REFERENCE PAGES

ACRONYMS & ABBREVIATIONS

Α		M	
ADA	Americans With Disabilities Act	MIC	Manufacturing and Industrial Center
APE	Area of Potential Effects	MOA	Memorandum of Agreement
		MOT	maintenance of traffic
В		mph	miles per hour
BINMIC	Ballard Interbay Northend Manufacturing and	MSAT	mobile source air toxics
	Industrial Center		
BMP	best management practice	N	
BNSF	BNSF Railway Company	N_2O	nitrous oxide
ВО	Biological Opinion	NAAQS	National Ambient Air Quality Standards
BTU	British thermal unit	NEPA	National Environmental Policy Act
		NFPA	National Fire Protection Association
C		NMFS	National Marine Fisheries Service
CAFE	Corporate Average Fuel Economy	NO_2	nitrogen dioxide
CFR	Code of Federal Regulations	NOAA Fi	isheries National Marine Fisheries Service
CH_4	methane	NOI	Notice of Intent
City	City of Seattle	NPDES	National Pollutant Discharge Elimination System
CO_2	carbon dioxide	NPS	National Park Service
CO_2e	carbon dioxide equivalents	NRHP	National Register of Historic Places
CTS	Commitment Tracking System		
CZMA	Coastal Zone Management Act	0	
		O_3	ozone
D			
dB	decibel	P	
dBA	A-weighted decibel	PAH	polycyclic aromatic hydrocarbon
		Pb	lead
E		PCB	polychlorinated biphenyl
Ecology	Washington State Department of Ecology	PM_{10}	particulate matter 10 micrometers in diameter or less
EIS	Environmental Impact Statement	$PM_{2.5}$	particulate matter 2.5 micrometers in diameter or less
EO	Executive Order	Program	Alaskan Way Viaduct and Seawall Replacement Program
EPA	U.S. Environmental Protection Agency	project	Alaskan Way Viaduct Replacement Project
ESA	Endangered Species Act	PSRC	Puget Sound Regional Council
F		R	
FHWA	Federal Highway Administration	RCW	Revised Code of Washington
FONSI	Finding of No Significant Impact	ROD	Record of Decision
Н		S	
HAED	Historia American Engineening Decemb	SDOT	Seattle Department of Transportation
HAER HOV	Historic American Engineering Record high-occupancy vehicle	Sea-Tac	Seattle-Tacoma International Airport
поч	nign-occupancy venicle		1
1		SEPA SHPO	State Environmental Policy Act State Historic Preservation Officer
I I-5	Interestata 5	SIG	Seattle International Gateway
	Interstate 5		,
I-90	Interstate 90	SO ₂	sulfur dioxide
		SODO	South of Downtown
L	agriculant cound level	SPCC SR	Spill Prevention, Control, and Countermeasure State Route
$L_{\rm eq}$	equivalent sound level	3K	State Notice

TAC Tolling Advisory Committee TBM tunnel boring machine U USC United States Code USFWS U.S. Fish and Wildlife Service ٧ VdB vibration decibel level VHD vehicle hours of delay vehicle hours of travel VHT VMTvehicle miles of travel W WAC Washington Administrative Code WASIST Washington State Intersection Screening Tool WDFW Washington Department of Fish and Wildlife WOSCA Washington-Oregon Shippers Cooperative Association

WSDOT Washington State Department of Transportation

Т

INDEX Acquisitions 144-146, 148, 156 subsurface 18, 144 Adverse effects 22, 33, 194, 217, 223, 242, 243, 246, 248, 249, 251, 255, 260 Air quality 21, 31, 103, 157-158, 199, 207, 228 Alaskan Way Promenade/Public Space 4, 6, 59, 206 Alaskan Way Surface Street Improvements 4, 6, 59, 206 Aquatic habitat 106-107, 159-160, 201-202, 218, 229 Archaeological resources 29-30, 101, 154, 193-194, 211, 224, 246, 247, 251, 253 Ballard Interbay Northend Manufacturing and Industrial Center (BINMIC) 59, 93, 94 Barges 72, 180, 185, 186, 200 Battery Street Tunnel 61, 67, 80, 82, 83, 115, 116, 125, 131, 134, 139, 140, 142, 143, 144, 153, 154, 162, 181, 182, 217, 244, 245, 246, 247, 253 Bicycles 96, 133, 134, 179-180, 195 Broad Street Detour 23, 166, 167, 169, 185, 193 Buses 93, 174-176 Businesses 19, 28, 99, 101, 148-153, 186-187, 197, 202, 222 Climate Change 104-105 Colman Dock: See Ferries Construction 71-83, 164 durations 23, 71, 76, 165, 186 noise 28, 32, 183-184 staging areas 2, 39, 40, 72-73, 180, 183, 185, 200 temporary access 30, 80, 169, 186, 195 temporary easements 30, 185-186, 193 traffic restrictions 23, 26, 165-170 Controversial issues 35-36 Costs 8, 237 Cultural resources 86, 101, 211 Cumulative effects 33-34, 202, 205-206, 207

D

Dewatering 77, 81, 181, 182, 200 Disabled populations 6, 67, 197, 224, 226

F

Economics 19, 28, 99, 148-153, 186-187, 210, 222-223
Elliott Bay Seawall Project 4, 59, 206
Elliott Bay 105, 106-107, 159
Elliott/Western Connector 4, 60, 206
Emergency exits 6, 67
Emergency services 103, 198
Employment 19, 28, 187

Endangered species 22, 32, 106-107, 159-160 Energy 21, 32, 105, 158-159, 200, 207, 218, 228 Environmental justice 101-103, 155-157 Erosion 230 Ferries 94-95, 96, 134, 177 Fire 226 suppression 67, 69, 157 tunnel evacuation 67 First Avenue Streetcar 4, 59, 206 Fish 22, 32, 105, 106-107, 159-160, 201, 207, 218, 229 Freight 93-94, 134, 176-177 Funding 4, 216 G Greenhouse gas emissions 21, 31-32, 104, 158, 199, 207, 212, 228 Groundwater 22, 32, 107-108, 160, 212, 219, 230 Hazardous materials 32-33, 108, 180-182, 231 Historic resources 20-21, 29, 100-101, 153-154, 191-193, 211, 216-217, 223-224, 241, 252-253 Homeless populations 101, 155-156, 197 I-5 10, 14, 89, 118, 131-132, 217, 226 additional trips 27, 171 Indirect effects 140, 147, 149, 155, 160-161, 187, 194, 202, 231 Irretrievable resources 161 Irreversible decisions 161 L Lake Union 105, 159 Land use 18-19, 30-31, 99, 146-148, 208, 222 Low-income populations 21, 31, 62, 101-103. 155-157, 197, 217, 226 M Mats Mats quarry 33, 73, 79, 180 Memorandum of Agreement (Section 106) 63, 217, 223, 242, 247, 248, 249, 250, 251, 252, 253

