

February 25, 2009

Mr. James Irish, Link Environmental Manager
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Subject: CETA's comment on the East Link Draft EIS

Coalition for Effective Transportation Alternatives (CETA) demands that the East Link environmental analysis fully analyze the impact of a no-build alternative that includes investment in new, high-performance express bus service for the same markets that East Link light rail is designed to serve. This action is a critically important addition to the East Link environmental process that in the draft for public comment focuses only on analyzing different light rail alignments, instead of analyzing reasonable alternatives that accomplish the same mobility objective.

The failure to analyze a competitive bus alternative to light rail in the East Link draft EIS is a breach of both the National Environmental Policy Act (NEPA) and the State Environmental Policy Act (SEPA) that mirrors NEPA. The NEPA process described in Section 1502.14 requires that project proponents:

Rigorously explore and objectively evaluate all reasonable alternatives ... Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits ... Include reasonable alternatives not within the jurisdiction of the lead agency [Sound Transit].¹

The Council on Environmental Quality's (CEQ) comments on the requirement just quoted indicate that Sound Transit is out of compliance in its DEIS for East Link:

Section 1502.14 requires the EIS to examine all reasonable alternatives to the proposal. In determining the scope of alternatives to be considered, the emphasis is on what is "reasonable" rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant.²

The no-build alternative that has been analyzed by the light rail proponents in the East Link draft EIS includes only a weak bus transit configuration, one that is an unsophisticated extrapolation of the present public transit system, based on King County Metro's present day 6-year Service Implementation Plans.³

The public transit aspects of the current no-build alternative are deliberately constrained to be non-competitive with the performance of Sound Transit's light rail. Sound Transit's no-build alternative in the draft EIS does not explicitly incorporate a modern BRT-on-arterials-and-HOV routing and

¹ 40CFR1502.14 at <http://ceq.hss.doe.gov/NEPA/regs/ceq/1502.htm#1502.14>

² Question 2A in CEQ's 40 Q&As at <http://www.mnrg.gov/meetings/2005cimpacts/pdfs/40Questions.pdf>

³ Sound Transit describes this no-build transit configuration on page 2-6 of the East Link draft EIS.

operations plan, incorporated with arterial bus priority measures as well as road pricing and active traffic management on the I-90 center roadway to maintain a smooth flow of traffic at all times. The present no-build alternative is not the strong all-bus alternative that transit-planning professionals at King County Metro could create if they were ordered to do so. The lack of a strong bus alternative on the present I-90 bridge center roadway violates common sense in light of the challenges of constructing a new passenger railroad on a floating bridge and through residential neighborhoods.

The transit configuration in the East Link draft EIS no-build alternative should not have been constrained by the preferences of the railroad-focused Sound Transit Board of Directors and staff. An additional strong transit alternative for analysis should have been coordinated with the EIS co-sponsoring organizations WSDOT and FHWA, both of which have a mandate to optimize transportation benefit across all modes – including buses, trucks, and cars – and all purposes – including freight movement as well as passenger movement – across the center roadway lanes of the I-90 Interstate facility now sought for light railroad use.

We have six reasons for our demand that a strong bus alternative be part of the East Link No Build:

First, because of technical issues in light rail track design on bridges generally⁴ interacting with the unprecedented uncertainty of electric light rail tracks placed on a floating bridge, the construction of light rail tracks on I-90 across Lake Washington is unusually risky. FHWA and WSDOT know that a key aspect of risk is the potential for stray current, train-generated vibration, and required structural changes reducing the lifespan of a critical segment of the Interstate Highway System. A non-railroad option that preserves the existing center roadway for motor vehicle use is an important hedge on the technical risk. Government agencies bearing extraordinary one-time and on-going costs to mitigate physical risk to the I-90 cross-Lake bridge is part of this issue as well.

