

Lower Snake River Dam Online Engagement

This questionnaire is part of a process to gather and summarize the perspectives of Washingtonians on the impacts, both positive and negative, of retaining or breaching/removing the four lower Snake River dams (LSRD). The results of the questionnaire will be summarized into themes.

Governor Inslee supports this process to understand the full range and diversity of views in Washington State in regard to the LSRD. He plans to use this information to help craft his recommendations on the Columbia River Systems Operations Environmental Impact Statement being developed by U.S. Army Corps of Engineers, Bureau of Reclamation, and Bonneville Power Administration anticipated in February 2020 regarding the operations, maintenance and configurations for 14 federal projects in the Columbia River System in the interior Columbia River Basin.

Responses to the questionnaire will be treated confidentially. Please email twendel@rossstrategic.com with the subject line "LSRD Distribution List" if you would like to be added to a contact list for updates.

Start of Survey:

1. Please select the option(s) that best represent your affiliation. You may select more than one option, and if you like you can identify your primary affiliation in the next question.
 - a. Conservation
 - b. Business
 - c. Sport or Commercial Fishing Industry
 - d. Recreation
 - e. Not-for-Profit Organization
 - f. For-profit Company
 - g. Federal Government
 - h. Tribe
 - i. State Government
 - j. Local Government
 - k. Interested Citizen
 - l. Other (please specify)

2. Which is your primary Affiliation?
 - a. Scroll bar to select ONE of the above options

3. What is your primary interest(s)? You may select more than one.
 - a. Retaining the dams
 - b. Breaching or removing the dams

- c. Prosperity of agriculture
- d. Economic viability of communities supported by the dams
- e. Recovery of salmon and steelhead
- f. Economic viability of communities supported by salmon and steelhead
- g. Transportation
- h. Cultural Heritage
- i. Energy supply and transmission
- j. Environmental/ecosystem function

4. Enter your Zip Code:

The next questions are meant to gather your perspectives on various social, economic, and environmental categories that could be impacted by retaining or breaching/removing the four lower Snake River dams (LSRD). You do not need to answer every question. For those questions that you do answer under each category, a short (600 characters, with spaces) text box is included to give you space to describe why you answered the way you did.

Agriculture:

In 2017, over 1 million acres of wheat were harvested in the 7 counties adjacent to the Snake River. In addition, the LSRD currently support approximately 37,000 acres of irrigated farmland drawn from the Ice Harbor Reservoir and allow for the transport of wheat and other commodities, generally at a reduced cost relative to other mode of transportation.

1. Description of the statement above:
 - a. I agree with how the statement is framed
 - b. I disagree with how the statement is framed

2. Retaining/Leaving the dams will:
 - a. Have a significant benefit for agriculture in the region
 - b. Have a small benefit for agriculture in the region
 - c. Have no benefit for agriculture in the region
 - d. Slightly harm agriculture in the region
 - e. Significantly harm agriculture in the region
 - f. Not sure/NA

3. Breaching/Removing the dams will:
 - a. Have a significant benefit for agriculture in the region
 - b. Have a small benefit for agriculture in the region
 - c. Have no benefit for agriculture in the region
 - d. Slightly harm agriculture in the region
 - e. Significantly harm agriculture in the region
 - f. Not sure/NA

4. Why? (If you'd like, please provide a short (600 characters, with spaces) answer on why you answered the way you did for the questions under this category.)
 - (1) Idaho is #1 in dry land wheat yields¹
 - (2) Wheat has been a steady contributor for Idaho's economic well-being for the last 60 years²
 - (3) 90% of Pacific Northwest Wheat is exported³
 - (4) 40% of the US wheat is handled on the Columbia/Snake River System⁴
 - (5) Idaho and other Northwest states for years have had a strong trading relationship with Taiwan. Taiwan Flour Mills signed a \$576 million wheat deal and intend to purchase 66.1 million bushels of wheat from the United States⁵
 - (6) Idaho is a strong partner with international traders because of the high-quality product and is able to consistently deliver within the shipment timelines, thanks to the Columbia-Snake River system. ⁶
 - (7) Idaho has a \$1 billion vibrant wheat and barley industry that helps serve as a backbone to the economy of Idaho and its many rural communities⁷
 - (8) Thanks to the irrigation benefits of hydropower, the Northwest has nearly 8 million more acres of farmland⁸

