-----Original Message-----
From: Jack Johnsen [mailto:jjjjohnsen@yahoo.com]
Sent: Monday, May 31, 2004 10:12 PM
To: viaduct@wsdot.wa.gov
Cc: Ed Murray WA House; Margaret Haugen WA House; Ruth Fisher WA House; Ken Jacobson WA Senate; WHTArmstrong; WHTBailey; WHTCampbell; WHTClibborn; WHTCooper; WHTDickerson; WHTEdwards; WHTEricsen; WHTFlannigan; WHTHankins; WHTHatfield; WHTJarrett; WHTKristiansen; WHTLovick; WHTMielke; WHTMorris; WHTNixon; WHTRockefeller; WHTRodne; WHTRomero; Bruce Agnew; Alaskan Wy Viad; AwVDickFord; Seattle Chamber of Commerce Bob Watt; Michael Brower; Belltown Business Association; Charlie Chong; WSDOT Don MacDonald; Dave Gering; Mary Gray; grdcqy; Migee Han; Elizabeth Healey; Peter Hurley; Pioneer Square BIA Judy Eakin; Downtown Business Assoc Kate Joncas; KCCConstantine; KCCedmonds; KCCFerguson; KCCGosset; KCCHague; KCCHammond; KCCIrons; KCCLambert; KCCMckenna; KCCPatterson; KCCPelz; KCCPhillips; KCCStCarlson; KCCStChatalas; KCCStFaubion; KCCStHodson; KCCStLatzy; KCCStLewicki; KCCStThornbury; KCCVonReich; KomoKR; James Leonard; Sharon Love; Pike Place Merchant's Association; WSDOT Paula Hammond; Peoples Waterfront; Argosy Cruises Ralph Pease; WSDOT Roger Horton; SEA TIMES epryne; SEA TIMES Garber; UNEXPECTED_DATA_AFTER_ADDRESS@.SYNTAX-ERROR
Subject: Alaskan Way Viaduct Draft EIS Comments

TO: Alaskan Way Viaduct Project Office

Attached are my comments on the Alaskan Way Viaduct in Microsoft Word format. It appears that the comment function provided on your web-site deletes the paragraph format of the document, making it quite difficlut to read.

I-278-001

In general, I believe the Draft EIS suffers greatly from the underlying approach to the project, which seems to focus on replacing the structure rather than looking at the functions it provides and providing the most effective mix of improvements to regional transprotation facilties to serve the traffic demand.

I believe that an important element of this integrated package would be improvements to I-5 that could replace some of the functions of the viaduct, particulary for through traffic.

I recommend that such an integrated approach be included in the comprehensive study of Interstate 5 recently initiated by WSDOT as reported in the Seattle Daily Journal of Commerce reported on April 14, 2004. This $5 million to $7 million WSDOT effort is designed to look at "any way we can to improve I-5 including capacity additions, pricing and HOT (high-occupancy toll) lanes." Given present capacity constraints on I-5, it appears that several billion dollars of improvements may be needed. This further highlights why WSDOT needs to look at all the major freeways in the Seattle area and develop an integrated plan that meets all future transportation needs in a cost effective manner.

Thank you for the opportunity to respond.

J. "Jack" Johnsen, PE

I-278-001

FHWA, WSDOT, and the City of Seattle appreciate receiving your comments. After the 2004 Draft EIS was published, your comments along with others led to additional analysis and revised alternatives presented in the 2006 Supplemental Draft EIS. Following publication of the 2006 Supplemental Draft EIS, there was not a consensus on how to replace the viaduct along the central waterfront. In March 2007, Governor Gregoire, former King County Executive Sims, and former City of Seattle Mayor Nickels initiated a public process called the Partnership Process to develop a solution for replacing the viaduct along the central waterfront. Details about the project history are described in the Final EIS, Chapter 2. Because the project has evolved since comments were submitted in 2004, please refer to this Final EIS for the current information.

The I-5, Surface, Transit Hybrid alternative was studied as part of the 2008 Stakeholder Advisory Committee process. The alternative was measured against the screening criteria and did not advance for further environmental review because it did not meet the objective of providing capacity for the future. It would require investments on I-5 to accommodate shifted viaduct traffic, leaving little room for future regional and state growth. In addition, travel times for trips through downtown on Alaskan Way would be 10 to 15 minutes longer.

AWV Draft EIS Comment Form Results:

Name: J. J. Johnsen Jr.
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Affiliation (optional):

Would like to be added to the project mailing list?