Second, the draft EIS as it stands reveals that level of service for cross-Lake vehicle movement (as expressed in the volume to capacity ratio, v/c) becomes worse in the AM and PM peak directions with East Link light rail in place, compared to No Build, because of the elimination of the I-90 center roadway for vehicles.⁵ For example, this ratio increases from 0.90 to 0.94 in the PM peak eastbound direction, and the quantitative extent of worsening in the westbound AM peak was calculated but not revealed by the DEIS.⁶ A strong express bus service within the no-build alternative that retains the center roadway for express buses and other HOVs would likely maintain the no-build cross-Lake v/c, and at the same time provide the transit benefits of the light rail alternatives. Because the light rail will take two lanes out of service on a critical Interstate Highway System bridge, FHWA and WSDOT should not dismiss this likelihood casually until the analysis demanded in this letter is carried out.

Third, the draft EIS as it stands reveals that the construction and operation of East Link light rail is a net generator of greenhouse gases contributing to global warming.⁷ The U.S. Environmental

⁴ As documented in *Track Design Handbook for Light Rail Transit* by Parsons Brinckerhoff Quade & Douglas, Inc. (Transit Cooperative Research Program Report 57, Transportation Research Board, National Research Council, 2000). Available full text at http://www.trb.org/news/blurb_detail.asp?id=2561.

⁵ DEIS Chapter 3, page 3-40.

⁶ DEIS Chapter 3, Table 3-3

⁷ The best case for construction energy divided by energy saved in operations after light rail completion in 2020, as revealed in the DEIS Chapter 4, Section 4.10: 6,314,624 million BTU in construction energy divided by (643,297 minus 641,798) million daily BTU in energy savings from light rail use = 6314/1.499 = 4,212 days. In transit, an annualization factor is approximately 300 days to turn weekdays into weekdays plus weekend days. So the most optimistic energy payback period, roughly equivalent to the greenhouse gas payback period, is 4,212/300 = 14 years. This kind of life cycle calculation of GHG impacts is ignored in the DEIS Section 4.6 covering climate change.

Protection Agency should take note. Construction energy for the East Link light rail project divided by the annual energy saved by the light rail service being available to travelers after operations begin in 2020 shows that net GHG savings do not occur until 14 years have passed. This is the best case. The worst case is a payback period of 22 years. In comparison, a peer-reviewed study in the *Journal of Public Transportation* shows that bus rapid transit can provide significantly greater CO2 reductions than light rail transit in most U.S. cities.⁸

Fourth, the draft EIS for East Link as it stands reveals the shocking forecast that net new regional transit ridership from the approximately \$5,000,000,000 in government expenditures to build East Link from Seattle to Redmond would be approximately 10,000 travelers daily.⁹ As revealed by Sound Transit and Federal Government officials in conversations with CETA members, this ratio of expenditure to incremental transit ridership does not meet Federal standards for funding support.

Fifth, passenger railroad trains on a floating bridge would create a new icon of American engineering genius that would be a target for enemies of the United States with devastating consequences if successfully attacked. U.S. Department of Homeland Security should take note! The East Link draft EIS does not discuss the issue of threats from waterborne attack, and the cost of protection.

Finally, based on growing evidence, CETA and others interested in maximizing the geographic coverage, connectivity, and patronage of transit in the region know that light rail is unusually expensive, less cost-effective, and more time consuming to implement than high performance, limited-stop bus rapid transit (BRT) operating on bus-priority arterials and expressway HOV lanes managed for rapid flow.¹⁰ A well-designed bus service provides more mobility benefits per dollar, more quickly and with less environmental damage than light rail.

Therefore, for these six reasons **CETA demands that an express bus transit alternative with equivalent forecast ridership (EFR) as Sound Transit's light rail should be specified as part of the no-build alternative for environmental analysis in the East Link project.** We at CETA believe that the level of civil construction to achieve this alternative could be sufficiently minimal to allow consideration of this alternative as an adjustment to the light rail No Build in the existing DEIS. However, our demand in this letter would also be satisfied by an express bus alternative characterized as an alternative build option. The most cost-effective option for moving people in a volume equivalent to light rail may include reconfiguration of the center roadway for full-time two-way HOV or high-occupancy toll (HOT) lanes. This would involve civil construction costs, but they would be much, much lower than the cost of building East Link light rail.

