

Peace River Water Use Plan

Monitoring Programs and Physical Works

Annual Report: 2015

For Implementation Year: June 2014 to May 2015

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

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BC Hydro Peace River Water Use Plan Annual Report: 2015

1 Introduction

This document summarizes the status of Peace Project Water Use Plan (WUP) physical work and monitoring program projects as of May 31, 2015. BC Hydro is required to provide this information to the Comptroller of Water Rights (CWR) pursuant to sections 7, 4, 5, and 4 of Schedules A, B, C, and D, respectively, to the Peace Order made by the CWR under section 88 of the *Water Act* and dated August 9, 2007 (the "Order").

Glossary:

BCH: BC Hydro

DNR: Dinosaur Reservoir.

GMS: Gordon M. Shrum Generating Station at WAC Bennett Dam.

FLNRO: Forests, Lands, and Natural Resource Operations.

PCN: Peace Canyon Dam.

PCR: Peace River.

PSP: The Peace Spill Protocol, a group of projects to be implemented in the event of spill releases of water from WAC Bennett Dam or Peace Canyon Dam. The PSP is described in detail in Appendix 3 of the WUP and is ordered pursuant to Schedule D of the Order.

TGP: Total dissolved gas pressure.

WLL: Williston Reservoir, also known as Williston Lake.

WUP Committee: The Peace Water Use Planning Committee as described in the Committee Report.

2 Status

The following table (Table 2-1) outlines the dates that Terms of Reference (TOR) for the Peace Water Use Plan monitoring programs and physical works were submitted to and approved by the CWR.

