

**Alaskan Way Viaduct Replacement
Program Advisory Committee on
Tolling and Traffic Management**

**Advisory recommendations for
tolling the SR 99 tunnel
February 2014**



February 2014

It is our pleasure to submit the Advisory Committee on Tolling and Traffic Management's recommendations in accordance with the 2011 Alaskan Way Viaduct Replacement Project's Record of Decision and Seattle City Council's resolution 31323.

In 2009, the Washington State Legislature identified tolling as a funding source for the Alaskan Way Viaduct Replacement Program and in 2013, confirmed that tolling revenue should contribute \$200 million toward viaduct replacement construction. In 2011, the City of Seattle and the Washington State Department of Transportation (WSDOT) formed the Advisory Committee on Tolling and Traffic Management (ACTT Committee) to explore ways to toll the SR 99 tunnel to raise revenue while minimizing and mitigating diversion onto city streets and I-5.

The ACTT committee, appointed by WSDOT, the Seattle Mayor and the Seattle City Council, has met over the past two years to analyze how various SR 99 tunnel toll scenarios would affect revenue generation and traffic patterns. We have worked diligently to understand transportation dynamics in and around downtown Seattle and how these dynamics could be altered by key policy choices.

We recognize and value the significant investment that the Alaskan Way Viaduct Replacement Program and specifically the SR 99 tunnel play in improving mobility to and through Seattle. We have approached our task with the goal of successfully completing the program, which includes generating sufficient toll revenue to satisfy the project financing plan, while minimizing traffic diversion in order to maintain mobility for all modes, protect economic vitality and create opportunities for a world-class waterfront. We also recognize the unique nature of this corridor compared to other state facilities that are currently tolled or planned to be tolled in the future.

Throughout this process, the ACTT Committee has struggled with the challenging task of translating modeling data on traffic diversion and determining how diversion will not only impact drivers in the area and the broader multi-modal transportation network, but also the character and economic vitality of downtown Seattle. We are wary of the potential for unintended impacts from diversion on the community, particularly considering that traffic modeling and financial forecasting reflect a narrow perspective. Without careful and deliberate planning, tolling could undermine broader community mobility and livability goals.

The attached report describes the work of the ACTT Committee, the recommended toll strategy and policies that could help mitigate diversion. While our role is advisory in nature, we hope that our work will inform future SR 99 toll planning efforts led by various appointed and elected officials and agency staff.

We would be happy to provide a briefing or answer any questions about our work. For your reference, this report is available on the Alaskan Way Viaduct Replacement Program website: www.alaskanwayviaduct.org. Please contact the Alaskan Way Viaduct Replacement Program staff at viaduct@wsdot.wa.gov or 1-888-AWV-LINE (298-5463) with questions about this report.

We look forward to seeing progress on future traffic and revenue analysis, the rate setting process and implementation of tolling the SR 99 tunnel.

Sincerely,

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Advisory recommendations

1 Strategy for tolling the SR 99 tunnel and minimizing traffic diversion

After studying eight potential toll scenarios (see traffic and revenue analysis later in this report), the Advisory Committee on Tolling and Traffic Management (ACTT Committee) supports a tolling strategy similar to Scenario 7, which meets the \$200 million funding target for the program while minimizing diversion. Toll rates studied in Scenario 7 (\$1 tolls 24-hours per day with a \$1.25 toll during the 6 to 9 a.m. and 3 to 6 p.m. peak periods) generate more than \$1 billion in gross revenue over 30 years. In addition to paying for the required capital contribution, this revenue can pay for expenses such as toll collection costs, operations and maintenance of the tunnel and transportation system improvements needed to address diversion. Charging a toll 24 hours a day helps keep toll rates at a level that minimizes diversion while generating sufficient revenue. Approximately half of the gross revenue is earned during the morning and afternoon/evening peak periods, while the remainder is earned on weekends, during the midday and overnight. Diversion rates are approximately 20 percent during peak periods and 38 percent during daytime off-peak periods based on transportation model forecasts for year 2017.

Under Scenario 7, 20 percent diversion rates would result in approximately 3,500 vehicles diverting from the SR 99 tunnel onto north-south arterial streets through downtown (not including Alaskan Way) during the afternoon/evening peak period. This is the equivalent volume of

cars traveling on a three-lane street over a three hour period of time. This diversion causes added congestion and other effects during the peak periods compared to a non-tolled alternative. These impacts are substantial but the effects could be reduced if mitigation strategies discussed later in this report were implemented. Higher levels of diversion seen in other scenarios increase traffic volumes and cause significant impacts that may not be feasible to mitigate.

Diversion rates during the daytime off-peak periods could be higher (up to 30 percent) because of the unused capacity on city streets. The ACTT Committee is concerned about the higher level of diversion during the daytime off-peak periods for Scenario 7 and more analysis is needed to identify ways to minimize these diversion levels from 38 percent to less than 30 percent; some recommendations are included below.

Based on the analysis completed to date, we believe that increasing toll rates significantly higher than Scenario 7 would result in levels of diversion that would negatively impact the economic vitality of downtown Seattle due to the congestion created. The ACTT Committee considered other scenarios with higher toll rates, but those scenarios resulted in unacceptable levels of diversion during both peak and off-peak travel times. Those levels of diversion cause significant adverse impacts such as longer travel times for drivers, freight and buses on city streets or travel delay on I-5. Scenarios with lower toll rates were also considered, but they did not generate as much revenue.

The ACTT Committee understands the significant investment that the SR 99 tunnel represents and recognizes the fragile transportation system that exists around it. Minimizing diversion from the tunnel to city streets and I-5 helps to maximize the benefit of the tunnel and the overall efficiency of the region's transportation system.

To this end, the ACTT Committee believes the Washington State Transportation Commission should establish two utilization guidelines for the SR 99 tunnel: at least 80 percent utilization during peak periods and at least 70 percent utilization during daytime off-peak periods, compared to utilization of a non-tolled tunnel. Given the correlation between toll rates and diversion, these thresholds should serve as guidelines for the Washington State Transportation Commission's rate-setting process. If utilization were lower than these levels, toll rates would likely need to be decreased and if higher, tolls might need to be increased. These guidelines could also be used by the Office of State Treasurer and the Washington State Department of Transportation (WSDOT) to forecast revenues for purposes of financing the \$200 million capital requirement.

As stated above, Scenario 7 showed that toll rates in the vicinity of \$1.00 could generate more than \$1 billion in gross revenue over 30 years. This

level of revenue was generated based on the assumption that toll rates would escalate at a rate of 1.3 percent per year in order to keep pace with inflation. The ACTT Committee appreciates that the Office of the State Treasurer does not want to assume such escalation for purposes of debt financing. However, as a practical matter it seems unlikely that the toll rates would remain unchanged for 30 years and rate increases over time could generate revenue for investments other than the initial capital need. Including escalating rates generates an additional \$125 million over 30 years above a scenario with the same toll rates that do not adjust with inflation.

With regard to freight mobility, the ACTT Committee studied both a flat rate and a per-axle toll multiplier for freight. The ACTT Committee recommends applying the per-axle toll multiplier as it is consistent with the state's current tolling system and might result in slightly higher revenue. However, given the limited number of routes available for freight through downtown Seattle during the day,



A rendering of the SR 99 tunnel

freight diversion from the SR 99 tunnel may have a disproportionate effect on Alaskan Way. As such, the ACTT Committee recommends that toll rates for multi-axle vehicles be

evaluated closely based on meeting the goal of at least 80 percent utilization of the tunnel by trucks during peak periods and 70 percent during the daytime off-peak periods.

ACTT Committee's recommendation:

- A toll rate structure like Scenario 7 (\$1 tolls 24-hours per day with a \$1.25 toll during the 6 to 9 a.m. and 3 to 6 p.m. peak periods) generates sufficient revenue to support the \$200 million goal for capital project funding and pay for additional expenses such as toll collection costs, operations and maintenance of the tunnel and system improvements needed to address diversion.
- The ACTT Committee recommends establishing utilization guidelines of at least 80 percent utilization of the SR 99 tunnel during peak periods and at least 70 percent during daytime off-peak periods for both general purpose traffic and freight. Given the correlation between toll rates and diversion, this threshold should serve as a guideline in the Washington State Transportation Commission's rate-setting process and for the Office of State Treasurer in financing the project.
- While Scenario 7 is the most promising option for balancing revenue generation with diversion minimization, more work on the exact toll rate structure is needed to meet the goal of 70 percent tunnel utilization during daytime off-peak periods. With toll rates set at \$1.00 during this period, diversion to city streets and I-5 is about 38 percent. The ACTT Committee recommends that the Washington State Transportation Commission further investigate ways to minimize diversion during midday while maintaining revenue, which could include lowering the midday toll rate to \$0.75 and extending the afternoon/evening peak period from 6 to 7 p.m.
- The ACTT Committee's analysis has included an escalation rate of 1.3 percent per year to keep pace with inflation which we believe is realistic, given anticipated growth and our diversion threshold recommendations. The Committee understands that the Office of the State Treasurer may choose not to inflate toll rates when creating assumptions for purposes of financing the capital contribution to the project.
- As a starting point for setting freight toll rates, the ACTT Committee recommends applying the per-axle toll multiplier. Freight rates should continue to be evaluated based on the goal of 80 percent utilization of the tunnel for trucks during peak periods and 70 percent during the daytime off-peak periods.

2 Strategy for mitigating traffic diversion on city streets and I-5

A toll strategy similar to Scenario 7 presents a viable option for maximizing use of the tunnel and minimizing diversion while fulfilling the revenue need. However, even with this low-toll scenario that achieves the utilization goal, there is still concern about the level of diversion and the subsequent effect this could have on transit service along the SR 99 corridor, freight movements through downtown Seattle and access to Terminal 46 near the SR 99 tunnel south portal and preserving the character of the waterfront. Through its work, the ACTT Committee has learned about the variability of the regional transportation system. The traffic modeling cannot capture impacts to the transportation system due to special events, traffic incidents, operational changes and daily traffic fluctuations. This makes it challenging to predict how the SR 99 corridor will respond to future travel patterns, population growth and other factors.

The ACTT Committee reviewed a list of potential transportation system improvements to mitigate the effects of diversion. This comprehensive systems approach identified a set of multi-modal improvements that could help the transportation system operate efficiently with a tolled tunnel. These improvements focus on transit, freight and traffic efficiencies as well as bicycle and pedestrian safety. A representative list of strategies is included as Appendix B.

The ACTT Committee felt the following criteria were most important in evaluating system improvements to mitigate the effects

of diversion from the SR 99 tunnel. The improvement should be:

- Flexible and adaptable to a variable transportation system where future travel patterns may be difficult to forecast.
- Able to limit the impacts of diversion (increased delays or increased traffic volumes) in and around downtown Seattle.
- Easy to implement without requiring interest payments and other costs needed to finance large capital investments.

Having studied many alternatives, the ACTT Committee believes the most impactful mitigation strategy that meets the above goals is an investment in improvements to transit services serving the SR 99 corridor. Investments in transit services could be tailored to changing needs, deployed quickly and funded in a manner that is “pay as you go,” without requiring a large initial capital investment and the associated financing costs.

Transit is a significant mode of travel for employees and others along the SR 99 corridor. In 2012, 43 percent of commuters traveling into downtown Seattle used transit. WSDOT and the City of Seattle are working with King County Metro to prioritize transit movements. However, without mitigation, diversion from the SR 99 tunnel would result in increased traffic volumes in downtown Seattle and particularly near the tunnel portals, which would lead to delays for all travel modes, including transit. Enhancing transit service when tolling begins would help offset these impacts. Enhancing existing transit service could also improve reliability, providing more certainty in travel times for

bus riders and encourage increased use of transit as an alternative for drivers. More people shifting to transit could result in lower volumes of vehicles on city streets, which would improve the performance of the SR 99 corridor in more efficiently moving people and goods. Lower traffic volumes may also improve the safety and character of city streets for cyclists and pedestrians.

Transit investments were envisioned to be a key component of the Alaskan Way Viaduct Replacement Program suite of projects to help keep people moving efficiently and to help accommodate future growth in the region. In 2009, a significant investment in transit service was included in the multi-agency agreement to replace the Alaskan Way Viaduct: \$190 million in transit capital investments and a \$15 million annual investment in transit service. It was envisioned this would be funded by a one percent motor vehicle excise tax authority for King County which has not yet been secured.

WSDOT did fund \$32 million in transit service to reduce congestion in the SR 99 corridor and mitigate the impacts of construction-related delays on transit service. This funding paid for added transit trips during construction of the south end of the corridor. This investment has led to a 42 percent increase in transit ridership on these routes. Transit ridership between West Seattle and downtown has also grown significantly, increasing by more than 40 percent since 2009. The funding that supports these transit service investments expires in June 2014.

In addition to the success of transit investments in the SR 99 corridor,

transit service has been a key component in the SR 520 corridor. Before tolling began in 2010, King County Metro and Sound Transit increased service by 20 percent in this corridor. Since then, transit ridership has increased by 40 percent, growing from 15,000 to 21,000 riders. This is another example of transit service as a proven strategy in meeting travel needs in a tolled corridor.

This recommendation to invest in transit service on the SR 99 corridor does not mean that the other mitigation strategies evaluated are not necessary. Added traffic due to diversion from the SR 99 tunnel, particularly near the tunnel portals and on Alaskan Way, could have negative impacts on freight, transit, bicycle and pedestrian movements through those areas as well. As noted earlier, Appendix B contains a representative list of strategies to mitigate the effects that diversion under Scenario 7 would have on the transportation system.

The ACTT Committee understands the economic benefit of the SR 99 corridor, which serves Seattle's Duwamish and Interbay industrial areas. This corridor is crucial to the region's freight mobility and supports movement of \$30 billion in cargo value through the marine



King County Metro RapidRide

terminals each year. The port and maritime industrial sector's economic growth rely on infrastructure investments to increase trade and improve the region's competitiveness in global markets. Low cost, yet significantly beneficial improvements such as adaptive signal systems at key intersections could provide crucial mitigation for the effects of diversion, particularly for freight. These investments are a high priority and given the limited toll revenue and other priorities identified in the next section, the State and local agencies should work together to seek funding from sources other than tolls for these mitigation projects. Potential sources of funding for freight mitigation strategies include the Freight Mobility Strategic Investment Board, Puget Sound Regional Council, Washington State Transportation Investment Board, U.S. Department of Transportation's TIGER and FRATIS funding or when new sources of funding are provided for WSDOT and the City of Seattle's Intelligent Transportation System program. The ACTT Committee recommends the agencies pursue funding with consideration to current or future applications already planned by individual agencies.

Ensuring pedestrian and bicycle safety is a high priority for the ACTT Committee. Millions of tourists, workers and residents walk and

bike around downtown every year and these bicycle and pedestrian facilities are also critical to the overall efficiency of the downtown transportation system and to the downtown economy. Mitigation projects to ensure safe and accessible pedestrian and bicycle routes in the neighborhoods near the SR 99 tunnel portals (i.e., Pioneer Square, South Lake Union and Uptown) should be consistent with current state and local policies for the design of Complete Streets to ensure safety, livability and economic vibrancy of city streets. Investments in projects to mitigate impacts on those who work, live and play in the surrounding neighborhoods are a high priority and the ACTT Committee recommends State and local agencies seek funding outside toll revenue for these improvements.

The ACTT Committee believes that toll revenue has the potential to provide a meaningful investment for transit along the SR 99 corridor and recommends the State Legislature direct the Washington State Transportation Commission to further analyze this strategy. Policy direction has been established in RCW 47.56.820 (2)(d), which allows for the expenditures of toll revenues "to provide for the opportunities of conveyances of people and goods." As outlined in the next section, the ACTT Committee has identified our recommended priority uses of toll revenues.

ACTT Committee's recommendation:

- Annual funding for transit service investments should be highest priority to mitigate diversion.
- Agencies should identify and aggressively pursue alternate funding sources for other transportation system improvements which are also important to manage impacts of diversion on freight, transit, bicycles and pedestrians. Appendix B contains a representative list of improvements.

3 Prioritizing use of toll revenue

The ACTT Committee recognizes that the use of the toll revenue would need to be prioritized by policymakers. After paying for the \$200 million capital costs (plus financing) and for the toll collection costs (operations and maintenance of the toll collection system), the remaining revenue cannot cover all the identified items needing funding. These items include tunnel operations and maintenance, long-term tunnel systems repair and rehabilitation, and tunnel insurance as well as transit investments and other system improvements needed to mitigate for traffic that diverts from the tunnel. Additional information about these costs is included in the traffic and revenue analysis later in this report.

Scenario 7 would generate an estimated \$1.085 billion in gross revenue over 30 years. Based on the ACTT Committee's estimates, there is sufficient revenue to fund the \$200 million capital, toll collection costs, and tunnel operation and maintenance items with potentially some funding available for other investments in the corridor needed to address diversion. The ACTT Committee recommends the following order for use of toll revenue. Based on our work to date, this appears to be compatible with the state's priorities.

1. Toll collection costs (operations and maintenance of the toll collection system)
2. \$200 million capital costs (plus financing) for the SR 99 tunnel
3. Operations and maintenance of the SR 99 tunnel
4. Annual funding to enhance transit service on the SR 99 corridor

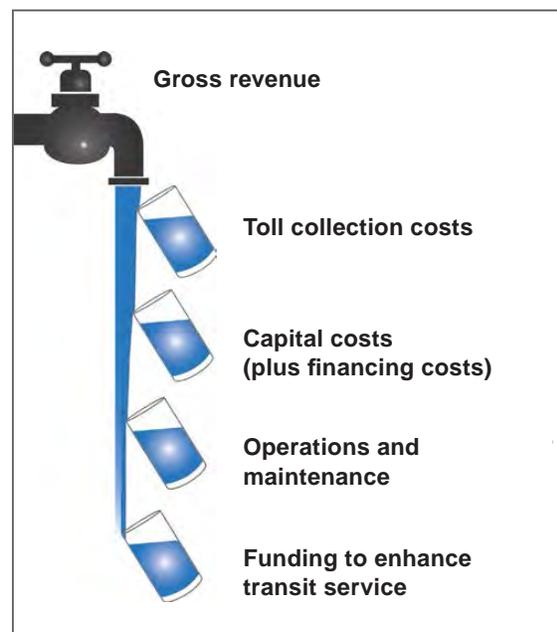
As stated earlier, the ACTT Committee believes that additional transit service offers the most flexibility to address diversion, in the context of a variable regional transportation system. That unpredictability makes it a challenge to forecast exactly how much and where diversion will occur in the SR 99 corridor as it responds to future travel patterns, population growth and other factors.

