COMPARATIVE ANALYSIS OF TOLL FACILITY OPERATIONAL COSTS

REPORT
FEBRUARY 22, 2007
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**APPENDIX A: DATA SOURCES**
1. INTRODUCTION

When the new Tacoma Narrows Bridge (TNB) opens in 2007, it will offer both electronic and manual toll collection. An operations contractor will provide the staff to manually collect tolls, operate the customer service center, process violations, and maintain the new electronic toll collection system. Washington State Department of Transportation (WSDOT) will primarily be responsible for setting policies and procedures, providing public communications, and ensuring that the contractual obligations are met.

As Tacoma Narrows will be the first toll facility in Washington to deploy Electronic Toll Collection (ETC), this report compares the cost of operating other contracted, ETC-equipped toll facilities across the country and provides information regarding their oversight role and organization.

This report examines the range of operations cost data collected from other toll facilities similar to TNB, and offers some conclusions regarding how the planned TNB oversight functions and costs compare to other facilities.

1.1 Methodology

Operational cost data was gathered for toll facilities that have similarities in scope and function to Tacoma Narrows Bridge. Criteria for determining which toll facilities were to be researched required that all or part of toll collection and customer services operations are performed by a contractor, and that ETC be deployed at the facility.

Annual reports for each facility were reviewed. The variations in toll facilities and data included in the annual reports necessitated that this review be followed by requests for additional, specific operations cost information. Detailed cost information is not typically provided in an annual report. Each agency was contacted to collect information at a level that would be useful for comparison to operational costs at TNB.

No toll facility is an exact “match” for comparison to TNB. There is a great range in the size and scope of toll facilities and how they are operated, including what expenses are considered “operations” costs and how the configuration of the facility affects these costs. These variations to be considered include:

- **Magnitude and Type of Facility**: Volume of traffic, number of toll lanes, and the amount of the toll charged vary widely, and directly affect the amount of revenue collected. Whether a facility is a bridge or toll road (which can be many miles long, with multiple entry/exit points) is also a fundamental difference that must be considered. Since operations costs are often presented as a percentage of toll revenue, the magnitude of the facility is a major factor.

- **Method of Toll Collection**: Beyond the type and size of facility, there are a number of variations that occur at the operational level, starting with how tolls are collected. Some facilities, like TNB, staff tollbooths or use Automated Coin Machines (ACM) for toll collection in addition to their ETC program. Others facilities offer ETC only. As the industry has shown that it generally costs less to collect a toll electronically versus manually, the number of ETC versus manual transactions is a consideration for analyzing operations costs.

- **Division of Responsibilities**: The types of responsibilities assigned to the contractor(s) and those that remain with the agency vary by agreement, and clearly
affect the budgeted operations expenditures of the agency. A public/private franchise or concession agreement may call for a private company to design, build, finance and operate the facility. Other agreements might call for the agency to provide bridge/roadway maintenance, management, and oversight, while the contractor provides only customer service. The level of management, and associated oversight costs, will depend on the type of agreement and service conditions in the contract.

- **Violations:** The number of people who fail to pay the required toll, as a percentage of transactions, varies widely among facilities, and the cost to process and collect on these violations also varies depending on the violation processing software’s level of automation, the jurisdiction’s collection laws, and the extent to which ETC has been adopted by the populations.

- **Availability of Customer Web Site and IVR:** The level of service offered by the facility’s Web site or Interactive Voice Response (IVR) system, in terms of providing customers “self service” for regular account queries, transponder distribution, and payments, reduces the need and cost for human customer service representatives.

- **Accounting Variations:** Some toll authorities include costs such as amortization, depreciation, and advertising/marketing as part of operations, while others account for them as separate budget items. These differences again impact the percentage of revenue used for operations to appear much higher.

