

## **In Attendance**

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### **CWG Members**

Andrea Tull, Sound Transit  
Robin Mayhew, PSRC  
Jennifer Lindwall, KCDOT  
Maria Koengeter, City of Bellevue  
Bob Brock, City of Issaquah

### **WSDOT Staff**

Carol Hunter, Urban Planning Office  
Richard Warren, Urban Planning Office  
Stephanie Weber, Urban Planning Office  
Zak Griffith, WSDOT  
Rick Roberts, WSDOT King County Traffic Engineer

### **Consultant Team**

Paul Ferrier, HDR  
Sharon Wright, HDR  
Michael Witter, HDR  
Matt Selinger, HDR  
Torsten Lienau, CH2M Hill  
Bill Love, CH2M Hill  
Brycie Philbin, PRR

## **Not in Attendance**

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### **CWG Members**

Don Petersen, FHWA  
Jim Christian, FHWA  
Kirk Holmes, City of Snoqualmie  
Jeff Brauns, City of Sammamish  
John Cunningham, City of Sammamish  
Ron Garrow, City of North Bend  
Elizabeth Stratton, WSDOT Freight Office  
Jim Arrowsmith, King County Metro Transit  
Barbara Briggs, WSDOT  
Michell Mouton, WSDOT  
Rosario Revilla, WSDOT

## Meeting Summary

Theresa Smith, WSDOT  
Chris Picard, WSDOT

### Meeting Agenda

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#### I. WELCOME & MEETING OBJECTIVES - *Carol Hunter, WSDOT*

##### Meeting Objectives:

- Discuss feedback on draft goals and objectives.
- Discuss preliminary feedback and conduct discussion regarding technical work that has been done to date (environmental, design and traffic analysis).

#### II. DISCUSSION ON DRAFT GOALS AND OBJECTIVES - *Carol Hunter, WSDOT*

The Corridor Working Group attendees of the meeting had no additional feedback regarding the draft goals and objectives.

#### III. ENVIRONMENTAL OVERVIEW - *Sharon Wright, HDR*

Carol introduced the environmental overview and reminded the group that this is a planning level review and that it is not intended as a NEPA or SEPA compliance document.

Sharon presented the highlights of the technical memo including:

- Data sources
  - Red flags including many waterways, fish passage, and wildlife crossings
  - Other red flag findings such as seismic hazards and land use findings, including the Snoqualmie Casino Project and many open space area and parks along the corridor
- The project team requests the Corridor Working Group review the Environmental Overview Technical Memorandum and provide feedback by March 30. Since the overview did not cover more in depth elements like utility mapping, socioeconomic reviews, any information on those topics would be especially helpful.

#### IV. EXISTING DESIGN (GEOMETRIC) CONDITIONS - *Paul Ferrier, HDR*

HDR provided an overview of the existing horizontal and vertical alignments to identify where I-90 meets WSDOT standards or there are deviations. This analysis was completed with As-Builts provided by WSDOT and a windshield survey. HDR is still gathering interchange data and will highlight those areas in more detail at a later point in time.

A map of existing geometric conditions was distributed. Areas with green meet WSDOT standards for design speed; yellow represents current WSDOT standards for posted speed; and red represents areas that do not meet current WSDOT standards.

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A technical memo will make it easier to reference back to the map and will be sent out in April.

*(Carol Hunter comments that it would be interesting to see where collisions are most frequent and how they correspond with geometric conditions).*

### V. EXISTING TRAFFIC CONDITIONS - *Torsten Lienau, CH2M Hill*

Torsten Lienau provided an overview of various models used in the analysis of existing traffic conditions: a forecasting model, which estimates the amount of traffic in the future and can distinguish between vehicle types (trucks, SOV, HOV 2, HOV 3+, etc.); the HCS model, which is typically used in the United States for freeway analysis and evaluates conditions using segmented approach; Synchro, the local street intersection model; and VISSIM, the freeway simulation model. VISSIM is used to supplement HCS's approach, because it is able to evaluate impacts on adjacent segments of freeway and takes into consideration congestion *throughout* the transportation network. Including portions of I-405, for example, is very important to the analysis, since congestion on I-405 causes congestion on the I-90 corridor.

CH2M Hill has adjusted the models (updated land use, current and forecasted transportation projects along the corridor, etc.), to better present existing conditions. They have also implemented operational models and collision history into the Existing Conditions Analysis.

The Existing Conditions Analysis is based on 2005 traffic counts on the I-90 corridor, with some 2006 data.

*Key findings of the Existing Conditions Analysis (discussed while reviewing graphic contained in Traffic Analysis Overview):*

#### A. Collisions

- There were four fatal collisions on the corridor in the last three years, all in different locations. All four involved drug and/or alcohol use.
- The highest collision-type are rear-enders and fixed object collisions.
- WSDOT has documented five "high accident locations," which will be emphasized when the I-90 corridor team is considering improvements. Along the corridor, the highest collision location is located in the I-90/Eastgate interchange area.

#### B. Congestion

- There is significant slowing around the I-405 interchange and the weave near SR 900 due to people trying to get in and out of the HOV lane, while others are merging onto the freeway from SR 900.

