

January 10, 2020

Summary of Findings

## NATIONAL TRANSPORTATION IMPACTS & REGIONAL ECONOMIC IMPACTS CAUSED BY BREACHING LOWER SNAKE RIVER DAMS: SUMMARY OF FINDINGS

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**Removal of Lower Snake River Dams will cost the nation \$4 billion over 30 years; which equates to a net present value of \$1.9 billion (30-year analysis at standard 7.0% annual discount rate).**

Pacific Northwest Waterways Association contracted with FCS GROUP (financial and economic consultants) to provide an independent and conservative evaluation of the transportation/infrastructure impacts that would be caused by Lower Snake River (LSR) dam breaching and closure of four LSR locks. The methodology used in this analysis is consistent with the benefit-cost analysis guidelines prescribed by the U.S. Department of Transportation. Findings are used to define outcomes from local (employment and sales), regional (transportation/freight impact) and national (transportation and infrastructure cost, air quality, safety, tax revenue) perspectives.

The Columbia/Snake River system is the largest wheat export gateway in the U.S. Almost half of the wheat exports arrive by barges moving through the Columbia / Snake River system. In 2017 over 3.5 million metric tons of commodities moved through the lower Snake River locks.

Taking the Snake River barge option away will not only lead to higher rail rates, but will result in substantial negative transportation and air quality impacts. Using guidelines provided by the U.S. Dept. of Transportation, **the removal of four lower Snake River dams would cost the U.S. over \$4 billion over 30 years. This equates to a net present value of \$1.9 billion (30-years at standard 7.0% annual discount rate).**

**Removing the Snake River locks would cause diesel fuel consumption to increase by nearly 5 million gallons per year** as barges are replaced by less efficient truck-to-rail shipments.

Negative air quality carbon emissions would result—equivalent to the cumulative emissions generated by a Boardman coal-fired power plant every 5-6 years.

This analysis focuses on national and regional impacts and conservatively excludes costs associated with the following:

- Construction cost of dam breaching and related access changes
- Truck and rail costs associated layover times
- Increased river dredging costs
- Rail safety/accident costs
- Replacement of hydropower capacity and transmission facilities
- Water supply and wastewater discharge facility costs to municipal and industrial users
- Irrigation water impacts
- Loss of revenues at the ports of Lewiston and Clarkston

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- Regional (non- agricultural) economic development dislocation costs.

**Farmers, shippers, ports and trade representatives express major concerns**

FCS GROUP conducted 14 interviews with regional grain farmers, shippers, port managers, and agricultural trade group representatives, and discussion with state agencies.

In general, **interviewees expressed concerns about the direct impacts LSR dam breaching and lock closure will have on national freight movement and regional impacts to farmers and local communities.** Specific issues were identified regarding the baseline assumptions made by the CRSO EIS Navigation TOM map of the “existing grain elevator and rail network” provided by the EIS project to date, which includes thousands of miles of rail track purported to exist which have been abandoned, and grain elevators that do not have rail loading capabilities.

Grain suppliers/shippers indicate that with **LSR dam breaching the transportation/storage expense will likely increase 50% to 100%.** At the current reported “break even” cost per bushel of \$5.00, the transportation/storage cost is now approximately \$0.40 per bushel of wheat. These costs could increase by up to \$0.80 per bushel with LSR dam breaching.

**If farm subsidies are not increased, devastating economic impacts could result as over 1,100 farms may be at risk of bankruptcy given average regional net farm cash income of only \$42,825 in 2017.** With wheat prices already near breakeven, farmers are not expected to adjust to lower levels of income. Hence, the federal government would need to increase annual direct payments to farmers by up to \$38.8 million to keep operations at the current level of net cash income.

**Highway, rail, grain elevators and local infrastructure network will need over \$1 billion capital investment**

Commodities moving through the Columbia/Snake River system currently remain on barges until they reach deep draft export ports. Over 2,623,000 tons of outbound (mostly grain) products and 874,000 tons of inbound shipments were moved through the LSR locks in nine months in 2017. The current distribution of commodities moving out of the 10-county bi-state region to deep draft export ports as follows: 90% barge and 10% rail.

With removal of the LSR locks, the share of goods transported by barge decreases and goods transported by truck and rail increase. **LSR dam breaching is expected to require at least 201 additional unit trains and 23.8 million miles in additional trucking activity annually.**

According to engineering studies and stakeholder input **up to \$1.1 billion in infrastructure investments would need to be constructed in the near-term to address transportation, railroad, grain storage capacity and local infrastructure changes that would result with LSR dam breaching.** No funding for these improvements has been identified; and these improvements would not be required if the LSR locks remain operational.

