

Alaskan Way Viaduct  
Stakeholder Advisory Committee  
Comments on Measures and Responses

**DRAFT**

Updated: July 23, 2008

At the May 22 Stakeholder Advisory Committee (SAC) Meeting, stakeholders were asked to give input on the second draft of the proposed evaluation measures. Responses to individual comments given at the meeting are listed below. Responses are prefaced with a P, Y or N. These letters indicate if the comment was incorporated or was already included but needed further clarification (Yes, No or Partially). If a comment involved a clarifying question or did not ask for a specific change in a measure, it is noted as “Clarifying question” or “Comment noted.”

The revised measures will be shared with the Stakeholder Advisory Committee at the July 24 meeting. They are scheduled to be finalized by the project’s Executive Oversight Committee in August.

<b>Comments on Measures for Guiding Principle #1</b>	<b>Response at 5/22/08 SAC Meeting</b>	<b>Incorporated or already included? (Y)es / (N)o / (P)artially</b>
<ul style="list-style-type: none"> <li>We have a critical public safety issue now with the structure being unsafe. I think we should add a new one that says “how quickly can the current structure be removed.”</li> </ul>		(N) – Removal of 40% of the existing viaduct structure in the south end is currently underway. Removal of the Central Waterfront portion of the viaduct structure may partially depend on implementation of other transportation improvements. As part of the scenario evaluation we will have only rough estimates of construction times for the building blocks, thus only limited information will be available to judge differences between scenarios.
<ul style="list-style-type: none"> <li>I think that could be rephrased to, “how quickly can any of the elements be implemented to address the safety issue.” This is to improve public safety, but some of the scenarios involve moving vehicles into areas where bikes and pedestrians go. We should assess the impact of any solution on bicycles and pedestrians.</li> </ul>	<i>That’s the intent of two. We’re not just looking at SR 99, but all areas.</i>	(P) – The details of construction phasing and the implementation timeline for other systems improvements are not likely to be available in time to be assessed as part of the scenario evaluation measures. Measure 1.2 will assess the safety impacts to bicyclists and pedestrians.
<ul style="list-style-type: none"> <li>Early on we changed the scope of our discussion from just SR 99 to the systems area. Will all</li> </ul>	<i>Washington state has a bridge program that oversees the other bridges. The Nisqually earthquake</i>	Comment was a clarifying question, not a request for a change to the measures associated with the guiding

bridges in the area need to be at the same 1,000 year seismic standard as the new SR 99?	<i>highlighted the specific risk to the viaduct and that focus.</i>	principle. No action required.
<ul style="list-style-type: none"> <li>I would argue there's a risk to any one structure.</li> </ul>	<i>If we had structures of a similar construction I would agree. I-5 and the Aurora Bridge have been retrofitted. We have a comprehensive seismic program that addresses structures based on their vulnerability and degree of risk.</i>	General comment, not a request for a change to the measures associated with the guiding principle. Comment noted, no action required.
<ul style="list-style-type: none"> <li>Is the viaduct uniquely deficient?</li> </ul>	<i>You can judge it by the fact that the state legislature allocated \$2.8 billion to address that deficiency.</i>	Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. No action required.
<ul style="list-style-type: none"> <li>I second the amendment to the new measure. We should do what we can now, the small things, as soon as possible. I was approached at the open house about what is happening now. I said we're doing things that don't cost money now. People want to know what we're doing immediately, today and tomorrow.</li> </ul>		(P) – Project Six of the Early Safety and Mobility Projects is in progress and includes many TDM and low capital improvements. In addition, replacement of the structure between Holgate and King Streets is moving forward. Implementation of the building blocks for the Central Waterfront will be dependent on the final recommended scenario.
<ul style="list-style-type: none"> <li>You were talking about the difference between a 2,500 and a 1,000 year earthquake standard. Can you quantify that? What are the financial differences and the impacts to public safety?</li> </ul>	<i>The difference in the two standards is based on the level of investment you're making in the structure. For example, the new Tacoma Narrows Bridge, a huge investment of public funds and a major piece of infrastructure, was designed to meet a 2,500 year standard recognizing it will be there for a long time. When we looked at the viaduct before, we had a similar standard. For more of a standard bridge type (standard structure or with a shorter span) is when the 1,000 year standard generally applies. The south end is a more standard bridge construction is designed at a 1,000 year standard. Part of that is the national standard but also an analysis of the level of investment.</i>	Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. No action required.
<ul style="list-style-type: none"> <li>Would it have an impact on public safety? How would the Nisqually earthquake have impacted a 1,000 year design versus a 2,500 year design?</li> </ul>	<i>Both would withstand a Nisqually Earthquake.</i>	Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. No action required.
<ul style="list-style-type: none"> <li>Are the recent construction examples we see (SR 519, Mount Baker bore, Mercer Lid, West Seattle Bridge) a 1,000 year standard?</li> </ul>	<i>They were designed to the standard in place at the time they were designed. We are learning a lot about the geology and seismology in this area. When we started the design in the 1980's for the Mercer Lid, the national standard was a 500 year standard. We know more now though and the national standard is a</i>	Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. No action required.

	<i>1,000 year standard. SR 519 was designed to the current standards, I will have to check on whether that was before it switched to a 1,000 year. We also have deep fill soils to address with the viaduct too.</i>	
<ul style="list-style-type: none"> <li>▪ The robustness answer is dependent on single point failures. More robust events like terrorism should be considered so as not to only look at single point failures.</li> </ul>		General comment on the analysis of the current viaduct structure, not a request for a change to the measures associated with the guiding principle. Comment noted, no action required.
<ul style="list-style-type: none"> <li>▪ Are emergency evacuation routes looked at?</li> </ul>	<i>Certainly with regard to an earthquake. In the second Guiding Principle we're looking at emergency access as it relates to traffic flow.</i>	Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. No action required.
<ul style="list-style-type: none"> <li>▪ What are the design standards for the Spokane Street Viaduct?</li> </ul>	<i>I think Spokane is a 1,000 year design standard.<sup>1</sup></i>	Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. No action required.

