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June 8, 2004

To: Monty Knaus,
ND LEA Consultants Ltd
Suite 600 - 1455 West Georgia Street,
Vancouver, BC V6G 2T3.

Re: Dollarton Highway Seymour River Bridge Upgrade

Dear Monty:

Thank you for your calls on June 10 regarding the bridge pillar ramp design and construction.

On June 10, Roger and I went to the Dollarton Bridge site in order to determine the water levels that will be of concern for paddlers, and to determine the actual dimensions that might be required in order to have the ramp catch flows which will be of concern to paddlers.

As we discussed, it is difficult to judge the height that the vertical section, without knowing the base elevation of the riverbed, and the elevation of the minimum water level of concern. After looking at the minimum flows we feel are going to be of concern (due to current velocity), and the maximum flows which will be of concern, we feel it is most important that the ramp be effective during higher flows. We were unable to determine the elevation of the stream bed due to the influence of the tide while we were there, however we did make an estimation of the depth, and the influence the minimum paddleable flows will have.

The consequences of impact with the bridge pillar at higher flows are of greater concern than a similar impact at lower flows (and therefore lower current velocities). The zone of flows where the most hazards will occur is the portion from mid-low up until high water. At both low flows (not as much current velocity) and flood flows (less likelihood of unskilled paddlers) the chances of an impact with the pilings are going to be decreased.

Given those comments, we feel that having a vertical section at the front of the pillar, below the start of the ramp, which is 85 cm in height will do two things:

1) reduce the impact on the streambed, by shortening the upstream distance required, as the foreshortened nose reduces the overall extension upstream

2) reduce the amount of material in the ramp so that the costs you mentioned can be reduced.

The attached drawings include those thoughts. As well, we calculated that the variance between the low flows of concern, and the high flows of concern would be approximately 2 metres. Given this, we feel it is important to have the ramp extend 2 metres (measured vertically), from the top of the vertical section on the upstream end of the ramp.

While this makes the ramp higher than we initially thought was required, it also shortens it. In trying to keep the materials down, and look to a shortened upstream distance, we also reduced the angle on the front of the ramp, from a 1:1 slope to a 3:2 slope, as you suggested. I have attached drawings and images to show the concepts.

This morning I also discussed a few items with Marcel, and he has agreed to work with the paddling community on the clean-up items below:

1) removal of the metal pieces from the river bottom during construction

2) Removal of the old posts that are in the riverbed, under the bridge

3) possible rip rapping in the area of the old gas pipeline. As Marcel and I discussed, I will need to follow up with Jim Schellenberg, to sort out if the owners of the pipeline should not undertake contributing to this work. In addition, we documented a large area of undercut concrete, rebar in the bank, and generally hazardous conditions associated with that pipeline casing. I did call Jim, and he is going to follow up with who he thinks is the owner of the pipeline.

If Jim's efforts can not have that hazard removed, or cleaned up, as we discussed, it would be good to follow up with you on exactly what you have planned for rip rap in the are on the east side of the bridge, as there is a possibility to cover up the hazards, if they can not be removed.

To help illustrate the debris items mentioned above, I have attached some photographs of the area, which Roger and I took yesterday.

Lastly, I also discussed with Marcel, the establishment of a "debris hotline" protocol, which paddlers might use to communicate with the District of North Vancouver4, so that any debris which might accumulate could be removed in a timely fashion. Marcel is going to connect Len Jensen and myself, so we can follow up on this protocol and system for debris monitoring and removal.

I have copied this to Jim Schellenberg, at the Navigable Waters Protection Divisions, so that he is notified that we have come to a general agreement on how to mitigate the impacts of the bridge piling, as best we can given the time constraints, and the monetary constraints the District of North Vancouver has for the project.

Sincerely

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WKABC River Projects Coordinator

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CC: Jim Schellenberg, Navigable Waters Protection Officer, Navigable Waters Protection Division
Marcel Bernier, Section Manager, Engineering Design Services, District of North Vancouver