

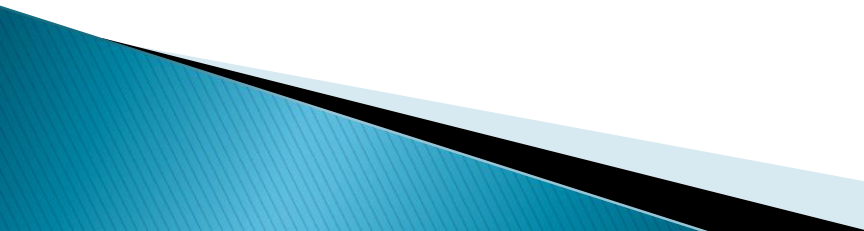
**Bridge Review Panel
Presentation
Columbia River Crossing
Project**

**For the Project Sponsors Panel
December 10, 2010**

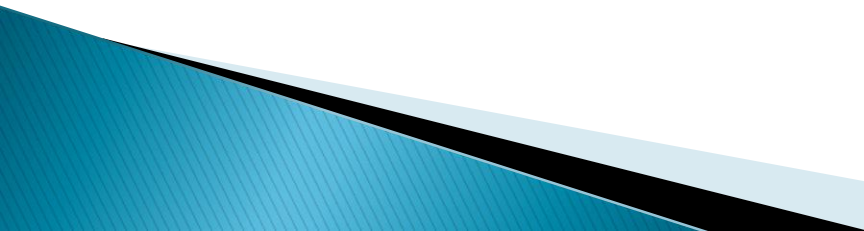
Bridge Review Panel Members

- ▶ Thomas R. Warne, PE, Chairman; Tom Warne & Associates
- ▶ Scott Ashford, PE, PhD; Oregon State University
- ▶ Benjamin Beerman, PE ; FHWA
- ▶ John Buchheit, PE, DBIA; FTA(PMOC)
- ▶ David Goodyear, PE, Chief Bridge Engineer; T.Y.Lin
- ▶ Siegfried Hopf, Chief Bridge Engineer; Leonhardt, Andra & Partners

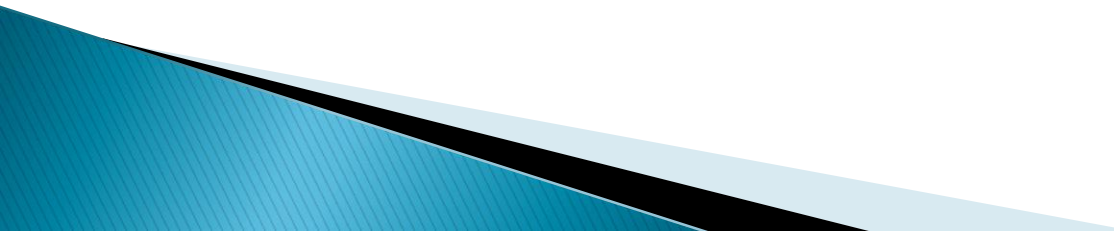
Bridge Review Panel Members

- ▶ Bruce Johnson, PE; ODOT
 - ▶ Jugesh Kapur, PE; WSDOT
 - ▶ Wesley King, High Capacity Transit Project Mgr; C-TRAN
 - ▶ Calvin Lee, PE; TriMet
 - ▶ John McAvoy, Major Project Mgr; FHWA
 - ▶ Mary Lou Ralls, PE; Ralls Newman, LLC
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Bridge Review Panel Members

