



**Washington State  
Department of Transportation**  
Sid Morrison  
Secretary of Transportation

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March 30, 2000

U.S. Army Corps of Engineers  
Walla Walla District  
201 North Third Avenue  
Walla Walla, Washington 99362-1876

Attn: Lower Snake River Study

Dear Ladies and Gentlemen:

The Washington State Department of Transportation (WSDOT) is pleased to comment on the Draft Lower Snake River Juvenile Salmon Migration Feasibility Report/ Environmental Impact Statement (Draft FR/EIS) released by the U.S. Army Corps of Engineers (Corps) in December 1999. This letter and the accompanying attachment comprise WSDOT's comments on the Draft FR/EIS. WSDOT provides these comments for the Corps' preparation of the Revised Draft FR/EIS that will document a preferred alternative and be issued later in the year 2000.

The Draft FR/EIS results from a Corps study that was initiated in 1995 in response to the National Marine Fisheries Service's (NMFS) 1995 Biological Opinion. The Draft FR/EIS examines the effects of the four lower Snake River dams on juvenile salmon migrating downriver and also considers adult fish returning to spawn. The Draft FR/EIS addresses only the four Snake River salmon stocks listed under the Endangered Species Act (ESA) and the ways for improving their survival as they migrate through the lower Snake River hydropower system. Although true to its charter, the Draft FR/EIS represents one part of a larger range of issues confronting the Pacific Northwest—the recovery of ESA-listed salmon and steelhead stocks.

Salmon and steelhead are an important part of Washington State's history, culture and economy. These fish are strongly associated with the Pacific Northwest way of life and with the natural environment of our region. At one time, up to 16 million salmon and steelhead returned each year to spawn in the Columbia River system. Today, less than one million return, and many of these are hatchery-bred rather than wild fish. The decline of wild salmon and steelhead is an issue that Washington State government is addressing, and will continue to address, through an integrated and comprehensive approach.

### **WSDOT and Salmon Recovery**

The Washington State Department of Transportation is committed to working with other state agencies through the Washington State Salmon Recovery Strategy to save and recover salmon. This statewide strategy is designed to address the full range of factors that affect salmon recovery—habitat, harvest, hatcheries and hydropower—as well as the unique characteristics of individual species, watersheds and local environments. WSDOT is an active participant in the state's Joint Natural Resource Cabinet (JNRC) and Joint Cabinet Agency Group (JCAG) forums for salmon recovery planning and coordination, and the Department serves on the state's Salmon Recovery Funding Board. In these capacities, WSDOT provides technical expertise as well as agency program coordination.

WSDOT co-manages a fish passage barrier removal program with the Washington Department of Fish and Wildlife (WDFW). Since 1991, this effort has inventoried and established priorities for hundreds of fish passage barriers and has restored fish access to hundreds of miles of stream habitat throughout the state. Culvert replacement is one activity that can have short-term positive impacts on salmon recovery when it is implemented through a systematic approach, as WSDOT is doing with WDFW. As a result, WSDOT has a plan in place to replace fish-barriers on state right-of-ways over the next 20 years.

Other WSDOT actions to save and recover salmon along with other ESA-listed species include: implementing provisions of the Highway Runoff Manual in ESA-designated areas; controlling erosion and sediment through written Temporary Erosion and Sediment Control plans on construction projects; controlling spills and releases of construction-related materials through written Spill Prevention Control and Countermeasure plans; and treating and controlling highway runoff to protect fish and wildlife habitat.