N

Mercer West Project 4, 60, 206 Minority populations 21, 31, 62, 101-103, 155-157, 197, 217, 226 RapidRide 60, 93 Recreation 21, 31, 101, 102, 194-195, 224-225 Mitigation 22, 33, 78, 212-213, 215, 249, 250, 257-258, 260 permanent/operational 215 Relocations 19, 29, 30-31, 144-146, 148, 155, 185-186, 192 Runoff 22, 32, 200-201 temporary/construction 183, 215, 219 traffic management 215-216, 219 S Moving Forward projects 3, 6 S. Holgate Street to S. King Street Viaduct Replacement Project 4, 39, 58, 60, 75, 89, 95, 165, 206 Neighborhoods 21, 31, 101-103, 155, 195-196, 210, 217, 225 S. Spokane Street Viaduct Widening Project 60, 206 Safeco Field: See Stadiums New Dearborn Intersection 147 No Build Alternative (Viaduct Closed): See Viaduct Closed (No Build Safety 41, 162 Seattle Center 95, 99, 178-179 Alternative) Noise 23, 96-97, 209-210 Seattle Ferry Terminal See Ferries Section 4(f) resources 21, 29, 153, 154, 239 construction 28, 183-184, 195, 220-221 Settlement 77-79, 182-183, 191-192, 230 operation 18, 135-140 Seismic safety/standards 40, 69, 70, 87, 162 Social resources 21, 31, 103, 155, 196-197, 210-211 Open space 154-155, 194, 224-225 Soil 22, 32-33, 212, 219, 230 improvements 78-79, 160, 183 liquefaction 87 Parking 19-20, 23, 96, 149-153, 223 South Lake Union 99 Spills, prevention of 223 during construction 28-29, 186, 188-191 Parks 21, 31, 101, 102, 154-155, 194-195, 224-225 Spoils 78, 79, 180-182 Partnership Process 3, 46, 49-51, 256, 257 Stadiums 95, 141, 178, 225 Stormwater 106, 159, 201 Pedestrians 95-96, 98, 134, 179-180, 194-195 Surface and Transit Scenario 35 Pike Place Market, 98, 142, 191, 192 Pioneer Square 87, 98, 141, 153, 154, 191, 192, 193, 224, 238, 239, 245, 246, 248, 249, 250, 252, 256, 258, 260 Police 103, 157, 226 Tolling 3, 21, 35, 54, 55, 57, 68, 69, 71, 156, 216, 237 Polson Building 29, 153, 154, 191, 192, 193, 224, 248-249, 254, 255 (discussed throughout Chapter 5) Port of Seattle 98, 99, 222 traffic effects 10 Project limits 1, 39, 85 Traffic 8-17, 23-38, 90-92, 112, 132, 169, 216, 220 events 95, 134, 178, 194, 220 Public involvement 34-35, 61, 217, 235 Public services 21, 31, 103, 157, 198, 207, 226-227 Transit 17, 60, 93, 132-133, 156, 216 construction effects on 174-176 Purpose and Need 1-2, 40-42, 162-163, 241, 242, 244, 250, 251, 252, 253, 256, 257, 258-260 enhancements 4, 60, 206 Travel time 12-17, 27, 55-56, 124, 125, 128-132, 170-171, 174 Tribes 241, 243, 253 Tunnel Boring Machine (TBM) 55, 72, 73, 78-79 Qwest Field: See Stadiums

Utilities 21, 31, 103, 157, 198, 207, 227 relocations 31, 74 Viaduct Closed (No Build Alternative) 4, 65, 111-112, 207, 215 Viaduct demolition 75, 191, 192, 196, 197 Vibration 30, 97, 135, 184-185, 221-222 Views (visual resources) 18-20, 30, 98-99, 140-144, 185, 208-209, 216, 222 Water quality (water resources) 22, 32, 105, 159, 200-201, 211, 228-229 Western Building 29, 153, 154, 191, 192, 193, 196, 224, 246, 248, 249, 250, 254, 255, 258 Wildlife 22, 32, 106-107, 201-202, 207, 218, 229 WOSCA detour 23, 75, 165-166

Summary

City of Seattle. 2005. Comprehensive Plan: Toward a Sustainable Seattle. Seattle Department of Planning and Development, Seattle, Washington. January 2005.

City of Seattle. 2006. Mayor's Recommendations: Seattle's Central Waterfront Concept Plan. Mayor Greg Nickels. Seattle, Washington. June 2006.

City of Seattle. 2010. Ordinance 123424/Council Bill 116983. An ordinance relating to environmental review of the Alaskan Way Viaduct Replacement Project, and ratifying and confirming certain prior acts. City of Seattle Legislative Department, Seattle, Washington.

City of Seattle. 2011. Ordinance 123542/Council Bill 117101. An ordinance relating to the State Route 99 Alaskan Way Viaduct and Seawall Replacement Program; entering into certain agreements with the State of Washington as provided in RCW 39.34.080, RCW Chapter 47.12, and other applicable law; and ratifying and confirming certain prior acts. City of Seattle Legislative Department, Seattle, Washington.

Federal Register. 2001. Environmental Impact Statement in Seattle, WA. Notice of Intent. Federal Register Vol. 66, No. 121, p. 33602. June 22, 2001.

Federal Register. 2003. Environmental Impact Statement in Seattle, WA. Notice of Intent. Federal Register Vol. 68, No. 187, p. 55712. September 26, 2003.

Federal Register. 2005. Environmental Impact Statement in Seattle, WA. Notice of Intent. Federal Register Vol. 70, No. 148, p. 44716. August 3, 2005.

WSDOT. 1995. Seismic Vulnerability of the Alaskan Way Viaduct: Summary Report. Publication WA-RD 363.4. July 1995.

Chapter 1 – Introduction

City of Seattle. 2007. Seattle's Industrial Lands Background Report. May 2007. Department of Planning and Development. Available at: http://www.seattle.gov/dpd/cms/groups/pan/@pan/@pl an/@industriallands/documents/web_informational/dpd p_020037.pdf.

City of Seattle. 2008. Council Passes Seattle Center Master Plan. News release dated August 18, 2008. Available at: http://www.seattle.gov/council/newsdetail.asp?ID=8758&Dept=28. Accessed November 18, 2009.

Larsen, R., D. Reichert, B. Baird, N. Dicks, J. McDermott, D. Hastings, J. Inslee, A. Smith, and C. McMorris. 2005.

Letter dated May 11, 2005, from members of the House of Representatives, Congress of the United States, to House Committee on Transportation and Infrastructure members D. Young, T. Petri, J. Oberstar, and P. DeFazio.

Parsons Brinckerhoff Quade & Douglas, Inc. 2002. SR 99: Alaskan Way Viaduct Project No Action Alternative. Executive Summary. August 2002.

Parsons Brinckerhoff Quade & Douglas, Inc. 2004. SR 99: Alaskan Way Viaduct and Seawall Replacement Project Draft EIS. Appendix C, Transportation Discipline Report, Section 4.10.2. March 2004.

SAFETEA-LU, **Public Law 109-59**. **2005**. Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users. Section 1301. August 10, 2005.

Chapter 2 – Alternatives Development City of Seattle. 2009. Ordinance 123133/Council Bill 116668. An ordinance relating to the SR 99 Alaskan Way

Viaduct and Seawall Replacement Program; stating the City's policy with respect to an alternative for replacing the present Viaduct and Seawall, and related work; and authorizing execution of a Memorandum of Agreement between the State of Washington and the City of Seattle. City of Seattle Legislative Department, Seattle, Washington.

City of Seattle. 2010. Ordinance 123424/Council Bill 116983. An ordinance relating to environmental review of the Alaskan Way Viaduct Replacement Project, and ratifying and confirming certain prior acts. City of Seattle Legislative Department, Seattle, Washington.

City of Seattle. 2011. Ordinance 123542/Council Bill 117101. An ordinance relating to the State Route 99 Alaskan Way Viaduct and Seawall Replacement Program; entering into certain agreements with the State of Washington as provided in RCW 39.34.080, RCW Chapter 47.12, and other applicable law; and ratifying and confirming certain prior acts. City of Seattle Legislative Department, Seattle, Washington.

ESHB (Engrossed Substitute House Bill) 2871. 2006. Modifying Regional Transportation Governance Provisions. Washington State Legislature, Olympia, Washington.

 $ESSB\ (Engrossed\ Substitute\ Senate\ Bill)\ 5768.\ 2009.$

Concerning the State Route Number 99 Alaskan Way Viaduct Replacement Project. Washington State Legislature, Olympia, Washington.Federal Register. 2001. Environmental Impact Statement in Seattle, WA. Notice of intent. Federal Register Vol. 66, No. 121, p. 33602. June 22, 2001.

Federal Register. 2003. Environmental Impact Statement in Seattle, WA. Notice of Intent. Federal Register Vol. 68, No. 187, p. 55712. September 26, 2003.

Federal Register. **2005**. Environmental Impact Statement in Seattle, WA. Notice of Intent. Federal Register Vol. 70, No. 148, p. 44716. August 3, 2005.

Federal Register. 2008. Environmental Impact Statement in Seattle, WA. Notice of iIntent. Federal Register Vol. 73, No. 137, p. 40908. July 16, 2008.

Federal Register. 2009. Environmental Impact Statement in Seattle, WA. Notice of Intent. Federal Register, Vol. 74, No. 106, pp. 26917–26918. June 4, 2009.

Federal Register. 2010. Notice of Intent to Prepare an Environmental Impact Statement for the Elliott Bay Seawall Project, Seattle, WA. Federal Register, Vol. 75, No. 103, pp. 30004–30005. May 28, 2010.