- ▶ Joe Showers, PE, Business Group
Technical Mgr; CH2M Hill
 - ▶ Steve Stroh, PE, Deputy Director of
Surface Transportation, Major Bridges;
URS
 - ▶ Steve Thoman, PE, Principle Bridge
Engineer; Independent Consultant
 - ▶ Theodore Zoli, PE; HNTB
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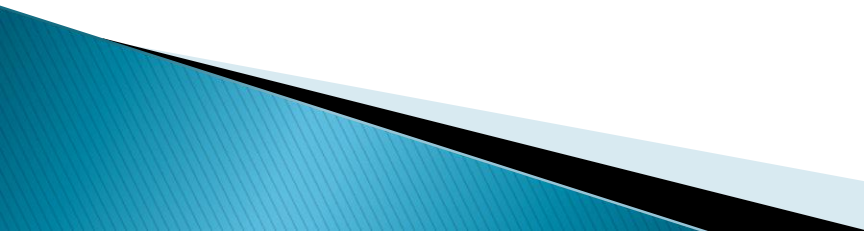
Panel Objectives

- ▶ Given the constraints imposed on the project evaluate possible bridge types that would meet these constraints
 - ▶ If the constraints are modified, are there other bridge types that should be considered
 - ▶ Given the outcomes of 1 and 2 evaluate cost, risk, constructability, and aesthetics for potential bridge types
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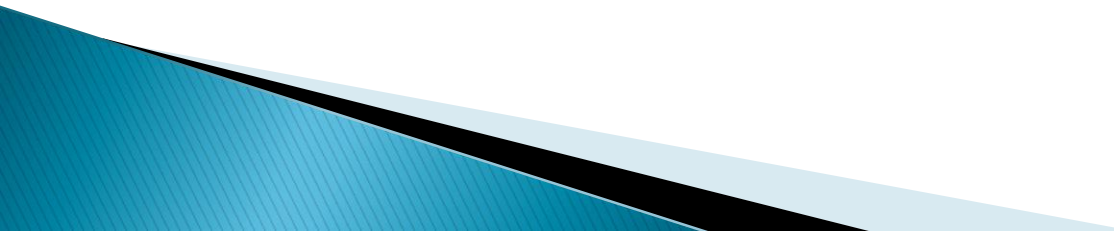
Bridge Review Panel Process

- ▶ November 3–4, 2010
 - Orientation and workshop
 - Review of bridge types and other technical analysis
- ▶ December 15–16, 2010
 - Summarize work to date and possible bridge types
 - Perform the alternatives analysis on the agreed upon bridge types
- ▶ January 18–19, 2011
 - Constructability review
 - Risk review
- ▶ Final report–Before January 31, 2011

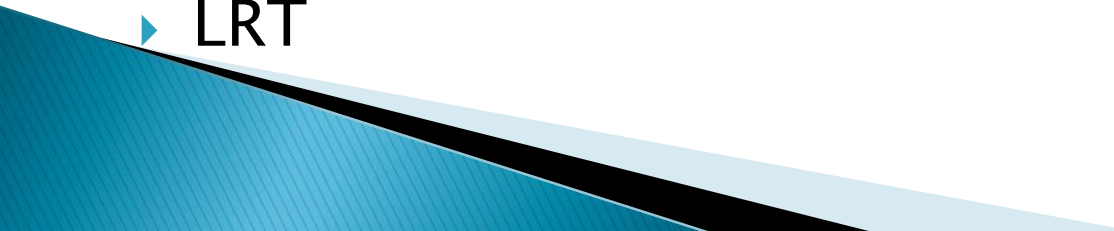
Four Criteria to Achieve

- ▶ Technically Sound – Constructible
 - ▶ Meets Environmental Commitments
 - ▶ Cost Effective
 - ▶ Achieves Aesthetic Goals
- 

Constraints

- ▶ Air space
 - ▶ Navigational Clearance
 - ▶ Navigation Channel Location
 - ▶ Minimized Footprint for Funding and Environmental
 - ▶ Horizontal Alignment
 - ▶ Staged Construction
- 

Constraints, cont'd

- ▶ Vancouver Historic Preserve, including Appletree Park
 - ▶ More in Water Impact
 - ▶ Large Increase in Shadow Impact
 - ▶ BNSF Railroad on North Side
 - ▶ Traffic in Closed Box
 - ▶ LRT
- 

