection system (TCS) is being implemented in 3 phases – existing TCS, temporary TCS, and permanent TCS. The original budget request for FY 2013-15 for TCS operations and maintenance services was based on Telvent’s contract to support the “existing” TCS system only. Support for the “temporary” and “permanent” TCS solutions was under procurement during the development of the FY 2013-15 budgets and contract pricing was unavailable.

In September 2012, Toll Division selected Telvent to provide the TCS O&M services for both the temporary and permanent TCS solutions on SR 520 Bridge. The executed contract included increased costs for TCS O&M based on the increased scope of work to operate and maintain multiple systems at the same time (existing to temporary; temporary to permanent). The Toll Division will need to cover the shortfall between the previous contract and the new contract pricing.

The contracts with Transcore for manual toll collection and toll collection system operations and maintenance for Tacoma Narrows Bridge expire on June 30, 2014. Toll Division is in the process of negotiating an extension of these contracts through June 30, 2015. It is anticipated that the best case
scenario would be no price increase from FY 2013 levels. Therefore, the Toll Division will need to recoup the 5% reduction included in the Enacted Budgets for FY 2013-15.

CSC Risk Mitigation
The contract for the Statewide Customer Service Center operations with ETCC expires on June 30, 2014. The Department is working with the vendor to determine whether a contract extension is viable. The Toll Division has estimated, through an independent analysis of the vendor’s staffing levels that they are likely losing in excess of $2 million dollars annually on CSC operations at the current contract pricing. Based on a risk analysis of existing operations the Toll Division must anticipate a change in the CSC operator, at an increased market rate cost. Therefore the Toll Division will need to be prepared to cover costs associated with a re-procurement, including development and letting of a RFP for CSC operator and transition costs related to bringing on a new operator.

Cashless Study of Tacoma Narrows Bridge
At the request of the legislature in 2010, the Toll Division studied the possible elimination of cash collection on Tacoma Narrows Bridge. The study recommended re-evaluation once photo tolling was implemented. Photo tolling was deployed on Tacoma Narrows Bridge in December 2011; the study would evaluate the potential savings associated with the conversion of toll collection operations to an all-electronic tolling system.

Ramp-up of I-405
Finally, current scheduling for commencement of tolling on the I-405 Express Toll Lanes ranges between May and September of 2015. The Toll Division will need to cover the purchase of initial transponders for I-405 Express Toll Lanes and the expected costs related to operating I-405 ETL tolling for two months of FY 2013-15 biennium.

Some of the needs described above affect the budget of a single facility, while others affect all three existing facility budgets.

Space and Facilities
The Toll Division has five leased spaces housing WSDOT, vendor and consultant staff to support the program. The leased space includes the Statewide CSC, located in the University District of Seattle, which also houses the Seattle walk-in center and adjudication facilities, adjudication facilities in Fife, walk-in centers in Bellevue and Gig Harbor, and administrative offices in downtown Seattle. Most Toll Division and GTC staff are co-located in the administrative offices in downtown Seattle. Given the limited space, WSDOT image certifiers and adjudication support staff are the only staff assigned to the Statewide CSC. Additionally there are two WSDOT offices at the Statewide CSC in Seattle which are shared by a few key members of the Toll Division operations staff. While the Toll Division administrative offices are just 20 minutes from the Statewide CSC, the distance limits WSDOT’s insight into day-to-day operations necessary for its role as a strong owner. Lessons learned and the review of space planning found that co-location with the Statewide CSC vendor is essential to the long-term success of the toll program, and would provide better efficiencies, at the lowest cost. Co-location would allow the Toll Division to:

- Work side-by-side with CSC vendor to improve and maintain customer service.
- Assure that processes and decision-making are well developed, transparent, and timely.
- Provide quick turn-around for work products, updates, and responses; working with vendors and staff to gather information.
- Respond immediately to back-office system, roadway tolling, and toll equipment maintenance needs to assure consistent and reliable toll collection.
- Develop and maintain stable, long-term division communications and practices to support the toll business needs of the State of Washington.