- **Maintenance:** Maintenance costs must be differentiated at two levels: physical facility maintenance (i.e., of the roadway/bridge) versus maintenance of the toll system and equipment. Some agencies may choose to roll both types of cost into a single “maintenance costs” line item. As physical facility maintenance for TNB will be provided by WSDOT, physical maintenance costs needed to be separated from toll system maintenance for this comparison. In addition, variations in the lifecycle and reliability of technologies deployed also affect the cost of maintenance. Finally, periodic or extraordinary maintenance or rehabilitation may also result in disproportionately high maintenance costs for a given year. For these reasons, facility maintenance is not included in cost data for this comparison.

- **Bond Covenants:** The terms of repayment for the bonds on a toll facility will vary, and may restrict the types of costs that may be paid from toll revenue.

Therefore, the inherent challenge in this exercise is to minimize “apples to oranges” comparisons. By identifying a series of metrics, the dissimilar systems may be analyzed.

Metrics that have been identified to date include:

- **Magnitude of Toll Facility:** These factors would include the number of toll lanes, traffic volumes, transactions, customer accounts, and tolled roadway miles.

- **Facility Characteristics:** Facility considerations include open versus closed toll facility, method of toll collection, level of automation, and maintenance requirements.

- **Contracted Services:** A description of the organizational structure and oversight services provided by the public sector, as well as the scope of services provided by the contractor.

- **Financial:** Annual revenues and toll rates for comparison to the overall magnitude of the toll facility.
• **Impact of Violations:** The annual number of violations, collection rate, staffing requirements and the impact to operations costs.

• **Customer Services:** The volume of customer service requests and associated staffing requirements.

### 2. Toll Facility Comparison

With consideration to the challenges described above, the following toll facilities are included in this analysis:

- **E-470, Denver CO:** E-470 is a 47-mile toll road along the eastern perimeter of Denver, and offers a timesaving route to the Denver Airport. The E-470 Public Highway Authority manages E-470. Payment may be made using manual toll collection booths, Automated Coin Machines or the EXpressToll transponder.

- **Golden Gate Bridge (GGB), San Francisco CA:** The Golden Gate Bridge is overseen by the Golden Gate Bridge, Highway and Transportation District. Unlike the other Bay Bridges, GGB staff includes manual toll collectors. GGB participates in the FasTrak electronic toll collection program.

- **Tobin Bridge, Boston MA:** The Tobin Bridge connects the Charlestown section of Boston with Chelsea, and is part of the Massachusetts Turnpike. The bridge is maintained by MASSPORT. ETC has been deployed via the FAST LANE program, which is administered by the Massachusetts Turnpike Authority (MTA).

- **Central Texas Regional Mobility Authority (CTRMA),** Austin TX: CTRMA will be the oversight agency for 183-A, a new all-ETC facility. The Texas Department of Transportation (TxDOT) will provide ETC operations via a contractor.

- **Bay Bridges, San Francisco Bay Area CA:** The Bay Area Toll Authority (BATA) is the agency that administers toll collection on the seven state-owned bridges in the region. In addition, BATA operates the customer service centers for customers with transponders under the FasTrak program. Caltrans owns, operates, and maintains these bridges, including providing manual toll collection.

- **Transportation Corridor Agencies (TCA), Orange County CA:** TCA (also known as “The Toll Roads”) consists of two separate toll authorities that oversee the Foothills/Eastern and San Joaquin Hills toll roads. The Toll Roads accept cash and the FasTrak ETC transponder for payment.

- **SR 91 Expressway, Orange County CA:** SR 91 is a ten-mile toll road that was the world's first all ETC toll facility. SR 91 is owned and operated by the Orange County Transportation Authority (OCTA), which purchased the road from a private concessionaire in 2003. OCTA operates the customer service center for SR 91. Violations processing is contracted. SR 91 only accepts FasTrak transponders for payment.

- **Causeway Bridge, New Orleans LA:** The Greater New Orleans Expressway Commission (GNOEC) is the controlling body of the Causeway Bridge, the longest bridge in the world. Tolls are collected both manually and electronically.

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1 This report uses engineering estimates provided by CTRMA for operations costs.
The following table summarizes the division of responsibilities between contractors and public agencies at these facilities.

