

August 22, 2011

Ms Paula Hammond, Secretary
State of Washington Department of Transportation (WSDOT)
310 Maple Park Avenue, SE
Olympia, WA 98504

Re: Tolling Expert Review Panel (ERP) Finding and Recommendations

Dear Ms Hammond,

Enclosed are the ERP's findings and recommendations based upon our review of the ongoing implementation of All Electronic Tolling in Washington. The ERP is pleased to submit these findings and recommendations and the panel will continue to be available as a resource to WSDOT as work to deploy tolling on State Route 520 continues and through the launch if desired. If you have any questions or need, additional information concerning the panel's findings and recommendations please feel free to contact the undersigned.

Sincerely,



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Enclosure



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Findings and Recommendations

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Version 1.0

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Background:

The Washington State Department of Transportation (WSDOT) reconvened a Tolling Expert Review Panel (**ERP**) organized by AECOM to review the current status of the ongoing implementation of All Electronic Tolling in Washington. In 2009 the Joint Transportation Committee (**JTC**) of the Legislature convened a similar group, comprised of some of the same members, to advise it on costs and strategies for Electronic Toll Collection.

**Findings and Recommendations:**

The ERP reviewed source data and periodic reports prepared for WSDOT for the ongoing Toll System development. Based upon those reviews and discussions, it makes the following Findings and Recommendations.

Themes:

The ERP issues will be presented as themes:

1. Stay the Course
2. Readiness to Collect Tolls on the Evergreen Point Floating Bridge (**SR 520**)
3. Prepare Contingency Plans
4. Ensure Vendors provide sufficient resources
5. Implement additional best practices for long-term success

The ERP wants to foremost reinforce the principle that Customer Acceptance and maximizing net

revenue must be the prime objectives in all decisions.

1. Stay the Course

The ERP has found that in spite of the numerous operational issues encountered during the transition of vendors at the Tacoma Narrows Bridge (**TNB**), and in light of the difficulties getting tolling started on SR 520, WSDOT should continue working with its current vendors to deliver the systems anticipated in the contracts. We believe that changing vendors (or significantly modifying staff) at this point of development would have significant negative impacts to the on-going operations at the TNB and further delay toll collections on SR 520 by as much as 24 months.

Findings:

The schedule calling for toll collection in November 2010 was never realistic, despite the offer by all proposers to meet that date. Even an April schedule would have required a preliminary system with many future improvements, some critical. The original June date should have been realized, but the Vendor fell behind in its efforts to attempt unrealistic deadlines and was further delayed by a lack of understanding as to the Department's expectations. The Vendor's lack of understanding of the Accounting requirements (**GAAP**) has caused several missteps in development of the system.

The existing tag readers on the TNB cannot read the new tags being issued by WSDOT and it is complicating operations there.

The authority for full decision-making has never been given to the Tolls Division. The intervention by the Chief Operating Officer has resolved problems experienced earlier, however, this is not viewed as a long-term option. The current organization is adequate to successfully deliver tolling to the SR 520 but opportunities for improvement exist.

The Vendors had not shown that the entire system worked properly together.

Recommendations:

- A. The Project Team should be guided by a single set of project goals. Critical among these should be Customer Satisfaction and maximizing net revenues by starting revenue collection on SR 520.
- B. The decision to switch to open source transponders (ISO 18000 6C) developed to meet national interoperability for windshield tags requires a change in the Readers at the TNB. The current readers are not accounting for account holders with new transponders. Transcore, the operator at the TNB needs to replace the readers or at least modules of those readers to units that read both the Transcore proprietary transponder and the 6c transponder ASAP.
- C. The schedule should be driven by realistic assessments of work completed and work outstanding. Before any new “go-live” date is set, the regression and operational testing should indicate that the system performs all tasks needed to properly handle accounts, collect tolls, account for revenues and accounts receivable and provide needed reports.
- D. There should be a period of approximately 30 days from when the system is deemed operational where the system is functioning but tolls are not collected on SR520. During this soft opening, the back office should gradually expand its functional processing of all transactions as if they were actually collecting tolls. When the system is deemed stable, the Secretary can certify its readiness and initiate billing on the TNB while still processing zero value tolls on 520. During the last week of this process, nearly every user of SR520 should be identified and a determination made as to any additional support needed for the go-live period.
- E. Organizationally there has been significant improvement since May with the involvement of the COO. However, the ERP strongly suggests that the long-term success of the toll systems will require that the Tolls Director position be strengthened

to allow for the level of decision-making shown needed. Incorporating the finance/accounting and IT elements into that organization is our recommended solution but we realize that this is not a short-term adjustment.

- F. WSDOT has assembled an impressive team of consultants. Unfortunately, each is assigned to a functional manager and their assignments tend to focus on the needs of that manager. Overall Program Management is suffering as a result. The consultant team should receive direction from the Program Managers and assist the functional managers but always in the context of improving overall Program Management.