Yes

Project Comments:

I-278-002

May 31, 2004 Washington State Department of Transportation Alaskan Way Viaduct Project Office Subject: Alaskan Way Viaduct Replacement Draft EIS Thank you for the opportunity to comment on this Draft EIS Alternatives I find the analysis provided in this Draft EIS and the technical appendixes generally to be quite thorough, however, there are many cases where the analysis in the Draft EIS appears designed to support the alternatives under consideration, rather than provide a broad view of the function of the transportation system. The choice of alternatives I find especially lacking in providing a logical, more effective, and likely less expensive alternative: improvements to Interstate 5 which parallels State Route 99 at a distance of about a mile through most of the corridor. The recent initiation of by WSDOT of a comprehensive study of Interstate 5 through most of the City of Seattle provides an opportunity to examine these two parallel facilities and determine what package of integrated improvements provides the best transportation system at the best price. The Seattle Daily Journal of Commerce reported on April 14, 2004 that the Washington Department of Transportation is initiating a consultant contract is valued at between $5 million and $7 million to look at "any way we can to improve the facility, including capacity additions, pricing and HOT (high-occupancy toll) lanes." It appears from the transportation modeling in the Transportation Discipline Report for the Alaskan Way Viaduct Draft EIS that 2030 traffic volumes on I-5 will be about 30% greater than at present. Given present capacity constraints on I-5, it appears that several billion dollars of improvements may be needed. This further highlights why WSDOT needs to look at! all the major freeways in the Seattle area and develop an integrated plan that meets all future transportation needs in a cost effective manner. The piecemeal approach of the current Alaskan Way Viaduct replacement project The major deficiency of the EIS is the lack of consideration of alternatives that would preserve the same mobility functions provided by the viaduct on other corridors. The problem with the approach to the viaduct is that the focus is on replacing the facility rather than the transportation mobility functions. As I outlined in previous emails to WSDOT, the alternative of making improvements the I-5 corridor preserves all of the functions of the Alaskan Way Viaduct for through traffic and has a number of advantages. The I-5 alternative was advanced in my comments to the viaduct project team on July 31, 2002, June 17, 2002 and January 10, 2002, to which I received responses from Carol Hunter on August 6, 2002, June 28, 2002 and January, 2002. To summarize features of such an alternative:

1) I-5 has a much wider right-of-way and has considerable potential for carrying additional through lanes without additional right-of-way, but with more efficient use of the existing corridor. (Included in my June 17, 2002 comment to WSDOT)

2) Both north and south of downtown, adding lanes to the existing elevated structure is relatively straightforward (Included in my June 17, 2002 comment to WSDOT)

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I-278-002

In March 2007, Governor Gregoire, former King County Executive Sims, and former City of Seattle Mayor Nickels initiated a public process called the Partnership Process to develop a solution for replacing the viaduct along the central waterfront. The Partnership Process embraced a new strategy-referred to as the Systems Approach that looked more broadly at the region as a whole to identify innovative strategies for moving people and goods in and through Seattle. The study area was broadened from the limited SR 99 corridor to a wider area more or less bounded by N. 85th Street to the north, the Seattle city limits to the south, Elliott Bay to the west, and Lake Washington to the east. This process led to the development and analysis of three hybrid scenarios, one of which was the I-5, Surface, and Transit Hybrid, which included extensive improvements to I-5. Details about the Partnership Process and its evaluation results can be found in the 2010 Supplemental Draft EIS Appendix S, Project History Report. A summary of the project history is described in Chapter 2 of the Final EIS. Because the project has evolved since comments were submitted in 2004, please refer to the Final EIS for the current information.

In January 2009, Governor Gregoire, former King County Executive Sims, and former Seattle Mayor Nickels recommended replacing the central waterfront portion of the Alaskan Way Viaduct with a single, large-diameter bored tunnel. After the recommendation was made, the Bored Tunnel Alternative was analyzed and compared to the No Build, Cut-and-Cover Tunnel, and Elevated Structure Alternatives in the 2010 Supplemental Draft EIS. The comments received on the 2004 Draft and 2006 Supplemental Draft EISs, subsequent Partnership Process, and the analysis presented in the 2010 Supplemental Draft EIS led to the lead agencies' decision to identify the Bored Tunnel Alternative as the preferred alternative for replacing the viaduct along the central waterfront.