<table>
<thead>
<tr>
<th>Facility</th>
<th>Services Provided by Contractor</th>
<th>Services Provided by Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-470</td>
<td>All toll collection, customer service, violations processing, auditing, and courtesy patrols.</td>
<td>Toll oversight, roadway maintenance.</td>
</tr>
<tr>
<td>Caltrans Bridges</td>
<td>All ETC operations.</td>
<td>Manual toll collection, bridge maintenance. Oversight provided by BATA.</td>
</tr>
<tr>
<td>Golden Gate Bridge</td>
<td>All ETC operations.</td>
<td>Bridge maintenance, manual toll collection. Oversight by BATA.</td>
</tr>
<tr>
<td>Tobin Bridge</td>
<td>Contractor provides hardware/software maintenance for ETC only.</td>
<td>MASSPORT provides bridge maintenance and oversight. Massachusetts Turnpike Authority provides toll collection.</td>
</tr>
<tr>
<td>CTRMA 183-A</td>
<td>Customer Service Center, Violation Processing (under an interagency agreement). Preventative and corrective maintenance for the toll collection system.</td>
<td>The TTA Division of TxDOT administers the Customer Service Center (CSC) and the Violation Processing Center (VPC). Some on-site toll collection enforcement is provided. The CTRMA Director of Operations administers maintenance.</td>
</tr>
<tr>
<td>TCA</td>
<td>Call center, toll payment enforcement, Customer Service Center, facility management, incident response.</td>
<td>Accounting, administration, financial and operations oversight.</td>
</tr>
<tr>
<td>SR 91</td>
<td>Enforcement, call center, customer service, facility management, incident response.</td>
<td>Manage contract, set toll policy and pricing, manage external service agreements, financial management, implement corridor improvements.</td>
</tr>
</tbody>
</table>

The following table presents key operations data for each facility named above. The purpose of this table is to provide a side-by-side comparison of the different facilities.
### COMPARISON OF FACILITIES

<table>
<thead>
<tr>
<th>FACILITIES</th>
<th>E-470</th>
<th>Caltrans Bridges</th>
<th>Golden Gate Bridge</th>
<th>Tobin Bridge</th>
<th>CTRMA</th>
<th>TCA</th>
<th>SR 91</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Facility Characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of Structure</td>
<td>Toll road</td>
<td>Seven bridges</td>
<td>Bridge</td>
<td>Toll road</td>
<td>Four toll roads</td>
<td>Toll road</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Denver, CO</td>
<td>Bay Area, CA</td>
<td>San Francisco, CA</td>
<td>Boston, MA</td>
<td>Austin, TX</td>
<td>Orange County, CA</td>
<td>Orange County, CA</td>
</tr>
<tr>
<td>Number of Toll Collection Locations</td>
<td>31</td>
<td>65</td>
<td>14</td>
<td>7</td>
<td>4</td>
<td>N/A</td>
<td>4</td>
</tr>
<tr>
<td>Miles of Toll Road</td>
<td>47</td>
<td>26.3</td>
<td>1.7</td>
<td>2.75</td>
<td>4.5</td>
<td>51</td>
<td>10</td>
</tr>
<tr>
<td>Annual Traffic Volume</td>
<td>N/A</td>
<td>135,000,000</td>
<td>20,000,000</td>
<td>9,000,000</td>
<td>109,500,000</td>
<td>11,200,000</td>
<td></td>
</tr>
<tr>
<td><strong>Toll Characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typical Toll Paid by 2-Axle Vehicle*</td>
<td>$1.00 - $11.75</td>
<td>$3.00</td>
<td>$4.00</td>
<td>$3.00</td>
<td>N/A</td>
<td>$3.00</td>
<td>$1.10 - $7.75</td>
</tr>
<tr>
<td>Annual Number of Toll Transactions</td>
<td>51,488,900</td>
<td>133,596,000</td>
<td>20,654,000</td>
<td>9,000,000</td>
<td>10,993,435</td>
<td>94,038,882</td>
<td>11,169,000</td>
</tr>
<tr>
<td>Percent Electronic Toll Collection</td>
<td>67%</td>
<td>77%</td>
<td>60%</td>
<td>42%</td>
<td>N/A</td>
<td>70%</td>
<td>100%</td>
</tr>
<tr>
<td>Percent Manual Toll Collection</td>
<td>33%</td>
<td>23%</td>
<td>40%</td>
<td>68%</td>
<td>N/A</td>
<td>30%</td>
<td>0%</td>
</tr>
<tr>
<td>Number of Electronic Toll Collection Accounts</td>
<td>199,563</td>
<td>170,000</td>
<td>65,200</td>
<td>N/A</td>
<td>N/A</td>
<td>310,957</td>
<td>116,000</td>
</tr>
<tr>
<td>Number of Transponders Issued</td>
<td>360,570</td>
<td>240,000</td>
<td>83,000</td>
<td>N/A</td>
<td>N/A</td>
<td>558,930</td>
<td>180,000</td>
</tr>
<tr>
<td><strong>Toll Operations Staffing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Customer Service Staff</td>
<td>41</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>170</td>
<td>30</td>
</tr>
<tr>
<td>Number of Toll Collector Staff</td>
<td>89</td>
<td>260</td>
<td>100</td>
<td>19</td>
<td>N/A</td>
<td>N/A</td>
<td>All ETC</td>
</tr>
<tr>
<td><strong>Financial Data</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annual Revenue from Toll Payments</td>
<td>$84,499,000</td>
<td>$265,362,000</td>
<td>$84,419,500</td>
<td>$28,000,000</td>
<td>$11,599,000</td>
<td>$168,000,000</td>
<td>$32,375,471</td>
</tr>
<tr>
<td>Annual Toll Collection Operations Cost</td>
<td>$11,589,800</td>
<td>$38,931,390</td>
<td>$15,479,000</td>
<td>$4,500,000</td>
<td>$3,162,495</td>
<td>$27,593,000</td>
<td>$5,146,526</td>
</tr>
<tr>
<td>Annual Toll System Maintenance Cost</td>
<td>$1,575,400</td>
<td>$2,972,514</td>
<td>$12,088,000</td>
<td>$2,500,000</td>
<td>$3,487,800</td>
<td>$10,300,000</td>
<td>$2,525,000</td>
</tr>
</tbody>
</table>

