

Alaskan Way Viaduct Replacement Program



**Advisory Committee on Tolling and Traffic Management
Meeting 2
Jan. 25, 2012**

Meeting Overview

- Consensus decision-making.
- The tunnel, tolling, traffic and diversion.
- AWW modeling.
- SR 520 – projections versus experience – so far.
- Guiding Principles discussion.
- Evaluation approach and tool kits.
- Public input.



ACTT Purpose

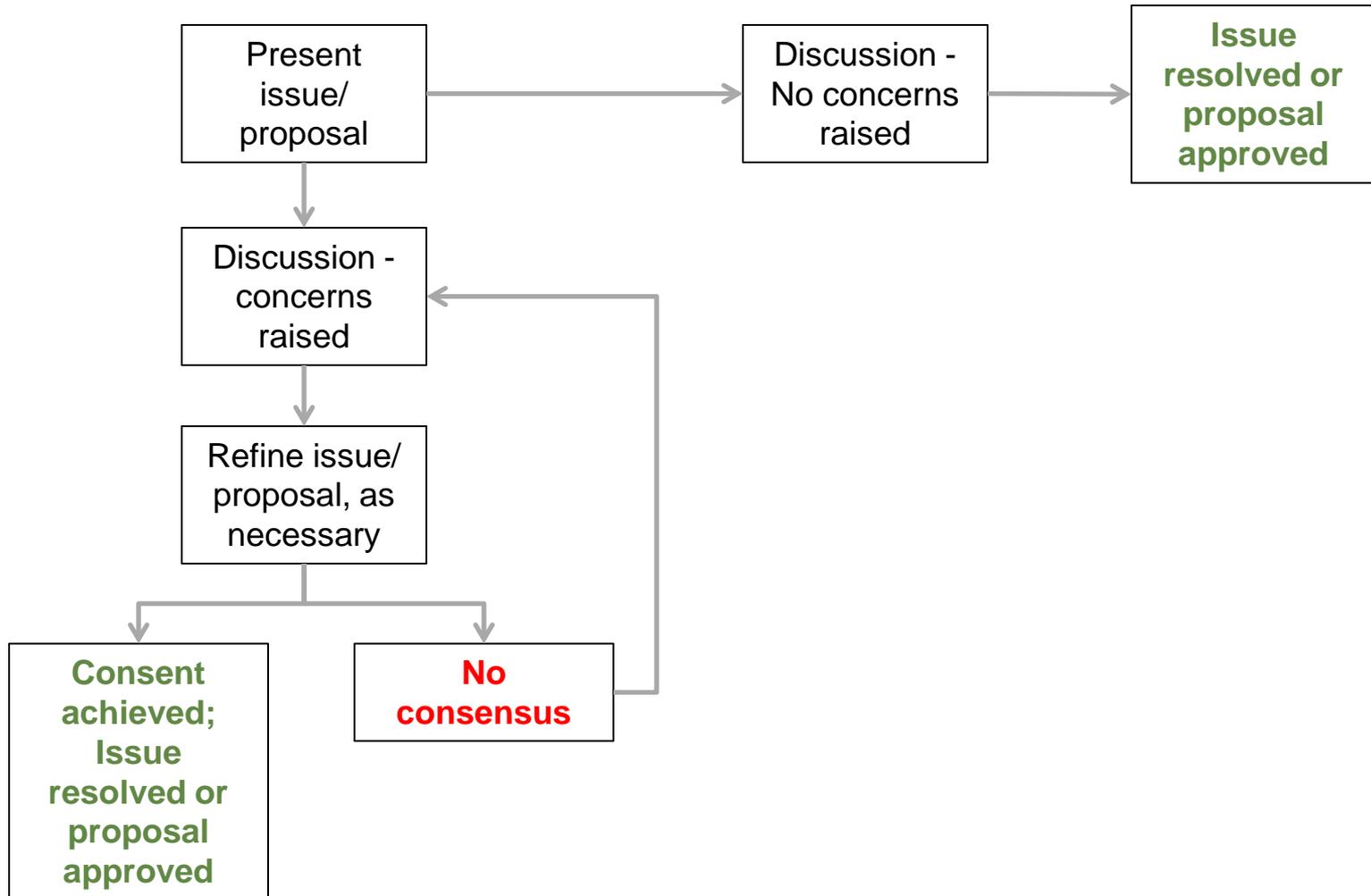
- The committee will make advisory recommendations on strategies for:
 - Minimizing traffic diversion from the tunnel due to tolling.
 - Tolling the SR 99 tunnel.
 - Mitigating traffic diversion effects on city streets and I-5.



Electronic tolling at Tacoma Narrows Bridge.