Table 2-1 Dates of Peace 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-01 PCR CREEL SURVEY	Schedule C.4.a	Apr 10, 2008	Apr 28, 2008	Aug 26, 2011	Nov 23, 2011 Approval to cancel
GMSMON-02 PCR FISH INDEX	Schedule C.4.b	Apr 10, 2008	Apr 28, 2008		
GMSMON-03 PCR FISH STRANDING	Schedule D.3.a	Feb 07, 2008	Apr 02, 2008	Apr 29, 2013	May 22, 2013
GMSMON-04 WACB ENTRAINMENT	Schedule D.3.b	Feb 07, 2008	Apr 02, 2008	Apr 29, 2013	May 22, 2013
GMSMON-05 PCR PRODUCTIVITY	Schedule C.4.c	Aug 08, 2008	Sep 15, 2008	Aug 07, 2009	Jan 20, 2010
GMSMON-06 PCR RIPARIAN FLOODING	Schedule D.3.c	Feb 07, 2008	Apr 02, 2008		
GMSMON-07 PCR SIDE CHANNEL FISHERIES	Schedule C.4.d	Feb 07, 2008	Apr 02, 2008	Jun 27, 2011	Jul 28, 2011
GMSMON-08 PCR SIDE CHANNEL RESPONSE	Schedule D.3.d	Feb 07, 2008	Apr 02, 2008	Apr 29, 2013	May 22, 2013
GMSMON-09 PCR SPILL HYDROLOGY	Schedule D.3.e	Feb 07, 2008	Apr 02, 2008		
GMSMON-10 PCR SPILL PHOTOS	Schedule D.3.g	Feb 07, 2008	Apr 02, 2008	Mar 24, 2009	Mar 31, 2009
GMSMON-11 PCR SPILL TGP/TEMP	Schedule D.3.f	Feb 07, 2008	Apr 02, 2008	Apr 29, 2013	May 22, 2013
GMSMON-12 PCR WILDLIFE SURVEY	Schedule D.3.h	Feb 07, 2008	Apr 02, 2008	Apr 29, 2013	May 22, 2013
GMSMON-13 WLL FISH INDEX	Schedule D.e.i	Feb 07, 2008	Apr 02, 2008		
GMSMON-14 DNR TRIBUTARY HABITAT	Schedule B.e.a	Aug 08, 2008	Sep 15, 2008		
GMSMON-15 WLL WETLAND HABITAT	Schedule A.6.b	Aug 08, 2008	Sep 15, 2008		
GMSMON-16 WLL DEBRIS TRENDS	Schedule A.3.c, Schedule A.5.a	Nov 26, 2008	Dec 17, 2008	Jan 10, 2014	Deferred - BCH to provide further info
GMSMON-17 WLL TRIBUTARY HABITAT	Schedule A.6.c	Aug 08, 2008	Sep 15, 2008		
GMSMON-18 WLL DUST CONTROL	Schedule A.6.d	Apr 02, 2008	Apr 28, 2008	Apr 09, 2014	Jun 17, 2014
GMSMON-19 WLL EROSION CONTROL	Schedule A.6.e				
GMSMON-20 WLL RECREATION USE	Schedule A.6.f	Aug 08, 2008	Sep 15, 2008		
GMSMON-21A WLL ARCHAEOLOGICAL OVERVIEW ASSESSMENT	Clause 7.a	May 09, 2008	Jun 02, 2008	Aug 07, 2009	Jan 20, 2010
GMSMON-21B WLL EROSION MONITORING OF ARCHAEOLOGICAL RESOURCES	Clause 7.b	May 09, 2008	Jun 02, 2008	Aug 07, 2009	Jan 20, 2010
GMSWORKS-01 PCR AERIAL PHOTOS	Schedule C.1	May 09, 2008	Jun 02, 2008	Mar 24, 2009	Mar 31, 2009
GMSWORKS-02 PCR BASELINE TGP/TEMP	Schedule D.1	Feb 07, 2008	Apr 02, 2008		
GMSWORKS-03 PCR TRIAL SIDE CHANNELS	Schedule C.1.a	May 09, 2008	Jun 02, 2008	Feb 28, 2014	Mar 05, 2014
GMSWORKS-04 PCR HYDRAULIC HABITAT	Schedule C.1.b	May 09, 2008	Jun 02, 2008	Aug 07, 2009	Jan 20, 2010
GMSWORKS-05 PCR HYDRAULIC MODEL	Schedule C.1.b	May 09, 2008	Jun 02, 2008	Aug 07, 2009	Jan 20, 2010
GMSWORKS-06 PCR MAINSTEM STAGE DISCHARGE	Schedule C.1.b	May 09, 2008	Jun 02, 2008	Jun 27, 2013	Jul 11, 2013
GMSWORKS-07 PCR RIPARIAN HABITAT ASSESSMENT	Schedule C.1.c	Feb 07, 2008	Apr 02, 2008	Aug 07, 2009	Jan 20, 2010