The ACTT Committee assumed the following estimated costs (over a 30 year period):

- Toll collection costs: \$350 million
- Capital costs for the SR 99 tunnel: \$200 million
- Operations and maintenance of the SR 99 tunnel: \$160 million

Financing costs for the \$200 million capital need are subject to financing methods that will be determined at a later date by the Office of the State Treasurer. However, in order to determine the potential revenue available for other uses such as mitigation, the ACTT Committee estimated that \$200

Recommended use of toll revenue



million to \$225 million should be reserved to cover financing costs. Remaining toll revenue in the order of \$150 million to \$175 million (\$5 million to \$6 million per year) could be available for enhancing transit service.

All cost assumptions included here may change. These estimates assume an annual escalation in toll rates. The ACTT Committee understands that revenue for transit investments would not be immediately available at the start of tolling and that the agencies will review alternatives for an initial funding source.

The ACTT Committee understands that there are additional long-term costs associated with tunnel system repair and rehabilitation as well as tunnel insurance. The costs for repair and rehabilitation are not immediate and funding may be available from toll revenue as the toll financing mechanisms begin to sunset. There is also a need for additional transportation system improvements beyond transit investments to mitigate for the effects of diversion. Given the limited toll revenue, the ACTT Committee recommends that the agencies work together to seek funding beyond toll revenue for these long-term tunnel costs and additional mitigation measures.

ACTT Committee's recommendation:

- The ACTT Committee recommends the following order for use of toll revenue:
 1. Toll collection costs (operations and maintenance of toll collection system).
 2. \$200 million capital costs (plus financing costs) for the SR 99 tunnel
 3. Operations and maintenance of the SR 99 tunnel.
 4. Annual funding for transit service on the SR 99 corridor.
- Given limited toll revenue and the priorities identified above, SR 99 tunnel repair and rehabilitation, tunnel insurance and additional transportation system improvements to mitigate the effects of diversion should come from sources other than toll revenue.

4 Local community and jurisdictional involvement in toll rate setting process

The ACTT Committee understands that there are additional planning efforts for SR 99 tolling in the next few years prior to the tunnel opening to traffic. The ACTT Committee encourages agencies and policymakers to use our recommendations and analysis to inform the future independent traffic and revenue analysis, finance planning, the Washington State Transportation Commission's rate-setting process and further discussions about the use of toll revenue. The ACTT Committee recommends the Washington State Transportation Commission proactively engage members of the ACTT Committee as well as the City of Seattle, King County and Port of Seattle during this process.

The ACTT Committee was originally charged with continuing its work through one year of toll implementation, anticipated to begin in 2016. However, there is concern about diversion and congestion along the waterfront

during construction of new Alaskan Way, which is expected to continue into 2018. The ACTT Committee feels that reviewing toll rates and the strategies to minimize diversion based on real-time conditions is particularly important during this time. As such, the ACTT Committee recommends reconvening on a periodic basis during the first two to three years after tolling begins and during construction of new Alaskan Way. The ACTT Committee also encourages ongoing agency coordination and review of construction sequencing to ensure that traffic impacts are minimized during waterfront construction and these first years of tolling.

Given the unpredictability of the future transportation system, the ACTT Committee recommends that a smaller review panel be convened by WSDOT and the City of Seattle to provide ongoing oversight of toll rates to maintain the balance between revenue generation and minimizing diversion. This panel would convene after the ACTT Committee's work is complete in 2018.

ACTT Committee's recommendation:

- Engage members of the ACTT Committee as well as the City of Seattle, King County and Port of Seattle during the rate-setting process and regarding the use of toll revenue.
- Continue the ACTT Committee for two to three years after tolling begins to review effects of tolling during construction on the waterfront.
- The State and City of Seattle should convene a small panel for ongoing oversight of toll rates to ensure a balance between revenue generation and diversion.

5 Further study of tolling highways within the Puget Sound area

Minimizing diversion from the SR 99 tunnel will be challenging because of the many alternate routes available for drivers traveling into and through downtown Seattle. This ease of diversion makes SR 99 different from other fully tolled routes in Washington state. As the region and state move forward with studying and tolling additional highways, diversion will continue to be a concern for all facilities, and especially for those with easily-accessible alternate routes. As the number of tolled facilities increases, there are also opportunities to incorporate efficiencies of scale. This could include investigating ways to lower toll collection costs as well as ensure a fair and equitable distribution of toll collection costs across the system.

A systems approach to tolling can help manage congestion, minimize diversion, lower costs and treat the regional transportation system holistically instead of as individual corridors or facilities. A logical, coordinated approach to the state's rollout of tolling will be critical to creating driver acceptance in order to maximize use of tolled facilities and ensure the efficient operation of the state's tolled facilities. The ACTT Committee recommends regional tolling be studied further.



Tolled facilities in Puget Sound

ACTT Committee's recommendation:

- The ACTT Committee sees value in a systems approach to tolling and recommends regional tolling be studied further.

SR 99 Tunnel Project background

The SR 99 Alaskan Way Viaduct, built in the 1950s, carried approximately 110,000 cars daily along Seattle's waterfront before the start of construction. The viaduct was already showing signs of age and deterioration when it was further weakened during the 2001 Nisqually earthquake. Initial environmental studies analyzed many replacement alternatives, including a cut-and-cover tunnel and new elevated structure. After a year-long stakeholder effort in 2008, state, county and city leaders signed a letter of agreement to replace the central portion of the viaduct with a bored tunnel, city street improvements and transit service. This alternative would allow SR 99 to remain open during the majority of construction, maintaining a vital north-south route through downtown Seattle.

In 2009, the Washington State Legislature passed ESSB 5768 authorizing the Washington State Department of Transportation (WSDOT) to pursue the tunnel project. This bill outlined the project's funding and directed WSDOT to pursue toll revenue as part of the budget. A final environmental impact statement was completed in 2011 followed by Federal Highway Administration's issuance of a Record of Decision approving the tolled tunnel. This final approval for the SR 99 tunnel required WSDOT and the City of Seattle to establish a tolling committee that would provide recommendations for ways to minimize traffic diversion from a tolled tunnel. In 2012, the Washington State Legislature passed SSB 6444 authorizing tolling of the SR 99 tunnel.



Alaskan Way Viaduct



SR 99 tunnel and Alaskan Way with connection to Elliott and Western avenues

The SR 99 tunnel will change the way traffic uses SR 99 in Seattle. Drivers approaching the tunnel from either direction will face a choice depending on their destination: use the tunnel to bypass downtown or exit to city streets and head into downtown. At the tunnel's north end, downtown access will be similar to today, with on- and off-ramps near Seattle Center. There will no longer be ramps at Elliott and Western avenues in Belltown or at Columbia and Seneca streets in downtown. The majority of traffic accessing downtown will use the new Alaskan Way surface street along the waterfront. From the north, a new roadway will connect Elliott and Western avenues to the new Alaskan Way. From the south, new on- and off-ramps near the stadiums will connect SR 99 to the new Alaskan Way. These new ramps and east-west connections between the new Alaskan Way and downtown will replace the function of today's Belltown and downtown viaduct ramps.

The SR 99 tunnel will be 57.5 feet in diameter and is being constructed using the world's largest tunneling machine. Tunneling began in summer 2013 and the SR 99 tunnel is scheduled to open to traffic at the end of 2015. Once the tunnel is open to traffic, the existing viaduct will be demolished and Battery Street Tunnel will be decommissioned. Following removal of the existing viaduct, the new Alaskan Way and connecting streets will be built.

Advisory Committee on Tolling and Traffic Management charge and formation

Formation of committee

WSDOT and the City of Seattle established the Advisory Committee on Tolling and Traffic Management (ACTT Committee) in fall 2011. The ACTT Committee was charged with making advisory recommendations on strategies for tolling the SR 99 tunnel to raise \$200 million for project construction, minimizing traffic diversion from the tunnel due to tolling and mitigating traffic diversion effects on city streets and I-5.

WSDOT, the Seattle Mayor and Seattle City Council jointly appointed the 15 committee members. Five members were nominated by each, and membership was confirmed by the Seattle City Council in resolution 31323. Members were selected to represent various interests, such as freight, local businesses, drivers, transit, and bicycle and pedestrian interests.



Advisory Committee on Tolling and Traffic Management

Committee work plan

The committee met 14 times between December 2011 and February 2014. Committee work during this time was divided into four phases.

Phase 1 – Reviewed tolling analysis done to-date, traffic conditions and traffic and revenue modeling.

Phase 2 – Discussed, evaluated and reviewed potential tolling scenarios and strategies to minimize diversion. This included two rounds of study. The committee published a progress report in late 2012 after reviewing the first round of toll scenarios.

Phase 3 – Began prioritizing strategies to minimize diversion and improve the transportation system with a tolled tunnel.

Phase 4 – Completed this report with the committee's recommendations.

Public engagement

Because the ACTT Committee is advisory and not a decision-making body, the ACTT Committee did not actively seek public input during its work. All ACTT Committee meetings have been open to the public and a public comment period has been available at the close of each meeting. The public will have the opportunity to comment on proposed toll rates and policies during the toll rate setting process led by the Washington State

Guiding principles

The ACTT Committee has worked to develop informed recommendations that are consistent with community values. To meet this goal, the ACTT Committee agreed on the following guiding principles to provide a framework for discussing potential traffic management and tolling scenarios.

1. Minimize diversion from the tunnel onto city streets.
2. Minimize diversion from the tunnel onto I-5.
3. Mitigate the anticipated adverse effects of traffic diversion.
4. Meet the State's funding obligation for the Alaskan Way Viaduct Replacement Program.
5. Identify funding for mitigation of diversion impacts.
6. Support Seattle's "Complete Streets" policy goals to make city streets function for bicycles, pedestrians, freight, transit and automobiles in strategies that are proposed to mitigate and minimize diversion impacts.
7. Support Seattle's waterfront and Center City policy goals to make the waterfront and downtown an enjoyable place for people to live, work, shop and play.
8. Support and maintain efficient use of city streets and I-5 for transit access into, within, out of and through downtown.
9. Support a vibrant maritime and industrial sector by maintaining efficient use of city streets and I-5 for freight access into, within, out of and through downtown.
10. Ensure that ACTT Committee recommendation(s) provide an effective integrated transportation solution across modes.

Transportation Commission. The ACTT Committee has provided updates on their work to the public and agency partners through the following ways:

Website

- Information about the ACTT Committee and meeting materials are available on the Alaskan Way Viaduct Replacement Program website.

Media stories

- Press releases were sent prior to ACTT Committee meetings.
- Media interviews were conducted with WSDOT staff and the ACTT Committee co-chairs.
- Resulted in more than 60 news stories in local Seattle media.

Briefings to community groups

- Program staff from WSDOT and the City of Seattle provided updates on the ACTT Committee's work at 12 community briefings.

Agency engagement

- Staff from WSDOT, the City of Seattle, King County, the Port of Seattle and the Puget Sound Regional Council met regularly to discuss ACTT Committee meeting materials.

Elected official outreach

- Program staff provided regular updates to the Washington State Transportation Commission, Seattle City Council and members of the Washington State Legislature.

Public comments

- The Alaskan Way Viaduct Replacement Program has received and responded to 18 public comments regarding the ACTT Committee's work.

Community events

- Program staff attended 24 transportation fairs and community festivals where tolling information was shared.



Advisory Committee on Tolling and Traffic Management

DRAFT

Traffic and revenue analysis

Toll Scenarios Studied

Prior to making recommendations, the ACTT Committee reviewed traffic and revenue data for eight potential toll scenarios. The ACTT Committee sought to find a balance between raising the necessary toll revenue for project construction while keeping vehicles from diverting away from the tunnel. During Round One, the ACTT Committee reviewed three scenarios that were chosen to help evaluate the effects of different policy choices. Round Two included Scenarios 4 – 7 which built upon and refined the results of the earlier scenarios. All of the toll scenarios assumed variable pricing.

Aside from toll rates, the variables explored in the committee's analysis included:

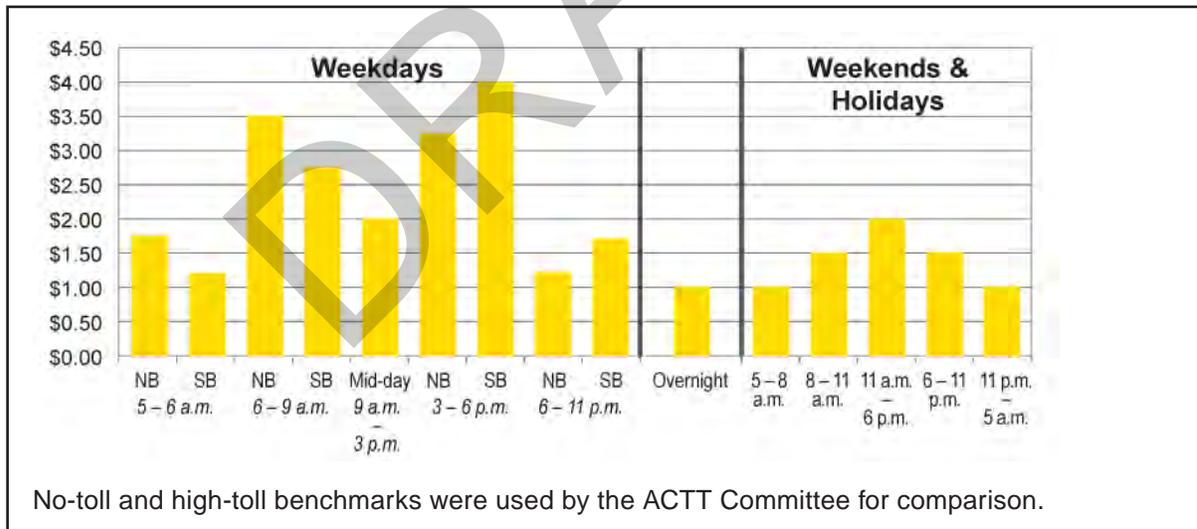
- Freight truck toll rates.
- Charging different toll rates by direction of travel.
- Tolling time periods.
- Toll rate escalation.

Below are the toll scenarios studied by the ACTT Committee as they worked to balance revenue goals while limiting diversion.

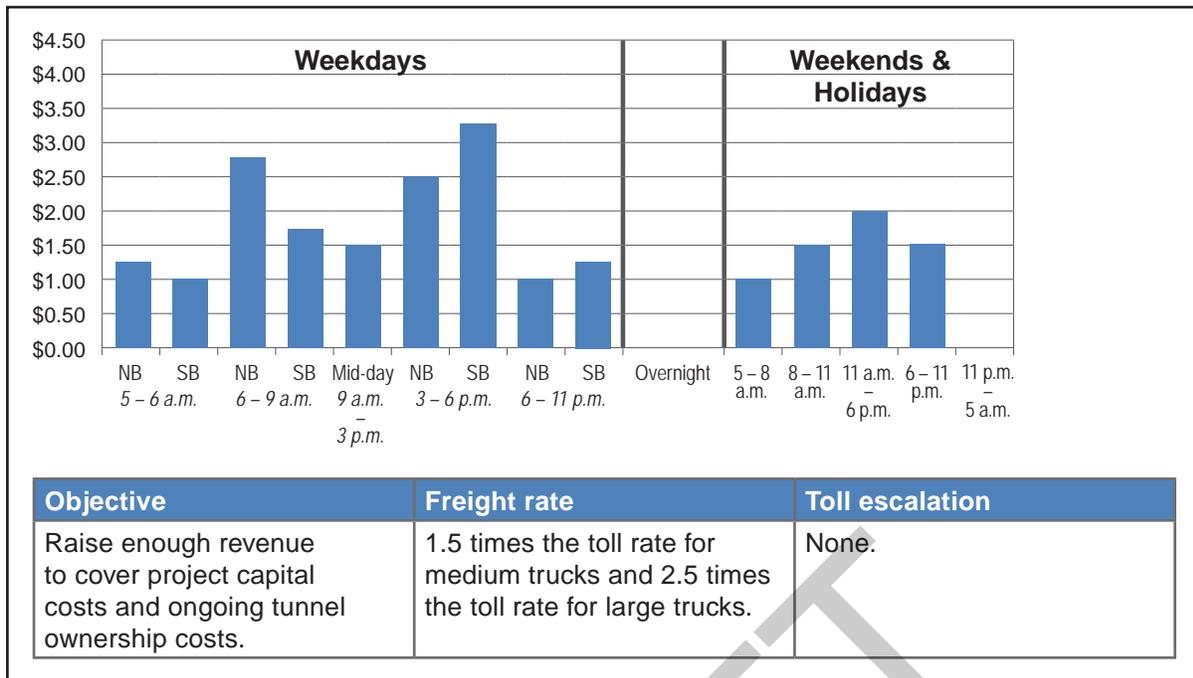
Variables including freight rates and toll rate escalation are noted.*

*For early scenarios, different rates were considered for northbound and southbound trips.

