Whitewater Kayaking Association of British Columbia

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To: **Jim Schellenberg**
Navigable Waters Protection Division
Department of Fisheries and Oceans, Canadian Coast Guard
#200-401 Burrard Street
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Re: File # 8200-04-8027
Dollarton Highway Seymour River Bridge Upgrade

Dear Jim:

Further to the referral which the WKABC received regarding the proposed bridge upgrade, and as per our telephone conversation today, please find the paddling community's input regarding the proposed bridge upgrade on the Seymour River. This was discussed at the Tuesday River Impacts and Access Committee (RIAC) meeting, and there were a number of comments and concerns put forth by members of the WKABC, and by members of the Recreational Canoeing Association of BC (RCABC).

The section of the Seymour in question is utilized for paddling as it comprises the lower portion of the run below the Seymour Canyon. This run begins at the Pool 88 stairs and is used extensively by beginner to intermediate paddlers, depending on the flows, and is used throughout the year, with the most use in the fall/winter rainy period, and the spring runoff period. The run ends at the ocean, on a point just downstream of the railroad bridge. The take-out location is accessed off Spicer Road. The lower portion of the run also features a small weir, where a pipeline crosses the river. This produces a surfing wave at high flow, and a play hole at lower flows, both which are attractions which paddlers utilize. The boulder-studded nature of the run makes the run attractive to a variety of skill levels, and obviously the easy access for Vancouver inhabitants, plus the lack of other easily accessed runs of this difficulty and quality, make the river and the runs in question very popular.

The pool immediately above the Dollarton Bridge (Dollarton Pool) is used for instruction, practice or play by all levels of paddlers. Dollarton Pool is important to the paddling community in that it is one of the few useful spots that instructors can safely train beginner canoeists and kayakers, without worry of downstream hazards, particularly in the Vancouver area. After receiving instruction, beginners continue to use the pool as a safe practice area. It is important to note that a paddling retail and instruction shop has moved in just downstream of Dollarton Pool with the intent of using the pool area for instruction and training. A letter from the owner is forthcoming.

Dollarton pool has specific qualities that make it a good training and play area:

- water in the rapid above is channeled into a narrow chute that feeds down the center of the pool.
- At most water levels there are large eddies on both sides of the chute
- there is a wave at the bottom of the chute that is a good play feature for intermediate and advanced canoeists and kayakers

Beginner canoeists and kayakers "ferry" across the current from the eddy on one side to the other, learn to Eskimo Roll, and practice other maneuvers. It is normal for boats to tip and for people to swim, or for beginners to lose control and get washed downstream. Any obstacle such as a bridge piling or wood debris downstream then becomes a serious hazard.

The concerns put forth regarding the bridge relate to the style of support that is being proposed. The 60-cm-diameter pipes present little deflection of water, and therefore little cushion should a kayak, canoe or other object come up against the bridge pillar.

Also of concern is the space that appears to be between the pipe pillars. From the scale drawings we have received this appears to be a distance of approximately 3 metres. On the Mount Seymour parkway bridge, the gap between the pillars is much smaller, and the added cumulative cushions from each pillar reduce the possibility of entrapment of debris or boats. The smaller gaps between the Seymour Parkway support pillars also make entrapment less likely as it is quite difficult to cut across the current with enough velocity to get between the pillars.

On the Mount Seymour parkway bridge, the bridge crosses the river at approximately right angles, making the middle support pillar perpendicular to the current. The Dollarton bridge crosses at approximately 45 degrees, and due to this, and the corner above, provides more opportunity for current to move across (likely from river right – the west bank, toward river left – the east bank). This, combined with the pillar spacing greatly increases the chance of entrapment for paddlers using the river.

Also of concern is the movement of the pillars upstream (due to the bridge widening) which will effectively move the hazard upstream, closer to the area that paddlers utilize. This shortens the time a boater has to react and safely avoid the pilings or debris.

