Table of Contents

Common Responses

Common Response CR-1: Memorandum Agreement CR-1
Common Response CR-2: High Capacity Transit (HCT) CR-3
Common Response CR-3: Shared-use Pathway CR-7
Common Response CR-4: Hybrid Alternative CR-12
Common Response CR-5: Flammable Cargo Routing Issues with Preferred Alternative R-8A CR-15
Common Response CR-6: Congestion CR-19
Common Response CR-7: Transit Volumes and Reliability CR-25
Common Response CR-8: Safety CR-28
Common Response CR-9: TDM/TSM CR-32
Common Response CR-10: Project Costs CR-35
Common Response CR-11: Why is Alternative R-8A the Preferred Alternative? CR-38

Agencies

Department of the Army, Seattle District, Corps of Engineers 1
United States Environmental Protection Agency 2
United States Department of Commerce, National Oceanic and Atmospheric Administration 14
Puget Sound Clean Air Agency 15
Puget Sound Regional Council 16
King County 23
Port of Seattle 29
City of Bellevue 30
Bellevue City Council 31
City of Clyde Hill 33
City of Medina 35
City of Mercer Island 37
Seattle City Council 45
City of Seattle Department of Transportation 49
Washington State Department of Ecology 51

Organizations

Bicycle Alliance of Washington 53
Eastlake Community Council 57
Eastside Transportation Partnership 60
The I-90 Safety Coalition 62
Seattle Community Council Federation 79
Sierra Club 89
1000 Friends of Washington 91
Transportation Choices Coalition 110
Washington Trucking Association 114

Individuals

Adams, Lee 115
Amick, Jean 116
Amphlett, James 160
Appelman, Ira B. 118
Argue, Clifford T., PE 123
Arias, Melissa Sparks 125
Aspiri, Gary R. 126
Aspiri, Mitzi M. 127
B., Georgina 128
Bader, Carolyn 129
Bair, Roger and Prudence 131
Barber, Linda 132
Bass, R. Lamar 134
Battison, Carol 136
Battison, R. Craig 138
Beaty, Chris 140
Bedlington, Diane 142
Beebe, Mark and Lisa 160
Belt, Jeffrey 143
Berg, David and Tresa 144
Billingsley, McKinley R. 145
Bloch, Perry 146
Bouchey, Paul 148
Bowman, Shelly L. 149
Brand, Jesseca 150
Bray, Daniel J. 152
Broback, Steve 153
Brown, Rich and Donna 155
Bruce, Jay and Lindy 156
Burgess, Stephen 158
Burrows, Alyssa 165
Cairns 166
Ccscupe 168
Chapin, Clinton G. 169
Chenoweth, David 171
Chester, Bernard 172
Clark, Robert and Amanda 173
Coglon, Tim 174
Collier, Pat 175
Cook, Janeen 176
Cordova, Marc A., MD 177
Corson, Carolyn 178
Crane, Chris 179
Crane, Paul B. 180
Culver, Burt 188

Curran, Jack 189
Daley, Nora 190
Dave3176 191
DelMissier, R.J. 192
Demitriades, Paul B. 193
Desonier, Don & Nancy 194
Donahue, Thomas M., Sr. 196
Donovan, Candi 198
Dorsey, Maggie McKee 199
Dougherty, Jim 202
Dowd, Tim and Janet 204
Dowd, Janet 205
Dubman, Jonathan 206
Dunn, Judy 207
Dykstra, Susan Ogden 208
Eanes, Jim 209
Edmonds, Sandy 211
Elkins, Richard 212
Ellison, Richard 214
Feit, John 215
Florakis, Sharon 216
Flynn, Bruce 217
Fouts, Brandon 219
Frank, Daniel S., MD 220
Fritchman, Bruce 222
Frkonja, Jeff 223
Gallagher, Thomas 225
Garvett, Don 227
Ginsburg, Joe 228
Glass, Ken 229
Goldmanis, Elizabeth 230
Gould, Tim 231
Grega, Philip 233
Gregg, Carol 234
Greutert, Ed 235
Gunby, George 237
Gunby, Virginia K. 239
Hammond, Curt 243
Hampson, Neil 244
Hart, Brian 246
Hartholz, Steven 247
Harvey, Alan 248
Hazel, Geoff 249
Heckbert, S. 250
Henderson, Tom 252
Henley, Mark 253
Hill, Gregory 254

Hill, H.W. 256
Hill, Virl Z. 258
Hobson, Sam 259
Howard, Elaine 260
Hspaeth, Nancy 261
Ilgenfritz, Bob and Gretchen 263
Jacobson, Louis 264
Jensen, Karen 266
Jones, Denise 267
Kaplan, Robert 268
Kavesh, Jerry & Michelle 269
Ketcherside, Robert 270
King, Christine B. and Thomas H. 272
Knopes, Barbara L. 273
Krane, Mary Lou 274
Kuhn, Bill 276
Lacroix, Fred 277
Lane, Frank 278
Lavin, Chief 280
Lee, James 160
Lee, Mimi 160
Lettini, Michael J 281
Levin, Norman 282
Liebermann, Jerry 283
Lindsey, Jim and June 284
Linton, David C. and Paige-Ann G. 285
Loewenherz, Franz 286
Logan, Corina 287
Lum, Mathew 160
Lycette, Valerie 288
MacDougall, Lindsay 290
MacIsaac, James W., PE 291
Marcy, Rebecca 298
Markley, Shannon 300
Martin, Dave 301
Mason, Theodora C. 303
Massoudi, Barry 304
Matthews, Duane 308
Mayer, Sophie 309
McDonald, Kevin D. 310
McLaughlin, Thomas J. 311
Meder, Jeff 312
Meldrum, Deirdre 313
Miller, Julie A. 315
Monahan, Christy 316
Morse, Janet and John 317
Neff, C. Andrew 318

Neller, John 319
Newman, Elliot and Frank Lane 321
Nomi, Kazuo & Mitsuko 322
O'Bara, Marianne 324
O'Callahan, Tom and Jan 326
Ojeda, Reyes, II 327
Oppenheimer, Jory 329
Patel, Niraj 331
Paulich, Kevin 332
Pieprz, Elie 333
Pullen, Heather 335
Raaum, Claire 336
Raaum 338
Raich, Kathy 340
Roser, Ellie 341
Rasmussen, G.F. 343
Reinke, Gary-Paul 345
Rice, Greg 347
Roben, Nancy 348
Robbins, Monica, PE 350
Robinson, Joelle 352
Romanchuk, Wendy 353
Rome, Mercy and Canuche Terranella 354
Rounds, Kent and Jennifer 160
Roze, Gatis 355
Rudo, David N. 357
Sajal, Peter 359
Salogga, DiaFelice Smith 361
Sandorffy, Michael 362
Schuler, Tony 364
Schumann, Frank 365
Scott, Walter 366
Shrader, John & Joan 369
Smith, Alice Copp 370
Smith, Maynard 371
Smyth, Jim 372
Soltys, John 373
Speiser, Rita & Harry 374
Spens, Conrad and Sue Ann 376
Stanton, J.L. 377
Stella, Terry 378
Stewart, John 380
Straughan, Ben 381
Suoja, Gary E. 383
Supple, Megan 385
Swarts, Dorothy Garrison 386
Thompson, Jay 160

Thomson, Neil W. 387
Trombold, Jim 389
Trimble, Alan 391
Tunks, Margaret Cary 392
Vance, Ruth P. 395
Vedder, Nicholas B. 396
Walker, Don 398
Walker, Petra 400
Weinberg, Sarah K. 402
Weinman, Richard 403
Wendle, Daryl 404
Werner, Ben J 405
Westberg, Pravan 406
Wheel, Graham 407
Whisner, Jack 408
White, S.J. 409
Wilkinson, Dave 411
Williams, Jennifer 412
Williams, Phyllis 413
Winter, Thomas R., Jr. 414
Wolch, John 416
Woodson, Emily 418
Wotipka, Dick 420
Wright, Gloria 421
Yorkey, Brian R. 422
Anonymous 423
Transportation Choices Coalition Postcard 458

Public Hearing

Maggie Dorsey 464
Doug Glant 466
John Theodore 468
Robert Williams 470
Geoffrey Hazel 471
Jim Trombold 472
Kim Amphlett 474
Nan Waldie 476
Tamar Baber 476
Bryan Cairns 477
Peter Tonglao 479
Ellis Levin 479
Anonymous 481
James Amphlett 482
Richard Elkins 482
Anthony E. Vedrich 483
J.D. Morrson 484

Richard Tait 484
Carol Wagner 486
Nichael Nadal 487
Frank Lane 488
John Ewald 489
James K. Lee 490
Perry Bloch 491
Rebecca Bell 495
Robert Kirkwood 496
Allan Blackman 497
Bal Tim 498
Dan Moore 500
Alastair Lockett 500
Chris Leman 501
Walter Scott 514
Richard Borkowski 514

Common Responses

Common Responses

The purpose of the Common Reponses is to address the most common comments received on the Draft EIS. The following ten issues are addressed in Common Responses:

Common Response CR-1:	Memorandum Agreement
Common Response CR-2:	High Capacity Transit (HCT)
Common Response CR-3:	Shared-use Pathway
Common Response CR-4:	Hybrid Alternative
Common Response CR-5:	Flammable Cargo Routing Issues with Preferred Alternative R-8A
Common Response CR-6:	Congestion
Common Response CR-7:	Transit Volumes and Reliability
Common Response CR-8:	Safety
Common Response CR-9:	TDM/TSM
Common Response CR-10:	Project Costs
Common Response CR-11:	Why is Alternative R-8A the Preferred Alternative?

Common Response CR–1: Memorandum Agreement

Consistency of Alternative R-8A with Memorandum Agreement

According to the 1976 Memorandum Agreement (MA), the design of the I-90 facility should accommodate two transit lanes in either a reversible or two-way directional mode. Therefore, all of the Alternatives, including the No Build Alternative, would be consistent with the MA. Alternative R-2B would provide two-way directional mode transit lanes in the center roadway. Alternatives R-5, R-5 Modified and R-8A would provide two-way directional mode transit lanes in the outer roadways. The parties to the MA agreed that the transit lanes should operate initially in a two-way directional mode at no less than 45 mph average speed, with first priority to transit, the second to carpools, and the third to Mercer Island traffic. The MA further provides that the subsequent mode of the operation of the facility shall be based upon existing needs as determined by the Washington State Highway Commission in consultation with the affected jurisdictions.

The MA does not require or specify that the two transit lanes must be in the center roadway. The MA also clearly provides the Commission with the authority and flexibility to craft the subsequent mode of operation. Section 14, which governs Commission actions that would result in a major change in either the operation or capacity of the I-90 facility, provides that "the Commission will take no action which would result in a major change in either the operation or the capacity of the I-90 facility without prior consultation with and involvement of the other parties to this agreement, with the intent that concurrence of the parties be a prerequisite to Commission action to the greatest extent possible under law."

The MA recognizes that operational and/or capacity changes to I-90 will be made, based on the consideration of efficient transit flow, equitable access for Mercer Island and Bellevue traffic, and traffic-related impacts on Seattle. The MA also provides for a consultation and concurrence

process among the MA parties as described above with respect to major operational or capacity changes.

The information developed in the Draft and Final EIS demonstrates that Alternative R-8A would promote efficient traffic flow, provide equitable access for Mercer Island and Bellevue traffic and minimize traffic-related impacts in Seattle. Consistent with the MA, as well as the purpose and need for the project, the implementation of Alternative R-8A would improve two-way transit and HOV operation on I-90 between Bellevue and Seattle, while minimizing impacts to the environment and to other users and transportation modes. Alternative R-8A also would preserve the ability to convert the center roadway into high capacity transit, an important component of the agreed facility design described in the MA.

Finally, the consultation and consensus process provided for in the MA is being followed. The I-90 Steering Committee (Committee), which consists of representatives of each of the signatories to the MA, or their successors, as well as Sound Transit, has worked for a number of years to develop and discuss I-90 project alternatives. While no final decision has been made yet, the Committee reached consensus on Alternative R-8A as the Preferred Alternative for the project on July 15, 2003. The Committee intends to amend the MA after the Final EIS is issued to reflect the final decision for this project and to acknowledge and plan for the ultimate configuration of the I-90 center roadway.

Consistency of R-8A with Sound Move

Sound Move provides for two-way transit operations in the center roadway on the I-90 bridge between Bellevue and Seattle, similar to the alternative described as Alternative R2-B. The preferred alternative, Alternative R-8A, differs from the design proposed in Sound Move in that it would place the transit lanes on the outer roadway instead of in the center roadway. Sound Move permits necessary design modifications such as this under certain circumstances, including infeasibility and/or impracticality. The reasons supporting the proposed design include the unacceptability of Alternative R2-B to certain signatories to the 1976 Memorandum Agreement and the center roadway design which would degrade, rather than improve transit operations. If Alternative R8-A is selected as the proposal to be constructed after issuance of the Final EIS for this project, then Sound Transit staff will prepare and submit the necessary documentation to support the design modification to the Sound Transit Board for consideration.

Common Response CR–2: High Capacity Transit (HCT)

Comments regarding High Capacity Transit (HCT) included: provide a full explanation of future possibility for HCT or light rail on the I-90 bridge and how it could be achieved; describe how each alternative would accommodate a future transition to HCT/light rail and describe the order of phased events (for at least Alternatives R-2B and R-8A).

For the purpose of the discussion provided in this comment response, HCT is defined as a transit system operating in dedicated right-of-way such as light rail, monorail, or a substantially equivalent system. The flexibility and adaptability of each alternative to future light rail (LRT) operation on I-90 as evaluated in WSDOT's SR 520 Trans-Lake Washington Project, is discussed in Section 4.16.3.4 of the FEIS. None of the alternatives evaluated in the EIS would preclude the implementation of HCT in the I-90 center roadway. With HCT in the center roadway, all traffic using the center roadway would be displaced to the outer roadways. Depending on the alternative, this traffic would include transit buses, carpools, vanpools, and other vehicles eligible to use the HOV lanes in the center roadway, and with Alternatives R-1, R-5 Restripe, R-5 Modified, and R-8A, Mercer Island traffic between Island Crest Way and Rainier Avenue. Only the Preferred Alternative (R-8A) would include provisions for this traffic, as follows:

- HOV lanes in the I-90 outer roadways between Bellevue Way SE and Rainier Avenue S.
- HOV direct access exit ramps from the outer roadway HOV lanes at 77th and 80th Avenues SE on Mercer Island.
- HOV direct access entrance ramp from Bellevue Way SE to the westbound HOV lane.
- HOV direct access exit ramp from eastbound I-90 to I-405 in Bellevue.

In addition, the existing reversible center roadway ramp at 80th Avenue SE on Mercer Island could be converted to connect to the eastbound outer roadway HOV lane that will be provided with the Preferred Alternative R-8A. The existing reversible center roadway ramp at 77th Avenue SE on Mercer Island would only provide maintenance access to the center roadway. Studies to date have also indicated that reconstruction of the Island Crest Way to westbound outer roadway ramp, which has a non-standard configuration connecting to the left side of the westbound outer roadway, would be desirable with HCT in the center roadway.

An analysis of potential geometric compatibility between an I-90 center roadway LRT or other HCT implementation and the addition of HOV lanes in the outer roadways was prepared in 2001 for WSDOT's SR 520 Trans-Lake Washington Project. It is anticipated that light rail or other HCT modes would require a width similar to the current I-90 reversible center roadway (e.g., 38-40 feet), once HCT maintenance and emergency access needs are factored in. As with the I-90 EIS alternatives, the ability to use existing center roadway space for outer roadway expansion is constrained by the major structures (tunnels, lids, community bridges, and floating bridges) that are present throughout the I-90 corridor.

With these HCT width requirements, and the constraints associated with the major structures in the I-90 corridor, deviations to interstate highway design standards would be required, although a fewer number than required for Alternative R-8A. The need for fewer deviations were primarily due to space to provide wider inside and outside shoulders in approximately 6-8 percent of the corridor, mostly on Mercer Island. The design analysis also concluded that a wider westbound outside shoulder could not be provided on the Homer M Hadley (HMH) floating bridge with HCT by shifting the median barrier further into the center roadway. This conclusion is based on the inability to modify the existing bridge deck to reduce the amount of ponding of stormwater runoff in the middle of the bridge.

I-90 Steering Committee Preferred Alternative: Alternative R-8A with HCT in the Center Roadway as the Ultimate Configuration of I-90

During discussions on the identification of a preferred alternative in the summer of 2003, the I-90 Steering Committee expressed a desire to expand the discussion of future options to consider other forms of high capacity transit. The term High Capacity Transit (HCT) has been used by the I-90 Steering Committee members to refer to the future technology for the Lake Washington crossing instead of "light rail" because the technology has not been determined yet. The Steering Committee defines HCT as "a transit system operating in dedicated right-of-way such as light rail, monorail, or a substantially equivalent system."

The Steering Committee envisions that HCT will operate along I-90 from Seattle to the Eastside as the ultimate configuration for I-90.

The I-90 Steering Committee identified Alternative R-8A, HOV lanes on the outer roadway, as its preferred alternative at its July 15, 2003 meeting as an essential first step towards achieving a long-term transit vision for the Eastside; providing a strong transit connection between east and west King County; and improving the region's economy, mobility and quality of life. The Steering Committee also identified its recommended ultimate configuration for I-90, with HCT in the center roadway. The committee's letters to the Sound Transit Board and WSDOT included the following key points:

- R-8A with HCT deployed in the center lanes is the ultimate configuration for I-90
- Construction of R-8A should occur as soon as possible as a first step to the ultimate configuration
- Upon adoption of R-8A, move as quickly as possible to implement HCT in the center lanes
- Commit to the earliest conversion of the center roadway to two-way HCT operation based on outcome of studies and funding approvals
- Committee identified their commitment towards development and execution of a future agreement outlining their collective interest in developing and implementing HCT in the I-90 corridor

The I-90 Steering Committee letters are included as Appendix F – Agency Correspondence.

I-90 Corridor in Future

Sound Transit will evaluate HCT in the I-90 corridor and make a determination regarding the corridor and the most appropriate technology to be used based on analysis and public input. This would be done in a regional transit planning and environmental process separate from the I-90 Two-Way Transit and HOV Operations project. That process is being initiated and is anticipated to be completed in 2005. In doing so, Sound Transit will be guided by its Long Range Vision, which identified the I-90 corridor as a potential rail extension crossing for Lake Washington. Sound Transit also will be guided by the Trans-Lake study, which confirmed the use of the I-90 corridor for HCT. HCT alternatives include light rail and other fixed-guideway technologies that operate in their own dedicated right-of-way. As noted, future HCT operations on I-90 will be addressed separately, as part of a regional transit planning and environmental process.

Alternative R-8A Is Consistent with Future HCT in the I-90 Center Lanes

Alternative R-8A provides capacity for transit and HOV on the outer roadway, so that if transit and carpools are removed from the center roadway to accommodate future HCT, they can operate in dedicated HOV lanes on the outer roadway.

Accelerating HCT Planning

As noted previously, Sound Transit is initiating a regional transit system planning and environmental process, which will include an evaluation of the I-90 corridor and potential HCT technologies. Sound Transit also is obtaining technical HCT planning assistance from the Puget Sound Regional Council. This assistance includes an assessment of HCT in the I-90 corridor. In addition, on November 13, 2003, Sound Transit identified Alternative R-8A as the preferred alternative for the I-90 project and directed staff to immediately negotiate an agreement with the parties to the 1976 MA for I-90. The purpose of the agreement is to define the ultimate configuration for I-90, consistent with appropriate planning activities and environmental studies, and to work with regional partners to accelerate planning for future HCT investments in the I-90 corridor.

Sound Transit's Role in Improving Transit, Implementing Future HCT

The goal of the I-90 project is to provide reliable and safe two-way transit and HOV operations on I-90 between Seattle and Bellevue. The goal of Sound Transit's regional express projects is to improve transit speed, reliability and access. The I-90 project is consistent with this goal.

Common Response CR–3: Shared-Use Pathway

The following provides an explanation of construction mitigation, barrier options, maintaining path width, and safety.

Section 4(f) Review of Impacts to Pathway

The shared-use pathway on the HMH floating bridge is considered a transportation facility. This determination was reviewed as a part of the DEIS process and a letter stating such signed by FHWA on November 25, 2002 is contained in Appendix F of the FEIS. Factors considered in the determination included:

- The shared-use pathway was funded, constructed, and exists primarily for transportation use.
- The shared-use pathway serves as an integral part of the regional and local transportation system. It provides a linkage across Lake Washington for bicycle, pedestrian, and other non-motorized travel between Seattle, Mercer Island, and Bellevue, and to other regional destinations.
- The Puget Sound Regional Council (PSRC) has identified the facility as part of the regional non-motorized transportation system in *Destination 2030*.

Recreation is an important function of the path, however, that function is secondary to the transportation functions noted above.

Construction Impacts

The primary impact during construction that was identified in the DEIS was total closure of the shared-use pathway for relocating the north traffic barrier that separates the path from the westbound outer roadway and widening the HMH floating bridge. This impact was anticipated to occur with Alternatives R-5 Modified and R-8A. Two levels of potential mitigation for this closure during construction were identified in the DEIS, shuttle services and detours. Since the DEIS was issued, more information has been developed about the shared-use pathway.

As part of continuing studies conducted in the spring and summer of 2003, WSDOT identified the possibility of avoiding the construction impact to the shared-use path by not widening the bridge, maintaining the shared-use pathway in its existing location with the existing 10-foot width, by providing four 11-foot traffic lanes on the HMH floating bridge. The project team has integrated this design modification into the Preferred Alternative R-8A configuration for the westbound outer roadway. This change eliminates the floating bridge widening proposed with Alternatives R-5 Modified and R-8A in the DEIS, and greatly reduces the construction impacts to the shared-use pathway from the potential 1 to 2 construction seasons, to temporary and intermittent closures.

Installation of screening on top of the existing concrete traffic barrier that separates the shared-use pathway from the westbound outer roadway would require some short-term closures of the

shared-use pathway. These closures would be scheduled to minimize impacts to bicycle and pedestrian users of the HMH floating bridge, keeping the shared-use pathway open during periods of peak use. Provisions such as those identified in mitigation measures in Section 3.4.3 of the FEIS would be included if full closures of the pathway were required. These closures would be temporary, ranging from a few minutes to a few days in duration.

Shared-Use Pathway Width

The existing 10-foot pathway width would be maintained with the Preferred Alternative R-8A. The north traffic barrier separating the shared-use pathway from the westbound outer roadway would not be relocated, allowing the pathway to remain in its existing location for the full length of the HMH floating bridge.

The existing I-90 project was designed in the 1970s to include an 8-foot wide shared-use pathway on the HMH floating bridge and on the East Channel bridge. This width was typical design practice at that time. By the time that the HMH floating bridge was constructed in the 1980s, the typical width for a shared-use pathway had increased to 10 feet. A design modification was made at the time of construction to increase the pathway width to 10 feet from the previously proposed 8-foot width by changing the railing configuration on the outside, or lake side of the pathway.

The current design practice would likely provide 12-14 feet in width for a shared-use pathway on a new bridge structure, subject to an engineering evaluation of operational and structural issues that could reduce the pathway width to 8 or 10 feet on high-cost structures. The 12-14 foot pathway width includes a 10-foot pathway, with 1-2 foot wide paved shoulders on each side for pedestrians or stopped cyclists, and to provide shy distance from the bridge rails.

Widening of the HMH floating bridge was evaluated as a part of the DEIS. The structural evaluations indicated that two feet is the maximum increase in width that would be feasible on the north side of the bridge.

Surveys of use of the shared-use pathway on the HMH floating bridge show a low level of use by pedestrians, typically in the range of 1-2 persons per hour or up to 30 persons per day on summer weekdays, and 5-15 persons per hour or up to 90 persons per day on summer weekends. With this low pedestrian use, the existing 10-foot width is considered adequate for an existing pathway carrying one lane of bicycle traffic in each direction, utilizing gaps in oncoming bicycle traffic for passing. During the summer periods of highest use by both bicycle commuters and recreational bicyclists, and pedestrians, bicycle commuters are the primary users in the AM peak periods. Usage increases in the weekday PM peak periods with moderate levels of recreational traffic along with the bicycle commuter traffic. This level of usage is similar to weekend mid-day peak periods when recreational traffic is highest.

Additional information regarding the shared-use pathway level of service analyses contained in the Transportation Discipline Report is included in Section 3.4.2.2 of the FEIS.

The shared-use pathway will remain in its existing location on the HMH floating bridge at its existing width of 10 feet. None of the project alternatives would affect the existing 8-foot wide

shared-use pathway on the East Channel bridge, and no changes are planned to either its width or location.

Barrier Analysis

The Preferred Alternative R-8A would include modifications to the existing concrete traffic barrier that separates the shared-use pathway from the adjacent westbound outer roadway on the HMH floating bridge. The shoulder width in the outer roadway adjacent to the pathway would be reduced from the existing 10-foot width to a width of 2-4 feet across the bridge. As a result, traffic in the westbound outer roadway would be moved 6-8 feet closer to the shared-use pathway. To protect pathway users, the height of the existing barrier would be increased from 32 inches to a minimum of 54 inches, per WSDOT *Design Manual* guidelines. The existing concrete barrier would continue to deflect away from the pathway errant westbound motor vehicles that may strike the barrier.

The Preferred Alternative R-8A would include screening on top of the existing concrete barrier to provide a total barrier height of 72 to 96 inches to address wind buffeting, debris, and glare issues associated with the proximity of traffic (also see Section 3.4.3.2 of the FEIS for a discussion of design tradeoffs that will be evaluated in subsequent design activities). A number of screening options could be applied; Figure 4.3-4 in the FEIS includes design concepts for a wire-mesh panel option and a Plexiglas panel option. Construction cost estimates for the Preferred Alternative include cost estimates for these screening options.

With these barrier modifications, the effective width of the shared-use pathway on the HMH floating bridge would be reduced, because eastbound bicyclists would likely shy away from the higher barrier. To mitigate this operational issue, rub rails could be installed on the existing north railing and incorporated into the screening to be installed on the south railing (see Section 3.4.3.2 of the FEIS). This and other railing modifications, including installation of kick plates along the existing north railing, would be further investigated in subsequent design activities. These design investigations will include consultation with representatives of shared-use pathway user groups. Other safety enhancements to the pathway on the HMH floating bridge to address the reduction in effective width, and existing operational issues, would also be provided, including centerline striping on the pathway, speed limit signing, and signing to clarify rights-of-way between cyclists, pedestrians, and other users of the shared-use pathway.