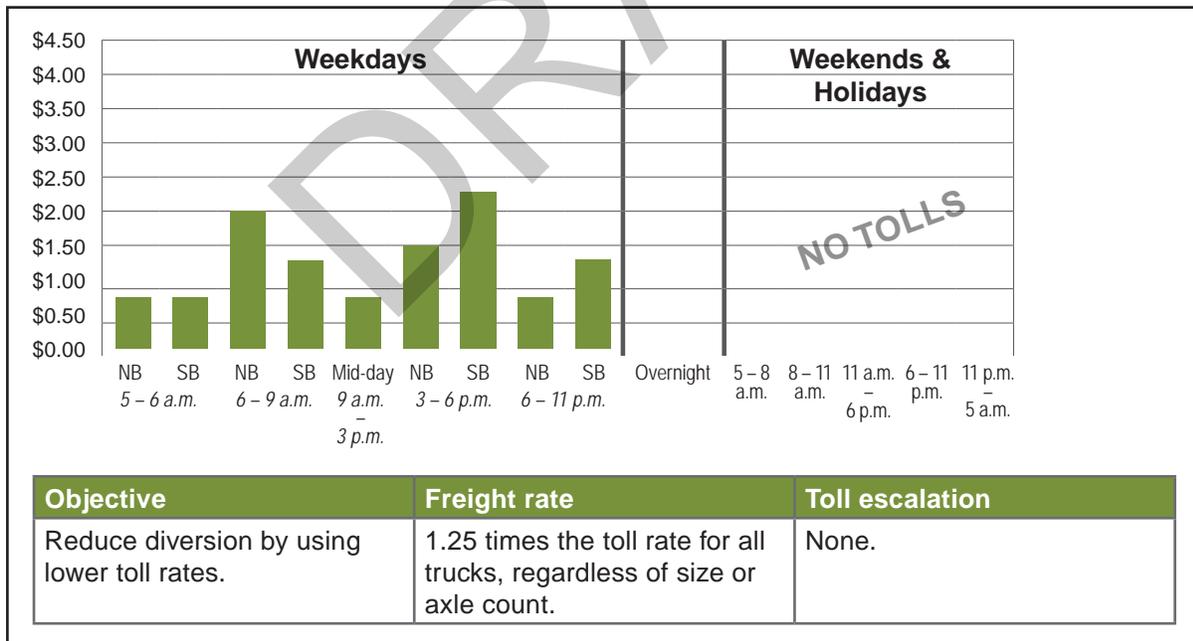
High toll benchmark



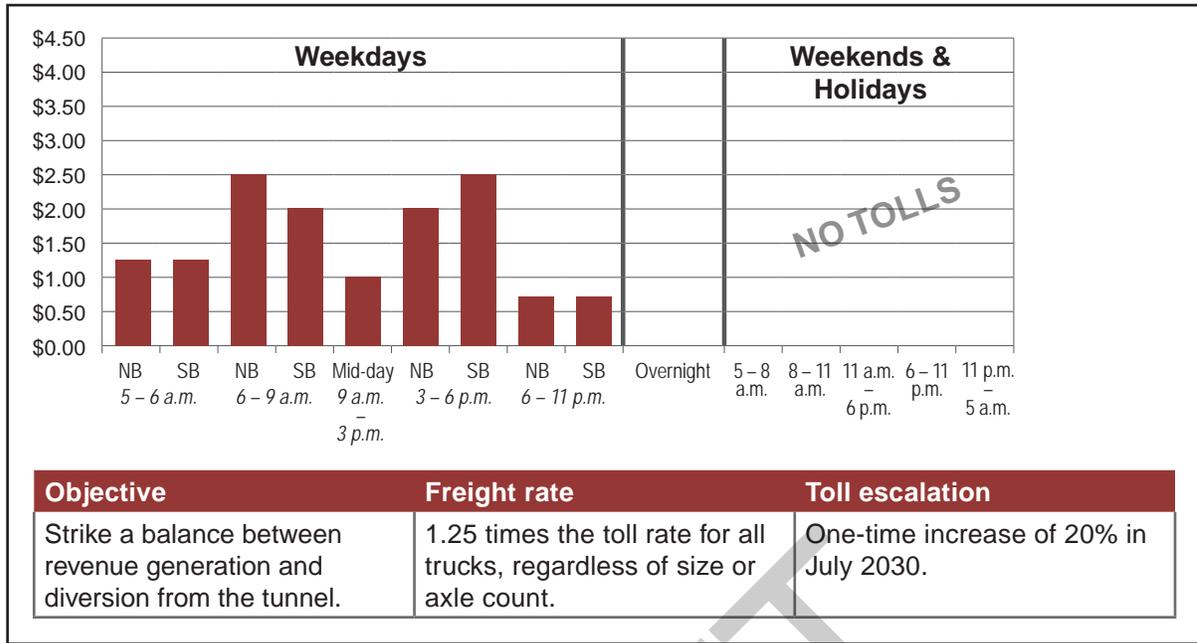
Toll rate structure - Scenario 1



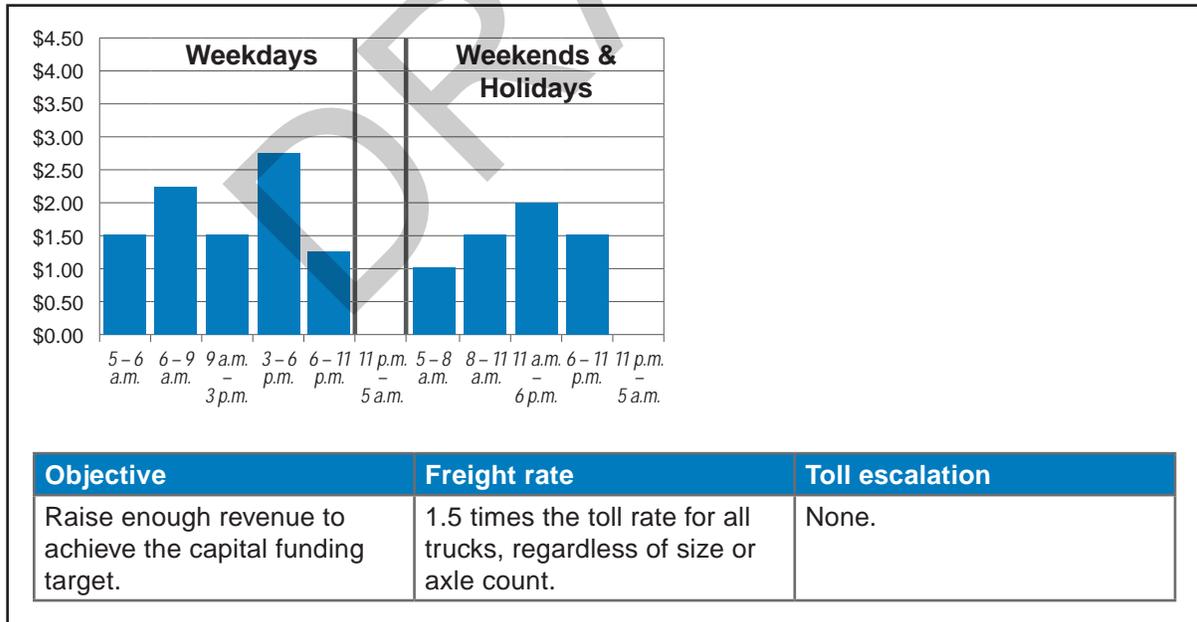
Toll rate structure - Scenario 2



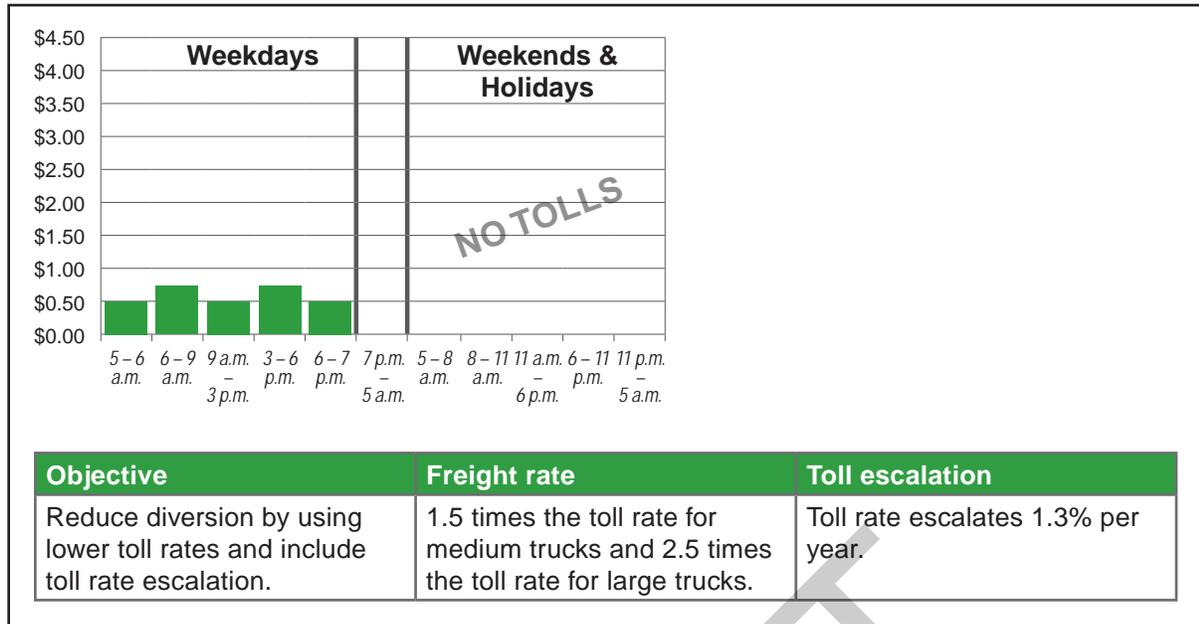
Toll rate structure - Scenario 3



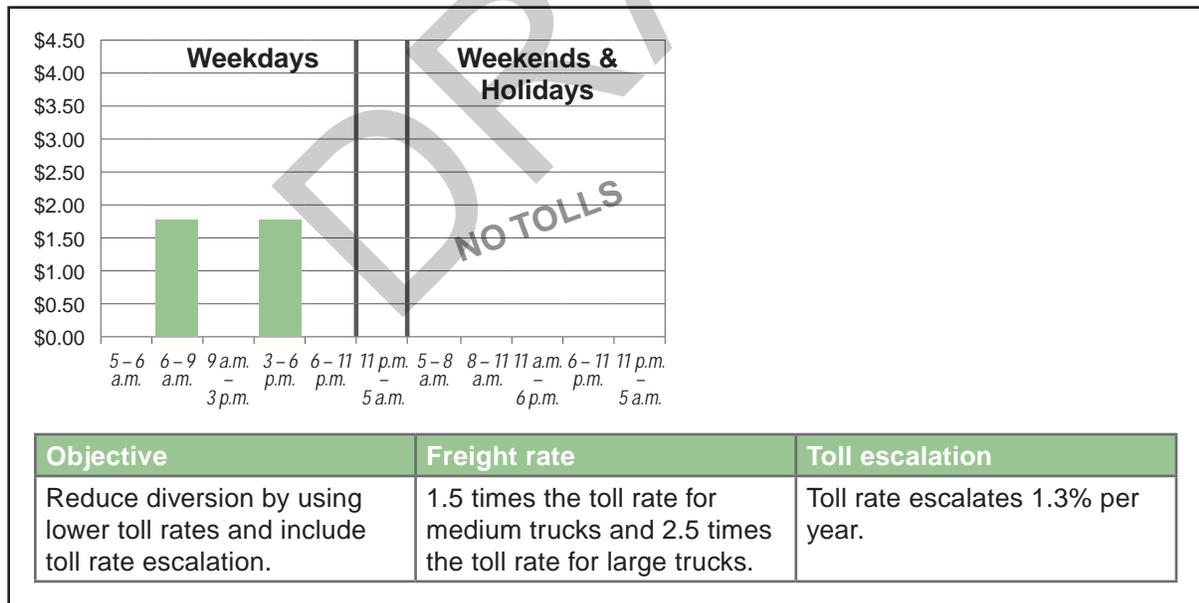
Toll rate structure - Scenario 4



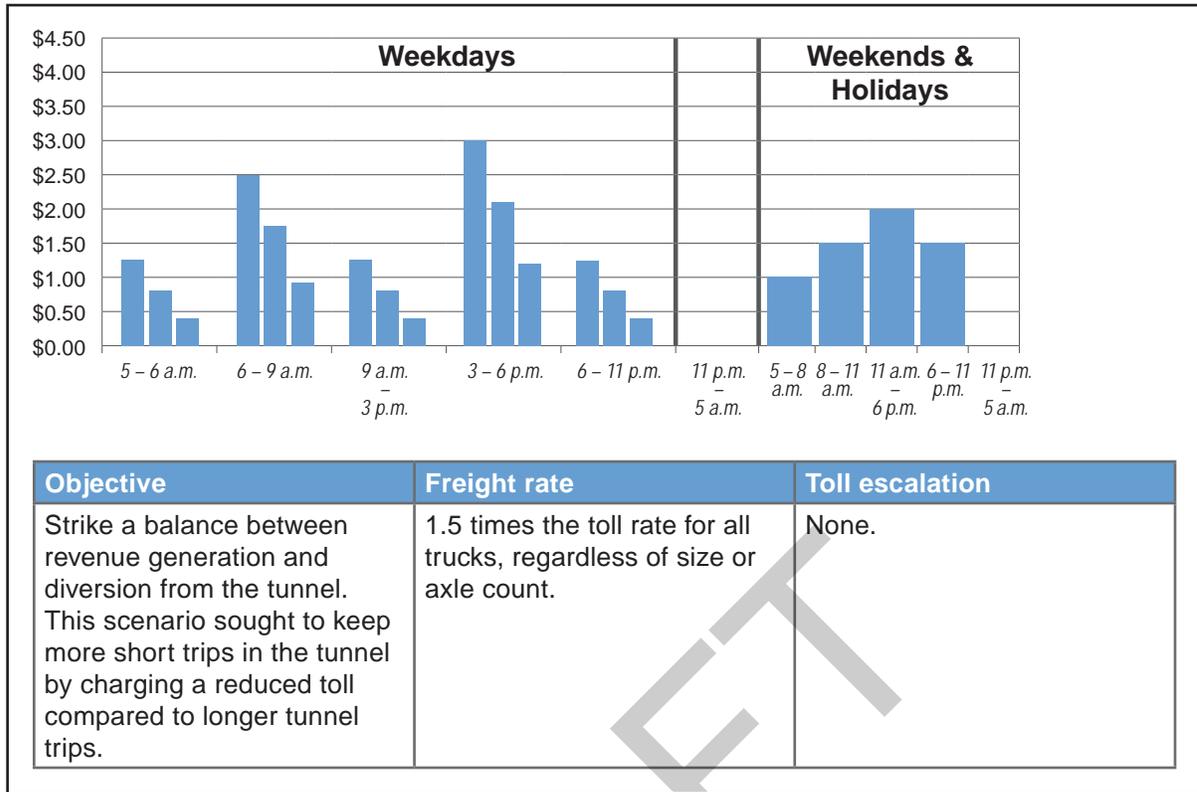
Toll rate structure - Scenario 5a



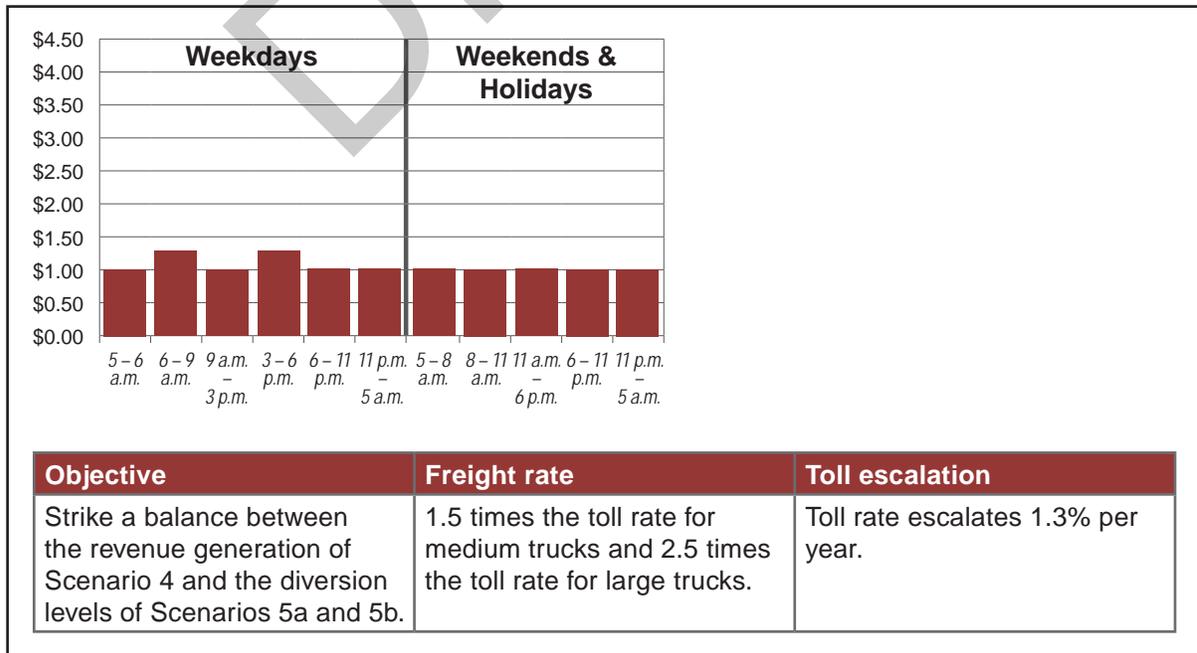
Toll rate structure - Scenario 5b



Toll rate structure - Scenario 6



Toll rate structure - Scenario 7



Traffic and diversion analysis

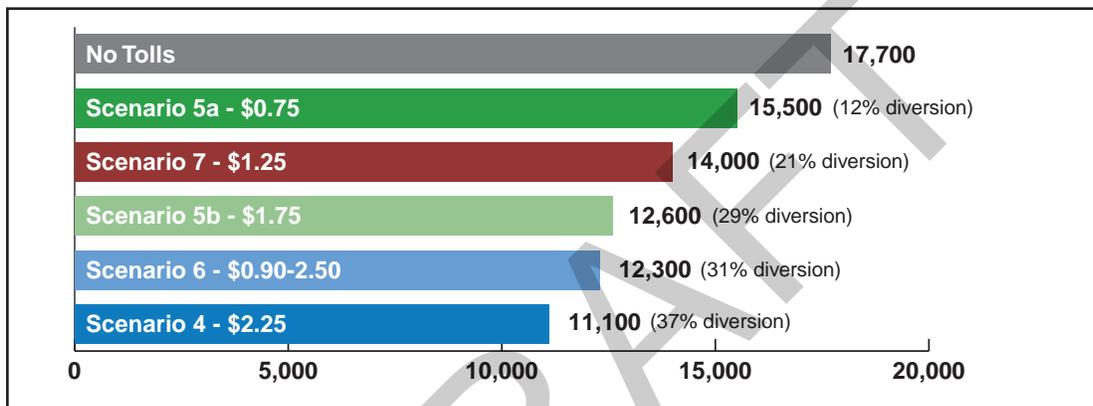
Under each tolling scenario, the ACTT Committee studied diversion, meaning the extra cars on city streets or I-5 when drivers choose alternate routes instead of the tolled tunnel. Because of the tunnel's location, drivers that divert have multiple route options through downtown Seattle. The charts below

show the number of vehicles which diverted from the tunnel for each scenario by time of day (for the year 2017)*.