FHWA (Federal Highway Administration) and WSDOT (Washington State Department of Transportation). 2008. SR 99 – S. Holgate Street to S. King Street Viaduct Replacement Project Environmental Assessment and Draft Section 4(f) Evaluation. Washington State Department of Transportation, Urban Corridors Office, Seattle, Washington. June 2008.

FHWA (Federal Highway Administration) and WSDOT (Washington State Department of Transportation). 2009. SR 99 – S. Holgate Street to S. King Street Viaduct Replacement Program Finding of No Significant Impact and Final Section 4(f) Evaluation. Washington State Department of Transportation, Urban Corridors Office, Seattle, Washington. February 2009.

Gregoire, C. 2006. Governor Gregoire Outlines a Path Forward to Replace the Alaskan Way Viaduct and 520 Bridge. News release dated December 15, 2006. Available at: http://www.governor.wa.gov/news/news-view.asp?pressRelease=411&newsType=1. Accessed November 9, 2009.

WSDOT. 1995. Seismic Vulnerability of the Alaskan Way Viaduct: Summary Report. Publication WA-RD 363.4. July 1995.

WSDOT. 2006a. The Alaskan Way Viaduct and SR 520 Bridge Projects: Report of the Expert Review Panel. Revision 1. September 1, 2006. Available at: http://www.wsdot.wa.gov/NR/rdonlyres/29E6D7A7-C145-4314-826E-0B6173DCD4F0/0/ERP_FinalReport_8312006. pdf. Accessed September 2, 2009.

WSDOT. 2006b. Updated Cost Estimates: Alaskan Way Viaduct and SR 520 Bridge Projects. October 2006.

WSDOT. 2009. Centennial Accord Plan. Available at: http://www.wsdot.wa.gov/tribal/centennial_accord.htm. Accessed April 6, 2010.

Chapter 3 – Alternatives Description American Society of Civil Engineers Review Committee. **2006**. Report of the American Society of Civil Engineers Review Committee. December 4, 2006.

KPFF Consulting Engineers. 2008. Alaskan Way Viaduct Independent Project Management Team: Evaluation of Seismic Retrofit Options. September 28, 2008.

Littlejohn, S. 2009. Protecting Big Ben Using Corrective Compensation Grouting. Geo-Strata. September/October 2009. pp. 24-26.

Parsons Brinkerhoff. 2007. Seismic Vulnerability Analysis Report. November 2007.

TY Lin International. 2005. Ty Lin International Independent Engineering Assessment of the Continuing Impacts of the February 2001 Nisqually Earthquake Upon the Alaskan Way Viaduct in Seattle, Washington.

Chapter 4 – Project Area

CEO (Council on Environmental Quality). 2010. Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions. February 18, 2010.

City of Seattle. 2008. The Greater Seattle Datasheet 2008 Edition. Available at:

http://www.seattle.gov/oir/datasheet/Datasheet2008.pdf. Accessed April 22, 2009.

City of Seattle. 2009a. Basic Industries Economic Impact Analysis. July 2009. Available at:

http://www.seattle.gov/economicdevelopment/pdf_files/ CAI%20BasicIndustries%202009%200803%20Final.pdf. Accessed September 11, 2009.

City of Seattle. 2009b. Draft Shoreline Characterization Report. Prepared by City of Seattle. March 2009.

CTED (Washington State Department of Community, Trade and Economic Development). 2008. Planning for Climate Change. Report to the Legislature. December 2008. Available at:

http://www.commerce.wa.gov/UPLOADS/Growth%20Ma nagement/PDF/lucc.pdf. Accessed September 9, 2009.

CTED. 2009. King County Overview. Available at: http://www.choosewashington.com/locate/counties/Page s/king.aspx. Accessed April 22, 2009.

Driscoll, E., P.E. Shelley, and E.W. Strecker. 1990. Pollutant Loadings and Impacts from Highway Stormwater Runoff. Vol. III, Analytical Investigations and Research Report. FHWA RD-88-008. Prepared for Federal Highway Administration by Woodward-Clyde Consultants, Oakland, California.

Ecology (Washington State Department of Ecology). 1995. Elliott Bay Waterfront Recontamination Study. Vol. 2, Data **Evaluation and Remedial Design Recommendations** Report. Publication 95-607. Prepared by the Washington State Department of Ecology, Elliott Bay/Duwamish Restoration Panel, Panel Publication 10. August 1995.

Ecology. 2009a. Washington's Leadership on Climate Change, 2009 Executive Order. Available at: http://www.ecy.wa.gov/climatechange/2009EO.htm. Accessed September 9, 2009.

Ecology. 2009b. 2008 Washington State's Water Quality Assessment [303(d)] query tool. Available at: http://www.ecy.wa.gov/programs/wq/303d/2008/index.h tml. Last updated February 2009. Accessed August 17, 2009.

EIA (U.S. Energy Information Administration). 2008. Washington State Total Energy Consumption by Sector for 2006.

http://tonto.eia.doe.gov/state/state_energy_profiles.cfm? sid=WA. December 2008.

Eisinger, A. 2009. Personal communication (e-mail) dated August 7, 2009, with Betsy Minden, Parsons Brinckerhoff, Seattle, Washington, on results of the 2009 One Night Count. Director, Seattle/King County Coalition on Homelessness, Seattle, Washington.

Jeffries, S.J., P.J. Gearin, H.R. Huber, D.L. Saul, and D.A. Pruett. 2000. Atlas of Seal and Sea Lion Haulout Sites in Washington. Washington Department of Fish and Wildlife, Wildlife Science Division, North, Olympia, Washington.

Kerwin, J. 2001. Salmon and Steelhead Habitat Limiting Factors Report for the Cedar-Sammamish Basin (Water Resource Inventory Area 8). Washington Conservation Commission, Olympia, Washington.

Li, K. 2009. North West Martins. Purple Martin Society. Available at:

http://www.purplemartins.com/OutsideResources/levinli/kevin-li-article.html. Accessed June 17, 2010.

LMEA. 2010. Unemployment Rate in Washington State: Resident Civilian Labor Force and Employment. January 26, 2010. Available at:

http://www.workforceexplorer.com/admin/uploadedPubl ications/1886_laus_historical.xls. Accessed February 11, 2011.

NMFS (National Marine Fisheries Service). **2010a**. Puget Sound Rockfish Endangered Species Act Listing. Available at: http://www.nwr.noaa.gov/Other-Marine-Species/Puget-Sound-Marine-Fishes/ESA-PS-Rockfish.cfm. Accessed April 27, 2010.

NMFS. 2010b. Endangered and Threatened Wildlife and Plants: Threatened Status of Southern Distinct Population Segment of Eulachon. Final Rule. Federal Register Vol. 5, No.52, pp. 13012–13024. March 18, 2010.

Parsons Brinckerhoff. 2007. Seismic Vulnerability Analysis Report. November 2007.

Port of Seattle. 2009. The 2007 Economic Impact of the Port of Seattle. February 10, 2009.

Seattle/King County Coalition on Homelessness. 2009.

Summary of the 2009 Unsheltered Homeless Count in Selected Areas of King County (data sheet). February 2, 2009.

Seattle/King County Coalition on Homelessness. 2010. Summary of the 2010 Unsheltered Homeless Count in Selected Areas of King County (data sheet).

February 2, 2010.

Thomas, G.S. 2009. Seattle Lost 69K Jobs in Last Year. Puget Sound Business Journal. September 1, 2009.

U.S. Census Bureau. 2000. Census of Population and Housing, 2000 (100 percent and sample survey). Available at: http://factfinder.census.gov.

U.S. Census Bureau. 2008. American Community Survey, 2008. Available at: http://factfinder.census.gov.

USFWS (U.S. Fish and Wildlife Service). **2009**. U.S. Fish and Wildlife Service critical habitat mapper website. Available at: http://criticalhabitat.fws.gov/. Accessed July 22, 2009.

Warner, E., and K. Fresh. 1999. Draft Lake Washington Chinook Salmon (Oncorhynchus tshawytscha) Recovery Plan. March 25, 1999.

WDFW (Washington Department of Fish and Wildlife).2009a. Priority Habitats and Species Maps. WashingtonDepartment of Fish and Wildlife, Olympia, Washington.