Finally, the possibility of debris entrapment on the midstream bridge piling, particularly given the history of such debris collection on the Seymour Parkway Bridge, would seem to be a very real possibility. Should any debris collect on the bridge pilings, this would form a significant hazard which will be introduced due to the construction of the bridge. While the paddlers feel that the larger surface area upstream piling would reduce this possibility, the installation of midstream objects will create opportunities for debris collection which currently do not exist.

For paddlers who are upright and have good control, the bridge is an obvious, but avoidable hazard, however, for less skilled paddlers, or for those who may be in distress, swimming in the river, upside down, or perhaps with less control, the items mentioned above contribute to increased possibility of problems occurring. In an area with significant use by lesser skilled paddlers, this is likely to be an ongoing issue into the future.

There are a number of possible solutions which were discussed, in order to alleviate the concerns mentioned above:

1) As was mentioned in our telephone conversation, plates running between the pilings, parallel to the line of pillars, which would block water movement from side to side, would remove most of the possibility of entrapment, or retention of debris. While this would not remove the obstacle that the upstream piling might pose, it does significantly reduce the opportunity for entrapment in an overall sense.

2) Suggestions also came forth for a larger diameter upstream pillar, which would create a larger cushion, and help to minimize the possibility of entrapment of boats or other objects. While this may not eliminate possible impacts with the pillar, it will lessen the consequences of such an occurrence. Combined with the first item this would significantly reduce the hazard posed by the pilings.

3) A “deflection shield” of boulders piled against and around the upstream side of the pillar could also provide a large surface area object (or group of objects) which would reduce the entrapment hazards. This angled deflector would rise on the downstream end, so as to provide a ramp which lifts any objects that contact the piling. If this ramp was also angled off to either side, this would not only deflect floating objects toward the surface, but also to the side. This would be a low-cost option for improving the existing design plan, and one that would also reduce the entrainment of debris, and possible entrapment of paddlers.

4) A bridge design without the pipe pilings would also reduce the hazard, and in their place a midstream concrete structure, with a larger diameter upstream end would further reduce the hazard. This might only be a portion of the height of the bridge, and the pipe design could be used on top of the lower solid structure. While perhaps not a possibility due to cost, and design, a structure without midstream supports would eliminate these issues.

5) Should the midstream bridge pilings be required, then a formal communication chain which would allow paddlers to report debris on the bridge pilings, and to have some commitment toward expedient removal of such debris would be a

method to work within what may be the project's limitations, and to address in some manner, the concerns about introduced debris collection.

Aside from the bridge construction, there are several other hazards in the immediate area of the bridge, and perhaps these might be removed during the construction of the bridge. This would see some beneficial safety improvements as part of the project, and may or may not be easy ways to improve the area. These 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.

b) the large metal pieces lying on the bottom, beneath the bridge are a foot entrapment hazard, and source of entanglement.

c) the abandoned gas pipeline on the east bank is becoming undercut, and serves as another source of entrapment.

In terms of the bridge construction project, there is significant interest in seeing the hazards that exist now removed, or reduced to a more manageable level. The paddling community can and will provide volunteer labor, and input to assist with cleaning up these hazards, if this is possible during the construction of the bridge upgrade.

The paddling community hopes that installation of the new bridge might enhance the safety in the area, and not produce further hazards. Without burdening the project with excess costs, the paddlers feel that improvements can be made to the area, and that the hazard posed by the upgraded bridge can be reduced through consideration of some of the comment above.

Based on the discussions which have occurred previously, between the WKABC and RCABC representatives, we are appreciative of the efforts by the District of North Vancouver, and the project engineers to address the inputs provided. The paddling community hopes that theses issues can be addressed in some manner which will not delay the efforts to see the bridge constructed in a timely manner, and we have contacted the project engineers, and the District of North Vancouver, as you suggested, to discuss these issues, and some possible solutions.

While the lower Seymour is not the best whitewater stream in the area, it is located such as to provide easy access to hundreds of paddlers, and has been historically used by a variety of users, in a variety of craft. In terms of easy options for less skilled paddlers, this is an important community resource. We would hope to see this remain a positive community benefit, and retain the possibility of safe use into the future, without undue risk to the individuals that will undoubtedly use the area.

Sincerely

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