¹ Lewis Clark Terminal (LCT) Page on Port of Lewiston Website: <https://portoflewiston.com/our-rivers/lewis-clark-grain-terminal/>

² Idaho Wheat Website- About Page: A Standout State: <http://idahowheat.org/about-us>

³ LCT Page on Port of Lewiston Website: <https://portoflewiston.com/our-rivers/lewis-clark-grain-terminal/>

⁴ LCT Page on Port of Lewiston Website: <https://portoflewiston.com/our-rivers/lewis-clark-grain-terminal/>

⁵ Idaho Office of the Governor Press Release: <https://gov.idaho.gov/pressrelease/idaho-taiwan-flour-millers-sign-576-million-wheat-deal-governor-announces-upcoming-trade-mission-to-taiwan/>

⁶ Governor Press Release: <https://gov.idaho.gov/pressrelease/idaho-taiwan-flour-millers-sign-576-million-wheat-deal-governor-announces-upcoming-trade-mission-to-taiwan/>

⁷ Grain Exports Page on POL Website: <https://portoflewiston.com/our-rivers/grain-exports/>

⁸ BPA Website- Economic Benefits: <https://www.bpa.gov/Hydroflowshere/Pages/Economic-Benefits.aspx>

- (9) The reservoirs behind the dams provide an important source of irrigation for large areas of northwest agricultural land that would otherwise be too dry to farm. 6% of the Columbia River basin's yearly runoff is used to irrigate about 7.8 million acres of Northwest farmland. ⁹
- (10) The Columbia River trade corridor supports over 50 million tons of foreign trade at a value of over \$24 billion annually. The Columbia River is the nation's number one wheat export gateway and number two for corn and soybean exports. It is the third largest grain export gateway in the world, as well as the West Coast's leader in mineral bulks, wood exports and is a significant auto import and export gateway. ¹⁰
- (11) Ice Harbor Dam (and its interaction with the McNary Dam reservoir downstream) provides a crucial source of drinking water for Tri-Cities communities. It also enables irrigation for 60,000 acres of farmland in central and southeastern Washington. Agriculture would be significantly harmed, and communities would face more severe drought conditions without these dams. ¹¹

Transportation:

The LSRD currently allow for barge and tourism navigation up and down the lower Snake River that support shipments of agricultural products and other materials used or produced by local communities. Transports of materials by barge are less than their historical levels in 2000. Some forecasts include continuation of current levels or increases in the amount of barge transportation.

1. Description of the Statement above:
 - a. I agree with how the statement is framed
 - b. I disagree with how the statement is framed

2. Retaining/Leaving the dams will:
 - a. Have a significant negative impact on the transport of materials upstream and downstream
 - b. Have a small negative impact on the transport of materials upstream and downstream
 - c. Have no impact on the transport of materials upstream and downstream
 - d. Slightly improve transport of materials upstream and downstream
 - e. Significantly improve transport of materials upstream and downstream
 - f. Not Sure/NA

3. Breaching/Removing the dams will:
 - a. Have a significant negative impact on the transport of materials upstream and downstream
 - b. Have a small negative impact on the transport of materials upstream and downstream
 - c. Have no impact on the transport of materials upstream and downstream
 - d. Slightly improve transport of materials upstream and downstream
 - e. Significantly improve transport of materials upstream and downstream
 - f. Not Sure/NA

⁹ Foundation for Water & Energy Education: <https://fwee.org/environment/what-makes-the-columbia-river-basin-unique-and-how-we-benefit/irrigation/>

¹⁰ PNWA Facts: <https://www.pnwa.net/factsheets/CSRS.pdf>

¹¹ City of Richland WA: <https://www.ci.richland.wa.us/Home/ShowDocument?id=2106>
Culligan Water: https://www2.culligan.com/cities/kennewick/?cvt_redir=1&cvt_ref=

4. Why? (If you'd like, please provide a short (600 characters, with spaces) answer on why you answered the way you did for the questions under this category.)
- (1) It would take 134 semi-trucks and eight times as much fuel to transport one barge-load by road. One barge equals 122,500 bushels of wheat. One 4-barge tow equals 490,000 bushels of wheat and would take 480 semi-trucks¹²
 - (2) Barging is the safest method of moving cargo, with a lower number of injuries, fatalities and spill rates than both rail and trucks.¹³
 - (3) Over 18,000 passengers visited via cruises on the Columbia and Snake Rivers in 2017, contributing over \$15 million to communities along the two rivers¹⁴
 - (4) The Columbia-Snake River System is part of our nation's "Marine Highway" designated as The Inland Marine Transportation System, managed by the U.S. Army Corps of Engineers. Together the inland and coastal waterways handle one-sixth of the nation's industrial materials, commodities and products.¹⁵

Energy:

The LSRD are a carbon free energy source, produce an average of 1,000 average megawatts of electricity annually, and currently support the reliability of the energy system regionally. Energy supply and markets are changing rapidly which may increase or decrease the role of energy provided by the LSRD.