Consensus Decision-Making

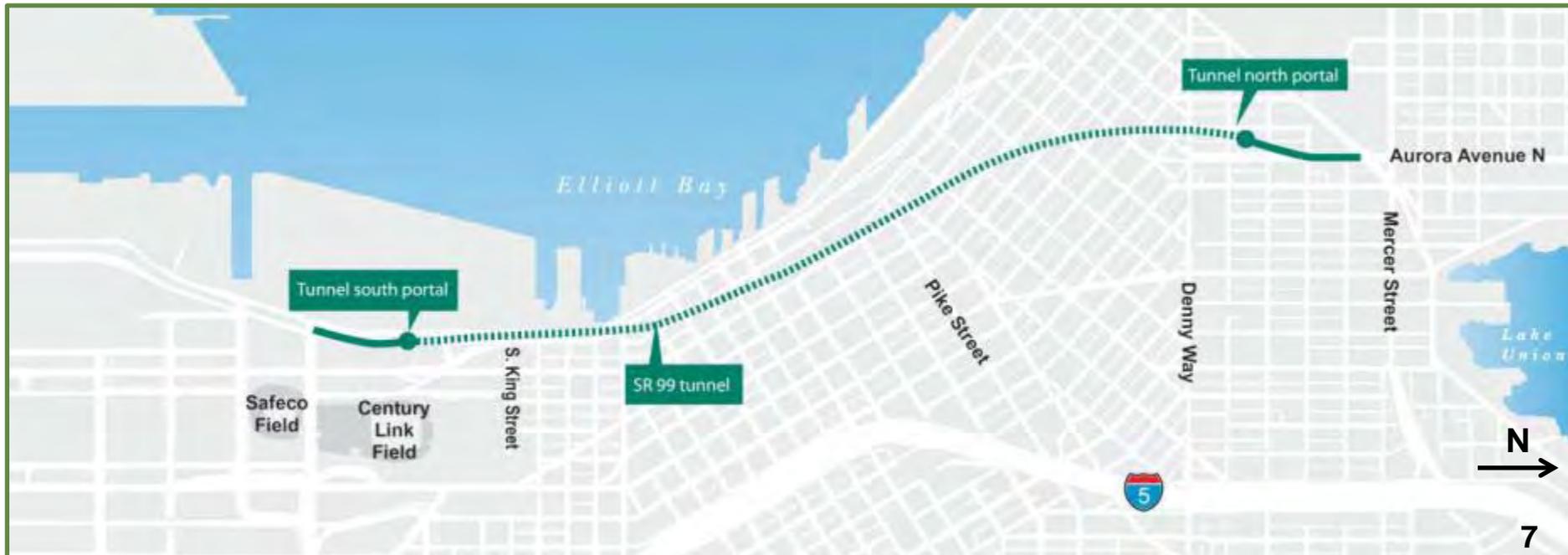
ACTT Consensus Process



The Tunnel, Tolling, Traffic and Diversion

Existing Data

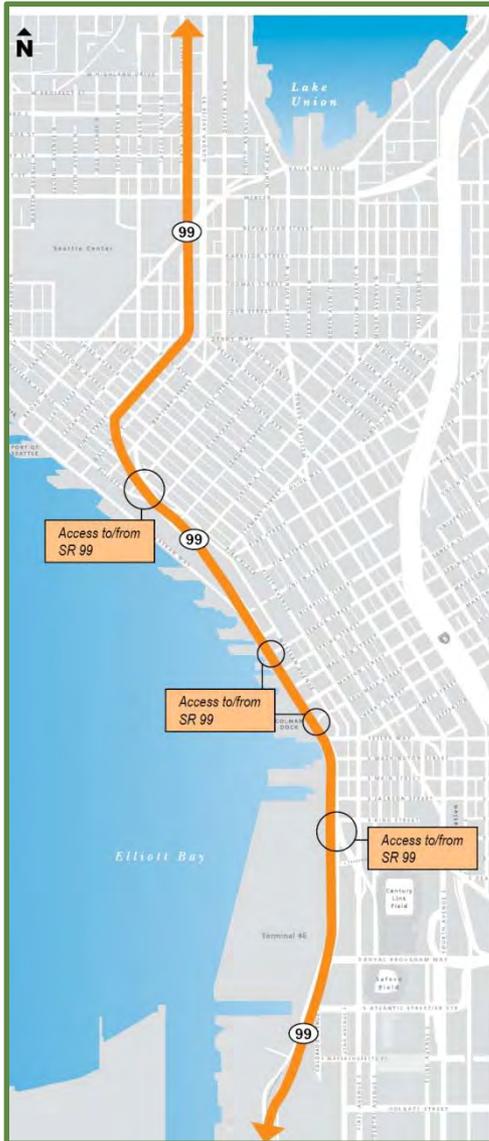
- Traffic patterns with and without tolls.
- Using traffic projections to estimate revenues from tolling the SR 99 tunnel.
- What we know from previous analysis.



Tunnel Changes Traffic Patterns From Today

- Full access at tunnel portals to northbound and southbound SR 99 and ramps to downtown city streets.
- Removal of viaduct's Columbia and Seneca ramps.
- Removal of viaduct's Elliott and Western ramps.

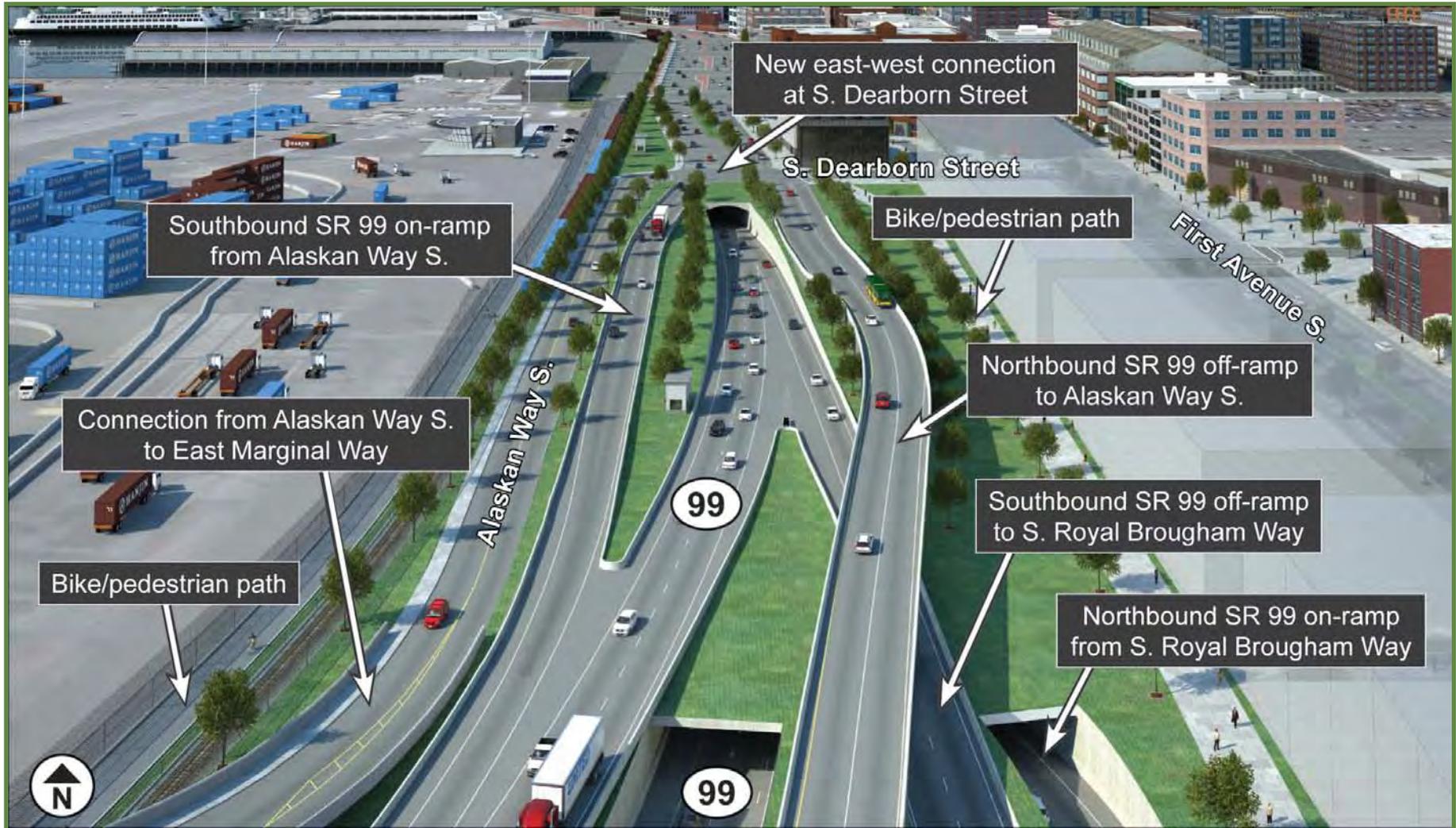
Traffic Pattern Changes With SR 99 Tunnel