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<sup>1</sup> Standards discussed on May 22 were reviewed after the meeting. The Spokane Street Viaduct was designed prior to January 1, 2008. Therefore, it was designed to a 500-year standard per the Federal guidelines at the time.

Comments on Measures for Guiding Principle #2	Response at 5/22/08 SAC Meeting	Incorporated or already included? (Y)es / (N)o / (P)artially
<ul style="list-style-type: none"> <li>The emphasis seems to be on moving to and through the center city. I wonder to what extent trips within the center city are factors? That issue relates to how we have a good people place.</li> </ul>	<p><i>The intent of number one is to take more than one screen line and measure what can move across that line when you combine everything. Looking at typical trip patterns may address your concerns more.</i></p>	<p>(Y) – Measure 2.7 will help assess changes to trips within the Center City.</p>
<ul style="list-style-type: none"> <li>Can you extrapolate from the conclusion what the financial and environmental impacts are?</li> </ul>	<p><i>A lot of the input to the environmental work and the economic impacts are related to how transportation changes under different scenarios. We will talk a little more about that when we get to the economic side, but we talked a bit about the air quality, VMT and carbon footprint and that what comes out of this model will help us measure those factors.</i></p>	<p>Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. No action required.</p>
<ul style="list-style-type: none"> <li>Numbers two and five aren't quite parallel. I'd be interested in evaluating not just speed, but time for transit.</li> </ul>		<p>(Y) – Travel time for transit will be evaluated.</p>
<ul style="list-style-type: none"> <li>You said we were challenged to model the impacts of new technology for cars as we look at this.</li> </ul>	<p><i>In the travel forecast, the evaluation includes many patterns, including user impacts. Those have been indexed to the Consumer Price Index (CPI), but historically the price of gas hasn't tracked with that index. A rapid increase in prices has brought us back in line with the CPI. It may be in some of the analysis to do a sensitivity test on the price of fuel.</i></p>	<p>(Y) – Sensitivity tests for the price of fuel on the baseline network are being considered. We'll determine how to incorporate them with the scenarios during the next stage of analysis.</p>
<ul style="list-style-type: none"> <li>I would like to point to number seven and, to a lesser extent, number nine regarding the effect a surface street has versus a new larger viaduct as it relates to obtaining additional crossings of Aurora. Additional crossings would be a significant economic factor and should be a part of the measurement. SDOT has done analysis of those crossings.</li> </ul>		<p>(Y) – Additional Aurora crossings will be evaluated in the measures for Guiding Principle #2.</p>
<ul style="list-style-type: none"> <li>It seems that modeling is going to be the crux of a lot of the discussion. It would seem to me that the assumptions used in the modeling will be the subject of a lot of discussion and posturing, depending on one's advocacy position. There seems to be no absolute truths in modeling, there are relative truths. Are the agencies confident that we have a unified</li> </ul>	<p><i>There are a lot of ways to look at it. When you get too caught up in the modeling you lose sight of what the model is supposed to do. The model shows which way we are going, it does not lead it. We are using a unified regional and nationwide basis for our model. It's a solid foundation that the team is</i></p>	<p>Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. No action required.</p>

<p>view of the factors used in the modeling?</p>	<p><i>comfortable with. Grace followed up that the state, city and county modelers are all working together. It's a healthy discussion, but we're all working on it together. Dave added that the modeling work requires a lot of background assumptions and that he imagines the SAC would like to debate those details. Our model takes output from the regional model and provides good data to help us, but will not solve the problem. It was suggested that there may be an interest in doing a "Modeling 101" session for those who are interested in learning more about how the model works.</i></p>	
<ul style="list-style-type: none"> <li>▪ This Guiding Principle provides efficient movement of people and goods and is our most important principle. A question we've all debated is the extent to which the existing corridor serves a through put function. One of the things we are doing is the origin and destination (O&amp;D) study. How does the model relate to the O&amp;D study?</li> </ul>	<p><i>The model itself gets calibrated on a survey of travel patterns for the region and the O&amp;D study assists with that. We are doing a limited O&amp;D study on the central waterfront (Spokane to the Battery Street Tunnel). We are looking at the trips that got on and whether they got off at the ramps at Seneca, Western or went through. We will then use the license plate to look backwards at where they came from.</i></p>	<p>Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. No action required.</p>
<ul style="list-style-type: none"> <li>▪ Will we also be looking at trips in the center city?</li> </ul>	<p><i>Yes</i></p>	<p>(Y) - Measures 2.6, 2.7 and 2.9 will also help assess changes to trips within the Center City.</p>
<ul style="list-style-type: none"> <li>▪ 70 percent of the traffic is through traffic. We need to use ratios in the analysis. We have to take into account other impacts (15th paving will impact that O&amp;D). Traffic will look for other corridors that freight can't use.</li> </ul>		<p>General comment, not a request for a change to the measures associated with the guiding principle. Comment noted, no action required.</p>
<ul style="list-style-type: none"> <li>▪ I would caution us to look at case studies as much as modeling.</li> </ul>		<p>(Y) – Case studies will be used, particularly to assess the impacts of Transit Demand Management and Transit System Management changes. Case studies will also be used to “truth test” the results of the travel demand model analysis.</p>
<ul style="list-style-type: none"> <li>▪ When we're measuring these criteria, what transit assumptions are we making? Is it a full build out of the Seattle transit plan?</li> </ul>	<p><i>The full roll out of that information will happen in June.</i></p>	<p>Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. No action required.</p>
<ul style="list-style-type: none"> <li>▪ Related to evaluation number five, one thing I've learned is that redundancy is important. I would add in redundancy. The more options you have for</li> </ul>		<p>(Y) – Redundancy can be achieved by increasing transit capacity, which will be assessed in Measure 2.5.</p>

