SR99: Alaskan Way Viaduct and Seawall Replacement Project DEIS
Joint Design Commission and Planning Commission Comments

SECTION	COMMENT
GENERAL COMMENTS Main Introductory Document (Chapters 1-11)	Overall the introductory document provides a good description of the project need, background and the alternatives. Many of the Commissions' comments relate to clarifying statements and the alternatives and to including more about the larger framework for the project and decision-making process. The 156-page overview document of the DEIS is thorough, informative, easy to read and understandable, making clear references to other technical memos, as appropriate. It is a beautifully laid out document with superb graphic quality, which we hope will be used as a model and precedent for other major transportation projects. We do, however, question the production cost and whether many important details are accessible to the general public. Our main concern is whether people could easily access all the necessary technical information to adequately assess the impacts of each of the 5 alternatives by reading only the DEIS document itself. The Commissions have a major concern that the DEIS does not inform the reader of the process for developing the preferred alternative. If the preferred alternative is to be developed prior to or concurrent with the response to DEIS comments in a FEIS, it is critical that the public understands how their comments were reflected in the decision process. It must also be clear what role the three lead agencies and the Leadership Group will have in selecting the preferred alternative. Some general description of the process from this point forward would be helpful for the interested reader and the general public and should be articulated soon. Chapter 2 serves as the Executive Summary and is well presented. It is a dramatic improvement over typical EIS documents and is directed toward the essence of the task – choosing the best alternative. However, despite the vast amount of interesting data, it is not organized in a way that is very useful in informing a responsible decision. A larger framework for making the decisions around the preferred alternative needs to be added to the Final EIS document, with the data put into a meaningful context for decision makers. Wherever possible there should be

clear context statements added about the meaning and value of the material presented. Within this context the document should explain the absence of any cost benefit analysis since many of the impacts are the same between alternatives and it simply gets down to the economic value of maintaining 'freeway' thru-route capacity vs. cost and open space quality/parks.

Additionally, some very fundamental assumptions need to be established and explained. These should be part of the framework for decision-making discussed above and relate to the transportation goals for the project and how these fit into the regional transportation goals and the City's Comprehensive Plan.

To address the need for a clear decision-making framework, we suggest a logical decision matrix be developed in which the following issues would be clarified:

- The economic value of providing additional SOV capacity for through traffic, both critical and non-critical should be carefully analyzed for its true value and costs. Given local and regional goals to discourage unnecessary SOV trips, this analysis should examine this element of the proposal carefully, particularly with the well-documented "build it and they will come" effect of added road capacity.

- Acceptable sizes for streets along the waterfront must be identified. A four lane street (with or without parallel parking) might well be the widest surface street that should run along the waterfront in order to establish the most vibrant, healthy and urbane pedestrian environment which translates in the long run into economic value.

- Clarification that the majority of the environmental indicators are essentially the same for the alternatives.

- The 7.5 – 11 year construction time frame with its related 4-lane detour will result in extended travel times caused and could permanently change travel patterns and consequently. This reality needs to be assessed in the transportation analysis.

- The economic impacts of the 7.5 to 11 year duration of construction on waterfront businesses need to be examined thoroughly. This analysis should include assessment of the total value of these businesses and the maximum time they could sustain the impacts of continuous construction and should also include an appropriate business mitigation plan.

- It would be helpful to see the "No Build" alternative as part of the comparisons in Chapter 2.

Chapter 1 Why We Need the Project	The Project Description on the cover sheet describes the goals of the project in terms of improved seismic safety and maintaining or improving mobility for people and goods. We strongly recommend that meeting transportation goals and needs throughout the whole area needs to be examined, not just a narrowly defined SR-99 corridor. The Final EIS should also include goals of maintaining or improving: • the urban environment and pedestrian experience • clean air, and • fish habitat and clean water 1.2 The first statement notes that the Alaskan Way Viaduct provides "vital roadway capacity that cannot be provided elsewhere in the region." While we understand that this is a summary document, it should provide rationale to substantiate this statement characterization of this corridor. The statement "usually congested I-5" should provide some definition of congestion (% of time/level over capacity, etc). This chapter does a good job of describing the five alternatives with accompanying graphics comparing them. The Commissions urge that the following comments and questions be addressed in the Final EIS to provide sufficient information and consideration of alternatives. 2.3 Alternatives It seems that another alternative should be examined in the Final EIS which would involve making improvements to I-5 and the arterials and mass transit through downtown to accommodate the traffic through the downtown area with the use of a four lane surface street along the waterfront. This could reduce the construction timeframe and costs and allow for the new roadway to operate at a lower traffic count as the remaining N-S roads would be more effective. It seems that this type of option should already by part of the team's earthquake emergency preparedness planning and should therefore be easy to add to the final EIS. The tunnel alternatives should evaluate the inclusion of mass transit (fixed rail options). The cost and difficulty of tunneling suggests we should look for the maximum public benefit from such projects. It seems irresponsible to not include at least a provision for future mass transit in the tunnel. The alternatives should also include a variant of the tunnel alternative that puts the northbound tunnel under Western, with one lane coming to the surface at Bell and the other two lanes at the Battery Street tunnel.

