Puget Sound Gateway Program

SR 509

Steering Committee
March 24, 2016

CRAIG J. STONE, PE    GATEWAY PROGRAM ADMINISTRATOR
OMAR JEPPERSON, PE    SR 509 PROJECT MANAGER
Agenda

• Welcome & Introductions
• Travel Demand Forecasting Model
• Draft Performance Metrics and Targets
• Next Steps
SR 509 Steering Committee 2016 Work Plan

1. Determine Needs
2. Define Performance Metrics
3. Develop Scenarios
4. Stakeholder Endorsement of Scope
5. Funding & Phasing
6. Recommend Implementation Plan

We are here
Context for the Project

- PSRC 2040
- Comprehensive Plans
- Urban and Manufacturing Industrial Centers
- Input from stakeholders
Context for Project

- PSRC 2040
- Comprehensive Plans
- Urban and Manufacturing Industrial Centers
- Input from stakeholders
- Projected travel patterns
Previous Traffic Forecasting

• High levels of peak period demand
• Used state-of-the-art forecasting that was available at the time (1999)
  • Daily demand factored to peak hour
  • Upstream and downstream physical constraints not fully captured
Current Traffic Forecasting

- Still showing growth
- State-of-the-art forecasting
  - Time of day demands
  - More accurate trip generation detail
- Greater network resolution
- Capacity constraints reflected
- Tolling is accounted for
  - Legislative intent to toll
SR 509 Traffic Forecasting Approach

Baseline Calibration
- OFM census track household estimates
- Refined network
- AM and PM peak hour vehicle demands match 2015 counts

Model Input
- Refined network
- Assumes tolling
  - Tolled similarly to SR 520
SR 509 Traffic Forecasting Approach

Model Input (cont.)

- 2025 / 2045
- PSRC Land Use Vision (LUV) forecasts
- Area specific forecasts
  - Comprehensive Plans
  - Land use distributions
SR 509 Traffic Forecasting Approach

Assumed Transportation Projects

- Local agency plans
- WSDOT regional projects
- Sound Transit

Trucks

- Limited truck data available
- PSRC truck module
- Freight Analysis Framework
- Existing truck counts
- Seattle marine terminal truck info
SR 509 Traffic Forecasting Application

Data extracted from the model
• By facility and area
• Future year demands
• Travel time
• Delay
Discussion
Review of Project Needs

2003 EIS Purpose and Need:

• **Purpose:**
  - Improve regional highway connections with an extension of SR 509 to serve current and future transportation needs in southwest King County and to enhance southern access to Sea-Tac International Airport.

• **Need:**
  - Create system linkages, accommodate travel demand and capacity needs, and improve intermodal relationships.
  - Close the gap between existing SR 509 and I-5
  - Ease capacity and travel demands on local streets and major transportation routes, like I-5
Review of Project Needs

2003 EIS Objectives:

- Support local and regional comprehensive planning and development
- Maintain efficiency of existing roadways in the immediate vicinity of the airport terminals and parking garage
- Relieve local congestion
- Serve harbor freight operations
- Improve regional mobility and safety
- Be compatible with connections to High Capacity Transit
- Develop broad public and political support for the preferred alternative
- Design project in an environmentally responsible manner
- Provide cost-effective alternatives and solutions
Practical Solutions Approach

