

# **Whatshan Project Water Use Plan**

## **Monitoring Program and Physical Works**

**Annual Report: 2013**

**Implementation Period: July 2012 – June 2013**

- **WGSMON-1 Lower Whatshan River Fish Habitat Enhancement Physical and Biological Effectiveness Monitoring**
- **WGSMON-2 Reservoir Vegetation Monitoring**
- **WGSMON-3 Reservoir Wildlife Monitoring**
- **WGSMON-4 First Nations Heritage and Archaeology Monitoring**
- **WGSWORKS-1 Habitat Complexing Assessment and Enhancement Structures**
- **WGSWORKS-2 Inonoaklin Recreation Site Boat Launch Extension**

**For Water Licences 120711 and 120712**

**July 31, 2013**

## **BC Hydro Whatshan Project Project Water Use Plan Monitoring Programs and Physical Works Annual Report: 2013**

### **1 Introduction**

This document represents a summary of the status and the results of the Whatshan Project Water Use Plan (WUP) monitoring programs and physical works to June 30, 2013, as per the Whatshan Order under the *Water Act*, dated July 14, 2005. There are four monitoring programs and two physical works.

### **2 Status**

The following table outlines the dates that TOR for the Whatshan Project WUP monitoring programs and physical works were submitted to and approved by the CWR.

**Table: 2-1: Dates of Whatshan Project WUP TOR Submissions and Approvals by the Comptroller of Water Rights**

Monitoring Program & Physical Works TOR	Order Clause (optional)	Original ToR Submission		Most Recent ToR Resubmission	
		Date Submitted	Date Approved	Date Submitted	Date Approved
WGSMON-1 Lower Whatshan River Fish Habitat Enhancement Physical and Biological Effectiveness Monitoring	Clause 3	Nov 14, 2005	Feb 15, 2006	May 09, 2010	Jun 30, 2010
WGSMON-2 Reservoir Vegetation Monitoring	Clause 4(a)	Nov 14, 2005	Feb 15, 2006		
WGSMON-3 Wildlife Monitoring	Clause 4 (a)	Nov 14, 2005	Feb 15, 2006	Jul 29, 2009	Oct 13, 2009
WGSMON-4 First Nations Heritage and Archaeology Monitoring	Clause 4 (b)	Mar 17, 2011	May 17, 2011		
WGSWORKS-1 Habitat Complexing Assessment and Enhancement Structures - Feasibility	Clause 3	Nov 14, 2005	Feb 15, 2006		
WGSWORKS-1 Construction Implementation	Clause 3	May 04, 2009	Jun 06, 2009	Jul 29, 2009	Oct 13, 2009
WGSWORKS-2 Inonoaklin Recreation Site Boat Launch Extension	Clause 2	Nov 14, 2005	Feb 15, 2006	Jun 12, 2006	Aug 02, 2006

### **3 Schedule**

The following table (Table 3-1) outlines the current schedule for the monitoring programs and physical works being delivered for the Whatshan Project WUP.

**Table 3-1: Table of WUP Schedule**

Monitoring Programs	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	
	WLR YR1	WLR YR2	WLR YR3	WLR YR4	WLR YR5	WLR YR6	WLR YR7	WLR YR8	WLR YR9	WLR YR10	
WGSMON-1 Lower Whatshan River Fish Habitat Effectiveness Monitoring	✓	✓	✓		✓		✓	u/w <sup>1</sup>		■	
WGSMON-2 Reservoir Vegetation Monitoring	✓					✓	✓			■	
WGSMON-3 Reservoir Wildlife Monitoring	✓		✓	✓	✓						
WGSMON-4 Whatshan Lake Reservoir Archaeological Study							✓	✓ <sup>1</sup>			
<b>Physical Works</b>											
WGSWORKS-1 Habitat Complexing Assessment and Enhancement Structures	✓	✓	x	✓							
WGSWORKS-2 Inonoalkin Recreation Site Boat Launch Extension	✓										
Legend:	■	= Program to be undertaken/initiated in identified year (red indicates change from original WUP)									
	u/w	= Project is underway									
	✓	= Program completed for the year (red indicates change from original WUP)									
	x	= Project encountered delays due to hydrological or operational events									
	<sup>1</sup>	= Reporting only in this year; no field study									

#### 4 Monitoring Programs and Physical Works Terms of Reference

The Monitoring Programs and Physical Works being implemented under the Whatshan Project 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/southern\\_interior/whatshan.html](http://www.bchydro.com/about/sustainability/conservation/water_use_planning/southern_interior/whatshan.html)

#### 5 Summary of Monitoring Programs

##### 5.1 WGSMON-1 Lower Whatshan River Fish Habitat Enhancement Physical and Biological Effectiveness Monitoring

###### 5.1.1 Status

This monitoring program was conducted again in Year 7 (2012), the second year of post-construction monitoring. The physical habitat survey and the fisheries survey are scheduled for September, 2012. The Year 7 report will be included with the 2014 Annual Report.