CHAPTER 2 Summary and Comparison of Alternatives	Lowering the Battery St. tunnel portal would allow the southbound tunnel to go under both Western and Elliott and continue lidded for most of the way south, thus creating developable land. A significant benefit of this option is the possibility to significantly shorten the down-time of the Viaduct. 2.4 In earlier briefings to the Joint SDC/SPC meetings, staff described a seawall replacement alternate like that proposed for the Sculpture Park as much less costly and much more beneficial for aquatic habitat. This alternative should be included in at least one of the alternatives in the Final EIS, with an analysis of its benefits compared to other configurations. 2.5 Comparison of Costs among Alternatives Consistent with the purpose and need statement, the Alaskan Way Viaduct corridor has been construed more broadly than simply the elevated facility at risk of failure resulting from a major seismic event. It would be appropriate to have the various cost elements of the "project" broken out by categories or groups of investments that reflect the various components as presented in the purpose and need statement. At a minimum, the corridor and the resulting "project" appear to include the Coleman Dock expansion, the Seattle Seawall replacement, connectivity improvements to north-end of corridor surface streets, connections at SR519, temporary structures erected during construction, and a Viaduct replacement structure (varying by alternative). It is not clear from the alternatives descriptions what the independent cost is of the seawall construction (e.g. from surface alt). This should be identified and called out in the Final EIS since it is an important consideration when looking at the costs of the various alternatives. 2.9 What are the financial costs associated with saving the existing Battery Street Tunnel? It is reused in all schemes and it appears to create some difficulties and negative impacts because of its location relative to the surface and tunnel alternatives. What would the costs and associated benefits be of relocating/rebuilding the tunnel deeper so that the surface and tunnel alternatives would not have to rely on the elevated roadways in front of the Pike Place Market to connect to Aurora Ave North? The Final EIS should consider this option. 2-10 Traffic Speeds The Commissions question whether travel speeds are relevant for this relatively short distance of SR99. The Final EIS should provide a clear explanation of the relative importance that traffic speed and how this relates to other criteria used to compare the alternatives.

2 - 11 Trips and Travel Times

While the daily traffic volumes are useful, it would be more helpful to also show the hourly distributions of these traffic volumes in the Final EIS, along with comparisons with transportation corridors that carry similar volumes.

The DEIS lacks a comparison of how the alternatives accommodate improvements to the ferry terminal and improvements for vehicle traffic and increased ridership for walk-on/ pedestrian traffic on the ferries. This is an important set of considerations and should be provided in the Final EIS.

The characteristics of the trips on the AWV are not found in this section. The Final EIS should include information that addresses the following questions:

What is the split between through trips and to trips?

- What are trip types or purposes of through trips? For example which are related to vital economic activity as opposed to a personal trips?
- How do increases in vehicle miles traveled compare to population increases along corridor? If so what is the relationship?
- What data was collected and what was learned from the period when the viaduct was completely shut down after the Nisqually Earthquake? How might it inform this evaluation?

2 - 14 Parking

The text should explain that basis for inferring that it is the City's responsibility to subsidize free and/or inexpensive (metered) storage (i.e. parking) of private automobiles. The Final EIS should address how this relates to City parking policies and the Comprehensive Plan.

2 – 15 Character and Views along the Waterfront

The Commissions question the value and benefit that is attributed to views from vehicles traveling on the Viaduct. While it is true that there are significant views, it is not at all clear that this should be accorded “scenic view” values that then need to be protected. The City and State should be very careful in seeming to assign this value since it has little to do with the primary transportation purposes of the facility.

2-20 Other Issues Considered

It seems intuitive that a surface option could be built in substantially less time with associated lower costs. If this is true, it should be explained and validated more clearly.

2-21 Construction

The Commissions have serious concerns about the magnitude and duration of the construction impacts described for the alternatives, particularly constructing a "temporary" elevated structure which could make the area feel like a construction zone for nearly a decade. Looking at Exhibits 2-29; 2-30 and 2-32 it is difficult to see how any resident or business on the waterfront could survive this scenario. This project could completely devastate the waterfront for the duration of construction and take several years afterwards for recovery. The Commissions strongly recommend that alternative construction strategies should be examined in the Final EIS. These should include making improvements to I-5 and the arterials through downtown to accommodate the traffic during the project. This would reduce the construction timeframe and costs and allow for the new roadway to operate at a lower traffic count as the remaining N-S roads would permanently be more effective.