1. Description of the statement above:
 - a. I agree with how the statement is framed
 - b. I disagree with how the statement is framed
2. Retaining/Leaving the dams will:
 - a. Have a significant positive impact on the region's energy system
 - b. Have a small positive impact on the region's energy system
 - c. Have no impact on the region's energy system
 - d. Slightly harm the region's energy system
 - e. Significantly harm the region's energy system
 - f. Not sure/NA
3. Breaching/Removing the dams will:
 - a. Have a significant positive impact on the region's energy system
 - b. Have a small positive impact on the region's energy system
 - c. Have no impact on the region's energy system
 - d. Slightly harm the region's energy system
 - e. Significantly harm the region's energy system
 - f. Not sure/NA

¹² Idaho Wheat Website- About- Why the River System Matters: <http://idahowheat.org/why-the-river-system-matters>

¹³ PNWA Website Fact Sheet: <https://www.pnwa.net/factsheets/CSRS.pdf>

¹⁴ PNWA Website Fact Sheet: <https://www.pnwa.net/factsheets/CSRS.pdf>

¹⁵ Port of Lewiston Website- Columbia Snake River System: <https://portoflewiston.com/our-rivers/columbia-snake-river-system-eis-process/>

4. Why? (If you'd like, please provide a short (600 characters, with spaces) answer on why you answered the way you did for the questions under this category.)
- (1) The four lower Snake River dams produce over 1,000 average megawatts of reliable, carbon-free energy. That's enough energy for over 800,000 average U.S. homes. ¹⁶
 - (2) Wind and solar generators are neither technically nor economically viable replacements for these dams. ¹⁷
 - (3) Living in the Northwest means, on average, you pay 28 percent less for electricity than the rest of the nation thanks to Hydropower. ¹⁸
 - (4) The Northwest's population and capacity to generate electricity has more than doubled since 1960¹⁹
 - (5) It would take two nuclear, three coal, or six gas-fired power plants to replace the average annual power produced by the four Lower Snake River Dams²⁰
 - (6) The four Lower Snake River Dams have a combined nameplate capacity of 3,033 MW. On average, the four projects generate 940 aMW, which is about 11% of the Federal Columbia River Power System. ²¹
 - (7) The sustained peaking capability of the four projects is 2,650 MW, 10 hours per day for five consecutive days. ²²

Salmon and Steelhead:

There are significantly different predictions of the benefits of breaching/removing the LSRD on Snake River salmon and steelhead returning adults that range from a fourfold increase in returning Snake River salmon/steelhead to a smaller percent increase.

1. Description of the statement above:
 - a. I agree with how the statement is framed
 - b. I disagree with how the statement is framed

2. Retaining/Leaving the dams will:
 - a. Have a significant negative impact on the abundance of Snake River salmon and steelhead
 - b. Have a small negative impact on the abundance of Snake River salmon and steelhead
 - c. Have no impact on the abundance of Snake River salmon and steelhead
 - d. Slightly improve the abundance of Snake River salmon and steelhead
 - e. Significantly improve the abundance of Snake River salmon and steelhead
 - f. Not Sure/NA

3. Breaching or Removing the dams will:
 - a. Have a significant negative impact on the abundance of Snake River salmon and steelhead

¹⁶ BPA Fact Sheet (2016): <https://portoflewiston.com/wp-content/uploads/2016/03/BPAXSnakeXDamsXFactXSheetX2016.pdf>

¹⁷ BPA Fact Sheet (2016): <https://portoflewiston.com/wp-content/uploads/2016/03/BPAXSnakeXDamsXFactXSheetX2016.pdf>

¹⁸ FWEE Following Nature's Current Book (Page 2): <https://fwee.org/following-natures-current/mobile/index.html#p=4>

