



## **Peace River Water Use Plan Dinosaur Reservoir Management Plan**

### **Monitoring Programs and Physical Works Annual Report 2016**

**Implementation Period: June 2015 to May 2016**

- **GMSMON-14 DNR Tributary Habitat Review**
- **GMSWORKS-8 DNR Demonstration Tributary**
- **GMSWORKS-9 DNR Tributary Inventory & Feasibility**
- **GMSWORKS-12 PCR & WLL Recreation Access**
- **GMSWORKS-51 Hudson's Hope Boat Ramp Construction (Dinosaur)**
- **GMSWORKS-53 Boat Ramp Design Hudson's Hope**
- **GMSWORKS-56 Hudson's Hope Maintenance**

**For Water Licences 123018, 123019, 123020, 123021, 123025**

**June 30, 2016**

## **BC Hydro Peace River Water Use Plan Dinosaur Reservoir Management Plan Annual Report: 2016**

### **1 Introduction**

This document represents a summary of the status and the results of the Peace Project Dinosaur Reservoir Management Plan Water Use Plan (WUP) monitoring program and physical works projects to May 31, 2016, as per the Peace Order under the *Water Act*, dated August 9, 2007. This annual report includes those projects in Schedule B of the Order. There is one monitoring program and six physical works.

### **2 Status**

The following table outlines the dates that Terms of Reference (TOR) for the Dinosaur Reservoir Management Plan WUP monitoring program and physical works were submitted to and approved by the CWR.

**Table 2-1 Dates of Dinosaur Reservoir Management Plan WUP TOR Submissions and Approvals by the Comptroller of Water Rights**

Monitoring Program & Physical Works TOR	Order Clause	Original ToR Submission		Most Recent ToR Resubmission	
		Date Submitted	Date Approved	Date Submitted	Date Approved
GMSMON-14 DNR TRIBUTARY HABITAT	Schedule B.e.a	Aug 08, 2008	Sep 15, 2008	Jul 29, 2015	Aug 12, 2015
GMSWORKS-8 DNR DEMONSTRATION TRIBUTARY	Schedule B.1.b	May 09, 2008	Jun 02, 2008	Jul 29, 2015	Aug 12, 2015
GMSWORKS-9 DNR TRIBUTARY INVENTORY & FEASIBILITY	Schedule B.1.a	May 09, 2008	Jun 02, 2008		
GMSWORKS-12 DNR RECREATION ACCESS	Schedule B.2.a	May 09, 2008	Jun 02, 2008	Aug 07, 2009	Jan 20, 2010
GMSWORKS-51 BOAT RAMP HUDSONS HOPE (Dinosaur)	Schedule B.2	Apr 18, 2011	Apr 03, 2012	Oct 17, 2013	Jan 14, 2014
GMSWORKS-53 BOAT RAMP DESIGN HUDSONS HOPE (Dinosaur)	Schedule B.2	Apr 15, 2010	May 07, 2010	Oct 17, 2013	Jan 14, 2014
GMSWORKS-56 HUDSONS HOPE MAINTENANCE (Dinosaur)	Schedule B.2	Apr 18, 2011	Apr 03, 2012		

### **3 Schedule**

The following table outlines the current schedule for the monitoring program and physical works being delivered for the Dinosaur Reservoir Management Plan WUP.

**Table 3-1: Monitoring Program and Physical Works Schedule as of May 31, 2016**

Monitoring Programs	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
	WLR YR1	WLR YR2	WLR YR3	WLR YR4	WLR YR5	WLR YR6	WLR YR7	WLR YR8	WLR YR9	WLR YR10	WLR YR11	WLR YR12	WLR YR13	WLR YR14	WLR YR15
GMSMON-14: DNR Tributary Habitat			✓					•							
GMSWORKS-8: DNR Demonstration Tributary			✓	Del	Del	Del	Del	•							
GMSWORKS-9: DNR Tributary Inventory & Feasibility		✓													
GMSWORKS-12: DNR Recreation Access	✓	✓	✓												
GMSWORKS-51 Hudson's Hope Boat Ramp Construction (Dinosaur)					✓	✓									
GMSWORKS-53 Boat Ramp Design Hudson's Hope			✓	✓	✓										
GMSWORKS-56 Hudson's Hope Maintenance						✓	✓	✓	u/w *	■*	■*	■*	■*	■*	■*
Legend	■ Project to be undertaken/initiated in identified year							✓ Project is completed for the year							
	u/w Project is under way							* Maintenance only in identified year							
	Del Project is delayed							• Relief granted; Project cancelled							

#### **4 Monitoring Program and Physical Works Terms of Reference**

The monitoring program and physical works being implemented under the Dinosaur Reservoir Management Plan WUP are described in Terms of Reference. These Terms of Reference and the reports for work completed to date can be found here:

[http://www.bchydro.com/about/sustainability/conservation/water\\_use\\_planning/north\\_ern\\_interior/peace\\_river.html](http://www.bchydro.com/about/sustainability/conservation/water_use_planning/north_ern_interior/peace_river.html)

#### **5 Status of Monitoring Program**

##### **5.1 GSMON-14 Dinosaur Reservoir Tributary Habitat**

Based on the inventory and feasibility results from GSMWORKS-9 (Dinosaur Reservoir Tributary Inventory), no feasible options exist to improve access for fish at a number of tributaries. As there were no viable options to improve access, the CWR relieved BC Hydro (letter dated August 12, 2015) of the obligation to deliver works through GSMWORKS-8 (Dinosaur Tributary) and the associated monitoring project, GSMON-14.