Pathway Usage

The DEIS contains summaries of bicycle and pedestrian count data on the HMH floating bridge from 2001 and 2002. These counts were performed in August/September 2001 and May 2002. Counts were conducted by WSDOT on the shared-use pathway at the west end of the floating bridge near the Mount Baker Ridge tunnel. The data covers weekdays, weekends, the Labor Day and Memorial Day holiday weekends, and Bike-To-Work Day (May 17, 2002).

The counts were performed by machine (tube counters) over a total of 44 days, and supplemented with simultaneous manual counts during daylight hours on eight days. An additional three days of manual counts were obtained in July and August 2002 in conjunction with truck counts and I-90 Trail user surveys. The machine counts provided totals of eastbound

plus westbound travel on the floating bridge. The manual counts provided a split between eastbound and westbound bicycle traffic during each count period. Pedestrian volumes were also obtained during the manual counts. Staff performing the manual counts were stationed at the overlook at the east end of the Mount Baker Ridge tunnel, where the west end of the shared use pathway on the HMH floating bridge could be clearly seen.

The machine counts were found to be systematically undercounting bicycle traffic, particularly during periods of higher use. This may be due to cyclists riding side-by-side across the counting tube, which was observed to occur with those bicyclists who were traveling in groups. Using the concurrent manual counts, adjustment factors were developed to correct the machine counts. Adjusted count volumes were reported in the DEIS.

The pedestrian volumes are summarized in Section 3.4.1.1 of the FEIS. These volumes, in the range of 5 to 30 pedestrians per day on weekdays, and 60-90 pedestrian trips per day on weekends, were consistent across all ten days that manual count data was collected. Additional detail on pathway usage is provided in the Transportation Discipline Report.

The EIS notes that volumes of users would likely increase with increases in regional population growth rather than a shift from motorized to non-motorized modes of travel. For Alternatives R-5 Modified and R-8A, some decreases in the use of the shared-use pathway could be expected due to degradation in the pathway environment with the closer proximity of adjacent motorized traffic. With weekday user volumes less than 100 bicycles per hour during peak periods, any shift to motorized modes of travel would be minor given the relatively higher volumes of motorized traffic on I-90. For example, if 50 percent of the AM peak period cyclists shifted to single-occupant autos, this would result in a volume increase of less than 25 vehicles per hour in each direction on I-90. This would represent less than one-half of one percent of total peak direction, AM peak hour traffic on the floating bridge.

Safety for Pathway Users

As stated in Section 3.4.1.1 of the FEIS, no bicycle crashes have been reported by the Washington State Patrol on the HMH floating bridge, and Mercer Island does not collect shared-use pathway crash data for the Lake Washington bridges. The City of Mercer Island data covers portions of the shared-use pathway within the City, however, these portions of the pathway have different user group mixes, e.g., more pedestrian activity, and are not comparable to the situation on the HMH floating bridge. Therefore, it is not possible to provide estimates of existing crash rates, or for potential changes in the number or rate of crashes on the shared-use pathway, as was done for the I-90 outer and center roadways.

A literature search was conducted to ascertain if sources of safety performance data were available for shared-use pathways. This search included contacts with transportation agency officials in Denmark, where bicycling is much more prevalent as a transportation mode than in the United States, and there is an extensive network of "cycle tracks", or off-street paths for use by bicycle traffic. All of the available data indicated that the vast majority of crashes involving injuries to cyclists and pedestrians occur on roadways, or at points where bicycle or shared-use facilities cross roadways. On shared-use pathways, bicycle-pedestrian collisions have been

reported as a specific concern in the literature, but hard data on the frequency of these collisions is not available.

Some of the comments indicated that collisions between shared-use pathway users had occurred on the bridge. However, as noted above, none of these collisions have been recorded in the WSDOT/WSP traffic accident database for the HMH floating bridge. The FEIS includes a summary of specific issues raised by the public and considered by the project team in the evaluation of shared-use pathway operations on the HMH floating bridge.

Two shared-use pathway safety issues have been identified and will be addressed by mitigation measures incorporated into the Preferred Alternative R-8A:

1. The closeness of motorized traffic in the westbound outer roadway would be mitigated with screening, as described above for Barrier Analysis. In addition to evaluating the ability of various screening options to provide protection from wind buffeting caused by adjacent traffic, improved protection from roadway debris, and glare from westbound auto and truck traffic, the design of the screening will consider other trade-offs. These include bridge structural and maintenance issues, aesthetic concerns, access to the pathway for use as a refuge by motorists with disabled vehicles, and safety and security issues for users of the shared-use pathway.

2. A reduction in the effective width of the pathway with the introduction of a higher barrier with the Preferred Alternative would be mitigated with:

   a) An evaluation of the addition of rub rails to the railings on either side of the shared-use pathway. Rub rails would reduce the risk of a crash caused by a cyclist snagging a handlebar in the railing.

   b) The addition of centerline striping to the shared-use pathway on the HMH floating bridge, to more clearly delineate the appropriate lane for each direction of non-motorized traffic.

In addition, WSDOT will work with the Cities of Mercer Island, Seattle, and Bellevue, and representatives of shared-use pathway user groups, to identify and address existing operations issues on the shared-use pathway. This could include educational programs and additional signing to clarify appropriate speeds, speed limits, and right-of-way priorities between various non-motorized user modes; a review of pavement conditions and other maintenance issues such as sweeping frequency; and security issues.

Common Response CR–4: Hybrid Alternative

A "hybrid" is defined as a combination of components of several alternatives. The roadway design or operation "hybrids" that were considered and also suggested by commentors are combinations of Alternatives R-2B and R-8A to mitigate the congestion effects of Alternative R-2B.

Several hybrid options were considered that would reduce the adverse impacts associated with Alternative R-2B on other users of the corridor. The hybrid options would combine two-way operation of the center roadway with features from other build alternatives to mitigate peak direction congestion impacts in the outer roadways. These impacts would result from the displacement of Mercer Island general purpose (GP) traffic (2005 and 2025) and high-occupancy vehicle with 2 or more occupants (2+) traffic (2025) from the center roadway in Alternative R-2B.

R-2B Hybrid Operational Strategies

Two potential operating strategies for a fourth outer roadway travel lane are identified in Section 5.3 of the EIS.

- HOV Lanes added to the outer roadways to mitigate for displaced HOV 2+ occupant carpools. In this concept, the center roadway would be limited to transit and high-occupancy vehicle with 3 or more occupants (HOV 3+) traffic.
- GP Lanes to mitigate for displaced Mercer Island single-occupant vehicle (SOV) traffic, with the fourth lane added to the outer roadways only between Rainier Avenue S and Island Crest Way. This concept would initially allow transit and HOV 2+ traffic in the center roadway. HOV 2+ occupant carpools would be displaced to the outer roadway when center roadway speeds dropped below the HOV operations criteria (45 mph).

Each of these hybrid options for Alternative R-2B would likely reduce peak direction outer roadway congestion levels associated with Alternative R-2B, but would result in additional deviations from design standards in both the center and outer roadways, similar to those that would be required with Alternatives R-2B and R-8A, respectively. The summary below provides estimated traffic impacts at the floating bridges for several hybrid options.

With the first option, HOV 2+ traffic would be accommodated in outer roadway HOV lanes. Peak-hour volumes in these lanes for the year 2025 would range from 1,400 to 1,500 vehicles per hour (vph) in the peak directions of travel (includes Mercer Island HOV 2+ traffic). At these volume levels, travel times for HOV 2+ traffic would improve over those in the adjacent general purpose lanes, though speeds would be near 40 mph for peak direction travel in the outer HOV lane. With peak-hour volumes in the center roadway below 500 vph in the peak directions of travel, the center roadway would appear to be underutilized in this hybrid option, relative to the HOV and general purpose travel lanes in the outer roadways.

In the second option, the volumes of Mercer Island general purpose traffic shifted to the outer roadway would range between 550 vph (PM) to 650 vph (AM) in 2005, and from 600 vph (PM) to 800 vph (AM) in 2025. These shifts would occur only in the peak directions of travel. Qualitatively, general purpose traffic operations would be improved in the outer roadway in the affected segments compared to Alternative R-2B. A potential new bottleneck would be created for eastbound traffic on Mercer Island at Island Crest Way where the fourth eastbound lane would be dropped.

A variant of the second hybrid option that was suggested in a public comment would reserve added general purpose lanes in the outer roadways on the outside shoulders exclusively for Mercer Island traffic, possibly by providing a physical separation such as rumble strips, chevron striping, or pylons. This option would be inconsistent with the purpose and need of the project, which is to improve transit and HOV operations, and would require a means to identify eligible Mercer Island traffic for enforcement purposes. Although vehicle identification technology to implement this option may be available, there would be administrative costs, management issues, and policy implications associated with this option. There would also be concerns over operational issues including weaving movements to and from ramps serving Mercer Island.

A third Alternative R-2B hybrid option would allow transit and HOV 3+, similar to option 1, but would allow Mercer Island traffic in the two-way center roadway, with HOV 2+ traffic accommodated in the outer HOV lanes. The peak-hour, peak direction volumes in the center roadway would range up to 1,400 vph (year 2025 westbound AM conditions) with this option. At this demand level, peak direction travel speeds in the center roadway would likely be consistently below 45 mph, and as such would not meet the established transit and HOV operational policy for I-90 and other regional HOV facilities. Outer roadway HOV lane volumes would reach 1,200 to 1,300 vph (2025 EB PM) with this option, assuming that Mercer Island HOV 2+ occupant carpool traffic would remain in center roadway.

All the hybrid options would result in reductions of peak direction transit and carpool travel time advantages and reliability relative to the No Build Alternative and relative to the Preferred Alternative R-8A. They would also involve additional operational and geometric compromises in both the center and outer roadways. For these reasons, they were not further analyzed in the DEIS or in the FEIS.

Alternative R-2B/R-5 Restripe Hybrid

One public comment suggested allowing use of the outside shoulders on the outer roadways for HOV 2+ occupant carpools during peak periods, restriping the outer roadways without widening. This would be similar to Alternative R-5 Restripe (transit shoulders), but would allow carpool traffic to use the shoulders during peak periods. This hybrid configuration, based on the transit shoulder operation evaluated for R-5 Restripe, would operate only in the reverse-peak directions of travel, leaving peak direction HOV 2+ traffic without priority treatment. It would therefore not provide capacity for displaced peak direction Mercer Island GP traffic, because these displacements occur only the peak directions of travel. Buses and HOV 3+ carpools and vanpools would use the two-way center roadway.

Even if peak direction HOV 2+ traffic were allowed to use the outside shoulders, potentially addressing the peak direction capacity impact resulting from the displacement of peak direction Mercer Island and HOV 2+ traffic from the center roadway, operational concerns would exist. This R-2B/R-5 Restripe hybrid option would introduce weaving movements by carpools to and from the existing inside HOV lane to the east, most likely in the vicinity of the East Channel bridge. Previous operational experience on I-405 in the vicinity of the Renton "S-curves" indicates that these weaving movements would likely have a negative impact on outer roadway operations. For this reason, a hybrid involving outside shoulder operation for HOV traffic would not be recommended for further investigation.

If this hybrid option were defined to serve HOV 2+ traffic in both directions of travel, and on the inside lanes, it would be similar to the R-2B/R-8A hybrid option discussed above, without outer roadway widening and with the addition of time-of-day operation. Shoulder widths would be reduced to an unacceptable level for HOV traffic and was therefore dropped from further study.

Alternative R-2B Hybrid Impacts

Any of the hybrid options would add a fourth lane in the outer roadways, in combination with implementation of a two-way center roadway. An assessment of the potential environmental impacts that would be associated with an Alternative R-2B Hybrid was conducted concurrently with the DEIS. This assessment indicated that the environmental impacts of the hybrid options would generally be similar to the impacts described in the DEIS analyses of Alternatives R-2B and R-8A, with one exception. Between the Luther Burbank Lid and East Mercer Way on Mercer Island (Shorewood vicinity), widening of both the center and outer roadways could result in increased net new impervious area.

Common Response CR-5: Flammable Cargo Routing Issues with Preferred Alternative R-8A

Comments regarding rerouting flammable cargo included: where would trucks be routed; what are the potential air quality, noise, and risk impacts; what mitigation measures would be provided; what would be the costs to freight mobility; what would be cost of lost investment in current fire suppression; and what would be the cost of new fire suppression in lids for SR 520.

Approximately 90 trucks per day carrying flammable cargo use I-90 in each direction. This is about 180 trucks per day, or about 4 percent of all trucks using the I-90 corridor on weekdays. These trucks are predominantly tanker trucks hauling gasoline, diesel fuel, and other Class 3 Flammable Liquids. Because the Preferred Alternative R-8A shoulder widths would be reduced within the Mercer Island lid and the Mount Baker Ridge tunnels and lid, a prohibition on flammable cargo on these portions of I-90 was identified in the DEIS, based on WSDOT procedures.

Following the publication of the DEIS, additional risk analysis was performed on crash rates for trucks carrying flammable liquid cargo. While this analysis (see Appendix K of the FEIS) shows little difference among alternatives, additional analysis is required before final operational decisions can be made. WSDOT is committed to further studying the issues associated with the movement of flammable cargo in the I-90 tunnels, and the means of managing the risks associated with the movement of flammable cargo on I-90 in an attempt to allow the continued use of the I-90 tunnels by trucks carrying flammable cargo. If this effort results in a policy decision to prohibit the trucks in the I-90 tunnel, WSDOT is committed to further studying means of managing risks associated with the movement of trucks on alternative routes.

Based on counts of trucks made in 2002 and 2003, approximately 60 additional trucks per day carry other hazardous cargo not classified as flammable. These other trucks carrying non-flammable hazardous cargo are currently allowed to use I-90 when flammable cargo is prohibited in the tunnels. In an action separate from this project, WSDOT is studying an extension of the current operating policy that prohibits flammable cargo in the I-90 tunnels and lids while the fire suppression systems are undergoing routine maintenance to include all hazardous cargo.

These operational decisions will be made in consultation with FHWA and other project stakeholders including local fire departments.

Background

With Alternative R-8A, trucks carrying flammable cargo may be prohibited in the I-90 tunnels that are located between Rainier Avenue and Island Crest Way. If prohibited, flammable cargo would be re-routed to the north across Lake Washington via I-5, SR 520, and I-405; or to the south around Lake Washington via I-5 and I-405. This re-routing could affect approximately 180 trucks per day in the year of project opening and 220 trucks per day in year 2025 for the project based on current truck counts.

The I-90 tunnels are currently closed to trucks carrying flammable cargo due to maintenance approximately 14 percent of the time. A review by WSDOT of highway video tapes has shown that during these closures, approximately two-thirds of the re-routed trucks use the northern route over SR 520, and one-third use the southern route on I-405. Using this count data, it appears that during restricted periods, more flammable liquid cargo is moved at night, conceivably to avoid daytime congestion on alternate routes. For the purposes of the analysis included in this FEIS, it is assumed that a similar percentage of trucks would use the SR 520 or I-405 routes if a permanent prohibition on I-90 tunnel use were to be put in place.

Discussions with dispatchers and managers for trucking companies that are carriers of flammable liquid cargo revealed that each driver typically determines the alternate route based on the destination of the cargo and anticipated congestion on routes in the region. Carriers indicated that trucks carrying flammable liquid cargo on I-90 have two primary destinations – local deliveries to gas stations or other retail and wholesale customers in the Puget Sound Region, and deliveries to customers in eastern Washington via I-90 over Snoqualmie Pass. I-90 tunnel closures do not affect a carrier's routes on surface streets to and from freeways.

An expanded discussion of the effects of the alternate routes on highway traffic and adjacent neighborhoods is contained in Section 3.5 of the FEIS. This section includes applicable local, state and federal codes that control where freight movement can occur.

Air and Noise Impacts

Carriers currently operate on a 24-hour per day, 7-day per week basis. Trips are scheduled to avoid congested hours and routes when possible (see responses to comments from the City of Clyde Hill). The assessment of changes in noise and air quality due to re-routed trucks carrying flammable loads are based on increases in vehicle-miles of travel and increases in truck volume.

Risk Analysis

A risk analysis, including potential consequences of an occurrence involving a fire or explosion, is included as Appendix K to this FEIS and summarized in Section 4.10 of the FEIS.

The probability of a crash involving a truck carrying flammable liquid cargo is extremely low, and an even smaller number would be predicted to result in a fire. By the year 2025, it is estimated that 220 trucks carrying flammable liquid cargo per day would cross Lake Washington. For the year 2025, the likelihood that a crash involving a truck carrying flammable liquid cargo on I-90 would result in a fire is predicted to be 0.0012 crashes/year with Alternative R-8A compared to 0.0010 crashes/year with the No Build Alternative. If WSDOT determines that trucks carrying flammable liquid cargo should no longer be able to use the Mt Baker Ridge and First Hill tunnels, these 220 trucks per day would need to be rerouted to other area freeways. If two-thirds of the same number of trucks (150 trucks) are rerouted to SR 520 and one-third of the trucks (70 trucks) were routed to I-405, the likelihood of a crash resulting in fire is predicted to be 0.0021 crashes/year for the combined North and South Alternate Routes.

Before any final policy determination is made, an evaluation is being made as to the change in risk of a crash on I-90 involving trucks carrying flammable cargo. The estimated frequency of

crashes involving trucks carrying flammable cargo on I-90 would be statistically similar for the No Build Alternative and Alternative R-8A.

Mitigation Measures

Carriers of flammable cargo are interested in any mitigation measures which would allow them to use the I-90 tunnels at least a portion of the time rather than a complete, permanent closure.

Impacts to Freight Mobility

The increase in mileage and vehicle-miles-traveled for the alternate flammable cargo routes over the current I-90 route is shown in Table 3.5-4 of the FEIS. For trucks traveling between Harbor Island and I-90 to the point of the I-90 intersection with I-405, the route is 9.1 miles. If these trucks were to instead use a route from Harbor Island going north on I-5, east on SR 520, and then south on I-405, the route would be approximately 16 miles, an increase of approximately seven miles. A south alternate route from Harbor Island consisting of south on I-5 to I-405 and then north on I-405, would be approximately 19.5 miles, an increase of approximately 10.5 miles.

Operating costs for motor carriers would increase as a result of the diversion of flammable liquid cargoes to other highways. Estimates of motor carrier operating costs for trucks were prepared that included the costs of driver, interest and depreciation, repairs and maintenance, fuel, tires, and taxes. Typical operating costs for all trucks and for large tanker trucks such as those found on I-90 were estimated using 1989 and 1999 cost data compiled for the Federal Highway Administration, and adjusted to 2003 dollars using the producer price index for the trucking industry. For large tank/trailer combination vehicles, operating costs are estimated to be about $2.12 per vehicle mile. Diversion of these vehicles from I-90 would increase annual operating costs (current dollars) to the industry by $1.1 M in 2003 and $1.5 M in 2025 with the Preferred Alternative. These figures represent an annual cost increase of 89 percent for the immediate routes of interest, but would represent an increase of about 3 to 5 percent for a 200-mile truck trip.

Loss of Existing Fire Suppression Investment

The State's investment in the current I-90 fire suppression systems would not be lost if flammable cargo were prohibited from using the I-90 tunnels. The fire suppression systems are not intended to protect the tunnels solely from potential fires involving flammable cargo, but from all potential fires in the tunnels. A review of tunnel fires in North America and Europe indicated that in many cases, cargo involved in severe fires was not classified flammable or hazardous – items such as margarine, flour, and furniture are three examples – with a foam sprinkler system such as is found in the I-90 tunnels, these severe fires would likely have been contained with minimal damage. As such, even if flammable cargo were prohibited from I-90 with the Preferred Alternative R-8A, the fire suppression systems would continue to protect motorists from potential car and non-flammable truck fires.

Cost of SR 520 Fire Suppression

WSDOT's SR 520 Bridge Replacement and HOV Project (formerly referred to as the Trans-Lake Washington Project) is considering tunnels and lids at various locations in the SR 520 corridor, between I-5 and SR 202. These are concentrated at the I-5 interchange, the Montlake area, and in the vicinity of the east end of the SR 520 Evergreen Point Floating Bridge. An August 2002 assessment of ventilation and life safety systems for these potential lids and tunnels was prepared for WSDOT by the Trans-Lake Washington Project Team. Foam and deluge sprinkler systems would typically only be required where tunnels or lids were more than 800 to 1000 feet long, in conjunction with ventilation systems required by applicable codes. Tunnels meeting these requirements are currently proposed in the vicinity of I-5, and would be provided with the appropriate ventilation and foam and deluge sprinkler systems to allow use of these system interchange ramp tunnels by tanker trucks carrying flammable cargo. Elsewhere in the corridor lids of this length are not currently anticipated to be included in the SR 520 project. If they were, WSDOT would make provisions for unrestricted tunnel traffic on SR 520, including tanker trucks with flammable cargo, with or without prohibitions of flammable cargo on I-90.

Common Response CR–6: Congestion

A summary of comments regarding congestion included: whether congestion numbers take into account adding Mercer Island Single-Occupant Vehicles (SOVs) to the outer roadway; whether the bottlenecks on I-5 and I-405 should be fixed first before doing this project; whether congestion numbers for Alternative R-8A take into account the increased delays caused by more collisions; how can R-8A cause longer queues, but lower number of hours of congestion; what are impacts to local streets; and how was induced demand taken into account in models.

Congestion on Outer Roadways – Alternative R-2B

Mercer Island SOV traffic would no longer be permitted to use the center roadway between Island Crest Way and Rainier Avenue S.

Estimates of outer roadway congestion with Alternative R-2B reflect this displacement of Mercer Island SOV traffic to the outer roadways. The hourly volume of displaced vehicles at the floating bridges would range between 550 vehicles per hour (vph) to 650 vph in the PM and AM peak hours of the opening year (2005), and 600 vph to 800 vph in the PM and AM peak hours of the design year (2025).

Congestion estimates also reflect an HOV 3+ eligibility requirement in the center roadway for year 2025 conditions. The volume of displaced HOV 2 vehicles would range up to 1,400 to 1,500 vph (2025 EB PM) at the floating bridges.

By definition, Alternative R-2B would not include additional capacity in the outer roadways to accommodate either of these traffic sources. If the typical capacity of a freeway lane were considered to be about 2,200 vph, the total displacement from the center roadway by 2025 would be roughly equivalent to the capacity of one travel lane in each direction.

Bottlenecks on I-5/I-405 (System Interchanges with I-90)

The purpose of the current project is to provide priority treatment for transit and carpool traffic operating in the reverse-peak directions of travel on I-90, without adversely affecting conditions for other users. The project would produce impacts at the I-5 and I-405 bottleneck locations, which were noted in the DEIS.

It is not the intent of the proposed I-90 project to improve conditions for the movement of general purpose traffic in the vicinity of the I-5 and I-405 interchanges with I-90. Congestion on I-5 and I-405 primarily affects the general purpose component of traffic on these facilities. HOV lanes are provided for carpool and transit priority on both I-5 and I-405, offering improved travel times for those who use these modes. Under existing conditions, priority treatment is provided for some HOV movements between I-90 and I-405 at the I-405 interchange. At the I-5 interchange, there are not currently any provisions for transit or HOV priority movements between I-5 and I-90, as the focus of most transit and HOV trips at this location is in and out of downtown Seattle. The D2 Roadway (the two-way roadway for transit and carpools between the Mt. Baker Ridge tunnels and Downtown Seattle) provides for those trips.

Planning for improvements to I-5 and I-405 is underway to address longer-term needs in these corridors. The I-405 Access Downtown Project, currently under construction, will develop improved bus and carpool facilities to serve downtown Bellevue. The I-405 Congestion Relief and Bus Rapid Transit Project is investigating future improvements in the corridor that will provide incentives for bus and carpool movement, including direct access ramps connecting to the I-90 HOV system. A recent study by WSDOT of the I-5 corridor was aimed primarily at pavement rehabilitation needs, but also investigated alternative lane arrangements for safer and more efficient utilization of the available roadway width, including the portion of I-5 in the vicinity of the I-90 interchange.

It is not currently a priority to "fix" the bottlenecks on I-5 and I-405 for the movement of general purpose commute traffic. Regional policy emphasizes instead a combination of techniques to provide incentives for carpool and transit use, such as increased urban density, limitations on commuter parking and imposition of parking charges, teleworking, and other measures to manage traffic demand by single-occupant commute vehicles. These policies are integral to the achievement of the region's air quality and sustainable mobility goals.

Alternatives R-2B and R-8A would affect I-5 and I-405 in the vicinity of the I-90 interchanges in the following specific ways:

I-5 Interchange

- R-2B would have one less lane carrying traffic out of Seattle in the PM and into Seattle in the AM peak. Existing bottlenecks on I-90, eastbound at the Mount Baker Ridge tunnel, and westbound at I-405 and the First Hill Lid, would be worsened with the reduction in peak-direction capacity on I-90.
- R-8A would have 6-8 percent more traffic than the No Build Alternative (R-1); the largest increase will be to/from south on I-5. Simulations of year 2025 traffic operations on I-5 and I-90 in the vicinity of this interchange indicate that this increase in volume would have a nominal effect on congestion on I-5, as measured by average travel speeds.
- Both Alternatives R-2B and R-8A would provide one additional lane in the reverse-peak directions of travel, eastbound in the AM peak period and westbound in the PM peak period, improving conditions for all traffic in the outer roadways.

I-405 Interchange

- R-2B would result in increased congestion on southbound I-405 during the AM peak period. Simulations of year 2025 traffic conditions indicated that southbound AM peak hour speeds on I-405 would be reduced by 15 mph between the Wilburton Tunnel and I-90 because one less lane would be available on westbound I-90.
- Alternative R-8A would improve southbound PM speeds on I-405 with the decrease in westbound congestion on I-90.
- R-8A would deliver more traffic to I-405 in the afternoon, resulting in an increase in queue lengths on I-90. To mitigate this impact, the existing eastbound auxiliary lane

on I-90 at I-405 would be lengthened and extended west to the Bellevue Way SE exit which would keep the queue off the I-90 mainline lanes.

Delays Caused by Collisions

The incident figures summarized in the EIS are based on records kept by WSDOT during the AM and PM peak periods, when they provide motorist assistance patrols in the I-90 corridor. The estimates of potential changes in the number and rate of crashes are based on historical data including all crashes occurring during the periods that were analyzed. Typically, only those crashes occurring during peak periods would produce a blocking incident. At other times, lower traffic levels provide enough room in the unblocked travel lanes for vehicles to move out of the blocked lanes, so delay to other motorists is minimal. Similarly, not all blocking incidents are the result of a crash; many are for tire, fuel, or other mechanical problems.