WDFW. **2009b**. Species of Concern in Washington State. List dated June 1, 2009. Available at: http://wdfw.wa.gov/wlm/diversty/soc/soc.htm.

WSDOT (Washington State Department of Transportation). 2009. Guidance for Project-Level Greenhouse Gas and Climate Change Evaluation. WSDOT Air Quality, Noise, Energy Program. September 2009.

Yount, J.C., G.R. Dembroff, and G.M. Barats. 1985. Map Showing Depth to Bedrock in the Seattle 30' x 60' Quadrangle, Washington. U.S. Geological Survey Miscellaneous Field Studies Map MF-1692. Scale 1:100,000.

Chapter 5 – Permanent Effects

City of Seattle. 1998. Pioneer Square Neighborhood Plan.

Adopted November 1998.

City of Seattle. 1999. Downtown Urban Center Neighborhood Plan. Adopted May 1999. City of Seattle. 2005. Comprehensive Plan: Toward a Sustainable Seattle. Seattle Department of Planning and Development, Seattle, Washington. January 2005.

City of Seattle. 2006. Mayor's Recommendations: Seattle's Central Waterfront Concept Plan. Mayor Greg Nickels. Seattle, Washington. June 2006.

City of Seattle. 2009. Stormwater Manual [Directors' Rules for Seattle Municipal Code, Chapters 22.800–22.808 (Stormwater Code)], Volumes 1–4. Seattle Public Utilities, Department of Planning and Development. Publications SPU 2009-003 through 2009-006 and DPD 15-2009 through 18-2009. Seattle, Washington. November 5, 2009.

King County GIS Center. 2010. King County Parcel Viewer: Interactive Property Research Tool. Available at: http://www.kingcounty.gov/operations/GIS/PropResearch/ParcelViewer.aspx.

NHTSA (National Highway Traffic Safety Administration). 2010. Corporate Average Fuel Economy (CAFE). Available at: http://www.nhtsa.gov/fuel-economy. Accessed April 2010.

Parsons Brinckerhoff. 2009. SR 99 Bored Tunnel Alternative—Right-of-Way Needs and Boundaries Summary. Seattle, Washington. July 2009.

PSRC (Puget Sound Regional Council). **2009**. *VISION* 2040: The Growth Management, Environmental, Economic, and Transportation Strategy for the Central Puget Sound Region. December 2009. Puget Sound Regional Council, Seattle, Washington.

PSRC. 2010. Transportation 2040: Toward a Sustainable Transportation System. Puget Sound Regional Council, Seattle, Washington. May 20, 2010.

U.S. Department of Energy. 2006. 2003 Commercial Buildings Energy Consumption Survey (CBECS) Detailed Tables. October 2006. Available at: http://www.eia.doe.gov/emeu/cbecs/cbecs2003/detailed_tables_2003/detailed_tables_2003.html#a1a8. Accessed July 29, 2009.

U.S. Department of Transportation. 1982. Highway

Construction Noise – Environmental Assessment and Abatement.

Federal Highway Administration, Washington, D.C.

WSDOT (Washington State Department of Transportation). 2008. *Highway Runoff Manual*. M 31-16.01. Washington Department of Transportation, Environmental and Engineering Programs, Design Office, Olympia, Washington. June 2008.

WSDOT. 2010. Washington State Statewide Transportation Improvement Program, 2011 to 2014. Available at: http://www.wsdot.wa.gov/localprograms/ProgramMgmt/STIP.htm. Accessed May 2010.

Chapter 6 – Construction Effects

Coughlin Porter Lundeen, Inc., Magnusson Klemencic

Associates, Inc., and KPFF Consulting Engineers, Inc. 2010.

Proposed SR 99 Bored Tunnel–Assessment of Settlement Impacts to Buildings. March 2010.

Littlejohn, S. 2009. Protecting Big Ben Using Corrective Compensation Grouting. Geo-Strata. September/October 2009. pp. 24-26.

PSRC (Puget Sound Regional Council). **2007**. *Parking Trends for the Central Puget Sound Region*, 2004–2006. Available at: http://www.psrc.org/assets/815/t7jan07.pdf.

Chapter 7 – Cumulative Effects

Binder, L. Whitely. 2011. Personal communication (telephone conversation) dated March 22, 2011 with Laura Whitely Binder, University of Washington Climate Impacts Group, regarding confirming observed climate changes and regional projections including estimates of sea level rise in Puget Sound. FHWA (Federal Highway Administration). 1987. Guidance for Preparing and Processing Environmental and Section 4(f) Documents. FHWA Technical Advisory T 6640.8A. October 30, 1987.

Jevrejeva, S., J.C. Moore, and A. Grinsted. 2010. How will sea level respond to changes in natural and anthropogenic forcings by 2100? Geophys. Res. Lett., 37, L07703, doi:10.1029/2010GL042947.

Mote, P., E. Salathé, V. Dulière, and E. Jump. 2008a.

Scenarios of Future Climate for the Pacific Northwest. Climate
Impacts Group, Joint Institute for the Study of the
Atmosphere and Ocean, University of Washington.

March 2008. Available at:
http://cses.washington.edu/db/pdf/moteetal2008scenarios628.pdf.

Mote, P.W., A. Petersen, S. Reeder, H. Shipman, and L.C. Whitely Binder. 2008b. Sea Level Rise in the Coastal Waters of Washington State. Report prepared by the Climate Impacts Group, Center for Science in the Earth System, Joint Institute for the Study of the Atmosphere and Oceans, University of Washington, Seattle, Washington and the Washington Department of Ecology, Lacey, Washington.

Pfeffer, W.T., J.T. Harper, and S. O'Neel. 2008. Kinematic Constraints on Glacier Contributions to 21st-Century Sea-level Rise. Science 321: 1340, doi: 10.1126/science.1159099.

Roalkvam, C.L., and A. Williamson. 2011. Personal communication (telephone conversation) dated April 22, 2011, with Carol Lee Roalkvam and Alec Williamson, Washington State Department of Transportation, Seattle, Washington, regarding climate projections and project design considerations.

Washington State Climate Change Response Strategy. 2011. Interim Recommendations of the Built Environment: Infrastructure and Communities Topic Advisory Group (TAG 1). January 26, 2011.

WSDOT, FHWA (Federal Highway Administration), and EPA (U.S. Environmental Protection Agency). 2008. Guidance on Preparing Cumulative Impact Analyses. Washington State Department of Transportation Environmental Services Office, Olympia, Washington. February 2008.

WSDOT. 2010. Environmental Procedures Manual, M 31-11.09. Washington State Department of Transportation, Environmental and Engineering Programs, Olympia, Washington. October 2010

Chapter 8 – Mitigation

City of Seattle. 2005. Comprehensive Plan: Toward a Sustainable Seattle. Seattle Department of Planning and Development, Seattle, Washington. January 2005.

City of Seattle. 2011. Ordinance 123542/Council Bill 117101. An ordinance relating to the State Route 99 Alaskan Way Viaduct and Seawall Replacement Program; entering into certain agreements with the State of Washington as provided in RCW 39.34.080, RCW Chapter 47.12, and other applicable law; and ratifying and confirming certain prior acts. City of Seattle Legislative Department, Seattle, Washington.

FHWA (Federal Highway Administration), NMFS (National Marine Fisheries Service), USFWS (U.S. Fish and Wildlife Service), and WSDOT (Washington State Department of Transportation). 2009. Programmatic Monitoring Approach for Highway Stormwater Runoff in Support of Endangered Species Act (ESA) Section 7 Consultation. June 30, 2009.

Parsons Brinckerhoff. 2006. Tunnel West Wall Constructability Workshop Construction Advisory Panel Report. September 2006.

Sheridan, M. 2009. HAER WA-No. 184, Alaskan Way Viaduct and Battery Street Tunnel.

WSDOT (Washington State Department of Transportation). 2010. Highway Runoff Manual. M 31-16.02. Washington Department of Transportation, Environmental and Engineering Programs, Design Office, Olympia, Washington. May 2010.

Section 4(f) Evaluation FHWA (Federal Highway Administration). 2005. Section 4(f) Policy Paper. March 2005.

