

**Comparison of Double Deck Cross Section Characteristics**  
May 7, 2007

Width	Cross Section Description	Consistency with Purpose and Need	Safety	Traffic Operations	Eastside Impacts	Cost	Access to Transit	Aesthetics / Bridge Type Restrictions	Staff Recommendation	Reasons to Eliminate	
<b>Double Deck Concepts</b>											
j	39 feet	2-lane replacement with bicycle/pedestrian on lower level	Yes	<ul style="list-style-type: none"> <li>Physical separation between bikes/peds and vehicles</li> <li>Decreased security due to lack of visibility from vehicles</li> </ul>	Easier connections to Springwater and Greenway Trail for Bike/Peds	<ul style="list-style-type: none"> <li>Footprint narrowed by placing bike lanes and multi-use paths below road.</li> <li>Minimum sidewalk/shoulder widths still required at street level for emergency use.</li> </ul>	More costly than a single deck due to additional beams, more connections to piers, a second deck pour, more railing.	<ul style="list-style-type: none"> <li>More difficult access to bus stops located one level above bike/peds.</li> <li>Improved access to streetcar and 43 buses.</li> </ul>	<ul style="list-style-type: none"> <li>Box girder eliminated.</li> <li>Truss is typical for double deck (Marquam Bridge).</li> <li>Truss could be hung beneath Cable Stay or Arch (Fremont Bridge) but reduces aesthetic advantages of these types (slim appearance)</li> </ul>	Advance	
k	57 feet	4-lane replacement with bicycle/pedestrian on lower level	Yes	<ul style="list-style-type: none"> <li>Physical separation between bikes/peds and vehicles</li> <li>Decreased security due to lack of visibility from vehicles</li> </ul>	Easier connections to Springwater and Greenway Trail for Bike/Peds	<ul style="list-style-type: none"> <li>Footprint narrowed by placing bike lanes and multi-use paths below road.</li> <li>Minimum sidewalk/shoulder widths still required at street level for emergency use.</li> </ul>	More costly than a single deck due to additional beams, more connections to piers, a second deck pour, more railing.	<ul style="list-style-type: none"> <li>More difficult access to bus stops located one level above bike/peds.</li> <li>Improved access to streetcar and 43 buses.</li> </ul>	<ul style="list-style-type: none"> <li>Box girder eliminated.</li> <li>Truss is typical for double deck (Marquam Bridge).</li> <li>Truss could be hung beneath Cable Stay or Arch (Fremont Bridge) but reduces aesthetic advantages of these types (slim appearance)</li> </ul>	Advance	
		2- and 4-lane replacement with one way on each level for all modes	Yes		Difficulty at either end tying multi-level traffic into existing street system.	Footprint widens to larger than a single level bridge due to transition to Tacoma Street.	More costly than a single deck due to additional beams, more connections to piers, a second deck pour, more railing.	More difficult access to bus stops located on different levels.	<ul style="list-style-type: none"> <li>Box girder eliminated.</li> <li>Truss is typical for double deck (Marquam Bridge).</li> <li>Truss could be hung beneath Cable Stay or Arch (Fremont Bridge) but reduces aesthetic advantages of these types (slim appearance)</li> </ul>	Eliminate	<ul style="list-style-type: none"> <li>The transition to go from double level traffic on the bridge to single level traffic on Tacoma Street will require similar footprint impacts on the eastside as seen with single level bridge.</li> <li>Westside interchange would become 3 levels (similar to Westend of Marquam Bridge)</li> </ul>
		2-lane replacement with streetcar on lower level	Yes			Footprint widens to larger than a 4-lane width to allow streetcar to rise up to Tacoma Street.	More costly than a single deck due to additional beams, more connections to piers, a second deck pour, more railing.		<ul style="list-style-type: none"> <li>Box girder eliminated.</li> <li>Truss is typical for double deck (Marquam Bridge).</li> <li>Truss could be hung beneath Cable Stay or Arch (Fremont Bridge) but reduces aesthetic advantages of these types (slim appearance)</li> </ul>	Eliminate	<ul style="list-style-type: none"> <li>No Streetcar Master Plan for area to validate the additional cost and complexity of building a separate bridge level for streetcar.</li> <li>The future streetcar crossing is provided with the 4-lane cross section concept.</li> </ul>