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

Advisory recommendations for
tolling the SR 99 tunnel
March 2014
March 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 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,
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.
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.

In order to determine the most effective approach to mitigating diversion from the SR 99 tunnel, the ACTT Committee reviewed the City of Seattle Master Plans for transit, freight, pedestrians and bicycles. We also used traffic model data to identify the location and potential impacts of traffic diversion from the SR 99 tunnel. Through a comprehensive systems approach, the ACTT Committee 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, traffic efficiencies and pedestrian and bicycle safety.

A representative list of these 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.
- Limit the impacts of diversion (increased delays or increased traffic volumes) in and around downtown Seattle.
- Be easy to implement without requiring interest payments and other costs needed to finance large capital investments.
- Address safety concerns for pedestrians and bicyclists.

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. WSDOT recently confirmed their commitment to extend funding that supports these transit service investments through 2015.

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

![King County Metro RapidRide](image)
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 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 related to freight and pedestrian safety. These investments are a high priority and given the limited toll revenue and other priorities identified in the next section, 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. Pedestrian improvements at intersections near the SR 99 tunnel portals should also be built with high-quality materials and maintenance should be prioritized to ensure pedestrian safety. 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 the 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 which, based on our work to date, 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

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<th>Gross revenue</th>
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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.
Local community and jurisdictional involvement in toll rate setting process

Toll rates will be set by the Washington State Transportation Commission approximately six months before the SR 99 tunnel opens to traffic. Before rates are set, the Transportation Commission will hold public meetings in Seattle. 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 Transportation Commission’s rate setting process and further discussions about the use of toll revenue. The ACTT Committee recommends the 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.
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. The ACTT Committee understands that the Puget Sound Regional Council has been asked by regional leaders to conduct a study to look at alternative approaches to tolling in the area. Puget Sound Regional Council is currently developing a proposed scope and looking for funding to support the study. The ACTT Committee encourages these efforts. As the region and state consider 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 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 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. 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. The ACTT Committee recommends regional tolling be studied further.

ACTT Committee’s recommendation:

- The ACTT Committee recommends regional tolling be studied further.
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 the 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.
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.

**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.

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.

Website

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

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.
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.
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. *

High toll benchmark

No-toll and high-toll benchmarks were used by the ACTT Committee for comparison. The high-toll benchmark included 1.5 times the toll rate for medium trucks and 2.5 times the toll rate for large trucks and no toll rate escalation.

* Toll rates shown are in year 2017 dollars. For early scenarios, different rates were considered for northbound and southbound trips.
**Toll rate structure - Scenario 1**

| Time       | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 5 – 6 a.m. | $0.00 | $0.50 | $1.00 | $1.50 | $2.00 | $2.50 | $3.00 | $3.50 | $4.00 | $4.50 |
| 6 – 9 a.m. | $0.00 | $0.50 | $1.00 | $1.50 | $2.00 | $2.50 | $3.00 | $3.50 | $4.00 | $4.50 |
| 9 a.m. – 3 p.m. | $0.00 | $0.50 | $1.00 | $1.50 | $2.00 | $2.50 | $3.00 | $3.50 | $4.00 | $4.50 |
| 3 – 6 p.m. | $0.00 | $0.50 | $1.00 | $1.50 | $2.00 | $2.50 | $3.00 | $3.50 | $4.00 | $4.50 |
| 6 – 11 p.m. | $0.00 | $0.50 | $1.00 | $1.50 | $2.00 | $2.50 | $3.00 | $3.50 | $4.00 | $4.50 |
| 11 p.m. – 5 a.m. | $0.00 | $0.50 | $1.00 | $1.50 | $2.00 | $2.50 | $3.00 | $3.50 | $4.00 | $4.50 |