I-278-002

3) In the existing corridor, the most constricted area between Columbia Streets and Pine Street can be increased in capacity either by a lower level under the existing lanes (similar to the 3 to 4 lane lower level express lanes between Mercer and Pine) or through adding collector-distributor lanes under the parallel surface streets on either side. (Included in my June 17, 2002 comment to WSDOT)

4) Construction of a tunnel or lower level on I-5 through downtown would be shorter than any of the Alaskan Way tunnel options. (Included in my June 17, 2002 comment to WSDOT)

5) 5) Improvements on I-5 have greater regional benefits because: a) I-5 connects to the entire regional freeway system; b) Improvements can include the Mercer to SR 99 and Spokane Street Viaduct to permanently enhance those weak links of the circulation system. (Included in my June 17, 2002 comment)

6) Construction of a tunnel or lower level in the existing I-5 right-of-way would be less complex because of a number of factors: (Included in my June 17, 2002 comment) a) WSDOT currently controls the entire right-of-way and can manage its use during construction with no conflict from other users. b) b) There are no adjacent businesses to be affected during construction. c) The geotechnical conditions are much better than the unconsolidated fill along the waterfront. d) The removal of thousands of piles is not required. e) The tunnel or lower level would not be at or below sea level, as are the lower levels of the tunnels on the waterfront. f) The management of existing traffic will be more straightforward than along the waterfront because construction can be staged to close lanes during non-peak periods and traffic can be temporarily constricted to a few lanes in each direction. (In addition, the existing one-lane through express lane under the northbound lanes can be expanded to two-lanes by elimination of the Seneca Street off-ramp and modification of existing supports. This would provide a two lane bypass when the southbound mainline needs to be closed temporarily closed for lower level construction. Construction of a lower level beneath the northbound lanes would occur after the lower level beneath the southbound lanes was completed, allowing traffic to be re-routed.)

7) The advantages of improvements to I-5 must be evaluated from the perspective of the current design flaws. I-5 has 12 lanes at the Ship Canal Bridge (including express lanes) and only 8 lanes (including one through express lane) at Madison Street. It has a total of 14 lanes at Jackson Street. Even more striking, the northbound lanes after the I-90 merge total 8 lanes at Jackson then narrow to 3 at Madison. Merely correcting this constriction may be enough to carry a substantial portion of the through traffic that would use the Viaduct. (Included in my June 17, 2002 comment)

8) SR 99 can continue to carry substantial volumes of traffic to and from the downtown without the aerial or tunnel connection along Alaskan Way. (Included in my June 17, 2002 comment). The Draft EIS on page 58 states that "Expanding I-5 is not considered as a replacement for the viaduct because it would not meet the purpose and need of the project. In addition, these concepts would not replace the seawall; so a separate seawall construction project would still be needed." I have reviewed the Purpose and Need statement and find no transportation related goal that the package of improvements outlined above would not meet. What specific consideration was given in the development of alternatives that provided capacity for through movements served by the viaduct on I-5? Did that consideration include detailed modeling? If so, how many additional lanes on I-5 would be required to accommodate through traffic (assuming that the existing SR 99 route to downtown would provide access from the south to at least King Street and from the north to the south portal of the Battery Street tunnel, and that a surface route would be available along the Alsaskan Way surface street between Broad Street and Atlantic Street)?

I-278-003

What responsibility does WSDOT and FHWA have in participating in the replacement of the seawall, in the absence of a state highway adjacent to it? What justification is there for combining seawall

I-278-003

The Cut-and-Cover Tunnel and Elevated Structure Alternatives include the replacement of the Elliott Bay Seawall as a critical element of their structural integrity. However, the Bored Tunnel Alternative (preferred alternative) does not require replacement of the Elliott Bay Seawall. If the Bored Tunnel Alternative is selected, the replacement of the Elliott Bay Seawall will be designed, analyzed, and permitted by the City of Seattle.

I-278-003 | replacement in the transportation project if alternate locations for the state highway can be developed to serve through traffic? Previous responses to my comments indicated that the viaduct is vital to freight mobility. It is true that the viaduct connects the Duwamish area and the Ballard/Interbay areas. This, fact, however does not establish that the viaduct is a major freight route.

I-278-004 | The following factors mitigate against the viaduct playing a significant role in freight mobility. a) Most of the Duwamish industrial area doesn't connect easily with the viaduct. The only access points are at First Ave/RR Wy and south of the Spokane Street Viaduct. At other locations, access is cut off by rail yards and other obstructions. (Included in my July 31, 2002 comments). b) There are other multiple access points connecting the Duwamish industrial area to the regional transportation system and I-5 which are much easier to access than the viaduct and connect to regional destinations which are important to freight mobility. (Included in my July 31, 2002 comments) c) There are few reasons for freight trips from the Duwamish industrial area to travel north on the viaduct, as compared to other regional destinations. The Ballard/Interbay industrial areas are very small compared to other industrial centers in Renton, in the Green River Valley, and on the east side of Lake Washington. (Included in my July 31, 2002 comments). d) The Viaduct is is only about a mile and a half of the route from the Duwamish area to Ballard/Interbay which is about 5 miles long. The rest of the route is over surface arteials. Providing surface arterial access for freight on the Alaskan Way surface street would not significantly increase travel time. (Included in my July 31, 2002 comments) e) For Ballard/Interbay, the Alaskan Way Viaduct is only one of several truck routes. Both Leary Way and Nickerson provide access to Dexter and Mercer Street which provides access to I-5 for regional trips. These routes provide better connections to I-5 and the regional road network than the Alaskan Way viaduct. (Included in my July 31, 2002 comments) f) The Alaskan Way Viaduct does not connect effectively to the regional freight network. The viaduct connects only to the Duwamish area, West Seattle,and the Burien area. There are no ramps connecting SR 99 to Spokane Street eastbound to I-5. A very small proportion of total trips from Ballard/Interbay are likely to use the viaduct. (Included in my July 31, 2002 comments) g) Ballard/Interbay is a specialized industrial areas focused mostly on the marine industry. There is no reason to assume that trips from Ballard/Interbay are particularly oriented to the Duwamish area. In fact, the Ballard/Interbay area is more likely oriented to specialty industrial supplies outside the region who access via I-5 and would not use the Alaskan WayViaduct. (Included in my July 31, 2002 comments) h) The Port of Seattle facilities on Harbor Island have no reason to use the viaduct except for) trips to north Seattle or Ballard.