A Small Plan Departing from Pearson Field with the Interstate Bridge in Sight



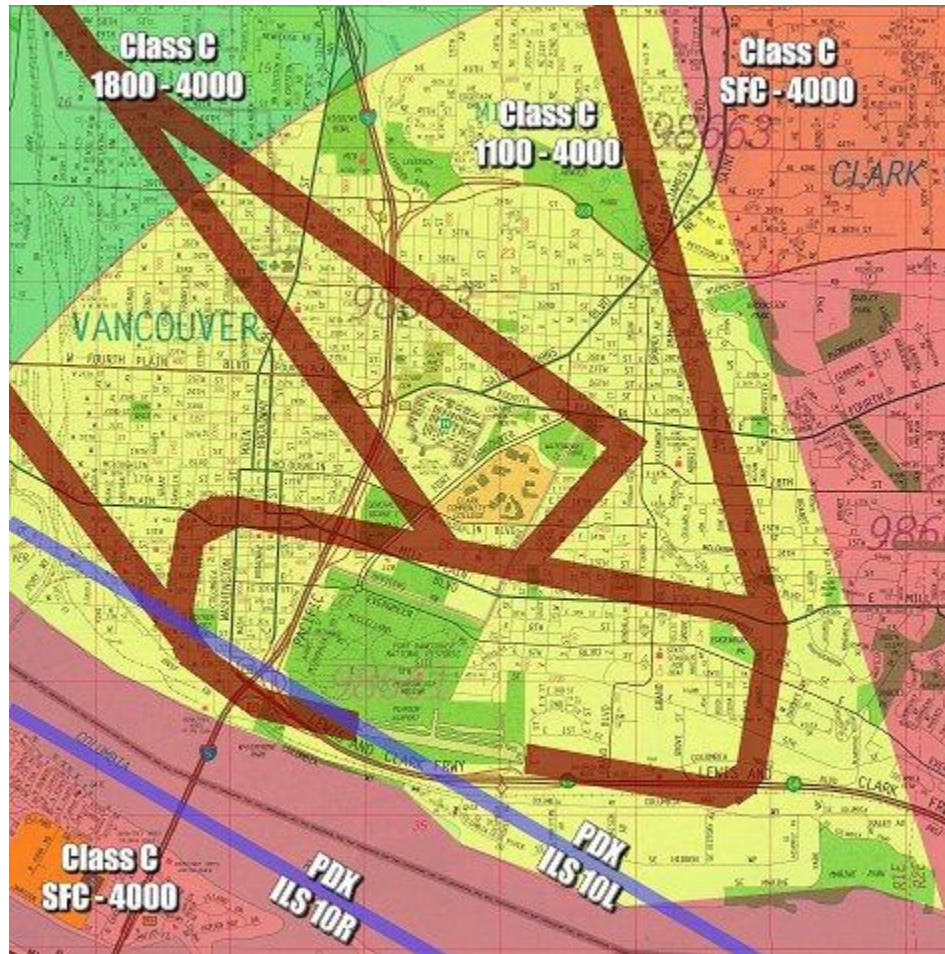
Olivia Bucks; The Oregonian, 2008; *Pilots at Pearson Field in Vancouver keep watch on new Interstate 5 bridge plans*; Nov. 11. 2010; OregonLive.com

