Opinion from the Peace (revised July 24, 2016)

Proposed Site C would destroy a productive river valley equal to the distance from Vancouver to Chilliwack. Would you like this project in your back yard? Do you think this flooding could be considered green and clean!!

The lack of transparency by the Provincial government regarding the proposed flooding of the Peace River will commit BC citizens to participating in British Columbia’s Environmental Disaster of the 21st Century. In order to emphasize this statement please refer to the following information.

The reader should note that the first two dams on the Peace (WAC Bennett and Peace Canyon) are imbedded in igneous bedrock and not in sedimentary material such as exists at proposed Site C.

This photo shows an overview of the proposed Site C dam axis with the very unstable Montmorillonite clays perched on top of the Shaftsbury shales. As long as these shales and clays are dry they remain stable. However, there is no way of guaranteeing they will remain dry. Man does not have control over the periods of heavy rain that can occur.
This 2011 photo shows the recent slide of the sedimentary rock (Shaftsbury shales) lying above the axis of the proposed Site C dam site. This shale slump (slide), directly on the centerline of the proposed Site C, occurred sometime during the last 24 months and has buried the exploratory adit (mine or tunnel) that was constructed by BC Hydro (BCHPA) in the late 1970s. This failure of the shale substrate parallels the causes of the Peace River Bridge failure in 1957. This Shale cannot be considered to be bedrock. The other numerous slope failures along the River Valley can likely be attributed to the wetting of the Montmorillonite clay soils overlying this shale base.

It is interesting to note that there is no known reference in any of the engineering reports referring to or acknowledging the presence of Montmorillonite clay soils and their unique characteristics. These characteristics contribute to the unstable shorelines and breaks all along the lower Peace River valley. Refer to the 1991 Weisgerber Report for confirmation of this statement.

A detailed explanation of Montmorillonite clay follows on the next page.
The structure of Montmorillonite clay (excerpted from US Department of Agriculture Yearbook 1957, pg. 34):

The wetting of these unconsolidated materials with water causes the thin plates to separate. When the platelets are on an inclined plane the coefficient of friction is reduced to the point where they will slide due to gravitational forces. The Attachie Slide in 1973, the BCR hill in the 1980s, and the Big Bam ski hill slide in 1996 are all examples of this phenomenon. Numerous other slides in earlier eras are located all along the undisturbed valley slopes. Any human disturbance in combination with high rainfall events exacerbates the slumping process along the edges of the Peace River Valley. There were extremely high rainfall years preceding the bridge collapse (1957), the Attachie slide (1973), and the ski hill failure (1996).

Aerial view of the Attachie Slide May 26, 1973 which dammed the Peace River for approximately 10 hours. This site is within the proposed Site C reservoir.
The proceeding discussion illustrates why the following comments were made by the BCHPA engineering contractor firm: Pg. 9 Klohn Crippen Berger and SNC-Lavalin September 2009 Report

http://www.bchydro.com/energy_in_bc/projects/site_c/document_centre/stage_2_reports.html

"...the uncertainties in predicting both the extent and rate of the shoreline impacts lead to the proposal to adopt an observational approach for periodically reviewing and updating the reservoir impact lines after the reservoir has been filled."

This proposal by a professional engineering firm should have had the proponents’ (BC Gov’t) hair standing on end and basically been a show stopper. Now it is doubtful that there will be any further objective analysis, as it appears that this firm has now taken an advocacy role. It is interesting to note that Gwyn Morgan, Chairman of SNC Lavalin was the energy advisor to the Premier of BC, Christy Clark.

From the Thurber 1976 report on proposed Site C:

"The preliminary "safeline" is a conservatively located line above which the security of minor physical facilities, particularly dwellings, can be assured. It is based only on probable effects of the reservoir upon slope stability with causes unrelated to reservoir action being excluded. The safeline is not to be confused with the probable limit of erosion or sloughing (sometimes called the "breakline"), which does not allow for any margin of safety, or with the "take line" which is a line used to designate land to be purchased or restricted, as a result of development."

These lines have not been defined for the proposed Site C reservoir. **WHY NOT?**

BCHPA needs to be compelled to define these lines within the proposed reservoir prior to advancement of this project. If they are unable to undertake this task then it is suggested that this project cannot proceed any further as a fiduciary responsibility to the citizens of BC is implicit in this utility’s (BCHPA) mandate.

It is also interesting to note that a small area near the WAC Bennett dam was mapped, defining a SAFLINE in the early 1970s. That line has since been exceeded in many places by the sloughing shoreline of that reservoir. The soils in this particular area are sandy and silty loam and have a different failure pattern as compared to the montmorillonite soils that are predominant in the proposed Site C reservoir. The following photo (from 2009) of a cabin lying on the expanding shoreline of the Williston Reservoir illustrates the inability of engineering technologies to accurately predict shoreline impacts along reservoir perimeters. Please note that the expansion of this shoreline perimeter still continues, some 42 years after the impoundment of the Williston Reservoir.
This site is approximately 8 miles west of the WAC Bennett dam. This cabin was built in 1976, at that time, the shoreline of the Williston reservoir was one third of a mile away from the cabin site. The cabin was built on the safe side of the defined safeline, 33 years prior to that picture being taken. This cabin was lost in 2009 the year the photo was taken.

These factors are all contributing to and reinforcing common sense observations that to proceed with further reservoir construction within the sedimentary basin of the lower Peace River is to create an environmental mess of unknown magnitude.

BC Hydro is on slippery ground in more ways than one. Citizens are encouraged to find out more about BC Hydro’s $20 Billion debt, deferral payments on another $5B debt, plus the total debt commitment due to Independent Power Producers [confirmed to be $50+ Billion]. Citizens need to take back their ownership of their Public Utility. At the present time the total debt is $76 Billion. Ask yourself why the BC Utility Commission is not involved in this process.

The natural gas cogeneration of 7 Site C’s can be built for the projected $9 Billion cost. Site C is unnecessary, irresponsible and UNSAFE.

The existing and paid for Burrard Thermal Plant in Port Moody is capable of powering 700,000 homes. This is equivalent power as the proposed Site C.

Destroying a river valley is neither clean nor green.

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