

June 11, 2018

File: 16-1856

John Baldwin  
Dam Safety Officer  
Water Protection, Ministry of Forests, Lands, Natural Resource Operations & Rural Development  
2080A Labieux Road  
Nanaimo, BC, V9T 6J9

Dear Mr. Baldwin:

**RE: GARDOM POND DECOMMISSIONING PLAN SUBMISSION  
CONTRACT 16-1856**

Further to the recent and ongoing discussions with your office and pursuant to the Water Sustainability Act Dam Safety Regulation - *Division 3, Section 17 – Removing, Decommissioning, Deactivating or Stopping Operation of a Dam*, please accept this plan as the Owners request to decommission the Gardom Pond Dam located on North Pender Island, BC beginning in August 2018.

Following the requirements of the legislation, this plan is based on your requested content as provided via email on December 14, 2017. In summary, the decommissioning work is planned to eliminate the storage of water that requires a water license under the BC Water Sustainability Act (WSA) for a dam. Current full storage (elevation 86.2 meter) is estimated to be approximately 22,000 cubic meters. The decommissioning proposal lowers the existing spillway channel to 84 meters elevation and fortifies the existing outlet to pass the 200-year period design flow storm event. The estimated remaining storage is 4,200 cubic meters. This decommissioning plan includes the following:

1. Criteria for the design
  - a. Decommissioning description, prepared by CRD
  - b. Routing diagram, prepared by JE Anderson & Associates
2. Water License Holders support
  - a. Legal Joint Works Agreement
3. Land encumbrances and permits
4. Signed drawings, prepared by JE Anderson & Associates
5. Schedule of work, prepared by CRD
6. Name of site supervisor
7. Construction Environmental Protection Plan, prepared by Kathy Reimer, QEP
8. Confirmation of water supply for fire fighting

**1. Criteria for the Design**

The CRD has developed a dam decommissioning concept considering, and in consultation with, the following stakeholders:

- a. The six water license holders held on Gardom Pond dam
- b. The Ministry of Forests, Lands, Natural Resource Operations & Rural Development (FLNRO) Regional Dam Safety Officer, John Baldwin
- c. The Ministry of Transportation and Infrastructure (MoTi), South Island Operations Manager, Ryan Evanoff
- d. Pender Island Fire Rescue, Fire Chief, Charles Boyte
- e. Islands Trust, Regional Planning Manager, Robert Kojima
- f. Island Trust Fund, Manager, Jennifer Eliason
- g. Razor Point Improvement District (RPID) with regards to their land encumbrance for water supply lines, Trustee, Riley Tate

The dam decommissioning proposal provides for the spillway outlet to remain at its current location (see attached map). The decommissioning effort will involve modifications to the existing outlet, extending across the Gardom Pond Park land (Owned by the CRD, Lot 12), 6610 Harbour Hill Drive (Owned by ██████████ Lot 8), and 6608 Harbour Hill Drive (Owned by ██████████ Lot 7) terminating at the tie-in point into the Ministry of Transportation and Infrastructure (MoTi) owned Harbour Hill Drive Road right-of-way (RROW), to provide for a 200-year period design flow storm event.

The proposed location for the outlet channel is a non-traditional method of dam breaching which leaves the dam embankment intact but lowers the existing reservoir and spillway channel. The channel is to pass a 200-year period design flow of 0.36 m<sup>3</sup>/s. The pond will be effectively lowered to the original invert of the stream bed elevation of 84 m. The current pond surface elevation fluctuates seasonally between approximately 85.2 to 86.2 m. The dam crest is at elevation 87 m.

The proposed outlet channel would cut from the existing pond outlet invert elevation of 85.98 m to the original outlet invert elevation of 84 m extending approximately 110 meters west to the culvert beneath Gardom Lane which has an invert elevation of 84.31 m. Cut depths would taper from 2 m at the spillway entrance to around 1 m at the upstream end of the Gardom Lane culvert. The outlet side slopes are to be stable with a 3:1 slope or better. Excavated material would be windrowed on the north side of the cut. The channel from the spillway inlet to the Gardom Lane culvert would be riprapped with 150 mm nominal riprap over a geotextile filter cloth. A 1,000 mm diameter culvert would be required at Gardom Lane to pass a 200-year period design flow.