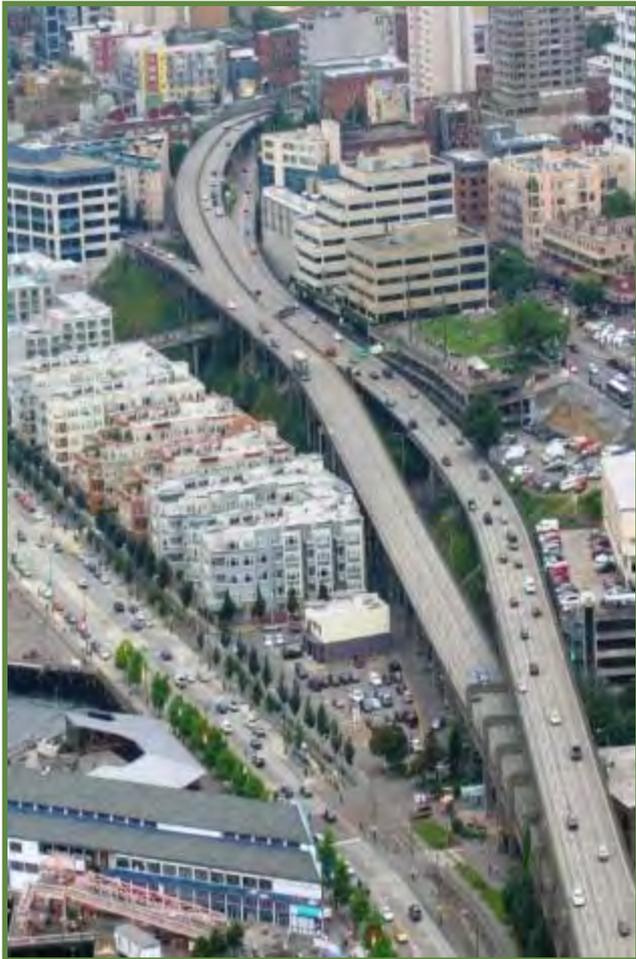
SR 99 tunnel and Alaskan Way with connection to Elliott and Western avenues

Alaskan Way Viaduct

South Portal Area



Connection to Elliott and Western Avenues

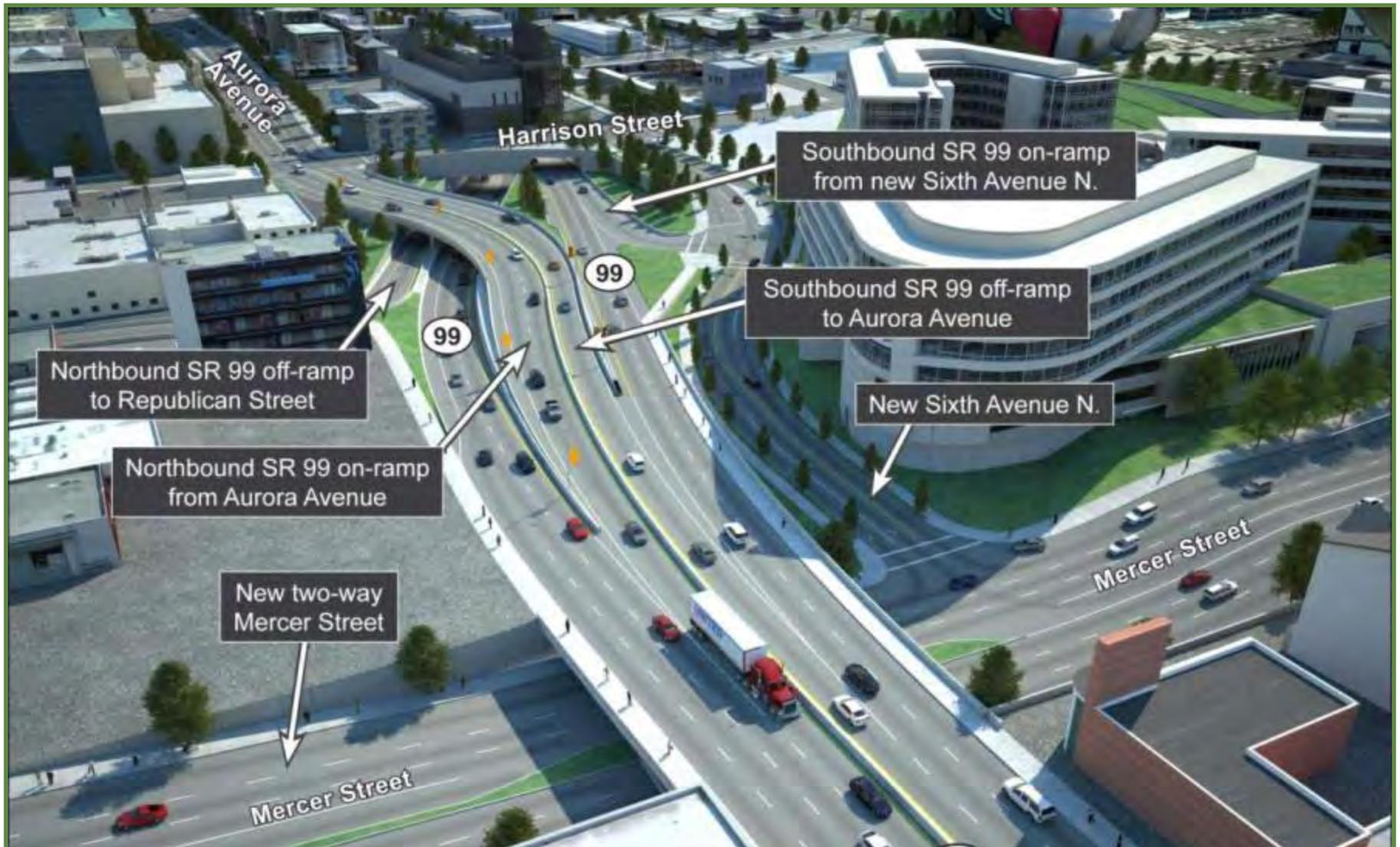


Today



Future

North Portal Area



Tolling the Tunnel Changes Traffic Patterns Compared to Not Tolling the Tunnel

- When you toll, people make choices about paying or avoiding the toll based upon travel time and costs.
- Traffic models help you evaluate the choices and what people might do.
- Models are models, not people.

