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Peace Water Use Plan

Williston Reservoir

Physical Works Terms of Reference

GMSWORKS-57 Dunlevy Boat Launch Maintenance

February 9, 2018

GMSWORKS-57 Dunlevy Boat Launch Maintenance Physical Works Terms of Reference

1 Background

1.1 Introduction

Under Clause (j) of Final Water Licence (FWL) 123021, and the Peace Water Use Plan dated August 9, 2007 (Schedule A, Clause 4), BC Hydro is required to provide reservoir access at Dunlevy.

BC Hydro upgraded the existing Dunlevy boat launch¹ with all construction completed by May 2015 (Figure 1). As part of the upgrades, BC Hydro undertook replacement of the ramp, and installed concrete mat slope protection, a gravel turnaround area, and expanded the existing parking lot. The upgrade work was undertaken under the GMSWORKS-49 Dunlevy Boat Launch physical works project.

The purpose of this Terms of Reference (TOR) is to outline BC Hydro's approach and scope of work for maintenance of the Dunlevy boat launch.

Figure 1: Dunlevy Park boat launch; May 13, 2015, reservoir elevation 663.20 m (2175.85 ft), Lat: 56°08'55.97"N, Long: 122°21'11.24"W



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 a parking lots, etc.

1.2 Location

The Dunlevy boat launch is located on Williston Reservoir, approximately 30 kilometers from Hudson's Hope. The boat launch is situated within the Butler Ridge Provincial Park. The location of the Dunlevy boat launch is shown in relation to the town of Hudson's Hope in Figure 2 below.

Figure 2: Location of Dunlevy boat launch



1.3 BC Hydro's approach to boat launch maintenance

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.

In some locations, additional non-access facilities may have been constructed or upgraded as part of the boat launch upgrade projects. Typically, the Park Operator or land owner will hold the responsibility for maintenance of these non-access facilities as part of their crown Licence of Occupation or tenure and would be specified in their Crown Management Plan responsibilities. However, in a few instances where there is no other operator and BC Hydro holds the right and responsibilities by tenure or by the Licence of Occupation, then BC Hydro will additionally take on the maintenance (structural and routine) of these non-access facilities.

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 to 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 this includes, for example, 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 complete maintenance at Dunlevy for the peak recreation season, and during the spring and fall shoulder recreation seasons when the ramp is available for launching. For the Williston Reservoir, these periods are defined as follows:

- Peak season: June 15 to September 15;
- Spring shoulder season: June 1 to June 14; and
- Fall shoulder season: September 16 to October 31.

In the event that a significant safety issue arises at the Dunlevy 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 or mitigated.

2 Dunlevy boat launch maintenance

2.1 Area of responsibility

BC Hydro is responsible for the structural and routine maintenance of the access-related facilities only under Parks Use Permit (PUP) #106747. As the Dunlevy boat launch sits within a Provincial Park, BC Parks maintains the non-access related facilities (e.g., toilet, parking lots, etc.) as shown in Table 1.

Table 1: Facilities at Dunlevy boat launch with BC Hydro’s maintenance responsibilities

Boat Launch	Access Road	Parking Lot	Toilets	Turn-Around	Concrete Ramp	Scour Protection	Concrete Mat Slope Protection
Non access-related facilities			Access-related facilities				
WILLISTON (Final Water License 123021)							
Dunlevy	X	X	X	BCH	BCH	BCH	BCH