This model is consistent with other toll agencies that have also chosen to co-locate with their CSC vendor. One example is the Texas Department of Transportation. In 2006, as a new tolling agency, TxDOT opened its state-owned 20,000 square feet Statewide CSC, with capacity to house 150 vendor and state employees.

Currently, WSDOT leases 15,000 square feet for Toll Division staff. The Statewide CSC vendor leases 12,500 square feet for the statewide CSC and back office, 3,800 square feet for adjudication facilities, and 1,600 square feet for the three walk-in centers. Additionally, WSDOT has 2,000 square feet of state-owned space for inventory and storage. Looking ahead, it is expected the existing walk-in centers could support the new projects opening during the FY 2015-17 biennium. This means no changes are needed for the Bellevue and Gig Harbor walk-in centers or the Fife adjudication facility. However, projections show that the current statewide CSC and back office space is insufficient to support program growth with the addition of the two new toll facilities. It is estimated that a total of 40,000 square feet is needed for the centralized Toll Division center to support the new facilities. In total, the Toll Division space needs range from 42,500 and 45,000 square feet.

For these reasons, the Toll Division will pursue plans to co-locate with the Statewide CSC Vendor. In addition, the Toll Division will evaluate the potential for reduction of walk-in centers as an area of potential savings. While walk-in centers are essential to address the needs of unbanked and cash customers, other agencies have partnered with retailers to provide account replenishment options. This would require up front system enhancements that are not currently funded, but long-term would be much more cost effective.
CHAPTER 6

Lean Management

Implementation of Toll Division Program Management Organization
The SAO Report recommended the Assistant Secretary, Toll Division, establish policies and procedures to manage future tolling projects. In response to that finding, the Toll Division has implemented a Program Management Organization (PMO), which is responsible for establishing policies and procedures to guide the development, implementation, and management of tolling projects. The PMO’s mission is threefold:

1. Provide a solid, accepted foundation for identifying and proactively managing project changes, risk, and issues at a Toll Division level;
2. Create a framework for project management best practices within the organization’s project teams; and
3. Guide key Toll Division projects to ensure successful results.

The Toll Division PMO utilizes industry-accepted principles established by standard setting bodies in the fields of project management, process improvement, and risk management, including: the Project Management Institute, Lean Enterprise Institute, Information Systems Audit and Control Association, and the Institute of Internal Auditors. PMO approaches are consistent with the requirements related to ISO9000. These principles will provide the Toll Division a common, well-established process for ensuring ultimate project success.

PMO Structure
The PMO consists of the Assistant Secretary, Toll Division, representatives from each functional area, and a parliamentarian, who serves as the meeting facilitator. The PMO meets monthly to receive project updates from project managers, to discuss project risks, and to manage project change, including scope, schedule, and budget. In addition, the PMO is used to review toll facility performance, revenues, and expenses.

When issues are raised that impact WSDOT stakeholders external to the Toll Division, they are invited to participate in the PMO. This group, known as the “Concurrence Authority”, has the same authority as a regular PMO member for the issue by which they are affected. This group consists of representatives from:

- WSDOT Accounting and Financial Services
- WSDOT Information Technology
- Region Traffic
- Mega Projects
- Other groups as needed

As discussed in Chapter 1, the Toll Division held its first meeting in September 2013; future meetings will include members from the Concurrence Authority, as needed.
Lean Initiatives

As previously described under Lean Review in Chapter 1, each functional area identified several projects that could potentially benefit from a Lean review. Each functional area is in varied stages of the Lean evaluation process. The Operations group has three projects under way, previously mentioned in the “Top Priority Improvements” section, and as further detailed below under the section titled Operational Efficiencies. The current statuses of the other functional area projects are detailed below:

Policy and Development
The Policy Development group conducted a PICK chart analysis to identify those identified projects that would have the highest impact if implemented. This resulted in 14 projects being selected from the 26 originally identified. Of these 14 high impact projects, the Policy and Development group elected to directly implement nine without a full Lean analysis because the issue was already being addressed for one or more of the following reasons:

- By the implementation of a PMO within the organization;
- Because the cost to formally document, calculate, and summarize the waste and any realized savings would be cost prohibitive; or
- Because the issue was an obvious best management practice that could easily be implemented without extensive analysis.