The Final EIS should identify and clearly evaluate the risks of the five options, particularly related to seismic vulnerability, risks to pedestrians and building occupants from falling objects and debris during construction, air quality, etc.

Finally, the Final EIS should address the following questions:

- What is the cost, travel times and duration of the detour routes?
- Will the duration be long enough to effect permanent changes to travel patterns? If so, what could be the impacts of this change on the project?
- What improvements to I-5 could be made to offset any diverted traffic?
- Was induced traffic factored in?

Finally, the footnote on buildings, employees and acres affected regarding surface should provide more information about this issue.

CHAPTER 10 Construction Impacts and Mitigation	10 - 14 Effects on economy and local businesses In a number of locations the DEIS quite strongly addresses the impacts of construction on the current patterns of use, tempering that concern with the obvious benefits of open space for the tunnel options and not for the other options. The Final EIS should provide a more balanced analysis of construction impacts for all options. The statement that "some businesses could be negatively affected if people choose to avoid the area during construction" seems naïve and optimistic. Is this realistic given the extended time periods involved and the nature of the businesses? The statement (Appendix B: p 64) that business owners "may experience economic effects due to the impacts" appears to substantially underestimate impacts considering the magnitude and duration of the construction activity. It seems likely that many small businesses would simply not be viable. If so, the negative impact should be acknowledged and addressed early with a creative mitigation plan. The Final EIS should do a more thorough job of analyzing the current business conditions including what are the pedestrian counts for different times of the year and what is the economic value to the city/region beyond the business ownership (i.e. what is it worth to keep them alive and accessible). This information should be used in a more accurate assessment of impacts and development of potential mitigating measures.
B: Alternatives Description and Construction Methods Technical Memorandum	The purpose and need statement seem to dictate that during the full extent of construction period, partial operation of the existing or temporary replacement structures will be maintained. A complete assessment of quantifiable construction impacts is not available. Specifically, what are the added or avoided costs (business impacts, cost of temporary structures, travel delay, construction staging efficiencies/inefficiencies, environmental impacts of temporary aerial structures, etc.) of keeping through lanes open in the corridor? Essentially, the question of what construction management approaches to be employed requires a more detailed assessment of these various strategies, their timelines, costs, and localized economic and environmental impacts. We believe that alternative construction approaches probably need to be evaluated, including those that do not provide through vehicle capacity in the corridor throughout the construction period. The construction schedule assumes 24-hour/7-day construction to meet the 7.5 – 11 year construction periods (+18 months of preparation), but there is limited discussion regarding noise, light and vibration impacts at night. Nighttime construction is not typical and should be addressed in more detail, especially in residential areas. The Final EIS should expand the analysis and discussion of these impacts. Construction impacts on tourism and cruise ship industry from 7 to 11 years is significant. The economic effects during construction could be quite significant to all businesses, particularly the waterfront businesses and should

	not be downplayed. 1,100 businesses (+/-) are located within one block of the project area. It is realistic to assume that construction "could cause people to avoid the waterfront, which could reduce business revenues". More analysis of the economic impacts and appropriate mitigation should be detailed in the Final EIS. The estimated volume of excavated soil (including contaminated soil) ranges from 741,000 CY to 2,290,000 CY. The added impacts from truck traffic for soil removal should be included in the Final EIS, including proposed trucking volumes and more specific information regarding trucking routes. The additional volume of trucks along the major existing truck routes should be analyzed and if necessary, mitigated. There is also mention of barging soils. If this is a viable option, more discussion should be included in the Final EIS including impacts to water (fish, wildlife, etc). Construction impacts to neighborhoods (residential in particular) could be significant – sidewalk and street closures (both long and short term), nighttime construction, detours, increased congestion, etc. The Final EIS should fully describe possible mitigation measures to keep residents informed. There does not appear to be a discussion of construction sequencing that was not linear (page 134 of the "big book"). Has there been any thought to beginning construction at different places along the viaduct simultaneously or this just assumed? This could increase impacts but perhaps for a shorter period of time and should be evaluated in the Final EIS. It is imperative that transit operations during construction not only meet existing standards but perhaps exceed them, creating more opportunities for commuters from the north and south. During construction downtown streets will probably be more congested, potentially reducing the reliability of transit service. Close coordination and out-of-the box thinking with Metro should be encouraged. The Final EIS should examine a range of mitigation measures.
C: Transportation Discipline Report Memorandum	**Traffic Operations Evaluation:** Existing facility scenario data presented for comparison of alternative traffic evaluations is for 2030. When 2030 existing facility values are compared with proposed alternatives it appears that not all alternative designs replace capacity. If this is so, a clear statement is required emphasizing the capacity differences. This is of note since evaluations seem to indicate that the existing system is not at full capacity and little is proposed to alter the capacity of the existing Broad Street tunnel. Throughput analysis is an important opportunity to present this information and distinguish among alternatives, however, clear statements of the importance of such analysis to decision-makers are lacking. This information and analysis should be included in the Final EIS.