How Do Tolls Affect Travel Behavior?

Getting from point A to point B:

- Some will pay the toll for a faster trip through the tunnel (blue).
- Some will avoid the toll and take a longer route through downtown (yellow) or take I-5 (green).
- Question is how many vehicles, and how do you estimate it?



Key Tool: Traffic Model

Models consider the following:

- Value of time
- Travel costs:
 - Auto operating costs, parking costs, tolls.
- Toll levels:
 - Rates.
 - Time of day.
 - Travel direction.
 - Inflation or rate escalation.
- Population:
 - Household information - income, size, locations.
- Employment/land use:
 - Types of jobs and location.
- Highway and transit networks
- Geographic area tolled

Toggle the Switch for Different Results

For example:

- Toll rate:
 - Higher tolls mean fewer people will take that route.
 - Lower tolls mean fewer people will divert.
- Geography:
 - Toll the tunnel only.
 - Toll the tunnel and segments of SR 99.

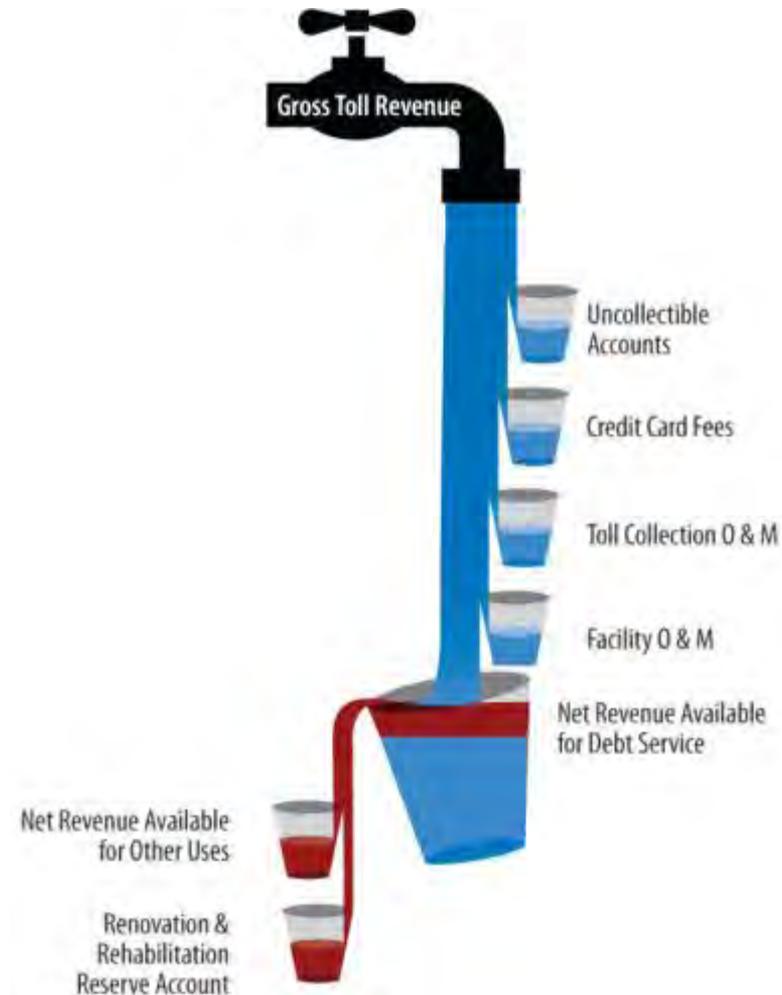
Key Tool: Revenue Model

- Revenue models use projections from traffic models to help us understand:
 - How much money we can raise over a period of time with tolls.

$$\begin{array}{r} \text{Period traffic counts (traffic model)} \\ \times \text{Toll rate for time period} \\ \hline \text{Tolls collected for time period} \\ + \text{Tolls collected from other time periods} \\ \hline \text{Daily tolls collected} \\ \times \text{Number of days in a year} \\ \hline \text{Potential annual tolls collected} \end{array}$$

Projecting Revenues

- Once we know total amount in tolls that can be collected, we identify expenses.
- Expenses can include:
 - Toll collection costs
 - Operations and maintenance costs
 - Rehabilitation and replacement reserves
- $\text{Tolls collected} - \text{expenses} = \text{Net revenue available for debt service.}$



Financial Model

- We use financial models to understand how much money is available for the project in exchange for future net revenues.
- They do so by estimating the net proceeds from a future bond sale.
- Major variables in a financial model are:
 - Assumed interest rates.
 - Reserve account assumptions.
 - Timing of the projects need for funds.
- WSDOT collaborates with the Office of the State Treasurer and their financial advisors to do financial modeling.

Alaskan Way Viaduct Replacement Program Modeling to Date

AWV Modeling Work Completed To Date

2010 Cost and tolling study

Five scenarios:
A, B, C, D, E

2010 Supplemental Draft EIS

Three scenarios:
A, C, E

2011 Final EIS

One scenario:
C

- Rate
- Geography
- Time of day
- Variable
- Electronic

Most conservative scenario

Results of 2010 Cost and Tolling Study

Range of Weekday Tolls for Tunnel Trips by Toll Scenario

Toll rate range expressed in 2015 Dollars



2011 Final EIS Modeling

- Used toll scenario C:
 - High toll rate scenario from 2010 tolling study for a conservative analysis.
- Tolls varied by time of day and direction of travel.
- Used PSRC regional travel demand model which does not address local street performance in detail.