*Small adjustments were made to the traffic model between Round 1 (Scenarios 1 - 3) and Round 2 (Scenarios 4 - 7) to improve accuracy of results. In addition, each time the traffic model is run, minor variations may occur in the data generated so the same toll will not necessarily result in exactly the same volume in the tunnel.

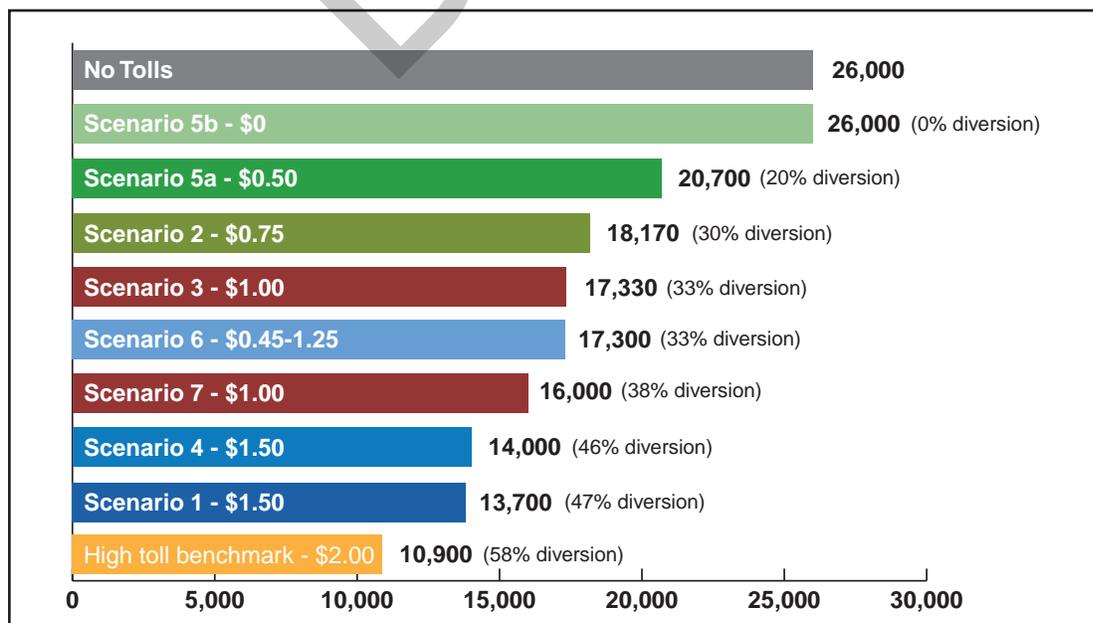
SR 99 tunnel volumes for all scenarios, year 2017

AM peak period*

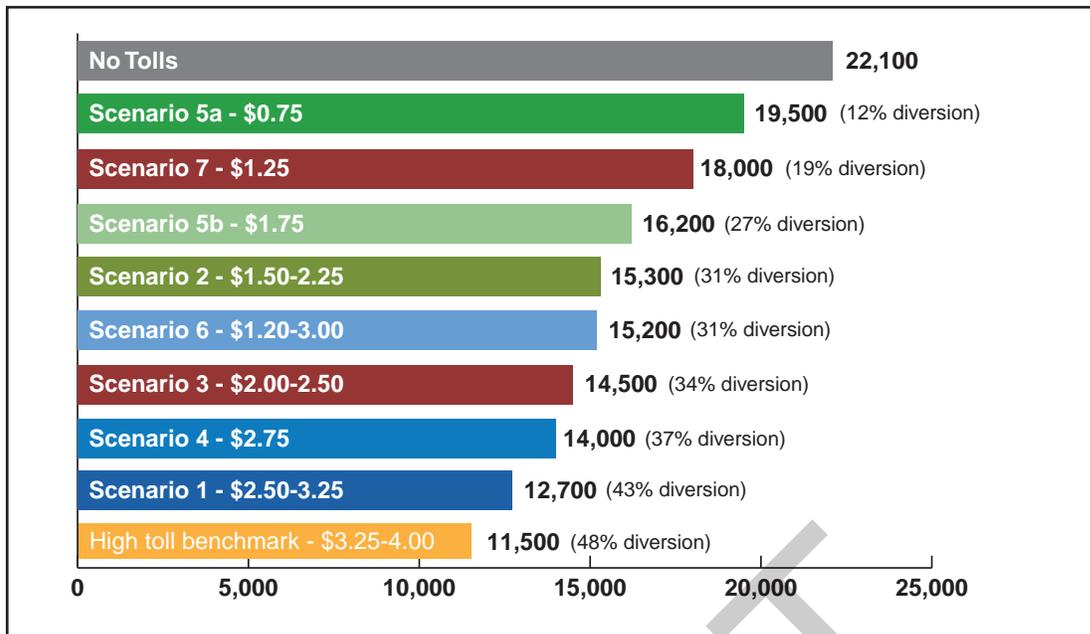


*Volumes were not modeled for Scenarios 1-3

Midday period

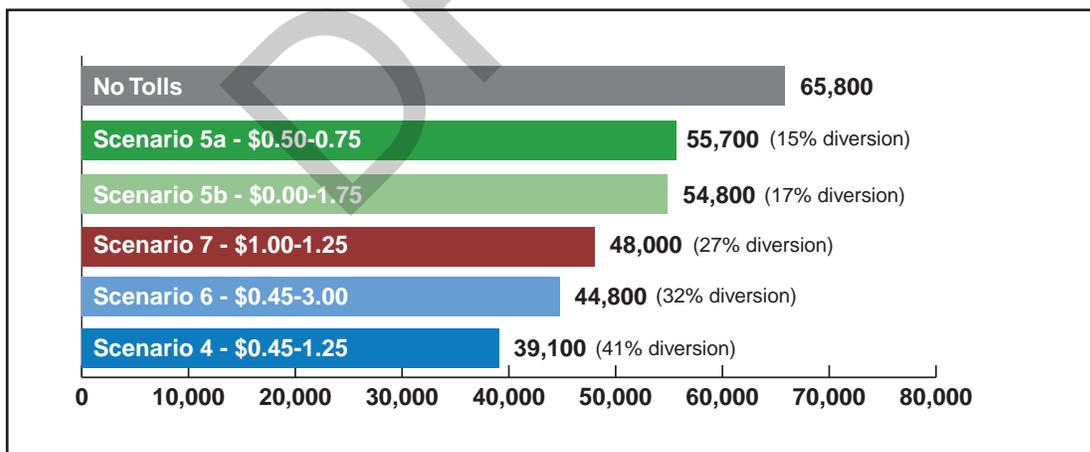


PM peak period



The ACTT Committee also found it helpful to review daily SR 99 tunnel volumes and the associated levels of diversion over a twelve-hour period.

Daytime 6 a.m. to 6 p.m.

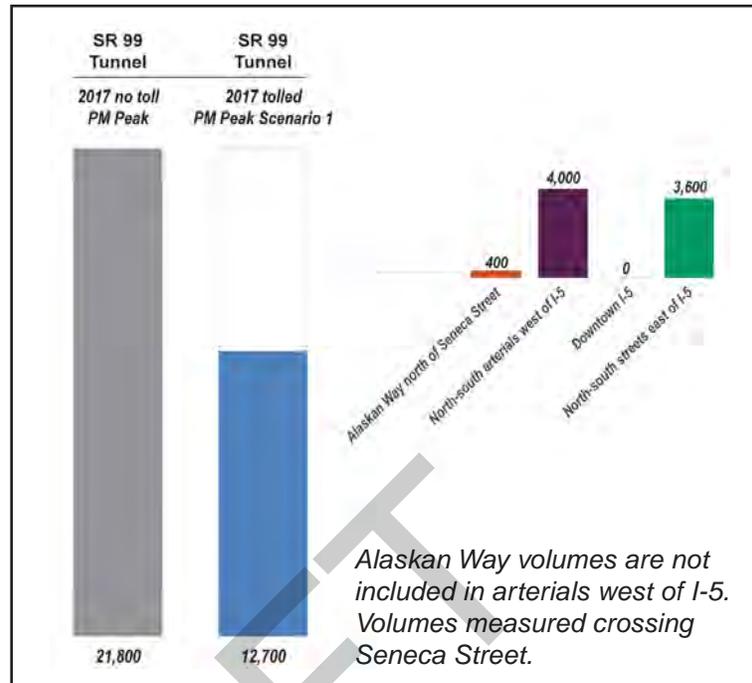


Cars that diverted from the SR 99 tunnel have several options for north-south routes through downtown Seattle. The charts below show the number of vehicles crossing Seneca Street in downtown Seattle and provide an estimate of where the diverted traffic would go during the afternoon/evening peak period. Traffic volume charts for Scenario 1, which generated the most diversion of Scenarios 1 - 7, and Scenario 7, which the ACTT Committee recommends, are included here.*

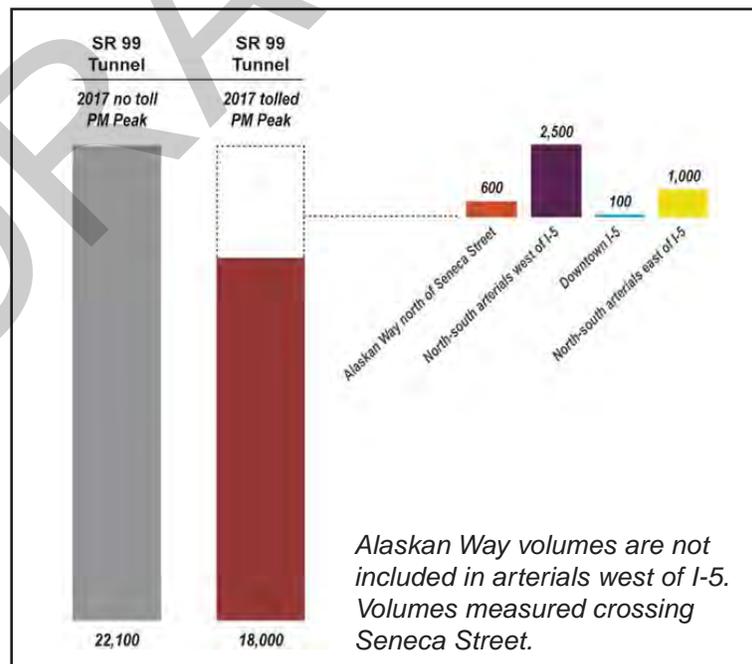
*Small adjustments were made to the traffic model between Round 1 (Scenarios 1 - 3) and Round 2 (Scenarios 4 - 7) to improve accuracy of results. Because of changes in the downtown circulation from diversion and localized congestion, some drivers will change their route, causing the volume to decrease at Seneca Street.

2017 Traffic volumes by location

Scenario 1 afternoon/evening peak period



Scenario 7 afternoon/evening peak period



The ACTT Committee also looked at vehicle hours of delay as another way to quantify diversion impacts. Vehicle hours of delay is generated by taking the total number of vehicles within the traffic model network and measuring the projected travel speed by scenario compared to free-flow vehicle speeds. Generally, as toll rates increase, the number of vehicles diverting to city streets increases and therefore vehicle hours of delay increases.

Vehicle hours of delay shows the number of hours that travelers spend on roadways at less

than optimal speeds. The ACTT Committee also used an estimated annual value of time to further quantify the impacts of diversion using the following equation.

Peak period vehicle hours of delay X 250 work days X \$18 per hour.

These numbers are not actual costs but represent the value of a person's time.

This value aggregates data for all vehicles traveling within the traffic model study area.

Estimated annual values of diversion studied by ACTT Committee

	No Toll	Scenario				
		4	5a	5b	6	7
2017 estimated peak period hours	36,600	44,600	38,000	39,800	42,900	40,000
2017 estimated annual peak period hours	9,150,000	11,150,000	9,500,000	9,500,000	10,725,000	10,000,000
Estimated annual value (hourly value of \$18)	\$165 million	\$201 million	\$171 million	\$179 million	\$193 million	\$180 million

Mitigation for the effects of diversion

When considering mitigation options to address diversion from the SR 99 tunnel, the ACTT Committee took a comprehensive transportation approach. This included considering the needs of various modes including cars, transit, bicycles, freight and pedestrians and how these modes operate within the transportation system. The ACTT Committee looked for strategies that would help the transportation system operate efficiently, limit the impacts of diversion and preserve the quality and character of downtown streets. A representative list of strategies for mitigating the diversion effects of Scenario 7 is included as Appendix B.

Revenue analysis

Revenue results for scenarios 1-7

	High Toll Benchmark	Scenario							
		1	2	3	4	5a	5b	6	7
Revenue collected from tolls*	\$1,340	\$1,220	\$770	\$980	\$1,270	\$600	\$610	\$1,260	\$1,085
Toll collection costs**	(\$280)	(\$300)	(\$260)	(\$260)	(\$320)	(\$280)	(\$160)	(\$360)	(\$350)
Revenues after collection costs	\$1,060	\$920	\$510	\$720	\$950	\$320	\$450	\$900	\$735

Numbers represent estimates for approximately 30 years. Costs are shown in millions of dollars.

*After adjustments for fees, credits and uncollectible accounts.

**Includes credit card fees and customer service center, state operations and roadway toll system costs. This amount could be lower with additional operational toll facilities.

The chart above represents the results of the revenue analysis on all eight scenarios.

The capital contribution assumed for the analysis is \$200 million. Items that the ACTT Committee considered tunnel tolls could also pay for are as follows:

Toll collection costs (vary by scenario, see chart above):

- These include costs for toll collection equipment, statewide customer service, credit card fees, postage for mailing invoices, state support staff and maintenance of the toll collection system.

Capital financing:

- The financing costs are unknown at this time and will depend on financing methods determined by the Office of the State Treasurer at a later date.

Operations and maintenance - \$160 million

- These costs could include incident response teams; maintenance of lighting, heating, ventilation and air conditioning, and electrical systems; maintenance of fire, life and safety systems.

Mitigation:

- The ACTT Committee's comprehensive systems approach to mitigating diversion identified a set of multi-modal improvements that could help the transportation system operate efficiently with a tolled tunnel. A representative list of strategies for mitigating the diversion effects of Scenario 7 is included as Appendix B. Costs vary depending on the mitigation strategy. Some scenarios with high diversion have effects that may not be feasible to fully mitigate.

Facility insurance for the SR 99 tunnel - \$55-85 million

- This is necessary to protect against potential loss of revenue if the tunnel and tolling have to be shut down temporarily. It also provides funding for repairs in the event of a catastrophic loss. The variation is due to coverage amounts and deductible levels.

Repair and rehabilitation for the SR 99 tunnel - \$190 million

- These costs could include repaving and restriping; replacement of fans and HVAC systems; and electrical and software upgrades for fire, life and safety systems.

General findings

- Across all scenarios (with the exception of Scenario 5b which did not toll during the midday period) diversion tends to be higher in the midday, on weekends or overnight when the system has greater unused capacity. This means drivers are more willing to divert to a different route if that route is less congested and could

offer them time savings or a comparable travel time.

- Across all scenarios, there is less diversion during the morning and afternoon/evening peak periods when there is more congestion within the transportation system and the tunnel may offer a faster or comparable trip.
- The ACTT Committee learned a great deal from the Round 1 scenarios and made a few adjustments for the Round 2 scenarios:
 1. Made toll rates the same for both northbound and southbound trips.*
 2. Some scenarios modeled toll rates that were increased annually by 1.3 percent versus a one-time increase.
 3. A scenario was crafted that attempted to attract shorter trips back into the tunnel.

*Based on observation from Round 1 scenario performance, where southbound drivers were charged more and subsequently were found to be more likely to divert from the tunnel.

Next Steps in toll rate setting process

These advisory recommendations will be shared with WSDOT, the Governor, Washington State Legislature, Washington State Transportation Commission, Federal Highway Administration, Seattle City Council and the Seattle Mayor. The ACTT Committee will also share these recommendations with its agency partners including King County, the Port of Seattle and the Puget Sound Regional Council. In 2014, WSDOT's Toll

Division will begin an investment-grade traffic and revenue study for tolling the SR 99 tunnel. WSDOT will seek bond authorization for the \$200 million capital contribution in 2015. Toll rates will be set by the Washington State Transportation Commission.

The ACTT Committee was originally charged with continuing its work through one year of toll implementation, anticipated to begin in 2016.

Appendix A

Advisory Committee on Tolling and Traffic Management formation documents:

- Seattle City Council Resolution 31323.
- Excerpt from Record of Decision for Alaskan Way Viaduct Replacement Project.
- Exhibit E from Memorandum of Agreement No. GCA 6486, Property, Environmental Remediation, Design Review, Permitting and Construction Coordination Agreement for the SR 99 Bored Tunnel Project.



City of Seattle Legislative Information Service

Information retrieved on November 4, 2011 10:43 AM

Resolution Number: 31323

A RESOLUTION concerning the Alaskan Way Viaduct and Seawall Replacement Program Advisory Committee on Tolling & Traffic Management; stating the Council's intent to convene the Committee to advise the City and the State on options and strategies to raise revenue and to minimize traffic diversion; and appointing some and confirming the membership of the Committee.