	It appears that no alternative examines real operational improvement strategies for parallel surface facilities through downtown Seattle. It is possible that a strict commitment to replacing all existing functionalities could limit the design development for a generally functional Seattle waterfront corridor given real cost and right-of-way constraints. For example, is streetcar replacement justified in all alternatives given low ridership and sizable right-of-way requirements (12" to 13" buffers on each side of the streetcar)? It appears that alternatives with similar surface configurations (Tunnel, Bypass Tunnel, and Surface) will result in dramatically different surface network operating conditions. This appears to be a function of variable through capacity at separate grade. This may in fact be more of an anomalous modeling result than an expression of a likely outcome that reflects best professional judgment relating to human behavior. It is unclear how the combined use of the regional travel demand model with CORSIM and Syncro has contributed to an appropriate description of operational issues associated with different alternatives. These are particularly important questions when build alternatives represent widely varied approaches to corridor investment. The peak hour operational findings are of interest but should be incorporated into a more comprehensive assessment of alternative viability, or effectiveness analysis. The utility of the project is dependent upon the relationship between full operating benefits during its entire economic life to the construction and operating costs. The Transportation Report contains measures of effectiveness (beginning on page 19) that reflect considerable overlap across the various measures: traffic density, speeds, and hours of delay, traffic distribution, and volume to capacity ratios. Multiple criteria that do not eliminate double counting confound alternative analysis. This pitfall should be avoided. If, on the other hand the measures of effectives are not intended to be utilized as part of the development of a preferred alternative, what exactly is their purpose? The aerial and tunnel alternatives include effective interchange connections at the south portion of the project, however, ramp configuration at the north end vary dramatically for the aerial and tunnel alternatives. The rationale for these important design differences requires justification, particularly since Alaskan Way will receive substantial additional activity with the tunnel alternative, with significant potential to alter the north end of the waterfront. The ramp configurations require more discussion concerning potential re-combination of existing north-end ramps with tunnel and by-pass tunnel designs. The aerial alternative appears to have received the most thought concerning ramp connections/improvements, while the tunnel alternatives have little and include potentially significant adverse of surface street streets (e.g., north end/Alaskan Way, including additional traffic volume and performance of signalized intersections). The Final EIS should contain a more detailed analysis of these designs and their relative impacts. Vehicle throughput measurement locations appear to reflect present urban conditions and expected areas of change. In light of the project scope, it is noted that little thought has been given to potential changes in

	development activities in the urban area, changes that might require or stimulate alternative project designs (e.g., ramp positions, configurations, and portal locations).
Methodology and Data Analysis:	The knowledgeable reader is unable to easily reconstruct the methods employed sufficiently to evaluate the analytical design. So, it becomes difficult to eliminate the possibility of unintended analytical bias. One conclusion that might be drawn is that results of the technical analysis represent near total inelastic demand, not just for total trip demand, but for demand for specific trip destinations, and demands on specific routes and facilities. This is not consistent with economic theories about utility maximization in an urban transportation context. The rationale for establishing the transportation analysis screen lines needs better explanation. The present analysis prevents effective consideration of changes in ramps and arterials serving the alternatives. It is noted that South Lake Union traffic forecasts include important additional data. Did other locations benefit from fresh data? For example, operational data for SR519 interchange traffic in connection with the design alternatives is not immediately clear. This is noteworthy since a 20 percent growth in traffic at this interchange seems to be projected. Discussion and analysis presented in "measures of effectiveness" format is very helpful, presenting information consistently with respect to connectivity, etc.
Environmental Impacts:	It would be useful to indicate in the Final EIS how the potential environmental impacts resulting from a non-operational Alaskan Way Viaduct are to be fully understood and addressed since an alternative where the current facility has not been replaced but is no longer operational as possible scenarios, especially considering the uncertain nature of project funding.
Transit and Non-Motorized Transportation:	Discussion relating to transit connections appears to ignore potential use of AWV design alternatives for high capacity transportation. In light of the project's investment, it is prudent to test designs for the ability to include high volume/capacity transit opportunities. For example, the present design alternatives do not address the absence of transit connections to the CBD to and from the north. Discussion indicates that pedestrian access to the waterfront from the central business district is an important criterion. Equal treatment of such access for each design alternative in the area of north Alaskan Way/Broad Street is not apparent.