Design Manual

Section 1

Ch. 1101
Understand the Project Need including the contributing factors

Section 2

Ch. 1102
Consider the Context

We are here

Section 3

Ch. 1103
Evaluate Design Controls

Section 4

Ch. 1104
Formulate & Evaluate Alternatives that meet the need

Section 5

Ch. 1105
Document selection of Design Elements

Basis of Design

Ch. 1106
Document selection of Dimensions
## Essential Needs

<table>
<thead>
<tr>
<th>Essential Needs Meeting 1</th>
<th>Updated Essential Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  • Complete freeway network (close the gap)                                             • Reduce travel time between Urban Centers and Manufacturing Industrial Centers in South King County</td>
<td></td>
</tr>
<tr>
<td>2  • Improve freight travel time and reliability                                          • Improve travel time reliability between Urban Centers and Manufacturing Industrial Centers in South King County</td>
<td></td>
</tr>
<tr>
<td>3  • Improve southern connection to Sea-Tac Airport for people and goods                   • Reduce travel time from South Sound to Sea-Tac Airport</td>
<td></td>
</tr>
<tr>
<td>• Improve travel time reliability from South Sound to Sea-Tac Airport</td>
<td></td>
</tr>
<tr>
<td>4  • Ease congestion between Seattle and Tacoma by utilizing unused capacity on SR 509   • Reduce hours of delay in the project subarea network</td>
<td></td>
</tr>
<tr>
<td>• Maintain or improve I-5 operations</td>
<td></td>
</tr>
<tr>
<td>5  • Support Regional Growth Centers for Burien, SeaTac, Kent and Federal Way, and Industrial Centers for Duwamish and Kent</td>
<td>• Improve economic vitality</td>
</tr>
<tr>
<td>• Support local and regional comprehensive land use planning and development</td>
<td></td>
</tr>
<tr>
<td>6                                                                 • Reduce number of serious injury and fatal crashes</td>
<td></td>
</tr>
<tr>
<td>7  • Improve transit operations and connections to transit                               • Will be addressed by mode in the performance metrics</td>
<td></td>
</tr>
</tbody>
</table>
## Contextual Needs

<table>
<thead>
<tr>
<th>Contextual Needs Meeting 1</th>
<th>Updated Contextual Needs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>• Support local and regional comprehensive planning and economic development</td>
</tr>
</tbody>
</table>
| 2  | • Improve mobility and safety between the state’s largest cities and counties  
  • Improve mobility and safety in the I-5 corridor north of SR 516  
  • Improve mobility and safety in the I-5 corridor south of SR 516 | *Moved to Essential Needs* |
| 3  | • Improve east-west connectivity across the Kent Valley MIC | *Moved to Essential Needs (part of urban centers concept)* |
| 4  | | • Reduce the number of serious injury and fatal crashes on local arterials |
| 5  | • Decrease demand on local arterials, decreasing delay and increasing safety | *Moved to Essential Needs (part of reduce hours of delay in the subarea network)* |
| 6  | | • Support multimodal choices to Sea-Tac Airport  
  • Improve intermodal relationships |
| 7  | • Provide pedestrian connectivity  
  • Provide bicycle connectivity | • Reduce pedestrian vehicle exposure  
  • Continuity and consistency of pedestrian and bicycle facilities |
| 8  | | • Maintains forward compatibility with EIS |
| 9  | | • Reduce area of impact to sensitive areas |
| 10 | | • Compatibility with Sound Transit Federal Way Link Extension |
# Scenario Comparison Table

## Scenario Comparison Table - SR 509 Completion Project

<table>
<thead>
<tr>
<th>Performance Category</th>
<th>Essential Performance Metric</th>
<th>Economic Vitality</th>
<th>Safety</th>
<th>Contextual Performance Metric</th>
<th>Safety</th>
<th>Mobility</th>
<th>Env't</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Build</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scenario 1 - Closing the Gap</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scenario 2 - Moderate Connectivity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scenario 3 - Gateway</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scenario 4 - Full Connectivity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scenario 5 - FEIS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Date:** 3/30/16

---

**Source:** WSDOT
Proposed Project Subarea
Developing Scenarios
Project Schedule (SR 509)

<table>
<thead>
<tr>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
<td>4</td>
<td>5</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kick-off</td>
<td>Methodology review</td>
<td>Preliminary scenarios and evaluation results</td>
<td>Present refined scenarios</td>
<td>Recommend scope</td>
<td>Construction staging &amp; funding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kick-off</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Open House</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Steering Committee Meeting**
- **Executive Committee Meeting**
- **Open House**
More information:

Craig J. Stone, PE
Puget Sound Gateway Program Administrator
(206) 464-1222
stonec@wsdot.wa.gov