Harvie Passage River Portage & Access Needs A Resolution

Summary:

The conceptual design of Harvie Passage as a safe traverse of the Western Irrigation District Weir on the Bow River in the heart of the City of Calgary was first proposed in 2001. Twenty years later Harvie Passage has become a high-use destination whitewater park and offers a safe traverse of the weir by an increasing number of recreational river users.

A safety-boom had historically been installed across the river upstream of the weir to aid in the prevention of access into what was considered at the time to be extremely turbulent and dangerous river flow conditions. The construction of the Harvie Passage eliminated this risk with the completion of the Harvie Passage- Low Water Channel (HP-LWC) as a Class 2 alignment to the river right. Under the normal operation of the Western Irrigation District water diversion operations from April to October each year, the flow-through of the HP-LWC is comparable to the entire reach of the Bow River within the City of Calgary. Therefore, a river-wide safety-boom is not needed.

The safety-boom has continued to be installed each year by Alberta Environment & Parks, and the Calgary Fire Department under the agreement of Transport Canada. It is Calgary River Users' Alliance opinion that the Canadian Navigable Waters Protection Act (NWPA) that assures safe navigation on the Bow River is being contravened, in so far as no alternative means are available for safe passage down the river. During the development of Harvie Passage, no consideration was given to the need for a by-pass of the safety-boom under low river flow conditions. That is, the portage channel installed more than 20 years ago as a safe exit from the river was never designed or subsequently not improved upon to bypass the safety-boom to allow boat access to the HP-LWC and river use downstream.

This report discusses the background to the Harvie Passage development, its construction, deficiencies, and solutions that need to be considered to assure safe navigation of the Bow River.

Background:

The **Calgary Bow River Weir Project** was proposed in 2001 by the **Bow Waters Canoe Club** to develop a safe river user passage through the Western Irrigation District Weir in the heart of the City of Calgary. The project later developed into the **Harvie Passage Project** that was first completed in 2012 and later redeveloped after the devastating 2013 flood. The facility was finally reopened to the public in 2018. From its humble conceptual beginning as a safe passage through the Western Irrigation District Weir, it has developed into a world-class whitewater park used by thousands of Calgarians and visiting recreation river users.

As the Harvie Passage development grew in scope, it became evident that access to and through the weir was being compromised by inadequate attention given to the need for an unimpeded traverse of the new infrastructure by a non-motorized moderately sized river craft. The original portage channel to the west of the Harvie Passage Low Water Channel (HP-LWC) was never upgraded to a "through passage" for watercraft to avoid the safety boom that continues to be installed across the river in April of each year. The original design of the channel was to allow a carry-out of pleasure craft above the weir that is now at a point adjacent to the entrance into the HP-LWC (Figure 1). Although water can flow through the channel under moderate to high flow conditions during the summer months, it is almost impossible to traverse the hand take-out location from the channel during low flow conditions that exist later in the year.

Figure 1: Harvie Passage Portage Take-out site.

This problem is of importance to the drift-boat community using the Bow River to float and fish the river from boat ramps upstream of Harvie Passage to take-out access site downstream. Drift boats have a beam of approximately 2 meters and an overall width of 6 meters with the oars extended (Figure 2).

Figure 2: Low profile drift boat traversing HP-LWC

Although the portage channel is navigable by drift boats under higher flows, once the river flows drop the width of the channel decreases and that makes it difficult, if not impossible, to traverse the channel. When this occurs, drift boat users resort to finding a passage across the chain and between the buoys on the safety boom installed across the river. This option to navigate the river is risky and possibly illegal. But once a drift boat user reaches the portage channel and finds it not navigable there is no alternative but to cross the safety boom to continue the trip through Harvie Passage to the predetermined destination downstream where the drift boat user's vehicle will have been shuttled to take the boat out of the river.

The Use of the Safety Boom – A Questionable Decision:

The original safety-boom installed across the entire river upstream width of the Bow River was installed each summer to aid in risk prevention for river floaters from the dangers of the Western Irrigation District (WID) Weir. When combined with the Portage Channel the combination allowed for a safe exit from the river upstream of the weir. It was recognized by the drift-boat and raft operators that the weir was not navigable at that time.

Once Harvie Passage was completed in 2012 and a safe traverse of the weir was possible through the HP-LWC the consensus of opinions was that the safety boom would not be needed. In 2013 the Calgary Fire Department petitioned Transport Canada for continued use of the river-wide boom sighting safety issues still exist for river users. The installation of the boom each year was agreed to without consultation with all river users' groups. The boom continued to be used each year up until the completion of mitigation to the 2103 flood damage in 2018 when Harvie Passage was reopened to the public. The original **Harvie Passage Alliance** stakeholders campaigned throughout the development to find solutions to a river-wide safety boom use, in what is considered an unnecessary impediment to recreational river use. It is understood that an application was made to Transport Canada that included a new design for the safety-boom, but to date, nothing has changed from the pre-Harvie Passage design.

The safety boom itself poses an unnecessary risk to recreational river users. The cable and buoy design is dangerous because it provides an opportunity for Stand Up Paddleboards (SUP) with leashes attached to the user to get caught in the boom. Rafts tied together, and any craft with a rope or anchor attached can also get caught in the safety boom. In the case of an ankle leash tethered to the SUP, this scenario can quickly become fatal as was demonstrated during Harvie Passage testing in 2018, and as shown in this video. https://www.youtube.com/watch?v=-NJEYNWaD8Q

More recently **Calgary River Users' Alliance (CRUA)** has taken up the challenge to find a resolution to what is considered the right to navigate the Bow River without unnecessary impediments to travel. A river wide boom in combination with an inadequate bypass to access the HP-LWC is considered such an impediment to river recreational use.