	If one of the tunnel alternatives is selected, there needs to be a thorough analysis regarding the potential of integrating rapid transit into the tunnel. Planning for a more transit oriented future helps to reinforce the City's transportation goals and policies. With an eye towards the selection of a preferred alternative, this document must look at the enhancement of bicycle and pedestrian circulation and commutes through the corridor (West Seattle to Magnolia/ Ballard). This should be developed as a separated trail, not bike lanes in the roadway. Analysis of these transportation modes should be included in the Final EIS and taken into consideration in development of the preferred alternative.
D: Visual Quality Technical Memorandum	While it is not as user-friendly as the introductory EIS report, this appendix is extremely thorough in its analysis of the existing visual environment and impacts of the proposed alternatives. The hierarchy of views studied in the analysis is not clear in the document. Much of the discussion implies that the views for drivers on SR-99 are of equal or higher value than of pedestrian and building users. An introductory clarifying statement would help understand the relative value given by the analysis. The document indicates that views from the ferry and for ferry riders are of low value (page 13 and other places in the document). This needs to be re-examined. While the viaduct may not be a prominent in a distant view of the city, it is significant. The considered first impression of the city from the water is that the automobile is dominant. The city has given over the prime land downtown to vehicular traffic at the expense of the urban environment. In addition the visual experience of pedestrians entering the city from the ferry terminal is a very bleak one. The study indicates (page 54) that regular ferry users (commuters) are not sensitive to the view and yet also indicates (pgs 10, 35, and others) that regular users of the viaduct (commuters) are sensitive to views. This seems like a strange and biased conclusion. In addition, there is little acknowledgement in the document that the ferries are heavily used by tourists specifically because of the scenic experience. Likewise the tourists using local tour boats and cruise ships should be factored into the consideration of the importance of views of the waterfront and viaduct from the waterside. Consideration should be given to likely changes that would occur to "viewer population size" at key locations with the removal of aerial structures. The Final EIS needs a clearer statement about the lack of visual coherence of the city as viewed from the waterfront in the existing condition and with the rebuild and aerial alternatives. Specifically: this lack of coherence makes way-finding from the waterfront into the adjacent neighborhoods almost impossible. The

	columns and aerial roadways obscure the street-grid and the buildings facing the waterfront, that are the primary visual clues that we use to understand and navigate the urban environment. The Final EIS needs a discussion of the historical (pre-viaduct and earlier) visual environment. The Final EIS and should consider the possibilities to recapture lost visual quality and the merits of such opportunities. The discussion of light and glare throughout the document seems to limit the discussion to the effects of street lighting. The Final EIS should include a discussion about the impacts of vehicle headlights in the various alternatives. The visual analysis matrix (Exhibit 5-1) is a useful tool and easy to understand. However given the extended (8-11 year) length of construction it would be useful to add a companion document recording construction visual impacts in the same way. Also there needs to be some way to quantify the visual impact of tunnel vent structures in this matrix. Additional minor points: • Page 22 Table 3-4 and Map 3-5: are #s 4 and 5 switched? • Page 23: #21- add P-patch as primary use. • Page 93: Should reference to A-23 actually be A-22? • What are the flyovers shown in the Surface Alternatives (A-23; A-33 and A-35)? • How do cars get from the Alaskan Way surface street to the Battery Street Tunnel in the Tunnel options? A-65 indicates there is no connection. Is this acceptable for traffic mobility in the city?
E: Visual Simulations	This section seems incomplete as all five alternatives are not covered in their entirety. The simulations are too simplistic and could be made more realistic with real people, cars, and known developments. They present exaggerated scenarios where the elevated structures are shown to loom over the City - and hence seem biased toward the tunnel alternatives. A more even-handed treatment of all five alternatives in the Final EIS is advised. There need to be visual simulations added for the tunnel vent structures at both the height required by current buildings (5 – 6 stories) and once those areas reach their full zoning envelope (15 – 18 stories).