LIST OF PREPARERS

Name	Contribution	Education	Years
AFFILIATION		Certifications/Licenses	Experience
		Professional Organizations	
Sine Adams	Economics	MUP Urban and Regional Planning	5
PARSONS BRINCKERHOFF		BA Geography	
Angela Angove WSDOT	Environmental Manager	BA Natural Resource Management	11
Paul Arnold	Transportation	MBA Seattle University	21
PARSONS BRINCKERHOFF		BA Economics	
Alex Atchison	Transportation	BS Civil Engineering	12
PARSONS BRINCKERHOFF		Professional Engineer (Washington)	
		ITE, Women's Transportation Seminar	
Ryan Avery	Transportation	PhD Civil Engineering	5
PARSONS BRINCKERHOFF		MS Civil Engineering	
		BS Civil Engineering	
		EIT (Colorado)	
		APA, ITE	
Julie Brandt	Water Resources Technical Lead	BS Civil Engineering	14
PARAMETRIX		Professional Engineer (Washington)	
		Low Impact Design Certified	
Stephanie Brown	Technical Review	BS Geoscience	9
SEATTLE DEPARTMENT OF TRANSPORTATION		MS Civil and Environmental Engineering	
		MRP City and Regional Planning	
		EIT (Washington)	
Barbara Bundy	Archaeologist	PhD Anthropology	13
ANCHOR QEA, LLC		MA Anthropology	
		BA Anthropology	
James F. Burton PARAMETRIX	Lead Graphic Designer Technical Appendices	Certificate of Graduation Advertising Art	28
Jennifer Caldwell	Environmental Team	BS Biological Oceanography	5
PARAMETRIX	Project Coordinator	CESCL (Certified Erosion and Sediment Control Lead)	
Bob Chandler SEATTLE DEPARTMENT OF TRANSPORTATION	Management Oversight Editorial and Technical Review		42
Gordon T. Clark	Alternative Development	MS Engineering	28
PARSONS BRINCKERHOFF	Facilities Design	BS Civil Engineering	
	Underground Structures	Professional Engineer (Washington, New York, Texas)	
Jill Czarnecki	EIS Author and	BS Geology	13
PARAMETRIX	Technical Team	Certificate Technical Writing and Editing	-
~ ~	Transportation	BS Civil Engineering	12
Carter Danne	Transportation	bs civil Engineering	12

270 Reference Pages

LIST OF PREPARERS

Name	Contribution	Education	Years	
AFFILIATION		Certifications/Licenses	Experience	
		Professional Organizations		
Youssef Dehghani	Transportation Modeling	PhD Civil Engineering	38	
PARSONS BRINCKERHOFF		MS Civil Engineering		
		BS Civil Engineering		
		Professional Engineer (Florida, Washington)		
		ITE		
		TRB Committee on Travel Demand Modeling/Forecasting	g	
		International Association of Travel Behavior Research	_	
Colin Drake	EIS Author	MUP Urban Planning	7	
PARAMETRIX	Parks and Recreation,	BA Human Biology	,	
	Public Services and Utilities	AICP, APA		
	Technical Lead			
Boris Dramov	Urban Design Concepts	Advanced Environmental Studies	33	
ROMA DESIGN GROUP		MS Urban Design		
		BA Architecture		
		Registered Architect (California, Florida, Texas, Oregon		
		and Washington DC)		
		National Council of Architectural Registration Board		
		(Member)		
		AIA (Fellow), AICP (Fellow)		
Randy Everett FHWA	Major Projects Oversight Manager	BS Civil Engineering	21	
Kimberly Farley	Management Oversight and	JD	19	
WSDOT	Editorial Review	BS Applied Engineering Geology		
Debbie Fetherston	EIS Team		17	
PARAMETRIX	Document Production			
Kittie Ford	Technical Review	BS Zoology	27	
SEATTLE DEPARTMENT OF TRANSPORTATION		BA Science Education		
		MUP Urban Planning		
		Professional Wetland Scientist		
Jenna Friebel	Water Resources	MS Environmental Engineering	13	
PARAMETRIX		BS Biology		
Scott Gaulke	Hazardous Materials	MS Engineering Science	27	
SHANNON & WILSON		BS Geology		
		Professional Engineer (Washington)		
		Licensed Hydrogeologist		
Peter M. Geiger	Economics Technical Lead	MS Physics	22	
PARSONS BRINCKERHOFF		BS Physics		
Helen Ginzburg	Tunnel Air Quality Modeling	MS Meteorology and Mathematical Modeling	31	
PARSONS BRINCKERHOFF		J. J		

LIST OF PREPARERS

Name	Contribution	Education	Years
AFFILIATION	Contribution	Certifications/Licenses	Experience
		Professional Organizations	,
Hina Golani	Transportation	MS Transportation Engineering	6
PARSONS BRINCKERHOFF	rransportation		0
		BS Civil Engineering	
		EIT (Michigan)	
		Women's Transportation Seminar	
Allison Hanson WSDOT	WSDOT Senior Management Review	BA Environmental Studies	13
Esther Howard	Editor	BS Environmental Studies	8
PARAMETRIX		Certificate Technical Writing and Editing	
		Certificate Editing	
Maya Hunnewell	EIS Author	MPA Public Administration	6
PARAMETRIX	213 / Idanor	BA Government and Legal Studies	Ü
Kevin Keller	Noise and Vibration Analysis	BA Geography	19
PARSONS BRINCKERHOFF		AICP	
Ginette Lalonde PARSONS BRINCKERHOFF	Air Quality and Noise Analysis	BS Civil Engineering	12
Alice Lovegrove	Energy and Air Quality Analysis	MS Environmental and Waste Management	23
PARSONS BRINCKERHOFF		BE Engineering Science	
		TRB Air Toxics Workshop	
Anthony Lo	Transportation	MS Transportation Engineering	15
PARSONS BRINCKERHOFF	Hansportation	BS Civil Engineering	75
		Professional Engineer (Washington)	
		ITE, ASCE, PMI	
Richard J. Martin	Earth	Licensed Hydrogeologist	21
SHANNON & WILSON			
David S. Mattern	Environmental Team Manager	MA Geography	27
PARAMETRIX	EIS Author	BA Geography	27
	<u> </u>	American Planning Association	
		National Association of Environmental Professionals	
		AICP	
Stephanie Miller PARAMETRIX	EIS Author	BA Biology	16
Betsy J. Minden	Social Resources Technical Lead	MUP Urban Planning	31
PARSONS BRINCKERHOFF		BA Biology	
		APA, AICP	
Andrew Natzel	Transportation	MS Civil Engineering	2
PARSONS BRINCKERHOFF	nansportation	BS Civil Engineering	2
•		EIT (South Dakota)	
		ITE, ASCE	
		aray ray CE	
Monique A. Nykamp	Earth Technical Lead	MS Geotechnical Engineering	20
SHANNON & WILSON		Professional Engineer (Washington)	

LIST OF PREPARERS

Name	Contribution	Education	Years
AFFILIATION		Certifications/Licenses	Experience
		Professional Organizations	
Carrie Oshiro	Transportation	BA Geography and Economics	13
PARSONS BRINCKERHOFF		Certificate Global Trade and Transportation Logistics	
		Certificate International Economics	
		APA, AICP	
		<u> </u>	
William P. Ott	Constructability and Scheduling	BS Civil Engineering	36
CONSTRUCTION CONSULTANT		BS Mechanical Technology	
Hussein Rehmat	Social	BA Community, Environment and Planning	3
PARSONS BRINCKERHOFF	Land Use		
Mike Rigsby	Project Director	MS Operations Research	36
PARSONS BRINCKERHOFF		BS	
		Professional Engineer (Virginia, Washington)	
Nicholas P. Roach	Transportation	MPA Urban Planning	26
PARSONS BRINCKERHOFF	·	BA Political Science	
		Certificate Project Management	
		ITE, APA, PMI, AICP	
Stephen S. Rolle	Transportation		18
PARSONS BRINCKERHOFF	Transportation	MS Civil Engineering	10
FARSONS BRINCKERHOTT		BS Civil Engineering	
		Professional Engineer (Washington, Connecticut)	
		ITE, APA	
Patrick Romero	Noise Analyst	MS Environmental Science	14
PARSONS BRINCKERHOFF		FHWA Traffic Noise Modeling Program	
Kathleen Rossi	Alternatives Description and	MUP Urban Planning	25
PARAMETRIX	Construction Methods	BS Environmental Studies	
Mike Sallis	Environmental Manager	BS Environmental Science and Regional Planning	16
WSDOT	Environmental Manager	BSS Political Science	70
		BSS Fortical Science	
Kevin Sakai	Constructability and Scheduling	BS Civil Engineering	23
CONSTRUCTION CONSULTANT			
Madhavi Sanakkayala	Transportation	MS Civil Engineering	6
PARSONS BRINCKERHOFF		BE Civil Engineering	
		ITE, Women's Transportation Seminar	
Larry Sauve	Transportation	BA Architecture and Urban Planning	36
PARSONS BRINCKERHOFF		Urban Land Institute	
Jim Schettler	Engineering	BS Civil Engineering	27
JACOBS CIVIL INC.		Professional Engineer (Washington, Alaska)	
		Structural Engineer (Washington)	
		FEMA/ATC Post Earthquake Inspection Certification	
		Confined Space Supervisor/Entrant/Attendant	
		Certification	
Jean Schwinberg	Lead EIS Graphic Designer and	MFA Painting	32
PARAMETRIX	Layout Artist	BFA Painting	
		Certificate Web Authoring	