GMSWORKS-08 DNR DEMONSTRATION TRIBUTARY	Schedule B.1.b	May 09, 2008	Jun 02, 2008	Aug 07, 2009	Jan 20, 2010
GMSWORKS-09 DNR TRIBUTARY INVENTORY & FEASIBILITY	Schedule B.1.a	May 09, 2008	Jun 02, 2008		
GMSWORKS-10 PCR INDUSTRY & TAYLOR WATER QUALITY ASSESSMENT	Schedule C.4.e	Nov 26, 2008	Dec 17, 2008		
GMSWORKS-12 DNR RECREATION ACCESS	Schedule B.2.a	May 09, 2008	Jun 02, 2008	Aug 07, 2009	Jan 20, 2010
GMSWORKS-13 PCR RECREATION ACCESS	Schedule C.2	May 09, 2008	Jun 02, 2008	Aug 07, 2009	Jan 20, 2010
GMSWORKS-14 WLL AIR PHOTOS & DEM	Schedule A.3.d	May 09, 2008	Jun 02, 2008		
GMSWORKS-16 WLL WETLAND INVENTORY	Schedule A.2.a	May 09, 2008	Jun 02, 2008	Aug 07, 2009	Jan 20, 2010
GMSWORKS-17 WLL TRIAL WETLANDS	Schedule A.2.a	May 09, 2008	Jun 02, 2008	Feb 25, 2014	Mar 13, 2014
GMSWORKS-18 WLL DEBRIS FIELD SURVEY	Schedule A.3.c	Nov 26, 2008	Dec 17, 2008	Jan 10, 2014	Feb 17, 2014
GMSWORKS-19 WLL TRIAL TRIBUTARY(S)	Schedule A.2.b	May 09, 2008	Jun 02, 2008	Feb 25, 2014	Mar 12, 2014
GMSWORKS-20 WLL DUST SOIL MAPPING	Schedule A.3.a	Apr 02, 2008	Apr 28, 2008	Apr 13, 2011	Jun 01, 2011
GMSWORKS-21 WLL DUST CONTROL TRIAL	Schedule A.3.a	Apr 02, 2008	Apr 28, 2008		
GMSWORKS-22 WLL DEBRIS REMOVAL	Schedule A.3.c, Schedule A.5.a	Nov 26, 2008	Mar 23, 2009	Nov 26, 2008	Mar 23, 2009
GMSWORKS-23 WLL EROSION CONTROL TRIAL	Schedule A.3.b				
GMSWORKS-24 WLL BOAT ACCESS	Schedule A.4	May 09, 2008	Jun 02, 2008	Aug 07, 2009	Jan 20, 2010
GMSWORKS-25 WLL BATHYMETRIC MAPPING	Schedule A.3.d	May 09, 2008	Jun 02, 2008	Jun 08, 2011	Oct 12, 2011
GMSWORKS-26 WLL COMMUNICATIONS/SAFETY	Schedule A.5.b, Schedule A.5.c, Schedule B.2.b, Schedule C.3.a	May 09, 2008	Jun 02, 2008	Aug 30, 2013	Sep 24, 2013
GMSWORKS-27 WLL FINLAY RIVER ACCESS INFORMATION PLAN	Schedule A.6.a	Aug 08, 2008	Sep 15, 2008	Aug 07, 2009	Jan 20, 2010
GMSWORKS-28 INDUSTRY FEASIBILITY AND DESIGN STUDY	Schedule A.1	Nov 30, 2009	Jan 11, 2010	Feb 05, 2013	Feb 13, 2013
GMSWORKS-29 LYNX CREEK	Schedule C.2.a	Apr 16, 2010	May 07, 2010		
GMSWORKS-30 BOAT RAMP DESIGN TAYLOR (Peace Island)	Schedule C.2.c	Apr 16, 2010	May 07, 2010	Jul 25, 2012	Aug 02, 2012
GMSWORKS-31 KWADACHA (Fort Ware)	Schedule A.4.b	Apr 16, 2010	May 07, 2010		
GMSWORKS-32 BOAT RAMP DESIGN DESERTER'S DUMP	Schedule A	Apr 15, 2010	Jun 28, 2010		
GMSWORKS-33 BOAT RAMP DESIGN INGENIKA (Billy's Bay)	Schedule A.4.b	Apr 15, 2010	Jun 28, 2010	Apr 18, 2011	Apr 3, 2012 Deferred - TOR to be resubmitted
GMSWORKS-34 BOAT RAMP DESIGN FINLAY BAY	Schedule A.4.c	Apr 15, 2010	Jun 28, 2010	Apr 18, 2011	Apr 3, 2012 CWR does not approve moving forward
GMSWORKS-35 BOAT RAMP DESIGN 6 MILE BAY	Schedule A.4.c	Apr 15, 2010	Jun 28, 2010	Apr 18, 2011	Apr 3, 2012 CWR does not approve moving forward
GMSWORKS-36 BOAT RAMP DESIGN CUTTHUMB BAY	Schedule A.4.c	Apr 15, 2010	Jun 28, 2010	Apr 18, 2011	Apr 3, 2012 CWR does not approve moving forward