With crash reduction measures, the potential number of crashes with Alternative R-8A would be similar to No Build conditions (a range of 5 more to 20 less per year for year 2025 estimates). Additional crashes may not be the source of the future increase in blocking incidents for Alternative R-8A. Instead, most would be associated with breakdowns that today are relocated to the shoulder, but in the future would block a travel lane. These impacts are proposed to be mitigated with the expansion of the freeway incident patrol in the corridor.

The safety and operational analyses that are summarized in the DEIS and FEIS considered the impacts of potential increases in blocking incidents, including crashes, on delays. This was accomplished by estimating the number of blocking incidents that occur during the peak periods. In the outer roadways, about 250 to 300 blocking incidents would occur each year in the peak periods with Alternatives R-1 or R-2B. With Alternative R-8A, these figures would range between 535 and 615 annually, reflecting the effects of reduced shoulder widths in the corridor between Island Crest Way and Rainier Avenue S. Most incidents in the outer roadways would block only one lane, allowing passage by vehicles in the remaining lanes. Alternative R-8A also would provide additional capacity in the form of an outer roadway HOV lane, which would increase the discharge flow after an incident has been cleared, reducing the time required to clear any queues upstream of the incident.

In the center roadway, Alternatives R-1 and R-8A would experience 10 to 15 incidents annually. Alternative R-2B would experience 40 incidents annually with HOV 2+ operation (2005) and 15 annually with HOV 3+ operation. Between Island Crest Way and Rainier Avenue S, where center roadway widening is not feasible, incidents in the center roadway with Alternative R-2B would block all or most vehicles in the single available lane until the incident was cleared.

The impacts of blocking incidents can also be seen in their effects on delay. Estimates of total person hours of travel and person hours of delay are presented in Figures 3.2-8 and 3.2-9 of the FEIS. In these figures total incident delay includes delay in both the center and outer roadways. Alternative R-2B would produce the highest values of incident delay in 2005, caused by increases in center roadway incidents, but total incident delay for Alternative R-8A is nearly as high. In 2025, incident delay would be highest in Alternative R-8A, and would represent nearly 50 percent of estimated year 2025 weekday delay occurring on the I-90 mainlines, or about 30 percent of total delay if delays incurred by I-90 users at ramps is included.

Queues and Congestion

A variety of performance measures pertaining to traffic operations were examined at the I-5 and I-405 system interchanges. The performance measures included person-hours of delay and queue lengths at the various interchange ramps, and speeds on mainline segments of I-5 and I-405 adjacent to the I-90 interchanges during peak hours. For the I-90 corridor, congestion was characterized by the number of daily hours during which mainline traffic operates below 40 mph anywhere in the corridor.

Alternative R-2B would provide one fewer traffic lane in the peak direction of travel, due to the loss of one center roadway lane. For travel in the eastbound direction on I-90 during the PM hours, this feature would aggravate the existing bottleneck at the Mount Baker Ridge tunnel. Over 50 percent of the total corridor delay with Alternative R-2B would occur in the segment of I-90 between I-5 and Mount Baker Ridge (approximately 2,800 person-hours in 2005, and 5,100 person-hours in 2025). In these same segments for Alternative R-8A, less than 25 percent of the corridor delay is generated (170 person-hours in 2005, and 200 person-hours in 2025). Alternative R-8A also produces fewer daily hours of congested operation in these segments, so is characterized as having less congestion.

In Alternative R-8A, one additional travel lane would be available for peak direction traffic. At the I-405 interchange, Alternative R-8A would deliver more eastbound I-90 traffic to the interchange, increasing peak-hour queue lengths compared to other alternatives. Person-hours of delay on the affected ramps also increase incrementally with the added Alternative R-8A demands (peak-hour increases of up to 20 person-hours of delay on individual ramps over 2025 No Action). These ramp effects are offset by fewer person-hours of delay on the I-90 mainline (twelve-hour decrease of about 32,000 person-hours of delay compared to 2025 No Action). The longer queue lengths projected on some individual ramps do not translate directly to increased daily hours of congestion on the I-90 mainline.

Traffic volumes on the I-5 interchange ramps also would be higher with Alternative R-8A, by six to eight percent compared to Alternative R-1. The additional capacity represented by the outer roadway HOV lanes would enable Alternative R-8A to deliver more westbound I-90 traffic to the interchange, which would in turn produce more queued vehicles on some interchange ramps. With the added outer roadway lanes in the Corwin curves, however, these queues would be shorter in length than with the No Build Alternative. There is not a direct correlation between peak-hour queue lengths at isolated locations and the daily duration of congested mainline operation.

Induced Travel

The I-90 EIS acknowledges that induced travel occurs in response to improvements in transportation accessibility. The forecasting conducted for the EIS analysis explicitly includes the major induced demand factors cited in published literature. These include changes in trip patterns, trip lengths, and mode shares. Of the remaining factors, there is no clear research that documents the magnitude of those effects.

While a number of researchers draw conclusions regarding the effects of added capacity (e.g., lane miles) to induced travel, there are many factors (population changes, income, gasoline prices) that complicate any research findings in this area. The oft-cited Hansen and Huang research acknowledged, "As expected, population emerges as a major determinant of VMT" (Hansen, p. 213). For example, they noted that trend analysis of California urban areas from 1977 to 1990 showed that around 40 percent of total changes in vehicles miles traveled (VMT) (on state highways only) was caused by general population changes in the region (Hansen, Figure 3, p. 216). Conversely, lane mile changes were found to only account for 8 percent of the VMT effects, with 'other' factors accounting for 52 percent of the effects.

Another area of recent focus has been the popularly referenced Texas Transportation Institute (TTI) statistics on congestion levels in major metropolitan areas around the country. Recent reports utilize portions of the TTI database to examine relationships between changes in population, lane miles, and congestion. Our review of the underlying TTI data and discussions with TTI staff showed relatively weak relationships between various indicators of added capacity (e.g., lane miles, lane miles per capita) and congestion (e.g., the TRI index in the TTI studies). There also seemed to be no meaningful correlation between change in population and congestion.

After the completion of the I-90 improvements, there may be a period of time during which the addition of transportation capacity comes before the effects of growth within the study area and region. In this event, it is reasonable to expect a short-term shifting of traffic patterns and modes that reflect the improved mobility that is provided. This phenomenon was in evidence after the completion of the I-90 freeway project in the early 1990s. However, given that the capacity added for this project will be for transit and HOV, any short-term induced travel effects would likely be minimized.

In summary, many of these research studies try to draw simple correlations between growth in travel and growth in highway capacity. The extent of these correlations is unclear when the data are closely examined, while simple correlations of theses two variables do not necessarily mean that highway capacity changes cause growth in travel.

The overall effects of induced demand are expected to be limited within the I-90 study area for the following reasons:

- Growth in population and employment is expected to increase travel demands during the next 20 years by over 50 percent in the central Puget Sound. This growth will leave minimal available capacity to generate additional induced demand. The effects of substantial travel growth also complicate any conclusions regarding the effects of induced demand.
- The number of hours of congestion are expected to improve with respect to current levels under the Preferred Alternative. However, congestion will still persist during the prime peak-hours due to the large amount of background growth. This effect will provide limited incentives for persons to generate additional peak period trips or to shift travel hours.

- Growth management policies and adopted land use and transportation plans within the study area and region will result in minimal shifting of land use patterns and resulting trip-making in response to the I-90 improvements.

Common Response CR–7: Transit Volumes and Reliability

Several comments related to the transit forecasts and analysis conducted for the I-90 project. The major topics are addressed below.

Transit and HOV Travel Time Reliability

Various comments related to the issue of travel time reliability, which is a very important factor affecting transit operations. It also affects the incentive for persons to form carpools or vanpools. Specific commentors asked to explain the differences in reliability among the build alternatives.

Each of the build alternatives would improve transit and HOV travel time reliability. Included below is an extraction of key differences in reliability among the alternatives:

Alternative R-1

As traffic grows in the I-90 corridor, transit/HOV reliability would worsen. Peak direction reliability would continue to be reasonably good, with transit/HOV operating in the center roadway. Reliability would worsen on surface streets connecting to the freeway. Examples include local streets on Mercer Island, Bellevue Way, and Seattle.

Alternative R-2B

Travel time reliability would be improved in the reverse-peak direction of I-90 by addition of the HOV lane in the center roadway. Reliability would worsen somewhat in the peak direction unless an HOV 3+ eligibility rule is imposed. This is caused by a reduction of HOV capacity from two to one lane in the peak direction. There is also the potential for delays due to occasional blocking incidents (i.e., every week or two) within the center roadway.

Alternatives R-5 Restripe and Modified

Reliability would remain the same in the peak direction on I-90. In the reverse-peak direction, the transit-only shoulder would improve reliability of transit, but there would be no improvement for HOVs. The shoulder transit operation would be affected by incidents that would create occasional blockages of the shoulder. Such blockages are expected to occur every other day.

Alternative R-8A

Reliability would remain the same in the peak direction on I-90 in the center roadway. Reliability would improve in the reverse-peak direction with the addition of the HOV lane in the outer roadway. Transit and HOVs traveling in the outer roadway in the peak direction would also benefit from the added HOV lane. Some incident blockages may occur in the outer roadway, but most are not expected to affect the HOV lane.

Alternative R-8A was cited in the DEIS as having the highest reliability benefits by 2025. This conclusion was based upon maintaining good peak direction reliability plus providing the most consistent reliability for both transit and HOV in the reverse-peak direction. Alternative R-2B was rated slightly lower for reliability due to the slight degradation in reliability in the peak direction and higher likelihood of incident blockages in the center roadway.

Comparison of Transit Ridership Among Alternatives

The primary comments on this theme related to concern about transit ridership growth among the alternatives. Other comments addressed the perceived lack of additional transit service or incentives provided as part of the build alternatives. Please refer to the TDM/TSM discussion of this topic in Common Response CR-9: TDM/TSM.

The FEIS presents a comparison of transit ridership among the Alternatives in Table 3.1-3 and summarized in section 5.2.1.3. Each of the alternatives assumes the same level of transit service provided in 2005 and 2025. The transit service levels are documented in Figure 3.1-1 and Section 3.1.1.1.

These data indicate that there is expected to be a substantial increase in I-90 transit service levels occurring over the next 20 years, even if nothing else is done in the corridor (i.e., Alternative R-1 the No Build condition). The number of buses traveling in the peak direction is expected to increase by around 35 percent, while the reverse-peak direction transit service levels will increase by 50 percent. As a result, daily transit demand across the floating bridges is forecasted to increase by 110 percent, from around 10,000 currently to over 20,000 per day in 2025. These large increases over the No Build Alternative in transit conditions provide justification to the need for the I-90 project.

Given this large growth in transit ridership in the No Build Alternative R-1, there are relatively small incremental changes in transit ridership forecasted to occur with each build alternative. The build alternatives do provide increased reliability and improvements in transit travel time. These effects are reflected in the transit ridership forecasts for each of the build alternatives.

The EIS documents that Alternative R-2B would stimulate the most additional riders, followed by Alternative R-8A. The overall differences in transit ridership are relatively small among the build alternatives. Common Response CR-9: TDM/TSM provides additional response relating to the transit ridership effects of adding more transit service and supporting TDM/TSM programs within the corridor.

Person Throughput with Alternative R-2B

Several comments supported Alternative R-2B with the understanding that this alternative has greater person throughput with lower vehicle throughput. Figures 3.2-6 and 3.2-7 document the person throughput during peak periods in the corridor for 2005 and 2025 respectively.

These figures and the supporting text indicate that each of the build alternatives would carry comparable total person throughput. Specifically, Alternative R-8A would carry the highest number of people, followed by Alternative R-2B. Alternative R-2B would carry slightly higher transit riders than either Alternative R-8A or R-5.

Regarding vehicle throughput, Figures 3.2-4 and 3.2-5 compare the peak hour volumes among alternatives. These data show that, in 2005, the vehicle throughput would be almost the same between Alternatives R-2B and R-8A. By 2025, Alternative R-8A would carry approximately 6 percent more peak hour vehicles in both directions across the floating bridge, in comparison with

Alternative R-2B. Part of this difference is due to the change in HOV definition (Alternative R-2B assumes HOV 3+; Alternative R-8A assumes HOV 2+).

In summary, the comment assertion is partially correct, in that Alternative R-2B carries fewer vehicles (i.e. cars) across the lake; however, Alternative R-8A carries more people overall.

Common Response CR–8: Safety

Potential Changes in I-90 Crashes

The estimates of potential changes in crashes that are summarized in the FEIS are based on historical crash data from I-90 and other congested, urban interstate freeways in Washington State. The projections thus derived represent a range of potential future crash levels, not a single-point value for potential crash rates or for potential numbers of crashes.

The FEIS estimates contain the expected range of potential number of crashes, based on experiences in the comparison corridors. Crash rates were compared (1) for facilities that incorporate standard design elements, versus those with non-standard lane and shoulder widths, and (2) for the current I-90 lane and shoulder configuration, versus the interim operation of I-90 during its construction period, when non-standard lane and shoulder widths were used. The proportionate differences between these cases served as the basis for estimating future number of crashes in the absence of mitigating measures, such as the crash reduction measures incorporated into each of the build alternatives.

The DEIS portrayed these estimates in Figures 3.2-10 through 3.2-13, showing comparative crash rates for the alternatives. In these figures:

- the Lower Bound represents a "best case" with crash reduction measures, and
- the Upper Bound represents a "worst case" without crash reduction measures.

The DEIS graphs have been enhanced to indicate the effectiveness of the crash reduction measures. This information is now included in the FEIS, showing potential ranges with and without the application of crash reduction features. The Preferred Alternative R-8A will include crash reduction measures in a targeted program to mitigate the effects of non-standard lane and shoulder widths. Discussion of the safety analysis, and crash reduction measures for each build alternative, is provided in Section 3.2 the EIS. Table 3.2-9 has been revised in the FEIS to include the potential crash rates and numbers with and without the application of crash reduction measures.

Potential Crashes – Year 2025

With crash reduction measures incorporated, the numbers of crashes for all build alternatives would be similar to those that are forecast to occur with the No Build Alternative (R-1). They would also be similar to or lower than other urban interstate freeways with similar levels of congestion.

Comparison of Potential Overall Numbers of Crashes with crash reduction measures (non-injury and injury):

- R-2B = potential for 20-25 fewer than No Build (ranges overlap)
- R-5R = potential for 70-100 more than No Build (but likely to be lower than range shown)

- R-5M = potential for 20-50 more than No Build (ranges overlap)
- R-8A = potential for 20 fewer to 5 more than No Build (ranges overlap)

Comparison of Potential Numbers of Injury Crashes with crash reduction measures:

- R-2B = potential for 10-15 fewer than No Build (ranges overlap)
- R-5R = potential for 0-15 more than No Build (ranges overlap)
- R-5M = potential for 0-5 more than No Build (ranges overlap)
- R-8A = potential for 10 fewer to 20 more than No Build (ranges overlap)

The comparison of potential numbers of injury crashes includes all categories of injury crashes – "possible", "evident", "disabling, and "fatal" – per the injury classification system used by the Washington State Patrol (WSP) in their crash reporting records. On I-90, severe injury crashes, those involving disabling injuries and fatalities, comprise less than 4 percent of total injury crashes. With crash reduction measures, all of the build alternatives analyzed for the EIS, including the Preferred Alternative R-8A would experience in the range of two to four severe injury crashes per year. The No Build Alternative, without crash reduction measures, would experience three to five severe injury crashes per year.

Crash Reduction Measures

The crash reduction measures focus on mitigation of impacts specific to each alternative:

- Alternative R-2B could experience increased numbers of crashes related to congestion (rear end collisions).
- Alternatives R-5 Restripe, R-5 Modified, and R-8A could experience increased numbers of crashes attributable to lane and shoulder width reductions (sideswipe and fixed object collisions).

A literature review was conducted to investigate the potential application and effectiveness of various crash reductions measures. The effectiveness of individual measures was estimated based on published case-study data. Crash reduction measures generally affect only specific types of crashes, or certain crash conditions, so their effectiveness in reducing overall crashes is diminished. These limitations were accounted for in the crash reduction estimates. A methodology developed by FHWA was used to estimate the combined effects of multiple crash reduction measures, to ensure that the positive effects were not over-estimated for. FHWA and WSDOT Headquarters have reviewed the methodology and results, and concur with the estimates of potential crashes with and without crash reduction measures that were depicted in the FEIS.

The crash estimates also reflect the effects of congestion on crash rates with each build alternative. The crash data for the comparison corridors were stratified according to peak and off-peak times of day. The data clearly showed that higher crash rates were associated with peak-period congestion on weekdays. These higher rates were applied over the number of hours

of congested operation with each alternative, using two-hour increments. The crash estimates for Alternative R-2B reflect congestion similar to that of Alternative R-1 (e.g. within two hours of the same value), while those for Alternative R-8A reflect safety benefits of a reduction in the duration of congestion.

Applications of the crash reduction measures to each of the build alternatives are summarized in Table 3.2-21 of the FEIS. The effectiveness of individual measures incorporated in the FEIS analysis is tabulated below:

Rumble Strips

- 5 percent reduction for overall crashes by reducing off-peak, fixed-object crashes.
- Applied where shoulders are 4 feet or less in width to alert inattentive drivers.

Speed Management

- 10-15 percent reduction in overall and injury crashes is estimated with variable speed limits.
- Applied to address congestion and sight distance issues.
- Variable speeds respond to congestion ahead, reduce secondary crashes.
- Examples on Snoqualmie Pass, East Coast toll roads, European motorways.

Enhanced Delineation & Signing

- 5 percent overall/injury crash reduction, 30 percent severe crash reduction.
- These measures will also address needs of older drivers.
- Profiled striping for edge and lane lines, linear delineation on barrier faces.
- Lighted pavement markers in tunnel(s).
- Illuminated signs in tunnels (I-5 Express Lanes example), other signing upgrades.
- Lane control signals in tunnels to facilitate lane closures for incidents & maintenance.

Enhanced Illumination

- Reductions in crashes included under Enhanced Delineation & Signing (see above).
- These measures will also addresses needs of older drivers.
- Tunnel lighting enhancements are being investigated.
- Lighting for enforcement areas and motorist "refuges" or oasis located in areas with wider shoulders.

Enhanced Incident Management

- Reductions in crashes included under Enhanced Delineation & Signing (see above).
- Increase Incident Response Trucks (IRTs) assigned to I-90 from two to three.

- Extend IRT operating hours from peak periods to mid-day periods.
- The focus of increased service will be on the tunnels, lids, and floating bridges where outside shoulder widths would be reduced with the Preferred Alternative R-8A.

Common Response CR–9: TDM/TSM

Several comments related to the amount of attention given to Transportation Demand Management (TDM), Transportation System Management (TSM) and Transit enhancements. The major topics are addressed below.

TDM/Transit program

The DEIS contained two Transportation Demand Management/Transportation Systems Management TDM/TSM sensitivity tests that focused on increases in I-90 corridor transit service, park and ride capacity, and transit priority treatments in the corridor. Comments indicated that there should be more attention paid to a broader TDM program of incentives and the emphasize actions on Mercer Island travelers. In addition, it was suggested that the program reflect more updated cost differentials between Alternatives R-2B and R-8A.

In response, the FEIS contains an additional TDM/TSM Test #3. Test #3 consisted of a $70 Million investment in TDM strategies that could be applied within the I-90 corridor. A key item that was considered during the development of the TDM strategy was the scope and type of project that the Sound Transit Express I-90 project is - one with a project goal to improve transit and HOV travel - and which does not propose significant roadway construction capital investments for additional highway capacity. Accordingly, the I-90 TDM Plan that was tested is different than the level of proposed TDM investments in other major corridor projects, such as SR 520 and I-405. These corridors include substantial roadway investments proposed for adding more highway capacity. In contrast, the I-90 TDM strategy was based on an appropriate level of TDM investment that addresses the project type, scope and goal, and has proportional investments in TDM that enhance the efficiency of I-90 by maintaining and increasing transit and HOV travel.

The TDM strategy included in Test #3 was formatted to tie into the I-405 and SR 520 TDM Plans approved within the I-405 and SR 520 Projects (but with the emphasis and level varied for the project type, scope and goal) in order to facilitate integration of the corridor TDM programs in the future. Although the plan may overlap with the other corridors' 20-year plans, the I-90 strategy was considered independently, since it is unknown at this time if the major corridor plans will be funded. Any overlap that may occur would be eliminated as part of a funding-related implementation planning process for the corridors. While Sound Transit would not be the implementing agency for many of these TDM actions we included them for purposes of the sensitivity test.

The I-90 TDM strategy consists of a monitoring and evaluation program supported by five major elements: 1) vanpool program, 2) public information, education and promotion program, 3) employer-based & HOV programs, 4) land use as TDM, and 5) other TDM programs. The TDM program dovetails with other strategies including park and ride expansion on Mercer Island, expanded transit service to/from and within Mercer Island, and TSM enhancements to improve transit speed and reliability. Some TDM strategies, such as various pricing actions, were not specifically included as they are being evaluated at the regional level.

TDM and Transit Program Targeted to Mercer Island

Three TDM/TSM sensitivity tests were performed in relationship to Alternative R-2B. These are documented in the FEIS. The purpose of the tests was to identify the degree to which traffic diverted from the center roadway under Alternative R-2B could be offset by a tailored TDM/TSM program in the I-90 corridor. For the TDM component, we examined the recent findings from the recent research on TDM effectiveness. (DKS Associates, *Modeling TDM Effectiveness: Developing a TDM Effectiveness Estimation Methodology (TEEM) and Case Studies for the SR 520 Corridor*, for WSDOT, April 2003.)

Given the objective, the primary focus of the TDM/TSM analysis was on the 'peak' direction of travel. Under Alternative R-2B in 2005, there would be 570-660 vehicles per hour diverted from the center roadway onto the outer roadway by converting to two-way center roadway operations. Most of this diversion would be Mercer Island Single Occupant Vehicles (SOVs). By 2025, the diversion could approach 625-780 vehicles per hour. These diversions equate to 10-12 percent of total vehicle volume in the outer roadway during these times.

The TDM/TSM sensitivity tests had two primary findings:

(1) Transit ridership would increase on I-90 with additional TDM/TSM investment, and

(2) Traffic volumes would not change on I-90 or SR 520.

The results showed that up to half of the peak direction excess vehicle demand from Alternative R-2B might be offset by TDM/TSM actions. This assumes that there would not be additional traffic diverted back to I-90. This assumption may not hold over the longer term based on the travel forecasts. The heavily congested conditions along both floating bridge corridors results in forecasts that the vehicle capacity released by the shift to transit/carpools on I-90 would likely to replaced by traffic shifting from SR 520 or other corridors. On a related note, the transit/TDM strategies that were aimed specifically at Mercer island travelers were fairly successful at shifting those travelers onto transit, particularly when combined with expanding the Mercer Island park and ride lot. Non-island travelers would also use the lot expansion.

Alternative Technologies, Including Pricing

Several comments focused on the potential for using advanced technology to improve corridor efficiency. Most of the comments asked why tolls or other forms of congestion pricing were not specifically considered in the alternatives. While many of these ideas might have good potential within the I-90 corridor, they should be considered in a regional context. This is being done by WSDOT and PSRC as part of ongoing regional pricing studies that have included consideration of I-90.

The purpose of the I-90 project is to provide reliable two-way transit and HOV operations. This can best be achieved through the combination of physical and service improvements included within the identified EIS alternatives.

Other advanced technology features, such as automated enforcement and traveler information can certainly be implemented as a successful addition to the Preferred Alternative R-8A.

TDMTSM Measures During Construction

Some comments asked Sound Transit to consider using TDM strategies to assist in demand reduction during the construction period of the preferred alternative. This suggestion has been added to the freeway traffic mitigation section of the FEIS. Once a preferred alternative is finalized, a construction mitigation program will be developed as part of the design activities. Included could be a TDM package that would help reduce demand and impacts on I-90 users. Strategies similar to those identified in the TDM/TSM section of the FEIS will likely be considered.

Common Response CR–10: Project Costs

Cost History

The cost information included in the DEIS identified preliminary estimates of probable construction costs for each of the alternatives in 2002 dollars. This information was included for comparison purposes. Design costs were not included nor were expenditures to date. Since the DEIS was issued, WSDOT has convened a team comprised of representatives from Sound Transit, WSDOT, FHWA and HNTB, along with experts in structural, civil, transportation, and construction engineering to re-evaluate design costs for each alternative. As a result of these efforts, the projected costs to complete the project, by alternative, have been updated.

The DEIS estimates of probable construction costs are as follows:

Alternative R-2B Modified:	$28 to $30 million
Alternative R-5 Restripe:	$10 to $12 million
Alternative R-5 Modified:	$68 to $76 million
Alternative R-8A:	$90 to $100 million

Additional analysis identified the possibility of reconfiguring the westbound lanes on the HMH Bridge rather than widening the bridge. As a result, the design and construction costs of Alternatives R-5 Modified and R-8A were reduced.

The cost estimation process was completed in order validate the construction cost estimate and to identify and quantify potential risks that could impact the project's budget and schedule. The cost of the final design phase and any costs incurred by the project to date are also included in the estimated numbers, for at total cost to complete the project. The cost of final design is estimated at approximately 11 percent of the construction costs, for budgeting purposes. Project cost probability ranges were developed based on the current level of project design. The project schedule for design, permits, right-of-way and construction was evaluated. Inflation factors were applied to the cost estimates based on the years expenditures were planned to occur. The cost estimates for the alternatives have been updated to include this information. The estimates of total project costs included below, projected to year of expenditure dollars, reflect 90 percent certainty:

Alternative R-2B Modified:	$ 49 million
Alternative R-5 Restripe:	$ 21 million
Alternative R-5 Modified:	$ 93 million
Alternative R-8A:	$128 million

Alternative R-2B

The cost of Alternative R-2B includes two new off-ramps on Mercer Island from the center roadway and modification to the existing ramp at Bellevue Way to make it two-way. The ramps on Mercer Island are located at 77th Avenue SE eastbound and 80th Avenue SE westbound. This alternative also includes the installation of a center barrier on the center roadway to provide for two-way operations.

Alternative R-5 Restripe

The cost of Alternative R-5 Restripe includes restriping of the outer roadway lanes on I-90 between I-5 and Bellevue Way SE to create transit-only shoulder lanes on the outside of the outer roadways.

Alternative R-5 Modified

The cost of Alternative R-5 Modified includes one new direct access ramp on Mercer Island at 80th Avenue SE westbound from the outer roadway. It also includes restriping of the outer roadway lanes on I-90 between I-5 and Bellevue Way SE. In addition it includes widening on Mercer Island to provide additional shoulder widths.