*Rate for ETC or average toll collected

### Notes:

a) Tobin Bridge is part of the Interagency Group cooperative toll consortium. Individual statistics for "just" Tobin Bridge cannot be known.

b) Operations and Maintenance costs for Tobin Bridge are low because the bridge has no violations processing costs and only contracts for hardware/software maintenance.

c) E-470 has numerous toll collection points, so the toll paid varies by miles driven.

d) CTRMA's toll road, 183-A. All numbers are projected estimates for 2009.

Section 3: Findings, presents a comparison and analysis of this collected data.
3. FINDINGS

There is a great range in the size and scope of toll facilities, average tolls, and how they are operated, including what expenses are considered “toll collection” costs and how the toll collection methods and practices affects these costs. These variations include:

- Size of Facility
- Type (road, tunnel, bridge) of Facility
- Percent of Electronic Toll Transactions
- Division of Responsibilities between Contractor(s) and Agency
- Number of Violators and Cost to Collect
- Availability of Automated ETC Customer Account Access via Internet and Telephone
- Variations in Facility Bond Covenants
- Variations in Accounting Practices

This section presents comparisons of the data collected from the various facilities.

3.1 Toll Collection Operating Cost As a Percentage of Annual Toll Revenue

For the purpose of this exercise, toll collection operating costs were defined as “the cost to collect tolls”, including staff and consumables for Manual Toll Collection, Customer Service costs for ETC, and violation enforcements. Operating costs also include agency contract administration and oversight. Service patrols and incident response were not included. Although operating costs are generally provided in annual reports, it was necessary to follow up with agencies to ensure that the cost provided in the report was inclusive of the costs described above.