GMSWORKS-37 BOAT RAMP DESIGN MACKENZIE LANDING	Schedule A.4.c	Apr 15, 2010	Jun 28, 2010	Aug 14, 2013	Aug 15, 2013
GMSWORKS-38 BOAT RAMP TAYLOR (Peace Island)	Schedule C.2.c	Jul 25, 2012	Aug 02, 2012	Oct 30, 2013	Nov 05, 2013
GMSWORKS-40 BOAT RAMP DESIGN BLACKFOOT PARK	Schedule C.2.d	Apr 15, 2010	Jun 28, 2010	Aug 19, 2013	Oct 10, 2013 Approval to cancel
GMSWORKS-41 BOAT RAMP DESIGN HALFWAY RIVER	Schedule C.2.b	Apr 15, 2010	Jun 28, 2010	Apr 18, 2011	Apr 3, 2012 Deferred until Site C decision
GMSWORKS-43 BOAT RAMP INGENIKA (Billy's Bay)	Schedule A.4.b	Apr 18, 2011	Apr 3, 2012 Deferred - TOR to be resubmitted		
GMSWORKS-44 BOAT RAMP FINLAY BAY	Schedule A.4.c	Apr 18, 2011	Apr 3, 2012 CWR does not approve moving forward		
GMSWORKS-45 BOAT RAMP 6 MILE BAY	Schedule A.4.c	Apr 18, 2011	Apr 3, 2012 CWR does not approve moving forward		
GMSWORKS-46 BOAT RAMP CUTTHUMB BAY	Schedule A.4.c	Apr 18, 2011	Apr 3, 2012 CWR does not approve moving forward		
GMSWORKS-47 BOAT RAMP MACKENZIE LANDING	Schedule A.4.c	Apr 18, 2011	Apr 03, 2012	Nov 21, 2013	Nov 29, 2013
GMSWORKS-48 BOAT RAMP BLACKFOOT PARK	Schedule C.2.d	Apr 18, 2011	Apr 3, 2012 Deferred	Aug 19, 2013	Oct 10, 2013 Approval to cancel
GMSWORKS-49 BOAT RAMP DUNLEVY	Schedule A.4.a	Apr 18, 2011	Apr 3, 2012 Deferred	Dec 19, 2014	Feb 04, 2015
GMSWORKS-51 BOAT RAMP HUDSONS HOPE (Dinosaur)	Schedule B.2	Apr 18, 2011	Apr 03, 2012	Oct 17, 2013	Jan 14, 2014
GMSWORKS-52 BOAT RAMP HALFWAY RIVER	Schedule C.2.b	Apr 18, 2011	Apr 03, 2012		
GMSWORKS-53 BOAT RAMP DESIGN HUDSONS HOPE (Dinosaur)	Schedule B.2	Apr 15, 2010	May 07, 2010	Oct 17, 2013	Jan 14, 2014
GMSWORKS-54 CAP BOAT RAMP DESIGN DUNLEVY	Schedule A.4.a	Apr 15, 2010	May 07, 2010	Jul 12, 2013	Jul 16, 2013
GMSWORKS-55 BLACKFOOT PARK MAINTENANCE	Schedule C.2.d	Apr 18, 2011	Apr 3, 2012 Deferred	Aug 19, 2013	Cancelled Oct 10, 2013
GMSWORKS-56 HUDSONS HOPE MAINTENANCE (Dinosaur)	Schedule B.2	Apr 18, 2011	Apr 03, 2012		
GMSWORKS-57 DUNLEVY MAINTENANCE	Schedule A.4.a	Apr 18, 2011	Apr 3, 2012 Deferred	May 07, 2013	May 15, 2013
GMSWORKS-58 MACKENZIE MAINTENANCE	Schedule A.4.c	Apr 18, 2011	Apr 03, 2012		
GMSWORKS-59 INGENIKA MAINTENANCE (Billy's Bay)	Schedule A.4.b	Apr 18, 2011	Apr 3, 2012 Deferred TOR to be resubmitted		
GMSWORKS-60 FINALY BAY MAINTENANCE	Schedule A.4.c	Apr 18, 2011	Apr 3, 2012 CWR does not approve moving forward		
GMSWORKS-61 6 MILE BAY MAINTENANCE	Schedule A.4.c	Apr 18, 2011	Apr 3, 2012 CWR does not approve moving forward		
GMSWORKS-62 CUTTHUMB BAY MAINTENANCE	Schedule A.4.c	Apr 18, 2011	Apr 3, 2012 CWR does not approve moving forward		
GMSWORKS-63 TAYLOR MAINTENANCE (Peace Island)	Schedule C.2.c	Jul 25, 2012	Aug 1, 2012 Not approved	Jun 10, 2013	Jun 20, 2013