Again, The Draft EIS and Transportation Discipline Report (TDR) contains no survey or other information about freight traffic accessing these facilities and whether their destinations are such that they can effectively use the viaduct. (Included in my July 31, 2002 comments i) Port facilities in interbay are bulk facilities such as grain terminals and fish processing uses. It is unlikely that they use the viaduct much. If they do, it is a short part of the trip and use of the surface route would not affect trip time significantly. (Included in my July 31, 2002 comments) On page 34 the Draft EIS states that "A working viaduct and seawall are critical to international and interstate freight and commerce through the Puget Sound region. Failure of the viaduct and seawall would push 110,000 vehicles per day (enough to fill two freeway lanes in each direction) onto already overwhelmed parallel freeways and arterials. This could increase congestion by nearly 40 percent. The congestion could severely affect the ability to move

I-278-005 | freight and goods across the country and to Canada. The seawall also supports the main rail line in the region, which serves both north- south and east- west freight and passenger service. On page 35 the Draft EIS says "SR 99 is an important alternative route to, from, and through downtown. It is a major freight corridor providing access for businesses in the SODO and Duwamish industrial areas to northwest Seattle neighborhoods. The corridor is an important route for freight in the Ballard/Interbay manufacturing and industrial area. WSDOT classifies this section of SR 99 as a freight corridor carrying more than 10 million tons per year - the highest classification made. Page 40 of the Draft EIS discusses

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I-278-004

While the viaduct does not carry as much freight traffic as I-5 through downtown Seattle, it is a viable freight corridor that serves a number of freight users (roughly 4,000 trucks per day) that are not well-served by I-5. It also provides an alternative to I-5.

The lead agencies have worked extensively with representatives and staff from the Port of Seattle, the Manufacturing Industrial Council of Seattle, and the Burlington Northern Santa Fe Railroad to understand freight needs throughout the Alaskan Way Viaduct study area. The lead agencies have repeatedly heard that the Alaskan Way Viaduct is an important freight route to all of the above-noted users and one that needs to be maintained and enhanced, if possible. Further data and information on freight movement and demand can be found in the Final EIS Appendix C, Transportation Discipline Report.

I-278-005

Comment noted. Project information and analysis has been updated and the EIS has been revised since the publication of the Draft EIS in 2004. Please see the Final EIS and the accompanying Transportation Discipline Report, Appendix C, for current project information.

I-278-005 the employment and trip generation of the Interbay/Ballard and Duwamish Industrial areas and suggests, by the context, that the viaduct is important to those areas. Portions of these statements are manifestly incorrect, in other places they are contradicted by more balanced analysis in the Transportation Discipline Report.

I-278-006 If the viaduct were not available, only the through component of traffic would be shifted to I-5. Unfortunately we don't know what this is, because the Draft EIS does not tell us. We know that the 110,000 vehicle trips applies to only a five block portion of the viaduct between King Street and Seneca Street. The volumes drop rapidly both north and south to about 80,000 south of King Street and about 60,000 through the Battery Street tunnel. A realistic estimate of the through traffic on the viaduct is probably about 40,000 vehicles per day. The existing SR 99 route for traffic accessing downtown from the south and the north would still be available. A number of alternative routes would be available for traffic to and from Ballard/Interbay. In terms of freight, as outlined above, the viaduct is virtually inaccessible to the Duwamish area except by a singe on-ramp and off ramp that carries relatively small truck volumes. Almost none of the marine cargo uses the viaduct. More detailed information is presented in the TDR, however this section of the Draft EIS, by presenting this information, suggests that it is relevant to the function of the viaduct.