### **WSDOT Perspective**

Under Washington State statutes, codified in Chapter 47 RCW, WSDOT is responsible for developing and maintaining a comprehensive and balanced statewide transportation system that meets the needs of the people of the state for safe and efficient transportation services, and to do so in an environmentally responsible manner. WSDOT is the responsible state agency for designing, building, operating and maintaining the state's 7,000-mile highway system, and for coordinating the connections of that system with local government roadways. The Department's freight rail program is chartered to address branch and light-density lines, mainline capacity, access to ports and preservation of rail infrastructure. WSDOT also is responsible for

developing a statewide multimodal transportation plan to ensure the continued mobility of people and goods within regions and across the state in a safe and cost-effective manner. Required components of that plan include state highways and freight rail as well as marine ports and navigation. It is noteworthy that there is a statutory state-interest in Washington's marine and river ports and in the navigation system that connects them with domestic and international markets.

As the state agency responsible for transportation, WSDOT has reviewed the Draft FR/EIS from the perspective of transportation impacts that will be caused by federal action. The Department also has commented on environmental impacts that will result from addressing or mitigating the transportation impacts caused by federal action. When appropriate, WSDOT has noted general omissions that should be included in the Revised Draft FR/EIS consistent with standard environmental documentation practice. WSDOT's comments focus entirely on the impacts of Alternative #4—Dam Breaching.

#### **Transportation Impacts**

The Draft FR/EIS acknowledges that Alternative #4—Dam Breaching will have significant transportation impacts because barge transportation will no longer be available through the lower Snake River. Additional truck and rail transportation will be needed to move products downriver to Columbia River elevators or directly to export facilities. The movement of products once carried by barge to upriver locations will also require changes in truck and rail transportation. Overall transportation costs will increase because barge transport is low cost and sometimes more direct than other transportation modes. Major improvements in highway and rail capacity will be needed to meet the required modal transportation shifts for moving products, goods and commodities.

The Draft FR/EIS estimates that almost 5 million tons of annual waterborne commerce will be diverted from barges on the lower Snake River to truck and rail transportation following dam breaching. For grain, which accounts for three-quarters of this volume, the Corps estimates that 1.1 million tons or 29 percent would likely be diverted to rail transport. The Draft FR/EIS indicates that required improvements to mainline and light-density railroads, additional rail car capacity and rail-related improvements at local elevators are estimated to cost between \$69 million and \$106 million. These estimates do not include geo-technical stabilization costs for roadbeds, embankments, bridges and track, nor do they include needed rail improvements at some ports and railheads. Acknowledging that there is uncertainty about how much waterborne traffic will be diverted to rail and where that diversion will occur, WSDOT nonetheless requests that the Corps identify specific rail improvement projects and costs in the Revised Draft FR/EIS.

The Corps estimates that about 71 percent or 2.7 million tons of grain will be moved by truck to river elevators on the McNary pool for subsequent barging downriver. This will be accompanied by an increase of nearly 2.6 million truck miles in Washington as truck shipments re-route from ports on the lower Snake River to ports in the Tri-Cities area. The capital improvement costs necessary to maintain adequate highway performance, improve intersections and replace or upgrade pavement are drawn from the Phase I HDR Engineering study funded by the Washington State Legislative Transportation Committee (WSLTC). The Draft FR/EIS states that highway capital costs are estimated between \$84 million and \$101 million, and then characterizes this range as the minimum and maximum for highway improvement costs under the dam breaching alternative.

WSDOT takes exception with Draft FR/EIS characterization of HDR's highway cost estimates. This Department participated in the HDR study conducted for WSLTC. WSDOT is comfortable with HDR's estimates for the particular state routes that HDR examined in the WSLTC study. The routes are the ones that will experience major impacts and require important capital improvements. However, time and resource constraints prevented HDR from examining the full range of state highway impacts and the full range of needed capital improvements to the state highway and local roadway systems. The Revised Draft FR/EIS should address the full range of state highway impacts and capital improvement costs. The Revised Draft FR/EIS should also address the transportation impacts to the county road and city street systems, including their connections with and access to the state highway system. As noted below, a second, or Phase II, WSLTC study is underway that should prove helpful to the Corps in addressing both of these issues.