transit, the more you are likely to use it.		
<ul style="list-style-type: none"> <li>Does the modeling give impacts on neighborhoods?</li> </ul>	<i>In general areas yes it does, but it does not provide specific streets. It does parts of town, not necessarily specific neighborhoods.</i>	Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. No action required.
<ul style="list-style-type: none"> <li>Statistics are a fungible art. The work being done now is sincere and I hope we get to see all the options. The only statistical 100 percent probability is that there will be people around this table that are set to a particular direction.</li> </ul>		General comment, not a request for a change to the measures associated with the guiding principle. Comment noted, no action required.
<ul style="list-style-type: none"> <li>Transit redundancy is important. Redundancy of routes should be counted too. We do have a state law that mandates VMT reduction and that means we should be evaluating access as we look at travel.</li> </ul>		(Y) – Redundancy can be achieved by increasing transit capacity, which will be assessed in Measure 2.5.
<ul style="list-style-type: none"> <li>The Mercer report states that two-way Mercer will inhibit traffic and we're using it as a building block for the SR 99 replacement. This is a big issue for the cruise ships and the amount of traffic on that corridor.</li> </ul>		(Y) – Measures 2.1 and 2.2 will evaluate person throughput and travel times for each of the suggested building blocks, including Mercer.
<ul style="list-style-type: none"> <li>In the modeling, everything should be disclosed and show what will and won't work.</li> </ul>		General comment, not a request for a change to the measures associated with the guiding principle. Comment noted, no action required.
<ul style="list-style-type: none"> <li>The Guiding Principle uses the word 'efficient.' Throughput for VMT would be an interesting evaluation.</li> </ul>	<i>It's included.</i>	(Y) – By viewing the results of Measure 6.1 and 2.1 together we can determine projected person throughput per vehicle mile traveled.
<b>Comments on Measures for Guiding Principle #3</b>	<b>Response at 5/22/08 SAC Meeting</b>	<b>Incorporated or already included? (Y)es / (N)o / (P)artially</b>
<ul style="list-style-type: none"> <li>This one we have got to get right. I think there is a general impression that our economic vitality is taken for granted. It should be obvious that if we destroy the environment, economics don't matter. On the other hand, they have advocates and we need to make sure we have an economic and environmental balance and make sure we're getting issues on the table.</li> </ul>	<i>A part of the first task is to put some more detail to this. That is happening now through a process that will come back to this committee to comment on. ECONorthwest is proposing that when we do the evaluation, it be done in a preliminary way first and come back to a series of focus groups, SAC members and business groups to show them what we're finding.</i>	General comment, not a request for a change to the measures associated with the guiding principle. Comment noted, no action required.
<ul style="list-style-type: none"> <li>We are in agreement on the importance of this Guiding Principle. My concern is that we look at what we need to do to retain the businesses we have and get the new ones we're looking at. I think we should talk to Enterprise Seattle who has done</li> </ul>		(Y) – Interviews with businesses are planned as part of the economic analysis for Measures 3.1 and 3.2.

<p>studies about what is most important to keep business and jobs here. The number one thing is the predictable and efficient movement. We should interview Microsoft and Boeing. At the ULI Infrastructure Seminar they stated that out of 23 American cities, we were the number one city with the biggest gap between what we're planning to do and what we've actually done and funded. I would ask you to interview the businesses and ask them what is most important to keep them.</p>		
<ul style="list-style-type: none"> <li>▪ Add to the output measures the impact of raw materials and goods. We should pay attention to the fact that port freight movement is different than marine. Port freight goes east/west and marine freight goes north/south.</li> </ul>		<p>(Y) – The unique nature of freight and marine business needs will be taken into account in Measures 3.1 and 3.2.</p>
<ul style="list-style-type: none"> <li>▪ We should include a historical analysis of Seattle's economy - our industries grew up around the viaduct as an arterial.</li> </ul>		<p>(N) – Measures 3.1 and 3.2 will analyze current economic impacts of the different scenarios.</p>
<ul style="list-style-type: none"> <li>▪ I suggest a fourth category could be taxation. Seattle is fortunate to have a vibrant downtown and one of the most vital office space markets in the county. Vital office space will be impacted by the alternatives. If the replacement is not going to generate as much tax revenue then it will have an impact on taxation in other parts of the city. I've seen it happen in San Francisco.</li> </ul>		<p>(N) - Projected tax revenues will not be analyzed at the scenario evaluation stage of the project. Measures 3.1 and 3.2 will assess economic impacts.</p>
<ul style="list-style-type: none"> <li>▪ This is a very important principle. What's so important about it is that it does impact the quality of life of people. Think about small businesses. Economic disruptions related to transportation could impact their ability to survive. We need to think of the impact on those small businesses as we make decisions.</li> </ul>		<p>(Y) – Interviews with businesses are planned as part of the economic analysis for Measures 3.1 and 3.2. These interviews will take place by sector and are likely to include some small businesses.</p>
<ul style="list-style-type: none"> <li>▪ This approach is much more holistic. It's a bit scary relying on the experts. We should look at access rather than transportation. Urban areas are more about access. In the outputs, include some measure of personal cost. If the cost of transportation keeps going up, that will affect personal income.</li> </ul>		<p>(Y) – Measure 3.1 will assess transportation access and user costs for travel to and through the central waterfront and Center City.</p>
<ul style="list-style-type: none"> <li>▪ Talk to the major manufactures before we force</li> </ul>		<p>(Y) – Interviews with businesses are planned as part of</p>