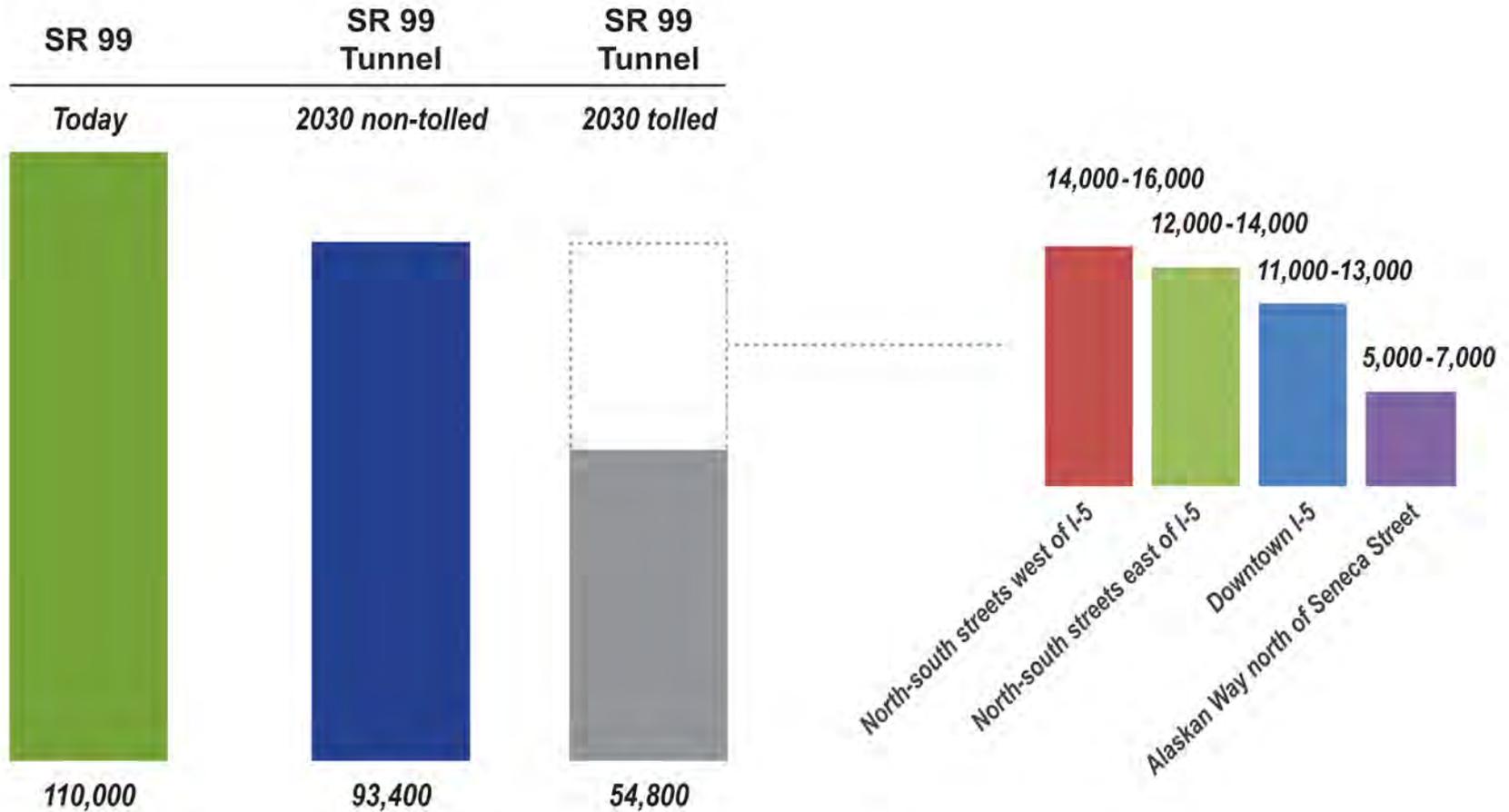
Comparative Traffic Volumes on SR 99

| Location | 2015 Non-Tolled | 2015 Tolled Tunnel* | 2030 Non-Tolled | 2030 Tolled Tunnel** |
|-----------------------------------|-----------------|---------------------|-----------------|----------------------|
| North of Mercer Street | 94,500 | 80,200 | 106,200 | 95,100 |
| SR 99 Tunnel | 86,600 | 41,600 | 93,400 | 54,800 |
| South – near South Holgate Street | 97,900 | 76,800 | 106,900 | 91,300 |
| Near Spokane Street | 63,000 | 49,200 | 69,800 | 59,700 |

*2015 data represents the tunnel only with toll scenario C.

**2030 data represents the AWV Replacement Program with toll scenario C.

Final EIS – SR 99 Volumes and Diversion Results



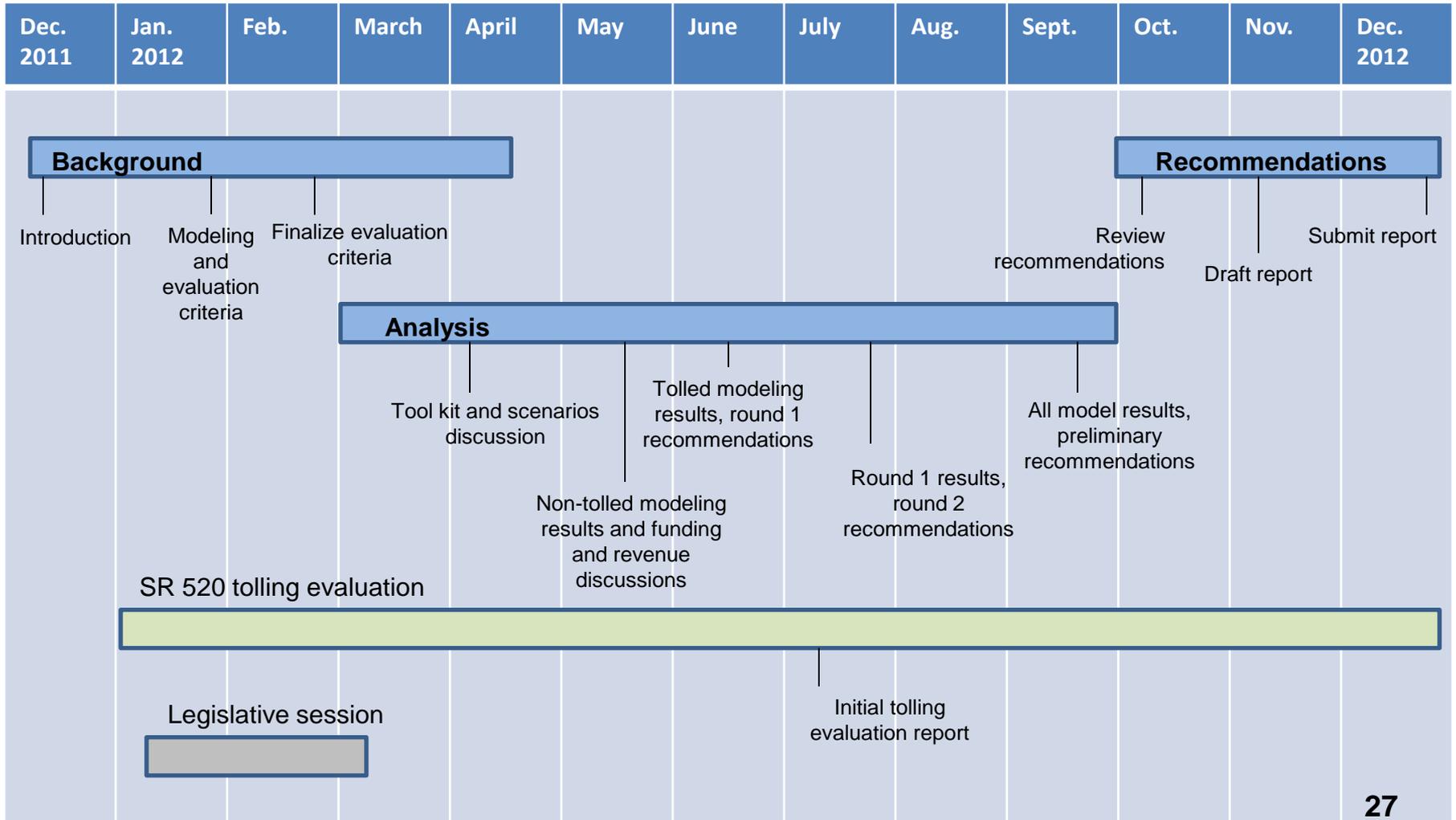
More Modeling Work is Underway

- Conservative (high) toll scenario C was used in the Final EIS representing the highest potential diversion effects.
- We need to better understand what happens on city streets.