Breaching the lower Snake River dams is a federal government action that will have significant and adverse transportation impacts; and it is a federal government responsibility to address and/or mitigate the adverse transportation impacts. This includes identifying required transportation projects and transportation-related activities, as well as the environmental impacts of those required projects and activities. The Draft FR/EIS does not identify nor quantify the indirect impacts to the environment that will result from projects required to address direct transportation impacts. Furthermore, the mitigation costs for environmental impacts from required transportation projects have not been identified.

WSDOT prepares environmental documentation as part of its state transportation responsibility. The Department expects environmental and mitigation costs associated with required transportation projects to be documented by the Corps in the Revised

Draft FR/EIS. When the Corps issues the Revised Draft FR/EIS, that document should identify the following for each of the alternatives considered: specific transportation impacts and the specific projects required to respond to those impacts; environmental impacts that will result from those transportation projects; the cost of specific transportation projects, including their environmental costs; mitigation that will be required as a result of transportation projects; and the cost of that mitigation.

#### **Other Issues for Revised Draft FR/DEIS**

WSDOT was unable to identify in the Draft FR/EIS the explicit consideration of possible railway/roadway at-grade crossing improvements that could result from Alternative #4—Dam Breaching. When sudden increases in rail traffic occur, existing railroad crossing protection may be inadequate and require upgrading to a higher standard. In some cases, as evidenced by the recent railroad mergers, the construction of grade separations is necessary to assure the safety of the traveling public. Given the increase in rail transportation that will occur under the dam breaching alternative, the Corps should examine this issue in the Revised Draft FR/EIS.

The Draft FR/EIS should provide additional consideration of the possible transportation impacts of increased sediment in Lake Wallula behind McNary Dam. The Corps estimates that some 50 to 75 million cubic yards of existing sediment would move downstream, and half of this would be deposited in Lake Wallula within the first two years following dam breaching. For comparison, the Corps' lower Columbia River deepening project is expected to remove about 20 million cubic yards of sediment from Portland to the Columbia River bar. Further, with the Snake dams breached, the Corps estimates that 3 to 4 million cubic yards of sediment will be carried downstream to Lake Wallula each year. Again, by comparison, annual dredging on the deep-water navigation channel between Portland and the Columbia River bar removes about 4 to 5 million cubic yards. The possibility of dredging to assure barge access to port and terminal facilities upstream of McNary Dam needs to be addressed in more detail by the Corps.

#### **Current Studies for Revised Draft FR/EIS**

WSDOT requests that the Corps review and incorporate findings from three current studies, as appropriate, in the Revised Draft FR/EIS. First, the Washington State Legislative Transportation Committee (WSLTC) is conducting a second Lower Snake River Drawdown Study to examine the transportation impacts of dam breaching on other state highways and county and city roadways. HDR Engineering (Bellevue) is the lead technical consultant. This second, or Phase II, WSLTC study also will consider state highways that were not included in the earlier WSLTC study. Based on work to date, it appears that the transportation impacts from Alternative #4—Dam Breaching

will result in significant additional costs for the roadway systems in southeastern Washington. For these reasons, the Corps should consider the findings and results of this work in the preparation of the Revised Draft FR/EIS.

Second, the State of Washington/Port of Benton Hanford Investment Study was completed in January 2000 with HDR Engineering (Portland) as the prime consultant. One finding is that the practical capacity of BNSF's Columbia River Gorge and Stevens Pass mainlines will be reached in 2005 or 2006, given current rail traffic growth rates. Although the Stampede Pass line will not reach its practical capacity until the 2020s, it is only 12 trains per day. The Corps should specifically address potential east-west mainline capacity constraints as part of its analysis of the transportation impacts resulting from Alternative #4—Dam Breaching.