That left five high impact projects that needed the full Lean analysis. Currently, all of these projects are in the Define phase. Schedules for the completion of the analysis are being developed and the process will continue into 2014 as resources are available.

Communications
The communications team first brainstormed possible improvements and then used an affinity diagram to group ideas for potential projects. The group took each set of ideas and described the process or activity in its current condition and what it should be like in its future condition. Following is the desired future state of those processes:

- Customer interaction – The communications team should be more involved in updating and developing the customer-facing tools that are managed by the toll vendor.
- Data collection – The communications team will coordinate with the operations team to help inform data collection and reporting to provide a consistent set of data needs on a regular basis that is ready for public use.
- Presentation development – The communications team will develop a clear presentation development process with appropriate checks and balances to allow WSDOT to deliver the best presentations and a clear message.
- Roles and responsibilities – Team members’ roles and responsibilities will be more clearly defined after extensive staff changes the past year.

Finance and Budget
The Toll Division Finance team held a workshop to brainstorm possible improvements which resulted in the identification of 25 potential projects, that were categorized into three main categories. The group flushed out each concept and described the current state process or activity and the desired future condition. The following outlines the three areas of improvement:

- Payment processing – This was identified as the highest priority project. Issues with payment processing occur from the time the invoice is first received throughout the process to reporting
in the expenditure reports. This is the first area of Lean improvement and the group is in the define phase, diagramming the process flow and collecting data.

- Data management – Several issues associated with data management were identified, including everything from traffic and revenue forecasting and reporting to budget and accounting data.
- Contract processing – Issues related to contract processing were identified and will be evaluated.

**Operations**

The Operations group deals with a wide variety of disciplines and tasks in order to accomplish its work. Toll Operations consists of teams responsible for customer service oversight, vendor management, toll system operations and maintenance, and financial accounting.

In July, the Operations group met to brainstorm ideas about possible areas for Lean improvements. The group identified 16 possible improvement projects. To prioritize the list of possible candidates, the group utilized several other Lean principles including PICK charting and process mapping. Three candidate processes - $0.25 Pay by Plate Fee Reversal Process, Escalated Customer Inquiry Procedures, and Image Review of Photo Enforced Transactions – were chosen for their ease of implementation and high pay off value in terms of time and/or cost savings.

Each of the three processes was then defined, measured, and analyzed to determine how best to implement process improvements and what might be expected in terms of future time or cost savings.

- $0.25 Pay by Plate Fee Reversal Process Improvement – the Lean review team believes that it is possible to achieve a 40% reduction in reversal processing time (equal to potentially $27,000 annually) by implementing a customer outreach program, empowering CSC frontline staff to handle reversals without transferring to another team, and streamlining the back-up documentation requirements.
- Escalated Customer Inquiry Procedures Improvement – the Lean review team believes that it is possible to achieve a 40% reduction in escalated customer inquiries forwarded to WSDOT for remediation (equal to potentially $15,000 annually) by implementing a customer outreach program and empowering CSC frontline staff to research and dismiss certain fees which were erroneously assessed or could be dismissed as a part of a customer education program.
- Image Review of Photo Enforced Transactions Improvement – the Lean review team estimates implementation of recommended improvements will lead to a 10 to 20 percent reduction in errors and an increase in revenues.

**Cost to Collect**

The Toll Division analyzed cost to collect during start-up of the new statewide customer service center and tolling on SR 520 (FY 2012, third and fourth quarters), and again during more stable conditions (FY 2013 first through third quarters). The results of FY 2013, first Quarter through fourth Quarter shown in Chapter 1 represent the analysis of steady state, although the areas of concern were somewhat consistent between reporting periods.

When reviewing the cost to collect by payment method, the analysis immediately highlighted the following areas to focus future Lean work.

- **Cash Collection**: The weighted average cost to collect per transaction is $0.40 on SR 520 and $0.52 on Tacoma Narrows Bridge. The difference is predominantly the inclusion of cash
collection on the Tacoma Narrows Bridge. At the request of the legislature in 2010, the Toll Division studied the possible elimination of cash collection on Tacoma Narrows Bridge. The study recommended re-evaluation once photo tolling was implemented. The Toll Division will seek legislative direction during the 2014 legislative session to update the Tacoma Narrows Bridge Cashless Study.