Status: **Adopted**

Date adopted by Full Council: **September 19, 2011**

Vote: **9-0**

Date introduced/referred to committee: **September 12, 2011**

Committee: **Transportation**

Sponsor: **RASMUSSEN**

Committee Recommendation: **Adopt**

Date of Committee Recommendation: **September 13, 2011**

Committee Vote: **4 (Rasmussen, Godden, Licata, O'Brien) - 0**

(No indexing available for this document)

Fiscal Note: [Fiscal Note to Resolution 31323](#)

Text

RESOLUTION _____

A RESOLUTION concerning the Alaskan Way Viaduct and Seawall Replacement Program Advisory Committee on Tolling & Traffic Management; stating the Council's intent to convene the Committee to advise the City and the State on options and strategies to raise revenue and to minimize traffic diversion; and appointing some and confirming the membership of the Committee.

WHEREAS, in the 1950s, the City of Seattle and the Washington State Department of Transportation jointly designed and built the Alaskan Way Viaduct to accommodate passenger and freight mobility into the foreseeable future; and

WHEREAS, in 2001 the Nisqually earthquake damaged the Alaskan Way Viaduct and Seawall; and

WHEREAS, the Alaskan Way Viaduct and Seawall are at risk of sudden and catastrophic failure in an earthquake and are nearing the end of their useful lives; and

WHEREAS, various studies have determined that it is not fiscally responsible to retrofit the viaduct, and that retrofitting would cause significant construction impacts; and

WHEREAS, the proposed Alaskan Way Viaduct and Seawall Replacement (AWVSR) Program consists of a four-lane bored tunnel and improvements to City streets, the waterfront, and transit, and the Moving Forward Projects; and

WHEREAS, in October 2009, the City Council passed and the Mayor signed Ordinance Number: 123133, which established the Bored Tunnel Alternative as the City's preferred alternative and which authorized a memorandum of agreement between the State of Washington and the City of Seattle; and

WHEREAS, that agreement contemplated that the State and City would negotiate further agreements detailing the State and City's relative rights and responsibilities in the State highway project; and

WHEREAS, In August 2010, the City Council passed Resolution Number: 31235, which expressed the City Council's intent to authorize additional agreements with the State if:

- 1) The State awarded a contract consistent with the Draft Design-Build Contract;**
- 2) The State demonstrated it could complete all elements of Washington State Department of Transportation's (WSDOT) Program within the Program Budget;**
- 3) The State provided the City with clear documentation identifying all changes between the Draft Design-Build Contract and the awarded construction contract; and**
- 4) The State Legislature has not enacted legislation to overturn WSDOT's responsibility for Program costs, including cost overruns, as set out in the proposed agreements between the State and City; and**

WHEREAS, those conditions have been met; and,

WHEREAS, Resolution 31235 also restated the City's policy that the State is solely responsible for all costs, including any cost overruns, related to implementing WSDOT's Program;

WHEREAS, Ordinance 123542 accepted Interlocal Agreements offered by WSDOT in order to protect the City's vital interests;

WHEREAS, Exhibit E to the interlocal agreement between SDOT and WSDOT (one of the Interlocal Agreements) calls for the establishment of an Advisory Committee on Tolling & Traffic Management to advise the state and city on strategies to toll the tunnel while minimizing traffic diversion and mitigating diversion impacts on City streets; and

WHEREAS, the State and City have published a completed Final Environmental Impact Statement (FEIS) identifying the Tolloed Bored Tunnel as the preferred alternative; and

WHEREAS, and the Federal Highway Administration issued a Record of Decision approving the decision to construct the preferred alternative identified in the FEIS; NOW, THEREFORE,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SEATTLE, THE

MAYOR CONCURRING, THAT:

Section 1. The Council intends to convene the Alaskan Way Viaduct and Seawall Replacement Program (AWVSRP) Advisory Committee on Tolling & Traffic Management (ACTT) to advise the City and the State on options and strategies to raise revenue and to minimize traffic diversion.

Section 2. The City Council appoints the following five individuals to serve on ACTT who will carry out the tasks and duties as set out in Sections 4-7 of this Resolution:

- 1. Charley Royer**
- 2. Henry Yates**
- 3. Bob Davidson**
- 4. Rob Johnson**
- 5. Phil Fujii**

The City Council hereby confirms the following five individuals who were appointed by the Mayor to serve on the ACTT to carry out the tasks and duties as set out in Sections 4-7 of this Resolution:

- 1. Anne Goodchild**

2. Marcus Charles
3. Sharon Maeda
4. Peg Staehli
5. Tessa Greigor

The City Council hereby confirms the following five individuals who were appointed by Washington State Department of Transportation (WSDOT) to serve on the ACTT to carry out the tasks and duties as set out in Sections 4-7 of this Resolution:

1. Maud Daudon
2. Sung Yang
3. Claudia Balducci
4. Kurt Beckett
5. Rick Bender

Section 3. The ACTT will be staffed by managers or policy level staff from WSDOT, SDOT, Port of Seattle, King County, and Council central staff. Staffing will be supported by technical staff from each of the agencies and/or consultant support. The role of staff will be to manage the ACTT's work plan, develop a schedule, frame issues, and review and format technical data for the ACTT's review. WSDOT and the City of Seattle will manage resources from the state's AWVSRP budget to cover mutually agreeable staffing and consultant costs to support the ACTT. WSDOT and the City will jointly facilitate these meetings.

Section 4. The ACTT will make advisory recommendations to WSDOT, the Governor, the Legislature, the Transportation Commission, the Federal Highway Administration (FHWA), the Seattle City Council, and the Seattle Mayor on strategies for:

- (1) tolling the SR99 bored tunnel;
- (2) minimizing traffic diversion from the tunnel due to tolling; and
- (3) mitigating traffic diversion effects on city streets and I-5.

These recommendations may be implemented by the State, City of Seattle, Port of Seattle, and/or King County as appropriate. Authority for tolling will require future action by the State Legislature, while tolling rates are within the purview of the Washington State Transportation Commission.

Section 5. The ACTT is expected to begin work in October 2011, and it will submit its initial tolling and diversion minimization recommendations by December 2012. Interim milestones will be established by the staff in conjunction with the ACTT members.

Section 6. The ACTT is expected to continue working to refine its analysis and recommendations through December 2015 (when the deep bored tunnel is anticipated to open to traffic and also when toll implementation begins). The ACTT will continue its work for up to one year after tolling begins to review the effects of the implemented tolling and diversion minimization strategies and to make further recommendations.

Section 7. The work of the ACTT will take place through an iterative process of reviewing financial goals, assessing the impact of different tolling strategies on traffic using the SR 99 bored tunnel, and evaluating a range of strategies to minimize diversion. The tasks of the committee will include:

- A. Review anticipated traffic impacts on City streets and I-5 for different tolling scenarios.
- B. Explore ways to:
 - 1) Refine the tolling strategy for the SR 99 bored tunnel, including considering variable toll rate, and regional tolling and/or tolling of other state and city facilities.

2) Reduce the level of toll revenue to the bored tunnel project by identifying alternative funding source(s).

3) Optimize the tolling strategy for the SR 99 bored tunnel to balance accomplishing state funding goals while minimizing diversion of traffic.

C. Assess various strategies for minimizing and mitigating adverse effects of traffic diversion from tolled SR99 onto city streets through optimizing traffic flows and/or restricting or limiting traffic, including, but not limited to:

1) Setting priorities for street use by time of day for various users (cars, trucks, bicycles, pedestrians, transit, parking consistent with City's complete streets policy goals;

2) Identify opportunities for traffic calming, and other restrictions on certain modes of travel;

3) Creating "transit first" policies through transit priority streets and other methods to improve transit speed and reliability;

4) Using other traffic demand management measures;

5) Funding enhanced transit services and vanpools.

D. Assess various strategies for minimizing and mitigating diversion of traffic onto I-5 and other state facilities through optimizing traffic flow and/or restricting or limiting traffic, including, but not limited to:

1) Modifying I-5 operations, including the express lanes and on and off-ramps in the City;

2) Extending the use of intelligent transportation systems on I-5 through the City.

E. Develop specific transportation plans for the north and south portal areas to more specifically identify street uses, traffic flows, and treatments. This work should also implement other recommendations of the Center City Strategy.

Adopted by the City Council the ____ day of _____, 2011, and signed by me in open session in authentication of its adoption this _____ day of _____, 2011.

President _____ of the City Council

THE MAYOR CONCURRING:

Michael McGinn, Mayor

Filed by me this ____ day of _____, 2011.

City Clerk

(Seal)

Dan Eder/de Alaskan Way Viaduct Replacement Tolling Committee Resolution August 31, 2011 Version #3a



Alaskan Way Viaduct Replacement Project Record of Decision

August 2011

Document available online:

<http://data.wsdot.wa.gov/publications/viaduct/FEISComments/AWV-ROD-08222011.pdf>

Excerpt from Project Commitments - Transportation Mitigation section, pg. 24

WSDOT will seek a practicable long-term tolling solution to minimize traffic diversion in order to optimize operation of the transportation network for all users. Strategies for optimization will be developed by the Tolling Advisory Committee (TAC), which will be established by WSDOT and the City, as outlined in Section 2.12 of Memorandum of Agreement (MOA) GCA 6486. When the TAC completes the first phase of its work in 2012 and in further phases, WSDOT and the City will jointly review the recommendations developed by the TAC. For improvements on state facilities or requiring state funding, WSDOT will recommend the strategies developed by the TAC (or other strategies, as appropriate) to the State Transportation Commission and seek funding for such strategies. WSDOT will work with the State, City, Port of Seattle, and King County in order to implement TAC strategies or other tolling mitigation strategies. Subject to legislative appropriation, WSDOT will fund recommendations agreed to by WSDOT and the City. If needed, additional environmental analysis may be performed to evaluate the potential effects of proposed strategies before implementation.

Mitigation strategies developed by the TAC will be monitored by measures of effectiveness developed by WSDOT and the City with input from the TAC. The measures of effectiveness will be developed to monitor the specific recommendations from the TAC; measures would likely include vehicle volumes in the bored tunnel and on specific city streets and I-5, travel times between specific points, levels of service at specific intersections surrounding the south and north portals, and revenue generation. The public will have an opportunity to comment on the measures of effectiveness to WSDOT and the City.

The TAC is expected to refine its analysis and recommendations through 2015 when toll implementation is expected to begin. Once the mitigation strategies recommended by the TAC are implemented, regular reporting will be provided to the TAC and the public based on the measures of effectiveness. The TAC will continue its work for up to 1 year after tolling begins to review the effects of tolling and strategies to minimize diversion. If measurements show that mitigation strategies are not achieving the desired results, they may be modified or additional mitigation may be recommended.

NO. GCA 6486

Exhibit E

Advisory Committee on Tolling & Traffic Management

Charge: Make advisory recommendations to WSDOT, the Governor, the Legislature, the Transportation Commission, the Federal Highway Administration (FHWA), the Seattle City Council, and the Seattle Mayor on strategies for: (1) tolling the SR99 bored tunnel, (2) minimizing traffic diversion from the tunnel due to tolling, and (3) mitigating traffic diversion effects on city streets and I-5. These recommendations may be implemented by the State, City of Seattle, Port of Seattle, and/or King County as appropriate. Authority for tolling will require action by the State Legislature, while tolling rates are within the purview of the Transportation Commission.

Staffing: The Advisory Committee will be staffed by managers or policy level staff from WSDOT, SDOT, Port of Seattle, King County, and Council central staff. Staffing will be supported by technical staff from each of the agencies and/or consultant support. The role of staff will be to manage the Advisory Committee's work plan, develop a schedule, frame issues, and review and format technical data for the Advisory Committee's review. WSDOT and the City of Seattle will manage resources from the state's Alaskan Way Viaduct and Seawall Replacement Program budget to cover mutually agreeable staffing and consultant costs to support the Advisory Committee. State and City will jointly facilitate these meetings.

Membership: The Advisory Committee will be comprised of up to 15 members. The Mayor; Seattle City Council; and WSDOT will each appoint one-third of the members. All members will be confirmed by Council. Advisory Committee membership should represent the following types of interests: Freight, retail, drivers, labor, bicycle and pedestrian interests, large employer, waterfront business, adjacent and affected neighborhoods, transit riders, low-income, and others.

Timeline: The Advisory Committee will begin work in March 2011, and it will submit its initial tolling and diversion minimization recommendations by June 2012. Interim milestones will be established by the staff in conjunction with the Advisory Committee members.

The Advisory Committee is expected to continue working to refine its analysis and recommendations through December 2015 (when the deep bored tunnel is scheduled to open to traffic and toll implementation begins). The Advisory Committee will continue its work for up to one year after tolling begins to review the effects of the implemented tolling and diversion minimization strategies and to make further recommendations.

Scope of Work:

The work of the Advisory Committee will take place through an iterative process of reviewing financial goals, assessing the impact of different tolling strategies on traffic using the SR 99 bored tunnel, and evaluating a range of strategies to minimize diversion. The tasks of the committee will include:



1. Review anticipated traffic impacts on city streets and I-5 for different tolling scenarios.
2. Explore ways to:
 - a. Refine the tolling strategy for the SR 99 bored tunnel, including considering variable toll rate, and regional tolling and/or tolling of other state and city facilities.
 - b. Reduce the level of toll revenue to the bored tunnel project by identifying alternative funding source(s).
 - c. Optimize the tolling strategy for the SR 99 bored tunnel to balance accomplishing state funding goals while minimizing diversion of traffic.
3. Assess various strategies for minimizing and mitigating adverse effects of traffic diversion from tolled SR99 onto city streets through optimizing traffic flows and/or restricting or limiting traffic, including, but not limited to:
 - a. Setting priorities for street use by time of day for various users (cars, trucks, bicycles, pedestrians, transit, parking consistent with City's complete streets policy goals;
 - b. Identify opportunities for traffic calming, and other restrictions on certain modes of travel;
 - c. Creating "transit first" policies through transit priority streets and other methods to improve transit speed and reliability;
 - d. Using other traffic demand management measures;
 - e. Funding enhanced transit services and vanpools.
4. Assess various strategies for minimizing and mitigating diversion of traffic onto I-5 and other state facilities through optimizing traffic flow and/or restricting or limiting traffic, including, but not limited to:
 - a. Modifying I-5 operations, including the express lanes and on and off-ramps in the City;
 - b. Extending the use of intelligent transportation systems on I-5 through the City.
5. Develop specific transportation plans for the north and south portal areas to more specifically identify street uses, traffic flows, and treatments. This work should also implement other recommendations of the Center City Strategy.



Appendix B

**Transportation system
improvements considered by
Advisory Committee on Tolling
and Traffic Management.**

Representative list of transportation system improvements considered by the Advisory Committee on Tolling and Traffic Management

September 2013

The ACTT Committee reviewed a list of potential transportation system improvements to mitigate the effects of diversion. This comprehensive systems approach identified a set of multi-modal improvements that could help the transportation system operate efficiently with a tolled tunnel. These improvements focus on transit, freight and traffic efficiencies as well as bicycle and pedestrian safety. Below is a representative list of these strategies.

Transit

Strategy	Overview / benefit
Burien / Delridge RapidRide service	Increases service frequency for 8,500 daily riders; expected to grow to 13,000 in five years. Helps meet increased demand for trips.
Separate RapidRide C (West Seattle) and D (Ballard-Crown Hill) lines	Allow lines to operate as separate routes. Improves reliability for 6,200 daily riders of the C line and 8,300 daily riders of the D line. Helps meet added demand for trips.
Implement new service to South Lake Union (extend all day service on RapidRide C line or peak-only service from southwest Seattle). Includes transit hub in South Lake Union	Supports increased transit service to growing South Lake Union market and improves access and connectivity in South Lake Union.
Transit priority treatments in the downtown core	Improves travel time and reliability for riders. Helps reduces impact from increased traffic volumes.
Continue viaduct construction mitigation service levels on high productivity routes serving the SR 99 corridor.	Sustains added service on routes serving West Seattle and peak commute trips on routes serving Ballard and Aurora corridors.

Freight

Strategy	Overview / benefit
Adaptive signal systems in SODO and south portal area	Signal system can respond with more precision to fluctuating traffic volumes. Benefits general purpose and transit.
Port terminal and SODO dynamic routing and access information on I-5, I-90 and key arterials (e.g. Travel time and electronic signs)	Facilitates freight movement to/from Port terminals due to variability in traffic levels and congestion in this area.

East Marginal Way truck emphasis strategies from Spokane Street to Atlantic Street (e.g. signage / enforcement)	Allows for efficient freight operations by prioritizing freight movements and excluding potential diverting traffic.
Southbound I-5 lane and ramp management improvements from Mercer Street to Corson Avenue (e.g. electronic signs, freight priority treatments)	Improves throughput and reliability on southbound I-5 for multiple modes. Reduces congestion southbound from SR 520 interchange to Corson Avenue.

Bicycle

Strategy	Overview / benefit
North-south cycle track through downtown	Increases vehicle / bicycle separation for safety, mobility and to encourage mode shift.
North-south facility through north portal area	Increases vehicle / bicycle separation for safety, mobility and to encourage mode shift.
East Marginal Way bicycle facility from South Spokane Street to South Atlantic Street	Reduces conflicts between freight and bicycle traffic.

Pedestrian

Strategy	Overview / benefit
Pedestrian safety projects at key locations in Pioneer Square and Belltown (for example: curb extensions, sidewalk improvements, etc.)	Improves safety and the pedestrian experience on key corridors. Addresses some potential hot spots.



Appendix C

**Advisory Committee on Tolling
and Traffic Management
meeting materials.**

Advisory Committee on Tolling and Traffic Management Meeting Materials (December 2011 – February 2014)

Available online at: <http://www.wsdot.wa.gov/projects/viaduct/Library/Meetings/ACTTM>

A copy of the ACTT Advisory Recommendations for Tolling the SR 99 Tunnel or any of the meeting materials are available upon request. Please email viaduct@wsdot.wa.gov or call 1-888-AWV-LINE (298-5463).