Third, WSDOT is funding an examination of the benefits and impacts of 286,000-pound and 315,000-pound rail cars on light-density rail lines in Washington State. The transition to heavier rail cars has been underway for some time because of the cost savings they can yield for mainline railroads. Although heavier cars may help address capacity constraints on existing mainlines, such as those noted above, most light-density lines do not have the necessary rail infrastructure to carry heavier cars. Two important objectives of this study are to assess the likelihood of heavier cars being used on Washington light-density lines and to estimate the capital investment needs associated with upgrading light-density lines to accommodate heavier cars. This research study is being directed through the Department's Transportation Research Center. The findings of this work, like the results of other two studies, could significantly alter the transportation impact costs of Alternative #4—Dam Breaching.

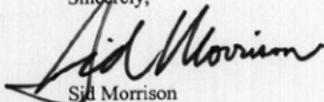
#### **Institutional Responsibilities**

WSDOT is requesting that the Revised Draft FR/EIS address the organizational structure, along with specific organizational responsibilities, for implementing and funding required transportation infrastructure and for mitigating transportation impacts that will result from the preferred alternative. The Department is prepared to work with the Corps and other federal agencies in addressing transportation impacts within an identified organizational framework and with financial assistance. The organizational framework should reflect the responsibilities of existing organizations and agencies and build on current institutional efforts, such as the state's Salmon Recovery Strategy, to save and recover salmon. Financial resources and responsible parties for providing that funding should be identified, recognizing the fiscal realities of state and local government agencies as well as the federal responsibility for federal actions.

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WSDOT appreciates the opportunity to provide these comments and those in the attachment to the Corps on its Draft Lower Snake River Juvenile Salmon Migration Feasibility Report/Environmental Impact Statement. The department plans to provide further comment when the Corps releases its Revised Draft FR/EIS identifying a preferred alternative. WSDOT stands ready to answer any questions the Corps may have concerning the department's comments on the Draft FR/EIS.

Sincerely,



Sid Morrison  
Secretary of Transportation

SM:ah/nr  
Attachment

cc: The Honorable Gary Locke, Governor  
Washington State Transportation Commission

## Attachment

**Additional Washington State Department of Transportation Comments  
on  
Lower Snake River Juvenile Salmon Migration Draft Feasibility Report/  
Environmental Impact Statement (Draft FR/EIS)**

[This attachment provides additional comments to those included in the March 30, 2000 letter from Secretary Sid Morrison, Washington State Department of Transportation, to the U.S. Army Corps of Engineers, Walla Walla District.]

### **Indirect and Cumulative Effects**

The Council on Environmental Quality (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) 40 CFR 1508.7 defines cumulative impacts as "... the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.

Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

40 CFR 1508.8 defines (a) direct effects as "... caused by the action and occur at the same time and place," and (b) indirect effects as "... caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect effects may include growth inducing effects, and other effects related induced changes in the pattern of land use, population density or growth rate, and related effects on air, water, and other natural systems, including ecosystems."

In CEQ's Forty Most Asked Questions Concerning NEPA Regulations, Question 18—Uncertainties About Indirect Effects of a Proposal notes "The EIS must identify all the indirect effects that are known and make a good faith effort to explain the effects that are not known but are reasonably foreseeable. . . . The agency has the responsibility to make an informed judgment and to estimate future impacts . . . the agency cannot ignore these uncertain, but probable, effects of its decision." Question 19b—How should an EIS treat the subject of available mitigation measures that are (1) outside the jurisdiction of the lead agency notes "All relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the lead or cooperating agencies, and thus would not be committed as part of the ROD of these agencies. . . ."

The Clean Water Act (33 USC 1344) Section 404 (b)(1) guidelines 40 CFR § 230.11 (g) notes that "cumulative effects . . . should be predicted to the extent reasonable and practical." and 40 CFR § 230.11 (h) requires that secondary effects of an action "shall be considered".

50 CFR § 402.02 and § 402.14 require that indirect effects which can be expected to result from an action must be considered under Section 7 of the Endangered Species Act.