- **Short Term Account contacts:** Although most customers establish short term accounts through online self-service, customers are calling into the customer service center to close the accounts, resulting in unnecessary, costly customer contacts. This has been identified for a future Lean review.

- **Customer Contacts:** WSDOT has a high number of customer contacts per account. The Toll Division is looking for opportunities to decrease customer contacts through first time resolution and self-service. The first time resolution issue is being addressed through the Escalated Customer Inquiry Procedures Improvement Review described above. Improvements to self-service portals will be evaluated as part of the website review scheduled to start in 2014.

- **Inactive Accounts:** Inactive customer accounts require support without off-setting revenue to cover those activities. The Toll Division will review when to begin closing accounts that have been inactive for more than two years and will review the impact to the program.
CHAPTER 7

Key Findings

The Toll Division Operational Review was expansive, extended beyond toll operations, and encompassed all aspects of the Toll Division. Several organizational and operational efficiencies have been identified and the following highlights the key findings of this review.

- **Tolling as a Funding Source:** Tolling has become a larger share of the transportation funding solution nationally, and within Washington State. Thirty states across the country are using tolling as a funding source and WSDOT has launched three new toll facilities since 2007 and two more are scheduled to open by 2016.

- **WSDOT’s Tolling Structure is Appropriate:** The Toll Division is a highly focused team that leverages the private sector to provide support to implement and operate its integrated toll program. The structure has been validated by the Joint Transportation Committee’s Expert Review Panel and the General Tolling Consultant. A review of other toll agencies further confirms the decision to house tolling as a separate division within WSDOT.

- **Customer Expectations:** According to a recent survey, most customers are satisfied. Having an issue or dispute resolved the first time someone calls is the largest service gap between importance to the customer and customer satisfaction.

- **Cost to Collect:** A review of Toll Division collection costs by payment method and facility was performed to evaluate cost drivers. The results of the cost of service analysis highlight areas requiring further examination, such as cash collection on the Tacoma Narrows Bridge and the use of Short Term Accounts. An evaluation of peer agencies demonstrates that WSDOT’s cost per transaction is reasonable.

- **Increased Emphasis on Transponder Accounts:** The cost to collect analysis shows *Good To Go!* transponder accounts are the most cost effective method of toll collection. The Toll Division will consider opportunities to more aggressively market transponders or partner with the Department of Licensing on a possible statewide distribution processes.

- **Organizational realignment:** The organization of the Toll Division was evaluated and restructured to better meet the current and future needs of the organization. Based on this review, the Development and Operations departments were combined under a single Director. Organizational changes will begin in November.

- **Clarification of roles and responsibilities:** Roles and responsibilities of toll division activities were reviewed to determine the appropriate responsibilities of toll activities and functions. This work will continue through the end of 2013, when an executive order defining roles and responsibilities will be issued by the Secretary of Transportation.

- **Reductions in WSDOT staff:** Each position was evaluated to validate the function served and to determine the long-term need. Four positions have been identified for elimination.

- **Reductions in consultant staff:** Consultant activities were evaluated to identify areas were ongoing work elements would be better performed by WSDOT staff. Three and one-quarter positions have been identified for elimination.

- **Co-location of Toll Division and statewide customer service center vendor staff:** The benefits of co-locating Toll Division staff with the customer service center vendor were evaluated and the Toll Division will pursue co-location opportunities.
Operational efficiencies: Lean workshops were held and 70 potential Lean projects were identified covering each of the Toll Division functional areas. Three Lean reviews are currently underway and others will follow. The process of applying Lean tools to quantify and eliminate waste is a culture the Division has embraced with the formal adoption of a Lean structure, ensuring the Toll Division operates efficiently and effectively with an eye towards continuous improvement.

Re-evaluation of toll program funding needs: A thorough review of the impacts of the five percent budget cuts made to the FY 2013-15 biennium B program budget has determined the cuts are not sustainable and WSDOT will need to address the future funding needs.