## Meeting Summary

### C. Grades

- There are grade issues along the corridor, which have an impact on operations, particularly for trucks when they merge on and off the freeway.

### D. Ramp Terminals, Intersections and Interchanges

- There are 77 local street intersections, including ramp terminals:
  - 16 intersections operate at or near capacity in the AM peak hours.
  - 24 intersections operate at or near capacity in the PM peak hours.
- There are various intersection failures along the corridor, e.g. at Eastgate, SR 900, Front Street, Snoqualmie Parkway.
- There is significant slowing around the I-405 interchange and the weave on SR 900.

### E. AM and PM Peak Hour Operations

- Most traffic is operating above 55 mph during the p.m. peak hours.
- AM peak hours in the westbound direction are the issue however, especially beginning between Front Street and SR 900, and the Eastgate and I-405 interchanges (traffic flow in less than 55 mph).

A technical memo will be sent out at the end of April to the technical working group and to WSDOT for their review.

#### *Graphics explanation:*

All graphics are a result of VISSIM and HCS. Sheet 1 and 2 were created using existing WSDOT data, taken from one day in 2005. CH2M Hill chose a representative day when there was no collision, Mariners games, etc. This day was **September 20, 2005**.

Congestion levels are represented by the colors black, red, green and yellow. From the graphic, it is clear that the AM peak hour has the most congestion going in the *westbound* direction. The PM peak hour is operating at or above 55 mph in both directions.

On the third page are temporal speed charts, referred to as "Brain Scans" during the meeting, which analyze the urban section of the corridor. These are split by the AM and PM peak hour. This graphic illustrates the effects of congestion, how long it extends, etc. The temporal speed charts also identify problem areas surrounding the corridor, e.g. congestion at the Bellevue Way exit and I-405/I-90 interchange. One purpose of the temporal speed charts is to calibrate the existing conditions model, thereby providing a level of confidence in the models.

The graphics show that eastbound, there are no congestion problems in the a.m. or p.m. peaks, other than some minor slowing around the Eastgate interchange. Westbound, there are problems that are mostly attributed to I-405 and during the a.m. peak hour.

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*(Question from Carol Hunter: Are the problems at Front Street attributed to I-405? Answer from Torsten Lienau: No. There are other factors.)*

*(Comment from Carol Hunter: Maybe we can use different colors to depict lane types at the bottom of the graphic to make it clearer. Torsten Lienau's reply: Okay. We are trying to make these graphics as reader-friendly as possible.)*

The next set of graphics is a result of the HCS analysis in the rural section of the corridor. Density (the spacing of vehicles) is calculated in this section and reveals that, within the rural section of the corridor, there are few congestion issues.

Overall, the analysis shows that traffic throughout the corridor is operating at LOS "D" or better, which means traffic is operating not quite at capacity (F means it is operating over capacity). (Note that HCS does not analyze HOV. This is not included in the corridor's rural analysis, but is included in its urban analysis).

### VI. TRAFFIC SIMULATION PRESENTATION - *Bill Love, CH2M Hill*

The simulation is according to the typical day (September 20, 2005). The following is the key for coloring used:

Green = SOV  
Blue = HOV2  
Light Blue = HOV3  
Pink = Heavy Vehicles

The simulations reveal the following tendencies:

- Westbound queuing and spill back from Eastgate and East Lake Sammamish (there are high tendencies for weaving to occur as a result of people trying to merge left). in the a.m. peak hour.
- As vehicles approach I-405, they are trying to get into the right lane, which creates solid congestion along the ramp at I-405 in the a.m. peak hour in the westbound direction.
- During the AM peak hour, there is a rolling queue going westbound at approximately 30-40 mph.
- Some of the bottlenecks experience a rolling queue at less than 30 mph.
- There is excessive demand at Coal Creek Parkway and I-405, creating bottlenecks that ultimately affect the operations of I-90.
- *Note that page two of the handout shows a big section of white, which represents data collection that was not working at the time of creation.*
- *Note also that VISSIM was used for freeway traffic analysis, not for exits. Also, elevations cannot be seen when viewing the simulation but the grades can (trucks go*

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*slower when climbing a grade). The simulation analysis was able to capture density, travel times and speed of HOV versus normal lanes.*

### **SUGGESTIONS:**

- Using the “typical day” strategy, create a side-by-side comparison of what the corridor would look like without any improvements and then with improvements (from Carol Hunter).
- Andrea Tull is interested in having transit mentioned in the Existing Traffic Conditions Analysis.

### **VII. NEXT STEPS**

- Send comments on Environmental Overview and Traffic Analysis to Stephanie Weber no later than close of business on Friday, March 30.
- Reply to Brycie Philbin ([bphilbin@prrbiz.com](mailto:bphilbin@prrbiz.com)) with your availability for the next CWG meeting.
- The next meeting will be about the corridor’s Screening Criteria.

*Questions about the meeting, additional materials or the Corridor Working Group can be addressed to Brycie Philbin [bphilbin@prrbiz.com](mailto:bphilbin@prrbiz.com) or 206-623-0232 x245.*