<p>them out of the area with gridlock and congestion. Average workers can't live in million dollar condos in Seattle and can't take buses because of their jobs. Employment and lower property values are important.</p>		<p>the economic analysis for Measures 3.1 and 3.2.</p>
<ul style="list-style-type: none"> <li>Yesterday I was at a meeting and we took a trip to the yacht builders and it was interesting to see them being built by people who couldn't afford one. The low end boat market is all gone and moved to Tennessee because of the infrastructure and regulatory environment. That market is gone because we weren't able to solve some of the problems. Some think that there will always be a port here, but Canada is making improvements that could impact us. We need to get it right.</li> </ul>		<p>General comment, not a request for a change to the measures associated with the guiding principle. Comment noted, no action required.</p>
<p><b>Comments on Measures for Guiding Principle #4</b></p>	<p><b>Response at 5/22/08 SAC Meeting</b></p>	<p><b>Incorporated or already included? (Y)es / (N)o / (P)artially</b></p>
<ul style="list-style-type: none"> <li>A number of these affect more than just the central waterfront and they use a lot of terms that need to be defined. I would like the criteria to expand the area boundaries from Virginia to the Battery Street Tunnel.</li> </ul>	<p><i>As we make improvements and changes we would be looking at that area. What you will see in the scenarios is a variety of ways to handle that area, regardless of what is on the waterfront.</i></p>	<p>(Y) – Measures 4.1, 4.2, 4.3, 4.4 and 4.7 already include adjacent neighborhoods in the study area. Measure 4.5 has been expanded to include adjacent Center City neighborhoods.</p>
<ul style="list-style-type: none"> <li>In the spirit of building a place that's great for people, I don't see any population or counts. How do you know how you've been successful? You need to quantify.</li> </ul>	<p><i>Getting accurate pedestrian data is hard to do ahead of designing a space. The City has a Central Waterfront Plan that hasn't been taken into design. There are a lot of things you can do. We will look at the amount of space, impacts by noise and traffic, and connections to the water. It also would be possible to study head counts in similar cities.</i></p>	<p>(P) – Many of the measures associated with Guiding Principle #4 are intended to be proxies for quantitative information on pedestrian travel, which is scarce.</p>
<ul style="list-style-type: none"> <li>I want to reiterate that it shows here that Pier 55 is the only area at which you are going to measure noise. The viaduct along the waterfront is a mile long. The fact that there are no chairs on balconies by the viaduct tells me there is an issue related to the quality of living along the current structure. I encourage you to look at noise as a critical factor for value of life and property.</li> </ul>		<p>(Y) – Noise will be evaluated in detail for the Environmental Impact Statement. For the scenario evaluation measures, Measure 4.5 has been expanded to include adjacent Center City neighborhoods.</p>
<ul style="list-style-type: none"> <li>I suggest we evaluate the construction mitigation period. Demolition will be the same. But construction</li> </ul>	<p><i>We intended to look at that from an economic standpoint.</i></p>	<p>(Y) – Duration of construction impacts has been added to Measure 4.4. However, as part of the scenario evaluation</p>

will be longer or shorter depending on the alternative and that is an important variable.		we will have only rough estimates of construction times for the building blocks, thus only limited information will be available to judge differences between scenarios.
<ul style="list-style-type: none"> <li>If downtown will be used as a freight corridor on First and Third (or for buses) then the noise should be looked at on those, not just at Pier 55.</li> </ul>	<i>We will look at adding a few other locations.</i>	(Y) – Noise will be evaluated in detail for the Environmental Impact Statement. For the scenario evaluation measures, measure 4.5 has been expanded to include adjacent Center City neighborhoods.
<ul style="list-style-type: none"> <li>PM peak seems to be the measurement period for everything. I wonder what the intent is if you want a good analysis, why only do PM peak?</li> </ul>	<i>We were looking for a good indicator, not an Environmental Impact Statement level analysis. PM was also chosen because PM noise is higher.</i>	(P) – Assessing noise levels at the PM peak allows us to capture the impact of noise when it is highest.
<ul style="list-style-type: none"> <li>The traffic management concepts we have looked at might have some adverse impacts on pedestrian movement. For example, when you make it one-way and take away parking, it starts to impact the feeling of pedestrian safety.</li> </ul>	<i>We are trying to capture that in number four. We will look at word modification.</i>	(Y) – Measure 4.4 has been changed to read: “Assess changes in bicycle and pedestrian environment throughout the Center City, including impacts of traffic volumes, <i>traffic management</i> , speeds and air pollution.
<ul style="list-style-type: none"> <li>There are different sensitivities during different times of days. Maybe the value of the view of the roadway should only be considered by non-SOV cars.</li> </ul>		(N) – The value of the view from the Alaskan Way Viaduct is difficult to measure and will not be assessed for any mode of travel.
<ul style="list-style-type: none"> <li>When we think about the surface option, it would look at placing cars on areas east and west of I-5. We should look at those areas. We should rewrite items two and five to not only have them be an exclusive waterfront focus, but to other areas as well.</li> </ul>		(Y) – Measure 4.2 currently includes key downtown destinations other than the waterfront. Measure 4.5 has been expanded to include adjacent Center City neighborhoods.
<ul style="list-style-type: none"> <li>There was a study done in the 1980's on the shoreline portion of I-5 and how much time people spend outside dependent upon their closeness to I-5, we should look at it.</li> </ul>		General comment, not a request for a change to the measures associated with the guiding principle. Comment noted, the study in question is being located.
<ul style="list-style-type: none"> <li>It would seem intuitive that if we're trying to clean up the environment of the waterfront area, you would take the traffic and put it in a tunnel. But the impact to adjacent neighborhoods isn't defined. How far out do they go?</li> </ul>	<i>We are potentially making a major change with vastly enhanced pedestrian and open space improvements, with possible impacts to neighborhoods such as traffic. The impact area will depend on modeling work to see how far displacements go. Grace added that we need to wrestle with that a bit. Maybe there is some way to look at distances. Eastside neighborhoods are nervous about the impacts to I-405.</i>	Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. No action required.
<ul style="list-style-type: none"> <li>We need good traffic volume assessments to get</li> </ul>		General comment, not a request for a change to the