**Objective**
Raise enough revenue to cover project capital costs and ongoing tunnel ownership costs.

**Freight rate**
1.5 times the toll rate for medium trucks and 2.5 times the toll rate for large trucks.

**Toll escalation**
None.

---

**Toll rate structure - Scenario 2**

| Time       | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  | NB  | SB  |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 5 – 6 a.m. | $0.00 | $0.50 | $1.00 | $1.50 | $2.00 | $2.50 | $3.00 | $3.50 | $4.00 | $4.50 |
| 6 – 9 a.m. | $0.00 | $0.50 | $1.00 | $1.50 | $2.00 | $2.50 | $3.00 | $3.50 | $4.00 | $4.50 |
| 9 a.m. – 3 p.m. | $0.00 | $0.50 | $1.00 | $1.50 | $2.00 | $2.50 | $3.00 | $3.50 | $4.00 | $4.50 |
| 3 – 6 p.m. | $0.00 | $0.50 | $1.00 | $1.50 | $2.00 | $2.50 | $3.00 | $3.50 | $4.00 | $4.50 |
| 6 – 7 p.m. | $0.00 | $0.50 | $1.00 | $1.50 | $2.00 | $2.50 | $3.00 | $3.50 | $4.00 | $4.50 |
| 7 p.m. – 5 a.m. | $0.00 | $0.50 | $1.00 | $1.50 | $2.00 | $2.50 | $3.00 | $3.50 | $4.00 | $4.50 |
| 5 – 8 a.m. | $0.00 | $0.50 | $1.00 | $1.50 | $2.00 | $2.50 | $3.00 | $3.50 | $4.00 | $4.50 |
| 8 – 11 a.m. | $0.00 | $0.50 | $1.00 | $1.50 | $2.00 | $2.50 | $3.00 | $3.50 | $4.00 | $4.50 |
| 11 a.m. – 6 p.m. | $0.00 | $0.50 | $1.00 | $1.50 | $2.00 | $2.50 | $3.00 | $3.50 | $4.00 | $4.50 |
| 6 – 11 p.m. | $0.00 | $0.50 | $1.00 | $1.50 | $2.00 | $2.50 | $3.00 | $3.50 | $4.00 | $4.50 |
| 11 p.m. – 5 a.m. | $0.00 | $0.50 | $1.00 | $1.50 | $2.00 | $2.50 | $3.00 | $3.50 | $4.00 | $4.50 |

**Objective**
Reduce diversion by using lower toll rates.

**Freight rate**
1.25 times the toll rate for all trucks, regardless of size or axle count.

**Toll escalation**
None.
### Toll rate structure - Scenario 3

<table>
<thead>
<tr>
<th>Objective</th>
<th>Freight rate</th>
<th>Toll escalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strike a balance between revenue generation and diversion from the tunnel.</td>
<td>1.25 times the toll rate for all trucks, regardless of size or axle count.</td>
<td>One-time increase of 20% in July 2030.</td>
</tr>
</tbody>
</table>

### Toll rate structure - Scenario 4

<table>
<thead>
<tr>
<th>Objective</th>
<th>Freight rate</th>
<th>Toll escalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raise enough revenue to achieve the capital funding target.</td>
<td>1.5 times the toll rate for all trucks, regardless of size or axle count.</td>
<td>None.</td>
</tr>
</tbody>
</table>
Toll rate structure - Scenario 5a

<table>
<thead>
<tr>
<th>Objective</th>
<th>Freight rate</th>
<th>Toll escalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce diversion by using lower toll rates and include toll rate escalation.</td>
<td>1.5 times the toll rate for medium trucks and 2.5 times the toll rate for large trucks.</td>
<td>Toll rate escalates 1.3% per year.</td>
</tr>
</tbody>
</table>

Toll rate structure - Scenario 5b

<table>
<thead>
<tr>
<th>Objective</th>
<th>Freight rate</th>
<th>Toll escalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce diversion by using lower toll rates and include toll rate escalation.</td>
<td>1.5 times the toll rate for medium trucks and 2.5 times the toll rate for large trucks.</td>
<td>Toll rate escalates 1.3% per year.</td>
</tr>
</tbody>
</table>
### Toll rate structure - Scenario 6

<table>
<thead>
<tr>
<th>Objective</th>
<th>Freight rate</th>
<th>Toll escalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strike a balance between revenue generation and diversion from the tunnel. This scenario sought to keep more short trips in the tunnel by charging a reduced toll compared to longer tunnel trips.</td>
<td>1.5 times the toll rate for all trucks, regardless of size or axle count.</td>
<td>None.</td>
</tr>
</tbody>
</table>