2012 Modeling update:

- Updating forecasts with new assumptions from the Office of the State Treasurer using updated regional travel demand model.
- Developing a street-level model to more precisely estimate diversion effects to city streets and I-5.

Work Plan



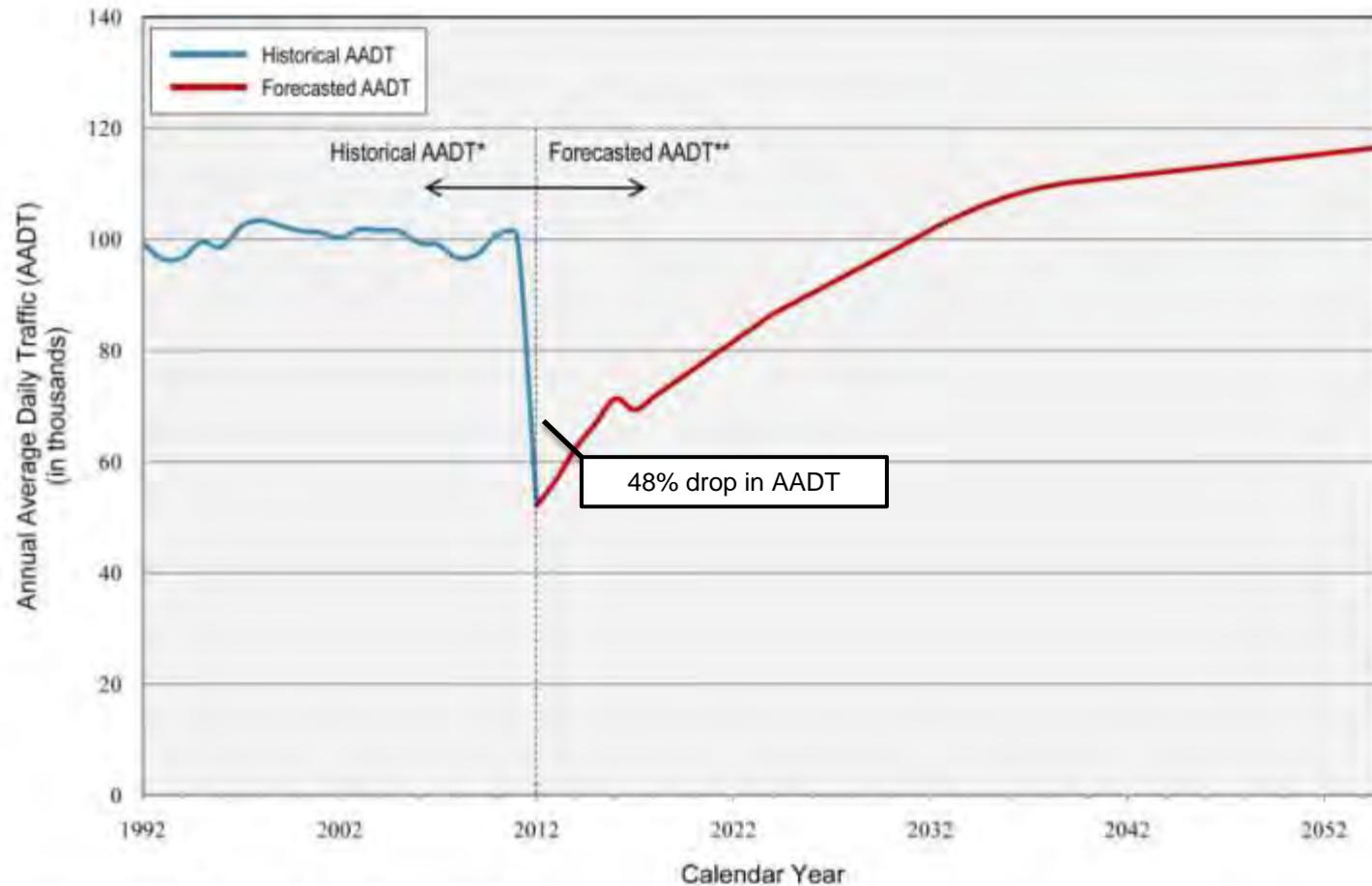
Real Life Experience: SR 520 Tolling

SR 520 2011 Traffic and Revenue Study

- Toll rate:
 - \$1.60 off-peak; \$3.50 during peak (with Good to Go pass, FY 2012).
 - Pay \$1.50 more without a *Good to Go!* pass.
- Charge toll; traffic goes down:
 - Model estimated 48% traffic reduction in 2012.
- Looking forward:
 - Diversion decreases / traffic on SR 520 increases over time.
 - “Real” value of toll rate decreases compared to inflation.