Impacts potentially significant to transportation systems and the environment are recognized in Section 5.8 of the Draft FR/EIS. It is the responsibility of the federal lead agency to determine what the infrastructure impacts will be and determine, using informed judgment, what the environmental impacts will be as a result of correcting those impacts to the transportation infrastructure. The analysis of the indirect and cumulative effects related to the Corps' proposed action as described in Alternative #4—Dam Breaching is not consistent with the requirements of the National Environmental Policy Act, the Clean Water Act or the Endangered Species Act.

#### **Geology and Soils**

The Draft FR/EIS Appendix D—Natural River Drawdown Engineering noted that a test drawdown in 1992 caused slope and base failure in the transportation facilities observed. A study commissioned by the Washington State Legislative Transportation Committee and prepared by HDR Engineering identified costs of \$ 48 million to \$192 million for geotechnical impacts to the transportation infrastructure. Approximately 78 miles of railroad grade and 30 miles of state and county roads are at risk. The impacts to the transportation infrastructure as a result of slope and embankment failure caused by the drawdown of the pools would be direct impacts from the federal action of breaching the dams, should that alternative be selected. Any environmental impacts resulting from either the projects to prevent failure or to correct failures that have occurred will be indirect impacts resulting from the federal action of breaching the dams; these effects are reasonably foreseen and therefore must be identified and analyzed.

What transportation infrastructure projects can be reasonably foreseen as being required to prevent or correct slope and embankment failures that may result from the implementation of the dam breaching alternative? What are the potential impacts to resources down slope of the transportation facilities as a result of projects to prevent failure and to repair failures that are a direct effect of the breaching alternative? What mitigation is proposed for these environmental impacts that may result from the slope and embankment failures and the projects to correct them? What mitigation is proposed for the direct impacts to the transportation infrastructure as a result of the implementation of the dam breaching alternative?

#### **Water Resources**

A critical element that was not addressed in the Draft FR/EIS Appendix C—Water Quality was an evaluation of water quality impacts due to transportation impacts if Alternative #4—Dam Breaching is the preferred option. If dams are breached, there will

be an immediate and economically critical need to annually transport approximately 3.8 million tons of grain to ports either on the Columbia River or Puget Sound. If the Alternatives #1, #2 or #3 are chosen, then barging will continue as a freight mobility option and ancillary water quality impacts from the alternate transportation options can probably be considered negligible. The degree of the water quality impacts will be dependent on the alternate transportation modes(s) chosen for freight mobility.

If trucks become the preferred replacement mode to barging under Alternative #4—Dam Breaching, there will be a significant increase in the number of heavy truck trips to the Tri-Cities area using rural state highways 12, 26, 124, 260, 261, and/or 395. Increased heavy truck traffic will accelerate pavement degradation on those highways and may increase both sediment and metals loading to receiving streams from highway runoff. It is likely that the impacts will be to tributaries of the Snake River that intersect the above-mentioned state highways rather than the Snake River itself. There are few structural water quality best management practices (ponds, vegetated buffers, vaults, dry wells, etc.) constructed along highways in the Snake River basin, and most stormwater runoff from highways is conveyed (and infiltrated) from the highway prism using roadside swales and channels. The degree of hydraulic "connectedness" between the highways and individual streams would vary greatly, and impacts may be negligible if the vast majority of the highway runoff is infiltrated rather than discharged into surface streams. Less frequent impacts from increased truck traffic would be accidental spills of oil and gas and losses of accidents. Another secondary impact to water quality could also result from expansion of basic support services for the trucking industry, such as truck stops and gas stations, which would further increase the probabilities of fuel spills that could adversely affect water quality.

It is recommended that the Corps expand the water quality analysis to evaluate impacts from alternate freight mobility options that would be necessary for freight movement if Alternative #4—Dam Breaching is selected as the preferred alternative. This analysis should include an overview of water quality conditions in the major tributaries to the Snake River and the potential impacts of increased highway truck traffic on those conditions.

