From: Yakima County Farm Bureau

To: US Army Corps of Engineers

Date: 04-13-20

RE: Columbia River Operation Draft EIS comments

These comments are from the Yakima County Farm Bureau (YCFB). YCFB is a grass roots organization with 3100 members consisting of farmers and ranchers with operations both large and small as well as other folks with interest in agriculture affairs in Yakima and Klickitat Counties.

The YCFB is in favor of the Preferred Alternative and totally opposed to breaching any Columbia River or Snake River dams. The YCFB believes that these dams should remain in operation for their entire physical life span and that they are much more valuable intact than breached, for a multitude of reasons.

First, it is a matter of necessity that our region and nation maintain a robust electrical generation capability. Western societies are becoming less dependent on fossil fuels due to the desire to reduce our carbon foot print and nuclear energy has been sidelined due to perceived safety concerns. This leaves hydropower, solar and wind generation as our exclusive electrical generating base in the near future.

While there have been advancements in solar and wind generating technologies the YCFB believes that by the very nature of the natural resources they draw upon they are not "trust worthy" as a stand-alone energy source. In the case of solar, it can only generate power 50% of the time (at most) based on it needing sunlight. But the Sun is not available to its full extent due to cloud cover, thus it is available even less than half the time. Wind is available on its own schedule, not one when the power is needed the most.

During the region's winters, a condition often occurs where long stretches of low temperature, stagnant air and solid cloud cover and/or fog which often lasts for weeks. The power needs are at their annual peaks due to heating and lighting needs during these periods. The net result is that when we have the most need for power, wind and solar is producing little or no electricity.

Due to the variable and intermittent nature of wind and solar, to operate effectively, they require a "large battery" to help the grid through resource shortages (periods of no wind or sun). Manufactured battery technology such as Lithium Ion has been advancing but there are still considerable hurdles with respect to creating ones large enough for a wind or solar farm. These new batteries require a considerable investment to manufacture and are largely built overseas due to environmental regulations in the United States and are expensive enough that they are currently used only up to the size required to power compact automobiles for short distances. When these batteries expire they present both an environmental challenge and are expensive to safely dispose of. Replacement batteries would be required as the older ones fail, also at great expense. Traditional batteries containing lead which are less expensive would surely be a non-starter in the current legal environment.

Hydropower dams are always able to generate power as they depend on (reliable) water and actually enhance both solar and wind production because of their ability to fill the "gaps" of production from these facilities. They work hand-in-hand with the power grid which ties all these production facilities together thus creating the "perfect battery". Finally, the public does not have to build these facilities because they are already in operation.

Beyond the intermittent nature of solar and wind power generation, the overall cost of wind and solar equipment and operation is much higher. Our region would suffer from an overwhelming power rate shock if we began breaching any dams due the increased cost of the replacement solar and wind compared to retaining the existing hydropower facilities.

While the Preferred Alternative of retaining the Lower Snake River dams and spilling more water for fish carries an estimated rate hike of 2.5%, the breaching alternative cost rises to about a 50% hike. The YCFB is opposed to any rate hike, the cost of breaching would be disastrous to agriculture, particularly with respect to irrigation rates.

According to Washington State University, 1.8 million acres are irrigated in the State with 80% being irrigated by sprinkler, 5% by drip and 15% by surface methods. Irrigation is a very power dependent activity. Ground water (even more power intensive) accounts for 25% of with drawl leaving 75% by surface water sources. We must assume that with few exceptions 85% (80% by sprinkler plus 5% by drip) of the irrigated land or 1.53 million acres require

power. Virtually all of that power in this region is by electricity. Of the other 300,000 acres irrigated by surface methods, a significant portion of that also requires power to deliver it. The Columbia Basin Project being a prime example.

The fact is that irrigation power bills amount to a substantial impact to farms and ranches in Washington State. The YCFB believes that a substantial increase in electric rates would negatively impact agriculture and a rate increase of up to 50% as suggested in the CRSO EIS due to breaching would CRIPPLE our industry as well as many other supporting businesses and activities that agriculture is sustained by.