3 Schedule

The following tables (Table 3-1 and Table 3-2) outline the current schedule for the physical works and monitoring programs being delivered for the Peace River WUP.

Table 3-1: Table of WUP Physical Works Schedule

Physical Works	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	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
GMSWORKS-1: PCR Aerial Photos	✓	✓	✓	✓					■	■				
GMSWORKS-2: PCR Baseline TGP/Temperature	✓	✓	✓	✓	✓	✓	✓	u/w	■	■	■			
GMSWORKS-3: PCR Side Channels	Del	✓	✓		✓	✓	✓	u/w	■*	■*	■*	■*	■*	
GMSWORKS-4: PCR Hydraulic Habitat	Del	✓	✓	✓	✓									
GMSWORKS-5: PCR Hydraulic Model	Del	✓	✓	✓	✓	✓								
GMSWORKS-6: PCR Mainstem Stage Discharge	Del	✓	✓	✓	✓	✓	✓							
GMSWORKS-7: PCR Riparian Habitat Assessment			✓	✓	✓									
GMSWORKS-8: DNR Demonstration Tributary			✓	Del	Del	Del	Del	Del ³						
GMSWORKS-9: DNR Tributary Inventory & Feasibility		✓												
GMSWORKS-10: PCR Industry & Taylor Water Quality Assessment	Del	✓	✓	✓	✓									
GMSWORKS-12: DNR Recreation Access	✓	✓	✓											
GMSWORKS-13: PCR Recreation Access	✓	✓	✓											
GMSWORKS-14: WLL Air Photos & DEM		✓	✓	✓							■			
GMSWORKS-16: WLL Wetland Inventory		✓	✓											
GMSWORKS-17: WLL Trial Wetlands			✓	✓	✓	✓	✓	u/w *	■*	■*	■*	■*	■*	
GMSWORKS-18: WLL Debris Field Survey		✓	✓	✓			✓							
GMSWORKS-19: WLL Trial Tributaries	Del	✓			✓	✓	✓	u/w *	■*	■*	■*	■*	■*	
GMSWORKS-20: WLL Dust Source Survey		✓	✓	✓	✓									
GMSWORKS-21: WLL Dust Control Trial	✓	✓	✓	✓	✓	✓	✓							
GMSWORKS-22: WLL Debris Management		✓	✓	✓	✓	✓	✓	u/w	■	■	■	■		
GMSWORKS-23: WLL Erosion Control Trial ¹														
GMSWORKS-24: WLL Boat Access	Del	✓	✓											
GMSWORKS-25: WLL Bathymetric Mapping			✓	✓	✓									
GMSWORKS-26: WLL Communications/Safety	Del	✓	Del	✓	✓	✓	✓	u/w *	■*	■*	■*	■*	■*	■*
GMSWORKS-27: WLL Finlay River Access Information Plan		✓	✓											
GMSWORKS-28: Industry Feasibility & Design Study	Del	Del	Del	Del	✓	✓	✓	u/w						
GMSWORKS-28a: District of Mackenzie Effluent Discharge Feasibility & Design Study			✓	✓	✓									
GMSWORKS-29 Lynx Creek Boat Launch Maintenance			✓	✓	✓	✓	✓	u/w	■*	■*	■*	■*		
GMSWORKS-30 Taylor Boat Launch Design			✓	✓	✓									
GMSWORKS-31 Kw adacha Boat Launch Maintenance			✓	✓	✓	✓	✓	u/w *	■*	■*	■*	■*		
GMSWORKS-33 Boat Ramp Design Ingenika			✓	✓										
GMSWORKS-34 Boat Ramp Design Finlay Bay			✓	✓										
GMSWORKS-35 Boat Ramp Design 6 Mile Bay			✓	✓										
GMSWORKS-36 Boat Ramp Design Cut Thumb bay			✓	✓										
GMSWORKS-37 Boat Ramp Design Mackenzie Landing			✓	✓	✓	✓								
GMSWORKS-38 Taylor Ramp Construction					✓	✓								
GMSWORKS-40 Boat Ramp Design Blackfoot Park			✓	✓	✓	Cancelled								
GMSWORKS-41 Boat Ramp Design Halfw ay River			✓	✓										
GMSWORKS-43 Boat Ramp Ingenika ¹														
GMSWORKS-47 Boat Ramp Mackenzie Landing							✓							
GMSWORKS-49 Boat Ramp Dunlevy							✓	✓						
GMSWORKS-51 Dinosaur Boat Ramp Construction (Hudson's Hope)					✓	✓								
GMSWORKS-52 Boat Ramp Halfw ay River						✓	✓	u/w *	■*	■*	■*	■*	■*	■*
GMSWORKS-53 Boat Ramp Design Hudson's Hope			✓	✓	✓									
GMSWORKS-54 Boat Ramp Design Dunlevy			✓	✓	✓	✓								
GMSWORKS-56 Hudson's Hope Maintenance						✓	✓	u/w *	■*	■*	■*	■*	■*	■*
GMSWORKS-57 Dunlevy Maintenance						✓	x	x	■*	■*	■*	■*	■*	■*
GMSWORKS-58 Mackenzie Maintenance							x	u/w *	■*	■*	■*	■*	■*	■*
GMSWORKS-59 Ingenika Maintenance ¹														
GMSWORKS-63 Taylor Maintenance						✓*	✓*	u/w *	■*	■*	■*	■*	■*	■*
Legend	■ Program to be undertaken/initiated in identified year							■ Opportunistic Program may be undertaken in identified year						
	u/w Project is under way							x Project not undertaken as planned for this year						
	✓ Project is completed for the year							Del Project is delayed for the year						
	* Maintenance only in identified year													