Why is the 110,000 trips represented in the Draft EIS as being shifted to I-5? Is the EIS writing unaware of the origin and destination of trips, or is this an attempt to create panic? Why is great detail on freight generation included in the Draft EIS without presenting the fact that very little of the total freight generation of these areas uses the viaduct? What is the daily and PM peak hour total volume using the viaduct that originates north of the Battery street tunnel and has destinations a)to downtown Seattle between Denny Street and Royal Brougham Way, b) to West Seattle, c) to the off-ramp to Harbor Island? d) to designations between Spokane Street and the Duwamish River, e) to SR 509 south of the Duwamish River, f) to SR 99 south of the Duwamish River? What is the daily and PM peak hour total volume using the viaduct that originates south of the Duwamish River and has destinations a)to downtown Seattle between Denny Street and Royal Brougham Way and east of Battery Street b) to the Belletown area south of Denny Way and west of Battery Street, c) to Elliott Avenue north of Denny Way d) between the Battery Street Tunnel and the Ship Canal Bridge e) north of the Ship Canal Bridge?

I-278-007 What is the daily and PM peak hour FREIGHT volume using the viaduct that originates north of the Battery street tunnel and has destinations a)to downtown Seattle between Denny Street and Royal Brougham Way, b) to West Seattle, c) to the off-ramp to Harbor Island? d) to designations between Spokane Street and the Duwamish River, e) to SR 509 south of the Duwamish River, f) to SR 99 south of the Duwamish River? What is the daily and PM peak hour FREIGHT volume using the viaduct that originates south of the Duwamish River and has destinations a)to downtown Seattle between Denny Street and Royal Brougham Way and east of Battery Street b) to the Belletown area south of Denny Way and west of Battery Street, c) to Elliott Avenue north of Denny Way d) between the Battery Street Tunnel and the Ship Canal Bridge e) north of the Ship Canal Bridge?

What other Washington State highways are classified as a freight corridor carrying more than 10 million tons per year? What order in magnitude is the viaduct in comparison to other Washington State highways are classified as a freight corridor carrying more than 10 million tons per year? What is the highest FHWA classification of Freight carrying highways and how does the viaduct compare with that classification? What is the total estimated daily Freight trips and tonnage generated by the Ballard/Interbay and Duwamish industrial areas? What percentage of trips and total tonnage is carried by the viaduct? Addressing these questions will to some extent repair the misconceptions furthered by the DEIS text. Previous responses to my comments also indicated that the viaduct is vital to access to the ferry system. The viaduct, however, provides access to the Ferry System only for trips originating in North Seattle. The trip volumes on SR 99 drop drastically to the north. I find it very doubtful that a

I-278-008

I-278-006

As you have noted, the volumes on the viaduct vary by segment. However, the total number of users on the viaduct in the central waterfront segment for the existing condition corresponds to 110,000 in the 2004 Draft EIS. Updated information regarding traffic volumes on the viaduct can be found in the updated Transportation Discipline Report, Appendix C of the Final EIS.

The total number of vehicles that currently use the viaduct are not all expected to transfer to I-5 in the event of a viaduct failure or during construction closures. Some traffic is expected to transfer to I-5, some to parallel city arterials, and small increases in traffic on I-405 are expected as well. Additionally, some users will use alternate modes (such as buses), while some trips are expected to not be made at all (or made to different locations), due to congestion on alternate routes and capacity limitations. More detailed information concerning expected shifts in traffic can be found in the Transportation Discipline Report, Appendix C of the Final EIS.

I-278-007

Please see the Final EIS Appendix C, Transportation Discipline Report, for a detailed discussion of freight issues. In addition, the Seattle Department of Transportation completed a freight survey and interviewed 35 businesses in both the Ballard and Duwamish manufacturing and industrial centers, which contains information on the number of trips made by various businesses and their typical hauling routes.

Origin and destination data for freight trips on the viaduct is not available, though truck enter and exit volumes for the viaduct are known and presented in the Transportation Discipline Report. However, the lead agencies have been working with the freight community to understand their needs and address them as part of the alternatives under

I-278-008 significant proportion of trips on the ferries uses the viaduct. From the Draft EIS and Transportation Discipline Report (TDR), it appears that no surveys of cars and trucks boarding the ferry to see what proportion used the viaduct for access. (Included in my July 31, 2002 comments)

I-278-009 As indicated above, the recent initiation of by WSDOT of a comprehensive study of Interstate 5 through most of the City of Seattle provides an opportunity to examine these two parallel facilities and determine what package of integrated improvements provides the best transportation system at the best price. The Draft EIS states that "Other Features of the Alternatives concepts such as adding ramps at specific locations (like S. Spokane Street to Fourth or Sixth Avenues), extending the AWV Corridor to I-5 or SR 520, and providing grade separation in specific areas. These ideas are not evaluated in this Draft EIS because many of them could be built as separate projects or they are marginally related to the purpose of this project and therefore could not be logically included. There are two design features included in the Draft EIS that could be built as separate projects, are marginally related to the purpose and should be eliminated. In addition, these features obscure the functional impacts of the viaduct alternatives and add costs that inflate the true cost of the alternatives for meeting the regions transportation needs.