noise impacts.		measures associated with the guiding principle. Comment noted, no action required.
<ul style="list-style-type: none"> <li>Need to measure shadow and blocking impacts. High rise condos will shadow and block too. The city has ordinances that restrict new high rises because of shadowing in some cases.</li> </ul>		(P) – Shadowing and view blocking impacts from transportation infrastructure will be assessed in Measure 4.3. Zoning and building regulations will govern any future development on the waterfront.
<ul style="list-style-type: none"> <li>Quiet pavement should be looked at too as it relates to noise.</li> </ul>		(N) – Quiet pavement will be evaluated as the recommended scenario moves into more detailed design, but will not be assessed as part of the scenario evaluation process.
<ul style="list-style-type: none"> <li>How would you go about evaluating the quality of public space?</li> </ul>	<i>We will look at things such as where it's located, usability, pleasantness (space closer to the water may be more pleasant than those closer to the city) and environmental aspects such as traffic, noise, shadowing. We are not designing the open space, but are creating the opportunities to design open space.</i>	Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. No action required.
<ul style="list-style-type: none"> <li>Item four needs a four 'A.' We need to look at ways to get across Aurora. At grade crossings are more feasible if there's not fast traffic along the waterfront.</li> </ul>		(Y) – Opportunities for pedestrian crossings of Aurora along the waterfront and north of the Battery Street Tunnel will be assessed in Measures 4.2 and 4.4.
<b>Comments on Measures for Guiding Principle #5</b>	<b>Response at 5/22/08 SAC Meeting</b>	<b>Incorporated or already included? (Y)es / (N)o / (P)artially</b>
<ul style="list-style-type: none"> <li>Sometimes when you have a complex system, such as when discussing operating and capital cost estimates, it would be helpful to have a cost that would say how much a transportation unit would be</li> </ul>		(N) - The measures, when taken as a whole, provide an assessment of cost effectiveness. Single measures of cost effectiveness will not be developed as part of the scenario evaluation.
<ul style="list-style-type: none"> <li>Where is the cost effectiveness represented in these measures? Part of what you get is a transportation one, but there are others.</li> </ul>	<i>Single clean measures of cost effectiveness are a struggle to develop. In the end you may need to look at cost against a series of benefits – such as environmental and transportation benefits. Grace stated that staff should look at combinations of the impacts, rather than trying to develop a single measure. Dave followed up that when we get to the third Guiding Principle there is a bit about how you account for effectiveness holistically.</i>	(P) – The measures, when taken as a whole, provide an assessment of cost effectiveness. Single measures of cost effectiveness will not be developed as part of the scenario evaluation.
<ul style="list-style-type: none"> <li>There may be some need to quantify dollar values and assign them to aspects such as environmental</li> </ul>		(N) – Because of the project's tight schedule, there is not time in the scenario evaluation to develop a shared

improvements.		methodology for assigning costs to environmental and other changes. The measures, when taken as a whole, provide an assessment of cost effectiveness.
<ul style="list-style-type: none"> <li>We are only discussing three costs: construction, operating, and loss of an arterial (including displacement of businesses that grew up around the viaduct). The Hebert study should be shared.</li> </ul>		(Y) – The Herbert study has been provided to the independent economists working on the measures for Guiding Principle #3.
<ul style="list-style-type: none"> <li>When discussing capital and operating costs and RTID, shouldn't we be including financing costs? The scenarios will have a difference in risk – risk should be included.</li> </ul>		(P) – Financing costs will not be assessed as part of scenario evaluation as they are likely to be similar across scenarios. Risk is included as an element in the cost estimate for each scenario in Measure 5.1.
<ul style="list-style-type: none"> <li>If we are talking about businesses, I am assuming they're in number three?</li> </ul>	Yes	(Y) – Impacts to businesses will be assessed in the measures under Guiding Principle #3. Interviews with businesses are planned as part of the economic analysis for Measures 3.1 and 3.2.
<ul style="list-style-type: none"> <li>If we look at different scenarios, there is transit which is King County's and roads which are Seattle's. Will any of these measures explore how much it will cost different entities and how feasible those costs are?</li> </ul>	<i>That was the purpose in the beginning about probably keeping the costs disaggregated; it wouldn't get at this issue to roll them up into one cost.</i>	(Y) – The cost estimates for each building block will be divided into capital and operating costs. This division will allow us to estimate different agency costs.
<ul style="list-style-type: none"> <li>Is the \$2.8 billion just an assumption?</li> </ul>	<i>The total state funding available is \$2.8 billion. Some of that is spent on the Moving Forward projects and now we need to look at how much of it is available to this project. Grace followed up that the SAC members are providing comments to the team about the \$2.8 billion, if we come up with a solution that meets the needs of the project and it comes in at \$3.2 billion then we will need to look at other funding options. Ron stated that the \$2.8 billion is the amount currently contributed by state and federal sources and does not include other options.</i>	Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. Comment noted, no action required.
<ul style="list-style-type: none"> <li>When will the costs of the scenarios be presented?</li> </ul>	<i>Scenario evaluation will be in August, costs likely will be in August/September.</i>	Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. Comment noted, no action required. Costs are likely to be available in September.
<b>Comments on Measures for Guiding Principle #6</b>	<b>Response at 5/22/08 SAC Meeting</b>	<b>Incorporated or already included? (Y)es / (N)o / (P)artially</b>
<ul style="list-style-type: none"> <li>Regardless of the efficiency of engines in the future, the relative value of the emissions wouldn't matter.</li> </ul>	<i>When discussing air quality, there is a debate about how quickly we may see cars move away from fuel. Demand hasn't been there</i>	(Y) – The relative value of emissions will be assessed in Measure 6.1 and 6.2. This will allow us to see any differences in emissions between scenarios, regardless of

