



Lower Snake River Juvenile Salmon Migration Feasibility Study

Transportation Analysis

The U.S. Army Corps of Engineers (Corps) is conducting a feasibility study of ways to improve juvenile salmon migration through the hydropower system on the lower Snake River. The study focuses on how the lower Snake River dams can be changed to improve survival and recovery prospects for Snake River salmon stocks listed under the Endangered Species Act.

Three major pathways are being evaluated for the four lower Snake River dams: maintain the existing system with planned improvements; make major system improvements to bypass facilities; and natural river drawdown, commonly referred to as dam breaching. The Corps is preparing a draft Feasibility Report/Environmental Impact Statement (FR/EIS) for release for public review in Fall 1999.

The Drawdown Regional Economic Workgroup (DREW) was established to develop a comprehensive social and economic analysis (which includes recreation and tourism) for this feasibility study. The DREW includes economists from Federal agencies, the Northwest Power Planning Council, states, tribes, contractors, and other regional stakeholders. Although the Corps acquired this document as part of its EIS process, the opinions and/or findings expressed in the report do not necessarily reflect the official policy or position of the Corps.

Transportation Analysis:

The transportation workgroup, a DREW subgroup, has completed an analysis that measures the effect that breaching the four Federal dams on the lower Snake River would have on the cost of transporting commodities and products that are presently shipped via the Snake River portion of the Columbia/Snake River System (CSRS).

This preliminary report will become the basis of a chapter on transportation impacts of the Economic Appendix of the *Lower Snake River Juvenile Salmon Migration Feasibility Report and Environmental Impact Statement*. It is important to note that this analysis is still preliminary data, and is subject to review and revision, based on comments received as part of the

reviews of the DREW team and the Independent Economic Analysis Board (IEAB).

Each of the dams on the lower Snake River is equipped with navigation locks. These locks allow commercial and recreational navigation up to Clarkston, Washington, and Lewiston, Idaho. From 1987 through 1996, cargo shipments through these locks averaged slightly less than 4 million tons annually. Cargo shipments consist primarily of grain (wheat and barley), which accounts for more than 77 percent of all shipments. Other groups of commodities shipped on the waterway include petroleum products (3 percent), logs and wood chips (18 percent), wood products (1 percent), and all other commodities (less than 1 percent).

While a number of strategies aimed at the restoration of anadromous fish stocks are evaluated in the feasibility study, the transportation analysis addresses only the natural river drawdown strategy, which lowers the Snake River to pre-dam levels. The analysis examines two scenarios: 1) the base condition, which reflects continued utilization of the CSRS in its present configuration as a navigable waterway between the Pacific Ocean and Lewiston, Idaho; and 2) a scenario in which the four dams on the lower Snake would be breached, thereby effectively limiting the head of commercial navigation to the Tri-Cities of Pasco, Richland, and Kennewick, Washington (on the Columbia River).

Breaching the four federal dams along the lower Snake River would result in the closure of this portion of the CSRS to commercial navigation. This would force commodities now shipped by

barge from ports on the Snake River to be shipped by land to alternative ports located lower down the river; or to be transported to destinations in the Portland, Oregon/Vancouver, Washington, area by an alternative land mode (probably rail). The measure of direct economic effects resulting from the elimination of commercial navigation on the lower Snake River is expressed as the change in the direct costs of product transport, storage, and handling from those that would be incurred with continued use of the existing system. A net increase in the costs represents direct economic losses that would not be offset by gains elsewhere within the nation's economy. These costs are identified as national economic development (NED) costs.

The analysis of NED direct economic effects required: 1) identification and analysis of alternative shipping modes and costs; 2) a determination of the most probable combination of storage, handling, and transport modes that would emerge in response to the curtailment of waterborne transport; and 3) the identification of commodity origins and destinations, modal costs, storage and handling rates at throughput facilities, and regional rail and truck capacity, as well as a variety of other elements that characterize the regional transportation system. The analysis also addressed potential secondary effects (*i.e.*, changes in shipping rates, impacts on rail line and cargo handling and storage capacity, impacts on roads, the change in the number of additional trucks making deliveries to Pasco, Wash., the increase in the number of unit trains, *etc.*). A synopsis of how these issues were addressed, and a description of the procedures and assumptions applied in the evaluation

process, is presented in the draft analysis.

In addition to the analysis of direct economic costs that would occur as a result of the closure of the Snake River to commercial navigation, a review of regional economic development (RED) impacts is also being conducted. The RED analysis provides a measure of the change in the level and distribution of regional income that would result from alternative Federal actions. In this case, the RED analysis uses the estimated direct economic impacts of the drawdown strategy and, through the use of regional input-output models, estimates the secondary economic effects that would be induced by the initial direct effects. The results of the RED analysis will be presented in the overall regional analysis.

The analysis shows that with drawdown and closure of the Snake River to commercial navigation, for conditions projected for 2002, grain transportation, storage, and costs for all of the regions affected would be \$1.23 per bushel compared with \$0.98 without drawdown, or an increase of \$0.27 per bushel. This represents an increase in these costs of just slightly less than 28 percent. The cost of shipping other commodities would also increase.

The Corps and several contractors have prepared the transportation analysis. Review and oversight are being provided by both IEAB and DREW. The preliminary transportation analysis will be revised, based on comments from DREW and IEAB. This analysis is only one part of the overall analysis of impacts that will be presented in the Economic Appendix of the feasibility study. Other critical components of the

economic analysis include power, water supply, tribal, regional, and social analyses.

The overall Economic Analysis will be presented in the *Lower Snake River Juvenile Salmon Migration Feasibility Report and Environmental Impact Statement*, scheduled for release in Fall 1999.

To get more detailed information on the [transportation analysis](#) see the Walla Walla District home page, www.nww.usace.army.mil.

For additional information, contact the DREW chair, Dennis Wagner, at the Corps' Northwestern Division Office (503-808-3854).