Footnotes:

1. Pending agreement between BC Hydro and the Tsay Keh Dene First Nation.
2. Delayed due to delay of corresponding WORKS projects
3. Outstanding feasibility questions

Table 3-2: Table of WUP Monitoring Schedule

Monitoring Programs	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
	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
GMSMON-1: PCR Creel Survey				×	×	Cancelled								
GMSMON-2: PCR Fish Index	✓	✓	✓	✓	✓	✓	✓	u/w	■	■				
GMSMON-3: PCR Fish Stranding					✓			■	■	■	■	■	■	
GMSMON-4: WACB Entrainment					✓			■	■	■	■	■	■	
GMSMON-5: PCR Productivity			Del ²	Del ²	Del ²	✓	✓	■	■	■	■	■	■	■
GMSMON-6: PCR Riparian Flooding										■	■			
GMSMON-7: PCR Side Channel Fisheries			Del ²	Del ²	Del ²	✓	✓	■	■	■	■	■	■	■
GMSMON-8: PCR Side Channel Response					✓			■	■	■	■	■	■	
GMSMON-9: PCR Spill Hydrology		✓			✓			■	■	■	■	■	■	
GMSMON-10: PCR Spill Photos					✓			■	■	■	■	■	■	
GMSMON-11: PCR Spill TGP/Temperature					✓			■	■	■	■	■	■	
GMSMON-12: PCR Wildlife Survey		✓			✓			■	■	■	■	■	■	
GMSMON-13: WLR Fish Index	✓	✓												
GMSMON-14: DNR Tributary Habitat			✓	Del	Del	Del	Del	Del ²	■		■			
GMSMON-15: WLL Wetland Habitat			Del	✓	✓	✓	✓	u/w	■	■	■	■	■	
GMSMON-16: WLL Debris Trends								Del ²	■		■			
GMSMON-17: WLL Tributary Habitat			Del	✓	✓	✓	✓	u/w	■	■	■	■	■	
GMSMON-18: WLL Dust Control	✓	✓	✓	✓	✓	✓	✓	u/w	■	■				
GMSMON-19: WLL Erosion Control ¹														
GMSMON-20: WLL Recreation Use		✓	✓	✓	✓	✓	✓	u/w	■	■	■			
GMSMON-21A: WLL Archaeological Overview Assessment		✓	✓											
GMSMON-21B: WLL Erosion Monitoring of Archaeological Resources		Del	✓	✓	✓	✓	✓	u/w	■	■	■			
Legend	■ Program to be undertaken/initiated in identified year							■ Opportunisitc Program may be undertaken in identified year						
	u/w Project is under way							× Project not undertaken as planned for this year						
	✓ Project is completed for the year							Del Project is delayed for the year						
	* Maintenance only in identified year													

Footnotes:

1. Pending agreement between BC Hydro and the Tsay Keh Dene First Nation.
2. Delayed due to delay of corresponding WORKS projects
3. Outstanding feasibility questions

4 Monitoring Programs and Physical Works Terms of Reference

The monitoring programs and physical works being implemented under the Peace River 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/northern_interior/peace_river.html

In an effort to streamline the presentation of status information in this Annual Report, the monitoring programs and physical works projects have been divided into groups that correspond to the schedules outlined in Clause 6 of the Order. The six groupings include:

- a. Williston Lake Reservoir (Schedule A)
- b. Dinosaur Lake Reservoir (Schedule B)
- c. Peace River (Schedule C)
- d. Protocols in the event of Spills (Schedule D)
- e. All schedules
- f. Clause 7

5 Status of Monitoring Programs and Physical Works Projects under Schedule A: Williston Lake Reservoir

5.1 GMSMON-15 – Williston Wetland Habitat

Pre-construction monitoring work began in April 2011. Construction of trial wetlands (GMSWORKS-17) was completed at Airport Lagoon (2013) and Beaver Pond (2014). Attached is the Year 4 report dated February 2015. Subsequent reports will monitor post-enhancement conditions.