	<i>and now there is a demand for more efficiency.</i>	technology changes in the future.
<ul style="list-style-type: none"> <li>Vehicles emit emissions two ways: taking a long time to do the trip or taking a long way to do the trip.</li> </ul>	<i>That is correct. Both vehicle miles traveled (VMT) and rate per mile will be evaluated.</i>	(Y) – Vehicle miles traveled and speeds will be assessed in Measure 6.2.
<ul style="list-style-type: none"> <li>Is the model going to take into account speeds? Emissions are higher at slower speeds.</li> </ul>	<i>Yes</i>	(Y) – Vehicle miles traveled and speeds will be assessed in Measure 6.2.
<ul style="list-style-type: none"> <li>The model will include assumptions about future technology; can you share those assumptions with us in the future?</li> </ul>	<i>We will get SAC members information on future technology assumptions in the model.</i>	(N) – The relative value of emissions will be measured in 6.1 and 6.2. This will allow us to see any differences in emissions between scenarios, regardless of technology changes in the future. Future technology assumptions will be provided with the analysis results.
<ul style="list-style-type: none"> <li>Are we measuring for the carbon reduction law that was passed last session or are we shooting for a set?</li> </ul>	<i>WSDOT is evaluating how it will be implemented. Dave clarified his comment from the previous SAC meeting. He assured the SAC that WSDOT is taking the law seriously and will follow the law. He raised the question of whether you adopt it for this project and then try to enact a certain VMT reduction. He suggested his answer would be to see what happens to VMT when the process gets through the first round of evaluation. He suggested taking case studies and applying them to see if the team can take down some of the trips in the corridor and whether they will be the means to reduce VMT.</i>	(N) – Emissions will be assessed in order to differentiate between scenarios rather than measure progress toward state and regional goals.
<ul style="list-style-type: none"> <li>Encourage people to remember that what we build will impact how much we drive. Emissions by each mode will be the most important thing to remember. You can not predict efficiently the impacts of capacity reduction. You should focus on VMT by mode, rather than congestion.</li> </ul>		(N) – We will not be able to analyze the scenarios at a sufficient level of detail in the time available to calculate emissions by mode.
<ul style="list-style-type: none"> <li>They seem to be phrased in evaluating, assessing, or describing rather than any fixed goal or criteria. I assume we're going to discuss further how this might be used in ranking. How you would weight the analysis and what does it mean?</li> </ul>	<i>People will have different viewpoints about which measures are more important. Any common value set would be difficult. Those trade offs will have to be made in the eye of the beholder. We hope to learn from the</i>	(N) – The measures and the guiding principles will not be weighted.

	<i>scenarios what combinations of building blocks give us the best performance on the Guiding Principles. We should be able to conclude if a surface and transit alternative would meet the Guiding Principles or if a particular investment in the SR 99 corridor is required.</i>	
<ul style="list-style-type: none"> <li>When does something meet the Guiding Principle? The measures do not have goals associated with them.</li> </ul>	<i>Look at the first two measures as an example. If all the scenarios don't have a significant impact on the air quality but they do have an impact on VMT, then those scenarios would perform better.</i>	(N) – The measures will be used to evaluate the scenarios' performance relative to other scenarios. Benchmarks or goals for the measures will not be set.
<ul style="list-style-type: none"> <li>Air quality, particularly in residential areas, is important. We have fragile residential areas that will be impacted.</li> </ul>		(N) – An in-depth air quality analysis will not be done as part of the scenario evaluation. Air quality analysis is a significant part of an Environmental Impact Study, which will come later in the process.
<ul style="list-style-type: none"> <li>One measure I didn't see was noise.</li> </ul>	<i>It is covered in Guiding Principle #4.</i>	(Y) – Noise is covered in measure 4.5.
<ul style="list-style-type: none"> <li>In a report from the Daily Journal of Commerce, the two-way Mercer Corridor speed limit will be 3 miles per hour in 2030. We know from a state document that as congestion increases and cars idle they increase the tons of CO2 and increase pollution. We have to measure congestion.</li> </ul>		(Y) – Measure 6.2 will evaluate both vehicle miles traveled and facility speeds.
<ul style="list-style-type: none"> <li>We may well be looking at fewer private automobiles in the next decade and there are factors that might lead to this – car ownership, increases in taxes, insurance and maintenance. This may be a factor in how many cars will be used and should be included.</li> </ul>		(N) – Projections of future private automobile ownership rates are difficult to make and will not be included in the measures.
<ul style="list-style-type: none"> <li>The difference between meeting current day standards for water quality and assessing improvements in water quality is critical. I think that the fourth measure is narrowly stated and that “describe” is a soft word. Nearshore habitat includes vegetation on the land side and in the shallow water. I also think that when we think of the project area we aren't just looking at the corridor. We should include</li> </ul>	<i>The intent was to focus on facilities that would be impacted by the transportation changes. For example, changes to I-5 that affected storm water would be included in measure number three.</i>	(P) – When assessing changes to water quality, the impacts of changes to all transportation facilities, not just the SR-99 corridor, will be assessed. Potential improvements to water quality beyond what is currently mandated are difficult to measure, however, we can make qualitative judgments about increased opportunities for alternative drainage systems as part