Alternative R-8A – Preferred Alternative

Alternative R-8A adds transit/HOV lanes in the outer roadways between I-5 and Bellevue Way SE, a six-mile stretch of roadway, for a total of 12 new lane miles. In addition, two new access ramps would be added on Mercer Island and one at Bellevue Way SE. An auxiliary lane would be added eastbound on the East Channel bridge to reduce congestion from traffic accessing I-405. The alternative includes modifications to the floating bridges. A higher barrier would be installed on the HMH Bridge between the shared-use pathway and the outer roadway shoulder. It also includes shoulder widening on Mercer Island. An additional lane would be added on I-90 in each direction between I-5 and Rainier Avenue S.

All the alternatives include traffic control during construction to maintain safety and keep as many traffic lanes open as possible during construction. All the build alternatives also include crash reduction measures as described in section 3.2 of the DEIS and FEIS.

Funds for I-405 vs. I-90

The I-90 and I-405 projects have different goals and are funded separately. The goal of the I-90 project is to provide reliable and safe two-way transit and HOV operations between Seattle and Bellevue while minimizing impacts on the environment and other users and transportation modes. The goal of the I-405 project is to improve personal and freight mobility and reduce foreseeable traffic congestion in the corridor that encompasses the I-405 study area from Tukwila to Lynnwood in a manner that is safe, reliable and cost-effective. There are 25 interchanges within the 30-mile I-405 study corridor. The preliminary cost estimate for the Preferred Alternative exceeds $7 billion. Funds for the project construction will be requested in the Regional Transportation Investment District (RTID) package.

The I-90 project is a much smaller scale project, with an eight-mile study area. It is a transit and HOV project. The preliminary cost estimate for the Preferred Alternative R-8A including all environmental, design, right of way acquisition and construction costs totals $128 million, projected to year of expenditure dollars. Sound Transit and WSDOT funds are dedicated to the project. In addition, funds from the reauthorization of TEA-21 and from the RTID are being requested.

Costs/Benefits of Alternative R-8A

While the projected cost of Alternative R-8A is higher than the other alternatives, its benefits are greater also. Alternative R-8A would create a fourth lane on the outer roadway for transit and HOV 24 hours a day/7 days a week. Current I-90 operation, with the reversible center roadway, provides a priority for transit and HOV westbound in the morning and eastbound in the afternoon, with no priority in the opposite direction.

Alternative R-8A would reduce congestion upon opening from the current eight hours of congestion to less than two hours of congestion. By 2025, R-8A is projected to result in less than four hours of congestion, compared with ten hours per day with the No Build. These measurements include person delay by mode, with accident delay factored into the calculations.

A limited benefit/cost analysis has been done for this project. The only alternative that shows a positive benefit/cost ratio is the Preferred Alternative R-8A, all other alternatives show a negative benefit/cost ratio.

Lower Cost Alternatives

Several alternatives that cost less than Alternative R-8A were evaluated in the DEIS. See cost information above about costs of the alternatives and refer to the FEIS for more information about the alternatives.

Funding Sources

The I-90 Project is funded by several difference sources. The Sound Transit budget for the project totals $18.9 million. The State Department of Transportation has received $1.75 million in Federal Interstate Maintenance funds for the preliminary design of the project. In addition, $15 million is included in the State Transportation budget. The Regional Transportation Investment District includes a request of approximately $65 million. A $30 million request was submitted to Congress for TEA-21 reauthorization funding for the 2004 to 2010 funding period.

The cost to complete Alternative R-8A is estimated at $128 million, including $5 million spent to date on preliminary design and environmental documentation.

Common Response CR-11: Why is Alternative R-8A the Preferred Alternative?

This response is a summary of information found in the Draft and Final EIS documents. It is intended to respond to the comments raised as to the differences between Alternatives R-8A and R-2B and the reasoning as to why Alternative R-8A has been identified as the "preferred alternative".

Alternative R-8A, the alternative that adds an HOV lane in each direction on the outer roadways, has been identified as the preferred alternative for the I-90 project by the I-90 Steering Committee and the Sound Transit Board. The Steering Committee and Sound Transit Board are made up of representatives of a diverse set of jurisdictions, and identification of a preferred alternative followed extensive study and discussions on benefits to the regional transportation system.

After publication of the Final EIS, the Sound Transit Board will take action to select the project to be implemented. The Washington State Transportation Commission will also take action on the proposed change to the configuration and operation of the I-90 roadway, as required by the 1976 Memorandum Agreement for I-90. This action is anticipated in summer 2004. The Federal Highway Administration will issue its Record of Decision (ROD) under the NEPA process as part of its approval of the project. This federal action will enable final design of the project to be initiated.

The differences between Alternatives R-2B and R-8A are primarily in the following areas:

Purpose and Need

Alternative R-8A, HOV lanes on the outer roadway, better meets the purpose and need statement than Alternative R-2B because it provides for reliable and safe two-way transit and HOV operations by providing an additional lane specifically for transit and carpools, 24 hours a day, seven days a week. Alternative R-2B would provide for two-way transit and HOV operations, but it would be at the expense of peak-direction operation. Current operation provides two lanes for transit and carpools and Mercer Island single-occupant vehicles, westbound in the AM and eastbound after noon. This capacity would be cut in half, which would result in decreased reliability for transit and carpools in the peak direction.

Transit Use

Both alternatives are projected to increase transit ridership compared to the No Build Alternative, with Alternative R-8A having slightly higher ridership in the peak direction, and Alternative R-2B having higher ridership in the reverse-peak direction.

Alternative R-2B would increase travel time for transit by 2.4 minutes in the peak direction meaning longer trips for transit users.

In the reverse-peak direction, Alternative R-2B would shorten the travel time for transit by 1 minute, whereas Alternative R-8A would shorten the travel time by 2.5 minutes (both as compared to the No Build Alternative).

Transit reliability would be degraded with Alternative R-2B with the two-person carpool option. It would be the same as Alternative R-8A and the No Build with the three-person carpool option.

Congestion caused by Alternative R-2B would increase delays for transit users by 1 minute in year 2005, lengthening to 1.3 minutes by year 2025. In comparison, Alternative R-8A would decrease delays by 0.7 minutes in the year of opening and shorten this delay by 2.3 minutes as compared to the No Build Alternative by year 2025.

HOV Use

Alternative R-2B would increase travel time for HOV users across the bridge by 2.4 minutes in the peak direction due to increased congestion. In the reverse-peak direction, the travel time would be reduced by 1 minute, whereas Alternative R-8A would reduce travel time by 2.5 minutes (both as compared to the No Build Alternative).

In year 2005, Alternative R-2B slightly increases (0.4 minutes) the delay for HOV users in the peak direction whereas R-8A decreases the delay slightly (0.5 minutes). By the year 2025, both alternatives would show greater reductions in delay, with R-2B reducing delay as compared to the No Build Alternative by 2.3 minutes. Alternative R-8A would show a greater reduction than Alternative R-2B, a reduction of 4 minutes.

Both alternatives would increase HOV usage by 2 percent in the PM peak hours, whereas Alternative R-8A would also increase HOV usage in the AM peak hours by 2 percent.

Safety

With the proposed design measures to reduce the risk of accidents, the rates of accidents are comparable between the two alternatives, 324 – 376 accidents per year with Alternative R-2B of which 2 to 3 would be projected to be "severe" as compared to 359 – 389 accidents per year with Alternative R-8A of which 3 would be projected to be "severe".

General Purpose Traffic

In year 2005, Alternative R-2B would increase congestion by 1 hour to a total of 8-3/4 hours of congestion, as compared to 7-3/4 hours of congestion with the No Build Alternative. With Alternative R-8A, the hours of congestion would be reduced by 5 hours as compared to the No Build Alternative, for a total of 2-3/4 hours. By year 2025, Alternative R-2B would cause 10 hours of congestion (the same as No Build) as compared to 3 hours of congestion with Alternative R-8A.

In the AM peak hour for year 2025, Alternative R-2B would increase travel time for general purpose users by 1.3 minutes. Travel time would be reduced by 4.5 minutes with Alternative R-8A.

The differences are even greater in terms of "person hours" spent driving through the I-90 corridor. In year 2005, Alternative R-2B, due to increased congestion, would increase the number of person hours of travel by 3,000 hours to 42,700 person hours. Alternative R-8A would reduce the person hours of travel by 6,100 hours to 33,600 person hours. By the year 2025, person hours with the No Build Alternative are projected to increase to 73,000 hours. Alternative R-2B would increase this time by 8,700 hours. In comparison, Alternative R-8A would show a reduction in person hours by 26,100 hours, to a total of 46,900 hours.

Effects to Other Users

Alternative R-2B would no longer permit Mercer Island SOV use of the center roadway. Alternative R-8A would continue to allow their use as long as the vehicular speed is maintained at 45 mph.

Alternative R-2B would eliminate HOV 2+ carpools from the center roadway. It could accommodate transit and HOV 3+ only. Alternative R-8A provides priority for HOV 2+ as well as transit.

The Washington State Department of Transportation has committed to re-studying their previously announced plan of prohibiting trucks carrying flammable liquid cargo from using the I-90 Mt. Baker Ridge tunnels.

Alternative R-8A would move traffic closer to the shared-use path through narrowing the shoulder adjacent to the shared-use path. Design features are being added to the barrier separating the pathway from the shoulder to lessen or eliminate the effects of wind and debris.

Because Alternative R-8A no longer includes a proposal for widening the Homer M Hadley floating bridge, there is no longer a need to permanently close the shared-use path for the duration of construction. Temporary intermittent closures would be needed for installation of a new barrier, however these will be timed to the extent possible to periods of low pathway use to reduce impacts of users.

High Capacity Transit in Center Roadway

Alternative R-8A better accommodates future high capacity transit than Alternative R-2B, because it provides HOV lanes now that will be critical in the future when HCT is implemented. HCT would operate in the center roadway which would displace transit, carpools and Mercer Island single-occupant traffic to the outer roadways. Transit and carpools can be accommodated in the HOV lanes that would be in place with Alternative R-8A.

The I-90 Steering Committee identified Alternative R-8A as the first step towards the ultimate configuration of I-90 with High Capacity Transit in the center roadway, at their July 15, 2003 meeting. They requested that Sound Transit take the following steps to implement Alternative R-8A:

- Alternative R-8A with HCT deployed in the center lanes is the ultimate configuration for I-90

- Construction of R-8A should occur as soon as possible as a first step to the ultimate configuration
- Upon adoption of R-8A, move as quickly as possible to implement HCT in the center lanes
- Commit to the earliest possible conversion of center roadway to two-way HCT operation based on outcome of studies and funding approvals. (HCT is defined by the I-90 Steering Committee as a transit system operating in dedicated right-of-way such as light rail, monorail or a substantially equivalent system.)

Cost

The projected cost of $128 million for Alternative R-8A is greater than the projected cost of $49 million for Alternative R-2B, however the access ramps and lane modifications that would be constructed for Alternative R-8A would be utilized upon opening and with future conversion to HCT operation in the center roadway. With Alternative R-2B, the center roadway barrier that was proposed for the alternative would need to be removed and the access ramps on Mercer Island would no longer be used by transit and carpools upon conversion of the center roadway. They would only be used for maintenance access.

Agencies

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 3755
SEATTLE, WASHINGTON 98124-3755

REPLY TO ATTENTION OF

RECEIVED
JUN 0 6 2003
SOUND TRANSIT
LEGAL DEPT.

Regulatory Branch

Central Puget Sound Regional Transit Authority
Mr. Steve Kennedy, Environmental Compliance Lead
401 South Jackson Street
Seattle, WA 98104

Reference: I-90 Two-Way Transit
& HOV Operations

Dear Mr. Kennedy:

This letter is a response to the Draft Environmental Impact Statement, dated April 25, 2003, for the I-90 Two-Way Transit and HOV Operations you are proposing between Seattle and Bellevue, King County, Washington.

The following are the Corps concerns regarding this project and its alternatives. Most of the alternatives you have presented in the Draft EIS have minimal impacts to wetlands and waters of the U.S. However, when wetland impacts involve "filling and/or excavation", the Corps should be notified to issue the correct authorization for this project. The main concern with your project from the Corp's standpoint are the result of any wetland and stream impacts associated with the replacement of the storm water pipe outfall into Mercer Slough. In addition, ESA listed species do occur within the project action area, therefore, ESA concurrence determinations, and EFH determinations would need to be obtained from the Services. A-1 A-2

When your project becomes ready to apply for the JARPA, please submit it and the drawings, should your project involve wetland and/or stream impacts as mentioned above, to the Corps.

Thank you for the opportunity to comment on the Draft EIS for your project. Should you have other concerns, comments, or questions regarding the Corps jurisdiction, please call me at (206) 764-6911.

Sincerely,

Carol Bordin

Carol Bordin, Project Manager
South Section Application Review

Form Ver. 062502

08/12/03 THU 16:30 [TX/RX NO 5138]

A-1 Army Corps of Engineers

Your comment is noted. If wetland impacts would require filling and/or excavation, the Corps would be notified to obtain the appropriate authorization. On page iv of the FEIS Fact Sheet under *"Required Approvals, Permits, Certifications and Licenses for the Proposal (Preliminary List)"*, we included the Army Corps of Engineers with the notation that "*A Nationwide Permit is assumed for replacement of the stormwater outfall.*" This is the only location within the construction area that has been identified to have wetlands present.

A-2

A biological assessment (BA) has been prepared for the preferred alternative. The BA concluded that the project was determined to "may affect, not likely to adversely affect" Chinook salmon, Coho salmon and Bull Trout. The project was determined to have no effect on Bald Eagles. NOAA Fisheries concurred in these determinations on January 20, 2004 and the United States Fish and Wildlife Service concurred on February 24, 2004.

06/20/03 FRI 07:44 FAX 1 206 398 5215 RTA 001
JUN-20-2003 FRI 08:33 AM FAX NO. P. 02

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

Reply To
Attn Of: ECO-088

Ref: 01-179-DOT

Andrea Forsyth Tull, Project Manager
Sound Transit
401 South Jackson Street
Seattle WA 98104-2826

Jim A. Leonard, Urban Area Engineer
Federal Highway Administration
711 S Capitol Way, Suite 501
Olympia WA 98501

Dear Ms. Tull and Mr. Leonard:

We have reviewed the draft programmatic Environmental Impact Statement (EIS) for the proposed **Interstate 90 (I-90)Two-Way Transit and High Occupancy Vehicle (HOV) Operations,** (CEQ # 030178) in accordance with our responsibilities under the National Environmental Policy Act and §309 of the Clean Air Act (CAA). Section 309 of the CAA specifically directs the U.S. Environmental Protection Agency (EPA) to review and comment in writing on the environmental impacts associated with all major federal actions. We have assigned a rating of EC-2 (Environmental Concerns, Insufficient Information) to the draft EIS. This rating and a summary of our comments will be published in the *Federal Register*. A copy of the rating system used in conducting our review is enclosed for your reference.

The five action alternatives analyzed in the EIS examine ways of improving existing transit service and High Occupancy Vehicle (HOV) service on an 8-mile stretch of I-90 between its western terminus and the I-90/Interstate 405 (I-405) intersection.

Our publication "Transportation Planning in the Northwest: Framework for Sustainability" (EPA 910-F-00-001, January 2000; attached), states our strong support for sustainable transportation solutions relying on increased transportation choices and multi-modal mobility, not just the movement of cars. Accordingly, we strongly support the project purpose and need to improve transit and HOV operations on the western eight-mile stretch of I-90. We have some concerns about several topic areas in the EIS which we discuss below.

Alternatives

We recommend the selection of Alternative R-2B Modified as the preferred alternative. It has comparatively low cost, fewer construction impacts, less construction time, and has the potential to increase transit, and possibly HOV ridership right away. It may also allow for a better transition to High Capacity Transit in the future than the other alternatives. Alternative R-2B Modified, of all the alternatives, most directly focuses on accomplishing the project purpose by dedicating the center roadways to two-way transit and HOV operations, thereby avoiding delays during morning and afternoon peak commute times. The EIS estimates that it would result in the largest transit ridership increase of any of the alternatives, particularly in the

A-3

Printed on Recycled Paper

A-3 Environmental Protection Agency

Your preference is noted. See Common Response CR-2: High Capacity Transit (HCT).

short-term. We support the project purpose to maximize the utility of the transit mode choice across the I-90 bridge, whatever alternative is ultimately selected.

Alternative R-8A is our least preferred alternative. Modeling predicts that HOV use would increase the most in the long term with Alternative R-8A, but R-8A would be the only alternative using HOV 2+ (requiring a minimum of three people per vehicle). This appears to assume that present commuter behavior ('resistance' to HOV use/practice) would not change in the future under any alternative as congestion increases. While Alternative R-8A would create less General Purpose traffic delay than any of the other alternatives and appears to generate more single occupancy vehicle traffic, neither of these is the purpose of the project. Because of these features, Alternative R-8A predicts the greatest risk of inducing travel, and thereby may have an effect on the rate of development in communities east of Lake Washington. Alternative R-8A is the most costly option and has the longest period of construction impacts, requiring closing of the Shared-Use Path for two years. It also appears to make the most safety compromises of any of the alternatives in the long term.

Finally, the alternatives could be presented more clearly or in a format that allows reviewers to make a full evaluation. We acknowledge that there are challenges to the effective graphic display and text descriptions of these action alternatives, which involve relatively subtle changes on an existing facility. Nonetheless, as the CEQ regulations state, the analysis of alternatives is meant to be, "the heart of the EIS . . . it should present the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice." Chapter 2 of the EIS should clearly emphasize which features most distinguish each alternative from the others, describe what each one was designed to accomplish and present the "comparative merits" or performance of each of them. Much of this information on transportation performance is in Chapter 3. We recommend a succinct summary of some of the most important points from Chapter 3 be brought forward into Chapter 2.

Cumulative Impacts

This section of the EIS should better evaluate whether the proposed I-90 improvements would result in significant impacts on land use and development in communities and cities east of Lake Washington, and should include this area in the cumulative impact analysis. In addition, we recommend that the temporal limits should be the same for the no-action as for the action alternatives.

Table 4.16-1 suggests that the proposed project would induce relatively few trips on I-90 in comparison to planned improvements on the I-405 and SR 520, but does not discuss land use. The Land Use subsection concludes that the action alternatives would have a minimal effect on land use, development, population and employment growth, if no improvements are made to I-405 and SR 520, and minimal impact on impervious surface, water quality, streams, aquatic habitat and fisheries. The text states that a qualitative analysis of cumulative effects was completed, but the these results are not discussed in the document. Thus, there is little information provided the reader to support this conclusion other than the predicted traffic

A-3 cont.

A-4

A-5

A-6

A-7

A-4

Your preference is noted. See also Common Response CR-11: Why is Alternative R-8A the Preferred Alternative?

A-5

Your comment on presentation of alternatives is noted. We agree that the fine distinctions between the physical characteristics of the alternatives make it hard to distinguish the differences for the lay reader. That is the reason for Chapter 5 Comparison of Alternatives, included in both the Draft and Final EIS, presents the comparative merits or performance of each alternative.

A-6

As noted in Section 4.16.2.1 and shown on Table 4.16.1 of the FEIS, the rate of growth east of Lake Washington would be affected largely by improvements to SR 520 and I-405. Improvements to I-90 by itself are forecasted to cause little change in traffic levels and therefore at most a small effect on the rate of either residential or commercial development on the east side of Lake Washington. Section 4.16.3.2 Time Frame has been expanded to further explain the need for different temporal limits for certain analysis.

A-7

The discussion on regional traffic impacts for the I-90 project is included in Section 4.16.3.4 of the EIS under "Transportation." Alternative R-8A would increase HOV capacity across I-90 but not general purpose capacity. Daily volumes on I-90 would increase up to 2 – 3 percent as compared to Alternative R-1 No Build with most of the traffic increase due to added HOV volumes. The traffic modeling indicates that daily and peak period traffic volumes increase very slowly between 2005 and 2025 (less than 1 percent annually). Due to the minimal forecasted traffic increases for the I-90 project, a qualitative analysis of the cumulative effects on land use was prepared and is described both in overall land use planning context and in terms of access and connection improvements to jobs, education and shopping within the section referenced in this comment.

Impacts from Table 4.16-1, and the assertion that Regional Planning documents such as Destination 2030, Vision 2020, and urban growth areas mandated by the Growth Management Act are likely to remain in effect. The EIS should describe how these conclusions were derived.

A-7 cont.

Completion of the I-90 bridge widening project in 1989 and 1993 caused an immediate and dramatic increase in traffic, which coincided with an equally dramatic increase in population growth in communities east of I-405. The EIS also states that the eastern boundary of the study area was set at the I-405. Given the evidence of past correlation between I-90 improvements and increased growth to the east, we believe it is critical that the geographic boundary of the cumulative impact study area be extended east beyond I-405 to those communities where land use is likely to be most affected by the proposed lane improvements. Without this, the EIS cannot support the conclusion that the proposed project would not have a growth-inducing effect on communities east of I-405 and north and south of the I-90 corridor.

A-8

Page 4.16-16 presents some conclusions, appearing in bulleted form, that appear to be in addition to those you have already stated. These conclusions are not explained. The EIS should clarify whether they are a summary, or in fact, new conclusions.

A-9

The Cumulative Impacts Section also contains some confusing text and organization. For example, on Page 4.16-3, in the Relevant Past, Present and Future Actions, under the heading of "Light Rail," you explain the numerous decisions required before light rail could be built on the I-90 corridor without providing the context to explain why and how you have chosen to discuss the topic. The evaluation sections on each reasonably foreseeable future action could be combined with the introductory paragraphs to make a much more cohesive and shorter discussion. We recommend that much of the material in those introductory paragraphs be omitted, and the important conclusions emphasized, to benefit the analysis and reviewers.

A-10

Effects on the Shared-Use Path

In our scoping comments, we recommended against a proposed narrowing of the shared-use pathway that would have greatly degraded the viability and safety of non-motorized modes on I-90. We are pleased to see that all alternatives analyzed now include a 10' width for the shared-use path. We are concerned, however, that alternatives R-5 modified, R-5 restripe, and R-8A reduce the distance between motorized traffic and path users from the 10' existing condition to 2-4' on the Homer M. Hadley (HMH) floating bridge, and possibly the Lacey V. Murrow or East Channel bridge. This condition would create a potential safety hazard for path users from wind buffeting and debris from motorized traffic. The addition of a higher railing than the present railing in these alternatives is proposed to protect users from wind buffeting and debris from motorized traffic. Addition of the railing, as the EIS notes, would also reduce the effective width of the pathway. The railing would force cyclists to ride further out toward the center of the path, making passing more difficult, and conditions for users potentially more hazardous. This may degrade the utility of the facility.

A-11

The EIS should discuss the relative effectiveness of the different railing types shown in

A-12

A-8

See Response A-7 above. Again, the traffic models for I-90 do not indicate more than a very small increase in traffic volumes on I-90, nor would general purpose capacity be added to I-90 with any of the alternatives. That is the key to distinguishing the improvements being proposed under this project from past I-90 roadway projects, and the likely affects on growth in land uses on the east side of Lake Washington.

A-9

Only the third bullet on the cumulative and secondary effects on air quality is in addition to information already stated in Chapter 4.16. The information included in the bullets is summarized or copied from information included in the text of Section 4.16 as follows:

The first bullet on VMT is copied from information included on page 4.16-4 of the DEIS in the first paragraph on the Metropolitan Transportation Plan beginning on the tenth line.

The second bullet on hydrocarbon emissions is copied from the last line of the "Air Quality" paragraph on page 4.16-13.

The fourth bullet on regulatory programs assuring the reduction in water quality degradation comes from the last line in the first paragraph on page 4.16-14 of the DEIS.

The fifth bullet on planned household and employment growth resulting in a 26 percent increase in impervious coverage in the I-405 study area over the next 20 years is found in the fifth line of the second paragraph on page 4.16-14 of the DEIS.

The sixth bullet on cumulative and secondary effects on surface water also comes from the second paragraph on page 4.16-14 of the DEIS in lines 9 through 12.

The seventh bullet on drivers behind the trend in adverse impacts on fish and fish habitat is copied from the second paragraph under "Fish Resources" on page 4.16-14 of the DEIS.

The final bullet on cumulative degradation to fish habitat links information from two places in Section 4.16: information in Section 4.16.2.2 Water Quality and Biological Resources on page 4.16-2 of the DEIS on the low rate of population and employment growth caused by the I-90 project alone; with the information on page 4.16-14 that says that high rates of population and employment growth that drive habitat degradation.

A-10

The text has been reorganized to respond to your comments. See revised Section 4.16 in the FEIS. It was decided to retain the information in the introductory paragraphs for the benefit of those readers who are not familiar with the background of those documents and projects, however we have moved the information to the subsections on secondary or cumulative effects as you suggested.

A-11

See Common Response CR-3: Shared-use Pathway.

A-12

See Common Response CR-3: Shared-use Pathway.

Figure 4.3.4 as safety features, in addition to their effects on visual resources. If you conclude that the railing decreases overall user safety, we strongly encourage you to seek and select a design alternative, such as a lower barrier, to minimize the adverse affects on this mode choice.

A-12 cont.

The American Association of State Highway and Transportation Officials (AASHTO), in their 1999 publication entitled "Guide for the Development of Bicycle Facilities" has recommended that shared use paths with substantial use by bicycles, joggers, skaters or pedestrians, should be 3.6m (12 feet), or possibly 4.2m (14 feet), particularly if there is no "free space" on either side of the path. The EIS should discuss AASHTO standards and assess whether this path may be considered to have substantial use and how each alternative would meet the AASHTO standards.

A-13

We note that the EIS includes no data on bicycle accidents, citing that bicycle accidents on the path are not tracked by the Washington Department of Transportation. You note, however, that the City of Mercer Island has some available data. Since you identify Shared-Use Path safety as a key issue in the draft EIS, this available data should be discussed in order to allow full consideration of safety impacts/potential hazards of path use on the HMH bridge and the East Channel bridge following construction.

A-14

Of additional concern are the impacts to the shared use path during construction, specifically the length of time the shared use path will be out of service. We suggest this mode choice "share the pain" of construction with other modes, but not bear more than its share. Closure for two construction seasons will completely shut down all non-motorized transportation crossing Lake Washington on I-90, while under Alternatives R-5 modified and R-8A, individual motorized lanes will only suffer temporary closure. We recommend this project, which seeks to improve one user mode choice, not result in the lengthy loss of another mode choice. The EIS, therefore, should rigorously explore and present all possible safe methods of partial access for pedestrians and bicyclists during construction (under alternative R-5 restripe), and consider measures such as the use of extra flaggers, use of temporary lanes, or providing convenient shuttle service with temporary stops for Shared-Path users near the bridges during commute times (under Alternative R-5 modified and R-8A; (pages 3.4-7 and 4.15-1 of the DEIS)). This would provide non-motorized traffic access to the bridges during construction, while also minimizing impacts to motorized traffic, allowing the facility to continue to serve all users while the improvements are completed.