The following chart shows the percentage of toll revenue that is spent on operating costs, including the budgeted cost for Tacoma Narrows Bridge over the life of the operations contract.
When comparing toll collection costs, it might be expected that those facilities with a higher ETC percentages would also have a lower overall cost. However, Figure 1 shows a fairly close range when comparing toll collection costs as a percentage of annual toll revenue. This highlights the impact of different toll collection practices and facility characteristics. For example, the seven Caltrans-operated bridges in the San Francisco Bay Area are operationally very different from the Tobin Bridge in Boston. But the toll collection cost percentages are quite close. The Caltrans bridges have heavy traffic, high toll rates, and a lower percentage of ETC use, whereas the Tobin Bridge is a smaller operation with moderate ETC use. Tobin Bridge uses gated toll lanes, effectively eliminating violations and the associated collection costs. SR 91 in Orange County is a 100%-ETC facility (no toll booths), yet the high rate of violations erodes the operational cost savings that might otherwise be seen. The slight increase in toll collection cost for the Transportation Corridor Agencies (TCA) in Orange County is due to large size and many manual toll collection points.
3.2 Toll System Maintenance Costs as a Percentage of Annual Toll Revenue

The maintenance costs data collected for this exercise include maintenance of toll system hardware, software, lane equipment, and communications. They also include salary costs for IT staff that troubleshoot and maintain the toll system. Costs for road signs, facility maintenance, trash pickup, landscaping, etc., are not included. For TNB, toll systems maintenance is included in the toll operations contract and is not a separate cost item.

The following chart shows the percentage of annual toll revenue that is budgeted for toll system maintenance costs at various other facilities.

![Figure 2: Toll System Maintenance Cost as a Percent of Annual Toll Revenue](image-url)
3.3 Average Toll Collection Operating Cost Per All Toll Transactions

The following chart shows the average cost of operations that comes from a single toll transaction. This cost was calculated by comparing the annual cost of operations, as defined above, with the total annual number (ETC and manual) of toll transactions. The relatively high cost per transaction at Golden Gate may be due to the large percentage of manual toll transactions at the facility (shown in Figure 4). For TNB, manual toll transactions and the relatively low number of annual transactions, compared to other facilities, are cost factors.

![Figure 4: Average Toll Collection Operating Costs Per All Toll Transactions](image-url)
3.4 Percent of Electronic and Manual Toll Transactions

The following chart displays the division of total toll transactions between manual and ETC transactions. Driver use of electronic toll collection is higher on commuter oriented facilities such as E-470 in Denver and Transportation Corridor Agencies (TCA) in Orange County, CA. SR 91 in Orange County only allows electronic toll collection. The mix of commuter and infrequent users is shown in the California toll facilities and on the Tobin Bridge in Boston.

![Figure 4: Percent of Electronic and Manual Toll Transactions](image)
3.5 Number of Customer Service Staff Per Number of Accounts

Facilities were surveyed on the number of customer service staff and the number of active ETC accounts to determine the relative staffing requirements based upon the size of the facility. Customer service staff may apply payments, open and close accounts, distribute transponders, provide account assistance, and process violations. Although some authorities have separate staff categories for violations processing and customer service, others simply assign staff duties based upon the day’s workload.

![Figure 5: Number of ETC Accounts Per Each CSC Staff](image)

*for agencies reporting staffing data

3.6 Organization of Oversight Agencies

The Washington State Department of Transportation has been particularly strong in emphasizing agency accountability and financial transparency in public works projects, with very positive results. With construction nearing completion, the reintroduction of highway tolling will shift public scrutiny from construction to accountability of the toll collection operation. Although a contractor will be operating the ETC system, physically collecting the tolls and interfacing with the public at customer service centers, the public will not be directly cognizant of this private entity. Instead the public will see WSDOT as the “face” behind each positive or negative experience. In addition, the handling of public funds and storing of individual personal information (including credit card information as part of ETC accounts) requires a level of hands-on management by WSDOT as the party ultimately responsible for this new toll facility.