Jan. 14, 2014

- [Agenda](#) (pdf 46 kb)
- [Presentation](#) (pdf 355 kb) - Draft committee recommendations
- [Draft recommendations](#) (pdf 354 kb) - Proposed ACTT recommendations discussed at the meeting

Sept. 25, 2013

- [Agenda](#) (pdf 51 kb)
- [Presentation](#) (pdf 487 kb) - SR 520 tolling update and transportation system approach to minimizing and mitigating diversion.
- [Summary](#) (pdf 55 kb)

July 24, 2013

- [Agenda](#) (pdf 54 kb)
- [Presentation](#) (pdf 586 kb) - Scenario 7 traffic and revenue results, and transportation system approach to minimizing and mitigating diversion.
- The full set of traffic model data tables and graphics, too large to provide here, is available upon request at viaduct@WSDOT.wa.gov
- [Meeting summary](#) (pdf 73 kb)

March 13, 2013

- [Agenda](#) (pdf 47 kb)
- [Presentation](#) (pdf 1.65 Mb) - Round 2 toll scenarios traffic modeling and revenue analysis results.
- [Meeting summary](#) (pdf 46 kb)
- The full set of traffic model data tables and graphics, too large to provide here, is available upon request at viaduct@WSDOT.wa.gov

Dec. 12, 2012

- [Agenda](#) (pdf 47 kb)
- [Presentation](#) (pdf 921 kb) - 2017 transportation system continued, mitigation discussion, progress report and committee schedule.
- [Materials and Handouts](#) (pdf 372 kb) - Small group map tool for discussing mitigation, previous meeting summaries provided below.
- [Meeting summary](#) (pdf 52 kb)

Nov. 14, 2012

- [Agenda](#) (pdf 42 kb)
- [Presentation](#) (pdf 1.5 Mb) - Review 2017 transportation system, discuss mitigation and progress report.
- [Meeting summary](#) (pdf 57 kb)

Nov. 1, 2012

- [Agenda](#) (pdf 54 kb)
- [Presentation](#) (pdf 247 kb) - Review round 2 scenarios, discuss mitigation and progress report.
- [Materials and handouts](#) (pdf 219 kb) - Comparison to other toll facilities handout.
- [Meeting summary](#) (pdf 56 kb)

Sept. 19, 2012

- [Agenda](#) (pdf 52 kb)
- [Presentation](#) (428 kb) - Review round 1 scenarios and traffic modeling results, tolling revenue overview and round 1 results, introduction to potential round 2 scenarios.
- [Materials and handouts](#) (pdf 714 kb) - Small group materials and toll costs handout.
- Meeting [summary](#) (49 kb)

June 27, 2012

- [Agenda](#) (pdf 47 kb)
- [Presentation](#) (pdf 535 kb) - Scenarios overview, traffic modeling results, diversion.
- The full set of traffic model data tables and graphics, too large to provide here, is available upon request at viaduct@WSDOT.wa.gov

April 17, 2012

- [Agenda](#) (pdf 138 kb)
- [Presentation](#) (pdf 408 kb) - committee guiding principles, tolling on SR 520 and existing SR 99 traffic patterns, toll scenarios discussion.
- [Materials and handouts](#) (pdf 87 kb) - revised guiding principles, potential mitigation actions, round one modeling scenarios.

March 14, 2012 optional briefing

- [Agenda](#) (pdf 129 kb)
- [Presentation](#) (pdf 1.1 Mb) - traffic modeling overview.

Feb. 29, 2012

- [Agenda](#) (pdf 45 kb)
- [Presentation](#) (pdf 4 Mb) - city, county and port policies; committee guiding principles and evaluation framework.
- [Materials and handouts](#) (pdf 135 kb) - action items, toll revenue summary, guiding principles.

Jan. 25, 2012

- [Agenda](#) (pdf 37 kb)
- [Presentation](#) (pdf 1 Mb) - guiding principles for evaluating and prioritizing future recommendations, basics of finance and traffic modeling.
- [Materials and handouts](#) (pdf 176 kb) - revised guiding principles, consensus process, public process.

Dec. 8, 2011

- [Agenda](#) (pdf 74 kb)
- [Presentation](#) (pdf 1.1 Mb) - overview of the committee, the viaduct replacement program and tolling.
- [Charter](#) (pdf 41 kb)
- [Draft guiding principles](#) (pdf 34 kb)
- [WSDOT/City agreement exhibit](#) (pdf 106 kb) that created the committee.
- [Council resolution](#) (pdf 77 kb) that appointed committee members.



Appendix D

**2012 Advisory Committee on
Tolling and Traffic Management
Progress Report.**

December 2012

In 2009, the Washington State Legislature identified tolling as a funding source for the SR 99 Tunnel Project. It is anticipated that tolling revenue will contribute \$200 million toward tunnel construction. In 2011, the City of Seattle and WSDOT formed the Advisory Committee on Tolling and Traffic Management to explore ways to toll the SR 99 tunnel and raise revenue while minimizing diversion onto city streets and I-5.

The 15-member committee has met regularly to discuss how various toll scenarios might affect traffic patterns and revenue. Three toll scenarios have been analyzed to date, but more work is needed to find a scenario that strikes the right balance between generating revenue and minimizing diversion. The initial analysis has found scenarios that reach the \$200 million capital funding target result in high levels of diversion to city streets and I-5. Scenarios that result in lower diversion still raise revenue, but not enough to cover both capital and ownership costs such as operations and maintenance, insurance and repair and rehabilitation.

In the first half of 2013, we plan to analyze three additional scenarios, providing a more comprehensive picture of possible tolling options. We'll begin to set priorities and discuss the potential need for mitigation measures that are not currently funded.

By the middle of 2013, we will come to you with our recommendations. In the interim, we are pleased to provide you with this progress report of our work. We have also identified several policy issues where your guidance may help inform our work. The policy issues are more fully addressed in the attached progress report.

- Priority of state's use of toll revenue: what types of costs should be covered by toll revenue and in what relative order.
- Financing and toll rate adjustments: how capital costs could be financed and whether toll rates could be adjusted in future years to keep up with inflation.
- Allocation of toll collection costs: how statewide tolling system costs are allocated among facilities.
- Systems approach to tolling: as the region moves forward with studying and tolling additional highways, the committee sees value in analyzing a systems approach to tolling – I-5, I-405, I-90, SR 99 - to reduce diversion across the regional roadway network.
- Freight rates: what freight rate structure makes sense for the tunnel.
- Mitigation funding: finding a funding source for potential mitigation measures.
- Transit funding: finding a sustainable funding source for King County Metro service.

We understand that these issues – including the toll rate structure – are within the purview of various appointed and elected officials and our role is advisory in nature.

We would be happy to provide a briefing on our work or answer any questions.

Sincerely,



Maud Daudon and Claudia Balducci
ACTT Co-chairs

SR 99 Advisory Committee on Tolling and Traffic Management

2012 Progress report

Overview

Formation and role of tolling committee

WSDOT and the City of Seattle established the Advisory Committee on Tolling and Traffic Management in fall 2011. The committee is exploring ways to refine tolling the SR 99 tunnel to minimize traffic diversion, meet project funding goals including \$200 million for project construction, and investigate strategies to reduce or mitigate diversion.

WSDOT, the Seattle Mayor and Seattle City Council jointly appointed the 15 committee members. Five members were nominated by each, and membership was confirmed by the City Council in resolution 31323. Members were selected to represent various interests, such as freight, local businesses, drivers, transit, and bicycle and pedestrian interests.

Authority for tolling is granted by the State Legislature, while toll rate setting is within the purview of the Washington State Transportation Commission.

Advisory recommendations in 2013

In the first half of 2013, the committee will provide initial recommendations on strategies for tolling the SR 99 tunnel, minimizing traffic diversion from the tunnel due to tolling, and mitigating traffic diversion effects on city streets and I-5. Recommendations will be provided to the Governor, Legislature, State Transportation Commission, Federal Highway Administration, Seattle Mayor and the Seattle City Council.

Recommendations may be implemented by the State, City of Seattle, Port of Seattle, and/or King County as appropriate.

The committee will continue working to refine its analysis and recommendations through December 2015 and for up to one year after tolling begins.

ACTT work completed to date

Process for studying potential toll scenarios

Prior to making recommendations, the committee is reviewing traffic and revenue data for six potential toll scenarios. All of the toll scenarios assumed variable pricing. Committee members are working to find a balance between raising toll revenue necessary to construct the SR 99 Tunnel Project and keeping vehicles from diverting away from the tunnel.

To date, the committee has reviewed traffic and revenue analysis for three of six total toll scenarios. The committee also investigated types of costs that could be covered by toll revenue and assumed that toll revenue would pay for toll collection costs and facility ownership costs over 30 years with the remainder going toward the \$200 million capital target.

The committee selected each toll scenario to evaluate the effects of different policy choices.

- **Scenario 1 - maximize revenue.** Raise enough revenue to cover project capital costs and ongoing tunnel ownership costs (operations and maintenance, insurance, and repair and replacement costs). The minimum toll was \$1 and maximum toll was \$3.25.

- **Scenario 2 - minimize diversion.** Reduce diversion by using lower toll rates. The minimum toll was \$0.75 and maximum toll was \$2.25.
- **Scenario 3 - balance revenue and diversion.** Strike a balance between revenue generation and diversion from the tunnel. The minimum toll rate was \$0.75 and maximum toll rate was \$2.50. This scenario included a one-time escalation of toll rates in 2030.

Observations from first round of traffic and revenue analysis

Overall, no toll scenario stood out to committee members as the right balance between generating revenue and reducing diversion. However, key findings were made that helped shape what the next three scenarios look like, including:

- All three initial scenarios would raise significant amounts of funding. However, none of the initial three scenarios would generate sufficient levels of revenue to fund **all** of the following: WSDOT's ownership costs, \$200 million project capital target, and any mitigation that may be recommended by the committee.
- Scenario 1 appears to generate enough revenue to meet the project's funding target and ownership costs. However, this scenario caused diversion throughout the day resulting in increased trip times and congestion on city streets and I-5, and it does not raise enough revenue to fund any mitigation measures.
- Diversion was significant in each of the scenarios and created congestion that would interfere with city and regional traffic, as well as international trade and logistics operations at the Port terminals.
- Revenue generated from the scenarios is directly connected to the amount of trips that stayed in the tunnel. In the table on page 6, you can see Scenario 1 raises enough revenue from tolls to pay for both capital project funding and ownership costs while Scenario 2 would not raise enough money to provide capital funding. Scenario 3 could support ownership costs and some project funding, but not enough to meet the \$200 million target.
- Having many toll-free route alternatives through downtown Seattle contributes to the amount of diversion projected. As an example, tolls as low as \$0.75 during the midday resulted in diversion because of the many toll-free route choices and the relatively free-flowing traffic conditions during midday travel. The table on page 6 shows daily tunnel volumes for each scenario in addition to the midday and p.m. peak period.
- Southbound tolls resulted in more diversion than anticipated. Future analysis should consider toll rates that are similar for northbound and southbound travel (southbound tolls were higher than northbound tolls in all three initial scenarios).
- Longer trips (e.g., North Seattle to the airport) tended to stay in the tunnel while shorter trips (e.g., Queen Anne neighborhood to the stadiums) were more likely to divert to other routes such as city streets and I-5. Future analysis should consider ways to attract some of the shorter trips back into the tunnel.

Policy issues discussed by ACTT

The committee has identified a number of policy issues based on its review of the traffic and revenue analysis completed to date.

- **State to prioritize use of toll revenue**

Tolling is a viable funding source as part of the Alaskan Way Viaduct Replacement Program, but the committee believes the use of revenue will need to be prioritized and views this as a state decision. Funding is needed for the following:

- \$200 million of project capital funding
- Ongoing facility ownership costs
- Potential funds to mitigate the effects of traffic diverting from the tunnel.

Current assumptions are that funding would pay for toll collection costs and facility ownership costs over 30 years, with the remainder going toward the \$200 million needed for project funding. To date, scenarios that raise enough revenue to cover both capital costs and ownership costs result in high levels of diversion largely because there are so many adjacent route options. The ACTT recognizes agencies and elected officials determine how toll revenue would be used. The committee believes their charge is to suggest a tolling approach which maximizes revenue while reducing diversion and the state will determine how best to use the revenue stream. The committee would welcome a discussion about how to prioritize the use of state funding.

- **Financing and toll rate adjustments**

For financial planning purposes, most scenarios the committee has analyzed assume no toll rate increases based on guidance from the Office of the State Treasurer and State Finance Committee. This approach helps secure favorable financing when bonding against toll revenue, but it also reduces the funding available for the project and ongoing costs. The committee believes it's reasonable to expect that nominal toll rates will not remain the same for 30 years. Toll rate adjustments in future years would help keep up with inflation over time. The committee would welcome a discussion on financing assumptions and toll rate adjustments over time.

- **Toll collection cost allocation policy**

WSDOT's Toll Division and the Office of Financial Management have created a cost allocation policy where system-wide toll collection costs such as customer service center operations and state operations are shared based on facility-specific toll transactions. This policy should be discussed as planning to toll new facilities or roadways continue. Because of diversion levels, SR 99 toll rates may need to be lower than other existing toll facilities. The current policy allocates costs on a per-transaction basis, and the cost to collect tolls on SR 99 is a larger percentage of the toll charged compared to other tolled facilities. This results in less revenue being available for the facility. The committee suggests analyzing revenue-based allocation of costs.

- **Systems approach to tolling**

As the region and the state move forward with studying and tolling additional highways, the committee sees value in analyzing a systems approach to tolling to manage congestion and minimize diversion. This would include tolling state facilities such as I-5, I-90, I-405 and SR 99 and could include other planned toll facilities and future facilities which could reduce diversion across the regional system. This type of study is beyond the committee's timeframe for making recommendations in 2013.

- **Freight rates**

Toll facilities in Washington currently have freight toll rates based on truck axle count. The ACTT has analyzed different cost structures based on axles and flat rates to determine if a change would encourage more freight to use the SR 99 tunnel rather than diverting. Because the Transportation Commission leads the rate-setting process, the committee will discuss with the Commission the results of traffic analysis for both cost structures.

- **Mitigation funding**

Currently, no source of funding has been identified for mitigation measures. The committee would welcome a discussion about what funding sources might be available, including the use of toll revenue.

- **Transit funding**

In 2009, as part of multi-agency plan to replace the Alaskan Way Viaduct (AWV), a significant investment in transit service was outlined, including \$140 million in transit capital investments and a \$15 million annual investment in transit service. It was envisioned that funding for these transit improvements would come from a 1 percent motor vehicle excise tax (MVET) authority for King County, which has not been secured. Investing in transit service, along with the tunnel and other roadway improvements, was expected to keep people moving to and through Seattle and provide additional capacity to and from downtown Seattle.

WSDOT funded \$32 million in transit service to reduce congestion in the SR 99 corridor and mitigate the impacts of construction-related delays on transit service. This funding paid for added trips and travel time impacts due to construction. This investment has led to a 22 percent increase in ridership on AWV related transit service. This funding expires in 2014 prior to the end of construction. To continue this service through the end of tunnel construction, King County Metro needs an additional \$10 million in both 2014 and 2015.

The committee asks that a sustainable funding source be identified to support King County Metro.

Additional transit funding may be necessary to reduce impacts from toll diversion. The committee will discuss impacts of diversion and possible mitigation measures in 2013.

ACTT work plan and schedule

At its Nov. 1 meeting, the committee approved three additional scenarios for traffic and revenue analysis. WSDOT and City of Seattle staff will share traffic and revenue results in February and March 2013.

- **Scenario 4 - maximize revenue.** Designed to raise enough revenue to cover project capital costs and ongoing tunnel ownership costs. This scenario is a variation on scenario 1, but for example, toll rates are optimized to reduce diversion. The toll rates range from \$1 to \$2.75.
- **Scenario 5 - ownership costs.** Designed to raise enough revenue to cover ongoing ownership costs such as operations and maintenance, repair and replacement and facility insurance. This scenario does not attempt to cover capital costs and toll-backed bonds would therefore not be pursued. This scenario includes escalating toll rates. Two different variations are being analyzed: tolls of about \$1.75 only during peak periods (6 – 9 a.m. and 3 – 6 p.m.) and low tolls (up to \$0.75) throughout most of the day. The committee expects this scenario will have the least diversion of those studied.
- **Scenario 6 – balance revenue and diversion.** Designed to maximize revenue and to reduce diversion from the tunnel by charging a tiered toll rate. Only those who use the tunnel would pay a toll. As an example, during the p.m. peak period, the tunnel toll might be \$3 for “Driver A” who uses the tunnel going from north Seattle to the airport. “Driver B” is also headed from north Seattle on SR 99 but wants to go to the stadium area. “Driver B” may not be willing to pay a \$3 toll for a trip through the tunnel and would exit just before the north end of the tunnel (avoiding the toll) to use city streets through downtown. This tolling scenario would set a tunnel toll to a low enough level that “Driver B” would choose to pay the toll and use the tunnel rather than diverting from the tunnel and taking another route. In this example, “Driver B” is willing to pay \$2 (but not \$3) for a faster trip to the stadium area using the tunnel. The toll rates range from \$0.45 to \$3.

Mitigation discussions and 2013 recommendations

Committee members expect to meet regularly in early 2013 to review traffic and revenue modeling for the second round of scenarios and examine issues such as equity as the broader impacts of tolling are discussed. After additional traffic and revenue modeling results are analyzed in early 2013, committee members expect to make a recommendation on strategies for tolling the tunnel, minimizing and mitigating diversion. The committee's recommendation may mix and match aspects analyzed in different toll scenarios. The committee expects to evaluate whether mitigation measures are needed to reduce the effects of drivers diverting from the tunnel to avoid tolls and keep people and goods moving through downtown, while balancing the needs of freight, transit, bicyclists, pedestrians and vehicle users. In late 2012 (and continuing into 2013), the committee will be discussing potential mitigation, estimated costs, and strategies for funding any package(s) of mitigation that may be recommended. In mid-2013, the committee will share its recommendations with agencies, policymakers and elected officials.