¹⁹ FWEE Book (Page 5): <https://fwee.org/following-natures-current/mobile/index.html#p=6>

²⁰ Snake River Dams Website: <http://www.snakeriverdams.com/clean-renewable-hydropower/>

²¹ BPA BP-20 Power Load and Resources Study: <https://www.bpa.gov/Finance/RateCases/BP-20/BP18/BP-20/Final-Proposal/BP-20-FS-BPA-03A%20Power%20Loads%20and%20Resources%20Study%20Documentation.pdf>

²² BPA Lower Snake Dam Fact Sheet: <https://www.bpa.gov/news/pubs/FactSheets/fs-201603-A-Northwest-energy-solution-Regional-power-benefits-of-the-lower-Snake-River-dams.pdf>

- b. Have a small negative impact on the abundance of Snake River salmon and steelhead
 - c. Have no impact on the abundance of Snake River salmon and steelhead
 - d. Slightly improve the abundance of Snake River salmon and steelhead
 - e. Significantly improve the abundance of Snake River salmon and steelhead
 - f. Not Sure/NA
4. Why? (If you'd like, please provide a short (600 characters, with spaces) answer on why you answered the way you did for the questions under this category.)
- (1) A billion-dollar habitat restoration program, the largest in the world, is moving forward in major river tributaries, creating safe nurseries for newly-hatched salmon and prime spawning areas for returning adults. ²³
 - (2) For every \$100 that a Northwest family or business pays towards their monthly electric bill, \$15 to \$20 goes towards salmon restoration efforts²⁴
 - (3) BPA and its partners have opened up more than 2,200 miles of spawning and rearing habitat since 2007- twice the length of the Columbia River. ²⁵
 - (4) NOAA: Survival rates through the hydro system are approaching levels in rivers without dams²⁶
 - (5) The dams are now on track to achieve standards of 96% average dam survival for young spring chinook and steelhead migrating downstream and 93% for young summer-migrating fish. ²⁷
 - (6) The Snake River dams DO NOT block access for fish, as was the case with the Condit, Elwha, and Glines Canyon dams. The Snake River dams have state of the art fish passage which allows over 97% of juvenile salmon to safely migrate past each of the dams.²⁸
 - (7) There are now more fish in the river than at any point since 1938, when the first dam, Bonneville, was put in and populations continue to increase. ²⁹
 - (8) NOAA: The survival and eventual return of juvenile Snake River salmon and steelhead to spawning streams as adults depends more on their size than the way they pass through hydroelectric dams on their migration to the ocean, new research shows³⁰

Ecological

There are differing interpretations of what the river will look like if the dams were to be breached, how long it will take the river to fully provide anticipated benefits, and what the impacts on water quality will be from sediment and turbidity.

²³ Northwest River Partners Website: <https://nwriverpartners.org/investments-in-salmon/>

²⁴ Northwest River Partners Website: <https://nwriverpartners.org/investments-in-salmon/>

²⁵ BPA Salmon and Steelhead: <https://www.bpa.gov/efw/FishWildlife/SalmonSteelhead/Pages/default.aspx>

²⁶ PNW Snake River Dams-The Facts: <https://portoflewiston.com/wp-content/uploads/2018/01/Snake-River-Dams-The-Facts-PNWA.pdf>

²⁷ BPA Fact Sheet (2016): <https://www.bpa.gov/news/pubs/FactSheets/fs-201603-A-Northwest-energy-solution-Regional-power-benefits-of-the-lower-Snake-River-dams.pdf>

²⁸ PNW Snake River Dams-The Facts: <https://portoflewiston.com/wp-content/uploads/2018/01/Snake-River-Dams-The-Facts-PNWA.pdf>

²⁹ PNW Snake River Dams-The Facts: <https://portoflewiston.com/wp-content/uploads/2018/01/Snake-River-Dams-The-Facts-PNWA.pdf>

³⁰ NOAA 2019 New Study: <https://www.fisheries.noaa.gov/feature-story/fish-size-affects-snake-river-salmon-returns-more-route-through-dams>

1. Description of the statement above:
 - a. I agree with how the statement is framed
 - b. I disagree with how the statement is framed

2. Retaining/Leaving the dams will:
 - a. Have a significant positive impact on the ecology of the river system
 - b. Have a small positive impact on the ecology of the river system
 - c. Have no impact on the ecology of the river system
 - d. Slightly harm the ecology of the river system
 - e. Significantly harm the ecology of the river system
 - f. Not Sure/NA