In order to safeguard the substantial public investment in the new bridge itself, the revenues collected (required by law to be used strictly for the repayment of the bridge construction costs, minus operations and maintenance costs), and the public goodwill towards WSDOT as an agency, WSDOT staff must oversee contractor operations, ensure proper financial procedures are followed, market the Good To Go! program, and other oversight functions.
Toll operational and financial oversight is a common function of all agencies at other facilities. All of the facilities contacted for this research effort had some public agency oversight role that varied in accordance with the range of functions performed by the contractor, and were organized into various divisions to meet these obligations. Some examples include:

- **E-470**: The E-470 Public Highway Authority is organized into divisions for Toll Operations, Roadway and Lane Management, Engineering, Finance, and Information Technology. Within these divisions, the agency’s oversight functions include accounting and finance support, bank verification, managing investor and legislative relations, payroll, internal auditing, traffic/revenue reviews, ETC marketing, technical support, and public relations.

- **Transportation Corridor Agencies**: At TCA, the agency divisions include Communications and Public Affairs, Finance/Administration, Toll Operations, and Engineering and Environmental Planning. Key functions include financial oversight and budgeting, project management, information technology, and customer service and toll compliance (violations) oversight.

- **SR 91**: As a division of Orange County Transportation Authority (OCTA), SR 91-specific functions include management, auditing, marketing and administration.

E-470, TCA, and SR 91 are all facilities where the breadth of contractor services is similar to TNB. In reviewing the organizational structure and roles and responsibilities of these agencies in overseeing contractor operations, the following functions have been identified that are applicable to TNB and that are needed as tolling commences and TNB begins day-to-day operations.

**Toll Operations Management**: Overall responsibility for the safe and efficient management of the tolled roadway, including interfacing with other WSDOT divisions, such as maintenance, the Olympic Region Traffic Management Center, and other toll projects; as well as being a key point of contact for the contractor’s management team. Other responsibilities may include:

- Management and administration of the toll operations contract
- Performance monitoring and reporting of contractor services
- Performance monitoring and reporting of toll operations services
- Long and short term planning – identification or approval of major initiatives, such as marketing plans, incentive programs, etc.
- Response to requests for information by WSDOT executive staff, OFM, OST, the Governor’s office, and elected officials
- Ensuring that that operations comply with state laws for safety, enforcement, and bond repayment
- Preparation, administration, approval, and management of all operating and capital budget expenditures
- Oversight of daily revenue collection and reconciliation reporting
- Oversight of security initiatives
• Coordination with bridge maintenance and supervision of other toll operations
  oversight staff

• Coordination with engineering consultants, contractors and outside agencies for
  special projects

**IT Systems Maintenance:** This function includes oversight of the contractor’s servicing of the toll
system hardware and software, including upgrades and replacement of equipment under the
system warranty.

• Monitoring of toll system hardware and software maintenance activities and
  comparison of system upgrades against contract requirements

• Software application problem identification, documentation, and working with the
  contractor to resolve

• Monitoring of system hardware and equipment maintenance and resolution of any
  issues arising from the contractor’s maintenance performance

• Intermittent operation of equipment to test its functionality

• Oversight of system hardware and equipment inventory, including spare parts

• Oversight and administration of network security

**Facility Operations:** The WSDOT Toll Operations manager and support staff ensures proper toll
facility operations:

• Coordination and monitoring of daily toll collections in collaboration with the contractor

• Review (and possibly development) of operating manuals, plans and procedures to
  improve toll operations, customer service, violation processing, financial audits, traffic
  control and security measures

• Coordination of traffic activities with the bridge maintenance unit, contractors and other
  agencies

• Coordination with WSDOT and Washington State Patrol incident response

• Management of violation enforcement processing quality, fairness, policies and
  procedures and maintaining liaison with Pierce County Court System, Washington
  State Patrol, and the Administrative Office of the Courts

• Monitoring and response to complaints or questions concerning the toll operations
  especially customer service and violation processing

• Assistance with the preparation, administration and monitoring of the annual operating
  budgets

• Coordination of TNB operations with other WSDOT tolling projects
Marketing: The Good To Go! ETC program is the statewide ETC program for other future toll facilities implemented in Washington. Therefore, branding and marketing of Good To Go! is a WSDOT function. Activities include:

- Oversight and approval of the use of Good To Go! and WSDOT logos by the contractor
- Review of promotional materials prepared by the contractor
- Development of an overall marketing plan for Good To Go!
- Development of potential ETC customer incentive plans and oversight of contractor implementation
- Coordination with other Washington toll facilities for local promotion of Good To Go!