##### 5.2 WGSMON-2 Reservoir Vegetation Monitoring

###### 5.2.1 Status

Implementation of this monitoring study is scheduled for Years 1, 6, and 10. A contract was awarded to G3 Consulting Ltd. for the final two years of the study. Attached is the Year 6 report, dated May 2012. Year 10 work is scheduled for 2015.

### **5.3 WGS MON-3 Reservoir Wildlife Monitoring**

#### **5.3.1 Status**

The final year of this study was implemented as scheduled in Year 5 (2010) and the study report was submitted with the 2011 Annual Report.

### **5.4 WGS MON-4 First Nations Heritage and Archaeology Monitoring**

#### **5.4.1 Status**

This one-year study was implemented in 2012. Copies of the final archaeological report are on file at BC Hydro. In order to protect sensitive information regarding the archaeological sites identified, examined or visited during the study, the report is not available to the public.

## **6 Summary of Physical Works**

### **6.1 WGS WORKS-1 Habitat Complexing Assessment and Enhancement Structures**

#### **6.1.1 Status**

The final component of WGS WORKS-1, construction of the habitat structures, was completed in 2009 and all reports have been submitted. Post construction monitoring continues under WGS MON-1.

### **6.2 WGS WORKS-2 Inonoaklin Recreation Site Boat Launch Extension**

#### **6.2.1 Status**

This project was completed in 2007.

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

The following table summarizes the Whatshan Project WUP monitoring programs and physical works costs approved by the Comptroller and the Actual Costs to June 30, 2013.

**Table 7-1: Whatshan Project WUP Monitoring Programs 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>Whatshan WUP Annual Report</b>	\$5,642	\$3,828	\$426	\$4,253	\$1,389	Forecast requires update.	Budget may be revised in 2014
<b>WGSMON-1 Lower Whatshan River Fish Habitat Enhancement Physical and Biological Effectiveness Monitoring</b>	\$248,493	\$168,285	\$58,641	\$226,926	\$21,567	Efficiencies found during project implementation.	
WGSM01A Lower Whatshan - OR DM	\$42,791	\$22,539	\$8,353	\$30,892	\$11,899		
WGSM01A Lower Whatshan - OR Imp	\$205,702	\$145,746	\$50,288	\$196,034	\$9,668		
<b>WGSMON-2 Reservoir Vegetation Monitoring</b>	\$162,160	\$98,472	\$63,522	\$161,994	\$166	Efficiencies found during project implementation.	
WGSM02A Reservoir Vegetation - OR DM	\$27,760	\$18,589	\$8,936	\$27,525	\$235		
WGSM02A Reservoir Vegetation - OR Imp	\$134,400	\$79,883	\$54,586	\$134,469	(\$69)		
<b>WGSMON-3 Wildlife Monitoring</b>	\$75,279	\$62,539	\$0	\$62,539	\$12,740	Project completed.	
WGSM03A Wildlife Monitoring - OR DM	\$27,218	\$14,380	\$0	\$14,380	\$12,838		
WGSM03A Wildlife Monitoring - OR Imp	\$48,061	\$48,159	\$0	\$48,159	(\$98)		
<b>WGSMON-4 First Nations Heritage and Archaeology Monitoring</b>	\$86,283	\$77,181	\$1,149	\$78,331	\$7,952	Project completed.	
WGSM04A Archaeology Inventory - OR DM	\$25,334	\$13,808	\$1,149	\$14,958	\$10,376		
WGSM04A Archaeology Inventory - OR Imp	\$60,949	\$63,373	\$0	\$63,373	(\$2,424)		
<b>WGSWORKS-1 Habitat Enhancement Construction Implementation</b>	\$280,590	\$254,018	\$0	\$254,018	\$26,572	Project completed.	
WGSW01A Habitat Enhancement - OR DM	\$14,373	\$13,752	\$0	\$13,752	\$621		
WGSW01A Habitat Enhancement - OR Imp	\$266,217	\$240,267	\$0	\$240,267	\$25,950		
<b>WGSWORKS-2 Inonoaklin Recreation Site Boat Launch Extension</b>	\$69,504	\$36,352	\$0	\$36,352	\$33,152	Project completed.	
WGSW02A Inonoaklin Rec Site - OR DM	\$18,104	\$33,492	\$0	\$33,492	(\$15,388)		
WGSW02A Inonoaklin Rec Site - OR Imp	\$51,400	\$2,860	\$0	\$2,860	\$48,540		
<b>OR - Ordered Remissible</b>							
<b>ONR - Ordered Non-Remissible</b>							

\* Red values in parentheses denote overage.