#### **Aquatic Resources**

Some issues of consideration for new impervious transportation surfaces created as a result of the federal action to breach the dams that need to be addressed include: How many road miles will need to be added/modified to off-set the loss of barge transport and where will these additions/modifications take place? How many stream crossings will the new impervious surfaces pass by/over? How much instream construction will occur in response to the new impervious surface? What are the long term effects on the aquatic resources adjacent to new impervious surfaces?

What will be the effects of Snake River tributaries adjusting and re-grading, as a result of dam breaching, on resident and anadromous salmonids, their habitat and ability to migrate therein?

#### **Terrestrial Resources**

According to Section 5.5 of the Draft FR/EIS, Alternative #4—Dam Breaching may impact approximately 668 acres of wetlands. 40 CFR 1502.14(f) requires that mitigation be included in the EIS. What wetland impacts are reasonably foreseen as a consequence of transportation infrastructure projects required in response to the effects of the dam breaching alternative, should that alternative be selected? What wetland impacts are reasonably foreseen as being associated with the transportation infrastructure projects required to stabilize slopes, roadbeds and embankments?

What mitigation is proposed for those wetland impacts that may be associated with the transportation infrastructure project required to stabilize the roadbed? What wetland impacts are reasonably foreseen as associated with the transportation improvements to pavement and intersections required in response to the increased truck traffic that the Draft FR/EIS identifies as a consequence of the dam breaching alternative? What wetland mitigation is proposed for those impacts resulting from transportation projects required as a result of the dam breaching alternative?

#### **Cultural Resources**

The following observations are based a review of the Draft FR/EIS and its Appendix N—Cultural Resources and Appendix O—Public Outreach Program. Although discussions on requirements pertaining to cultural resources were identified extensively throughout the Draft FR/EIS, no quantifiable assessments can be made due to the lack of cultural resource surveys and lack of all tribal input to the Alternative #4—Dam Breaching alternative.

Section 106 of the National Historic Preservation Act requires the federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council a reasonable opportunity to comment. Section 106 procedures are detailed under the Secretary of Interior's Standards and Guidelines for Archaeology and Historic Preservation 36 CFR Part 800. Section 106 seeks to accommodate historic preservation concerns with the needs of federal undertakings through consultation among the Agency Official and other parties with an interest in the effects of the undertaking on historic properties, commencing at the early stages of project planning. The goal of consultation is to identify historic properties potentially affected by the undertaking, assess its effects, and seek ways to avoid, minimize or mitigate any adverse effects on historic properties. Section 106 must be complete prior to the approval of the expenditure

of any federal funds on the undertaking or prior to the issuance of any license. Complex projects such as this often are presented as a phased approach, with the final identification of properties and evaluation of historic properties specifically provided for in a Memorandum of Agreement executed pursuant to Sec. 800.6, a Programmatic Agreement executed pursuant to Sec. 800.14(b), or NEPA pursuant to Sec. 800.8. It is unclear at this time how this Draft FR/EIS will comply with Section 106.

There is no discussion of coordination with the State Historic Preservation Officer (SHPO), no new in-depth cultural resource studies for the project, no testing measures, and limited discussion of interested parties' views. There are currently no properties identified in which to apply the National Register criteria and determination of effect. Determinations of National Register eligible properties are essential to determining what impacts the project will have on historic properties. Has this document been submitted to the Advisory Council for Historic Preservation? Adverse effects appear unavoidable for this project. Extensive planning, scheduling and costs will be needed for mitigation once the effects have been determined.

Alternative #4—Dam Breaching would result in increased traffic on existing roads and may result in the need for widening and/or new roadways. Any disturbance of previously undisturbed soils will also require surveys, potential testing and determinations of eligibility and effect. Erosion and/or slope stabilization have the potential to destroy the known archaeological sites as well as expose new sites. What measures will be taken to prevent this? Will these measures be acceptable to the tribes affected? Are there any historic structures within the project area (buildings, bridges, landmarks, etc.) that are eligible and/or listed in the National Register?

