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June 8, 2004

To: Marcel Bernier,
Section Manager
Engineering Design Services
District of North Vancouver
355 West Queens Road,
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Re: Dollarton Highway Seymour River Bridge Upgrade

Dear Marcel:

Thank you for your e-mail of June 4, 2004. The paddling community is appreciative of the efforts you have made to address the concerns we have put forward, and we are also appreciative that you are considering the measures we suggested, given the costs you have identified as associated with those measures. In response to your e-mail, the paddling community has discussed the items that you mentioned and the information below is the response.

The key safety issues that arise from the proposed bridge structure are as follows:

- a) collision with the upstream bridge pillar, and/or other debris that may accumulate on the piling.
- b) entanglement between the bridge pilings, and/or other debris that may accumulate there

The paddling community has no desire to add unnecessary costs to the project, or to be a burden which hinders the project proceeding in a timely manner. It is unfortunate that we could not have discussed these concerns earlier, so that these safety issues might have been incorporated sooner. However, given the timelines we were faced with, we have responded as quickly as possible. We hope that our input is helpful and clearly outlines the concerns the paddlers have.

The crucial safety concern is the upstream bridge pillar, as this object will be exposed to the full force of the current, and will be the most likely place that a paddler in any craft, a swimmer, or any floating objects will impact the bridge structure. As such this is the key area to focus on modifications which might improve the safety of the structure.

After discussing this with various paddlers, a possible solution that addresses the critical safety concerns, and the costing issues you mentioned, is as follows:

- 1) using the attached diagrams for a ramp on the upstream side of the bridge as a model, install the ramp, however a larger diameter ramp (minimum 1.5 metres cross-section) would be required, for the reasons that follow. This reduces the possibility of broaching (sideways impact with an object in the river) due to the larger cushion that the bigger object creates, as was noted previously. The smooth and rounded surface of the ramp will also reduce entanglement possibilities.

The larger diameter ramp will also create a reduction in the current velocity which will occur downstream of the ramp, where the other pillars are located. While this does not completely address the concerns with either paddlers or debris getting caught on the upstream side of the pillars below (downstream) of the first pillar, the larger diameter front pillar will help to shield the lower ones.

Finally, a square profile on the downstream side of the upstream pillar, would provide a further reduction in the current speed below the first pillar. This would produce an eddy, which would actually be of benefit to the paddling community, and would likely also provide fisheries enhancements from the project. This production of an area with reduced current speed will reduce the possibility of materials collecting on the upstream side of the downstream pillars.

This will produce slower current velocity in the area of the lower pillars, which will make handling any possible impacts while in a boat, more predictable. As well, the larger diameter ramp will deflect aside more water, and more floating objects (paddlers or otherwise) that might impact the lower pillars. The square downstream end of the ramp will assist with this by keeping any objects away from the lower pillars. In addition this is likely easier to construct, as the base can be square, with only a rounded upstream portion.

2) If the ramp as described above (and as noted in the attached files) is put in place the paddling community feels that the cost/benefit ratio of addressing the concerns we have put forth will be best addressed. This does not eliminate the possibility of entanglement between the lower pillars, as would a diaphragm between the pillars, which ran from the river bottom to above the high water line. However this may be a solution that will address your cost concerns, while addressing some of the safety issues.

3) along with the larger diameter ramp, if the District of North Vancouver would undertake a program that would allow easy communication, between instream river users and the District, so that instream users noting debris caught on the bridge (or others in the area) could easily contact the District, then this would assist in keeping the area hazard free. Along with the contact system and protocol, if the paddling community had assurances that the district would endeavor to remove hazardous debris in a timely manner, then this program of communication and debris removal would help to reduce the possibility of entanglement, by keeping the bridge free from debris.

It is our understanding that the design of the bridge has made allowances for easy removal of debris in the future. If this is the case, then this would help ensure the area is less hazardous to instream users.

4) If the suggestions above are incorporated with some of the clean up items noted in the April 29 letter (see below) this would add to the overall safety of the area, and contribute to more enjoyable and safer use of the area by recreationalists.

The other clean up items noted previously are:

a) the old wooden pilings in the riverbed, which are a serious hazard, which are often partially or wholly submerged, and which act collectively as a large strainer, and individually as objects which can easily wrap, and entrap a boat. Removal of these during construction would eliminate objects which may both injure or entrap paddlers, and entrap other debris.

b) the large metal pieces lying on the bottom, beneath the bridge are a foot entrapment hazard, and source of entanglement. Removal of these during construction would eliminate objects which may both injure or entrap paddlers, and entrap other debris.

c) the abandoned gas pipeline on the east bank is becoming undercut, and serves as another source of entrapment. Either removal of this, or if that is not possible, building up the upstream side, so as to eliminate the possibility of entrapment due undercutting, would eliminate another object which may both injure or entrap paddlers, and entrap other debris

Should the suggestions above be possible to implement during construction of the project, then it is the thoughts of the paddling community that this will best address the concerns we have expressed, given the restrictions in place. The measures above will address the safety concerns we have, and if these are possible, it is thought that the diaphragms between the pillars will not be required, and therefore those costs, of concern to you, not required.

To conclude, we thank you for considering our input, and our concerns. We hope that the suggestions that we have made offer an opportunity to address our safety concerns and, based on the costing estimates you delivered, your concerns as well.

Our suggestions have attempted to work with the least expensive option you identified, while attempting to address the most critical safety concerns. Again, we thank you for the efforts to address our concerns.

Please let us know if the suggested solution is a workable one for you. You may contact us at the numbers below.

Sincerely

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WKABC River Projects Coordinator

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