areas of habitat and vegetation.		of the scenario evaluation process. Potential water quality improvements as a result of these systems would be assessed in an Environmental Impact Statement.
<ul style="list-style-type: none"> <li>What does the word “describe” mean over “assess?”</li> </ul>	<i>It could be reworded. It’s not inherent in the alternative, but an opportunity.</i>	(Y) – In measure 6.4 “describe” has been changed to “assess”.
<ul style="list-style-type: none"> <li>When measuring storm water run off, will you look at what is happening on the facilities such as SR 99? Will you look at trips that may be on transit?</li> </ul>	<i>We need to do work now in the corridor along the waterfront. We are looking at improving the whole central waterfront corridor since it catches storm water from a much larger (2,000 acres) area than the roadway.</i>	(P) – When assessing changes to water quality, the impacts of changes to all transportation facilities, not just the SR-99 corridor, will be assessed. Assigning relative impacts to different modes of travel is difficult and will not be done with the scenario measures.
<ul style="list-style-type: none"> <li>Are you looking at technological ways we can clean up storm water? Reducing trips also helps; we need to find ways to try and figure out how to balance technology and trip reduction.</li> </ul>	<i>Part of that is in the VMT discussions.</i>	(P) – Storm water treatment systems are not likely to be designed at the scenario development stage of the project and analysis of them would take place in an Environmental Impact Statement. Trip reduction will be measured in Measures 6.1 and 6.2.
<ul style="list-style-type: none"> <li>Are we assuming conventional pavement and construction strategies or are you looking at lower impact strategies such as pervious materials?</li> </ul>	<i>We will be looking at other strategies.</i>	(P) – We will be looking at new technologies to improve storm water run off. Many of those technologies will not be designed at the scenario stage of the project and analysis of them will take place in an Environmental Impact Statement.
<ul style="list-style-type: none"> <li>The focus of our discussion is on the viaduct, but we’re looking at the regional approach. There will be areas where the impacts will be 10 to 50 times greater than it is now. Runoff, noise, etc... are we looking at all of that?</li> </ul>	<i>We will be able to look at redistribution, but it will be a challenge to do individual street level analysis.</i>	Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. No action required.
<ul style="list-style-type: none"> <li>There were some interesting elements in the seawall discussion that were a bit outside the existing seawall, but were not accepted for fear of encroaching on Puget Sound. Our expert said that the quality of the water near the seawall now needs improvements. Seems like an opportunity to kill two birds with one stone.</li> </ul>	<i>The alternatives for the seawall may or may not address those. Current work at Waterfront Park gets at some of these same issues.</i>	(P) Because seawall construction is independent of the Alaskan Way Viaduct in seven of the eight scenarios, seawall design will not be addressed in the evaluation measures. Current work on seawall test panels at Waterfront Park will provide early guidance as seawall design progresses.

### Response to Interagency Working Group Comment on the Draft Measures

At the May 15 Interagency Working Group Meeting, members were asked to give input on the second draft of the proposed evaluation measures. Responses to individual comments given at the meeting and after the meeting via email are listed below. Responses are prefaced with a P, Y or N. These letters indicate if the comment was incorporated or was already included but needed further clarification (Yes, No or Partially). For comments received later via email, there was not a response provided at the May 15 meeting.

Comments on Measures for Guiding Principle #1	Response at 5/15 Interagency Working Group Meeting	Incorporated or already included? (Y)es / (N)o / (P)artially
<ul style="list-style-type: none"> <li>▪ Candidate Measure 2: the qualitative assessment should recognize the safety inherent from separating bicycles from trucks. On major freight routes, the city's Complete Streets language calls for trucks to have priority.</li> </ul>	<p><i>Comment received via email.</i></p>	<p>(Y) – Measure 1.2 covers safety for varying types of facilities, modes, and potential exposure routes. Any safety assessment will be consistent with the City Complete Streets policy.</p>
<ul style="list-style-type: none"> <li>▪ Candidate Measure 2: An additional measure (3) would be how the design resolves current issues/high accident locations.</li> </ul>	<p><i>Comment received via email.</i></p>	<p>(N) –All proposed scenarios will remove any current issues by removing the existing viaduct structure. Other system improvements are not at a sufficiently detailed level of design to determine these types of safety improvements.</p>

<b>Comments on Measures for Guiding Principle #2</b>	<b>Response at 5/15 IAWG Meeting</b>	<b>Incorporated or already included? (Y)es / (N)o / (P)artially</b>
<ul style="list-style-type: none"> <li>▪ Candidate Measure 2: when comparing among results, this measure should have some weighting relative to the importance of the trips, perhaps based on # people making that trip.</li> </ul>	<i>Comment received via email.</i>	(Y) - Representative trips will be chosen based on number of people making that trip, importance of the trip to freight, and potential impact to that trip under different scenarios.
<ul style="list-style-type: none"> <li>▪ Candidate Measure 2: we suggest a representative trip being from Terminal 91 to the freeway/airport. Also, Pier 69 to freeway/airport.3rdly, along Alaskan Way Waterfront (Safeco to Sculpture Park).</li> </ul>	<i>Comment received via email.</i>	(Y) – A complete list of representative freight trips is being developed and we anticipate that trips similar to those listed will be included.
<ul style="list-style-type: none"> <li>▪ Candidate Measure 3: Representative freight trips we recommend are between <ul style="list-style-type: none"> <li>○ T-46 &amp; I-5/I-90</li> <li>○ Harbor Island &amp; I-5/I-90</li> <li>○ Harbor Island &amp; Fishermen's Terminal</li> <li>○ Terminal 5 and Argo or T-18 and SIG</li> </ul> </li> </ul>	<i>Comment received via email.</i>	(Y) – A complete list of representative freight trips is being developed and we anticipate that trips similar to those listed will be included.
<ul style="list-style-type: none"> <li>▪ Candidate Measure 3: In addition to travel times, another quantitative distinguishing factor would be value &amp; volume</li> </ul>	<i>Comment received via email.</i>	(N) - Calculating potential value and volume of freight moved is difficult. Measures 2.3, 2.4, 2.8, 3.1 and 3.2 are all intended to assess the impact to freight under the different scenarios.
<ul style="list-style-type: none"> <li>▪ Candidate Measure 3b (paralleling 7): Provide qualitative assessment of impact to major truck streets.</li> </ul>	<i>Comment received via email.</i>	(Y) – Measure 2.8 provides a qualitative assessment of the impact to freight under the different scenarios.
<ul style="list-style-type: none"> <li>▪ Candidate Measure 6: Center City neighborhoods should include especially the Duwamish MIC, and also BINMIC</li> </ul>	<i>Comment received via email.</i>	(Y) – See Measure 2.8.
<ul style="list-style-type: none"> <li>▪ Regarding Measure 3, “measure travel times for freight for representative trips to and through the Center City, including to port facilities and industrial areas,” it is important to note that freight moves at different times than peak commuter hours.</li> </ul>	<i>Comment received via email.</i>	(Y) – The AM peak will be used where possible in analysis of freight movement.
<ul style="list-style-type: none"> <li>▪ The Port gates are usually open from 7 a.m. to 3 to 4 p.m.</li> </ul>	<i>Non-peak travel times will be evaluated in the models.</i>	(Y) – The AM peak will be used where possible in analysis of freight movement.