Pearson Field Seen from the East at 200 Feet

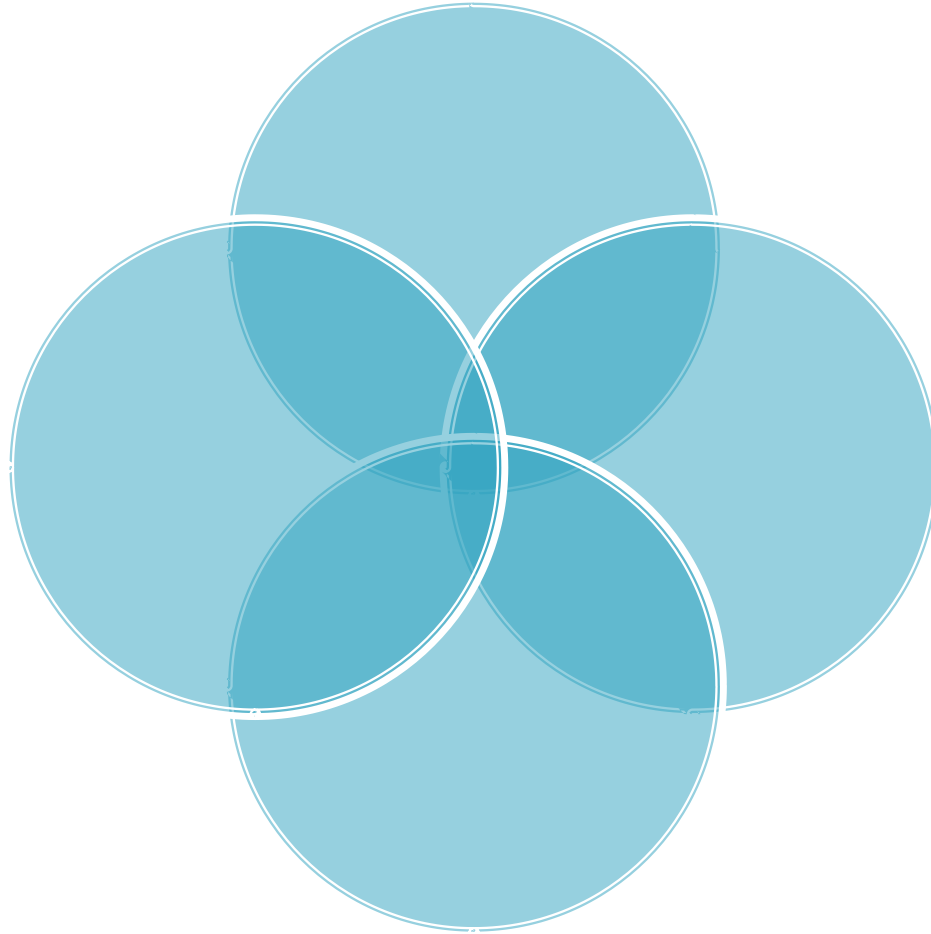


Dean Baker; Special to the Oregonian; *Pilots at Pearson Field in Vancouver keep watch on new Interstate 5 bridge plans*; Nov. 11, 2010; OregonLive.com