These features which should be eliminated are: a) options for crossing SR 99 north of the Battery Street Tunnel, and b) relocating the SR 99 surface highway west of the rail yards south of Holgate Street. The inclusion in the alternatives of east-west crossing of SR-99, specifically the Mercer Street Underpass options that include significant changes to east-west crossings of SR 99 appears to not meet the purpose and need of the project. These options bear little or no relation to the replacement of the viaduct. The elimination of 4 lanes of traffic crossing under Aurora Avenue using Broad Street and replacing them by two additional lanes on Mercer Street will have pervasive changes on traffic circulation and operations. Including these features provides a confounding factor that make it impossible to determine the effects of the alternatives for viaduct replacement for the area north of Denny Way. It is likely that changes in east-west traffic patterns with resulting changes in intersection demand characteristics, especially left-turn demand confounds an accurate comparison of effects of the viaduct replacement alternatives. In addition, this features appears to benefit on! ly the development interests in the South Lake Union Area and perhaps the City of Seattle has no relevance to the transportation goals of WSDOT, and adds cost to the alternatives in which it is included that skews the decision-making process.

In addition, if these east-west crossing alternatives are to be properly analyzed, the analysis area needs to extend to the entire corridor from Elliott Avenue to I-5 where traffic patterns will be changed. What is the increase in east-west traffic on Denny Way and other east-west connections, as a result of viaduct alternatives with no change in east-west crossings of SR 99 What is the change in levels of service at intersections north of the Battery Street Tunnel as a result of viaduct alternatives with no change in east-west crossings of SR 99? The second feature that bears little or no relation to the purpose and need of the project is moving the SR 99 right of way to the west south of Holgate Street. This features appears to benefit only the railroads and perhaps the Port of Seattle by allowing a larger railroad classification yard. It has no benefits for vehicular transportation. It is a substantial expense that is proposed to be borne by the public which receives no direct benefit. What benefit to transportation circulation is provided by relocating the SR 99 right-of-way to the west of the existing route south of Holgate Street? What is the cost of the alternatives without relocation of SR 99 south of Holgate? As indicated above, these features of the alternatives should be eliminated for the reasons given in DEIS, they can be implemented independently of the replacement of the viaduct and bear little relevance to the purpose and needs of a state highway.

I-278-010 Transportation Analysis The description of the function of the Alaskan Way Viaduct in the Transportation Discipline Report (TDR) in Appendix C reflects a pervasive confusion about the role of the Alaskan Way Viaduct. (I refer to the "viaduct" as the elevated roadway between Holgate Street and the Battery Street Tunnel.) The the TDR includes the following: "State Route 99 (SR 99) is an important

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consideration.

Other Washington State highways with freight classifications can be found on the Washington State Department of Transportation website at http://www.wsdot.wa.gov/. FHWA freight classification information can be found the Federal Highway Administration website at http://www.fhwa.dot.gov/.

I-278-008

Please see Chapter 5, Permanent Effects, and Chapter 6, Construction Effects, in the Final EIS for updated information regarding the project's potential effects on access to the ferry terminal.

I-278-009

Yes, WSDOT is studying ways to improve traffic flow and reduce congestion along I-5 through downtown Seattle. The current planning and design efforts for I-5 that are underway are not the result of the Alaskan Way Viaduct Replacement Project or any of its alternatives. Please see the I-5 Pavement Reconstruction and Bottleneck Improvement Project's website at http://www.wsdot.wa.gov/Projects/I5/Rehab/ for more information about what WSDOT is doing along the I-5 corridor in Seattle.

As previously noted, the project has evolved since the publication of the Draft EIS in 2004. Please see the Final EIS for the current configuration of each build alternative.

I-278-010

State Route 99 (SR 99) extends between Everett to the north and Fife to the south. As SR 99 passes through downtown Seattle, it travels along the Alaskan Way Viaduct, the elevated two-level structure adjacent to the downtown Seattle waterfront. The Alaskan Way Viaduct comprises a

I-278-010

highway facility that serves both local and regional travel demands in the central Puget Sound area" (TDR, p. 1). What is meant by a regional trip? What is the percent of regional trips on the viaduct? What is the percent breakdown of designations for regional trips? What is meant by a local trip? What is the percent of regional trips on the viaduct? What is the percent breakdown of designations for regional trips? The methodology of establishing 2030 trips appears unusual. I would expect modeled existing trips to be compared with future modeled trips and a growth rate applied to each intersection approach or ramp.

