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Subject: Over-Arching Transportation Impacts of Proposed Pe Ell dam.

A lot of work has gone into the preparation of Appendix K, Transportation Discipline Report and the April 24, 2024 FCZD Technical Memorandum on Access Roads. Both documents are well written.

The one aspect which both Appendix K and the 2024 Technical Memorandum lack is an understanding of the existing road system (1) in the residential area of Pe Ell, (2) the private road entering the proposed dam site and (3) the use of Weyerhaeuser roads during and after reservoir inundation.

Decision makers are not provided with the over-arching issues which make Appendix K almost meaningless. Page 22 of Appendix K states there is no significant adverse impact regarding roads. Given the following scenarios, decision makers will clearly see that there will be significant environmental impacts on the Pe Ell road system.

Over-arching Issue 1: When the Dept of Ecology denies the FCZD a permit to withdraw water for dam construction between May and October each year, there will be 100,000 truck trips required to haul water from an adjacent water basin. That is 20,000 trips between May and October per year or about 200 trips per day through the residential district of Pe Ell in that period of time.

Over-arching Issue 2: When the Dept of Ecology denies the FCZD a permit to dump overburden debris on the banks of the Chehalis river within the footprint of the reservoir, there will be 120,000 truck trips into Pe Ell as spoils are carried to some unidentified place for filling. That is another 24,000 trips per year or about 120 trips per day through the Pe Ell residential district.

Over-arching Issue 3: When the FCZD actually finishes the characterization of proposed rock quarries and finds out that the quantity and quality of rock is insufficient for making good concrete, there will be 100,000 double-truck trips of quality rock through the residential district of Pe Ell to the dam site. That is another 20,000 trips per year or about 100 trips per day during the 5 years of construction. The well-known source of quality basalt (Columbia River basalt) is in the Doty hills north of Pe Ell.

What is missing from the draft EIS is that the Dept of Transportation will not use any of the pillow basalt around the dam site for hiway construction due to the fractured nature of the pillow basalt.

Pillow basalt was formed by eruption of molten lava from the sea floor of the Pacific Ocean. As the lava was cooled by the sea water, water was trapped, evaporated and created microscopic air bubbles in the cooled rock. Over millions of years islands were formed in the Pacific Ocean consisting of alternating layers of soft pillow basalt and marine sediment.

As the North American tectonic plate separated from Europe and moved westward, it scooped up volcanic islands in the Pacific Ocean forming the Willapa Hills area of southwest Washington. All of the boreholes for the dam have revealed alternating layers of highly fractures pillow basalt and soft marine sediment called saltstone and claystone.

Weyerhaeuser has found that pillow basalt from local quarries is easily crushed into a wet slime by heavy traffic. That has made road maintenance expensive. I have taken large pieces of pillow basalt to my home for yard decoration only to find it begins to crack and crumble after a few years due to the freeze and thaw cycles. Unfortunately, geologists describe this fractured basalt as "weathered" which hides the fact that "weathered" pillow basalt is highly fractured due to the presence of microscopic pockets of water which expand during freeze and thaw cycles.

Designers of the dam are optimistic and claim that by adding glue (called Dental cement) to the fractured pillow basalt, the fractured rock will be suitable for building the dam. This optimism is not shared by geologists across the country who have looked at the borehole data.

The lingering question is whether or not there is adequate quality and quantity of rock for dam and road construction. The FCZD issued a Preliminary Design Cost Report on June 26, 2025 which stated the need for "better understanding of available construction materials and requirements for quarry development, aggregate production, and aggregate transport."

When will decision makers get that "better" understanding?

The purpose of this comment is to illustrate the potential for extensive traffic through the residential district of Pe Ell which has been entirely left out of the draft EIS.

120 trips per day prior to construction to haul away overburden from the dam site.

100 trips per day to haul in quality rock. During May thro October, that increases to 300 trips per day when hauling water is added.

These trips are added to the heavy traffic hauling sand, sacks of cement, steel, and heavy duty construction equipment through the residential district of Pe Ell. I can understand why the author of the draft EIS wrote that there is no significant impact of the dam on transportation. I met one EIS author who told me that she has never been to Pe Ell. It was obvious by reading the draft EIS. Case closed.