DRAFT

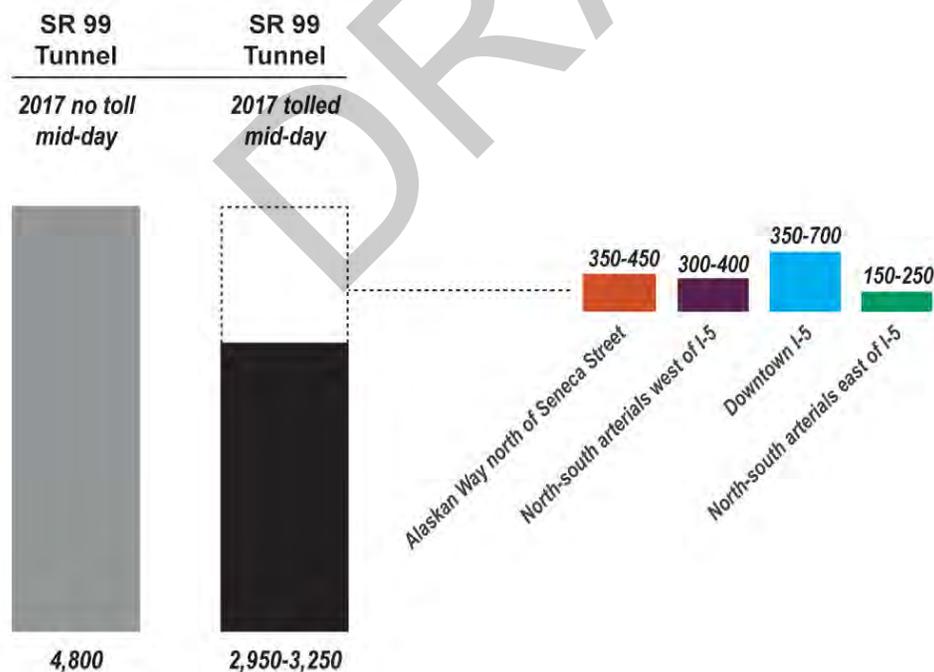
Advisory Committee on Tolling and Traffic Management

2012 Progress report

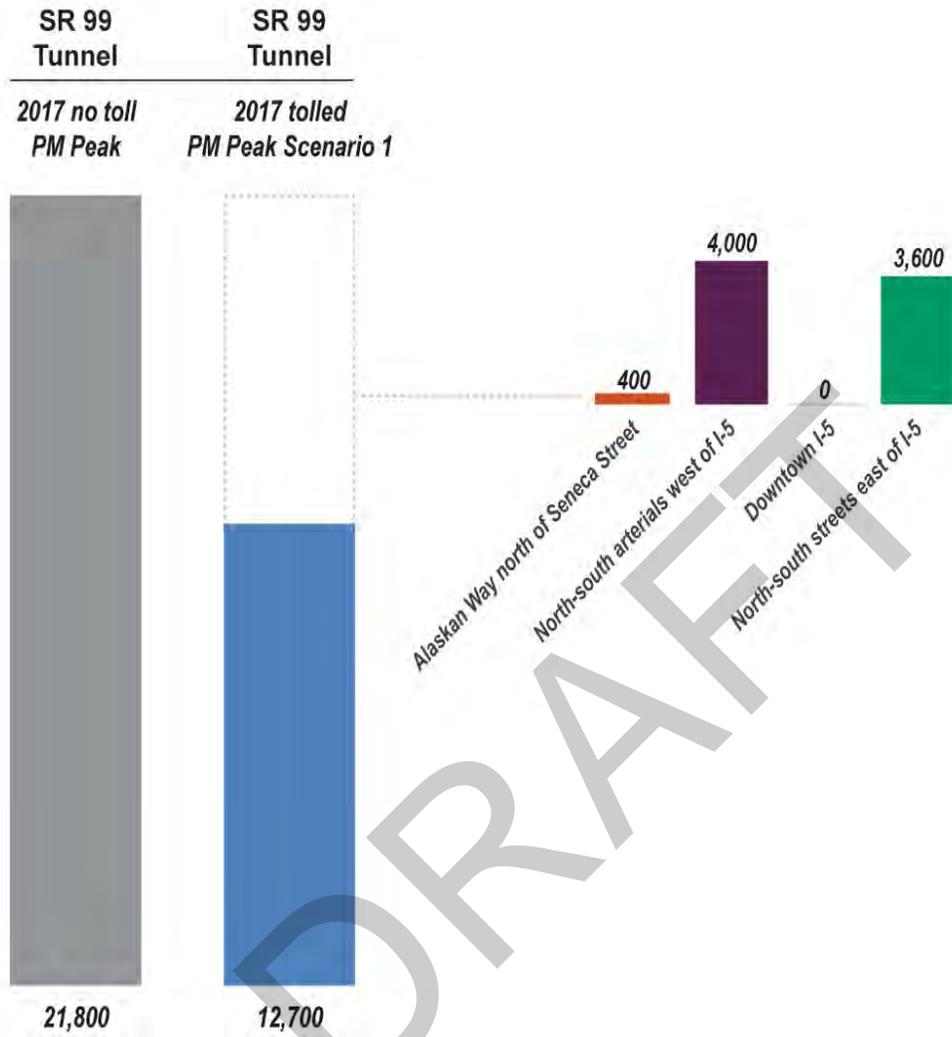
Traffic in the SR 99 tunnel and potential capital funding for project construction (target is \$200 million)

Toll scenario	6 – 9 a.m. peak period	1:30 – 2:30 p.m. mid-day	3 – 6 p.m. peak period	Total daily traffic in SR 99 tunnel	Potential capital funding after paying various toll collection and ownership costs
No toll	Not yet evaluated	4,800	21,800	85,800	N/A
Scenario 1	Not yet evaluated	2,450	12,700	50,000	Provides revenue for toll collection costs, ownership costs and \$170 to \$210 million for capital funding.
Scenario 2	Not yet evaluated	3,250	15,300	63,300	Provides revenue for toll collection costs and ownership costs, but the revenue likely couldn't be bonded to provide capital funding.
Scenario 3	Not yet evaluated	3,100	14,500	59,200	Provides revenue for toll collection costs, ownership costs, and \$110 to \$150 million for capital funding.

2017 Traffic volumes by location – Scenarios 1 – 3
Midday 1:30 – 2:30 p.m.



**2017 Traffic volumes by location – Scenario 1
Peak period 3 – 6 p.m.**



Due to congestion on downtown streets, it may be more difficult for drivers to reach Alaskan Way or I-5.



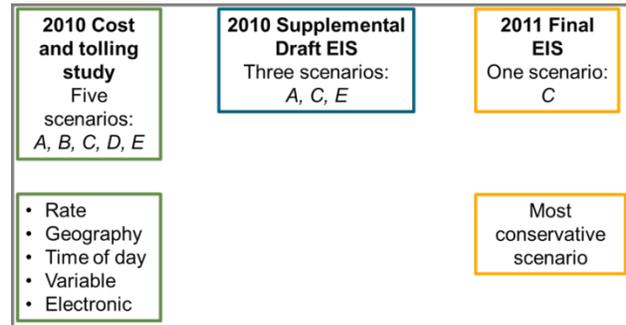
Appendix E

Overview of traffic modeling process.

Overview of Traffic Modeling Process

Tolling studies for the SR 99 Tunnel Project prior to 2011

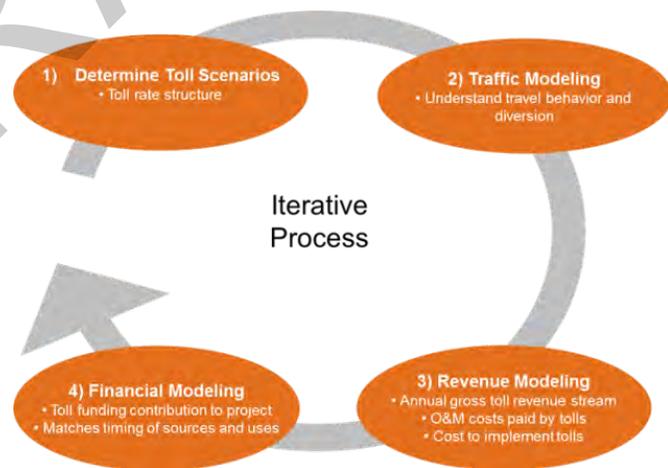
Per direction from the Washington State Legislature in the 2009 Engrossed Substitute Senate Bill (ESSB) 5768, which identified a deep bored tunnel as its preferred option for replacing the central waterfront section of the SR 99 Alaskan Way Viaduct, WSDOT evaluated five separate toll scenarios to determine whether tolling could raise up to \$400 million in funding for the project. These five scenarios considered a range of toll rates which varied by time of day and direction of travel. Some of the scenarios examined tolling only the bored tunnel, while others looked at tolling the tunnel as well as trips using ramps in the portal areas to access downtown.



A cost and funding study was submitted to the Washington State Legislature and the Governor in 2010. Tolling was considered in the SR 99 Tunnel Project's Supplemental Draft Environmental Impact Statement and Final Environmental Impact Statement and was ultimately a component of the preferred alternative documented in the Record of Decision issued by the Federal Highway Administration in 2011.

Iterative planning process used by Advisory Committee on Tolling and Traffic Management (ACTT Committee)

- Step 1: Start with determining the toll rate structure and looking at scenarios.
- Step 2: Traffic modeling.
- Step 3: Revenue forecasting based on the traffic modeling. This tells how each scenario raises money relative to the others. This step involves examining the gross toll revenue stream and subtracting the various costs that toll revenues could pay for.
- Step 4: Financial modeling. This will be completed by the WSDOT Toll Division during the investment grade analysis.



Traffic modeling for the ACTT Committee

Assumption revisions from previous modeling work

Several key assumptions used in the modeling process have been revised since the earlier tolling and environmental analyses. These included changes to values of time, land use and toll rate escalation.

The values of time were updated to reflect those from the SR 520 Investment Grade (IG) Study, which used a stated preference survey to determine the likely willingness-to-pay for users of that bridge. These values of time are lower than those used in previous SR 99 traffic and tolling analysis.

Land use assumptions were updated to reflect the effects of the recent economic recession. Using land use information from the SR 520 IG Study, population and employment were reduced by one percent and three percent for future years, 2017 and 2030, relative to Puget Sound Regional Council-adopted land use forecasts that had been last updated in 2006.

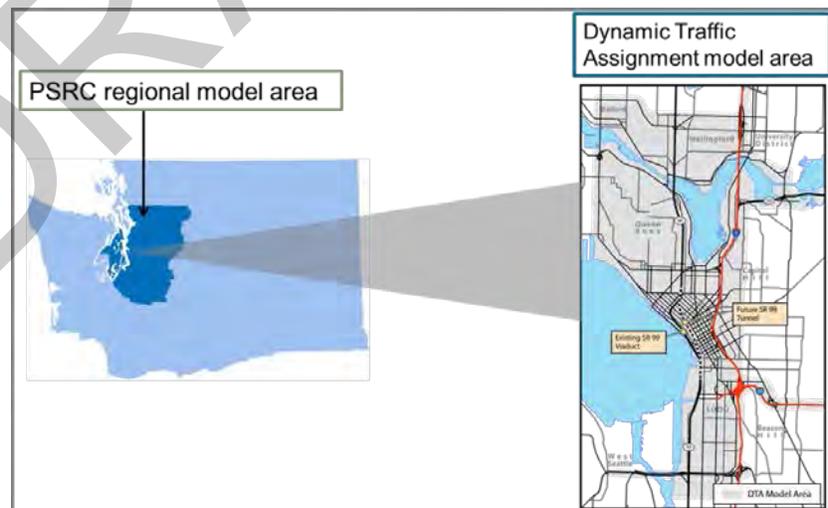
The previous toll analyses assumed that toll rates would increase over time commensurate with the rate of inflation. However, for the purposes of developing toll revenue projections in support of legislative bonding authorization, the State Treasurer has since determined that toll rate escalation should not be assumed as stated in “A Solid Foundation for Tolling Policy in Washington State” published by the State Treasurer’s Office on Oct. 19, 2010. The first round of modeling for the ACTT reflected this direction. Per the ACTT Committee’s desire to understand the impact of escalation, some scenarios in the second round of modeling did include inflation as an assumption.

In addition, the 2012 Washington State Legislature revised the target funding contribution from \$400 million to \$200 million for toll revenue.

Type of model used for the ACTT Committee

The previous toll analysis used the Puget Sound Regional Council travel demand model to develop the toll transactions by time period. The analysis completed for the ACTT Committee refined that process by using a Dynamic Traffic Assignment (DTA) modeling tool.

DTA models are a finer grain method of examining traffic, looking at a city/local level instead of a regional level. They examine local street operations such as lane configuration and traffic signals. DTA models are better than traffic demand models at estimating travel times because they include more details about streets and their speed characteristics. Traffic is assigned to the path of least resistance (i.e. least cost) which provides a better estimate of toll diversion.



Dynamic Traffic Assignment model area

The DTA model covers an area within Seattle from approximately South Spokane Street to about North 45th Street, and Alaskan Way to Broadway.

Key inputs to the model

Some of this data is derived from Puget Sound Regional Council travel demand model outputs.

- Population and employment forecasts in the project area.
- Transportation network: this includes all of the principal arterials and larger streets; all transit and ferry routes; park and rides; and regional bike trails.
- Costs: this includes off-street pay parking lots and new areas for paid parking lots in the future; toll and ferry fares by time of day; and auto operation costs (fuel and maintenance). All costs are assumed to rise at the same rate of inflation.
- Value of time: traffic models estimate a traveler's perceived value of time based on type of vehicle, trip type, income level and time of travel. For example, work trips have higher values of time than non-work trips. Freight trips are valued higher than commuter trips. A person with a high value of time is more likely to pay a tunnel toll rather than take a trip that may take longer on surface streets.
- Trip generation: the number and types of trips based on employment and population data.
- Trip distribution: what is the destination of those trips?
- Mode choice: how will those trips get to their destination?
 - The DTA model does not account for mode shifts from cars to transit or from cars to bicycling or walking. During previous modeling work for the Alaskan Way Viaduct Replacement Program's Environmental Impact Statement, a no toll and high toll were studied, which exceeds any rates studied by the ACTT Committee. In this previous model, the number of transit trips did not change with a tolled tunnel compared to a non-tolled tunnel. Tolling the SR 99 tunnel would also have a very low degree of mode shift from cars to bicycling or walking. The distance most trips cover is too great for walking and biking and there would need to be a significant travel time impact to auto travel to overcome the lower travel speed of bicycling and walking. This constant number of vehicle trips was used by the DTA model and tested against different toll rates to see what route choice changes could occur.

The table below lists the improvements to the city street grid that were assumed as being complete in the DTA model.

Projects/Infrastructure Included (with project extents)	Description of Change Included
SR 99/Alaskan Way Viaduct Replacement Program: South Holgate to South King Street	SR 99 south end reconfiguration, including new ramps and surface street changes.
SR 99/Alaskan Way Viaduct Replacement Program: South King Street to Valley Street	SR 99 tunnel and north end reconfiguration, including ramps, new Aurora Avenue North and surface street changes.
Elliott/Western Connector: Pike to Battery streets	New connection from Alaskan Way to Elliott and Western avenues.
Alaskan Way Improvements: South King Street to Broad Street	Reconfigured Alaskan Way.
I-90 R8A: Rainier Avenue South to Mercer Island	Added eastbound and westbound HOV lanes, reconfigured direct access ramps and closed express lanes.
SR 520 Bridge Replacement and HOV Program: I-5 to Medina	Added eastbound and westbound HOV lanes and reconfigured ramps and auxiliary lanes.
Mercer Corridor Project, Mercer East: Dexter Avenue North to I-5	Two-way Mercer Street and reconfigured adjacent streets.
Mercer Corridor Project, Mercer West: Queen Anne Avenue North to Fifth Avenue North	Two-way Mercer Street and reconfigured adjacent streets.
Spokane Street Viaduct Widening Project: I-5 to SR 99	Widen Spokane Street Viaduct, including reconfigured ramps and cross-streets.
First Avenue Streetcar: South Jackson to Harrison streets	Reconfiguration of First Avenue
McGraw Square: Westlake and Fifth Avenues	Closed southernmost block of Western Avenue.
Nickerson Street Road Diet: Westlake Avenue North to 15th Avenue West	Rechanneled Nickerson Street.
Dexter Avenue North Buffered Bike Lanes: Mercer Street to Fremont Avenue North	Rechanneled Dexter Avenue North.
First Hill Streetcar: First Avenue South and South Jackson Street to Broadway and East Denny Way	Rechanneled Broadway, Yesler Way, and South Jackson Street.
Southend Transit Pathways: Alaskan Way to Third Avenue	Converted to two-way Columbia Street with one bus lane and one general purpose lane westbound and one bus lane eastbound.
RapidRide: C Line	West Seattle to Downtown Seattle.
RapidRide: D Line	Crown Hill to Downtown Seattle.
RapidRide: E Line	Shoreline to Downtown Seattle.

Link Light Rail	North Link and East Link Light Rail projects by 2030.
Downtown Transit Tunnel: Rail only	No buses in the tunnel by 2030.
Bus Infrastructure: Alaskan Way	Bus lane from South Dearborn to Columbia streets.
Bus Infrastructure: Aurora Avenue	Bus lane from Denny Way to Harrison Street.
Bus Infrastructure: Battery Street	Bus lane from Denny Way to Fifth Avenue.
Bus Infrastructure: Wall Street	Bus lane from Third Avenue to Denny Way.
Bus Infrastructure: Howell Street	Bus lane from Ninth to Yale avenues.
Bus Infrastructure: Olive Way	Bus bulb on Sixth Avenue.
Bus Infrastructure: Third Avenue	Bus bulbs from Broad to Stewart streets.
Bus Infrastructure: Third Avenue	Transit only in peak periods from Denny Way to Mercer Street.

Key outputs from the model

Information available from the model includes traffic volumes and speeds, travel times, route choice, vehicle miles traveled and vehicle hours of delay.

Revenue forecasting for the ACTT Committee

The traffic model results formed the basis for calculating potential gross toll revenues, and ultimately, net toll revenues after various operating costs and other expenditures. The graphic below shows how gross toll revenue is calculated.

Period traffic counts (traffic model)	
x Toll rate for time period	
<hr/>	
Tolls collected for time period	
+ Tolls collected from other time periods	
<hr/>	
Daily tolls collected	
x Number of days in a year	
<hr/>	
Potential annual tolls collected	

Once the total amount in tolls that can be collected is calculated, expenses are subtracted from the gross total. Expenses can include toll collection costs, capital costs (to build the SR 99 tunnel), operations and maintenance costs and mitigation funding.



Appendix F

Public engagement activities.