The EFR-bus configuration for an East Link alternative should conform to characteristics described in the growing body of professional literature on the topic of BRT, as compiled by numerous sources, including the Bus Rapid Transit Policy Center (www.gobrt.org), the National Bus Rapid Transit Institute (www.nbrti.org), and the BRT Clearinghouse at University of California.¹¹ BRT characteristics include numerous features that attract riders by improving availability, speed, and reliability, including bus priority at traffic signals, queue jumping at bottlenecks, fare collection

⁸ "The Potential for BRT to Reduce Transportation-Related CO2 Emissions" by William Vincent and Lisa Jerram, *Journal of Public Transportation*, Volume 9, No. 3, 2006, pp219-237

⁹ \$5 billion cost for East Link in year of expenditure dollars, including financing costs, is from the Sound Transit 2 Plan. The forecast of 10,000 net new daily regional transit riders is stated in the East Link DEIS on page 3-3.

¹⁰ Sound Transit's self-serving invention of rail-convertible BRT is an exception to the generalization stated here.

¹¹ The clearinghouse is online at <http://path.berkeley.edu/informationclearinghouse/index.html>.

before boarding, bus boarding/exiting at multiple doors without steps, and high-tech passenger information systems.

The EFR buses should be specified with power plant technology that permits quiet and low-emissions operation.

The EFR transit alternative should *not* mimic the light rail operational pattern of high-capacity vehicles confined to a single trunk transit way, with HCT passengers brought to stations by a separate class of feeder vehicles. HCT vehicles should be able to enter and leave the main BRT alignment to serve Eastside neighborhoods that are not adjacent to main transit ways such as the I-90 center roadway and I-405 HOV lanes.

The EFR transit alternative subjected to environmental analysis should not involve end-to-end exclusive bus ways, particularly those with the radius-of-curvature and load-bearing characteristics of light rail track ways, since these railroad characteristics add to cost and to negative environmental impact of BRT service.

The EFR transit no-build alternative for the East Link environmental analysis should incorporate existing right-of-way to the greatest extent possible, including peak-period takeover of general-purpose roadway capacity and on-street parking as necessary to maintain speed and reliability of service.

The EFR transit alternative should utilize some form of managed HOV lanes on the I-90 floating bridge as opposed to dedication of the center roadway to an exclusive bus way. **The thrust of new technology developments in BRT over the past decade leaves no doubt that buses operating in managed HOV lanes over the I-90 floating bridge center roadway could be made "substantially equivalent" to light rail, a requirement of existing inter-jurisdictional agreements.** Policy innovation in the form of congestion-sensitive tolling of a center roadway HOV facility used by EFR-BRT could also be specified for the strong-bus transit components of the no-build alternative.

The EFR no-build alternative that CETA demands here as an alternative to East Link should be coordinated in its design with the future BRT system focused on the greater Eastside as described in the Record of Decision for WSDOT's I-405 Corridor Program.¹² It should also be coordinated with the emerging design of the BRT-on-HOV transit lines already specified by Sound Transit, King County Metro, and Washington State DOT in the transit plan for the new SR 520 corridor.¹³

The EFT alternative should be designed to meet all of the following objectives for regional public transportation just as well as East Link light rail allegedly does. These objectives are adapted (quoted and supplemented) from the East Link Scoping Report:

- Provide a reliable and efficient alternative for moving people throughout the region.
- Improve speed and reliability and expand capacity for people traveling on the region's increasingly congested transportation corridors, while preserving the environment.
- Increase mobility and accessibility to and from the region's highest employment and housing concentrations by providing a transportation alternative

¹² The Record of Decision for the I-405 Corridor Project is available at <http://www.wsdot.wa.gov/projects/i405>. A BRT plan for this corridor is sketched in the document *I-405 South Corridor Bus Rapid Transit Pre-Design Final Report*, June 16, 2005, by IBI Group, Mirai Associates, and Otak for WSDOT. Available full text at <http://www.wsdot.wa.gov/Projects/i405/corridor/Library.htm>

¹³ *SR 520 High Capacity Transit Plan* by Ron Paananen, Greg Walker, Kevin Desmond, and Theresa Doherty, December 2008