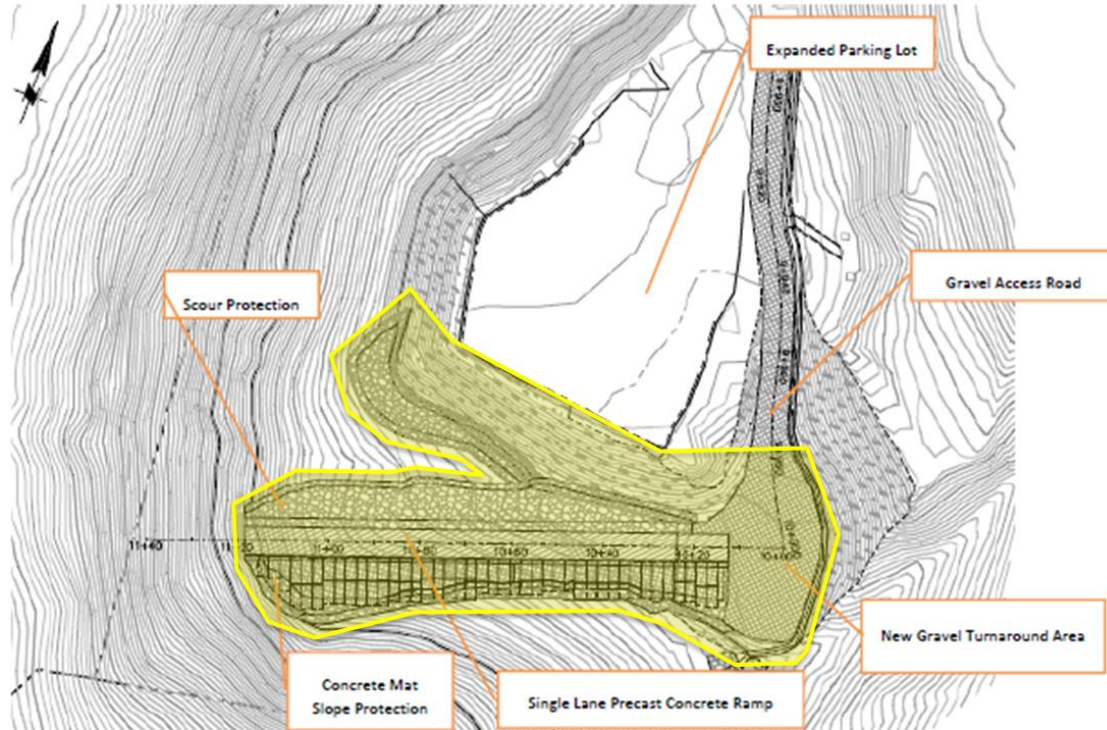
BCH = BC Hydro will undertake maintenance (both structural and routine)

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

N/A = Asset does not exist at this location

The yellow highlighted area shown in Figure 3 below represents BC Hydro’s area of responsibility for the Dunlevy boat launch. This polygon is provided to give greater clarity and certainty on which parts of the launch are part of BC Hydro’s ongoing obligations under Clause (j) of FWL 123021.

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



2.2 Facilities to be maintained

Table 2 below provides a list of the facilities on which BC Hydro will undertake maintenance at the Dunlevy boat launch and the typical type of work required. The work listed under the heading 'Details' is not exhaustive but is 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 Dunlevy with a description of maintenance activities

Facilities	Details
Access related facilities	
Concrete boat ramp and turnaround	<ul style="list-style-type: none"> Concrete panels for ramp and gravel turn-around situated at top of ramp. Structural maintenance: inspect for cracks, depressions, ruts and any other significant abnormalities that will impede safe access to the reservoir. Routine maintenance: remove sediment and/or debris where it obstructs access and/or could harm the facilities. Smaller pieces of debris and sediment that can be moved by hand will be performed by BC Parks.
Scour protection (toe and sides of ramp)	<ul style="list-style-type: none"> Riprap. Structural maintenance: inspect for slumps and depressions. Routine maintenance: removal of debris and/or vegetation that could displace the riprap. Smaller pieces of debris and sediment that can be moved by hand will be performed by BC Parks.
Concrete mat slope protection	<ul style="list-style-type: none"> Riprap combined with a concrete mat. Structural maintenance: inspect for slumps and depressions. Routine maintenance: removal of debris and/or vegetation that could displace the riprap. Smaller pieces of debris and sediment that can be moved by hand will be performed by BC Parks.

2.3 Permit information

As the site is located within a Provincial park BC Hydro has been granted access via a Parks Use Permit (PUP#106747; expiry February 29, 2044).

In addition, annual notification is provided to the Ministry of Forests, Lands, Natural Resource Operations and Rural Development for maintenance works within an existing footprint according to The Approved Work Practices for Boat Launch Construction and Maintenance in BC Hydro Managed Freshwater Systems (AWP).

2.4 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: \$302,588.

4 References

BC Hydro (May 13, 2014). Approved Work Practices for Boat Launch Construction and Maintenance in BC Hydro Managed Freshwater Systems. 21pp.

Moffatt & Nichol (June 4, 2015). Dunlevy Boat Launch Ramp Completion Report and Operation and Maintenance Manual. 23pp plus appendices