I-278-011

The TDR states "Growth rates were established for ramp locations considering both the modeled growth forecast for the area served by the ramps, as well as the growth forecast for mainline traffic and area-wide for the portion of the network served." (TDR p. 15) What weight was given each of these factors? How does this methodology take into consideration trip choice based on capacity of other elements of the transportation system and the desired end point of trips? The methodology for arterials and intersections were based on "an evaluation of sub-area and screenline growth forecasted by the AWV model" (TDR p. 16) How does use of screen lines provide a means to allocate growth between individual arterials? For example, how can you determine how north-south trips split between 1st, 3rd and the 2nd/4th Avenue pair? How does this methodology take into consideration trip choice based on capacity of other elements of the transportation system and the desired end point of trips? For example, how does this account for "local" trips shifting from SR 99 to local arterials based on congestion? The initial step of establishing future traffic volumes for the SR 99 mainline at the Battery Street Tunnel appears flawed by estimating volumes substantially higher than the capacity of the facility. The Battery Street Tunnel is substandard by today's standards with a very tight turn near each end. It lacks shoulders on the side and center. The 2030 estimated PM peak hour northbound volume of 4050 (TDR Figure 4-9) is 2025 vehicles per lane and appears substantially beyond the capacity of the roadway. This is reflected in calculations on page 26 that capacity of the Battery Street Tunnel is 1,900 pcphpl. That figure seems high given the geometrics of the tunnel.

In addition the v/c results on TDR figure 5-19 that indicate the tunnel operating at over capacity, which is likely to be either impractical, or dangerous, or both. How was the capacity of the Battery Street Tunnel calculated? If traffic assigned is assume at a lower capacity, what is the shift of traffic to arterials and I-5? The measures of transportation system operation appear flawed in a number of cases and lack relevance or needed information to judge the alternatives from the perspective of operation of the regional transportation system. MOE H2: Corridor Peak Hour Travel Times The choice of routes to measure travel time appears flawed. Page 24 of the TDR provides the following destinations and route: Between downtown Seattle and the Aurora Bridge This route extends from the center of downtown Seattle (within a one-block radius of Second Avenue and Madison Street) to just south of the Aurora Bridge on the north side of Queen Anne hill. The route does not utilize SR 99 through downtown, as access to/from the north is not provided from downtown. Instead, the route follows First Avenue and Battery Street (northbound) and Wall Street and Second Avenue (southbound) through downtown. Access to SR 99 is at the Denny ramps, and the route follows SR 99 north of there. Using 1st Avenue for this route makes little sense. 1st Avenue is not near the center of downtown and is a two-way roadway with turning conflicts at intersections. As such it is a much slower and more congested route than 4th Avenue. 2nd Avenue and 4th Avenue have been a high capacity arterial pair providing access through downtown since the 1950s. Since they are both one-way streets with coordinated signals, they provide very efficient vehicle movement. I have timed the trip on these streets at rush hour a number of times and find that the trip time from Madison to the SR 99 ramps at Denny Street is about 5 minutes. This route is likely to be much less congested in the future because of the lack of conflicting turn movements at intersections and signal coordination that is possible on a one-way pair. Why was 1st Avenue chosen for this route? What are the trip times if 2nd Avenue and 4th Avenue are used instead? MOE H3 and H4: SR 99 Corridor PM Peak Hour Vehicle and Person Throughput provides a flawed perspective of system operation because it considers only SR 99.

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small section of the entire SR 99 corridor.

In this context, the terms local trips and regional trips were applied generally. A local trip is one where the origin and destination are relatively close, usually within the same city. An example of a local trip along the viaduct would be a trip from downtown Seattle to West Seattle. A regional trip has an origin and a destination that are further apart, either in different cities or counties. A trip on SR 99 that begins in Edmonds and ends in downtown Seattle (King County) would be considered a regional trip.

The methodology used to forecast year 2030 trips was established using standard traffic engineering and transportation planning principles and is consistent with the methodology that you have suggested. Adjustments are necessary to balance out the ramp and mainline volumes and are also employed to correct obvious model assignment anomalies.

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Traffic analysis, modeling, and methodology have been updated since the 2004 Draft EIS. Updated information can be found in Appendix C, Transportation Discipline Report, of the Final EIS.