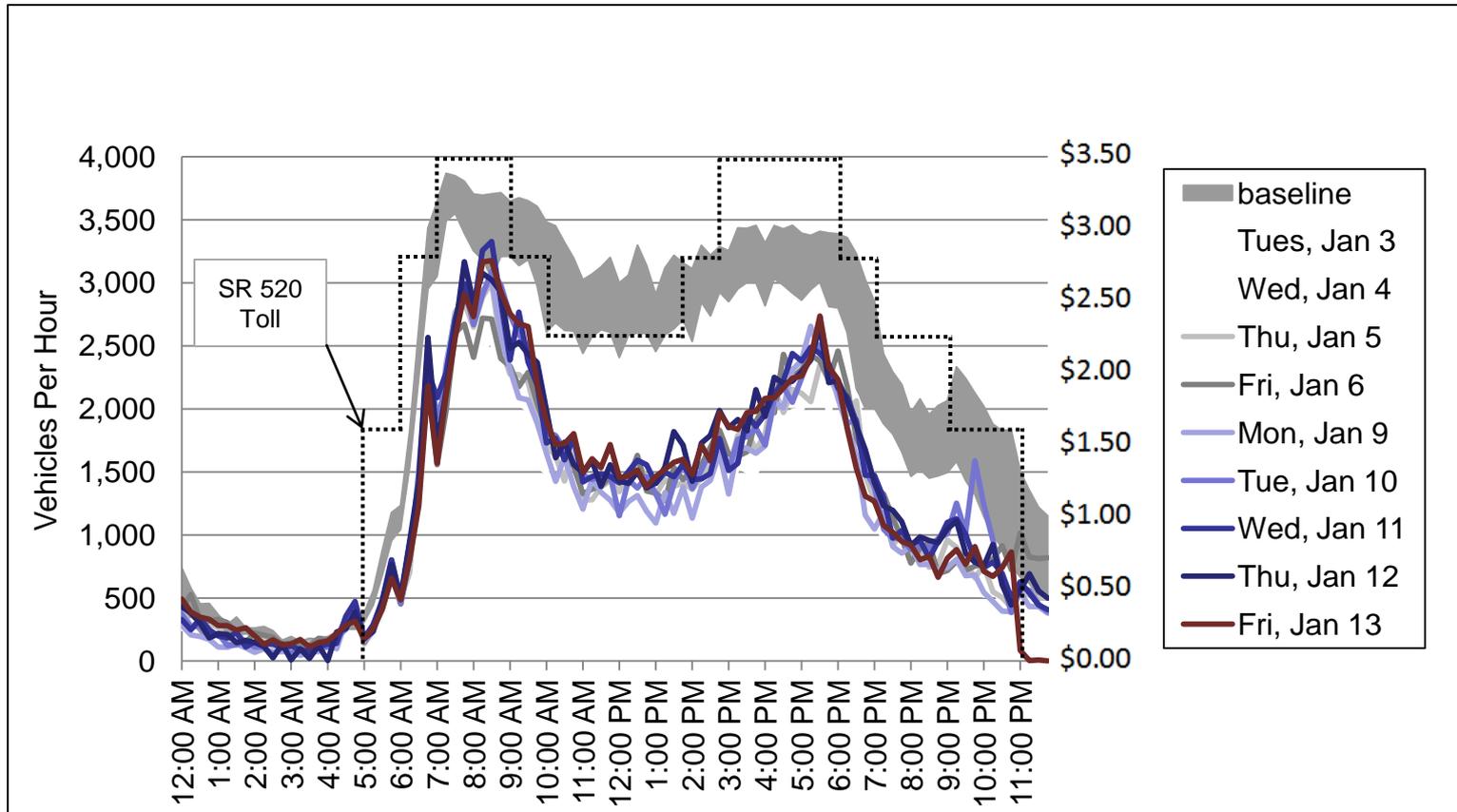
Historical and Forecasted SR 520 Bridge Volumes



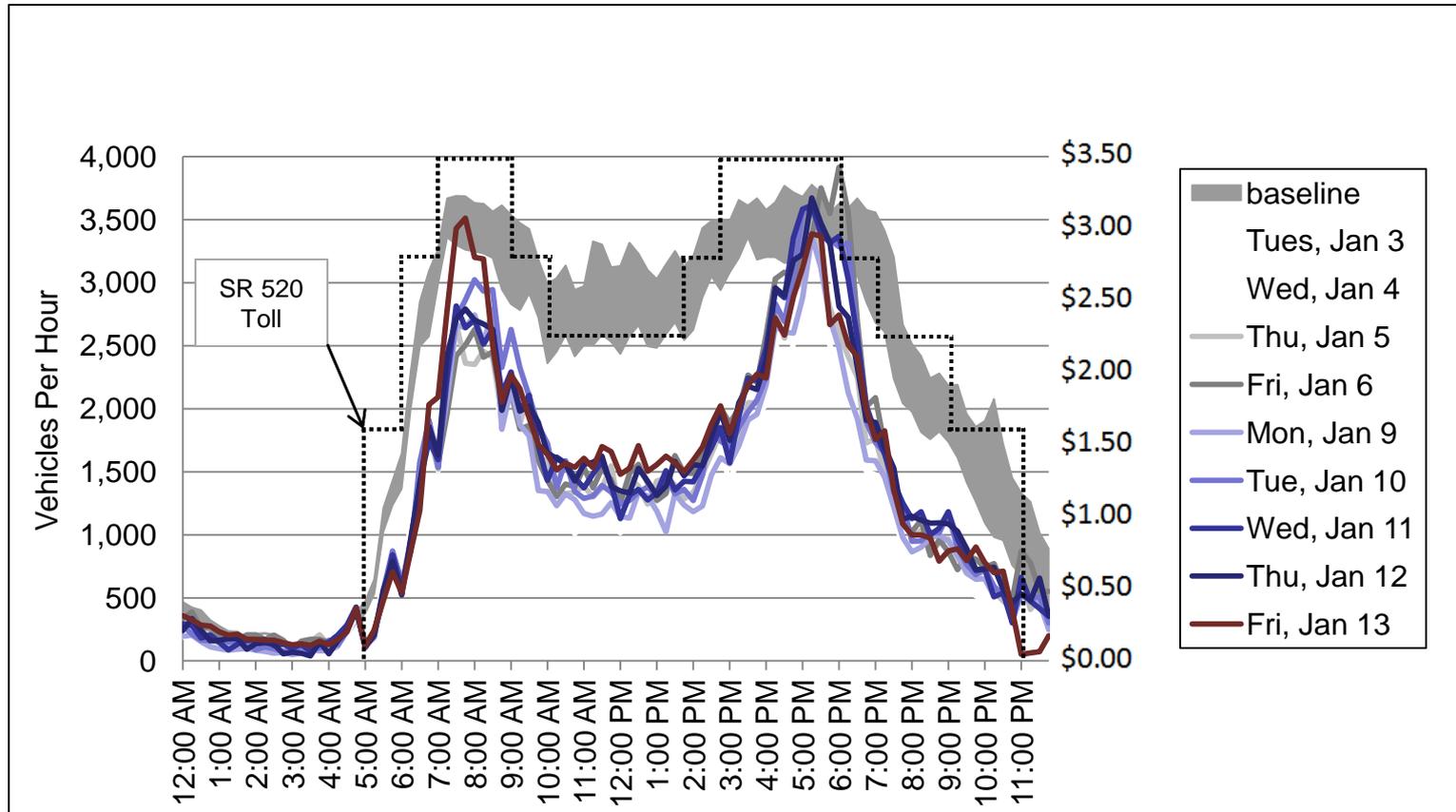
* Historical AADT: WSDOT Annual Traffic Data Reports