F: Noise and Vibration Discipline Report	Overall these review comments focus on the adequacy of information, analysis, and evaluation presented concerning three principle matters: 1. Potential effects on existing land uses, activities, and properties 2. Potential effects on future land uses and activities 3. Potential need for offsetting compensation or mitigation actions EIS materials define 10 dBA noise increases as substantial. This contrasts with criteria and evaluations generally applied by the City of Seattle and other development sponsors, identifying an increase up to 5 dBA as a moderate potential effect, 5-10 dBA as a significant effect, and an increase of more than 10 dBA as a very serious adverse effect. For developed areas, including what appears to be the entire central waterfront area, area in the vicinity of Colman Dock and Pioneer Square, and existing industrial areas south of South King Street, 72 dBA is indicated as the baseline noise criterion. Potential noise increases are evaluated in contrast to 72 dBA as an existing background condition. This noise level is characterized as a very noisy urban area. The Final EIS should address more fully the impacts of this noise level on urban activities and uses along the waterfront. No baseline noise measurements were obtained for area south of South King Street, with the exception of two locations southeast of the South King Street/First Avenue South intersection. Generally, the EIS indicates that area south of South King Street does not include noise-sensitive land uses. In the Rebuild alternative the expected noise levels in the north end of the project area may increase to levels in excess of approximately 75 dBA. In the Tunnel alternative, the area at the north end of the project (south of the Battery Street Tunnel) is expected to increase 6 dBA. It is unclear if this condition affects areas east and west of the project. No information is presented describing noise conditions at south end of project, south of South King Street, for aerial or tunnel project alternatives. These issues should be addressed in the Final EIS. **Potential effects on existing land uses, activities, and properties:** In general, it is assumed that present land uses contend with existing noise produced by the AWV. However, it is important to note that proposed tunnel alternatives have the potential to increase noise at the north and south ends of the project area, including potentially important sound level increases at the north portal and potentially significant additional sound production at the south tunnel portal. Tunnel construction would benefit a substantial area of the waterfront by replacing the existing overhead

	viaduct, but two features of the tunnel alternatives are important for decision makers to consider: (1) an exposed ramped roadway connecting the existing Battery Street tunnel with the proposed tunnel alternatives will add to the noise environment in the Belltown area and adjacent waterfront locations and (2) the existing viaduct south of South King Street, extending to the vicinity of South Atlantic/South Massachusetts streets will be replaced with surface routes, with a tunnel entrance in the area of South King Street, adding significantly to the existing noise environment in the area. **Potential effects on future land uses and activities:** The potential for increased noise levels at the north and south ends of the project require careful evaluation. Adding to the noise environment in the area of existing commercial and residential uses and where substantial recent residential development has been taken place will be important to all in the north portion of the project. Additional analysis of the effect of increased noise on future land uses is required in the Final EIS. The south portion of the project includes existing commercial, residential, and industrial uses. If noise conditions in this area increase significantly, commercial and residential uses may be adversely affected. If future land use changes, particularly altering existing industrial areas for commercial and residential use, are justified, these subsequent uses would be significantly foreclosed due to increased noise levels. **Potential need for offsetting compensation or mitigation actions:** EIS materials require additional information describing actions and methods for reducing anticipated adverse noise effects. Little analysis of potential steps for avoiding and minimizing adverse noise effects is presented.
G: Land Use and Shorelines Technical Memorandum	While the discussion of current land use is detailed and the market conditions are outlined, there doesn't seem to be much real investigation of the relative development potential of each alternative. Nor is there much consideration of the enhanced land value to the adjacent properties. Unlike the monorail, some of the alternatives will add significant value to adjacent properties offering greater views and less noise and air pollution. Such potential increases in land values should be considered not only in the land use analysis, but also in the project cost/benefit analysis. Land use impacts will be positive in many cases. The development potential needs to be examined in detail, almost on a site by site basis. This project offers the opportunity to think of transportation projects as community development projects as well. It is imperative that this project factor community development impacts and opportunities into its scope. This will ensure that the full value of the selected alternative is realized and will help to build support for the project. It would be helpful for Final EIS to acknowledge and describe what the City is doing on the Waterfront Planning Process. This will provide an important connection between these two parallel and related planning efforts.

This review is focused on an important goal of making sure that this information will be used to make an informed decision regarding a preferred alternative. The Final EIS should reference the decision making process and also include a comparison of the alternatives relative to the project objectives in arriving at the preferred alternative.

Specific comments

Consider the Mayor's Center City initiative in the existing context section. At the very least, the downtown EIS should be referenced in this section regarding the potential development patterns that might result from changing downtown zoning in some locations.

It is not clear where there would not be more development potential with the by-pass tunnel option. This should be considered in the Final EIS. For example, redevelopment potential seems to be discounted because of parking and other concerns, but it is not clear why this is so. The Final EIS needs to provide substantiation for these conclusions (Pg 58 of the Appendix). Related to this is the assumption that parking would be lost in all alternatives. The Final EIS should provide a more detailed analysis of where it would be lost and the expected impact of that loss.

Regarding the photos on pgs. 102 and 110 of the EIS. It is not clear that such a big street is needed and we recommend consideration of other options.

The appendix is generally thorough in its recitation of the facts. Most of its detailed conclusions are supportable, however there are couple of areas that are questionable:

- First, there seems to be a disconnect between Chapter 5 and 7. Chapter 5 repeatedly draws the conclusion that there will be little or no effect on land uses. But Chapter 7 acknowledges repeatedly that there will be some influences on future land uses, without speculating on what those influences might be.