<b>Comments on Measures for Guiding Principle #3</b>	<b>Response at 5/15 IAWG Meeting</b>	<b>Incorporated or already included? (Y)es / (N)o / (P)artially</b>
<ul style="list-style-type: none"> <li>▪ Candidate Measure 1: (a) include freight trips downtown (e.g., deliveries, FedEx, UPS, etc);</li> </ul>	<i>Comment received via email.</i>	(Y) – Revised Measures 3.1 and 3.2 will both assess freight trips within the Center City. In addition, Measure 2.3, 2.4 and 2.8 will assess freight trips within the Center

		City.
<ul style="list-style-type: none"> <li>▪ Candidate Measure 1: (b)also, in the Duwamish considering conflicts with Port freight, the AM peak provides the highest volumes mixing commuter &amp; Port trucks;</li> </ul>	<i>Comment received via email.</i>	(Y) – The AM peak will be used where possible in analysis of freight movement.
<ul style="list-style-type: none"> <li>▪ Candidate Measure 1: (c) should also include travel on Interstate 5.</li> </ul>	<i>Comment received via email.</i>	(Y) – I-5 is part of the expanded project study area and will be analyzed.
<ul style="list-style-type: none"> <li>▪ Candidate Measure 4: Please reference the City website regarding freight at the following link. <a href="http://www.seattle.gov/transportation/freight.htm">http://www.seattle.gov/transportation/freight.htm</a></li> </ul>	<i>Comment received via email.</i>	(Y) – All development of the scenarios and their evaluation will take place within the context of City policy on freight.
<ul style="list-style-type: none"> <li>▪ The Port has information on passenger vessels and their potential effect on business districts and is happy to share it.</li> </ul>	<i>Comment received via email.</i>	Economic information has been received from the Port of Seattle.

<b>Comments on Measures for Guiding Principle #4</b>	<b>Response at 5/15 IAWG Meeting</b>	<b>Incorporated or already included? (Y)es / (N)o / (P)artially</b>
<ul style="list-style-type: none"> <li>▪ Candidate Measure 4b: need to include a parallel to measure to 4 as traffic redistributes itself in the south end: assess the changes in manufacturing &amp; industrial center environment, with a qualitative assessment based on changes in traffic volumes &amp; speeds. Can the MICs still viably operate?</li> </ul>	<i>Comment received via email.</i>	(N) – Guiding Principle #4 is focused specifically on enhancing downtown, the waterfront and adjacent neighborhoods as a place for people. All development of the scenarios and their evaluation will take place within the context of City policy on freight, which includes protecting manufacturing and industrial land uses. Impacts to freight are analyzed extensively under Guiding Principles #2 and #3.
<ul style="list-style-type: none"> <li>▪ I worry about gentrification; does this take into account view condos that could exist in the future over industrial areas that are there now?</li> </ul>	<i>The analysis is for one point on the central waterfront and the view from that point would be looking away from the industrial area.</i>	(N) - All development of the scenarios and their evaluation will take place within the context of City policy on freight, which includes protecting manufacturing and industrial land uses.
<ul style="list-style-type: none"> <li>▪ What about school buses and charter buses – do you think different options would have different abilities to serve those things? If so, could you add charter and school buses to the list of things to look at?</li> </ul>	<i>Yes.</i>	(P) – Measure 2.4 addresses parking and loading issues that are central to charter and school bus operation downtown, but will not analyze impacts to these vehicles separately.
<ul style="list-style-type: none"> <li>▪ Will ferry traffic be looked at in modeling?</li> </ul>	<i>Yes.</i>	Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. No action required.
<ul style="list-style-type: none"> <li>▪ On traffic volumes and speeds, is volume analysis going to address a change in the type of vehicle, like trucks that are not passing through downtown at this time?</li> </ul>	<i>We could assess that qualitatively.</i>	(Y) – Changes in truck routes will be assessed in Measures 2.3 and 2.8.

<b>Comments on Measures for Guiding Principle #5</b>	<b>Response at 5/15 IAWG Meeting</b>	<b>Incorporated or already included? (Y)es / (N)o / (P)artially</b>
<ul style="list-style-type: none"> <li>▪ How does the seawall play into scenarios?</li> </ul>	<p><i>The seawall is deteriorating and needs to be replaced, so each scenario will include a seawall replacement option.</i></p>	<p>Comment was a clarifying question, not a request for a change to the measures associated with the guiding principle. No action required.</p>
<ul style="list-style-type: none"> <li>▪ Would you put the benefits of the seawall into the economic analysis?</li> </ul>	<p><i>Yes, but it is important to note that the economic benefits will differ depending on how and when it is replaced.</i></p>	<p>(N) – Given the compressed schedule for analysis, seawall economic impacts will not be analyzed as part of the scenario evaluation process.</p>

<b>Comments on Measures for Guiding Principle #6</b>	<b>Response at 5/15 IAWG Meeting</b>	<b>Incorporated or already included? (Y)es / (N)o / (P)artially</b>
<ul style="list-style-type: none"> <li>▪ Shouldn't carbon footprint and air quality be two separate measures based on what the Stakeholder Advisory Committee is saying?</li> </ul>	<p><i>There is not enough air quality analysis available to warrant its own measure.</i></p>	<p>(Y) – Air quality and emissions have been split into revised Measures 6.1 and 6.2.</p>