### Toll rate structure - Scenario 7

<table>
<thead>
<tr>
<th>Objective</th>
<th>Freight rate</th>
<th>Toll escalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strike a balance between the revenue generation of Scenario 4 and the diversion levels of Scenarios 5a and 5b.</td>
<td>1.5 times the toll rate for medium trucks and 2.5 times the toll rate for large trucks.</td>
<td>Toll rate escalates 1.3% per year.</td>
</tr>
</tbody>
</table>
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 in the tunnel and the percent 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

Morning peak period (6 to 9 a.m.)*

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Toll</th>
<th>AM peak period volumes</th>
<th>Diversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Tolls</td>
<td></td>
<td>17,700</td>
<td></td>
</tr>
<tr>
<td>Scenario 5a - $0.75</td>
<td></td>
<td>15,500 (12% diversion)</td>
<td></td>
</tr>
<tr>
<td>Scenario 7 - $1.25</td>
<td></td>
<td>14,000 (21% diversion)</td>
<td></td>
</tr>
<tr>
<td>Scenario 5b - $1.75</td>
<td></td>
<td>12,600 (29% diversion)</td>
<td></td>
</tr>
<tr>
<td>Scenario 6 - $0.90-2.50</td>
<td></td>
<td>12,300 (31% diversion)</td>
<td></td>
</tr>
<tr>
<td>Scenario 4 - $2.25</td>
<td></td>
<td>11,100 (37% diversion)</td>
<td></td>
</tr>
</tbody>
</table>

*Volumes were not modeled for Scenarios 1-3

Midday period (9 a.m. to 3 p.m.)

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Toll</th>
<th>Mid-day period volumes</th>
<th>Diversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Tolls</td>
<td></td>
<td>26,000</td>
<td></td>
</tr>
<tr>
<td>Scenario 5b - $0</td>
<td></td>
<td>26,000 (0% diversion)</td>
<td></td>
</tr>
<tr>
<td>Scenario 5a - $0.50</td>
<td></td>
<td>20,700 (20% diversion)</td>
<td></td>
</tr>
<tr>
<td>Scenario 2 - $0.75</td>
<td></td>
<td>18,170 (30% diversion)</td>
<td></td>
</tr>
<tr>
<td>Scenario 3 - $1.00</td>
<td></td>
<td>17,330 (33% diversion)</td>
<td></td>
</tr>
<tr>
<td>Scenario 6 - $0.45-1.25</td>
<td></td>
<td>17,300 (33% diversion)</td>
<td></td>
</tr>
<tr>
<td>Scenario 7 - $1.00</td>
<td></td>
<td>16,000 (38% diversion)</td>
<td></td>
</tr>
<tr>
<td>Scenario 4 - $1.50</td>
<td></td>
<td>14,000 (46% diversion)</td>
<td></td>
</tr>
<tr>
<td>Scenario 1 - $1.50</td>
<td></td>
<td>13,700 (47% diversion)</td>
<td></td>
</tr>
<tr>
<td>High toll benchmark - $2.00</td>
<td></td>
<td>10,900 (58% diversion)</td>
<td></td>
</tr>
</tbody>
</table>
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.**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Volumes</th>
<th>Diversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Tolls</td>
<td>65,800</td>
<td></td>
</tr>
<tr>
<td>Scenario 5a - $0.50-0.75</td>
<td>55,700</td>
<td>(15% diversion)</td>
</tr>
<tr>
<td>Scenario 5b - $0.00-1.75</td>
<td>54,800</td>
<td>(17% diversion)</td>
</tr>
<tr>
<td>Scenario 7 - $1.00-1.25</td>
<td>48,000</td>
<td>(27% diversion)</td>
</tr>
<tr>
<td>Scenario 6 - $0.45-3.00</td>
<td>44,800</td>
<td>(32% diversion)</td>
</tr>
<tr>
<td>Scenario 4 - $0.45-1.25</td>
<td>39,100</td>
<td>(41% diversion)</td>
</tr>
</tbody>
</table>