I-278-011 It is of little consequence if the number of vehicles and persons carried on one corridor is reduced if the capacity of the system is adequate. This is a case where analysis of the alternative of increasing capacity on I-5 is especially relevant. MOE H5: Corridor Peak Hour Volume to Capacity Estimates appears fatally flawed in comparing the surface alternative to others. Because the methodology is different, the results are not comparable. In addition, the following anomalies are noted in questions below. How can the v/c ratio of 1.35 reported for the Surface Alternative in TDR Table 5-18 be relevant if the intersection v/c ratios as reported in TDR Table 5-34 range from .98 to 1.21? Is not intersection capacity generally the relevant measure of capacity on a street with signalized intersections? MOE H8: Traffic Distribution is designed to gauge the general impacts to parallel streets and highways. As described in Section 5.3.7 (TDR p 169f) the analysis is essentially meaningless for two reasons: a) It is based on ADT, which has no bearing on capacity and b) volume shifts to other corridors are not compared to capacity. In addition, reporting the shifts in traffic between the alternatives in ADT makes it impossible to clearly relate the changes in on travel time and congestion, which are based on the PM peak to the shift to alternative routes. It is critical, for example to relate the shift to I-5 for the Surface Alternative to the PM peak hour capacity of I-5. It may be necessary to propose capacity improvements to I-5 as part of the mitigating measures for the Surface Alternative. What are the PM peak hour shifts in traffic distribution? How do those shifts relate to capacity of the facilities? MOE H9: Arterial Intersection Performance has the potential to indicate the impacts of the alternatives, but has been rendered meaningless because of the limited scope of the analysis. The analysis extends only to 2nd Avenue. This provides a very limited view of the effects of traffic re-distribution. It excludes the 4th Avenue 2nd Avenue arterial pair that provide the highest capacity routes for northbound and southbound traffic through the downtown because they are one-way streets with coordinated signals. This doesn't give an accurate view of travel through the downtown utilizing available alternative routes when capacity on SR 99 is limited. In addition, there are a number of anomolies in LOS and v/c ratios reported as noted below. The screenlines used in MOE H8 extend all the way from the waterfront to I-5, why weren't intersections analyzed for the same area? Why does 2nd/Madison experience 144 seconds delay in 2030 Existing Facility and much less in other alternatives? Why does the delay at different intersections on Second Avenue vary? Was the analysis performed assuming coordinated signals? (With coordinated signal operation, as at the present time, southbound traffic should platoon through intersections with approximately the same delay would be produced on 2nd Avenue by the signal coordination at each intersection. Any difference in delay would be attributed entirely to the cross street delay.

I-278-012 If so, this should be reported because a delay in cross street traffic for the relatively short trips between 2nd Avenue and the I-5 interchanges is different in character and much different for operation of the circulation system than delays to north-south traffic platooning with coordinated signals.) Was analysis on First Avenue performed assuming left-turns allowed at cross streets, particularly the current signal timing at Pike Place? Why were two lanes in each direction assumed on First Avenue rather than the existing configuration? Would it not be more consistent to identify impacts with the existing conditions and identify additional lanes as mitigation. Is a four lane First Avenue consistent with City of Seattle plans for Pioneer Square? What is the source of traffic on First Avenue? Can that traffic be reasonably re-routed to 4th Avenue northbound and 2nd Avenue to 4th Avenue southbound? Were any other changes in configuration of operation of downtown streets assumed in the analysis? For example, was elimination of two-way operation on First and Third Avenues considered as mitigation? To what extent is LOS on the intersections north of the Battery Street Tunnel related to re-distribution of east-west traffic with the reduced capacity of the Mercer Street crossing of SR-99 with the elimination of the 4 lane undercrossing at Broad Street rather than relating to capacity of the Holgate to Battery Street segment of SR 99? The increase in cross traffic and turning movements due to re-distribution of east-west trips may have a greater effect than the viaduct alternatives. The above provide a general overview

I-278-013 of the deficiencies I see in the Alaskan Way Viaduct replacement project that stem from the limited perspective of replacing the facility, rather than analyzing the functions it serves and designing an

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Uniform delay progression, which accounts for the effects of coordinated signals, is just one factor that informs delay at individual signalized intersections. Vehicular traffic volumes, vehicle queue lengths, intersection geometry, and signal timing/phasing are some other factors that affect average intersection delay. These factors differ at each intersection along Second Avenue; therefore, average delay is expected to differ at each intersection as well. Optimization of signal timings for future conditions was accounted for in the analysis.

Traffic analysis, modeling, and methodology have been updated since the 2004 Draft EIS. Updated information can be found in Appendix C, Transportation Discipline Report, of the Final EIS.

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FHWA, WSDOT, and the City of Seattle appreciate receiving your comments on this project. Please refer to the responses provided by above as they address your specific comments about incorporating capacity improvements to I-5 in to the Alaskan Way Viaduct Replacement Project.

I-278-013 integrated plan that will provide effective vehicular circulation to at the greatest benefit and least cost to the public. I urge that the planning for the viaduct replacement be integrated with the recently initiated WSDOT program to identifying capacity improvements to I-5. Thank you for your consideration. J. "Jack" Johnsen, PE 500 Wall Street Seattle, WA 98121

Comments apply to:
Overall Project