A-15

Transportation Demand Management / Transportation System Management

EPA strongly supports Transportation Demand Management (TDM) and Transportation System Management (TSM) measures. We believe it is always best to attempt least-cost/non-structural changes first, to avoid or minimize environmental impacts and expensive solutions to transportation problems. The proposed action clearly attempts to look at non-structural solutions to the problems of transit delays on I-90. The analysis, however, of TDM/TSM raises some questions.

A-16

Page 4 of 6

A-13

Current AASHTO and WSDOT design guidelines suggest that the desired width of a shared-use pathway on a structure be 12-14 feet, defined as a 10-foot path width with 1-2 feet of shy distance to bridge rails, barriers, or railings.

The existing shared-use pathway on the HMH Floating Bridge was designed and constructed prior to the current AASHTO guidelines, and at 10 feet wide is consistent with typical practice at the time of design and construction. Any widening would be costly, and adding more than two feet of width to the bridge is not structurally feasible. Consequently, the width of the shared-use pathway will be maintained, but will not be increased.

See also Common Response CR-3: Shared-use Pathway for additional information.

A-14

Section 3.4 of the EIS states, "The City of Mercer Island collects accident data for the portions of the I-90 shared-use pathway in the city, **not including the bridges over Lake Washington.**" Because the project would not affect the shared-use pathway within the areas covered by the city database, no pertinent accident data can be obtained from that source. A request for bicycle accident data from the Washington State Patrol (WSP) accident data base indicated that there were no bicycle accidents reported during the periods for which data was available (e.g. 1994-1996 and 1999-2000).

The project team was made aware that a crash involving bicyclists and requiring a response from emergency aid providers occurred on the HMH Floating Bridge shared-use pathway in July of 2002. Neither the City of Mercer Island nor the WSP was able to locate a record of this crash. Without supporting data, it would be inappropriate to speculate on the nature or cause of this crash.

Section 3.4 of the FEIS includes an expanded discussion of safety and maintenance issues reported to the project team during preparation of the DEIS. These issues have been taken into account in the evaluation of potential impacts to the shared-use pathway, and in the development of mitigation measures for the Preferred Alternative (R-8A).

A-15

See Common Response CR-3: Shared-use Pathway.

A-16

See Common Response CR-9: TDM/TSM. A new test, Test #3, was conducted that included $70 million in TDM strategies that could be applied within the I-90 corridor.

We recommend that measures not currently proposed in the EIS, such as funding additional vanpools along the western stretch of I-90 west of I-405, might simultaneously allow expansion of transit and more person throughput on I-90 while reducing congestion problems. In addition, other measures, such as additional park-and-ride lot capacity and additional bus service to what is proposed in the EIS may also be employed to help solve the current transit delays. It seems possible that Alternative R-2B, in particular, with transit and HOV traffic on the center roadway, might show greatly improved performance with additional TDM expenditures.

A-16 cont.

Page 3.1-17 of the EIS cites a figure of $30 million as the difference between the cost of Alternatives R-2B and R-8A, from which a reasonable cost for TDM/TSM was derived. The EIS should discuss why the $30 million figure was chosen as a ceiling for total TDM / TSM measures. Without additional explanation, there appears to be is no reason why a figure higher than $30 million could not be spent effectively on a TDM/TSM program for this project.

I-90 User Safety

In our scoping comments, we noted concerns stemming from modeling estimates that additional vehicle crashes and injury accidents may result with at least one alternative, R-8A, because full-width shoulders would be replaced with narrower ones.

We are pleased to see that this matter has been given full consideration in the preparation of the draft EIS. Potential crashes, if unmitigated, would greatly increase in most action alternatives, from 23% to 35% over the no-action alternative (except for alternative R-2B Modified). The EIS proposes mitigation measures (speed management, improved signing and lighting, improvements in responses to accidents, and shoulder/ rumble strips) which are predicted to reduce crashes to levels calculated in the no-action alternative.

A-17

The EIS compares of crashes in the action vs. no-action alternatives where action alternatives include the proposed traffic mitigation measures but the no-action alternative does not. This may not be an equivalent comparison if it is reasonable that safety improvements consistent with current safety standards would be added to I-90 under no-action as part of WSDOT's regular safety program, thereby reducing crashes. The no-action alternative should be compared to the other alternatives assuming these measures are in place. The result could be a larger net decrease in motorist safety for most of the action alternatives than the EIS presently displays. This may be a truer reflection of the possible safety costs of taking action. As an added note on this topic, we point out that on page 3.2.49 incident management is to be discussed in Section 3.2.3.4, and there is no such Section.

A-18

Safety is estimated to be poorest for in Alternative R-8A and, along with the R-5 alternatives, is predicted with poor precision. The EIS should discuss why the predictive ranges are so imprecise for these two alternatives.

A-19

The EIS clearly indicates a reliance on the proposed traffic mitigation measures to perform very well in order for the action alternatives to yield safety levels comparable to the no-action

A-20

A-17

Your comment is noted.

A-18

See Common Response CR-8: Safety. Without the current project, WSDOT has no plans to implement crash reduction measures in the I-90 corridor between Seattle and Bellevue. Numerous other corridors with higher accident frequencies compete for State and Federal safety improvement funding. Investment in countermeasures at these known high-accident locations produces benefits exceeding those that might be expected in the existing I-90 corridor. In addition, the crash reduction measures included in each of the build alternatives are enhancements to existing corridor safety provisions, which are generally consistent with current design practice, and do not represent upgrades required to make the corridor "consistent with current safety standards" as suggested in the comment.

A-19

See Common Response CR-8: Safety.

A-20

WSDOT is, and has been, working closely with FHWA on this issue. See also Common Response CR-8: Safety for more information.

alternative. While we strongly support the safety mitigation measures, the EIS should discuss, based on your past experience, how these measures might perform on this project. For example, lowering speed limits may be difficult to enforce enough to be effective. Incident response service might not help as much during peak congestion periods. Both of these items require ongoing funding, which is separate from this project, and is not guaranteed. Accordingly, you should discuss what measures, if any, might be proposed as possible contingency items if presently proposed mitigations are not funded or otherwise do not function as predicted.

A-20 cont.

The EIS compares blocking accidents for the no-action alternative and for the action alternatives. Predicted increases in blocking accidents, owing generally to the narrowing of shoulders and lanes appear significant, particularly on the outer roadways. Increases in blocking accidents can worsen conditions rather than resolve the problem the proposed improvements are intended to solve. In raw numbers of blocking incidents, Alternative R-8A clearly performs far worse than the other alternatives. Yet Figure 3.2-8 shows this alternative resulting in less "mainline delay" in the long term (year 2025) than the other alternatives. The EIS should clarify whether the information in this figure reflects the increase in blocking accidents.

A-21

Thank you for the opportunity to review this draft EIS. If you would like to discuss this matter further, please do not hesitate contact Jonathan Freedman at (206) 553-0266.

Sincerely,

Judith Leckrone Lee, Manager
Geographic Implementation Unit

Enclosure

A-21

See Common Response CR-8: Safety.

United States Environmental Protection Agency October, 1998
Office of Enforcement and Compliance Assurance

EPA's Section 309 Review: The Clean Air Act and NEPA

ENVIRONMENTAL REVIEW AND THE CLEAN AIR ACT

The Clean Air Act, a law to prevent pollution of a single environmental medium, contains an unusual provision. That provision is Section 309, which authorizes the Environmental Protection Agency (EPA) to review certain proposed actions of other federal agencies in accordance with the National Environmental Policy Act (NEPA) and to make those reviews public. If the proposing agency (the "lead" agency) does not make sufficient revisions and the project remains environmentally unsatisfactory, EPA may refer the matter to the President's Council on Environmental Quality for mediation. (See Highlight A.)

HIGHLIGHT A: Section 309 of the Clean Air Act

(a) The Administrator shall review and comment in writing on the environmental impact of any matter relating to duties and responsibilities granted pursuant to this Act or other provisions of the authority of the Administrator, contained in any (1) legislation proposed by any Federal department or agency, (2) newly authorized Federal projects for construction and any major Federal agency action (other than a project for construction) to which Section 102(2)(C) of Public Law 91-190 [*] applies, and (3) proposed regulations published by any department or agency of the Federal government. Such written comment shall be made public at the conclusion of any such review.

(b) In the event the Administrator determines that any such legislation, action, or regulation is unsatisfactory from the standpoint of public health or welfare or environmental quality, he shall publish his determination and the matter shall be referred to the Council on Environmental Quality.

[*] NEPA (42 USC 4332(2)(C) et seq.)

Section 309 originated in 1970, the year in which landmark national legislation created new agencies and new requirements for restoring and protecting the environment. Besides NEPA and its creation of CEQ, the National Oceanic and Atmospheric Administration (NOAA) and EPA

were established, and, at the end of 1970, the Clean Air Act was passed. At that time, many issues of environmental consequence were brewing (see Highlight B), one of which--the proposed supersonic transport aircraft (SST)--became a crucial test of NEPA. (See The National Environmental Policy Act section, below.)

The lead agency for the SST project, the Department of Transportation (DOT), chose not to disclose EPA's comments on the NEPA-required environmental impact statement (EIS) before having issued its final decision, construing NEPA to contain no explicit public disclosure requirements. Although later CEQ regulations under the Act would clarify this ambiguity, the Congress had a vehicle at hand in which to make its point: the draft Clean Air Act. Senator Edmund Muskie, sponsor of Section 309, said to the Senate when submitting the conference report, that as soon as EPA has completed its review of a proposed action, it must make its written comments public, and "not when the environmental impact agency decides the public should be informed." (116 Cong. Rec. S-20802, Dec. 18, 1970)

HIGHLIGHT B: When NEPA Was New: 1970-1971 Issues

- Trans-Alaska oil pipeline and theNorth Slope-Valdez route
- Supersonic transport aircraft
- Cross-Florida Barge Canal
- Clearcutting "areas of scenic beauty" in national forests
- Tennessee-Tombigbee Waterway
- Dredging and filling in wetlands
- Calvert Cliffs (MD) nuclear power plant

To correct another ambiguity of NEPA, Section 309 places the requirement to review EISs upon EPA because NEPA "does not assure that Federal environmental agencies will effectively participate in the decision-making process. It is essential that mission-oriented Federal agencies have access to environmental expertise in order to give adequate consideration to environmental factors." (Sen. Rept. No. 91-1196, 91st Cong., 2d Sess. 43, 1970) Consequently, EPA has reviewed most of the approximately 20,000 draft and final EISs produced since the passage of NEPA.

Section 309 confers upon EPA broad review responsibilities for proposed federal actions. (See Highlight C.) The EPA Administrator has delegated responsibility of national program manager to the Office of Federal Activities (OFA), and to the ten EPA Regional Administrators for review of regional specific actions. OFA has developed a set of criteria for rating draft EISs. The rating system provides a basis upon which EPA makes recommendations to the lead agency for improving the draft. If improvements are not made in the final EIS, EPA may refer the final EIS to CEQ. (See

HIGHLIGHT C: Materials Which EPA Reviews Under Section 309 Authority

- Proposed legislation
- Proposed regulation
- Environmental assessment (EA)
- Environmental impact statement (EIS), draft and final
- Any proposal that the lead agency maintains does not require an EIS but that EPA believes constitutes a major federal action significantly affecting the environment so as to require an EIS.

sections on **The National Environmental Policy Act** and **Referrals**, below.)

Figure 1: EPA's Criteria for Sec. 309 Review of Impact Statements

Rating Environmental Impacts:
LO--Lack of Objections
EC--Environmental Concerns--Impacts identified that should be avoided. Mitigation measures may be required.
EO--Environmental Objections--Significant impacts identified. Corrective measures may require substantial changes to the proposed action or consideration of another alternative, including any that was either previously unaddressed or eliminated from the study, or the no-action alternative).
Reasons can include:
- o violation of a federal environmental standard;
- o violation of the federal agency's own environmental standard;
- o violation of an EPA policy declaration;
- o potential for significant environmental degradation; or,
- o precedent-setting for future actions that collectively could result in significant environmental impacts.

EU--Environmentally Unsatisfactory--Impacts identified are so severe that the action must not proceed as proposed. If these deficiencies are not corrected in the final EIS, EPA may refer the EIS to CEQ
Reasons, in addition to impacts identified, can include:
- o substantial violation of a federal environmental standard;
- o severity, duration, or geographical extent of impacts that warrants special attention; or,
- o national importance, due to threat to national environmental resources or policies.

Rating Adequacy of the Impact Statement:
1 (Adequate)--No further information is required for review.
2 (Insufficient Information)--Either more information is needed for review, or other alternatives should be evaluated. The identified additional information or analysis should be included in the final EIS.
3 (Inadequate)--Seriously lacking in information or analysis to address potentially significant environmental impacts. The draft EIS does not meet NEPA and/or Section 309 requirements. If not revised or supplemented and provided again as a draft EIS for public comment, EPA may refer the EIS to CEQ.

(See **Selected Publications**, below: EPA's ***Policy and Procedures for the Review of Federal Actions Impacting the Environment***)

Annually, OFA and its regional counterparts review about 450 EISs and some 2000 other actions (see **Figures 1 and 2**). Among the variety of proposed actions that may be reviewed, besides that for which an agency provides an impact statement, are: legislation proposed by a federal agency; a proposed agency regulation; the renewal of an action originally approved before the enactment of NEPA; a proposal for which an agency has determined that no impact statement is needed, whether or not the agency has published a Finding of No Significant Impact

(FONSI); and, an action that is actually a segment of either a program or a reasonably expected succession of actions that could result in a cumulative negative impact on human health or welfare or the environment.

In addition to conducting environmental reviews, OFA develops guidance materials and provides training courses on NEPA and Section 309 requirements for EPA regional staff, and promotes coordination between EPA offices and other federal agencies.

THE NATIONAL ENVIRONMENTAL POLICY ACT AND CEQ

The National Environmental Policy Act (NEPA, 42 USC 4321 et seq.) was enacted on January 1, 1970 in recognition of the widening influence on the human and natural environment that individual federal agency actions can exert. With its stated purpose (see **Highlight D**) and with heightened public awareness of environmental quality questions, NEPA makes its goals and policies "supplemental to those set forth in existing authorities of **Federal agencies**" (NEPA, Section 105). In this way, the agencies' authorizing statutes were amended to include NEPA requirements.

Title I of NEPA requires the federal government to use all practicable means to preserve and maintain conditions under which human beings can coexist with the natural world in productive harmony. Section 102 directs federal agencies to lend appropriate support to initiatives and programs meant to anticipate and prevent degradation of world environmental quality. Further, this section requires federal agencies to incorporate environmental considerations in their decision-making, using a systematic, interdisciplinary approach.

HIGHLIGHT D: The Purposes of NEPA

The purposes of this Act are: To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality.

(PL 91-190, 42 *USC* 4321 et seq.)

Title II of NEPA establishes the Council on Environmental Quality (CEQ, or the Council). Two months after enactment of NEPA, the President issued Executive Order 11514 authorizing CEQ to guide the Sec. 102 process. Under this order, the Council immediately published guidelines, followed in 1978 by regulations (40 CFR Parts 1500-1508) requiring all Federal agencies to issue NEPA regulations consistent with CEQ's. Advisory to the President, CEQ conducts studies, prepares the annual Environmental Quality Report to Congress, and reviews EISs. Moreover, CEQ mediates interagency disputes concerning environmental analyses of matters of national importance. (See **Referrals** section, below.)

As evidence of compliance with the NEPA Section 102 provisions for a proposed major action that could significantly affect the environment, CEQ requires the lead agency to prepare a

detailed written statement addressing NEPA concerns, i.e., an EIS (40 CFR Part 1501). The lead agency may first prepare an environmental assessment (EA), which is a concise public document (40 CFR Part 1501.3) that determines whether an EIS or a FONSI (40 CFR Part 1501.4(e)) should be prepared. An EA is not necessary, however, if the agency has decided at the outset to prepare an EIS.

For review, the lead agency provides the EIS to those federal agencies having statutory jurisdiction or special expertise, as well as to appropriate other federal, state, and local agencies; Indian tribes, when the proposed action might impact tribal lands; and, the interested or affected public (40 CFR Part 1503.1). Once the EIS is final, the lead agency must file it formally, simultaneously making it available to the public, together with the reviewers' comments and the lead agency's responses to those comments (40 CFR Part 1506.9). The CEQ regulations designate EPA the official recipient of all final EISs, which responsibility the EPA Administrator delegates to OFA.

REFERRALS TO THE COUNCIL ON ENVIRONMENTAL QUALITY

The "predecision referrals" provision (40 CFR Part 1504) enables any federal agency under NEPA to refer another agency's final EIS to CEQ during the 30-day waiting period before a lead agency can proceed with the action. On the other hand, Section 309 authorizes EPA to refer to CEQ a broader range of federal activities, not only actions for which EISs are prepared. The CEQ regulations (40 CFR 1504.1(b)) implement Section 309 of the Clean Air Act, acknowledging that EPA has been assigned more extensive review and referral authority than the other agencies (see Highlight C).

Within 25 days after the lead agency has made the final EIS available to the public, the referring agency must provide early notification to that agency about its intention, and make its referral in writing to CEQ. The lead agency, once it has received written notification from CEQ, is to respond in writing within 25 days. During that same period, other agencies and the public may submit written comments to CEQ. Then CEQ may publish Findings and Recommendations; mediate between the disputing agencies; hold public meetings or hearings; refer irreconcilable disputes to the Executive Office of the President for action; or, conclude either that the issue is not of national importance or

Figure 2: EPA'S REGIONAL SECTION 309 REVIEWERS

REGION 1 : (617) 565-3422
Office of Environmental Review
JFK Federal Bldg., Room 2203
Boston, MA 02203

REGION 2 : (212) 637-3804
Envir. Planning & Protection
290 Broadway
New York, NY 10007-1866

REGION 3 : (215) 814-2995
Envir. Programs Branch
841 Chestnut Street
Philadelphia, PA 19107

REGION 4 : (404) 562-9611
Office of Envir. Assessment
100 Alabama Street, SW
Atlanta, GA 30303

REGION 5 : (312) 886-7342
Federal Activities program
77 West Jackson Blvd.
Chicago, IL 60604-3507

REGION 6 : (214) 665-7481
Office of Planning & Coordination
1445 Ross Avenue, Suite 1200
Dallas, TX 75270-2733

REGION 7 : (913) 551-7148
Environmental Review
726 Minnesota Avenue
Kansas City, KS 66101

REGION 8 : (303) 312-6728
Ecosystem Protection Program
999 18th Street, Suite 500
Denver, CO 80202-2466

REGION 9 : (415) 744-1584
Office of Federal Activities
75 Hawthorne Street
San Francisco, CA 94105

REGION 10 : (206) 553-6918
Office of Ecosystems and Communities
Attn: ECO-088
1200 Sixth Avenue
Seattle, WA 98101-1128

that insufficient information has been submitted upon which to base a decision.

In the time since the referral process was formally established in 1973, agencies have referred a total of 24 proposed federal actions to CEQ. Of these, EPA was responsible for 15, of which one was referred jointly with the Department of the Interior (DOI). (See **Figure 2** for EPA regional environmental review offices.) So far, in no case has CEQ made a formal referral to the Office of the President. Most often, CEQ has issued Findings and Recommendations. In a few cases the lead agency has withdrawn the proposal, and in three cases CEQ determined that the issue was not a matter of national importance.

In 1989, CEQ upheld EPA's Section 309 referral authority. At issue was a DOI Bureau of Reclamation proposal to renew long-term water contracts for irrigation operations of the Friant Unit in the Central Valley Project of California. The reason for referral was that no EIS had been prepared on the contract renewals, which individually and in the aggregate were likely to result in unsatisfactory environmental effects. In response, DOI questioned EPA's right to challenge the agency's decision that no EIS was needed. In rejecting that argument, CEQ established a precedent, that is, affirmed that EPA may identify a major federal action significantly affecting the environment, even though the lead agency disagrees.

SELECTED PUBLICATIONS

Caldwell, Lynton K., Science and the National Environmental Policy Act; Redirecting Policy Through Procedural Reform. University of Alabama Press, c1982.

Congressional Record, vol. 186, p. S-20602 (Dec. 18, 1970).

Healy, Martin, "The Environmental Protection Agency's Duty to Oversee NEPA's Implementation; Section 309 of the Clean Air Act," Environmental Law Reporter, 3 ELR 50071 (1973).

Liroff, Richard, "The Council on Environmental Quality," Environmental Law Reporter, 3 ELR 50051 (1973).

Policies and Procedures for the Review of Federal Actions Impacting the Environment. U. S. Environmental Protection Agency, Office of Enforcement, Office of Federal Activities, Pub. No. 1640 (rev. 1984).

Procedures for Implementing the Requirements of the Council on Environmental Quality on the National Environmental Policy Act. U. S. Environmental Protection Agency, 40 CFR Part 6.

Rand, Sally and Tawater, Mark Steven, Environmental Referrals and the Council on Environmental Quality, Washington, D. C., Environmental Law Institute, 1986.

Regulations For Implementing the Procedural Provisions of the National Environmental Policy Act. U. S. Executive Office of the President, Council on Environmental Quality, 40 CFR Parts 1500-1508 (reprint, as of July 1, 1986). Contents include: the National Environmental Policy Act of 1969, as amended in 1975; the Clean Air Act, Section 309; and, Executive Order 11514, as amended by Executive Order 11991.

Senate Report No. 91-1196, 91st Congress, 2nd Session, p. 43 (1970).

RECEIVED
REGIONAL EXPRESS
MAY 19 2003
PROJ NAME I-90
CONTRACT# 3282-2032
DC CODE#

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
WASHINGTON HABITAT BRANCH OFFICE
510 Desmond Drive SE/Suite 103
LACEY, WASHINGTON 98503

May 19, 2003

Andrea Tull
Sound Transit
Central Puget Sound Regional Transit Authority
Union Station
401 South Jackson Street
Seattle, Washington 98104-2826

Re: Draft Environmental Impact Statement for the I-90 Two-way Transit and HOV Operations Project

Dear Ms. Tull:

Thank you for the opportunity to review the Draft Environmental Impact Statement (DEIS) for the I-90 Two-way Transit and High Occupancy Vehicle Operations Project. The project alternatives described in the DEIS appear to reflect the full range of available options. At the present time, NOAA's National Marine Fisheries (NOAA Fisheries) is not in a position to provide specific comments on the alternatives because they lack project-design information that we need to analyze the potential effects on Puget Sound chinook. However, we look forward to reviewing details on the scope of the preferred project alternative and the analyses of its effects to listed species.

A-22

Should you have any questions would like to discuss the project further, feel free to contact either Mike Grady at michael.grady@noaa.gov or 206.526.4645 or Bill Leonard at bill.leonard@noaa.gov or 360.753.9887.

Thank you for your interest in protecting Puget Sound chinook.

Sincerely,

Steven W. Landino
Washington State Director

A-22 NOAA

See Response A-2. The Biological Assessment (BA) includes information on the potential effects of the preferred alternative on Puget Sound Chinook. The BA concluded that the project was determined to "may affect, not likely to adversely affect" Chinook salmon, Coho salmon and Bull Trout. The project was determined to have no effect on Bald Eagles. NOAA Fisheries concurred in these determinations on January 20, 2004 and the United States Fish and Wildlife Service concurred on February 24, 2004.

Puget Sound Clean Air Agency

Working Together For Clean Air

www.pscleanair.org

Ph 206.343.8800
1.800.552.3565
Fax 206.343.7522

110 Union Street
Suite 500
Seattle, WA 98101-2038

EXECUTIVE DIRECTOR
Dennis J. McLerran

BOARD OF DIRECTORS

TACOMA CITY COUNCIL, CHAIR
Bill Evans

KING COUNTY
Ron Sims, Executive

SEATTLE
Gregory J. Nickels, Mayor

KITSAP COUNTY
Jan Angel, Commissioner

BREMERTON
Cary Bozeman, Mayor

PIERCE COUNTY
John Ladenburg, Executive

SNOHOMISH COUNTY
Jeff Sax, Councilmember

EVERETT
Frank Anderson, Mayor

MEMBER AT LARGE
Janet Chalupnik

June 9, 2003

Andrea Tull, Project Manager
Sound Transit
401 S. Jackson Street
Seattle, WA 98104-2826

I-90 Two-way Transit and HOV Operations Draft EIS

Thank you for the opportunity to comment on the above referenced Draft Environmental Impact Statement. Improving high capacity transit and encouraging high occupancy vehicle trips are critical to maintaining and improving air quality in our region. The following information is provided to further assist you in your efforts to inform decision-makers and the public, ensure clean air, and comply with state and federal Clean Air and other environmental laws.

We note the positive project level conformity determination and that the project is included in the conforming Transportation Improvement Program and conforming Metropolitan Transportation Plan of the Puget Sound Regional Council. These findings indicate that the project will not cause any violations or increase the frequency or severity of existing violations.

We appreciate the increased attention to construction impacts and the detailed list of construction impact mitigation measures. Incorporation of these measures in the project specifications and requiring implementation by the construction contractor(s) will assist our efforts to protect public health. Incorporation could occur as part of the adoption of the Final Environmental Impact Statement, as part of the Record of Decision or possibly at some other point in the process. We look forward to discussing the timing of the adoption of these measures by Sound Transit and the Washington State Department of Transportation. A-23

We would appreciate more discussion of the differences in the construction impacts between the alternatives, given that Alternative R-8A costs three times as much as Alternative R-2B Modified. We would also appreciate additional discussion of the differences in traffic volumes on the general purpose lanes between the alternatives. A-24 A-25

We can provide additional information about our concerns and implementation of the mitigation measures. If you have questions, please call me at (206) 689-4085 or e-mail paulc@pscleanair.org.

Sincerely,

Paul D. Carr
Air Resource Specialist

RECEIVED
REGIONAL EXPRESS
JUN 12 2003
PROJ NAME
CONTRACT#
DC CODE#

PDC/lh

cc: Dave Kircher
John Anderson

A-23 Puget Sound Clean Air Agency

Sound Transit and WSDOT will comply with regional air quality regulations for construction emissions, and will incorporate mitigation measures as part of the Final EIS, and will address specific best management practices (BMP's) during final design and construction.