- One effect that should be addressed more specifically in Chapter 6 is the devastating effect on retail sales and services that construction projects of this nature usually have along their path. Those businesses that depend on foot traffic and/or parking will see a serious decline in their revenues for the duration of construction and for some time thereafter if they remain in place and survive. Many will not survive or will relocate. It is not the case that these uses will simply spring back up when the construction is over, as the conditions which caused them to be there in the first place may not exist anymore, or the businesses may be thriving in their new locations and have no reason to return.

	For example, many of the ground-floor businesses along Western in the central segment are retail showrooms for high-end home furnishings. This location serves them well as the rents are no doubt lower than elsewhere (say the downtown commercial core) and the large, high-ceiling spaces are appropriate for their needs. These businesses may be expected to relocate rather than endure the construction. Whether they return will depend on their success in their new locations, as well as the character of the waterfront post-construction, including the amount of parking available. Dislocation can have an effect on land use changes and should be addressed in the Final EIS. The loss of parking should also be addressed more prominently. Currently, a general discussion of the problem is buried under the Aerial Alternative (on page 52), where it is acknowledged that loss of parking may make some uses nonconforming. Combine this with the dislocation of businesses and there is a potential problem. Not only may some use be dislocated, but new uses may be constrained by loss of parking. The choice of alternative may have an effect here. Under the two tunnel alternatives, it seems likely that there may be a demand for increased recreational uses in place of the existing retail uses mentioned above; yet these uses will need more parking than the existing uses. Thus, it may be appropriate for some mitigation in the form of public parking facility to support existing, new, and returning uses particularly in the central area. Finally, an alternative that was put forth at the Waterfront Charrette should be considered in the Final EIS, possibly as a variation of one of the tunnel options. This calls for the north bound tunnel under Western Avenue with just the southbound tunnel as the seawall. This would allow the existing viaduct to remain in service through most of the construction. This proposal would create new buildable land where the ramps now run up to the Battery Street tunnel. Uses on the new land could be commercial, residential, or (most likely) mixed, with some significant open spaces. This alternative deserves serious consideration as it would allow for easier phasing and would provide greater development potential just east of the proposed seawall tunnel. It could also have potential cost savings and less construction disruption than other alternatives.
H: Parks and Recreation Technical Memorandum	Appendix H contains a very thorough analysis of the construction sites and of the proposed impacts each of the alternatives. The following additions should be included in the final report. The appendix considers park facilities within 3-5 blocks of existing or proposed facilities are identified as being within the potential impact area of construction or operational impacts. The impacts may more accurately consider a 12-15 block area of impacts. The report should further consider that displaced users will more heavily use recreation facilities in other parts of the city as access and desirability of the waterfront will be greatly diminished.

	In the tunnel options the impacts of not lidding the portion of SR99 directly in front of Victor Steinbrueck Park and Pike Place Market should receive more emphasis. The tunnel options and the rebuild option should include lidding the last several hundred feet of roadway as well as any scheme that utilizes the Battery Street Tunnel. The impacts on the Aquarium is very serious, particularly the construction impacts which will drive away users for a long period of time and could harm the current sea creatures and exhibits. Mitigation measures should be described in the Final EIS.
I: Social Resources Technical Memorandum	This technical memorandum does a very thorough job of describing the "who and what" occurring in each segment (South, Central, North, N. Waterfront) of the project based on analysis of data from the census, local social services groups, housing providers, etc. While it describes the impacts for each of the alternatives, it fails to explain the "why" or "what could be done" in some instances. For example, on pg. 110, why do certain properties (Local 19) need to be acquisitioned and not others? Some explanation of why certain decisions are made for each alternative would be helpful to readers. When describing how the adverse affects of this project will be mitigated, the memo fails to mention who will be responsible for them (WSDOT, City of Seattle, etc.). It is not enough for the memo to describe how the adverse effects will be mitigated if there is no accountability. Also, more measures should be taken to make sure the people (residents, homeless, employees) of the area are aware of what is going on. A newsletter is not enough (page 155). Communications should include use of websites, a radio station dedicated to what will be happening with the AWV project, similar to "Highway Advisory AM Radio updates" so that people know what is going on around their business, home, cultural/social/sports/institutional destination 24 hours a day. If construction occurs 24 hours a day, then something like this may lessen the adverse impacts of the project during construction or at least help people anticipate and find ways to avoid them. It is critical that a commitment is made at the outset of the project for ongoing outreach and communication throughout the entire life of the project. The Final EIS should be clear about the scope of these mitigation strategies, responsibility and accountability.
J: Environmental Justice Technical Memorandum	This document is very straight-forward and clearly states that the AWV and seawall project: (1) will take many years to complete; (2) is presented in only preliminary design concepts at present, which are likely to change significantly; and (3) will require continuing monitoring of plans and actions to protect disadvantaged communities. However, none of the other materials were so clear in stating that evaluating the potential effects due to the project cannot be precise since the project will change in response to numerous technical and institutional requirements and that conclusions concerning potential adverse effects are equally subject to significant changes.