** Forecast AADT: T&R Analysis

Volume: Eastbound SR 520 Bridge (Weekdays)



Volume: Westbound SR 520 bridge (weekdays)



Guiding Principles Input and Review

Proposed Guiding Principles

| | Original Draft | Proposed Guiding Principles |
|----|---|---|
| 1. | Minimize diversion from the tunnel onto city streets, and onto I-5. | Minimize diversion from the tunnel onto city streets. Minimize diversion from the tunnel onto I-5. |
| 2. | Mitigate the anticipated adverse effects of traffic diversion. | No change |
| 3. | Meet the State's funding obligation for the AWW Replacement Program and identify funding for mitigation of diversion impacts. | Meet the State's funding obligation for the AWW Replacement Program. Identify funding for mitigation of diversion impacts. |

Proposed Guiding Principles

| | Original Draft | Proposed Guiding Principles |
|----|---|--|
| 4. | 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. | No change |
| 5. | 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. | No change - use handout for discussion |
| 6. | Maintain efficient use of city streets and I-5 for transit access into, out of and through downtown. | Maintain efficient use of city streets and I-5 for transit access into, within, out of and through downtown. |

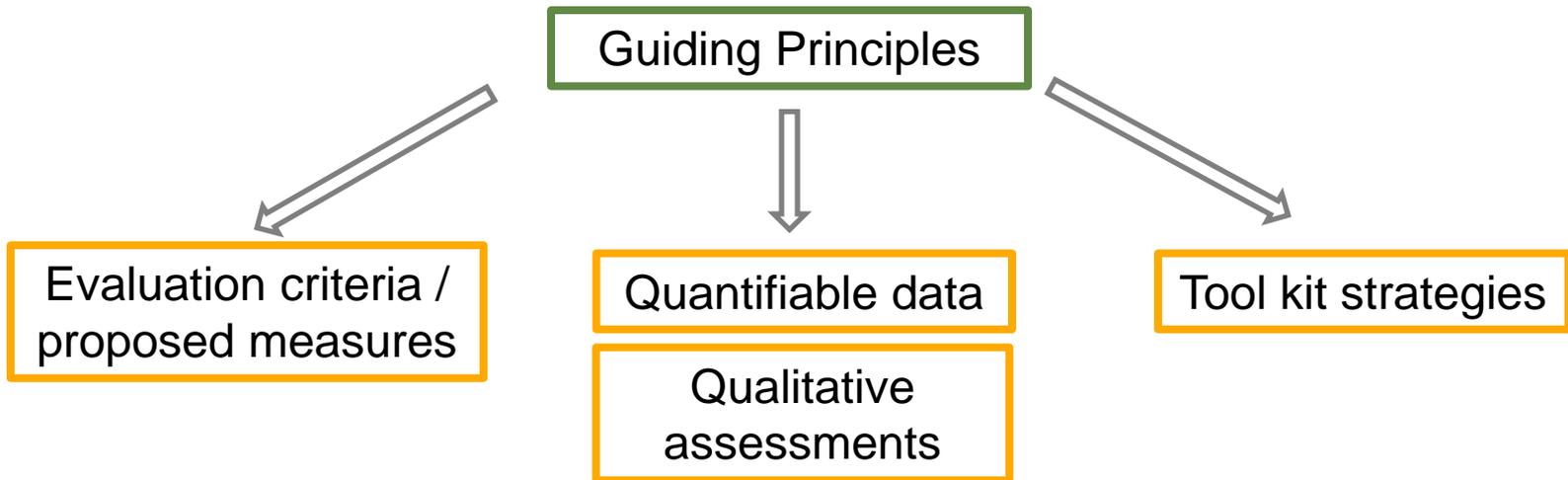
Proposed Guiding Principles

| | Original Draft | Proposed Guiding Principles |
|----|--|---|
| 7. | Maintain efficient use of city streets and I-5 for freight access into, out of and through downtown. | 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. |

Evaluation Approach

Evaluation Process Overview

- Minimizing traffic diversion from the tunnel due to tolling.
- Tolling the SR 99 tunnel.
- Mitigating traffic diversion effects on city streets and I-5.

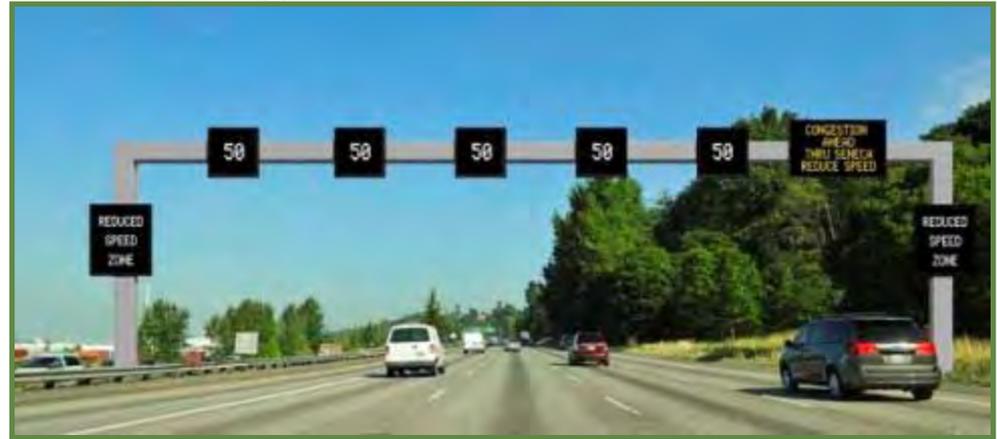


Potential Tool Kit Strategies

- Tolling strategies:
 - Rates, geography, time of day.
 - System tolling.
- Modify I-5 operations, express lanes and ramps.
- Prioritize street uses:
 - By user group (cars, trucks, bikes, transit, parking, pedestrians).
 - By time of day.
- Transit first policies.
- Transportation Demand Management.
- Funding transit and vanpools.
- Manage parking on downtown streets.

Potential Tool Kit Strategies Continued

- Traffic calming measures.
- Traffic signal improvements.
- Active traffic management.
- Extend Intelligent Transportation Systems.
- Mercer Street and S. Spokane Street improvements (in progress).
- Increased Ballard and West Seattle transit (in progress).



Driver information signs on I-5. Active traffic management.



Intelligent Transportation Systems.

Public Input

Public Input

- Process would complement the ACTT's work and provide input at key milestones.
- Ways to gather and share information would include:
 - City Council and Transportation Commission meetings.
 - Open houses tied to preliminary recommendations.
 - Comments received from members of the public.
 - Program website with meeting materials.

Questions and Next Steps



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