AWV Presentations to Community Groups, Elected Officials, and Program Stakeholders

Date	Audience	Topic
9/13/2011	Seattle City Council Transportation Committee	ACTT resolution
10/19/2011	Washington State Transportation Commission	ACTT committee introduction
2/21/2012	Washington State Transportation Commission	ACTT charge, work to-date, guiding principles, timeline
2/28/2012	South Lake Union Chamber Transportation Fair	General SR 99 tunnel tolling inquiries
3/26/2012	Seattle City Council Special Committee on the Waterfront, Seawall and Viaduct Replacement	ACTT committee introduction, workplan, timeline
4/24/2012	Mercer West Project Open House	General SR 99 tunnel tolling inquiries
5/18/2012	Bike to Work Day	General SR 99 tunnel tolling inquiries
5/23/2012	Washington State Transportation Commission	ACTT update, round 1 scenarios
6/25/2012	South Lake Union Rezone Open House	General SR 99 tunnel tolling inquiries
7/13/2012 - 7/15/2012	West Seattle Summer Fest	General SR 99 tunnel tolling inquiries
7/14/2012 - 7/15/2012	Ballard Seafood Fest	General SR 99 tunnel tolling inquiries
7/17/2012	Washington State Transportation Commission	Round 1 scenarios - traffic modeling results
8/10/2012	South Lake Union Block Party	General SR 99 tunnel tolling inquiries
9/6/2012	Queen Anne Farmers Market	General SR 99 tunnel tolling inquiries
9/12/2012	1201 Third Ave. Transportation Fair	General SR 99 tunnel tolling inquiries
10/11/2012	Washington State Legislative staff briefing	Tolling round 1 traffic scenarios and results. Toll collections, operations and maintenance, repair and replacement and insurance costs. Round 1 revenue modeling results.
10/17/2012	Washington State Transportation Commission	ACTT update, round 2 scenarios
10/19/2012	Briefing with Representative Reuven Carlyle	Tolling round 1 traffic scenarios and results. Toll collections, operations and maintenance, repair and replacement and insurance costs. Round 1 revenue modeling results.
10/24/2012	Central Waterfront Stakeholder Group	ACTT update
11/8/2012	Office of the State Treasurer	Round 1 revenue results, operations and maintenance costs, round 2 scenarios
12/8/2012	Washington State Transportation Commission	ACTT round 2 scenarios update, committee policy issues review
1/13/2013	Bill and Melinda Gates Foundation Transportation Fair	General SR 99 tunnel tolling inquiries
1/23/2013	House Transportation Committee	ACTT update
1/23/2013	Washington State Transportation Commission	ACTT progress report
1/25/2013	Senator Patty Murray's staff (Uriel Ybarra)	ACTT update and progress report
2/6/2013	Senate Transportation Committee	ACTT update, progress report, round 2 scenarios
2/6/2013	South Portal Working Group	ACTT round 1 scenarios, round 2 scenarios, progress report
2/7/2013	North Portal Working Group	ACTT round 1 scenarios, round 2 scenarios, progress report
3/4/2013	Office of the State Treasurer	ACTT round 2 traffic modeling results
3/11/2013	Legislative staff briefing	AWV program and tolling update
3/18/2013	Pioneer Square Mayor's Open House	General SR 99 tunnel tolling inquiries
3/19/2013	Transportation Commission	ACTT round 2 traffic and revenue modeling results
3/20/2013	15th Avenue West Transportation Coalition	ACTT update

Date	Audience	Topic
3/21/2013	Mercer West Project Open House	General SR 99 tunnel tolling inquiries
4/8/2013	Seattle City Council Central Waterfront, Seawall and Alaskan Way Viaduct Replacement Program Committee	ERP and ACTT update
4/13/2013 - 4/14/2013	Seattle Sounders and Seattle Mariners tabling event	General SR 99 tunnel tolling inquiries
4/23/2013	North Seattle Industrial Association	ACTT update
5/8/2013	AWV Stakeholder Group	ACTT round 2 updates
5/17/2013	Bike to Work Day	General SR 99 tunnel tolling inquiries
6/13/2013	Safeco Transportation Fair	General SR 99 tunnel tolling inquiries
7/12/2013 - 7/14/2013	West Seattle Summer Fest	General SR 99 tunnel tolling inquiries
7/13/2013 - 7/14/2013	Ballard Seafood Fest	General SR 99 tunnel tolling inquiries
8/10/2013	South Lake Union Block Party	General SR 99 tunnel tolling inquiries
9/16/2013	Seattle City Council Central Waterfront, Seawall and Alaskan Way Viaduct Replacement Program Committee	ACTT round 2 updates, vehicle hours of delay, system improvement strategies
9/17/2013	AWV Stakeholder Group	ACTT scenario 7 update
10/2/2013	Downtown Transportation Alliance Executive Meeting	ACTT update
10/28/2013	Starbucks Company Transportation Fair	General SR 99 tunnel tolling inquiries
11/12/2013	American Society of Civil Engineers, UW Student Chapter	Tolling the SR 99 tunnel
11/20/2013	15th Avenue West Transportation Coalition	ACTT update
12/12/2013	Washington Agriculture and Forestry Leadership - Seattle Transportation Seminar	ACTT update
12/12/2013	AWV Stakeholder Group	ACTT update
2/12/2014	Bill and Melinda Gates Foundation Transportation Fair	General SR 99 tunnel tolling inquiries

Media stories related to SR 99 tunnel tolling

News:

Public meeting on Seattle tunnel tolling

www.king5.com/news/local/Seattle-tunnel-tolling-public-hearing-135267858.html

King 5 News—December 8, 2011

Meeting today on tunnel tolls, funding

www.djc.com/news/co/12037312.html

Daily Journal of Commerce—January 25, 2012

Tolls on Highway 99 tunnel now expected to fall \$200M short

seattletimes.nwsourc.com/html/localnews/2017612886_tunneltolls28m.html

Seattle Times – February 27, 2012

The \$200 million tunnel miscalculation

www.king5.com/news/The-200-million-tunnel-miscalculation-140671673.html

KING 5 – February 27, 2012

Toll the tunnel? Price it for cheapskates like me

seattletimes.nwsourc.com/html/dannywestneat/2017620438_danny29.html

Seattle Times—February 28, 2012

Tolls in Seattle's tunnel predicted to slow traffic even more

www.king5.com/news/local/State-tolling-estimates-for-tunnel-way-off--What-now-140800843.html

King 5 –February 28, 2012

State Expects Fewer Toll Dollars To Pay For Hwy. 99 Tunnel (article no longer available online)

KUOW—February 29, 2012

The talk on tolls

<http://blogs.columbian.com/all-politics-is-local/the-talk-on-tolls/>

The Columbian – March 1, 2012

I-5 drivers feel pain of 520 tolls

http://seattletimes.nwsourc.com/html/localnews/2017667794_520traffic05m.html

Seattle Times – March 5, 2012

520 toll rates to increase in July

<http://www.seattlepi.com/local/transportation/article/520-toll-rates-to-increase-in-July-3425590.php>

Seattle PI – March 21, 2012

SR 520 bridge toll rates to increase in July

<http://www.king5.com/news/Toll-on-SR-520-floating-bridge-will-increase-143750216.html>

KING 5 – March 21, 2012

Toll hikes leave too much in reserves

<http://www.kitsapsun.com/news/2012/mar/26/our-view-toll-hikes-leave-too-much-in-reserves/>
Kitsap Sun – March 26, 2012

Deep Bore Tunnel tolls: What price is just right?

<http://www.kirotv.com/news/news/traffic/deep-bore-tunnel-tolls-what-price-just-right/nMbwP/>
KIRO TV – April 17, 2012

Would you pay \$3 to use the SR 99 tunnel?

<http://www.seattlepi.com/local/transportation/article/Would-you-pay-3-to-use-the-SR-99-tunnel-3492197.php>
Seattle PI – April 18, 2012

State mulls tolling scenarios for Highway 99 tunnel

<http://www.komonews.com/news/local/State-mulls-tolling-scenarios-for-Highway-99-tunnel-148110615.html>
KOMO – April 19, 2012

Would you pay \$3 to use the SR 99 tunnel?

<http://www.seattlepi.com/default/article/Would-you-pay-3-to-use-the-SR-99-tunnel-3492197.php>
Seattle PI – April 26, 2012

State study says drivers will avoid SR 99 tunnel tolls

<http://www.king5.com/traffic/news/viaduct/How-much-traffic-will-get-dumped-onto-Seattle-streets-by-tolls-160615405.html>
King 5 News—June 27, 2012

Study: Thousands of drivers would clog streets to avoid tunnel tolls

seattletimes.nwsourc.com/html/localnews/2018544988_99tolls28m.html
The Seattle Times—June 27, 2012

Study: Drivers would still skip tunnel with cheaper tolls

<http://www.seattlepi.com/default/article/Study-Drivers-would-still-skip-tunnel-with-3668132.php>
Seattle PI – June 28, 2012

Key state lawmaker wants Highway 99 tunnel tolls kept low

http://seattletimes.com/html/localnews/2019186583_99tolls18m.html
Seattle Times – September 17, 2012

Modest tunnel tolls would divert traffic

<http://www.djc.com/news/ae/12045213.html?query=alaskan+way+viaduct&searchtype=all>
Daily Journal of Commerce – September 20, 2012

Study: Cheaper tolls not enough to pay for tunnel

<http://www.seattlepi.com/local/transportation/article/Tunnel-tolls-3878348.php>
Seattle PI – September 19, 2012

Panel drops early toll-rate options to pay for Highway 99 tunnel

http://seattletimes.com/html/localnews/2019205344_99tolls20m.html

Seattle Times – September 19, 2012

Study: Modest tolling would divert Seattle tunnel traffic

<http://www.king5.com/news/cities/seattle/Modest-tolling-would-divert-Seattle-tunnel-traffic-170422636.html>

KING 5 – September 19, 2012

Group fears high tolls on SR 99 tunnel could clog I-5, downtown streets (article no longer available online)

Q13 – September 19, 2012

Study says even modest tolling would divert Seattle tunnel traffic

<http://www.komonews.com/news/local/Modest-tolling-would-divert-Seattle-tunnel-traffic-170417856.html?tab=video&c=y>

KOMO News – September 19, 2012

Study: Cheaper tolls not enough to pay for tunnel

<http://www.seattlepi.com/default/article/Study-Cheaper-tolls-not-enough-to-pay-for-tunnel-3878348.php>

Seattle PI -- September 20, 2012

Officials worry drivers will avoid Alaskan Way tunnel, toll

<http://www.komonews.com/news/local/188140621.html>

KOMO – January 23, 2013

Officials worry drivers will avoid Alaskan Way tunnel, toll

<http://www.seattlepi.com/default/article/Officials-worry-drivers-will-avoid-Alaskan-Way-4219072.php>

Seattle PI – January 23, 2013

Tolling on I-5? Committees discuss tolling on viaduct, other roadways

<http://q13fox.com/2013/01/23/tolling-on-i-5-committees-discuss-tolling-on-viaduct-other-vital-roadways/#axzz2JONx5IYt>

Q13 – January 23, 2013

State Transportation Dept. corrects TV news report on using toll revenue for Seattle viaduct replacement

http://kpbj.com/business_daily/2013-01-25/state-transportation-dept-corrects-tv-news-report-on-using-toll-revenue-fo

Kitsap Peninsula Business Journal – January 25, 2013

Dem plan doesn't solve toll troubles

http://seattletimes.com/html/localnews/2020398639_transpo52099xml.html

Seattle Times – February 20, 2013

Reduce tolls? Highway 99 tunnel panel grasps at ideas

<http://blogs.seattletimes.com/today/2013/03/reduce-tolls-highway-99-tunnel-panel-grasps-at-ideas/>

Seattle Times – March 14, 2013

3 business groups to lawmakers: Don't toll Seattle tunnel

<http://www.bizjournals.com/seattle/news/2013/05/01/three-business-groups-oppose-seattle.html>

Puget Sound Business Journal – May 1, 2013

Business groups ask state to nix tunnel toll, raise gas tax

<http://www.komonews.com/news/local/Business-groups-ask-state-to-nix-tunnel-toll-raise-gas-tax-205903881.html>

KOMO – May 3, 2013

State budget correction a message to tolls panel

http://seattletimes.com/html/localnews/2021143325_tunnelmoneyxml.html

Seattle Times – June 7, 2013

How Much Would You Pay to Take the New Alaskan Way Viaduct?

<http://www.komonews.com/news/local/How-much-would-you-pay-to-take-the-new-Alaskan-Way-Viaduct-216845851.html>

Komo News-July 24, 2013

SR 99 Tunnel tolling: Looks like \$1 each way

q13fox.com/2013/09/25/sr-99-tolling-looks-like-1-each-way/#axzz2fuhmGmF4

KCPQ- September 25, 2013

\$1 solution for Highway 99 tunnel? New proposal surfaces

seattletimes.com/html/localnews/2021898403_99tunneltollsxml.html

The Seattle Times- September 25, 2013

New Proposal: Highway 99 Tolls Could Be \$1.00

<http://kuow.org/post/new-proposal-highway-99-tolls-could-be-100>

KUOW- September 26, 2013

Seattle's skeptical look at tolls worth considering

<http://www.vancouversun.com/news/Seattle+skeptical+look+tolls+worth+considering/9076198/story.html>

The Vancouver Sun- October 24, 2014

Grumbling over tunnel toll louder as Bertha stays quiet

<http://www.komonews.com/news/local/The-Cost-of-Bertha-Now-and-When-Complete-240156611.html>

KOMO News- January 14, 2014

Blogs:

2 tolling notes: 1st meeting ahead for 99 committee; 520 date

westseattleblog.com/2011/12/2-tolling-notes-1st-meeting-ahead-for-99-committee-520-date-set

The West Seattle Blog—December 7, 2011

State Cuts Alaskan Way Toll Projections In Half

publicola.com/2012/02/27/state-cuts-alaskan-way-toll-projections-in-half/

Publicola – February 27, 2012

Tolling projections for viaduct replacement tunnel already short (Podcast)

mynorthwest.com/?a=39599&n=&nid=577&p=

My Northwest—February 28, 2012

DBT Tolling Projections Drop

seattletransitblog.com/2012/02/28/dbt-tolling-projections-drop/

Seattle Transit Blog—February 28, 2012

More and more drivers opting to avoid 520 Bridge toll

<http://www.komonews.com/communities/bellevue/more-and-more-drivers-opting-to-avoid-520-bridge-toll-724125-197211101.html>

KOMO News Bellevue Blog—February 29, 2012

Tolling projections for viaduct replacement tunnel already short

mynorthwest.com/?nid=11&sid=635289

My Northwest—February 29, 2012

Seattle's Shunpikers Slice \$200 Million From Tunnel Toll Estimates

<http://thesunbreak.com/2012/02/29/seattles-shunpikers-slice-200-million-from-tunnel-toll-estimates/>

The Sun Break – February 29, 2012

How far will state go to collect 520 tolls?

<http://mynorthwest.com/11/646123/How-far-will-state-go-to-collect-520-tolls>

My Northwest – March 16, 2012

WSDOT to start imposing penalties for late toll bills

<http://mynorthwest.com/11/645676/WSDOT-to-start-imposing-penalties-for-late-toll-bills>

My Northwest – March 15, 2012

WSDOT examines options for tolling future SR-99 tunnel

mynorthwest.com/11/699502/Already-talk-of-tolls-on-future-SR99-tunnel

My Northwest – June 27, 2012

Alaskan Way Viaduct: More Revenue Shortfalls Expected

<http://daily.sightline.org/2012/09/18/alaskan-way-viaduct-more-revenue-shortfalls-expected/>

Sightline – September 18, 2012

State Tolling Scenarios Leave Tunnel Budget Shortfall

<http://publicola.com/2012/09/20/state-tolling-scenarios-leave-tunnel-budget-shortfall/>

Publicola – September 20, 2012

Tolls for SR-99 tunnel a balancing act

<http://mynorthwest.com/?nid=11&sid=740058>

MyNorthwest – September 19, 2012

One Potential Solution to Tunnel Tolling Shortfall: Toll Non-Tunnel Users?

<http://publicola.com/2012/09/26/one-potential-solution-to-tunnel-tolling-shortfall-toll-non-tunnel-users/>

Publicola – September 26, 2012

State Transportation Chair: State Could Lift Spending Cap on Tunnel

<http://publicola.com/2012/09/26/state-transportation-chair-state-could-lift-spending-cap-on-tunnel/>

Publicola – September 26, 2012

Friday Jolt: Committee Goes Back to Drawing Board on Tunnel Tolling

<http://www.seattlemet.com/articles/friday-jolt-committee-goes-back-to-drawing-board-on-tunnel-tolling>

Publicola – January 18, 2013

Concerns About Tunnel Tolls, Superheroes Patrol Seattle

<http://seattle.curbed.com/archives/2013/05/concerns-about-tunnel-tolls-superheroes-patrol-seattle.php>

Curbed – May 2, 2013

Committee Thinks They've Found the SR 99 Tunnel Tolling 'Sweet Spot'

<http://mynorthwest.com/11/2321132/Committee-finds-the-Seattle-SR-99-tunnel-tolling-sweet-spot>

My Northwest-July 25, 2013

Committee hopes \$1 toll would sway you to use Seattle tunnel

mynorthwest.com/11/2362308/Committee-hopes-1-toll-would-sway-you-to-use-Seattle-tunnel

MYNorthwest- September 26, 2013

Thursday Memo: Big rain ... Half-naked boat guy ... Tunnel toll poll (Viaduct Mentioned)

blogs.seattletimes.com/today/2013/09/thursday-memo-big-rain-half-naked-boat-guy-tunnel-toll-poll/

The Seattle Times- September 26, 2013

What will the Highway 99 tunnel tolls be? Draft recommendations focusing on \$1 to \$1.25

<http://westseattleblog.com/2014/01/what-will-the-highway-99-tunnel-tolls-be-draft-recommendations-focusing-on-1-to-1-25/>

West Seattle Blog- January 15, 2014

SR 99 Tunnel Toll Update

<http://seattletransitblog.com/2014/01/18/sr-99-tunnel-toll-update/>

Seattle Transit Blog – January 18, 2014