	The memorandum indicates that on-going effort is required through all phases of the project (development, design, implementation, and operation) to ensure the needs of disadvantaged communities are not adversely affected. A clear commitment validating this statement from the project sponsor needs to be included in the Final EIS. Access through the project corridor is essential. The impacts of each alternative, including during construction and operation, must be evaluated and the memorandum indicates that this cannot be accomplished in appropriate detail at present due to flux in design alternatives. This indicates a necessity in the Final EIS to either provide such detail or lay out an agreed upon approach to this further evaluation and its effect on the final design of the project. The noise effect statements in Appendix J must be checked with Appendix F to ensure consistency, in particular expected noise levels at north and south ends of project area (adjacent to disadvantaged housing and shelter locations). Transit service is essential to disadvantaged community members and more detail is needed to ensure that transit services will not be altered such that negative effects result. The conclusion presented is noteworthy, indicating that the proposed alternatives will have substantial adverse effects on environmental justice populations due to traffic congestion and reduced mobility. These negative effects will be present for the community served as well as for staff, emergency services, and operation/maintenance of these facilities
K: Relocations Technical Memorandum	While displacement directly resulting from acquisitions does not appear to be a significant issue given the overall scale and scope of the project and the value of properties in the affected area, the DEIS is vague on actual acquisitions as well as siting of staging areas during construction (p. 145). Only two acquisitions are specifically mentioned and they are in the section on "historical resources", p.21). One is the Washington-Oregon Shippers Cooperative Association (WOSCA) freight house (location not noted) and the One Yesler Building located at the South end of Alaska Way where the Viaduct ramps up into the Stadium area. As part of the FEIS, it is recommended that more specific information be given for acquisitions including the number, location, type of facility, type of impact (industrial, commercial, residential), temporary or permanent.

	The greatest difference in neighborhood impacts based on the different alternatives is the amount of parking. With the Rebuild or Aerial alternatives, there will continue to be parking under and around the structure. With the Tunnel, Tunnel By-Pass, or Surface alternatives, you will lose most of the parking (p.12). For future use of a redeveloped waterfront, a public parking facility should be considered as part of the redevelopment along with improved public transportation options. One lesson from the Sound Transit Project is that mitigation is limited for businesses which are not going to be acquired in whole or in part. This appears to be the case for the vast majority of the businesses and facilities along the Viaduct corridor. As a result, the FEIS should be very specific about the types of impacts and the duration of disruptions due to construction activity.
O: Public Services and Utilities Technical Memorandum	The section appears to be thorough and offers an objective, failure evaluation of potential impacts of the alternatives. No other comment.
P: Economics Technical Memorandum	The assessment of economic impacts associated with project construction is handled responsibly within a traditional input-output framework. However, this reveals very little about the economic viability of the project itself or the relative economic importance of project alternatives. For example the same construction multiplier effects would result from an alternative project, with equivalent federal participation, regardless of the nature of the construction project and independent of its actual usefulness. A project that is economically important will in fact change production functions in some small way. This indicates that a formal assessment, recognizing opportunity costs and quantifying user benefits is the preferred way to estimate the economic viability of this type of project. The input-output analysis recognizes that only new dollars represent net contributions to the regional economy, the same perspective should be applied to the measure of sales tax impacts. In addition to the project capital and operating costs, the substantial economic impacts of construction will relate to the business disruption during the prolonged construction period associated with any build alternative. It was not clear that these economic impacts were formally quantified in the DEIS. Ideally, a project benefit-cost analysis would be performed at this stage in the alternative analysis

	The DEIS is somewhat cursory is its discussion of impacts on businesses. In particular, greater study is needed on the variation in impacts on different business sectors. The potential impact of prolonged construction disruption on small retail business would be much greater than the impact on an industrial use, for example. The DEIS notes that tourism is "the fourth largest industry for Washington State is a critical part of Seattle's economy." However, it does not investigate the potential impacts of major disruption to this industry to Seattle, especially in areas outside the immediate study area. Tourists have options and may be expected to avoid an area that is experiencing major disruption. This could have particular impact on the cruise ship industry and those who rely to the tourists that industry attracts to the city. If so, the economic reverberations could be severe on a number of levels and would presumably extend beyond the waterfront to other major attractions including Seattle Center and the Westlake retail center. The impacts of disruption to the tourism industry deserve greater study and mitigation measures should be developed to minimize disruption.
X: Design Variations for Surface Street	All variations appear to be relatively similar. They curiously extend beyond the Battery Street Tunnel which is now the northern limit of the project according to the description in Chapter 2. In general, more creative street design options should be explored that look at varying the priorities from roadway to parkway to transit way.