2. Readiness to Collect Toll on the Evergreen Point Floating Bridge (SR 520)

At the present time we cannot say that WSDOT is ready to collect tolls on SR 520. However, we do not see any reason why they should not be ready to do so this year.

Findings:

As indicated in 1C, WSDOT has had an aggressive delivery schedule from the start.

Notwithstanding the Vendor's assurances that it could exceed or meet the schedule, they failed to provide the critical staff to do so.

The Vendors had not shown that the entire system worked together. WSDOT conducted additional

testing of the entire system, which identified a number of corrective actions but did not show any fatal errors, which would require a major change in the systems.

Key accounting reports are needed to ensure reconciliation. This is more difficult for billing customers without accounts as compared to issuing Notices of Infraction.



Recommendations:

- A. Complete testing. Additional **Successful** Regression Testing will be needed as well as Extended Operational Testing. During all testing no changes should be made to any code. Once testing is complete and changes are made to address deficiencies, the test should be re-run. If a test needs to be stopped because of a fatal flaw it should begin anew once the correction is provided.
 - B. WSDOT's consultants should review any test manuals prepared by Vendors to ensure they provide sufficient data to properly evaluate the systems.
 - C. All software should be named in accordance with a WSDOT naming convention to ensure that everyone knows which version is being used and/or tested.
 - D. Business Rules should be set for a period of time before going live to avoid unnecessary (even if warranted) software changes.
 - E. Stress testing should be done on the telephone systems and other CSC Customer centric systems and staff. The ERP recognizes that the staff now employed appears to have the skills needed to handle transactions. However, it should be anticipated that once a firm public date is set for SR 520 there might be a large request for accounts that could overwhelm the system. Similarly once invoices go out the requirements on the CSC could jump significantly. We suggest testing the telephone system beyond the capacity of the staff and determining the ability of the IVR (voice telephone function) to properly obtain the customer's information and establish accounts. Similar tests should be run on the web site options. Make required changes prior to public announcement of a start date for toll collection on 520. These tests can be conducted by arranging for a call center to attempt to overwhelm each system.
 - F. The ERP recommends the Vendor improve the management of the back office and CSC and encourages active WSDOT oversight and if necessary involvement in the operations.
 - G. The CSC should also be the subject of an agreed upon staffing plan that provides for WSDOT staff to supplement the vendor for key functions during periods of intense activity. The leadership from both the Department and the Vendor should be clearly identified and begin working together to ensure a successful transition.
 - H. The minimum required financial system elements for go live should be firmly set with anticipated dates for delivery of the remaining support, report and reconciliation, financial system elements.
 - I. Recognizing the time to process NOI's and the potential someone would get both an NOI and an invoice at the same time, the ERP recommends suspension of NOI's for 5 days prior to the Secretary's finding and for three days after the finding. While some income may be lost it will save considerable customer dissatisfaction and frustration.
- ### 3. Prepare Contingency Plans
- There is a need for continuous Contingency Planning to identify potential project issues and associated risks and develop a preset approach for mitigating these issues if they arise and reducing

any risks associated with them. WSDOT has advanced this effort.

Findings:

WSDOT is developing a toll system that must accommodate a start up operation that is all electronic (no manual collections) and at the same time operate two existing tolling facilities. The requirements they have established go beyond anything in place today. Implementing this system far exceeds the difficulties experienced by most toll agencies that are migrating an existing system. Problems, conflicts, staffing needs and operational challenges must be anticipated. WSDOT has put a Contingency Planning process in place, which needs to be maintained as an ongoing function.

WSDOT should anticipate the worse in every case and prepare to address it.

Recommendations:

- A. Continue the contingency planning process.
- B. Recognize the worse case issues, especially as regards the startup of SR 520 and develop corrective actions to take if they are experienced.
- C. Anticipate the need to operate more of the system without vendor support and know what is needed to accomplish this.

4. Ensure Vendors provide sufficient resources

This project is among the most complex in the Tolling industry. Heavy reliance was placed by the contracts on the Vendors. Unfortunately, the Vendors promised more than they delivered.

Findings:

TransCore has been treating customers with 6c transponders as License Plate Customers at a time when full license plate functionality is not available.

ETCC has not delivered the systems at a reasonable timeframe (June) but it appears possible to have an operational system by the end of 2011.

Full Integration requires all vendors to work cooperatively. To date this has not been apparent.

Additional staffing should be anticipated by the Vendors for both programming and operations.