When the Lower Snake River Dams were constructed, tens of thousands of acres of additional land became irrigated losing that agricultural production caused by breaching would be unacceptable. The YCFB believes that the promises offered to make the farm families "whole" due to a loss of their irrigation are hollow. Even if their loss were to be fully compensated, simple money does not reimburse for the loss of one's way of life. Also, the true cost of compensation would be staggering.

Interestingly, there are environmental consequences related to wind and solar production, some are known and some are surfacing over time. An example is the issue of birds being killed by wind turbines. Some of these species are in fact endangered or listed. The first generation of wind turbines were scrapped after generating power for a number of years because of their lethal nature to Bald Eagles and other birds. Imagine the cost of that reversal, first to develop the technology, implement it and then scuttle it? The current generation of turbines are claimed to have improved blades but the controversy continues and birds continue to die.

Another issue with wind and solar farms is over the view scape. These installations typically occupy considerable amounts of real estate that are valued by many individuals for their scenic value. There have been instances of serious opposition and road blocks in the form of local zoning regulations adopted with the intent of barring new wind or solar projects.

As a matter of economics, wind turbines can only be sited where the wind is fairly constant and there is enough speed to pay back the investment. As a matter of fact, they have already been built on the best locations and only upon

less desirable sites later as the economics may or may not work out. There is a point of no return, where it simply does not pay to build on subsequently less favorable sites. Another requirement is that a substantive power line must be close enough to afford to connect a potential wind farm to the grid. So the net result is that wind turbines (and solar farms in the case of no close grid or little sunshine) just will not work everywhere.

Further, wind turbines have a short life span compared to hydropower installations and that adds to the cost of power generation with them. We do not know what the lifespan of solar farm components are yet but due to the materials used to construct the generating panels, it certainly could not rival the lifespans of dams which are measured in centuries.

There is an argument that our region does not need more power or even as much generation capacity as it presently has. The YCFB strongly disagrees with that assertion. It is obvious that there will be continued long term economic growth in Washington and neighboring States which will demand more electricity. The recent leveling off in electrical demand has been created largely through conservation but one can only conserve to a point. Soon our regional load will increase due to economic growth however, the current total generating capability of wind and solar is far from substantial enough to satisfy our present needs. If Dams are allowed to be breached, emergency fossil or coal based power would have to bridge the gap and that would substantially add to carbon emissions.

To reduce carbon emissions further, our electric demand will increase due to a continued move towards mobile electric transportation. While autos have led the way, both heavy and light rail transportation and city buses have a history of utilizing electricity and there are companies testing the feasibility of producing large and small electric freight and utility trucks. The move to electrify personal and freight transportation will certainly produce an increased load on power generation and ignoring the impact is foolish and dangerous.

Another reason the YCFB believes our LSRD must be retained is because they are fitted with locks. This allows millions of bushels and tons of agricultural commodities and other freight to be transported by barge rather than truck or rail. Simply put, barging saves money and reduces carbon emissions. A single barge replaces many rail cars and countless trucks on our roads and rail lines in a more fuel and labor efficient manner, thus subjecting our roads and rail lines

to much less wear and tear. Most important, fewer trains and trucks on our roads directly enhance public safety.

<u>After all, when was the last time that a car collided with a barge?</u>

The dams of the Columbia and Snake Rivers also provide life and property saving flood mitigation. The floods of 1861 and 1894 occurred prior to the construction of any dams on the Columbia River and claimed many lives in 1861. The latter (1894) affected Portland Oregon and caused great damage. The water level reached 33.5 feet higher than low flow (a record) and many buildings had their ground floors entirely submerged across a 250 square block area. It was referred to as the "dirty flood" because raw sewage was routinely dumped into the river in that time and great numbers of flood killed livestock and then dead fish, further compounding the specter of serious water borne disease.

The Van Port flood in 1948 also caused great loss and killed at least 15 people (but estimates ran as high as 50 lost). Only two major dams had been built by the time of the 1948 flood. Another serious flood also occurred in 1996 but the most unpredictable damages and danger to public safety was caused by flooding from the Willamette River. The Portland area has been fitted with other property and life-saving structures (levies etc.) in the intervening years but the role that the major dams on the Columbia River System serve in saving lives and property cannot be minimized.