5.2 GMSMON-16 – Williston Debris Trends

The scope and schedule of this project is currently under review due to the delay in finalizing and implementing the debris management strategy (GMSWORKS-18). BC Hydro plans consultation with agencies and First Nations prior to seeking approval for TOR revisions.

5.3 GMSMON-17 – Tributary Habitat Review

Pre-construction work began in April 2011. Enhancement work (under GMSWORKS-19) for Ole Creek and Six Mile Creek commenced in spring 2014 and was completed in June 2014. Attached is the Year 4 report dated February 2015. Subsequent reports will monitor post-enhancement conditions.

5.4 GMSMON-18 – Williston Dust Control

This work was initiated in April 2008 and will be undertaken every year for ten years (completed by March 2017). Attached is the Year 6 report dated July 9, 2014. The Year 7 draft report is under review and will be submitted with the 2016 Annual Report.

5.5 GMSMON-19 – Williston Erosion Control

The submission of TOR for this project is on hold pending an agreement between Tsay Keh Dene First Nation (TKD) and BC Hydro.

5.6 GMSMON-20 – Reservoir Recreation Use

This work was initiated in May 2009 and will be undertaken every year for ten years (completed by February 2019). Attached is the Year 6 report, dated February 2, 2015.

5.7 GMSWORKS-14 – Williston Air Photos and DEM

The first stage of work was initiated in April 2009 and completed in December 2010. The second set of air photos was scheduled to be acquired in 2013, but those photos were taken in spring of 2011 to take advantage of the very low reservoir level, thus assisting several Peace projects including dust mitigation, wetlands and tributaries, and bathymetry. Advancing those photos did not negatively affect the project budget. The third set of photos is scheduled to be acquired in 2018.

5.8 GMSWORKS-16 – Williston Wetland Inventory

This project is complete.

5.9 GMSWORKS-17 – Williston Trial Wetlands

Construction was completed at the two trial sites, Airport Lagoon (completed in 2013) and Beaver Pond (completed in June 2014). The Completion Report for Airport Lagoon was submitted with the 2014 Annual Report. The Completion report for Beaver Pond is attached, dated December 2014. Maintenance will be ongoing.

5.10 GMSWORKS-18 – Williston Debris Field Survey

The project, which commenced in 2009, consists of two components – a debris field survey and a debris management strategy. The debris field survey was completed in June 2010. Attached is the Williston Reservoir Debris Management report dated February 10, 2015.

5.11 GMSWORKS-19 – Williston Reservoir Trial Tributaries

Construction of the trial tributaries at Ole Creek and Six Mile Creek were completed in 2014. The project completion report is attached, dated December 2014. Maintenance will be ongoing.

5.12 GMSWORKS-20 – Williston Dust Mapping

This work was initiated in May 2009. The final season of field data was collected in 2012.

5.13 GMSWORKS-21 – Williston Dust Control Trials

Williston Dust Control Trials are complete.

Vegetation trials are complete. The 2012 report is currently in draft form and is under review.

An Engineered Roughness trial using local woody debris was implemented in 2014. A feasibility and effectiveness report is currently in draft form and under review.

An Irrigation trial using a high volume pump and four sprinklers to cover the beach area was implemented in 2014. A feasibility and effectiveness report is currently in draft form and under review.

5.14 GMSWORKS-22 – Williston Targeted Debris Management

Work was initiated in May 2009 and will be completed in 2019. Year 6 reports are in draft and will be included in the 2016 Annual Report.

5.15 GMSWORKS-23 – Williston Erosion Control Trial

This project is on hold pending an agreement between Tsay Keh Dene First Nation (TKD) and BC Hydro.

5.16 GMSWORKS-24 – Finlay Reach Access

This project is complete.

5.17 GMSWORKS-25 – Williston Reservoir Bathymetry

This project is complete. Twenty-five bathymetric charts of the reservoir were created.