A-24

Alternative R-8A would require the largest amount of construction activity, and therefore has the potential to cause the greatest temporary impacts to air quality. A detailed quantitative analysis of construction related air quality impacts is not possible at this time and is of questionable value even under the best of situations. Construction impacts depend on the number and type of vehicles operating at one time in a given area. The impacts also depend on the type and amount of soil excavated, transported and left exposed. Wind speed and direction, as well as humidity and precipitation events will also influence the analysis. See Section 4.4.2.1 of the EIS for discussion of differences in construction impacts among alternatives and Section 4.4.3 for measures to minimize impacts.

A-25

Peak-hour traffic volumes and projections for the I-90 outer roadways are presented on Figures 3.2-3, 3.2-4 and 3.2-5 of the EIS. Additional discussion of the traffic patterns is provided in the Chapter 3 of the FEIS.

A-26 Puget Sound Regional Council

Your comment is noted.

Puget Sound Regional Council

PSRC

June 9, 2003

Ms. Andrea Tull
Project Manager
Sound Transit
401 South Jackson Street
Seattle Washington 98104

RE: I-90 Two-Way Transit and HOV Operations Draft Environmental Impact Statement

Dear Ms Tull:

The Puget Sound Regional Council appreciates the opportunity to comment on the I-90 Two-way Transit and HOV Operations Draft Environmental Impact Statement (DEIS). The Regional Council concurs with your "Purpose of Project" statement in the DEIS that focuses this project on transportation improvements to establish reliable and safe two-way transit and HOV operations on I-90 between Bellevue and Seattle, as these are essential components of the I-90 corridor improvements adopted in our long-range regional transportation plan, *Destination 2030*. Consistent with Sound Transit's Long Term Vision Plan, *Destination 2030* also supports the future conversion of the center lanes to high capacity transit. The I-90 corridor between Bellevue and Seattle provides a vital link for moving people and goods within and through the region. The Regional Council applauds the project sponsors for thinking creatively and framing the issues and alternatives associated with providing reliable and safe two-way transit and HOV operations on I-90 between Bellevue and Seattle.

A-26

This letter has two parts. The first provides comments on the DEIS. The second portion of the letter summarizes the process and steps to be taken to advance the I-90 Transit and HOV Operations project from a Candidate project to an Approved project in *Destination 2030*, a necessary step to be fully incorporated into the long-range plan and to be eligible for federal funding.

Comments on DEIS

The selection of the preferred alternative and the supportive material contained in the Final Environmental Impact Statement (FEIS) should:

1) Not preclude the facility from longer-term high capacity transit options
2) Mitigate impacts of the project on the shared use path
3) Provide additional analysis or discussion addressing:

   - Environmental Justice
   - Crash Estimates
   - Freight Movement

1011 Western Avenue, Suite 500 • Seattle, Washington 98104-1035 • (206) 464-7090 • FAX 587-4825

- Original 1976 Memorandum of Agreement
- Travel Time Estimates
- Air Quality
- Reference to VISION 2020

Following are our specific comments on the DEIS:

High Capacity Transit. We think it is reasonable to assume that well before the year 2025, the region will begin construction of some form of high capacity transit (HCT) across Lake Washington in the I-90 corridor. The Regional Council will work with and assist Sound Transit and the WSDOT to examine longer-range HCT system expansion needs and options as part of our own required update of the regional growth and transportation plans, ***Destination 2030*** and VISION 2020. Our continued collaborative work on system expansion planning is mentioned because of the strong public expectations for you to move forward with such future HCT decisions on I-90 in the next few years.

The FEIS should include a focused discussion of HCT in the analysis of 2025 and the potential for light rail being installed in the center lanes. The preferred alternative should be designed to help facilitate the transition of transit and HOV traffic from the center lanes to the outside roadways.

A-27

As part of this analysis, the FEIS should contain cross-section drawings and analysis that illustrates implementation of HCT in the center lanes and HOV in the outer roadway. The drawings should clearly show the ROW needs for light rail in the center lanes vs. other HCT options. If light rail requires less ROW than the proposed alternative configurations, then it may be possible to avoid significant mitigation and expense in implementing several of the alternatives.

Managed Lanes. The FEIS should address how the preferred alternative could accommodate and not preclude the potential future option to implement value pricing and other managed lanes options on this link, as part of the regional system.

A-28

Bike and Pedestrian Shared Use Path. The alternative selected should make every effort to mitigate or potentially enhance the travel experience of users of the shared bike and pedestrian path. If the Puget Sound region is to maintain its world-class quality of life we must continue to improve our nonmotorized connections, particularly at key points like crossing Lake Washington.

The FEIS should make it clear that for some alternatives, the shoulders on the majority of the exposed bridge (about 5,500 feet) would be 2 feet and on the approaches (2,000 feet in Seattle, and 1,000 on Mercer Island) the shoulder would be 4 feet wide. Currently, the diagrams in the summary documents simply show 4 to 10 foot wide shoulders.

A-29

The FEIS should include a discussion of the engineering constraints and costs associated with alternative ways of addressing issues associated with the shared path. The discussion should include an assessment of the potential to address these issues in this project and/or in a subsequent project.

A-30

A-27

An analysis of potential geometric synergies between an I-90 center roadway light rail or other HCT implementation and the addition of HOV lanes in the outer roadways was prepared in 2001 for WSDOT's SR 520 (Trans-Lake Washington) project. It is anticipated that light rail or other HCT modes would require a right-of-way width similar to the current I-90 reversible center roadway (e.g. 38-40 feet), once HCT maintenance and emergency access needs are factored in. With HCT in the center roadway, the ability to use existing center roadway space for outer roadway expansion to add HOV lanes would be constrained by the major structures (tunnels, lids, community bridges, and floating bridges) that are present throughout the I-90 corridor. As such, it would not be possible to avoid most of the proposed widening and other roadway modifications included in the Preferred Alternative (R-8A).

Since the HCT technology that would be implemented in the I-90 corridor has not been identified, it is not feasible to provide roadway cross-sections that would show placement in the center roadway. HCT technology will be evaluated in preliminary planning for Phase II of *Sound Move*. See also Common Response CR-2: High Capacity Transit (HCT).

A-28

See Common Response CR-9: TDM/TSM.

A-29

The purpose of the proposed project is to improve regional mobility, while minimizing impacts to the environment and to other users and transportation modes. Table S-1 of the EIS presents the impacts to the shared-use pathway on the I-90 Bridges. The Figures in Chapter 2 of the EIS show the width of adjacent shoulders on the floating bridge. The pathway will remain in its existing location, and the existing 10-foot width will be maintained. With the proposed reductions in adjacent shoulder widths, the Preferred Alternative (Alternative R-8A) will include screening on top of the existing concrete traffic barrier to provide a total barrier height

The FEIS should analyze the potential to manage the travel lanes in a manner that benefits users of the shared path. For example:

- In options R-5 Modified and R-8A, could the westbound right lane be managed through traffic signalization and only used only when congestion on other lanes reached a certain level? A-31
- Is it possible to move the HOV to the inside lanes and operate the outside lanes for automobiles only? A-32
- Could traffic speed limits be varied based on congestion? A-33
- Could a solid, transparent barrier such as the one being installed on the Woodrow Wilson Bridge in Virginia (see *The Urban Transportation Monitor*, May 16, 2003) be used on the I-90 bridge? Such a device could potentially protect path users from the vehicle turbulence/debris and provide a more pleasing visual experience for both motorized and nonmotorized users of the bridge. A-34

Environmental Justice. The FEIS should address the potential for environmental justice implications associated with truck traffic being diverted from the bridge and potentially passing through other areas with disproportionately more minority or low-income populations. A-35

Crash Estimates. Crash estimates in the DEIS (page S-31) do not match those in the summary article in *Express Connections* (May 2003). It appears that the upper range of crash estimates has been dropped based on the application of "safety measures." If this is true, please clarify that distinction in the DEIS summary table for the FEIS. A-36

Impacts on freight movement/safety. The impacts of increased incidents due to reduced lane widths under R8A is not clear. The DEIS page 3.5-2 states that trucks are involved in 8% of all accidents, 6% of all injuries, and 17% of all severe injury accidents. This section goes on to say, "trucks are typically involved in a disproportionate rate in all categories of accidents, due to greater mass and stopping distances". The DEIS should clearly spell out the delay impact of increased incidents of freight/truck travel. A-37

Data on the number of trucks carrying flammable and hazardous material are unclear and appear contradictory. The DEIS states (p. 3.5-3) that 90 trips per day of trucks carrying flammable and hazardous materials would be affected under R8A. On page 3.5-2, the DEIS states that "flammable and hazardous truck containers comprise about 5% of total truck movements". The DEIS also mentions that 4,500 trucks use I-90 daily. Five percent of 4,500 is 225 flammable and hazardous truck trips. Which numbers are correct? An estimate should also be provided for the growth in flammable and hazardous truck trips in 2025. A-38

Original MOU. A good description of the original 1976 MOU is provided on page 1-10. The FEIS should discuss how each alternative deviates (or does not) from this MOU. A-39

Travel Time Estimates. Have crash and other incident delays been factored into travel time estimates? Data indicates (see, for example, *Economic Implications of Congestion*, NCHRP Report 463, TRB, 2001) that non-reoccurring delay can account for as much as half of urban congestion. On page 3.1-13, the DEIS states that the frequency of incidents under alternative A-40

of 72 to 96 inches to address wind buffeting, debris, and glare issues associated with the proximity of traffic. Other safety enhancements to the pathway on the HMH Floating Bridge will be investigated in subsequent design activities. These measures include rub rails and kick plates for the existing north railing, centerline striping on the pathway, speed limit signing, and signing to clarify rights-of-way between cyclists, pedestrians, and other users of the shared-use pathway. These design investigations will include consultation with representatives of shared-use pathway user groups.

A-30

See Common Response CR-3: Shared-use Pathway.

A-31

Mitigation TRAN-16 describes how lane controls could be used to open and close the outside lane in both directions. WSDOT has decided not to pursue time-of-day operation of the outside lane in both directions with the Preferred Alternative at this time. If this is proposed at a later date, it would have its own evaluation to document benefits and impacts in support of an operational change.

A-32

The HOV lanes for the Preferred Alternative would be the inside lanes of the eastbound and westbound outer roadways, which would provide a configuration consistent with the existing I-90 HOV lanes east to Issaquah.

A-33

Mitigation TRAN-2 describes how variable speed limit signs will be used to manage speeds in congested locations.

A-34

See Common Response CR-3: Shared-use Pathway.

A-35

See revised Section 3.5 Freight Movement of the FEIS concerning the routing of trucks carrying flammable materials and revised Section 4.10 Hazardous Materials for a risk analysis associated with the reroutes. If trucks are rerouted, the reroutes would occur on state and interstate freeways, not through neighborhoods.

A-36

See Common Response CR-8: Safety.

A-37

The average weekday delay per person by transportation mode is shown in Table 3.2-16 of the EIS. The calculated delay for general purpose traffic includes incident delay and can be applied to trucks as well as automobiles.

A-38

See Common Response CR-5: Flammable Cargo Routing Issues with Preferred Alternative R-8A.

A-39

See Common Response CR-1: Memorandum Agreement. All of the Alternatives, including the No Build Alternative, would be consistent with the MA. Alternative R-2B would provide two-way directional mode transit lanes in the center roadway. Alternatives R-5, R-5 Modified and R-8A would provide two-way directional mode transit lanes in the outer roadway.

A-40

See Common Response CR-8: Safety.

R8A more that doubles (123%). This causes a blocking incident "every other day", compared to every week or two for alternative R2B. How does this affect travel time?

A-40 cont.

Air Quality. The western edge of the project is located in the Duwamish maintenance area for particulate matter less than 10 microns in diameter (PM_{10}). As such, conformity to PM_{10} should be addressed.

A-41

A statement is made on page 4.4-2 that says, "The PSCAA and the Puget Sound Regional Council (PSRC) do not require an air quality modeling analysis for the emissions from roadway construction activities unless construction will continue for a period of time greater than five years." This requirement comes from the federal transportation conformity rule, not PSCAA or PSRC.

A-42

In August 2002, the Environmental Protection Agency determined that project-level conformity analyses should have a design year equal to the horizon year of the long-range metropolitan transportation plan, which in our region is 2030. The air quality analysis included in the I-90 Transit and HOV Operations DEIS has a design year of 2025. The air quality consultation partners in the central Puget Sound region have recommended that an analysis conducted prior to the August 2002 date could be "grandfathered" from the 2030 analysis year requirement, as long as the analysis was not reopened at a later date due to changes in the project. Additionally, some flexibility may be allowed for analyses conducted after the August 2002 date on a case-by-case basis. Our recommendation for the I-90 Transit and HOV Operations project is that the project sponsor either 1) demonstrates that the air quality analysis was performed prior to August 2002, or 2) if the analysis was performed after this date, provide documentation indicating that the project would not exceed emissions standards in 2030.

A-43

Table 4.4-2 combines the results of three alternatives into one table, which is somewhat confusing. Breaking each alternative out into separate tables would provide the reader a better understanding of the results.

A-44

VISION 2020. A statement is made on page 4.49 that says, "PSRC's primary planning document, *Destination 2030* was adopted on May 24, 2001 and replaces VISION 2020, which was adopted in 1990 (amended in 1993 and 1995)." *Destination 2030* does not replace VISION 2020; *Destination 2030* is the transportation element of VISION 2020, which is the long-range growth management, economic and transportation strategy for the region.

A-45

Information of Regional Council's Candidate/Approved Process

The following information addresses the steps to be taken to advance the I-90 Transit and HOV Operations project from a Candidate project to an Approved project in *Destination 2030*.

- **Background.** In May 2001, the Puget Sound Regional Council adopted a new regional transportation plan – *Destination 2030*. This plan included guidance for capacity investments that categorized all regionally significant improvements as either Candidate or Approved (please refer to Guidance for Major Capacity Investments for a more detailed explanation of these distinctions). The I-90 Transit and HOV Operations Project is included in *Destination 2030* as a candidate project. Candidate projects must

A-46

A-41

A qualitative analysis of the projects potential impact on the Seattle-Duwamish PM_{10} non-attainment area has been added to the Final EIS.

A-42

Statement regarding the modeling of construction activities has been corrected to cite the federal transportation conformity rules.

A-43

As noted in the letter dated June 26, 2003, FHWA has concurred with Sound Transit and the Washington State Department of Transportation's (WSDOT) determination that the Final EIS for the I-90 Two-Way Transit and HOV Operations project should continue to use the same design year (2025) for the air quality analysis that was used to prepare the Draft EIS. The reasons for this determination are discussed in the attached letter. The FHWA letter can be found in Appendix F – Agency Correspondence.

A-44

Throughout the EIS, information for each of the alternatives has been summarized in a single table in order to allow for quick and easy comparisons among the various alternatives.

A-45

Your comment is noted.

A-46

Thank you for providing information on the Puget Sound Regional Council's Candidate/Approved process. Sound Transit is prepared to work with PSRC, as necessary and appropriate, in this process as the I-90 Two-Way Transit and HOV Operations project moves toward completion of the NEPA and SEPA environmental process, and the selection of a final preferred alternative and Federal Highway Administration (FHWA) Record of Decision (ROD).

satisfactorily address Approved project criteria before being designated as Approved in *Destination 2030*.

- **Process.** *Destination 2030* includes a policy that enables the Executive Board to authorize a change in status of regionally significant projects from Candidate to Approved. Listed below is a summary of the requirements identified in the "Guidance for Major Capacity Investments" for moving a project from Candidate to Approved status.

  1. Regional Council staff review and determine consistency of the project's final preferred alternative with *Destination 2030* policies.
  2. Sponsor provides documentation for completed benefit cost analysis.
  3. Environmental documentation is completed and submitted with sufficient detail as to the final nature, character, components or design of the given project or program to determine regional policy consistency.
  4. Sponsor satisfactorily addresses any other planning requirements, which might have been specified by the Regional Council's Executive Board for a given project.
  5. Sponsor submits financial plan demonstrating project feasibility by showing how the entire corridor project or its individual project components are to be funded.
  6. The project's final preferred alternative is reviewed for consistency with the current plan air quality conformity analysis; a new air quality plan conformity determination may be required.

When a Candidate project meets the above requirements, the project sponsor(s) may request the Regional Council to change the project and associated supporting projects to Approved status.

A-46 cont.

In conclusion, the Regional Council would like to again thank the study team for their commitment to this project. If you have questions about our comments, please call me at (206) 464-7134 or Eli Cooper, Director of Transportation Planning at (206) 464-7122.

Sincerely,

Norman a. Abbott

Norman Abbott
Environmental Officer

A-47

A-47

Your comment is noted.

King County
Ron Sims
King County Executive
516 Third Avenue, Room 400
Seattle, WA 98104-3271
206-296-4040 206-296-0194 Fax
TTY Relay: 711
www.metrokc.gov

RECEIVED
REGIONAL EXPRESS
JUN 10 2003
PROJ NAME
CONTRACT#
DOC CODE#

June 9, 2003

Ms. Andrea Tull, Project Manager
Sound Transit
401 South Jackson Street
Seattle, WA 98104-2826

Re: Draft EIS on I-90 Two-Way Transit and HOV Operations

Dear Ms. Tull:

King County is pleased to present comments to Sound Transit on the I-90 Two-Way Transit and HOV Operations Draft EIS. Metro staff and officials have been deeply involved over the past few years in the process of reviewing and helping in the development of the alternatives. We agree that any alternative selected should meet the purpose and need statement for the project: "Improve regional mobility by providing reliable and safe two-way transit and HOV operations on I-90 between Bellevue and Seattle, while minimizing impacts to the environment and to other users and transportation modes." We believe the Draft EIS presents a fair and reasonable evaluation of the alternatives. A-48

Technical comments on the DEIS are attached on the following page. We would ask that our technical issues be addressed in the FEIS. King County's greatest concern, however, is with the policy issues that flow from the selection of a preferred alternative and the implications for future High Capacity Transit (HCT)/Light Rail across the I-90 Corridor.

The 1976 Memorandum Agreement called for two lanes on the facility to be permanently committed to transit use and for the facility to be designed for possible conversion to a fixed guideway. Both Destination 2030 and the Sound Move Long Range Vision call for high capacity transit/light rail across the I-90 corridor. However, final decisions on that choice will be part of the Phase II plan for Sound Transit. In the meantime, the preferred alternative should not preclude and indeed, should facilitate, the eventual conversion of the center lanes to HCT/light rail use. A-49

King County is an Equal Opportunity/Affirmative Action Employer and complies with the Americans with Disabilities Act

A-48 King County

Your comment is noted.

A-49

See Common Response CR-2: High Capacity Transit (HCT).

Subsequent to the decisions on this project, King County would suggest that the parties continue an analysis of future HCT/light rail use on I-90. Included in that review would be more detailed analysis of the technical requirements for light rail conversion, including an assessment of possible joint bus/rail operations. I-90 also has been identified as a potential candidate for High Occupancy Toll (HOT) lane application. A decision on whether to move forward with a HOT lane facility on I-90 should be done in the context of Sound Transit Phase II planning, given that short term HOT lane use could complicate a longer range conversion to HCT/light rail.

Thank you again for providing the opportunity to comment. We look forward to the FEIS and the eventual implementation of a project alternative.

Sincerely,

David Hopkins
Regional Transit Manager, King County Executive Office

Enclosure

cc: The Honorable Ron Sims, King County Executive
King County Councilmembers
Sound Transit Boardmembers
Joni Earl, Sound Transit Executive Director
The Honorable Alan Merkle, Mayor, City of Mercer Island
The Honorable Connie Marshall, Mayor, City of Bellevue
The Honorable Greg Nickels, Mayor, City of Seattle
Doug McDonald, Secretary, Washington State Department of Transportation
Harold Taniguchi, Director, King County Department of Transportation (KCDOT)
Rick Walsh, General Manager, Transit Division, KCDOT
Eric Gleason, Manager of Service Development, Transit Division, KCDOT
Ron Posthuma, Assistant Director for External Affairs, KCDOT
Victor Obeso, Supervisor of Service Planning, Transit Division, KCDOT
Gary Kriedt, Environmental Planner II, Transit Division, KCDOT

A-49 cont.

A-50

A-50

Your comment is noted.

COMMENTS ON DEIS

King County is concerned with the reliability for transit operations of using outside shoulder lanes for buses, as would occur with the R-5 alternatives. A-51

The level of bus service described for the reverse commute market seems low. With two way transit service, Metro would run service levels comparable to the traditional commute direction.
The DEIS could be underestimating the potential for increased transit ridership across the lake in 2025. A-52

We would suggest that Section 3.1.1.2 (Future Conditions) should note that the provision of transit/HOV lanes in both directions on I-90 would facilitate the conversion of one-way peak direction routes to two-way, allowing a better balance between the number of eastbound and westbound trips with a minimal increase in service hours. A-53

The financial impacts of delays in bus operations should be discussed in the EIS. Any delays to bus operations not only affect passenger capacity and ridership, but also result in real dollar costs to the public. A-54

The discussion of transit frequency and delays across I-90 appears to only consider in-service coach operations. Metro has a significant number of buses deadheading across I-90 in the AM and PM peaks -- approximately 50 to 60 during each 3-hour peak. Most of these deadheading coaches are operating in the off-peak direction (eastbound in the morning and westbound in the afternoon). Although delays to these buses do not directly affect transit passengers, any delay in deadheads has an impact on bus schedules and the peak-period capacity of the system, as well as increasing the cost to the public of operating the system. The discussion of existing conditions and the impacts of each alternative should be revised to reflect the impact on deadhead speed and reliability. A-55

In the discussions on Transit Reliability, it should be noted that King County Metro Transit does not consider a bus to be late when it is less than 5 minutes behind schedule. Statistics on the number of trips on schedule should reflect this definition. A-56

Some of the alternatives worsen the LOS at Airport Way's intersections with 4th and 5th Avenues. It's not clear whether traffic backups on Airport Way at 4th Avenue are considered in calculating the LOS at 5th Avenue & Airport Way. Degraded LOS at these intersections would have an impact on transit operations, both for coaches leaving and entering I-90, particularly during tunnel closure for light rail construction, and for trolley and diesel coaches deadheading to and from Atlantic, Central, and Ryerson Bases. The EIS should discuss these impacts and their costs to the transit system, and mitigation should be proposed. A-57

A-51

The Preferred Alternative R-8A would locate transit operations on the inside shoulders.

A-52

The existing peak direction transit service on I-90 is almost three-times higher than the reverse peak direction. In this sense, the service provided to reverse peak riders is disproportionately low compared to overall person demand in that direction. For 2005 and 2025, we used service level increases included in the most current PSRC models that reflect the service plans of Sound Transit and King County. Based on the DEIS findings, it would be reasonable to consider additional reverse-peak direction service to meet that growing market. The large number of deadheading buses operating in that direction might offer scheduling opportunities for increasing transit service levels.

A-53

Your comment is noted. A change has been made in the FEIS text under Section 3.1.2.2 Transit Reliability. Section 3.1.1.2 describes only the future condition under No Build conditions.

A-54

The DEIS discusses the impacts on transit reliability and bus operations. The FEIS includes additional background on deadheading buses that are also affected by reliability issues. There is no direct way to determine all of the financial impacts of delays in bus operations for each alternative. For the purpose of the FEIS, it is important to consider the implications of delays to bus service on a qualitative basis. Delays and longer travel times result not only in passenger-minutes of delay, but also increased transit operational costs, both for in-service buses and for "deadheading" buses (out of service buses operating between a transit base and the start/end of service). Longer travel times caused by congestion have several cost components, only some of which can be readily calculated, including the cost of service time and the cost of new equipment.

The current hourly operational costs are approximately $100/ hour. To add one additional transit trip between Seattle and Bellevue, including time to and from the transit base, would require a minimum of 2-1/2 service hours. For a PM peak period trip, provided 256 days per year, the cost is estimated at $64,000 per year, in 2004 dollars. The majority of I-90 service would use an articulated hybrid bus, which based on recent 2004 purchases by Metro cost $645,000. Spare buses to provide additional service may or may not be available. Lead times to purchase additional buses are lengthy.

When significant congestion occurs which increases travel time beyond the time allocated in the schedule for a particular transit trip, this leads to off-schedule service with resulting frustration and a non-quantifiable number of riders choosing to no longer use transit. This results not only in lost revenues to transit agencies; it can also result in increased congestion as those riders choose to drive their cars.

A-55

Delays to deadheading buses do translate to costs for additional labor and fuel. During the 3-hour PM peak period there were 69 deadheading buses in the westbound direction; the AM peak period has 54 eastbound and 2 westbound buses. Information on deadheading buses has been added to the FEIS.

A-56

Comment noted and sentence clarifying KCM late policy has been added to Section 3.1.1.1 Transit Reliability of the FEIS.

A-57

The intersection analysis was conducted with the Synchro software, which looks at intersection operations as a network. The program estimates vehicle queuing and flags conditions where queues at one intersection back up into an upstream intersection. The intersections cited will in fact have queue-spillback problems in 2005 and 2025, for both the No Action and Build alternatives. Some additional text is added to the FEIS in Section 3.3 addressing the issues raised in the comment.

The DEIS also mentions that intersection mitigation proposed for the stadium/SODO areas under the R-8A alternative might not be acceptable to the City of Seattle. The FEIS should include a mitigation alternative that will be accepted by the City and that would lessen the adverse impacts on bus operations in the vicinity of the Metro bases. A-58

Prior to the development of the DEIS, a R2/R8 hybrid was proposed for evaluation. However, the DEIS does not contain any analysis of this alternative. The FEIS should discuss why this alternative was screened from detailed review. A-59

Any alternative selected must maintain at a minimum a ten-foot wide bike path across the Homer Hadley bridge. The safety for bikers and walkers from the loss of much of the vehicle shoulder adjacent to the bike path under the R-8A alternative should be assessed in more detail. A-60

The DEIS shows significant reductions in congestion for the R-8A alternative. How was the issue of "induced demand" assessed and factored in to the traffic modeling for all the alternatives? A-61

The DEIS notes that trucks carrying flammable materials will no longer be able to use I-90 to cross Lake Washington with the R-8A alternative due to decreased lane widths on the outer roadway and in the tunnel. It also notes that the fire suppression systems are not installed on the center roadway. Would the lane widths on the center roadway be sufficient to accommodate trucks carrying flammable materials? And if so, what would be the cost of retrofitting the tunnels and lid to include fire suppression facilities as a possible mitigation measure for loss of access to the outer roadways? A-62

One of the potential mitigation measures for alternative R-8A (TRAN 16) suggests conversion of the outer HOV lane to general-purpose use in the peak direction. The effects of such a time of day conversion on HOV's entering the freeway on Rainier Ave. eastbound in the AM peak and entering from Bellevue Way westbound in the AM peak, and having to weave to the center roadway, should be assessed. A-63

A-58

The FEIS includes revised traffic analyses and mitigations at these locations that were reviewed and acceptable with the City of Seattle.