3. Breaching/Removing the dams will:
 - a. Have a significant positive impact on the ecology of the river system
 - b. Have a small positive impact on the ecology of the river system
 - c. Have no impact on the ecology of the river system
 - d. Slightly harm the ecology of the river system
 - e. Significantly harm the ecology of the river system
 - f. Not Sure/NA

4. Why? (If you'd like, please provide a short (600 characters, with spaces) answer on why you answered the way you did for the questions under this category.
 - (1) Replacement of the SRD with gas would increase the region's carbon dioxide emissions by 2.0 to 2.6 million metric tons annually (equivalent to 421,000 more cars on the road)³¹
 - (2) Vegetation and algae growth in the Snake River reservoirs is not high enough to produce the necessary plant matter for decomposition because the water is not warm enough to support either large growth or the necessary decomposition environment.³²
 - (3) While it may not seem fast to casual observers, the current through each reservoir is more than enough to mix the water, circulate oxygen and prevent a large temperature gradient from forming.³³
 - (4) Generally, the lower Snake River projects do not release methane gas because oxygen levels are very high, the water does not stratify, and the reservoirs are shallower with water circulating regularly³⁴

Recreation:

There are differing interpretations of what the recreational shift will be in the river system if the dams were to be breached/removed, causing the river to shift from flat water/slack water system to a more natural system featuring riffles, pools and whitewater rapids.

³¹ BPA Fact Sheet (2016): <https://www.bpa.gov/news/pubs/FactSheets/fs-201603-A-Northwest-energy-solution-Regional-power-benefits-of-the-lower-Snake-River-dams.pdf>

³² PNW Snake River Dams-The Facts: <https://portoflewiston.com/wp-content/uploads/2018/01/Snake-River-Dams-The-Facts-PNWA.pdf>

³³ PNW Snake River Dams-The Facts: <https://portoflewiston.com/wp-content/uploads/2018/01/Snake-River-Dams-The-Facts-PNWA.pdf>

³⁴ Army Corps of Engineers- Methane Gas: <http://www.snakeriverdams.com/wp-content/uploads/2015/01/FS-Methane.pdf>

1. Description of the statement above:
 - a. I agree with how the statement is framed
 - b. I disagree with how the statement is frame

2. Retaining/Leaving the dams will:
 - a. Have a significant positive impact on the recreational use of the Snake River system
 - b. Have a small positive impact on the recreational use of the Snake River system
 - c. Have no impact on the recreational use of the Snake River system
 - d. Slightly harm recreational use of the Snake River system
 - e. Significantly harm recreational use of the Snake River system
 - f. Not Sure/NA

3. Breaching/Removing the dams will:
 - a. Have a significant positive impact on the recreational use of the Snake River system
 - b. Have a small positive impact on the recreational use of the Snake River system
 - c. Have no impact on the recreational use of the Snake River system
 - d. Slightly harm recreational use of the Snake River system
 - e. Significantly harm recreational use of the Snake River system
 - f. Not Sure/NA

4. Why? (If you'd like, please provide a short (600 characters, with spaces) answer on why you answered the way you did for the questions under this category.)
 - (1) The Snake River Dams provide 2.8 million visitors a year with recreation opportunities³⁵
 - (2) The Lower Granite Dam recreation areas offer a wide array of outdoor activities, everything from serene walks along tree-lined paths on the Clearwater & Snake River National Recreation Trail to sturgeon fishing at Lower Granite Dam.³⁶
 - (3) Both Little Goose and Lower Granite Dam feature fish viewing rooms that allow you an up-close look at the many species of fish in the Lower Snake River³⁷
 - (4) Lower Monumental Dam – Lake West hold many opportunities for camping, picnicking, wildlife viewing, and boating, as well as hunting deer, upland game birds and waterfowl.³⁸
 - (5) A variety of recreation opportunities such as fishing, swimming, picnicking, boating, hunting, hiking, and camping are available around Ice Harbor Dam and Lake Sacajawea.³⁹

Tribal Cultural Resources:

When the dams and reservoirs were created, tribal communities' sites were lost as well as sites for fishing, hunting, and gathering.

