

Two vertical bars, one green and one blue, are positioned on the left side of the page.

Columbia River Project Water Use Plan

Kinbasket and Arrow Recreation Management Plan

Physical Works Terms of Reference

- **CLBWORKS 52 Downie Creek Boat Launch Maintenance**

November 6, 2018

1 Background

1.1 Introduction

Under Clause (o) of Conditional Water Licence (CWL) 47215, BC Hydro is required to construct recreational facilities in the vicinity of the Revelstoke reservoir.

BC Hydro funded construction of the Downie Creek boat launch¹ between 1982 and 1983 through the *Park Development Fund* that was established in 1976 with BC Parks under a Statement of Understanding. The construction consisted of a gravel boat ramp.

In a letter, dated February 13, 2013, received from the Comptroller of Water Right's (CWR) office confirmed that BC Hydro is fulfilling its obligation under Clause (o) of CWL 47215 provided the Downie Creek boat ramp is being properly maintained.

On September 18, 2018 the CWR approved the proposal to develop a Terms of Reference (TOR) for ongoing maintenance at Downie Creek boat launch.

The purpose of this TOR is to outline BC Hydro's approach and scope of work for maintenance of the Downie Creek boat launch.

Figure 1: Downie Creek boat launch, date June 28, 2012. Reservoir elevation: 572 m (1,876 ft). Lat: 51°29'54.78"N Long: 118°22'32.85"W. Photo from Recreation Sites and Trails BC.

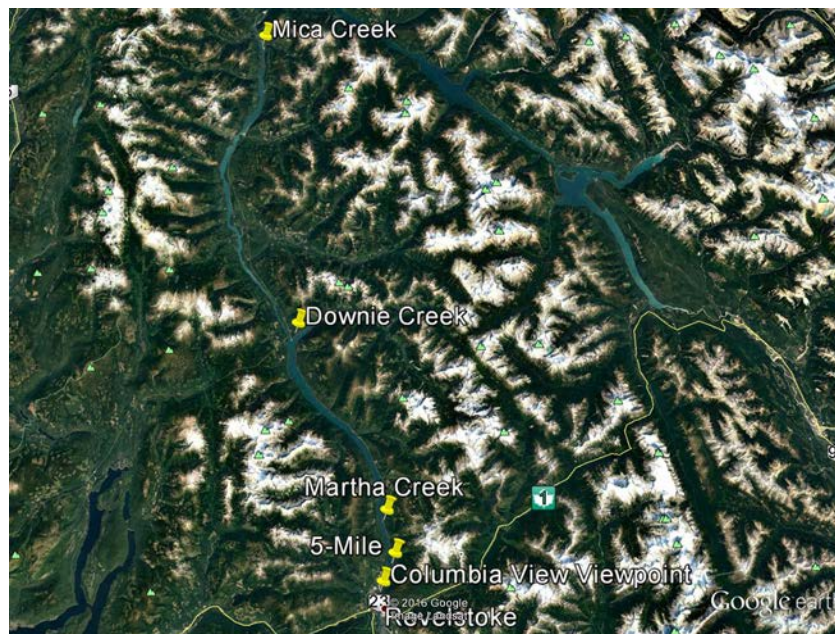


1.2 Location

The Downie Creek boat launch is located on the east shore of the Revelstoke Reservoir approximately 70 km north of the town of Revelstoke. The location of the Downie Creek boat launch is shown in relation to other boat launches on the Revelstoke Reservoir in Figure 2 below.

¹ Boat ramp refers to the concrete or gravel ramp used to access the reservoir. Boat launch is used more broadly to refer to all related facilities, including the ramp, walkways, breakwaters, etc. and may include other non-access related facilities such as parking lots, etc.

Figure 2: Boat Launches on the Revelstoke Reservoir



1.3 BC Hydro's approach to boat launch maintenance

BC Hydro filed its approach to boat launch maintenance with the CWR on November 22, 2017. As described in that letter, BC Hydro will undertake structural and routine maintenance of access-related facilities at boat launches where BC Hydro has licence or Water Use Plan responsibilities.

These terms are defined below:

- **Access-related facilities** are defined as those structures and facilities that provide safe access to the reservoir (i.e., ramps, low-water turnarounds, breakwaters, and boarding floats).
- **Non-access-related facilities** are defined as those structures and facilities that provide related infrastructure adjacent to the boat launch but are not directly related access (e.g. day use areas, parking lots, access roads, toilets, etc.).
- **Structural maintenance** refers to work that occurs at infrequent intervals to ensure the physical facilities are structurally sound and are functioning as intended (i.e., to ensure safe access to the reservoir). Examples would include, repair of a major crack that has formed in a ramp, replacing breakwaters when they can no longer be effectively repaired, etc.
- **Routine maintenance** refers to the work that must occur on a routine and regular basis such as annual activities in preparation for the recreation season, or throughout the recreation season, as required. For access-related facilities for example, this includes debris, or sediment removal, replacing safety signs, any pre-season repairs to walkways or breakwater bumpers. For non-access related facilities, this may include garbage removal, toilet pumping, etc.