A-59

See Common Response CR-4: Hybrid Alternative.

A-60

Your comment is noted. None of the proposed alternatives would decrease the width of the shared-use pathway. See also Common Response CR-3: Shared-use Pathway.

A-61

See Common Response CR-6: Congestion.

A-62

The foam sprinkler systems present in the eastbound and westbound outer roadways are not provided for the center roadway. Re-routing trucks to the center roadway is not currently contemplated due to weaving concerns that would be created in the outer roadways at either end of the center roadway.

A-63

Time-of-day operation of Alternative R-8A should not be confused with the hybrid options for Alternative R-2B discussed in Chapter 5 of the DEIS. With the Preferred Alternative, the center roadway would continue to operate in a reversible fashion to serve only peak-direction travel. The time-of-day operation would respond to off-peak period operations concerns by providing wider outside shoulders on the outer roadways during off-peak periods. The Preferred Alternative also would provide a new direct ramp connection from Bellevue Way onto the westbound outer roadway HOV lane, but this could be closed with time-of-day operation. There would be no preferential treatment for reverse-

peak direction transit or carpools during the off-peak periods with the Alternative R-8A time-of-day operation.

This operation is different from the hybrid option referred to in Chapter 5.3.1.1, which would combine two-way operation of the center roadway with a fourth outer roadway (GP) lane. That option would experience the referenced weaving maneuvers to and from the center roadway at Rainier Avenue. (At Bellevue Way, Alternative R-2B provides for two-way direct access to and from the center roadway). A second hybrid option described in the same discussion would make the fourth outer roadway lane an HOV lane, which would eliminate the need for weaving.

08/10/03 TUE 07:50 FAX 1 206 398 5215 RTA 001
JUN. 9. 2003 3:03PM PORT OF SEATTLE NO. 243 P. 2

Port of Seattle

June 9, 2003

Ms. Andrea Tull, Project Manager
Sound Transit, Regional Express Department
Union Station
401 S. Jackson St.
Seattle, WA 98104-2826

Re: I-90 Two-Way Transit and HOV Project

Dear Ms. Tull:

Thank you for the opportunity to review and comment on the Draft Environmental Impact Statement (D-EIS) for the projects proposed for the Interstate 90 (I-90) Two-Way Transit and HOV Project. Our goals in this regard include both enhancements to the regional transportation system and improvements to freight mobility.

It is important that the selected alternative should maintain or enhance capacity of the highway system. Much of our passenger base (either to the airport or cruise ship terminals), and cargo volumes, use the Interstate 90 corridor to reach Port facilities. These trips have origins or destinations at the eastside of Lake Washington, in eastern King County, or in eastern Washington State. Our customers rely on smooth traffic flows to perform their business and personal duties. Good transportation is a critical component of our regional economy. A-64

Regarding freight mobility specifically, I would echo the general comments noted above. Additionally, we have reviewed the alternative plans with regard to our container and cargo traffic. Of some concern is the mitigation for the narrowed lanes of Alternative R8A, and the resultant proposal to prohibit hazardous and flammable cargo through the I-90 tunnels in that configuration. Recognizing that mitigation may be required, we request further involvement in determining the appropriate and necessary mitigating solutions. We suggest reconsideration of off-peak traffic volumes and whether a full-time prohibition is warranted. Finally, since most of the cargo through our port terminals is not hazardous nor flammable, we cannot speak for the affected drivers nor operators. We recommend direct contacts to the terminal operators for the refined products, in order to contact the affected drivers and operators. A-65

Should you have questions regarding these comments please call me at 206-728-3778.

Sincerely,

Geraldine Poor
Program Planner, Seaport Strategic Planning and Policy

cc: Washington State Department of Transportation – Denise Ciero

U:\[illegible]\I90HOV.doc

A-64 Port of Seattle

Your comment is noted.

A-65

See Common Response CR-5: Flammable Cargo Routing Issues with Preferred Alternative R-8A.

City of Bellevue

Post Office Box 90012 • Bellevue, Washington • 98009 9012

June 9, 2003

Andrea Forsyth Tull
Project Manager
Central Puget Sound Regional Transit Authority
401 S Jackson Street
Seattle, WA 98104

RECEIVED
REGIONAL EXPRESS
JUN 1 0 2003
PROJ NAME_____
CONTRACT#_____
DC CODE#_____

VIA FACSIMILE AND FIRST CLASS MAIL

RE: I-90 Two-Way Transit and HOV Operations

Dear Ms Tull:

I have reviewed the Draft EIS for this proposal and believe that the document adequately addresses both an appropriate range of alternatives and their associated impacts in a very comprehensive and exhaustive manner. In addition, the Draft EIS appears to conform to the procedures of the State Environmental Policy Act. We look forward to rapid issuance of the Final Environmental Impact Statement.

A-66

Sincerely,

Richard N. Aarvig for Carol Helland

Carol Helland
SEPA Responsible Official

CC: Bernard Van De Kamp, Regional Projects Manager
Kris Liljeblad, Assistant Director, Transportation Planning

Department of Planning & Community Development • (425) 452-6864 • Fax (425) 452-5225 • TDD (425) 452-4636
Lobby floor of City Hall, Main Street and 116th Avenue SE

A-66 City of Bellevue

Your comment is noted.

City of Bellevue
Office of the Mayor • Phone (425) 452-7810 • Fax (425) 452-7919
Post Office Box 90012 • Bellevue, Washington • 98009 9012

May 19, 2003

The Honorable Ron Sims, Chair
Sound Transit Board of Directors
Office of the King County Executive
400 King County Courthouse , 516 Third Avenue
Seattle, WA 98104

Re: I-90 Two-Way Transit/HOV Project DEIS

Dear Executive Sims:

On behalf of the Bellevue City Council, I am writing to communicate our position concerning the Draft EIS for the I-90 Two-Way Transit/HOV Project—a critical component of our City's multi-modal *Regional Transportation Vision.*

First, we are very committed to the purpose of this critical regional project, supported by voters in *Sound Move,* to provide two-way transit/HOV operations on I-90 between Bellevue and Seattle without impacting other corridor users. After a careful comparison of the DEIS alternatives, it's clear that Alternative R8A—the option that would add new HOV lanes to the outer roadways remains the top performer. Alternative R8A will: A-67

1. **Move the most transit, carpool, and vanpool users** and do so while improving overall corridor traffic conditions. It will also mitigate current and future safety concerns. Improved Cross-Lake mobility is critical for meeting our region's ambitious economic and growth management plans, particularly those in the County's two most significant centers that directly benefit from the investment. We have a real opportunity to improve our area's livability by providing travelers within the corridor a measurably improved travel time—a real reduction in congestion upon project opening and in future years. A-68

2. **Maintain the 10' foot pedestrian and bicycle path**--this is an important facility that must be protected as part of the project. The I-90 Steering Committee has continued to uphold its commitment to provide optimal multi-modal travel in the I-90 corridor, including cyclists. We're delighted that this issue has been resolved by maintaining the path as existing (10 feet) and by providing new protective screening between the bike path and traffic. A-69

City of Bellevue offices are located at Main Street and 116th Avenue S.E.

A-67 Bellevue City Council

Your preference is noted.

A-68

Your preference is noted.

A-69

Your comment is noted. None of the proposed alternatives would decrease the width of the shared-use pathway.

3. **Incorporate safety features** - The R8A alternative has been subject to an exhaustive analysis of safety. The result is a package of safety improvements that would have a net effect of no change to the safety of the corridor as compared to the no-build alternative. A-70

4. **Prepare for High Capacity Transit .** As our region continues to grow, expansion of Sound Transit's High Capacity Transit (HCT) system to significant urban centers such as Downtown Bellevue, Overlake and Redmond will be essential. It is my understanding that Alternative R8A is the only option that creates the opportunity to build future HCT within the center lanes and in doing so, will also allow for adequate transit/HOV capacity to meet future travel demand. A-71

Thank you for the opportunity to comment on this critical project. The City of Bellevue looks forward to continued work on this project with a Preferred Alternative slated for selection this summer. We are committed to assisting Sound Transit and WSDOT in seeking additional funding for the project as each phase of implementation progresses.

Sincerely,

Connie B. Marshall, Mayor
City of Bellevue

cc: Bellevue City Council
Sound Transit Board of Directors
Agnes Govern, Sound Transit
Joni Earl, Sound Transit
Puget Sound Regional Council
Eastside Transportation Partnership

A-70

See Common Response CR-8: Safety.

A-71

See Common Response CR-2: High Capacity Transit (HCT).

CITY OF Clyde Hill

9605 NE 24th Street • Clyde Hill, Washington 98004-2141
425-453-7800 • Fax: 425-462-1936 • www.clydehill.org

RECEIVED
REGIONAL EXPRESS
JUN 16 2003
PROJ NAME E-90
CONTRACT# 3378-2032
DC CODE#

June 11, 2003

Andrea Tull
Project Manager, Sound Transit
401 South Jackson Street
Seattle, WA 98104

Dear Ms. Tull:

The City of Clyde Hill has, with interest, been monitoring the discussions and communications regarding the I-90 Two-Way Transit and HOV Project Draft Environmental Impact Statement. As has been stated succinctly by others, the City "...believes that improved mobility within this regional corridor that connects our county's most significant employment centers is critical for meeting our region's ambitious economic and growth management plans". However, as has been recognized and acknowledged, these changes in the I-90 corridor will affect the SR-520 corridor which corridor bisects the City of Clyde Hill. It is of significant concern to the City of Clyde Hill that the resulting impacts in the SR-520 corridor be fully evaluated and addressed, particularly with respect to noise, air quality, and safety.

A-72
A-73
A-74
A-75

We urge that our concern be addressed.

Very truly yours,

George S. Martin
Mayor

cc: City of Medina
Town of Yarrow Point
Town of Hunts Point
Village of Beaux Arts

A-72 City of Clyde Hill

The DEIS section on Cumulative Effects (4.16.3.4) describes the effects of I-90 improvements on SR 520 traffic. The traffic effects were documented to be small overall.

A-73

Alternative R-8A could shift a small volume of traffic (less than 1 percent) away from the existing SR 520 to I-90. Although a small amount of traffic could be shifted away, SR 520 would continue to operate at capacity during the peak hours. The operation of SR 520 at peak-hour capacity would result in similar peak-hour sound levels along SR 520 with or without this projected shift of traffic from SR 520 to I-90. In comparison, Alternatives R-1, R-2B, R-5 Restripe, and R-5 Modified would not measurably shift any traffic from SR 520 to I-90.

If SR 520 were to expand to six or eight lanes, traffic could be diverted from I-90 to SR 520. Traffic volumes on I-90 could be reduced by approximately 6 to 8 percent, which could reduce projected I-90 traffic sound levels by less than 1 dBA. Although a small amount of traffic could be shifted away from I-90, I-90 likely would continue to operate at capacity during the peak hours, which would result in similar peak-hour sound levels along I-90 with or without this projected shift of traffic under the cumulative development scenarios. With Alternative R-8A, trucks carrying flammable cargo may be prohibited on I-90, some of which would be diverted to SR 520 if rerouting was required.

See also Common Response CR-5: Flammable Cargo Routing Issues with Preferred Alternative R-8A and Common Response CR-9: TDM/ TSM regarding pricing.

A-74

A quantitative air quality impact analysis can not be performed for the Clyde Hill area, as the data specific to this region has not been collected by the Puget Sound Clean Air Agency. However, the SR 520 traffic volumes changes associated with the I-90 project have been estimated. Alternatives R-8A, R-2B and R-5 are expected to result in small changes

to traffic patterns, essentially shifting less than one percent of the general-purpose volume from SR 520 to I-90. If trucks carrying flammable cargo are restricted from using the Mt. Baker tunnel portion of I-90 with Alternative R-8A, this alternative would also shift approximately 120 trucks per day carrying flammable loads from I-90 to SR 520. It is unlikely that any of the I-90 alternatives will cause a measurable impact to the air quality of Clyde Hill or any other community along SR 520 as the changes to the existing traffic volumes are small.

See also Common Response CR-5: Flammable Cargo Routing Issues with Preferred Alternative R-8A.

A-75

Since the traffic effects were shown to be very small on SR 520, the effects on safety were not quantified. The FEIS documents safety effects of flammable cargo shifts to SR 520 with Alternative R-8A.

501 EVERGREEN POINT ROAD • P.O. BOX 144 • MEDINA, WA 98039-0144
TELEPHONE 425-454-9222 • FAX 425-454-8490 • POLICE 425-454-1332

RECEIVED
REGIONAL EXPRESS
MAY 30 2003
PROJ NAME
CONTRACT#
DC CODE#

May 28, 2003

Ms. Andrea Forsyth Tull, Project Manager
Sound Transit
401 S Jackson Street
Seattle, WA 98104

Dear Ms. Tull:

The City of Medina has reviewed the I-90 Two-Way Transit and HOV Operations Draft Environmental Impact Statement. The following comments were approved by the Medina City Council during the May 12, 2003 City Council meeting:

- Alternative R-8A will prohibit flammable loads on I-90 between I-5 and Island Crest Way due to reductions in lane and shoulder widths on the outer roadways through the Mount Baker Ridge Tunnels and Lid, and through the First Hill Lid. This prohibition is projected to divert a significant number of trucks daily to other regional routes, including SR-520. The DEIS states that decreased lane and shoulder widths result in a potential increase in the number of crashes. Diverting additional flammable loads to SR-520 and the Evergreen Point Floating bridge, which has no shoulder and minimum lane widths, is not an acceptable solution. An accident involving flammable or hazardous cargo on the Evergreen Point Floating bridge has the potential of becoming a major catastrophe. The limited analysis and information available relative to the impacts created by this diversion is not adequate when weighed against the potential for loss of life and property. A-76
- The estimated cost of Alternative R-8A does not appear to be cost-effective when compared to the limited mobility and operational benefits anticipated with this option. A-77
- The DEIS does not address adverse noise and air quality impacts associated with the diversion of diesel trucks to SR-520, which would be caused by Alternative R-8A. Emissions from diesel engines, known as PM 2.5, have been linked to numerous cardio-pulmonary diseases. SR-520 is adjacent to several residential areas in the cities of Clyde Hill, Yarrow Point, Hunts Point, Medina and Seattle. A-78 A-79
- Alternative R-2B Modified is the preferred option of the City of Medina. A-80

A-76 City of Medina

See Common Response CR-5: Flammable Cargo Routing Issues with Preferred Alternative R-8A.

A-77

See Common Response CR-10: Project Costs.

A-78

See Response A-73 for a discussion of the potential secondary and cumulative noise impacts on the SR 520 corridor.

A-79

It has been determined from truck counts along I-90 that approximately 60 trucks in each direction will be diverted to SR 520, for a total of 120 trucks per day. This represents a 4 percent increase in truck traffic, and 0.17 percent increase in total traffic volume. This is a very small increase and therefore, is not likely to produce a measurable affect on air quality.

A-80

Your preference is noted. See also Common Response CR-11: Why is Alternative R-8A the Preferred Alternative?

The City of Medina recognizes the purpose of the proposed Project to improve regional mobility by providing reliable and safe two-way transit and HOV operations on I-90 between Bellevue and Seattle. The City of Medina is not opposed to efforts that will improve regional mobility, however, any improvements that will increase or create adverse impacts to residential property adjacent to SR-520 will be closely scrutinized by the City of Medina. A-81

If you have any questions, please feel free to contact me at (206) 423-3368.

Sincerely,

Dan Becker
Mayor

Cc: Medina City Council
City of Clyde Hill
Town of Hunts Point
Town of Yarrow Point

P:\Letters\MAYOR\I-90 DEIS comments 05282003.doc

A-81

Your comment is noted. No to minimal impacts to residential property in Medina have been identified.

CITY OF MERCER ISLAND, WASHINGTON
9611 S.E. 36th Street • Mercer Island, WA 98040-3732
(206) 236-5300 • TDD (206) 232-9598
www.ci.mercer-island.wa.us

June 9, 2003

Ms. Andrea Tull
Project Manager
Sound Transit
401 South Jackson Street
Seattle, WA. 98104

RE: City of Mercer Island Comments on I-90 Two-Way Transit and HOV Operations Draft Environmental Impact Statement

Dear Ms. Tull:

Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS) for the I-90 Two-Way Transit and HOV Operations. As you know, Mercer Island is uniquely and disproportionately impacted by Interstate 90. This regional transportation facility is a vital link that moves almost 150,000 vehicles each day, but it also provides the only access to Mercer Island and literally cuts right through the heart of our community. Disruptions to local access and existing Town Center businesses and impacts to Mercer Island neighborhoods must be minimized. Access for the 65,000 vehicles with a Mercer Island origin or destination must be given due consideration. Any changes to this facility must be made with these factors in mind. A-82

We would like to reiterate our support for alternative R8A for the I-90 Two-Way Transit and High Occupancy Vehicle (HOV) project. After a careful performance comparison of the DEIS alternatives, it's clear that Alternative R8A remains the top performer. A-83

We believe that this alternative best meets the project objectives by improving travel time for transit and HOV in the non-peak direction. Alternative R8A provides the greatest reduction in delay time for transit and HOV, is the only alternative that provides an annual travel time savings, and is the only alternative that reduces daily hours of freeway congestion. A-84

Alternative R8A maintains the 10 foot multi-use bicycle-pedestrian pathway as a necessary commitment to multi-modal transportation along the I-90 corridor. A-85

Further, Alternative R8A is the most adaptable alternative in terms of compatibility for conversion of the I-90 center roadway to High Capacity Transit (HCT). A-86

Alternative R8A also maintains the commitments that were made in the 1976 memorandum Agreement which recognized the special access needs of Mercer Island. A-87

A-82 City of Mercer Island

Your comment is noted.

A-83

Your preference is noted.

A-84

See Common Response CR-6: Congestion.

A-85

Your comment is noted. See Common Response CR-3: Shared-use Pathway.

A-86

See Common Response CR-2: High Capacity Transit (HCT).

A-87

See Common Response CR-1: Memorandum Agreement.

Improvements to our major transportation corridors such as I-90 are essential to maintain mobility and the quality of life in the Puget Sound. However, regional infrastructure projects such as this can also have severe impacts on local residents during both construction and ongoing operations. Disruption of local access, noise, loss of business, and other construction impacts are examples of impacts that are impossible to fully mitigate, at least in the short-term.

In order to ensure that this project protects and sustains the quality of life we enjoy in Mercer Island, mitigation must be developed that adequately responds to the wide range of short-term and long-term impacts associated with this project. The distribution and use of mitigation funds in impacted communities should be proportional, targeted, and flexible to respond to the wide-range of complex impacts that cannot be fully mitigated in the short-term or completely foreseen. We specifically ask that you continually consult with the City of Mercer Island during the refinement and implementation of mitigation measures so that we may provide some local perspective and help ensure more effective mitigation. A-88

As you know, we previously submitted comments on the Transportation Discipline Report in the Preliminary DEIS. We have attempted to go through the DEIS thoroughly to examine where our comments have been addressed. We are concerned that many of the specific mitigation measures identified in the City's comments on the PDEIS do not appear to be specifically addressed in the DEIS or addressed at a level of detail that we feel is appropriate. Only the initial comment about the need for installation of temporary barriers along shoulders to provide room for emergency vehicles appears to be specifically addressed with the statement "to the extent it would be feasible, shoulders would be provided on the I-90 roadways during construction to facilitate passage of emergency vehicles during congested periods." The City would again offer these 16 specific comments, dated December 4, 2003, on the Transportation Discipline Report in the PDEIS and ask that they be incorporated as part of this comment letter. (See Attachment #1) A-89

Consistent with the City of Mercer Island Comprehensive Plan Policies Relevant to the Project Land Use, Transportation Elements (Appendix G, I-90 Two Way Transit and HOV Operations Draft EIS, pages G8-G10):

Policy 1.1, (Commute Trip Reduction, CTR) and Policy 8.2 (Ensure adequate levels of transit service linking Mercer Island to the rest of the region)

- The City would like to work with Sound Transit and Metro King County's Vanshare, Flex Car and custom bus programs to assist Mercer Island residents commute on and off the Island and access the existing bus stops on North Mercer Way. A-90

A-88

Sound Transit and WSDOT appreciates the City's concern about providing adequate mitigation, and the agency is committed to doing so for identified impacts as appropriate under SEPA and NEPA. Sound Transit will continue to consult with the City as the project's mitigation commitments are refined.

A-89

See Responses A-103 through A-117.

A-90

See Common Response CR-9: TDM/TSM.

Policy 1.3 (Transportation Systems Management)

- A traffic signal should be considered for the intersection / I-90 westbound on-ramp on 76th Avenue SE at North Mercer Way. A traffic signal was installed at this location during the original I-90 construction to eliminate right-of-way confusion at this intersection. A-91

Policy 3.3 (Traffic congestion from regional facilities)

- The City encourages coordination between Sound Transit and the Washington State Department of Transportation to synchronize traffic signals to improve efficiency of existing roadways and freeway ramps for local and regional access on and through Mercer Island. This is will be especially necessary during construction and as new Sound Transit services are added after construction is completed. A-92

Policy 9 (Minimize noise, air pollution from cross-lake transportation facilities and upgrade/improvement from existing facilities)

- The City requests that Sound Transit and WSDOT share information collected regarding air quality within, adjacent to the I-90 corridor and within I-90 tunnels, whenever that information is collected. A-93

Policy 10.1 (Open space preservation, park and trails development and well-designed public facilities):

- Existing mature landscaping on I-90 overpasses, lid, and sound walls should be replaced after completion of the I-90 Two Way Transit and HOV Operations construction. A-94

Additional comments regarding construction of the I-90 project include:

- Notify the City of Mercer Island Public Safety Department Dispatch at (206) 236-3500 of any planned and prolonged closures of the I-90 center roadway HOV and any access ramp restrictions. A-95
- Roadway lighting and street lighting in all tunnels, ramps and roadway be provided at all times, with no service disruption during construction. A-96
- Notify the City of Mercer of any utility relocations that are required for this project and new ramps constructed on Mercer Island. A-97
- Maintain access for emergency, fire, medical aid vehicles to respond to incidents on I-90 and respond to homes adjacent to ramps and the freeway during construction. A-98

A-91

The DEIS mitigation section (TRAN-23) identified a change in channelization that would help this unsignalized intersection under Alternative R-2B. A traffic signal could also provide relief at this location.

A-92

Your comment is noted.

A-93

The air quality data used for the DEIS was obtained from the Puget Sound Clean Air Agency's (PSCAA) monitoring stations. WSDOT typically uses data from PSCAA for air quality studies. No data was collected inside the I-90 tunnels. The City of Mercer Island may be able to obtain any additional air quality data directly from PSCAA.

A-94

No landscaping is proposed to be removed from I-90 lids, overpasses or above the sound walls. The only landscaping that would be removed would be within the median or along the roadway in areas the roadway is proposed for widening. If the existing mature landscaping in those areas can be successfully removed, stored during construction and then replanted within the narrower landscaped areas, the landscaping will be saved for replanting. Otherwise narrower sections will be replanted with appropriate material.

A-95

WSDOT will work closely with the City of Mercer Island during the final design and construction phases to ensure that the City stays informed about planned traffic revisions.

A-96

During the final design and construction WSDOT will work to minimize any service disruption to the extent possible.

A-97

During the final design phase WSDOT and Sound Transit will work closely with the City to identify any utility relocations that affect the City.

A-98

Maintaining access for emergency vehicles during construction will be part of the construction phasing strategy and temporary traffic control management plan. WSDOT routinely includes this in the construction contract and will make sure that special provisions for emergency access during construction are included in the contract for this project.

The City of Mercer Island also has the following questions:

- How will eastbound Mercer Island drivers exit the freeway in an R-5 modified configuration? A-99
- The range of vehicle speeds within the Center Roadway differs in the Transportation Discipline Report and the DEIS. Please clarify if a peak hour, period, daily average speed was used. A-100
- How will the new ramps proposed at 77th and 80th Avenue SE connect to the eastbound and westbound HOV lanes and function with existing Town Center District streets and intersections? A-101
- Will the level of service on I-90 ramps affect Mercer Island Growth Management Act concurrency and ability to develop? A-102

Thank you for an opportunity to comment on the Draft EIS for the I-90 Two-Way Transit and HOV Operations. We appreciate your continued commitment to providing a thorough analysis and a sound decision making tool. We will be following the SEPA process and related decision making for this project closely to ensure our concerns our adequately addressed. We look forward to seeing our detailed comments specifically addressed in the Final EIS. If you have any questions about the issues expressed in this letter please contact Gabe Snedeker or Nancy Fairchild at (206)236-5300.

Sincerely,

Richard Hart

Richard Hart, AICP
Development Services Director
City of Mercer Island

Attachment #1: Comments on Transportation Discipline Report

A-99

The eastbound exit ramps that are provided today at West Mercer Way, Island Crest Way, and East Mercer Way would remain in place with Alternative R-5 Modified. In addition, the center roadway ramps to 77th Avenue and Island Crest Way would remain operational and open to Mercer Island traffic. The exit maneuver would be similar to that experienced by general purpose traffic on I-405 before 1996, when the HOV lanes were on the outside, and exiting traffic merged into the HOV lane prior to the ramp.

A-100

The center roadway observed average speeds cited in the second paragraph on page 3.2-7 of the DEIS are the same as those in the first paragraph on page 6-13 of the Transportation Discipline Report.

A-101

The new ramps at 77th and 80th Avenue SE will provide transit- and HOV-only direct access exits from the proposed I-90 HOV lanes in the outer roadways to the Mercer Island Town Center District. The ramps will connect directly to the inside lanes of I-90, which will be designated HOV-only. With these ramps, weaving movements made by transit buses and other eligible HOV traffic exiting to the Mercer Island Town Center District will be eliminated, reducing congestion and improving safety in the I-90 outer roadway general purpose lanes. The existing ramps connecting 77th and 80th Avenues SE to the I-90 Express Lanes (center roadway) will remain in place, operating in a reversible mode similar to that which occurs today.

With the new ramps, transit and HOV would have direct access to Mercer Island city streets in both directions. The effects of these ramp connections at specific surface street intersections are expected to be minimal, as described in the 'Surface Street' section of the FEIS.