Finance: Financial functions include the management, utilization and development of systems and techniques to audit and analyze toll system revenue and traffic data, including:

- Assistance with the preparation, administration and monitoring of the annual operating and capital budgets
- Conduct of periodic audits of toll revenue transactions including reconciliation with TRAINS
- Analysis of financial reports and progress
- Management and oversight of the development of toll collection, revenue auditing and traffic analysis system enhancements
- Preparation of monthly reports for any system report problems
- Administration of the operations and maintenance contract, including renewals
- Preparation of independent toll system revenue reports
- Identification and reporting of revenue data errors and discrepancies

General Administration: Other functions that are provided by WSDOT include:

- Provision of public information
- Management of special projects and events
- Day to day administrative support and payroll

This review of toll agency oversight functions and organization has demonstrated that there are many commonalities in the roles and responsibilities that agencies undertake in the management of toll facilities, despite the many variations that can be seen in the size and scope of the those facilities. The range of common key oversight functions performed by agency staff includes overall management, contractor operations oversight (including customer service and violations processing), reporting and finance, technical support, and marketing.
3.7 Conclusions

Overall, this exercise confirmed the difficulties of comparing costs to operate vastly different facilities that may only share the single common characteristic of tolls. However, the estimated toll collection costs for Tacoma Narrows Bridge are within the industry range for such costs, particularly considering the relatively small size of the facility. TNB has estimated 12-16% for operations and administration of tolls over the life of the operations contract, which is within the range found for the other facilities researched. Administration costs are more varied depending on the size and age of the toll system.

TNB has estimated an initial 55% penetration rate for Good To Go!. Although a somewhat higher rate than other bridges, this is certainly not an unreachable goal, considering the high levels of local and commuter traffic in the area, and the likelihood of an initial ETC discount. Public surveys have indicated that many residents make frequent trips across the bridge, even several times per day. Most of these residents will use Good To Go!

All agencies have toll operations staff that provide auditing and oversight of the operations contractor, including performing independent reviews of revenue and violations reports, budgeting, and marketing, as well as the other functions described in Section 3.2. As other toll projects, including the SR 167 HOT Lanes are likely to follow TNB, WSDOT will also need oversight staff to ensure the integration of these facilities.
APPENDIX A

DATA SOURCES
### Toll Operations Costs – Data Sources

<table>
<thead>
<tr>
<th>Facility</th>
<th>Primary Data Source</th>
<th>Notes on Operations Costs</th>
<th>Notes on Maintenance Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-470</td>
<td>2005-06 Budget E-470 Staff</td>
<td>Cost for Operations Contract and salaries. Includes direct cost, does not include animal removal and litter, from 2005-06 budget</td>
<td>Includes IT salaries, select software, toll system hardware maintenance.</td>
</tr>
<tr>
<td>Caltrans Bridges</td>
<td>Annual Report BATA Staff</td>
<td>Includes toll accounting, manual toll collection from Caltrans, plus CSC operations</td>
<td>Includes toll equipment maintenance and IT support.</td>
</tr>
<tr>
<td>Tobin Bridge</td>
<td>Tobin Bridge staff.</td>
<td>Includes administration, toll collector salaries, direct costs and payment to MTA for ETC.</td>
<td>Toll system and hardware maintenance.</td>
</tr>
<tr>
<td>SR-91</td>
<td>OCTA Staff, based on 2006 budget</td>
<td>2006 Budgeted Costs</td>
<td>2006 Budgeted Costs</td>
</tr>
<tr>
<td>Lake Pontchartrain</td>
<td>2004/05 Budget</td>
<td>Cost of operating services plus toll collector salaries</td>
<td>Includes a few misc. items like A/C and plumbing supplies for which separate costs were not available.</td>
</tr>
</tbody>
</table>