Revised regulations of Section 106, effective June 17, 1999, now require tribal consultation in the early stages of project planning. Tribal and SHPO concurrence on the Areas of Potential Effect (both off and on tribal lands) is also required. The importance of tribal input is thoroughly discussed, but there is no documentation of tribal opinions and exchange of ideas regarding the project. Most of the focus was understandably on the salmon issues pertaining to the tribes. However, other cultural resource issues, such as artifacts, sites, districts and traditional cultural sites, will need to be identified and assessed. Visual, audible, alterations to property, and atmospheric elements will also need to be assessed. The document does not reflect meaningful consultation to address concerns of all the directly and indirectly affected tribes.

#### **Hazardous Materials**

The Draft FR/EIS does not include a separate discussion for hazardous materials impacts. While NEPA does not specifically require a discussion of hazardous materials as a separate discipline, the subject should be thoroughly analyzed within the study.

WSDOT's review found that hazardous materials impacts are not adequately discussed. The document's discussion of hazardous materials is limited to a brief analysis of sediment quality.

The only areas in which hazardous wastes are briefly discussed are with regard to sediment quality in the water quality discipline study (Appendix C) and the air quality discipline study (Appendix P). The air quality study discusses fugitive dusts resulting from exposed lake bed sediments. However, it does not discuss the potential for airborne sediments to contain contaminants, citing a lack of existing information on sediment quality. Conversely, the water quality study indicates, that while existing data is limited, there were numerous elevations of contaminants of concern found in these sediments. Elevated concentrations of organochlorine pesticides, including DDT, as well as elevated levels of TPH were detected in lake sediments. The sediment quality study was limited to surface sediment sampling (top 10 cm). Historical use of DDT and other pesticides would more likely result in encountering elevated concentrations in deeper sediments. According to modeling performed as part of the air quality study, these deeper, potentially contaminated sediments, once exposed, could become airborne and pose inhalation and other health risks to humans and to the environment.

Final disposition of any airborne contaminated sediments is also of concern as, depending on contaminant concentrations, deposition could in fact result in creation of upland cleanup sites. Locations for deposition of any contaminated fugitive dust should be predicted by the study. Resuspension of any contaminated sediments into the Snake River system is also of concern. The water quality study examines resuspension and deposition of clean sediments; however, it does not consider the potential impacts of resuspending contaminated sediments which may be encountered beneath the surface sediments. In summary, a much more thorough assessment of sediment quality is needed in the Revised Draft FR/EIS to ensure the above potential impacts are adequately addressed.

Fugitive dust emissions from dam deconstruction are addressed in the air quality study. It is not clear whether lead-based paints, guano, asbestos, silica or other contaminants might be encountered during demolition. If no such contaminants exist, the study should expressly state this, or the reader is left to wonder. If contaminants are potentially present, inhalation risks and risks associated with final deposition of those airborne or waterborne contaminants should be addressed.

Removing the dams will result in increased quantity and distribution of goods transported by highway and rail. Though the Draft FR/EIS recognizes this, the hazardous waste issues associated with this level of impact are not addressed. According to the water quality study, in 1994, over 4.2 million tons of freight passed through the locks at Ice

Harbor Dam. Petroleum products comprised 70 percent of the upriver transport, fertilizers and chemical products comprised 14 percent of the upriver transport, and manufactured products comprised 14 percent of the upriver transport. According to the economics study, petroleum products, the third largest commodity group transported on the lower Snake, generally accounted for approximately 80 percent of all upriver commodity movements above Ice Harbor lock. Annual shipments ranged from 95,000 tons in 1996 to 144,000 in 1995, with an average of 116,000 tons from 1987 through 1996. This shift in transportation of these goods greatly increases hazardous spill risks along the alternate transportation corridors. These risks have not been identified or analyzed in the Draft FR/EIS.