Downstream of the Gardom Lane culvert the terrain slopes steeply towards the Harbour Hill Drive RROW (elevation 82.5 m dropping to 51.6 m, ~25% slope). A head pond would be required at the downstream end of the Gardom Lane culvert and a riprap lined channel would be required extending to the Harbour Hill Drive RROW. An energy dissipater is required prior to entering the Harbour Hill Drive RROW.

The extent of construction would end at the entrance to the Harbour Hill Drive RROW. Harbour Hill Drive was constructed by MoTi after the construction of the Gardom Pond dam and the roadway construction design considered the existing surface run-off and spillway flow from the area catchment.

The existing dam embankment will remain in place and continue to serve as an access road to Lots 4 and 5, however, it will no longer perform as a dam. The existing low level outlet pipe extending through the dam embankment will be removed at two locations and sealed with a trench dam.

The RPID has been given notice that their water supply lines will be temporarily disconnected starting August 15, 2018 and they are responsible to make arrangements for alternate water supply. Following the completion of the decommissioning construction the RPID will reinstate their supply lines.

## **2. Water License Holder Support**

A copy of the joint legal works agreement is appended to this plan submission.

## **3. Land Encumbrances and Permits**

Copies of the easements that permit the CRD to construct and maintain an outlet channel across 6608 and 6610 Harbour Hill Drive are appended to this plan submission.

A copy of the roadworks agreement provided by MoTi for the decommissioning construction effort within their RROW at the tie-in location is appended to this plan submission.

MoTi acknowledges and accepts the CRD proposal to limit the extent of construction to the entrance point to the Harbour Hill Drive RROW with regard to the proposed decommissioning work. CRD's obligation will be to ensure the outlet flow is suitably discharged into the RROW. Any possible future drainage works required downstream of the tie-in point will be the responsibility of MoTi.

## **4. Signed Drawings**

Sealed drawings and routing diagram are appended to this plan submission provided by JE Anderson and Associates.

## **5. Schedule of the Work**

A schedule of the project milestones, including approvals, procurement and construction, are appended to this plan submission.

## **6. Name of Site Supervisor**

The successful contractor will be providing a dedicated site supervisor for the duration of the decommissioning work. In addition, Jim Buchanan, P.Eng, of JE Anderson and Associates will be conducting appropriate construction site inspection to satisfy the requirements of professional assurance.

## **7. Construction Environmental Management Plan**

An Environmental Impact Management Report, prepared by Kathy Reimer, QEP, is appended to the plan submission.

John Baldwin – June 11, 2018  
 Gardom Pond Decommissioning Plan Submission

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## 8. Confirmation of Water Supply for Fire Fighting

It is estimated that there will remain sufficient water volume in the decommissioned reservoir to satisfy fire protection provided by the Gardom Pond dry hydrant. The Fire Underwriters Survey (FUS) and NFPA 1142 require a minimum volume of 24,000 imperial gallons in order to supply a flow rate of 200 gallon/minute for two hours. Based on available bathymetry, at a reduced reservoir level of 84 m, the resulting volume would be approximately 900,000 imperial gallons.

Modifications to the existing 6" dry hydrant located on Gardom Lane directly to the west of the dam embankment are detailed on the sealed drawings appended to this plan submission.

A copy of the sealed decommissioning drawings was provided to the Pender Fire Rescue for general review on May 3, 2018.

I am formally requesting a 30 day review period by your office in order to support a tentative August 2018 construction start date.

I trust this meets with your requirements at this time and please feel free to contact me directly should clarification be required.

Regards,



Ben Martin, P.Eng.  
 Senior Project Engineer  
 Parks & Environmental Services Department

BM/mer

Attachment(s): Email correspondence, decommissioning options, received December 14, 2017  
 Site Plan, Proposed Dam Decommissioning Extent of Construction  
 Legal Joint Works Agreement  
 Easement Agreements across 6608 & 6610 Harbour Hill Drive  
 MoTi RoadWorks application and permit  
 Decommissioning Drawings, prepared by JE Andersons & Associates  
 Gardom Pond Catchment Routing Diagram, prepared by JE Andersons & Associates  
 Schedule of Decommissioning Works, prepared by CRD  
 Construction Environmental Management Plan, prepared by Kathleen Reimer, QEP

CC: John Chapman, PIPRC, via email: [REDACTED]

[REDACTED]

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Charlie Boyte, Pender Island Fire Rescue, via email: [chief@penderfire.ca](mailto:chief@penderfire.ca)  
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Riley Tate, RPID, via email: [REDACTED]