The **Navigable Waters Protection Act (NWPA)** ensures a balance between the public right of navigation and the need to build works (such as safety-booms), as well as the shared use of the waterways by the public. If the works are substantial, the NWPA states that there must be a public comment period so that the views of all potential users of the waterway are considered. As part of a review, it may be required for an applicant to modify work or place aids to navigation to mitigate any potential interference with the public right of navigation. The safety of shared waterways is considered a priority for Transport Canada and through their programs, work to ensure that navigation safety requirements are upheld. Although Transport Canada has engaged with both the Alberta Environment & Parks and the Calgary Fire Department on the use of the safety boom, there was limited engagement with the paddling community and none with the fishing boat community.

We, therefore, are asking Transport Canada, through the NWPA – Navigation Protection Program to investigate the current navigation constraints of the Bow River into the Harvie Passage-Low Water Channel and to consider options to what appears to be a firmly entrenched opinion by Alberta Environment & Parks and the City of Calgary Fire Department that a river wide safety boom is the only recourse that is possible to assure safe recreational use on the river.

The Proposal:

Although there is consensus within the paddle and fishing community that the river-wide safety boom is not needed to divert casual recreational river users to the safety of the portage-boom bypass. And the HP-Low Water Channel (river right) meets or likely exceeds the safety standards for a Class 2 passage alignment therefore does not need to be any restricted access. There is a recognition that the HP- High Water Channel (river left) with more of an advanced Class 3 whitewater configuration needs cautionary protection guidance for the inexperienced paddler who would have difficulty navigating this section of the river. The following options take into consideration the different needs for river users' protection for the high and low water channels.

Option 1: The Boom Installed Between the Left Bank and Left Entrance into the HP-LWC. This would exclude any access to the HP – HWC unless the safety boom is crossed. But does offer an embedded anchor point in the entrance pier of the HP-LWC (Figure 3).

Option 2: The Boom Installed Between the Left Bank and One of the Three Mid-Stream Rocks Immediately Upstream of the Entrance into the HP-LWC. This would exclude any access to the HP-HWC until closer to the entrance to HP-LWC where signage would need to be installed to address the challenge of using the HP-HWC by inexperienced paddlers. The safety boom would not need to be crossed to enter the HP-HWC. (Figure 3).

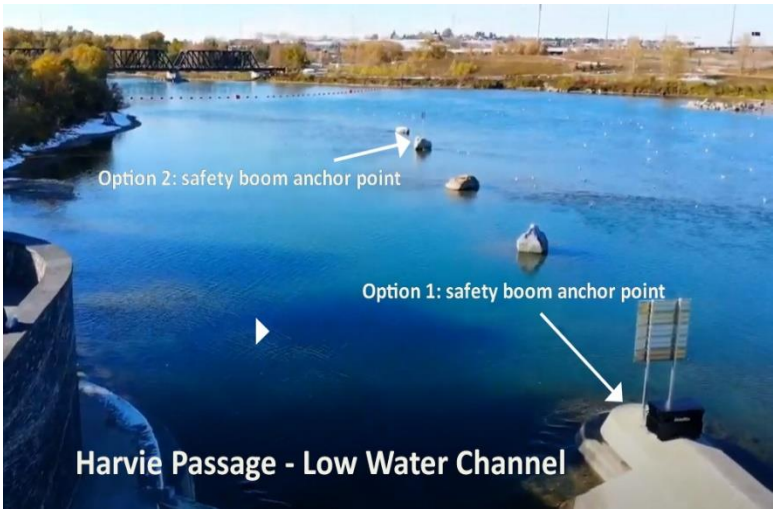

Figure 3: Harvie Passage Boom Anchor Point Options

Option 3: Redevelop the Existing Portage Channel to Accommodate Unobstructed Non-Motorized Rivercraft Use. The current configuration of the channel at the take-out point (Figure 1) is too shallow to allow for drift boats to navigate the waterway under low river flows. The problem is at its greatest in the fall of the year when flows are so low that debris collects along the gravel bar that extends from the main channel of the river into the side channel. Adding one meter of depth to this section of the side channel and the removal of the gravel bar (Figure 4) will increase flows through the side channel that will maintain an acceptable bypass of the river safety boom.

Figure 4: Harvie Passage Outflow in October 2020 - Flows 50 CMS

Outcome:

In summary, Option 2 would appear to be the best solution to assure public safety and unimpeded access to Harvie Passage as it allows for the containment of recreational river use into a defined and safe reach of the river. It allows for drift boat use of this reach of the Bow River and unobstructed access into the HP- Low River Channel and river access take-out points further downstream.

More experienced paddlers would be able to access the HP- High Water Channel without crossing the safety boom. It also allows Calgary Police and Fire River Rescue Units to navigate the river without infringing on safety boom constraints and restrictions.

It also eliminates a common procedure, and risk to the paddling community when traversing the safety boom. This is most likely to occur when a paddleboard is tethered to the leg of the user and gets lodged in the safety boom.