In addition, although average daily traffic increases are not expressed in numbers, the study predicts that in terms of tons of product to be moved, truck and rail traffic will greatly increase. The air quality study addresses airborne contaminants associated with increased use of these transportation modes, predicting a 13 percent increase in vehicle emissions. However, the report does not address deposition of these contaminants to soil, water and sediments. Potential impacts to all environmental media and pathways should be addressed in the Revised Draft FR/EIS.

Hazardous waste issues associated with replacement power generation (thermal or nuclear) are not discussed in the Draft FR/EIS. The economic impact study discusses energy replacement in terms of thermal power cost versus hydropower cost; it does not expressly state quantities of coal and/or fossil fuels to be transported or piped, nor does it discuss potential spills and explosions associated with transportation or piping of large quantities of these materials.

Increased human health and environmental risks associated with spills or explosions from piping or otherwise transporting coal and/or fossil fuels to energy facilities must be addressed. Communities outside the immediate area are also likely to experience hazardous materials impacts as a result of dam removal. Due to impacts to regional power sources, the economic impact study scope included the entire West Coast of the US and parts of Canada as defined by the Western Systems Coordinating Council (WSCC). The WSCC comprises all or part of the 14 Western States and British Columbia, Canada, over 1.8 million square miles. Likewise, hazardous materials impacts throughout this region should be addressed as part of the Revised Draft FR/EIS.

Hazardous spill potentials which exist during deconstruction are not discussed. Such spill potentials include materials (such as fuels and lubricants) brought onto the construction site, heavy equipment, storage of waste materials, etc. All spill risks and potential impacts associated with the deconstruction operation should be identified and discussed in detail in the Revised Draft FR/EIS.

### **Transportation**

The Draft FR/EIS does not adequately address the increased operating and maintenance costs for highways, roadways and railways that will result from the increased truck and rail traffic arising from the loss of waterborne traffic under Alternative #4—Dam Breaching. Based on the estimates of increased truck and rail traffic, the Revised Draft FR/EIS must identify the increased operating and maintenance requirements for highways, roadways, and railways.

Under Alternative #4—Dam Breaching, increased truck and rail traffic will result in capacity, pavement, intersection and/or track deficiencies. The Revised Draft FR/EIS should identify specific improvement projects for each deficiency directly resulting from the dam breaching alternative. What capacity improvements will be required? What pavement and intersection projects will be required? What track improvements will be required? What is the cost of these projects and what are the associated environmental impacts? What mitigation is required to address these environmental impacts? What are the costs associated with the mitigation?

Bridge piers for highways, roadways and railways in the affected area of Alternative #4—Dam Breaching will be subject to increased scour. The projects required to protect the affected structures and the costs of those projects must be identified in the Revised Draft FR/EIS. The environmental impacts caused by the projects to protect the existing bridge piers must be identified. What are the reasonably foreseeable impacts to the salmonid species and to the critical habitat for salmonids as a result of the indirect impacts from the dam breaching alternative? What mitigation is proposed for the potential impacts to the species and the habitat? What consultation with NMFS must be done?

The Draft FR/EIS does not adequately address mitigation means and mitigation costs for Alternative #4—Dam Breaching. What mitigation is proposed for the direct effects to transportation infrastructure? What mitigation is proposed for the indirect effects on transportation as a result of the diversion of commodities from waterborne to rail and truck transportation? What mitigation is proposed for the indirect effects to intersection deficiencies caused by the increased truck traffic? What mitigation is proposed for the indirect effects to pavement and capacity deficiencies?

The Draft FR/EIS does not adequately identify specific projects that will prevent or correct embankment failure resulting from Alternative #4—Dam Breaching. What impacts will projects to prevent or correct embankment failure have on salmonid species, cultural resources and water quality?