A-102

There are limited numbers of locations on Mercer Island that are impacted by any of the build alternatives. The EIS identifies selected

33756041_01agencies.P65

intersections that would benefit from improvements; either under the No Action or specific build alternatives. The new ramps themselves would have minimal impact on city streets and would not be expected to affect the City's growth management policies.

A-103

See Response A-98.

A-104

During the final design phase WSDOT will examine options for improving emergency access at this location.

A-105

Options for improvement fire hydrant markers will be evaluated during the final design phase.

I-90 Two-Way Transit and HOV Operations Project

Washington State Department of Transportation

SOUNDTRANSIT

Reviewer's Comments - Preliminary Draft Environmental Impact Statement

December 4, 2002

Comments By:

- *Richard Hart, Development Services Director*
- *Glenn Boettcher, Maintenance Director*
- *Ron Elsoe, Police Commander*
- *Greg Brown, Parks Manager*
- *Patrick Yamashita, City Engineer*
- *Jimmi Maulding, Maintenance Right of Way*
- *Nancy Fairchild, Transportation Planner*
- *Mercer Island Fire Department*

Reply Legend:
Agreed / Will Comply 1
Agreed / No Action Necessary 2
Will Clarify / Follow-Up 3
No Action Taken * 4
* Provide Justification/Rationale

09/19/03

		Transp. Discipline Report		
MERCER ISLAND FIRE DEPT. (MIFD)		Transp. 6-123	Narrowed shoulders may increase response times to I-90 incidents. Temporary barriers for construction should be placed to provide adequate room for emergency vehicles.	A-103
MIFD		Transp.	Improve emergency access at the eastbound ramp on the west end of Mercer Island at 60th Avenue SE (WSDOT facility below lid). Install an emergency light or priority warning system to inform drivers traveling westbound on I-90 that an emergency vehicle will be entering traffic.	A-104
MIFD		Transp.	Improve markings for fire hydrant and shut off valve locations on I-90 for emergency response.	A-105

GB		Transp.	Re-examine the Maintenance Agreement between the WSDOT and the City of Mercer Island regarding the turnback maintenance of the I-90 lid and trail vegetation. Clarify ownership of these areas and maintenance responsibilities.	A-106
GB		Transp.	During trail reconstruction, examine and repair root damage and areas where the asphalt has been displaced 0.7 inches (as identified in the current agreement).	A-107
GB		Transp.	Improve litter pick-up at I-90 on and off ramps and the North Mercer Way Park and Ride lot.	A-108
RE		Transp.	Identify where construction materials will be staged on Mercer Island. The City will have a number of large projects under construction south of I-90. Therefore, locations that were used for equipment, material staging and concrete batch plant during the original I-90 construction are no longer available on Mercer Island.	A-109
RE/PY		Transp.	Provide details for formal construction detours and mitigations if surface streets on Mercer Island will be affected. Sound Transit shall describe how they plan to discourage informal detours by I-90 drivers onto Mercer Island. Sound Transit, City and Police staff must discuss a mitigation plan if traffic congestion increases accidents or creates an unsafe situation on Mercer Island surface streets.	A-110
RE		Transp.	Provide details for traffic coordination at ramps, construction schedule and Sound Transit contact for drivers who call to report noise, broken windshields and similar complaints. The MIPD fielded many of these complaints during the original I-90 construction.	A-111
JM		Transp.	Provide information signs that instruct "Pedestrians Stay to the Right" to reduce/eliminate bicycle and pedestrian collisions and confrontations on the I-90 trail.	A-112
NF		Transp.	Implement a speed reduction program for bicyclists on the I-90 Pedestrian and Bicycle Trail. The draft report indicates that the trail will continue to serve a high percentage of bicyclists. Therefore, effort should be made to ensure that the "shared use" is safe for both bicyclists and pedestrians.	A-113
NF		Transp.	Define the construction detour routes for the I-90 Pedestrian and Bicycle Trail and possible informal detours that may be created by pedestrians and bicyclists on Mercer Island surface streets, particularly North Mercer Way and SE 24th Street.	A-114
NF		Transp.	If Sound Transit construction overlaps with private development in the Town Center District (south of I-90), Sound Transit and developers must coordinate the timing for road and ramp closures to ensure that access is provided for pedestrians, bicyclists and vehicles at all times.	A-115
NF		Transp.	Install a traffic signal (under Alternative R8A) which is expected to increase the delay at the unsignalized intersection of East Mercer Way and the I-90 westbound on/off ramp. As stated in section 7.3.4 of the Transportation Discipline Report, "A signal could be installed at this intersection to prevent I-90 westbound off-ramp queues from backing up onto the mainline. With a signal in place, the intersection would operate at LOS B during the 2025 PM peak hour, and the off ramp would have sufficient capacity for westbound queues."	A-116
RE		Transp.	Coordinate with Mercer Island Police, Fire, Maintenance, Parks and Recreation, and the Development Services Group regarding any necessary permits, construction impacts and mitigation on Mercer Island prior to beginning construction.	A-117

A-106

During the final design phase WSDOT will work closely with the City to examine the maintenance agreement between WSDOT and the City and determine if clarifications or amendments are needed.

A-107

The portions of the I-90 shared-use pathway with evident damage due to tree roots and other asphalt displacements would not be affected by the project. As such, these maintenance items will need to be addressed as routine maintenance and preservation projects.

A-108

Your comment is noted.

A-109

Construction staging areas, if provided by WSDOT, will be determined during the final design phase of the project. WSDOT will work with the City of Mercer Island to locate these areas.

A-110

Construction detours will be identified during final design of the project. Mitigation plans will be coordinated with Mercer Island City and Police staff.

A-111

WSDOT will manage the construction of this project and will provide to Mercer Island, and the public, the Project Engineer's name and phone number as contact during construction.

A-112

WSDOT and Sound Transit will work to identify safety measures for both bicycle and pedestrian users of the I-90 shared-use pathway.

A-113

WSDOT and Sound Transit will continue to work with the bicycle community to identify safety measures such as speed limit signs, and

center line striping which would help emphasize awareness of the shared-use nature of the trail.

A-114

If implemented, construction detour routes would only affect bicycle and pedestrian travel patterns in the immediate vicinity of the east end of the HMH and LVM Floating Bridges, between 60th Avenue SE and West Mercer Way. A pathway detour on the I-90 center roadway would route bicyclists and pedestrians to 60th Avenue SE, where existing shared-use pathway spur routes provide direct connections to the existing trail at West Mercer Way. A pathway detour on the eastbound outer roadway would route bicyclists and pedestrians via the eastbound I-90 to West Mercer Way exit ramp, intersecting the existing pathway at West Mercer Way. In neither case would bicyclists or pedestrians have any incentive greater than that that exists today to use North Mercer Way or SE 24th Street. See also Common Response CR-3: Shared-use Pathway.

A-115

WSDOT will work with Mercer Island during the final design phase to identify areas where the contractor will be working near local projects.

A-116

Your comment is noted. WSDOT will evaluate the need for a signal at this location during the final design phase.

A-117

Your comment is noted.

Seattle City Council

RECEIVED
RECEIVED
REGIONAL EXPRESS
REGIONAL EXPRESS
JUN 11 2003
PROJ NAME
CONTRACT#
DC CODE#

June 9, 2003

Ms. Andrea Tull
Project Manager, Sound Transit
401 S. Jackson Street
Seattle, WA 98104

RE: Comments on I-90 Two-Way Transit and HOV Operations Draft Environmental Impact Statement

Dear Ms. Tull,

We are submitting these comments on the I-90 Two-Way Transit and HOV Operations Draft Environmental Impact Statement (DEIS). We are aware that the Seattle Department of Transportation is submitting comments, but as elected officials on the Seattle City Council, we wanted to submit these comments as well.

We are concerned that the impacts of Alternative R-8A have not been adequately analyzed or described in the DEIS. A prime concern is that Sound Transit's mission is high-capacity transit, and yet much of the focus seems to have shifted to improving travel conditions for general-purpose traffic in the I-90 corridor. Where is this stated to be part of Sound Transit's mission, and how does it fall within the purview of the state enabling legislation for Sound Transit? Although this may not be a strictly environmental issue, it is a critical one for the public and local elected officials, as well as the Sound Transit Board, to address. How and when will the public have access to analysis of this issue and an opportunity to comment? A-118

Other concerns include:

- Bicycle / pedestrian pathway: Alternative R-8A would reduce shoulder widths on I-90, thereby necessitating installation of a railing along the bicycle / pedestrian pathway. While a railing could address negative impacts such as wind buffeting, kicked-up road debris, and headlight glare, it would also have the effect of narrowing the pathway. What are the effects of a narrower pathway and how will they be addressed? This is not adequately analyzed in the DEIS. The only strategy offered is to install rub rails on railings to reduce the potential that a bicyclist will snag a handlebar in the railing balusters. Why didn't the DEIS analyze widening the bicycle / pedestrian pathway, perhaps to a 12-foot width per federal guidelines? Although the main focus of the project is two-way transit and HOV travel, the DEIS actively pursued increased general-purpose capacity that would arise with Alternative R-8A. Yet widening the bicycle / pedestrian pathway just to maintain the existing effective width was not analyzed, and this is a shortcoming of the DEIS. As use of alternative modes grows in our region in the future, how will the increased bicycle and pedestrian volumes be accommodated on this facility with a narrower effective width? A-119

1100 Municipal Building, 600 Fourth Avenue, Seattle, WA 98104-1876
(206) 684-8888, Fax: (206) 684-8587, TTY: (206) 233-0025
E-Mail Address: council@ci.seattle.wa.us Internet Address: http://www.pan.ci.seattle.wa.us
An EEO/AA employer. Accommodations for people with disabilities provided upon request.

Printed on Recycled Paper

A-118 Seattle City Council

The purpose of the I-90 project is to provide reliable and safe two-way transit and HOV operations on I-90 between Seattle and Bellevue, while minimizing impacts on the environment and other users and transportation modes. These other transportation modes include general-purpose traffic, freight, bicycles and pedestrians.

The intent of the I-90 project is not to improve general-purpose traffic operation, but this does occur as an indirect effect. Any time HOV lanes are added to an existing roadway, some capacity is freed up on existing traffic lanes as HOV traffic shifts into its own exclusive lanes.

A-119

The DEIS did not consider widening the shared-use pathway. The existing width of the pathway is ten feet, consistent with design guidelines at the time the Homer M. Hadley Floating Bridge was built. This existing width will be preserved.

Analysis of patterns of use of the shared-use pathway on the HMH Floating Bridge indicates a low level of use by pedestrians, as such, the existing 10-foot width would be considered adequate for an existing facility carrying one lane of bicycle traffic in each direction, utilizing gaps in oncoming bicycle traffic for passing. In the course of evaluating potential impacts to the shared-use pathway, the project team contacted representatives of transportation agencies in Denmark for data on operational and safety issues relative to bicycle operations on paths similar to that found on I-90. One of the findings from these contacts is that much higher volumes of bicycle traffic than those currently experienced on I-90 are found in Denmark on paths that are in the range of 8-10 feet wide. This, in combination with relatively low use by pedestrians, suggests that the existing I-90 shared-use pathway width of 10 feet would be adequate to accommodate significant levels of growth in bicycle traffic, albeit at lower levels of service than those experienced today.

An analysis of levels of service on the pathway with existing volumes indicates that the level of service ranges from LOS C during AM peak periods, to LOS D to LOS E during the PM peak period and during peak recreational usage periods on weekends. These levels of service are better than those found on the adjacent I-90 roadways during peak travel periods.

Widening of the pathway was not considered as part of the project, due to the cost and impacts on the shared-use pathway and other bridge users. The project purpose is to provide reliable two-way transit and HOV operations while minimizing impacts on other users. Balancing impacts and costs and benefits is critical to the project. The cost to add an additional two feet to the shared-use pathway, without relocating existing traffic barriers or other work associated with roadway widening as proposed in the DEIS, is estimated to be in excess of $10 million in current year dollars. It would add an additional construction season to the project and an additional year of disruption to bridge users, including bicycles and pedestrians.

A reduction in the effective width of the pathway with the introduction of a higher barrier with the Preferred Alternative will be mitigated with the addition of centerline striping to more clearly delineate the appropriate lane for each direction of non-motorized traffic, and possibly with the addition of rub rails to the railings, which would reduce the risk of a crash caused by a cyclist snagging a handlebar in the railing.

In addition, WSDOT will work with the Cities of Mercer Island, Seattle, and Bellevue, and representatives of shared-use pathway user groups, to identify and address existing operations issues on the shared-use pathway. This could include educational programs and additional signing to clarify appropriate speeds, speed limits, and right-of-way priorities between various non-motorized user modes; a review of pavement conditions and other maintenance issues such as sweeping frequency; and security issues.

- Hazardous truck loads: Alternative R-8A would narrow shoulders, thereby diverting trucks carrying hazardous or flammable loads to other, longer routes, including SR-520 and other routes. What is the percentage increase in truck volumes on these other routes that would result from this diversion? Of key importance, how would the prohibition on hazardous truck loads on I-90 be enforced, and how effective would that enforcement likely be? We don't see any discussion of I-90 HOV enforceability in the DEIS, a serious shortcoming. What would the impacts be of the increased travel distance and time for these trucks? Additional vehicle-miles of travel will likely increase the number of accidents, yet this is not analyzed. What would the potential liability be, for state or local governments, associated with the longer travel distance if a truck carrying a flammable or hazardous load were involved in an accident? What would the impacts be on the neighborhoods through which these diverted truck trips would pass, such as those along SR-520 on both sides of Lake Washington? A-120

- Air quality: The longer queues and reduced level-of-service that Alternative R-8A would cause at Seattle intersections would necessarily result in more pollution and reduced air quality. This is true despite the statement in the DEIS, based on modeling, that concludes that impacts on air quality at these intersections would be relatively equal among all alternatives. The statement that "no operation mitigation measures are required" (page 4.4-12) is purely conclusory and is based on modeling, not common sense. In addition, with narrower shoulders and high volumes traffic closer to the bicycle / pedestrian pathway under Alternative R-8A, what would the air quality impacts be to bicyclists and pedestrians? A-121

- Seattle surface street impacts: The DEIS assumes that SR-519 phases 1 and 2 are completed, but the current plans are different. The EIS needs to re-analyze the surface street impacts, and then afford additional opportunity for the public to comment on the corrected analysis. This is especially critical in the very busy stadium area south of downtown Seattle where pedestrian volumes are high and safety is of great concern. A-122

- Lack of analysis of congestion pricing: We are dismayed that the DEIS seems to lack any analysis of congestion pricing as a tool to address traffic congestion. We requested this analysis in the past. The EIS lauds the ability of R-8A to improve travel conditions for general-purpose traffic, yet the whole point of this project is to improve two-way transit and HOV travel, not general-purpose traffic. If our region is ever to make progress in reducing reliance on single-occupant vehicles, we must focus on alternatives and not on increased general-purpose roadway capacity. Yet this DEIS does not analyze congestion pricing as a way to reduce travel demand, thereby eliminating any desire to expand general-purpose capacity. Transportation demand management is briefly mentioned, but congestion pricing is not analyzed, and this is a serious shortcoming of the DEIS. A-123

A-120

Permanent signing would be erected on connecting routes, and in advance of the Rainier Avenue and Island Crest Way exits. The Washington State Patrol would monitor I-90 truck traffic for compliance, as it does currently when temporary prohibitions on the movement of flammable cargo on I-90 are in place. Also see Common Response CR-5: Flammable Cargo Rerouting with Preferred Alternative R-8A.

A-121

The air quality impact analysis did not find major variations among alternatives because the actual differences in traffic volumes do not differ greatly. Of the Seattle intersections examined, MLK Jr. Way and Rainier Avenue S had the highest traffic volumes in 2005 for all alternatives at 4379 vehicles per hour. For the design year (2025), MLK Jr. Way and Rainier Avenue S was once again the intersection with the highest volume, but the minimum and maximum projected volumes ranged from 5414 to 5419 vehicles per hour. Again, the difference is not significant enough to impact the air quality model.

Bicyclists and pedestrians traveling along any heavily used highway will be subjected to higher concentrations of the emitted pollutants due to their close proximity to the mobile sources. The levels of exposure would be similar for all alternatives because the traffic volumes are high enough, and similar enough, such that there would be little difference among them.

A-122

The FEIS has revised the traffic analysis to only assume the SR 519 Phase I plans are in place (Section 3.3 of the FEIS). Additional changes could be made with Phase II of the SR 519 Project but these actions were not available at the time of the analysis.

A-123

See Common Response CR-9: TDM/TSM.

Overall, we are very concerned about the cost of Alternative R-8A. It has the highest cost of any alternative, and pursuing it would inevitably mean there would be fewer resources for the other critical transportation safety needs in our region. The cost, environmental consequences, and policy decisions about the role of Sound Transit have not been adequately assessed for Alternative R-8A. A decision to pursue R-8A cannot be made responsibly without addressing the concerns we have outlined above.

A-124

Thank you for this opportunity to comment. We look forward to continuing our collective effort to improve transit and HOV travel in the I-90 corridor.

Sincerely,

Richard Conlin
Seattle City Council
Chair, Transportation Committee

Heidi Wills
Seattle City Council
Vice Chair, Transportation Committee

Richard J. McIver
Seattle City Council
Member, Transportation Committee
Member, Sound Transit Board

A-124

See Common Response CR-10: Project Costs.

City of Seattle

Gregory J. Nickels, Mayor

Seattle Transportation
Grace Crunican, Director

June 9, 2003

Andrea Forsyth Tull
Project Manager, Sound Transit
401 South Jackson Street
Seattle, WA 98104

RE: Comments on the I-90 Two-Way Transit and HOV Operations Draft Environmental Impact Statement (DEIS)

Dear Ms. Tull:

Thank you for the opportunity to comment on the DEIS for the I-90 Two-Way Transit and HOV Operations Project. Because Seattle Department of Transportation staff participated in the Project Management Team, many of our technical comments have already been incorporated into the DEIS.

Based on the DEIS and discussions with our regional partners, I believe that a consensus is emerging on the long-term vision for the I-90 corridor. That vision is essentially a "hybrid" of Alternative R-8A, with high capacity transit (HCT) deployed in the center roadway, and HOV lanes for buses and carpools on the outer roadways. The main challenge, then, is how Alternative R-8A could be implemented as an interim configuration with the assurance that we move as quickly as possible to implement HCT in the center roadway. The FEIS should include a sequencing plan that demonstrates how this transition will be accomplished. A-125

Furthermore, in order to provide assurance and regain trust both in Seattle and in the broader region, Sound Transit should initiate accelerated planning for I-90 HCT concurrently with the development of the FEIS. Without this commitment to move forward, our elected officials and the general public can and will continue to reasonably ask: are we repeating the mistake we made in 1976 by agreeing to a long-term vision that we can never accomplish? A-126

With respect to the I-90 bicycle and pedestrian facility, the Final EIS must continue to solidify the commitment to maintain a minimum 10-foot facility throughout the corridor, to implement improvements to the facility where possible, and to mitigate negative impacts of the project to the maximum extent possible. The project team should work closely with users of the bicycle and pedestrian facility to develop practical, reasonable, and mutually acceptable accommodations for users during construction. A-127

700 Fifth Avenue, Suite 3900, Seattle, WA 98104-5043
Tel: (206) 684-7623, TTY/TDD: (206) 684-4009, Fax: (206) 684-5180
An equal-employment opportunity, affirmative action employer. Accommodations for people with disabilities provided on request.

A-125 Seattle Department of Transportation

There are a number of steps in the sequencing from a decision on Alternative R8-A to a decision concerning HCT in the center roadway of I-90. First, the 1976 Memorandum Agreement governing the use of I-90 is being amended. That amendment will establish principles for the ultimate configuration of the I-90 center roadway.

Sound Transit is also initiating a regional transit system planning and environmental process which will evaluate the I-90 corridor and HCT technology. In doing so, Sound Transit will be guided by the I-90 Steering Committee's recommendation for HCT as the ultimate configuration for I-90 and by the agency's Long-Range Vision. This process is anticipated to be completed in 2005, at which time the Sound Transit Board will make a decision about the use of the I-90 center roadway for HCT. Depending upon that decision, project-level design and review would then proceed for the ultimate configuration of the center roadway of I-90.

A-126

Your comment is noted. The Sound Transit Board will consider this when it identifies a preferred alternative for the I-90 project. See also Common Response CR-2: High Capacity Transit (HCT).

A-127

Your comment is noted. None of the proposed alternatives would decrease the width of the shared-use pathway.

Finally, please address the following technical comments in the development of the Final EIS:

1. Regarding Mitigation Measure TRAN-22 on page J-3 ("Increase cycle length at Seattle intersection of Jackson Street/2nd Avenue Extension to 100 seconds"): Description of this measure should contain a disclaimer similar to the disclaimers in TRAN-25 and TRAN-26. The following language should be added to the description: "The City of Seattle has indicated that this mitigation may not be acceptable due to impacts to other users of this intersection, and impacts to the overall, coordinated downtown Seattle signal timing plan." A-128

2. Regarding Section 4.12 – impacts to Seattle storm sewers and associated mitigation measures. The assumption that only minor adjustments to storm sewers will be required *may* be accurate due to the limited extent of new paving anticipated. However, stormwater codes, regulations and practices have changed radically since I-90 was built. Significant work above and beyond in-kind replacement adjacent to the widened lanes could be required to ensure stormwater quality. In addition, capacity impacts will need to be analyzed to the receiving water body and bottlenecks, if any, would need to be replaced. In the event that proposed drainage systems discharge to the combined sewer systems that are prevalent in this corridor, detention could be required. Your project team should work with staff from Seattle Public Utilities early in the development of the Final EIS to ensure that these issues are adequately addressed. A-129

3. As described in the Transportation Discipline Report for the DEIS, the analysis assumed that Phase I of the SR-519 would be completed by 2005, and Phase II (as then envisioned) would be completed by 2025. Since that time, substantial additional thought has been given to the ultimate design for the completion of the highway and roadway network in this area of Seattle, including both SR-519 and SR-99, and related surface modifications. Your project team should work with staff from Seattle Department of Transportation early in the development of the Final EIS to reach agreement on future network assumptions for the final analysis. A-130

Thank you, again, for the opportunity to comment. We look forward to working with your team on this important project.

Sincerely,

Grace Crunican, Director
Seattle Department of Transportation

A-128

This change has been made to Section 3.3 of the FEIS. The mitigation measures included in the FEIS have been revised due to changes in the SR 519 project. See Section 3.3.3.2.

A-129

The drainage impacts from Alternative R-8A and the other build alternatives are described in a Drainage Technical Memorandum dated October 9, 2002. Development of specific design solutions will be coordinated with Seattle Public Utilities.

A-130

This change in analysis has been completed. See Response A-122 and A-128.

A-131 Washington Department of Ecology

Your comments are noted. WSDOT will make every effort to ensure that construction of this project does not result in an increase in pollutant loads discharged into Lake Washington from I-90.

A-132

Your comment is noted.

A-133

Amendments have been made to the Fact Sheet in the FEIS to reflect your comments. See Section 4.1 Land Use for more detail on the shoreline programs and requirements for the cities of Bellevue, Mercer Island and Seattle.

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

P.O. Box 47600 • Olympia, Washington 98504-7600
(360) 407-6000 • TDD Only (Hearing Impaired) (360) 407-6006

August 14, 2003

Ms. Andrea Tull
Central Puget Sound Regional Transit Authority
Union Station
401 S. Jackson St.
Seattle, WA 98104-2826

RECEIVED
REGIONAL EXPRESS
AUG 18 2003
PROJ NAME_____
CONTRACT#_____
DC CODE#_____

Dear Ms. Tull:

The Department of Ecology has reviewed the Draft Environmental Impact Statement (DEIS) for the "I-90 Two-Way Transit and HOV Operations" project. We offer the following comments:

1. Discharges from the parts of this project site that are located in the City of Seattle and unincorporated King County are covered under WSDOT's stormwater NPDES permit. The primary requirement of the permit is the adoption and implementation of a Stormwater Management Program. Compliance with the Stormwater Management Program requirement is defined as reducing the discharge of pollutants to the Maximum Extent Practicable (MEP). The Stormwater Management Program is intended to reduce the discharge of pollutants, reduce impacts to receiving waters, eliminate illicit discharges and make progress towards compliance with water quality standards. Given these permit expectations, WSDOT should make every effort to ensure that construction of this project does not result in an increase in pollutant loads discharged into Lake Washington from the I-90 Bridge. Pollutants of particular concern to Ecology are oil and grease and illicit discharges resulting from spills. A-131

2. Section 4.7.3 Mitigation Measures Page 4.7-10
   Area substitution (off-site) mitigation for stormwater should be conducted on a site that is of equal area and drains to Lake Washington. Stormwater impacts in the project area should cause no violation of the water quality standards. (Water Pollution Control, Chapter 90.48 RCW) A-132

   Additionally, Ecology offers the following comments to the "Fact Sheet" section on **Required Approvals, Permits, Certifications and Licenses for the Proposal**: A-133

   - For any construction work within 200 feet of the Ordinary High Water Mark or associated wetlands of Lake Washington, a Shoreline Substantial Development

A-131 Washington Department of Ecology

Your comments are noted. WSDOT will make every effort to ensure that construction of this project does not result in an increase in pollutant loads discharged into Lake Washington from I-90.

A-132

Your comment is noted.

A-133

Amendments have been made to the Fact Sheet in the FEIS to reflect your comments. See Section 4.1 Land Use for more detail on the shoreline programs and requirements for the cities of Bellevue, Mercer Island and Seattle.

and/or Conditional Use permit may be required. Consult with the appropriate local government.

- A Clean Water Act Section 401 Water Quality Certification will be required if the Army Corps of Engineers issues an individual Section 404 permit or a Nationwide Permit (depending upon which Nationwide Permit is issued). The permit information provided for the Corps of Engineers (p. iv) should be amended to reflect this.

- The project must be consistent with Washington's Coastal Zone Management Program (WCZMP). Essentially, this means complying with the applicable enforceable policies of the WCZMP: the Clean Air Act, Clean Water Act (Section 401), the Shoreline Management Act (90.58 RCW), and the State Environmental Policy Act (SEPA).

A-133 cont.

Thank you for this opportunity to offer comments on the DEIS. Should you have questions or concerns, please do not hesitate to call me at 360.407.6789 or via e-mail at tswa461@ecy.wa.gov.

Sincerely,

Therese M. Swanson
Ecology-WSDOT Liaison

cc: Paul Krueger, WSDOT Urban Corridors Office
Lisa Rozmyn, Ecology WQ-HQ