Recommendations:

- A. ETCC should improve the management for the back office and CSC. The ERP has seen some recent progress in this area and recommends it be continued and expanded. It is critical that ETCC commit to key staff throughout the startup period.
- B. Transcore as the vendor responsible for toll collection on the TNB needs to put new toll readers (or modules) on that facility which can accurately read the 6c transponders. It is unacceptable to continue treating all of these customers as License Plate Accounts on that facility. The Readers should be replaced as soon as possible.
- C. Televent should research and test alternative options for night illumination if the near infrared does not produce the quality required. The limitations on the use of light are critical but adjusting the cameras or looking for new ones could be valuable.
- D. ETCC should consider a second (not identical) OCR engine be used, one at the lane and one at the back office.
- E. Televent should consider implementing finger printing on the license plate lookups if the OCR positive reads do not meet 90%.
- F. Full financial systems are recommended, but determining which elements are critical for the initial period is needed. These sub-systems will be breaking new ground in the toll industry. It is important that at startup there is sufficient reliable data to fully account for all revenues, costs and improvements. The DOT should provide the Vendor with sufficient time to complete these elements but ensure that the final system is implemented within the first year. The Vendor needs to commit the resources to make this happen.

5. Implement additional best practices for long-term success

The WSDOT contract has placed unusual (in the toll industry) requirements on the Vendors. Some of these requirements have not been understood and therefore not achieved on time. The WSDOT system will establish new parameters and practices

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for the industry. It is important that the systems embrace the best practices from the industry while establishing new practices that will be encompassed by others.



Findings:

The contract requirements were not fully understood at the beginning of the project by the vendors.

WSDOT has not always been able to resolve disagreements among agency stakeholders in a timely manner, which is needed to direct vendors with a single voice.

Perceived (and probably real) State Policies have created unusual demands on the toll system.

Business Rules need to provide flexibility to manage the Toll program as a business, with focus on customer satisfaction and net revenues.

Available data is a resource to assist in preparing for next steps and should be used when possible.

The contract between WSDOT and its vendor has strong protections for the taxpayers of Washington State. The ERP recognizes the financial realities of vendors engaged in the tolling business and suggests where the State has incurred actual damages it is fully appropriate to require the contractor to cover those costs. However, where the damages involve delays in toll collection some consideration needs to be given to the overall cause of the delays. We note that liquidated

damages do not ensure project completion.

Recommendations:

- A. WSDOT should review with the Legislature its authority to provide certain flexibility to the Secretary. Key among these are:
 - a. Clarify that WSDOT has the authority to make prudent business rules in the pursuit of unpaid tolls. Nonpayment of a single toll should be evaluated for the potential to collect before an extensive pursuit is initiated.
 - b. WSDOT should have the ability to allocate costs based upon proportionality rather than try to identify each cost as being allocated to a specific project.
 - c. There should be some flexibility to allocate resources to emerging projects or critical needs. This may require fund transfers if full allocation is still mandated but clear authority for the Secretary to make such allocations may prove critical in the future.
 - d. As more facilities come on line there will be more common customers, so flexibility in cross utilization of equipment should be provided.
 - e. Allow the Secretary to establish grace periods for the issuance of Notice of Infractions to properly recognize system and operational priorities.
- B. Continue to use available data to improve service and better understand the customers. Data is available today, which could prove highly useful in identifying key trends and stress points in preparing for go live.
- C. Communications with customers should specifically address the need for maintaining accurate license plate data and for keeping the account balance or credit card number (and expiration date) current.
- D. Continue to foster improved relations with the media. Provide opportunities for the

media to fully understand the complexity of the systems.

- E. At the TNB be sure the video tolling elements (including OCR capabilities) are properly working at the back office before proceeding with video billing.
- F. While the business rules need to be fixed for a period after the go live date, during the first three months there should be a review to determine if any need modification. These can be planned for a scheduled systems update.
- G. Plan on running an annual end-to-end test on the system where actual probes with unusual conditions test each of the locations. Software changes and hardware degradation can negatively impact system performance over time. Staff who provide these test vehicles can be reimbursed for any expenses incurred as part of the test costs.
- H. Strong contract management does not end once a full system is available. Continuing to monitor the performance of the vendor and staff are key to long-term success of not only this project but also tolling in Washington.
- I. Consideration needs to be given to project completion and the overall cause for the delays in assessing Liquidated Damages. Here there may be other compensation options that reinforce the Agency's position going forward, have a real fiscal impact on the vendor but do not involve cash transfers. Access to the Code with the ability to make changes in the future; modifications in staffing of the CSC; acquisition of additional data centers, etc. all fit this concept. WSDOT should focus on getting the best possible system in the shortest time when determining damages.

The Expert Review Panel is pleased to submit to Secretary Paula Hammond our findings and recommendations based upon our review of the ongoing implementation of All Electronic Tolling in Washington. The Panel will continue to be available as a resource to both Secretary Hammond and the WSDOT tolling division as work to deploy tolling on State Route 520 continues and through the launch if desired.

Respectfully submitted,
The ERP