**Increased truck and rail traffic will result in more fatalities and related costs**

Increased reliance on truck-to-rail or truck-to-barge terminal shipping is expected to result in an increase of 23.8 million miles of travel per year on county, state and federal highways. **The increased trucking activity will increase fuel costs, highway maintenance costs, terminal facility maintenance cost, driver time, and vehicle maintenance costs by over \$69 million per year.**

**Diesel fuel consumption will increase by nearly 5 million gallons per year;** thereby reducing our nation’s ability to achieve energy independence.

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Using accident frequency and injury/fatality probability statistics from the National Highway Traffic Safety Administration (NHTSA), LSR dam breaching will result in about 1 additional traffic fatality every 3 years.

While the increase in unit trains of 1-2 per day enhance the probability of train related incidents and fatalities, the cost of train safety incidents has not been included in this study.

### **Negative Air quality emissions by dam breaching will create unintended consequences**

Shifting commodity flows from barge to truck and rail will result in increases in CO<sub>2</sub> and other harmful emissions by over 1,251,000 tons per year.

**This amount of CO<sub>2</sub> increase is equivalent to the environmental impact of:**

- **Adding 90,365 standard size homes**
- **Adding 181,889 passenger cars**
- **Removing 6,927 acres through deforestation**
- **The cumulative emissions created by the Boardman coal-fired power plant every 5-6 years**

### **Environmental justice and regional impacts**

The regional market area that would be directly impacted by the LSR breaching alternative is defined as ten counties that are generally within a two-hour drive of the ports of Lewiston and Clarkston, five of which are in Washington, and five in Idaho. These counties are primarily rural agricultural areas that depend heavily upon the LSR locks and barge transportation systems for the movement of wheat, fuel and other bulk products.

- **The 10-county market region population includes 202,852 people.**
- **Nearly 1 in 5 people in the market region are at or below the federal poverty level.**
- **Average wages in the region were \$40,211 or about 25% below the national average in 2017.**
- **The market region includes 1,139 farm operations with nearly 4.6 million acres, according to the U.S. Census of Agriculture, 2017.**
- **Net cash income for farms reporting receipts averaged only \$42,823 in 2017.**

The LSR dam breaching alternative could have a negative regional economic impact on agriculture (if federal direct payments do not increase as described in the prior section) and potential negative impacts on manufacturing, transportation, warehousing and visitation businesses that are physically or functionally related to LSR freight movements and river access.

### **Fragile regional economies are at-risk with LSR dam removal**

**At-risk agricultural exports (primarily wheat) shipped from the Snake River to ocean ports accounted for \$472.7 million in sales and supports nearly 4,000 jobs in the 10-county region, and generates over \$29 million in federal tax revenues annually.**

Interview feedback indicated that the LSR dam breaching alternative would result in significant reductions to river levels which will have a negative impact on specific business establishments, especially industrial employers and cruise ship operations in the Lewiston/Clarkston area. Concerns range from the inability to ship finished products from manufacturing firms through existing port

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terminals, to mitigation cost of wastewater outfalls; and new investments in water intakes, filtration and pumping/transmission systems.

**Input provided by the Port of Clarkston identifies six specific businesses and cruise ship operations which support 6,811 workers.** These businesses generate \$625.7 million in total annual GDP. A subset of GDP includes \$65.5 million in state and local tax payments and \$86.6 million in annual Federal tax payments.

The cruise ship industry is now an important component of the local economy. Over \$3 million in annual GDP spending and 70+ jobs would be lost if LSR dams are breached.

At least three cities (Clarkston, Lewiston and Asotin), regional counties and major industrial businesses (such as Clearwater Paper) have permits for treatment and discharge of wastewater into the river. A share of the economic contribution of these communities could be at-risk with dam breaching, with nearly \$1.5 billion in combined annual GDP. Note, this is a conservative estimate of the regional GDP, since many other communities in Washington and Idaho will also be impacted.

As observed in the 1992 drawdown experiment (see photos) existing wastewater infrastructure is likely to be damaged or rendered useless if the river level drops. The impact of the river drawdown would have impacts on local infrastructure such as roadways, public docks, outfalls, stormwater infrastructure and various public and private capital investments, as well as land values. These costs would have significant fiscal impacts on local and state governments and the nation.

**Photographs from 1992 Snake River Drawdown (credit: Port of Lewiston)**



For questions regarding this study, please contact Kristin Meira, Executive Director  
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