1.4 Maintenance period

BC Hydro will undertake routine and structural maintenance of the access-related facilities at Downie Creek boat launch to ensure that the general public have safe access to the reservoir for the peak recreation season, and during the spring and fall shoulder

recreation seasons when the ramp is available for launching. For the Revelstoke Reservoir, these periods are defined as follows:

- Peak season: June 15 to September 15;
- Spring shoulder season: May 15 to June 14; and
- Fall shoulder season: September 16 to September 30.

In the event that a significant safety issue arises at the Downie Creek boat launch outside of the maintenance period, then BC Hydro will use reasonable efforts to ensure the site is secured until the hazard can be removed.

2 Downie Creek Launch Maintenance

2.1 Area of responsibility

At Downie Creek, BC Hydro is responsible for the structural and routine maintenance of the access-related facilities only as shown in Table 1 below. As confirmed in correspondence (January 5, 2018) with Recreation Sites and Trails BC (RSTBC) branch of the Ministry of Forests, Lands, Natural Resource Operations & Rural Development (MFLNRORD) have the responsibility to maintain the non-access facilities (e.g., toilet, parking lots, etc.), as shown in Table 1 below.

Table 1: Facilities at Downie Creek with BC Hydro’s maintenance responsibilities

Boat Launch	Access Road	Parking Lot	Day Use Area	Toilet	Lower Turn Around	Gravel/ Asphalt Ramp	Break-waters	Boarding Floats	Pilings
Non access-related facilities					Access-related facilities				
Revelstoke (Conditional Water License 47215)									
Downie Creek	X	X	X	X		BCH			

BCH = BC Hydro will undertake maintenance (both structural and routine)

X= Asset exists but are not to be maintained by BC Hydro

Blank = Asset not present

The yellow highlighted area shown in Figure 3 represents BC Hydro's area of responsibility for the Downie Creek boat launch. This polygon is provided to give greater clarity and certainty on which parts of the launch form part of BC Hydro's ongoing obligations under Clause (o) of CWL 47215.

Figure 3: Downie Creek boat launch. Yellow highlights represent BC Hydro's area of responsibility for facility maintenance.



2.2 Facilities to be maintained

Table 2 provides a list of the facilities on which BC Hydro will undertake maintenance at the Downie Creek boat launch and the typical type of work required. The work listed under the heading 'Details' is not exhaustive but are provided for illustration purposes. All items below are to be inspected at least once annually with repairs to be done as needed. Any public safety hazards will require immediate action.

Table 2: Facility details at Downie Creek with a description of maintenance activities

Facilities	Details
Access related facilities	
Gravel/Asphalt boat ramp	<ul style="list-style-type: none">• Gravel• Structural maintenance: inspect for potholes, depressions and any other significant abnormalities that will impede safe access to the reservoir.• Routine maintenance: remove vegetation and/or debris where it obstructs access and/or could harm the facilities.

2.3 Known structural maintenance

In the summer of 2018 BC Hydro observed substantial sediment on the boat ramp which could make launching problematic when reservoir levels fall below 571.8 m. The Revelstoke Reservoir was drawn down below 571.8 m almost weekly during this time to

the lower end of the operating range to accommodate spillway concrete repairs at the Revelstoke Dam. The sediment will need to be removed when permits are received and conditions allow for work to be completed; there is also a potential for the need to install a concrete slab dependent upon the findings a full inspection of the ramp.

2.4 Permit information

As an RSTBC site, work will be completed under a Section 16 authorization (*Forest Recreation Regulations/Forest and Range Practices Act*).

In addition, annual notification is also provided to the MFLNRORD for maintenance within an existing footprint according to *The Approved Work Practices for Boat Launch Construction and Maintenance in BC Hydro Managed Freshwater Systems (AWP)*.

2.5 Safety

All work must be in compliance with all WorkSafeBC health and safety regulations and must be undertaken following BC Hydro's current processes for ensuring worker and contractor safety.

3 Budget

Total program cost \$151,000.

4 References

BC Hydro (May13, 2014). Approved Work Practices for Boat Launch Construction and Maintenance in BC Hydro Manager Freshwater Systems. 21pp.