**Afternoon/evening peak period (3 to 6 p.m.)**

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Volumes</th>
<th>Diversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Tolls</td>
<td>22,100</td>
<td></td>
</tr>
<tr>
<td>Scenario 5a - $0.75</td>
<td>19,500</td>
<td>(12% diversion)</td>
</tr>
<tr>
<td>Scenario 7 - $1.25</td>
<td>18,000</td>
<td>(19% diversion)</td>
</tr>
<tr>
<td>Scenario 5b - $1.75</td>
<td>16,200</td>
<td>(27% diversion)</td>
</tr>
<tr>
<td>Scenario 2 - $1.50-2.25</td>
<td>15,300</td>
<td>(31% diversion)</td>
</tr>
<tr>
<td>Scenario 6 - $1.20-3.00</td>
<td>15,200</td>
<td>(31% diversion)</td>
</tr>
<tr>
<td>Scenario 3 - $2.00-2.50</td>
<td>14,500</td>
<td>(34% diversion)</td>
</tr>
<tr>
<td>Scenario 4 - $2.75</td>
<td>14,000</td>
<td>(37% diversion)</td>
</tr>
<tr>
<td>Scenario 1 - $2.50-3.25</td>
<td>12,700</td>
<td>(43% diversion)</td>
</tr>
<tr>
<td>High toll benchmark - $3.25-4.00</td>
<td>11,500</td>
<td>(48% diversion)</td>
</tr>
</tbody>
</table>
Cars that divert from the SR 99 tunnel would 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.

**Traffic volumes by location; afternoon/evening peak period (3 to 6 p.m.), year 2017**

**Scenario 1**

<table>
<thead>
<tr>
<th>Location</th>
<th>2017 no toll PM Peak</th>
<th>2017 tolled PM Peak Scenario 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR 99 Tunnel</td>
<td>21,800</td>
<td>12,700</td>
</tr>
</tbody>
</table>

Alaskan Way volumes are not included in arterials west of I-5. Volumes measured crossing Seneca Street.

**Scenario 7**

<table>
<thead>
<tr>
<th>Location</th>
<th>2017 no toll PM Peak</th>
<th>2017 tolled PM Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR 99 Tunnel</td>
<td>22,100</td>
<td>18,000</td>
</tr>
</tbody>
</table>

Alaskan Way volumes are not included in arterials west of I-5. Volumes measured crossing Seneca Street.
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.

\[ \text{Peak period vehicle hours of delay} \times 250 \text{ work days} \times \$18 \text{ per hour.} \]

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 vehicle hours of delay and annual values of time

<table>
<thead>
<tr>
<th></th>
<th>No Toll</th>
<th>Scenario 4</th>
<th>Scenario 5a</th>
<th>Scenario 5b</th>
<th>Scenario 6</th>
<th>Scenario 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017 estimated peak period vehicle hours of delay</td>
<td>36,600</td>
<td>44,600</td>
<td>38,000</td>
<td>39,800</td>
<td>42,900</td>
<td>40,000</td>
</tr>
<tr>
<td>2017 estimated annual peak period vehicle hours of delay</td>
<td>9,150,000</td>
<td>11,150,000</td>
<td>9,500,000</td>
<td>9,950,000</td>
<td>10,725,000</td>
<td>10,000,000</td>
</tr>
<tr>
<td>Estimated annual value (hourly value of $18)</td>
<td>$165 million</td>
<td>$201 million</td>
<td>$171 million</td>
<td>$179 million</td>
<td>$193 million</td>
<td>$180 million</td>
</tr>
</tbody>
</table>

### 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

<table>
<thead>
<tr>
<th>Revenue collected from tolls*</th>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
<th>Scenario 4</th>
<th>Scenario 5a</th>
<th>Scenario 5b</th>
<th>Scenario 6</th>
<th>Scenario 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue collected from tolls*</td>
<td>$1,340</td>
<td>$1,220</td>
<td>$770</td>
<td>$980</td>
<td>$1,270</td>
<td>$600</td>
<td>$1,260</td>
<td>$1,085</td>
</tr>
<tr>
<td>Toll collection costs**</td>
<td>($280)</td>
<td>($300)</td>
<td>($260)</td>
<td>($260)</td>
<td>($320)</td>
<td>($280)</td>
<td>($160)</td>
<td>($360)</td>
</tr>
<tr>
<td>Revenues after collection</td>
<td>$1,060</td>
<td>$920</td>
<td>$510</td>
<td>$720</td>
<td>$950</td>
<td>$320</td>
<td>$450</td>
<td>$900</td>
</tr>
</tbody>
</table>

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.

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. Safety systems.
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. More information on the Transportation Commission’s rate setting process can be found on their website: http://www.wstc.wa.gov.

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