LIST OF PREPARERS

Contribution	Education	Years
		Experience
		Experience
	Professional Organizations	
Transportation	MCP City and Regional Planning	13
	BA Anthropology	
	AICP, APA	
Historic Resources Technical Lead	MUP Specialization in historic preservation planning	17
-		34
Visual Simulations	AICP	
Air Quality Analysis and	MS Urban Affairs	41
Technical Review	BS Chemical Engineering	
PB Environmental Lead and	BLA Landsape Architecture	23
Land Use Lead	•	
	_	
	Transfer in Secretary of Environmental Processionals	
Energy and Air Quality Analysis	BA Earth Science	12
	BA Environmental Studies	
Public Involvement Technical Lead	BA Communication	9
	BA Foreign Languages and Literature	
	Public Relations Society of America	
Technical Review	MS Civil Engineering	25
	BS Civil Engineering	
Transportation	MS Civil Engineering	30
	9 9	-
	**	
Section 4(f)	_	21
	BS English	
Transportation	BS Civil Engineering	7
	EIT (Michigan)	
Mechanical Noise Analysis	BS Mathematics	35
Vibration and Technical Review		55
Hazardous Materials	MS Environmental Science - Hazardous Waste Option	20
	BA Geology	
	Licensed Geologist (Washington)	
	Licensed Hydrogeologist	
Transportation	MS Transportation Planning	15
	BA Geography and Urban Studies	
	Leadership Tomorrow	
	and the second of the second o	
	Transportation Historic Resources Technical Lead Visual Quality and Visual Simulations Air Quality Analysis and Technical Review PB Environmental Lead and Land Use Lead Energy and Air Quality Analysis Public Involvement Technical Lead Technical Review Transportation Section 4(f) Transportation Mechanical Noise Analysis, Vibration and Technical Review Hazardous Materials	Transportation Certifications/Licenses Professional Organizations MCP City and Regional Planning BA Anthropology AICP, APA MUP Specialization in historic preservation planning BA History and Political Science Society of Architectural Historians, Vernacular Architecture Forum, AICP Visual Quality and Visual Simulations AICP Air Quality Analysis and Technical Review BE Chemical Engineering BE Environmental Lead and Land Use Lead APA National Association of Environmental Professionals Energy and Air Quality Analysis BA Earth Science BA Environmental Studies Public Involvement Technical Lead BA Communication BA Foreign Languages and Literature Public Relations Society of America Technical Review MS Civil Engineering BS Civil

DISTRIBUTION LIST

Stakeholder Advisory Committee Members

Warren Aakervik – Interbay/BINMIC

Jeff Altman - Northwest County

Chuck Ayers - Cascade Bicycle Club

Mahlon Clements - Ballard/Fremont

John Coney - Uptown/Queen Anne

Bob Donegan – Seattle Historic Waterfront Commission

Kathy Fletcher – People for Puget Sound

David Freiboth - King County Labor Council

Gene Hoglund - Working Families for an Elevated Solution

Mary Hurley - Ballard/Fremont

Rob Johnson - Transportation Choices Coalition

Mary McCumber - Futurewise

Cary Moon - People's Waterfront Coalition

Don Newby - Southwest County

Mike O'Brien - Sierra Club

John Odland - Manufacturing Industrial Council

Jim O'Halloran - Northeast Seattle

Vlad Oustimovitch - West Seattle

John Pehrsen – Belltown

Peter Philips - Seattle Marine Business Coalition

Susan Ranf - Sports Stadiums

Earl Richardson - Southeast Seattle

Rob Sexton - Downtown Seattle Association

Pete Spalding - West Seattle

Sue Taoka - International District

Herald Ugles - International Longshore & Warehouse Union

Todd Vogel – Allied Arts

Tayloe Washburn - Greater Seattle Chamber of Commerce

North Portal Working Group

Glenn Avery – Queen Anne Community Council

Rachel Ben-Shmuel – Vulcan

David Brown - Pacific Northwest Ballet

John Coney - Uptown Alliance

Stephen DeForest – Magnolia Community Club

David Delfs – Magnolia/Queen Anne/South Lake Union

Design Review Board

Tom English – Plymouth Housing Group

Tom Graff - Belltown Business Association

Bob Grossman - South Lake Union Community Council

Ron Hildebrandt – Trident Seafoods at Interbay

Kevin Hughes – Pacific Science Center

John Kane - Ballard Interbay Northend Manufacturing and

Industrial Center (BINMIC)

Bree Moore – Bill & Melinda Gates Foundation

Robert Nellams - Seattle Center

Lee Newgent - Seattle/KC Building & Construction Trades Council

Vince O'Halloran - Puget Sound Ports Council & Sailors Union

of the Pacific

Kim Suelze - CityIce Cold Storage

Marko Tubic - Fremont Chamber of Commerce

Bob Viggers – Charlie's Produce

Eugene Wasserman - North Seattle Industrial Association

Elaine Wine - Ballard Neighborhood

South Portal Working Group

Linda Anderson – Amalgamated Transit Union

Michael Beranbaum – Joint Council of Teamsters No. 28

Bill Bloxom - Bloxom Company

Jerome Cohen - West Seattle Chamber of Commerce

Barbara Cole - International District

Lisa Dixon – The Alliance for Pioneer Square

John Huey - Viking Bank

Ron Kieswether – Oak Harbor Freight Lines

Don Newby - Burien

John Odland – MacMillan-Piper

Marty Oppenheimer – South Park

Vlad Oustimovitch - West Seattle

Mike Peringer - SODO Business Association

Lisa Quinn - Feet First

Susan Ranf - Seattle Mariners

Paul Schieck - Seattle Seahawks

Ed Shilley – Nucor Steel

Pete Spalding - Delridge

Brent Stavig – Starbucks

Herald Ugles – International Longshore and Warehouse Union

Bill Weise - Silver Cloud Inn

Cynthia Welti – Mountains to Sound Greenway Trust

Central Waterfront Working Group

Warren Aakervik – Ballard Oil

Zander Batchelder - Belltown Community Council

Patrick Binion – Columbia Distributers

Carol Burton - Magnolia/Queen Anne District Council

Craig Curtis - American Institute of Architects

Karen Daubert – Seattle Parks Foundation

Bob Davidson – Seattle Aquarium Society

Bob Donegan – Seattle Historic Waterfront Coalition

David Freiboth - King County Labor Council

Adam Hasson – Pioneer Square

Dave Janis - Bicycle Alliance of Washington

Cary Moon - People's Waterfront Coalition

Ralph Pease - Argosy

Chas Redmond - Feet First

Ron Sevart – Space Needle

Rob Sexton - Downtown Seattle Association

Brian Steinburg – Allied Arts

Heather Trim - People for Puget Sound

Mark Wainwright - Admiral Neighborhood Association

Tayloe Washburn - Greater Seattle Chamber of Commerce

Peter Whitehead - Nelson Trucking

Leila Wilke – Seattle Art Museum/Sculpture Park

Business/Trade/Other Organizations

Belltown Business Association

BNSF

Graham & Dunn

Historic Seattle

People for Puget Sound

Pike Place Market PDA

Pioneer Square Historic Preservation Board

Seattle Aquarium

Seattle Parks Board

Union Pacific

Washington State Public Stadium Authority

Washington Trust for Historic Preservation

Libraries

Ballard Branch, City of Seattle Library

Burien Library, King County Library System

Capitol Hill Branch, City of Seattle Library

Central Library, City of Seattle Library

Delridge Branch, City of Seattle Library Shoreline Library, King County Library System