It should be noted that when the Columbia floods in the Portland area, those events are not historically short lived but have last from several days into weeks.

<u>The gain to migratory fish due to breaching is much less certain.</u> There is a serious issue about what the effect of sudden, large releases of silt and mud built up behind the dams will have upon the river below each dam breached. Any purported gains could take years if not decades to come to fruition and instead breaching may well set back salmon and other migratory fish in the meantime.

Furthermore, the debate about dam breaching has been occurring for many years. During that time there has been much improvement with regard to the technology to mitigate the fish issues around dams. Study of the other

elements of the migratory fish environment has also been advancing. It is finally being recognized that issues such as predation and over fishing (both domestically and internationally) are very important factors. The YCFB believes that addressing those two issues would far outweigh losses due to dam passage.

Another issue that has surfaced recently is that of a declining population of the Southern Resident Orcas. Advocates for breaching the LRSD blame a reduced salmon population due to losses because of them. The facts and history are illustrative because the Orca population is the same as it was before large scale fish hatchery operations began. The Orca count was about 66 individuals in the area of concern. Millions of salmon were reared and released from hatcheries for many years and the Orca's numbers increased to over 100. The hatcheries were closed or scaled back considerably and the Orcas now number …….. 78.

The YCFB believes that the Orca's rise in numbers and then their subsequent decline is significantly correlated to the rise and fall of artificial releases of hatchery reared fish. As the releases of hatchery salmon have declined, the Orcas finding fewer reared fish had to turn to the wild salmon which then also declined because of the added pressure from the Orcas. If we need more Orcas, then it is obvious that we need to resume rearing and releasing more hatchery fish to feed them.

Though there is disagreement within the environmental community about the genetic quality of hatchery fish, the YCFB believes that they are genetically one in the same as wild salmon, the difference being how they are reared. One study, from the Hood River, claims that first cross fish from eggs and sperm from wild salmon are only 87% as genetically fit as the wild parents. No one else has such a finding. YCFB agrees with the principle Native Nations on this issue. They are big proponents of hatchery fish, and they operate a number of rearing operations in the region and are also at the forefront on research on how to better breed and rear them with great success.

Understanding where the Southern Resident Orcas reside is also important since they range within the Puget Sound and the Salish Sea for more than half of the year. The EPA has been closely monitoring pollution levels in the Sound and adjoining Salish Sea for decades and they have been finding alarming levels of PCB's and PBDE's in the marine life there.

The primary animals the agency is monitoring are the Pacific Herring and the Harbor Seal. Less often, the agency has retrieved samples from Orcas and one individual, a "transient" (mammal eating) Orca was found to have alarmingly high levels of these harmful pollutants. The resident (Salmon eating) Orcas tested are also showing heightened levels of a number of pollutants including PCB's and PBDE's. Shockingly, scientists in Canada are finding high estrogen levels in male salmon to an extent where some are producing eggs and female proteins. The estrogen is being dumped by humans into waste treatment systems. Scientists are finding similar trends in the Puget Sound. Cocaine is also among the numerous chemicals detected in salmon.

The EPA banned PCB's in the 1980's and PBDE's by 2003. Continued monitoring has shown that PCB levels are declining and PBDE concentrations are leveling off. Unfortunately these pollutants are very persistent in the environment and have been shown to bio-accumulate with marine animals higher in the food chain such as with Orcas. It is to be noted that PCB's and PBDE's have been implicated with interfering with many critical life functions in animals. We also find it interesting that the highest levels of these onerous pollutants with in the Sound, on an order of magnitude (a few hundred units vs. nearly 4000) has been found *right in the vicinity of Olympia*. The YCFB believes that transposing a Puget Sound pollution issue into an advocacy to breach the Lower Snake River Dams is scapegoating, at best.

Though a great amount of effort has been directed to fish passage around the Columbia River dams, the YCFB finds it very odd that relatively little has been accomplished with respect to passage around the many blockages of tributaries that empty into the Puget Sound. This is peculiar since this is the home space for the Orcas and if salmon, the prime food source for the resident Orcas, are not allowed to spawn in those tributaries, we ask the question: Is it any surprise that they (Orcas) are hungry?