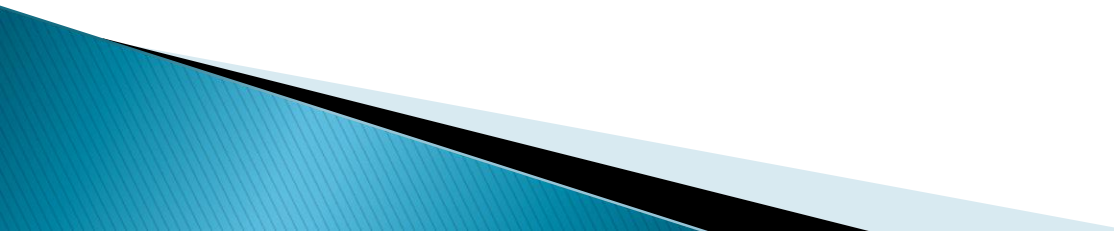
Pearson and PDX Issues



Cumulative Impact of Constraints



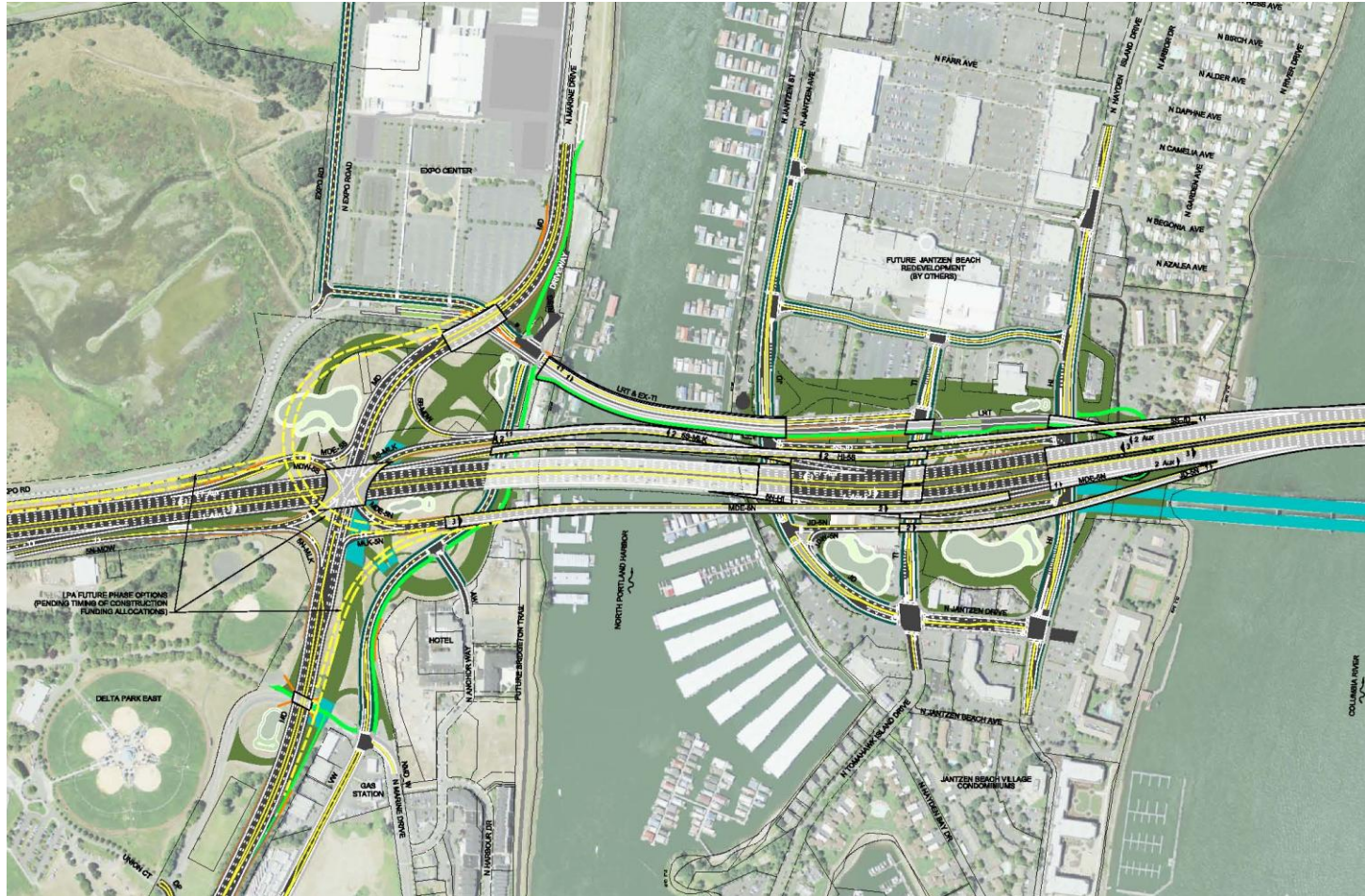
Other Challenges

- ▶ Operational Reliability
 - ▶ Seismic Vulnerability
 - ▶ Getting Buy-In From Political and Citizen Groups if changes are recommended to the Current Design Concept
 - ▶ Maintenance and Inspection Challenges with the Currently Proposed Bridge Type
 - ▶ Cost Uncertainty with Current Bridge Type
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Crossing in Plan View



Marine Drive and Hayden Island



Current Project Cost Estimate*

- ▶ Total Estimated Cost: \$3.2–3.55 billion
- ▶ Cost of LRT: \$830–920 million
- ▶ Cost of the bridge: \$740–820 million
- ▶ Cost of roadway and interchanges: \$1.63–1.81 billion

*Costs are for the 60% and 90% CEVP range

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