- Support Vision 2020 and Destination 2030 regional transportation plans to encourage directing growth into high-density urban and manufacturing centers in downtown Bellevue, Overlake, and Redmond by providing high-capacity transit connection between these centers and with other regional destinations
- Fulfill Sound Transit's legislative mandate to meet public transportation and mobility needs for high-capacity transportation infrastructure in the central Puget Sound region, as established by the State High-Capacity Transportation Systems Act (Ch. 81.104 RCW)
- Continue to implement Sound Transit's main transportation goal, to "provide a public transportation system that helps ensure long-term mobility, connectivity, and convenience for the citizens of the Puget Sound Region for generations to come" and to "provide reliable, convenient, and safe public transportation services between regional growth centers and create an integrated system of transit services."
- Implement the high-capacity transit (HCT) element of the I-90 Two Way Transit and HOV Operations Project Final EIS dated May 21, 2004; the Federal Highway Administration Record of Decision of September 28, 2004; and the August 2004 Amendment to the 1976 Memorandum Agreement between King County, City of Bellevue, City of Seattle, City of Mercer Island, Washington State Transportation Commission, and Sound Transit. These documents stipulate that the ultimate configuration of I-90 should accommodate HCT in the center lanes and the Amendment directs the agencies to "to provide high-capacity transit in the center lanes of I-90 between Bellevue and Seattle as quickly as possible." The Amendment and FHWA Final EIS define HCT as "...a transit system operating in dedicated right-of-way such as light rail, monorail or a substantially equivalent system." BRT is well documented by the United States Government and other authorities as substantially equivalent to light rail. Under RCW 81.104.015(1), HOV lanes qualify as HCT right-of-way.
- More fully develop a regional transit system that would integrate with any future Central Link light-rail line that is constructed, and provide direct connections among the largest urban centers in King County, including Bellevue, Overlake, Redmond, downtown Seattle, Capitol Hill, and the University District. Inter-modal transfers between buses and different types of trains are defined in practice by Sound Transit as a form of "integration" that provide "direct connections."

Sufficient specification of the EFR alternative for purposes of environmental analysis could be provided easily by BRT design specialists employed or under consulting contracts at King County Metro and other regional government agencies. The BRT route already partially designed by Metro between Redmond and Bellevue for the Transit Now initiative¹⁴ and included in the no-build alternative in the draft EIS should of course also be part of the EFR alternative demanded here by CETA.

The EFR alternative incorporating modern bus system technology, right-of-way adjustments for bus priority, and high-frequency operating patterns can and should be specified to overcome all of the objections to existing bus service laid out by Sound Transit in the East Link environmental scoping report as attributes of a no-build-no-action alternative. Every one of the justifications for East Link light rail that amount to criticism of the existing bus system in the DEIS

¹⁴ See <http://www.metrokc.gov/kcdot/transitnow>.

could be met sufficiently and more cost-effectively in the proposed timeframe for East Link light rail construction by the CETA alternative: a well-designed express bus system operating on actively-managed HOV lanes on arterials and expressways, with road user fees as needed. Such an alternative needs to be thoroughly covered in the EIS.

Please note this conclusion from the nationwide case studies in the Federal Transit Administration Report, *Characteristics of Bus Rapid Transit for Decision-Making*¹⁵ prepared by an expert panel of authors organized by Booz Allen Hamilton, Inc.:

"The ridership impact of BRT implementation has been comparable to that experienced with light rail transit investment of similar scope and complexity."

Inclusion in the environmental analysis of strong bus transit in the no-build alternative to East Link Light Rail that has equivalent forecast ridership is prudent and responsible stewardship of resources. As noted above, inclusion of all reasonable alternatives is also a legal requirement for environmental analysis under NEPA and SEPA. A no-build alternative including bus transit with equivalent forecast ridership – one involving billions of dollars less civil construction – is without question a highly reasonable alternative to the proposed project. It should be fully exposed in an environmental analysis. To claim that this analysis is unnecessary would be an error in the environmental process, and a cover up of a better alternative investment that does more and costs less.

To repeat and summarize, CETA demands that the East Link EIS document include a no-build alternative that analyzes an express bus transit system with a ridership forecast equivalent to the forecast for the proposed light rail.

Respectfully submitted,



John Niles
Co-Chair

¹⁵ Page 5-5 of Report FTA-VA-26-7222-2004.1, August 2004, available full text at http://trb.org/news/blurb_detail.asp?id=4213.