Further, Orcas while in the Sound are also threatened by humans conducting water travel by a multitude of surface and sub-surface ships and craft. These activities include commercial shipping, recreation and military. A point of fact is that even the commercial tour boats used to view the Orcas have been implicated in injuring them. The Orcas are said to be injured not only by the hull of the ships/boats but also by propeller strikes.

A related controversy exists over the use of sonar by ships and other water craft. Orcas hunt, navigate and communicate with their own sonar and it is claimed that all these sonars working in a relatively confined space such as the Puget Sound is detrimental to the Orcas. One can count on Orca tour boats using a form of sonar when even the most basic outfitted fisherman in the Puget Sound is using the technology (fish finders). The sonar caused confusion could even add to the Orca/boat collisions.

During the winter and spring, the South Resident Orcas range from Monterey Bay on the south to coastal South East Alaska on the north. NOAA has done some remarkable research utilizing satellite tracker tags on salmon and made several important discoveries.

Interestingly, Columbia and Snake River salmon as a group do not all range in the same area when out in the ocean. They have found that salmon from the upper reaches of the Columbia River and the Snake River travel farther out into the Pacific Ocean before they begin traveling along the coast. <u>This is incredibly significant because Orcas range more closely to the shore.</u>

Salmon from the lower Columbia tributaries such as those originating from rivers such as the Cowlitz and Deschutes among others travel closer to the shore precisely where the Orcas are during the winter and spring. The Snake River Salmon are farther from land than the Orcas looking for salmon. Breaching the LSRD expecting to get more salmon from the Snake River to feed the Orcas is foolish when in fact the Orcas rely upon salmon that arise from the lower tributaries of the Columbia and not those from the upper Columbia and Snake Rivers.

All of the Columbia and Snake River Salmon have relatively high return rates thanks to tremendous efforts and expense to improve habitat and passage in the entire basin. It is interesting that while these salmon have been increasingly successful it is found that runs in areas where NO dams exist are way down even in British Columbia and Alaska. Scientists studying this phenomenon are puzzled as to the reason but again there has been a great amount of land mark research and the likely problem stems from conditions in the Ocean. Predators are a suspected factor in reducing salmon populations.

<u>One researcher recently commented that they are having a difficult time finding other factors that could be impacting the salmon because his satellite tagged fish are getting eaten so quickly.</u>

The North Resident Orcas have been growing in numbers (about 200) to the extent that they are flourishing. One theory is that the South Resident Orcas are being out "performed" by their "neighbors" (the North Resident). Orcas are known to favor salmon greater than 25 inches long. The research points to a possible answer in that the increasing numbers of North Resident Orcas are harvesting the bigger fish before they can leave the Alaskan waters and travel south back to Washington State tributaries and thus denying the South Resident Orcas a chance to feed on them.

The status of the South Resident Orcas and what needs to be accomplished to support a desired population of them is a complicated matter, the four Lower Snake River Dams are the least of their problems and focusing on the false hope that breaching affords will only allow their population to further decline since the real problems are being ignored.

Our hydroelectric dams generate reliable power economically and provide water for irrigation as well as serving in flood mitigation. Further, our dams form an important transportation system along with great recreational opportunities. Trading this "sure bet" system that is the envy of the world for two less reliable generating systems that have serious short comings is nonsensical. The supposed environmental gains related to breaching are dubious. The argument that dam breaching would save the Southern Resident Orcas is fallacious when the facts speak otherwise. New technology is already boosting fish survival around the dams with the promise of more innovations in the future without breaching.

The YCFB believes that the facts show that breaching the Lower Snake River Dams would negatively impact efforts to reduce the region's carbon foot print. The breaching of dams is a poor tool to save various fish species when there are many other options that have been or are already about to be implemented to improve their survival without damaging our electric generation capacity, transportation system and regional economy.

Therefore, the YCFB supports the Preferred Alternative chosen by the Army Corps of Engineers, Bureau of Reclamation and Bonneville Power Adm. and our members thank them for the exhaustive work done to draft this EIS.

Mark Herke

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