1. Description of the Statement above:

³⁵ Army Corps of Engineers- LSRD: <https://www.nww.usace.army.mil/Missions/Lower-Snake-River-Dams/>

³⁶ Army Corps of Engineers- Lower Granite: <https://www.nww.usace.army.mil/Missions/Recreation/Lower-Granite-Dam-and-Lake/>

³⁷ Army Corps of Engineers- Little Goose: <https://www.nww.usace.army.mil/Missions/Recreation/Little-Goose-and-Lake-Bryan/>

³⁸ Army Corps of Engineers- Lower Monumental: <https://www.nww.usace.army.mil/Missions/Recreation/Lower-Monumental-Dam-Lake-West/>

³⁹ Army Corps of Engineers- Ice Harbor: <https://www.nww.usace.army.mil/Missions/Recreation/Ice-Harbor-Dam-Lake-Sacajawea/>

- a. I agree with how the statement is framed
 - b. I disagree with how the statement is framed
2. Retaining/Leaving the dams will:
- a. Have a significant positive impact on tribal cultural resources in the basin
 - b. Have a small positive impact on tribal cultural resources in the basin
 - c. Have no impact on tribal cultural resources in the basin
 - d. Slightly harm tribal cultural resources in the basin
 - e. Significantly harm tribal cultural resources in the basin
 - f. Not Sure/NA
3. Breaching/Removing the dams will
- a. Have a significant positive impact on tribal cultural resources in the basin
 - b. Have a small positive impact on tribal cultural resources in the basin
 - c. Have no impact on tribal cultural resources in the basin
 - d. Slightly harm tribal cultural resources in the basin
 - e. Significantly harm tribal cultural resources in the basin
 - f. Not Sure/NA
4. Why? (If you'd like, please provide a short (600 characters, with spaces) answer on why you answered the way you did for the questions under this category.)

(1) There are 45 federally-recognized tribes in the Pacific Northwest; the Pacific Region's Fisheries and Aquatic Conservation Program partners with at least three dozen of them. Together co-managing hatchery programs that support tribal, commercial, and recreational harvests and conserve, protect and restore native aquatic species and their habitats.⁴⁰

Economics:

There are differing estimates and perspectives on what the impacts will be on the local economy of the communities surrounding the LSRD as well as the state and region more broadly, due to shifts in recreation usage, shifts in employment, shifts in shipping, and shifts in energy and water supply.

1. Description of the statement above:
 - a. I agree with how the statement is framed
 - b. I disagree with how the statement is framed

2. Retaining/Leaving the dams will:
 - a. Have a significant positive economic impact to local communities and the region
 - b. Have a small positive economic impact to local communities and the region
 - c. Have no economic impact to local communities and the region
 - d. Slightly harm the economy of local communities and the region
 - e. Significantly harm the economy of local communities and the region
 - f. Not Sure/NA

⁴⁰ Fish & Wildlife Service- Working with Tribes: <https://www.fws.gov/pacific/fisheries/Tribes.cfm>

3. Breaching/Removing the dams will:
- Have a significant positive economic impact to local communities and the region
 - Have a small positive economic impact to local communities and the region
 - Have no economic impact to local communities and the region
 - Slightly harm the economy of local communities and the region
 - Significantly harm the economy of local communities and the region
 - Not Sure/NA
4. Why? (If you'd like, please provide a short (600 characters, with spaces) answer on why you answered the way you did for the questions under this category.)
- It would cost \$1.3 billion to \$2.6 billion to breach the dams⁴¹
 - The Northwest hydropower system provides more than 100,000 jobs to the region.⁴²
 - Snake River ports are critical economic drivers for their local communities and for the nation. Many modes of transportation come together at Northwest ports to provide efficient and safe movement of both commercial cargo and people.⁴³
 - The Lower Snake River dams generate about \$200 million annually in electricity and help move 3.5 million tons of cargo, worth \$1.5 billion, to regional markets.⁴⁴

End of Survey

⁴¹ BPA Fact Sheet (2016): <https://portoflewiston.com/wp-content/uploads/2016/03/BPAXSnakeXDamsXFactXSheetX2016.pdf>

⁴² BPA Economic Benefits: <https://www.bpa.gov/Hydroflowshere/Pages/Economic-Benefits.aspx>

⁴³ PNWA PowerPoint

⁴⁴ Snake River Dams: <https://portoflewiston.com/wp-content/uploads/2016/03/IntercomXSnakeXRiverXDamsX2016.pdf>