#### **6 Status of Physical Works**

##### **6.1 GSMWORKS-8 Dinosaur Reservoir Demonstration Tributary**

As per GSMON-14 (above), the CWR relieved BC Hydro of the obligation to deliver this project (letter dated August 12, 2015).

##### **6.2 GSMWORKS-9 Dinosaur Reservoir Tributary Inventory and Feasibility**

The inventory was completed in 2009 and included a survey to establish the extent and number of tributaries affected by debris fields and reservoir operations; with a subsequent feasibility study to determine whether works could improve access for fish at a number of tributaries. No feasible options were identified and wood debris levels were described as sparse and were not found to restrict fish access at tributary confluences. This project is complete.

##### **6.3 GSMWORKS-12 Dinosaur Recreational Access (Feasibility of Boat Ramps)**

The objective of this feasibility study was to evaluate improved boat launch facilities on Dinosaur Reservoir. This project is complete.

##### **6.4 GSMWORKS-51 Hudson's Hope Boat Ramp Construction (Dinosaur)**

This project is for the construction of the approved design for the boat ramp works at Hudson's Hope Park as described below in GSMWORKS-53

The construction on this project is complete.

Maintenance for this ramp occurs under GSMWORKS-56.

##### **6.5 GSMWORKS-53 Boat Ramp Design Hudson's Hope**

Under Clause (m) of Conditional Water Licence 123025 for Dinosaur Reservoir, BC Hydro is required to provide reservoir access at areas as directed by the CWR. Hudson's Hope Park was identified as a site for improved access as part of the WUP. The feasibility study was undertaken in March 2010 under GSMWORKS-12

The design approved by the CWR in 2010 included replacing the existing single lane ramp with a double lane concrete boat launch at the site to a toe elevation of EL498.8 m (1636.5 ft.), replacing the floating walkway at a new alignment, and installation of breakwater. The design also required a dredge of the basin to reach the toe elevation.

The works were constructed under GMSWORKS-51 above. This project is complete.

#### **6.6 GMSWORKS-56 Hudson's Hope Maintenance**

This project is for the maintenance of the boat ramp constructed under GMSWORKS-51(Hudson's Hope Boat Ramp Construction). Maintenance is in place.

### **7 Monitoring Program and Physical Works Costs**

The following table summarized the Dinosaur Reservoir Management Plan WUP monitoring program and physical works costs approved by the Comptroller and the Actual Costs to May 31, 2016.

**Table 7-1: Dinosaur Reservoir Management Plan WUP Monitoring Program and Physical Works Costs**

Monitoring Programs	Costs approved by CWR	Life to Date Actuals (LTD)	Estimated to Complete (Forecast)	Total Forecast (LTD and Forecast)	Variance Total to Approved	Explanation	Corrective Action
<b>GMSM14A DNR Tributary Habita</b>	\$32,018	\$32,018	\$0	\$32,018	\$0	Project cancelled	
GMSM14A DNR Tributary Habita - OR DM	\$14,509	\$14,509	\$0	\$14,509	\$0		
GMSM14A DNR Tributary Habita - OR Imp	\$17,509	\$17,509	\$0	\$17,509	\$0		
<b>GMSW08A DNR Demonstration</b>	\$15,886	\$15,886	\$0	\$15,887	\$0	Project cancelled	
GMSW08A DNR Demonstration - OR DM	\$7,878	\$7,878	\$0	\$7,878	\$0		
GMSW08A DNR Demonstration - OR Imp	\$8,008	\$8,008	\$0	\$8,009	\$0		
<b>GMSW09A DNR Tributary Inven</b>	\$41,013	\$32,434	\$2,956	\$35,390	\$5,623	Project complete	
GMSW09A DNR Tributary Inven - OR DM	\$16,013	\$9,308	\$2,956	\$12,264	\$3,749		
GMSW09A DNR Tributary Inven - OR Imp	\$25,000	\$23,125		\$23,125	\$1,875		
<b>GMSW12A DNR Recreation Acc</b>	\$118,729	\$71,586	\$3,220	\$74,806	\$43,923	Project complete	
GMSW12A DNR Recreation Acc - OR DM	\$60,765	\$15,400	\$3,220	\$18,620	\$42,145		
GMSW12A DNR Recreation Acc - OR Imp	\$57,964	\$56,186	\$0	\$56,186	\$1,778		
<b>GMSW51A BRC Dinosaur</b>	\$3,258,435	\$4,250,852	\$0	\$4,250,852	(\$992,417)	Project complete	
GMSW51A BRC Dinosaur - ONR DM	\$180,300	\$6,156	\$0	\$6,156	\$174,144		
GMSW51A BRC Dinosaur - ONR Imp	\$3,078,135	\$4,244,696	\$0	\$4,244,696	(\$1,166,561)		
<b>GMSW53A BRD Dinosaur</b>	\$87,965	\$62,315	\$0	\$62,315	\$25,650	Project complete	
GMSW53A BRD Dinosaur - ONR DM	\$12,965	\$9,694	\$0	\$9,694	\$3,271		
GMSW53A BRD Dinosaur - ONR Imp	\$75,000	\$52,621	\$0	\$52,621	\$22,379		
<b>GMSW56A Dinosaur Maintenance</b>	\$100,000	\$47,953	\$52,047	\$100,000	\$0		
GMSW56A Dinosaur Maintenance - ONR DM	\$0	\$6,986	\$9,821	\$16,807	(\$16,807)		
GMSW56A Dinosaur Maintenance - ONR Imp	\$100,000	\$40,967	\$42,226	\$83,193	\$16,807		

OR - Ordered Remissible  
ONR - Ordered Non-Remissible

\* Red values in parentheses denote overage.