North East Branch, City of Seattle Library

Seattle Central Community College Library

Sound Transit Information Center

University of Washington – Engineering Library
University of Washington – Architecture and Urban Planning Library

Washington State Library

Washington State DOT Library

Neighborhood Service Centers

Ballard Neighborhood Service Center

Central Neighborhood Service Center

Delridge Neighborhood Service Center

Lake City Neighborhood Service Center Southeast Neighborhood Service Center

University District Neighborhood Service Center

West Seattle Neighborhood Service Center

Elected Officials

FEDERAL

U.S. Senator Patty Murray

U.S. Senator Maria Cantwell

U.S. Representative Jaime Herrera Beutler

U.S. Representative Norm Dicks

U.S. Representative Doc Hastings

U.S. Representative Jay Inslee

U.S. Representative Rick Larsen

U.S. Representative Jim McDermott

U.S. Representative Cathy McMorris Rodgers U.S. Representative Dave Reichert

U.S. Representative Adam Smith

STATE OF WASHINGTON

Governor Christine Gregoire

Lt. Governor Brad Owen

Attorney General Rob McKenna Senator Mary Margaret Haugen – 10th District

Senator Margarita Prentice – 11th District

Representative Zack Hudgins – 11th District

Representative Bob Hasegawa – 11th District

Representative Maralyn Chase – 32nd District

Senator Cindy Ryu – 32nd District

Representative Ruth Kagi – 32nd District Representative Sharon Nelson – 34th District

Representative Eileen Cody – 34th District

Senator Joe Fitzgibbon – 34th District

Senator Jeanne Kohl-Welles – 36th District Representative Reuven Carlyle – 36th District

Representative Mary Lou Dickerson – 36th District

Senator Adam Kline – 37th District

Representative Sharon Tomiko Santos – 37th District

Representative Eric Pettigrew – 37th District

Representative Judy Clibborn – 41st District

Senator Ed Murray – 43rd District Representative Jamie Pedersen – 43rd District

Representative Frank Chopp – 43rd District Senator Scott White – 46th District

Representative David Frockt – 46th District

Representative Phyllis Gutierrez Kenney – 46th District

Transportation Commissioner Richard Ford

Transportation Commissioner Jerry Litt Transportation Commissioner Philip Parker

Transportation Commissioner Tom Cowan

Transportation Commissioner Dan O'Neal

Transportation Commissioner Anne Haley Transportation Commissioner Latisha Hill

Reema Griffith - Transportation Commission

CITY OF SEATTLE

Mayor Mike McGinn

Councilmember Sally Bagshaw

Councilmember Tim Burgess

Councilmember Sally Clark

Councilmember Richard Conlin

Councilmember Jean Godden

Councilmember Bruce Harrell

Councilmember Nick Licata

Councilmember Mike O'Brien

Councilmember Tom Rasmussen

PORT OF SEATTLE

Tay Yoshitani – Port of Seattle Chief Executive Officer

Tom Albro – Port of Seattle Commissioner

Bill Bryant - Port of Seattle Commissioner

John Creighton - Port of Seattle Commissioner

Rob Holland - Port of Seattle Commissioner

Gail Tarleton - Port of Seattle Commissioner

KING COUNTY

Executive Dow Constantine

Councilmember Bob Ferguson – District 1

Councilmember Larry Gossett - District 2

Councilmember Kathy Lambert - District 3

Councilmember Larry Phillips – District 4

Councilmember Julia Patterson – District 5

Councilmember Jane Hague – District 6

Councilmember Pete von Reichbauer – District 7

Councilmember Joe McDermott – District 8

Councilmember Reagan Dunn – District 9

Media

Asian Weekly/Seattle Chinese Post

Daily Journal of Commerce

Filipino American Herald

International Examiner

KUOW

NW Vietnamese Weekly

Publicola

Puget Sound Business Journal

Seattle PI.com

Seattle Skanner

Seattle Times

Seattle Weekly

The Hispanic News

The Seattle Medium

The Stranger

Real Change

West Seattle Blog

Tribes

Duwamish

Jamestown S'Klallam

Lower Elwha Klallam

Muckleshoot Indian Tribe

Port Gamble S'Klallam

Snoqualmie Indian Tribe

Suquamish Tribe

The Tulalip Tribes

Confederated Tribes and Bands of the Yakama Nation

Federal Agencies

Advisory Council on Historic Preservation

Department of the Interior

Environmental Protection Agency, Region 10

Federal Highway Administration

Federal Transit Administration

National Marine Fisheries Service

National Park Service

U.S. Army Corps of Engineers

U.S. Coast Guard

U.S. Fish and Wildlife Service

U.S. General Services Administration

State Agencies

Washington State Department of Archaeology and Historic Preservation

Washington State Department of Ecology

Washington State Department of Fish and Wildlife

Washington State Department of Natural Resources

Local Agencies

City of Seattle

King County

Port of Seattle

Puget Sound Clean Air Agency

LIST OF APPENDICES

Supporting Documentation (All in separate volumes)

- A. Public Involvement Discipline Report
- B. Alternatives Description and Construction Methods Discipline Report
- C. Transportation Discipline Report
- D. Visual Quality Discipline Report
- E. Visual Simulations
- F. Noise Discipline Report
- G. Land Use Discipline Report
- H. Social Discipline Report
- I. Historic, Cultural, and Archaeological Resources Discipline Report
- I. Section 4(f) Supplemental Materials
- K. Public Services and Utilities Discipline Report
- L. Economics Discipline Report
- M. Air Discipline Report
- N. Wildlife, Fish, and Vegetation Discipline Report
- O. Surface Water Discipline Report
- P. Earth Discipline Report
- Q. Hazardous Materials Discipline Report
- R. Energy Discipline Report
- S. 2004 Draft EIS and 2006 Supplemental Draft EIS

Comments and Responses

- T. 2010 Supplemental Draft EIS Comments and Responses
- U. Final EIS Correspondence
- V. FHWA and WSDOT response and draft document: Additional Review of the Impacts of Deep Bored Tunnel Tolling Diversion on City Streets;

Identification of Mitigation

W. Screening Reports

X. Tolling Re-evaluation Memo

274 Reference Pages

TECHNICAL INDEX	Summary	Chapter 1 Introduction	Chapter 2 Alternatives	Chapter 3 Alternatives	Chapter 4 The Project	Chapter 5 Permanent	Chapter 6 Construction	Chapter 7 Cumulative	Chapter 8	Chapter 9 EIS Comments	Final Section 4(f) Evaluation
Subject		introduction	Development	Description	Area	Effects	Effects	Effects	Mitigation	& Responses	Evaluation
Alternatives Description	3-8			64-71							244-245
Alternatives Development	2-3		44-57								
Alternatives Not Considered in Detail			44-57								
Areas of Controversy	35-36										
Cumulative Effects	33-34						202-203	205-213			
Indirect Effects						140, 147, 149, 155, 160, 161	187, 194, 202		231	33-34	
Irreversible Decisions & Irretrievable Resources						161					
Issues to be Resolved	36										
Logical Termini	1	39		85							
No Build Alternative	4			65		111-112			215		256
Project Description	1	39		64-71							
Public Involvement	34-35		45-46, 49-51, 54, 61-63						217	235-237	
Purpose and Need	1-2	40-42				162-163					244, 258-259
Section 4(f)	21, 29					153, 154					238-261
Short-Term Resource Uses & Long-Term Gains of Project						161-162					
Unavoidable Adverse Effects	22-23, 33										257-258, 260-261

TECHNICAL INDEX	Summary	Chapter 1 Introduction	Chapter 2 Alternatives	Chapter 3 Alternatives	Chapter 4 The Project	Chapter 5 Permanent	Chapter 6 Construction	Chapter 7 Cumulative	Chapter 8 Mitigation	Chapter 9 EIS Comments	Final Section 4(f) Evaluation
Subject		meroduction	Development	Description	Area	Effects	Effects	Effects	Wildgation	& Responses	Evaluation
Affected Environment, Impacts, and Mitigation (alphabetical order)											
Air Quality	21, 31				103-104	157-158	199	207	228		
Archaeological & Cultural Resources	29-30				86, 100-101	154	193-194	211	224		239, 246, 251, 253
Climate Change					104-105			212			
Economics	19, 28				99-101	148-153	186-188, 196	210	222-223		
Energy	21, 32				105	158-159	200	207	218, 228		
Environmental Justice	21, 31				101-103	155-157	197	210	217, 226		
Fish and Wildlife	22, 32				106-107	159-160	201-202	207	218, 229		
Geology and Soils	22, 32-33				84-87	160	180-182	212	219, 230		
Greenhouse Gases	21, 31-32				104	158	199	207	228		
Groundwater	22, 32				107-108	160	201	212	219, 230		
Hazardous Materials	32-33				108		180-182		231		
Historic Resources	20-21, 29				100-101	153-154	191-193	211	216-217, 223-224		239, 240, 243, 248, 252
Land Use	18-19, 30-31				99	146-148	185	208	222		
Noise	18, 28				96-97	135-140	183-184		220-221		
Parks and Recreation	21, 31				101-102	154-155	194-195	209-210	224-225		240, 243
Public Services and Utilities	21, 31				103	157	198-199	207	226-227		
Relocations	18-19, 30-31					144-146	185-186, 192		224, 226		
Social Resources (neighborhoods)	21, 31				101-103	155	195-197	210	217, 225		
Transportation	8-17, 23-28				88-96	112-135	169-180	209	215-216, 219-220		
Access	8-9, 23-26				91	112-113, 133-134	170-171		217, 220, 229		
Bicycles					96	134-135	179-180		220		
Event Traffic					95	134	178-179		220		
Ferries					94-95	134	177		222, 229		
Freight					93-94	134	176-177		216, 219		
Parking	19-20, 23, 28-29				96	149-153	186, 188-191		223		
Pedestrians					95-96	134	179-180		220		
Transit	17				93	132-133, 156	174-176		216, 220		
Travel Time	12-17, 27					124-125, 128-132	170-171, 174				
Vibration	30				97-98	135	184-185		221-222		
Visual Quality	18-20, 30				98-99	140-144	185	208-209	216, 222		
Water Quality and Sediments	22, 32				105-106	159	200-201	211	228-229		







RON SIMS KING COUNTY EXECUTIVE CHRISTINE O. GREGOIRE GOVERNOR

GREG NICKELS MAYOR OF SEATTLE

March 14, 2007

To: Seattle Legislative Delegation, City Council, and County Council

Thanks for all your thoughts and concerns about the Alaskan Way Viaduct and its replacement. Major transportation projects in large cities are very challenging. And the path to success is not always smooth.

The past months have been particularly challenging for all of us as we have tried to forge a path forward on the viaduct replacement project. Clearly there are legitimate and heartfelt differences about the specific approach that path should take. Now that Seattle voters have expressed their opinions on two specific approaches to replacing the Alaskan Way Viaduct, we have the opportunity to renew our commitment to key principals and to find common ground.

In 2005, we secured the dollars necessary to replace the viaduct. In 2006, we started to develop options and estimate costs. Now in 2007, we have a much better understanding of the will of our citizens. We are making much needed progress and we appreciate all of your support in the effort.

We all agree that the viaduct is a significant safety risk and must come down within the project's existing timeframes. We all agree that delay is not an option. We further agree that any final selected alternative must adequately address the three fundamental criteria of safety, capacity, and financial responsibility. We all agree that the core elements of any solution must address issues such as vigorous public transit, freight mobility, business disruption, urban design, job creation, the preservation of our marine economy and the future of Seattle's central waterfront. With these principles and criteria in mind we are writing to invite you to join us in continuing our efforts to move forward.

Over the next several months we have a lot of work to do. We will begin by meeting to establish guidelines and a collaborative process that is timely and centers on determining a final alternative. The process needs to be inclusive and guided by the principles and criteria we hold in common. The process also needs to be open to creativity. We must rely on the best available engineering and design through the renewed efforts of the integrated project team from the State of Washington and the City of Seattle with representation from King County. Assuming you agree with this next step, we will be in touch with you in the near future as we get it started.

Seattle Legislative Delegation, City Council, and County Council March 14, 2007 Page 2

Second, beginning this summer, we have agreed to initiate a series of projects that significantly advance the overall replacement project in time to avoid the \$10 million in project costs for every month of delay. These early safety and mobility projects are detailed in the enclosed graphic. None of these projects rely on the final design of the center one-mile portion of the overall project. However, by moving forward we will be on track to take down the existing viaduct in a timely manner.

Lastly, we must remain vigilant about the safety of the existing structure for its continued use of approximately 110,000 vehicles per day. To this end, the Washington State Department of Transportation will increase the safety monitoring program and will undertake a series of temporary safety repairs on key portions of the structure described in the enclosure.

It has been six years since the Nisqually Earthquake. We must continue to move forward. We look forward to working with all of you on the next steps. We are confident that we are on the right track to break through the challenges of the past and develop a final design for replacing the Alaskan Way Viaduct in time for the next bi-annual budget.

King County Executive

Governor

Greg Nickels Mayor of Seattle

Enclosure







Governor Christine O. Gregoire State of Washington

Executive Ron Sims King County

Mayor Gregory J. Nickels City of Seattle

A Letter of Agreement Between the State of Washington, King County, and the City of Seattle

January 13, 2009

Consensus on the Recommended Alternative for Replacing the Alaskan Way Viaduct & Seawall

Over the course of the last 18 months, after developing and evaluating numerous scenarios, the State of Washington, City of Seattle, and King County have reached consensus on replacement for the SR 99 Alaskan Way Viaduct and Seawall.

We have decided jointly that a four-lane bored tunnel, together with improvements to city streets, the city waterfront, and transit, is the recommended alternative for replacing the existing viaduct, referred to as "The Project." This letter represents the governments' commitment to this solution and outlines responsibilities for funding and implementation.

The total estimated cost of this solution is approximately \$4.24 billion and the allocation of specific project responsibility to each jurisdiction carries with it the responsibility for project management, environmental work, design, construction, and project cost overruns.

The State of Washington is responsible for taking down the existing viaduct structure, building a bored tunnel from approximately north of S. Royal Brougham Way to Harrison St., providing a surface connection from approximately Yesler Way to Elliott Avenue, completion of the projects associated with the Moving Forward program and partial construction transportation mitigation. The total estimated cost to the State of this work is \$2.82 billion.

King County is responsible for additional Rapid Ride and peak express bus service to downtown Seattle. In addition, the County will simplify downtown trolley service and provide city street improvements related to improved bus operations. The total estimated cost of this work for King County is \$190 million in capital and \$15 million in annual operating expenses which shall be paid for through a countywide 1% Motor Vehicle Excise Tax imposed by the King County Council for transit services.

The City of Seattle is responsible for Seattle public utility relocation costs associated with the project, a promenade along the central waterfront, other city street improvements, and a First Avenue streetcar. The total estimated cost of this work for the City is \$937 million.

Alaskan Way Viaduct Replacement Project Final EIS 277

The Port of Seattle is being asked to contribute \$300 million to portions of the program that benefit their operations.

The parties agree to seek state legislative approval of the project and will support efforts to obtain state legislative authority for King County to implement a 1% Motor Vehicle Excise Tax. In addition, the parties agree to support efforts to obtain local authority for the development of a Local Infrastructure Financing Tool. The parties further agree to support an \$88 million allocation of anticipated federal economic recovery funds, currently distributed as \$8 million to King County for transit facilities and \$80 million to the City of Seattle for portions of the Mercer and Spokane Street projects, which will be ready for construction by the summer of 2009.

Eight years ago the Nisqually earthquake warned us of the dangers posed by the existing viaduct. After years of extensive review and discussion, today we join together calling for action. We are confident that a bored tunnel replacement, with improvements to transit and city streets, is the best solution for Seattle, the region and the state.

Sincerely,

Governor Christine O. Gregoire

State of Washington

Executive Ron Sims King County

Mayor Gregory J. Nickels

City of Seattle