5.18 GMSWORKS-27 – Finlay River Access Information Plan

This project is complete.

5.19 GMSWORKS-28 – Industry Feasibility & Design Study

Phase Two of the study was completed in November 2013. The confidential reports are currently under review will be submitted to the Comptroller of Water Rights.

5.20 GMSWORKS-28A – District of Mackenzie Effluent Discharge Feasibility & Design Study

The report is currently under review.

5.21 GMSWORKS-31 – Kwadacha Boat Ramp

Maintenance is in place.

5.22 GMSWORKS-33 – Boat Ramp Design Ingenika

Feasibility of Ingenika boat ramp remains part of ongoing conversations with local First Nations, Tsay Keh Dene, in particular.

5.23 GMSWORKS-34 – Boat Ramp Design Finlay Bay

The project has been deferred until recreational demand warrants upgrade work at this facility as per letter from Comptroller of Water Rights dated February 13, 2013.

5.24 GMSWORKS-35 – Boat Ramp Design 6 Mile Bay

The project has been deferred until recreational demand warrants upgrade work at this facility as per letter from Comptroller of Water Rights dated February 13, 2013.

5.25 GMSWORKS-36 – Boat Ramp Design Cut Thumb Bay

The project has been deferred until recreational demand warrants upgrade work at this facility as per letter from Comptroller of Water Rights dated February 13, 2013.

5.26 GMSWORKS-37 – Boat Ramp Design Mackenzie Landing

This project is complete.

5.27 GMSWORKS-43 Boat Ramp Ingenika

Feasibility of Ingenika boat ramp remains part of ongoing conversations with local First Nations, Tsay Keh Dene, in particular.

5.28 GMSWORKS-47 Boat Ramp Mackenzie Landing

This project is complete.

5.29 GMSWORKS-49 Boat Ramp Dunlevy

Upland work and some construction for the new boat ramp commenced in spring 2014. High reservoir levels in 2015 prevented the construction of the toe of the ramp to the design elevation of 658 m. Construction was completed to a toe elevation of 660.75 m. Feasibility and requirements to construct to 658 m are being developed. The 2015 project completion report will be included in the 2016 Annual Report.

5.30 GMSWORKS-54 – Boat Ramp Design Dunlevy

This project is complete.

5.31 GMSWORKS-57 Dunlevy Maintenance

When the operations and maintenance manual from GMSWORKS-49 is complete, a maintenance TOR will be developed and submitted.

5.32 GMSWORKS-58 Mackenzie Maintenance

Maintenance is in place.

5.33 GMSWORKS-59 Ingenika Maintenance

Ingenika Boat Ramp under GMSWORKS-43 has not yet been built.

6 Status of Monitoring Programs and Physical Works Projects under Schedule B: Dinosaur Lake Reservoir

6.1 GMSMON-14 – Dinosaur Reservoir Tributary Habitat

This monitoring project for the DNR Demonstration Tributary (GMSWORKS-8) commenced in June 2010, but has since been delayed pending a decision on the recommendation from GMSWORKS-9.

6.2 GMSWORKS-8 – Dinosaur Reservoir Demonstration Tributary

This project has been delayed pending a decision on the recommendation from GMSWORKS-9.

6.3 GMSWORKS-9 – Dinosaur Reservoir Tributary Inventory and Feasibility

This project is complete.

6.4 GMSWORKS-12 – Peace and Williston Recreational Access (Feasibility of Boat Ramps)

This project is complete.

6.5 GMSWORKS-51 – Dinosaur Boat Ramp Construction (Hudson's Hope)

This project is complete.

6.6 GMSWORKS-53 – Boat Ramp Design Hudson's Hope

This project is complete.

6.7 GMSWORKS-56 Hudson's Hope Maintenance

Maintenance is in place.

7 Status of Monitoring Programs and Physical Works Projects under Schedule C: Peace River

7.1 GMSMON-1 – Peace River Creel Survey

Project canceled as per the Comptroller of Water Rights approval on November 23, 2011.

7.2 GMSMON-2 – Peace River Fish Index

This monitoring project commenced in 2008 and will be undertaken every year for ten years (completing in 2017). Field work was completed in 2014 and attached is the Year 7 report, dated March 10, 2015.

7.3 GMSMON-5 – Peace River Productivity

This project commenced in the spring of 2013 to provide baseline data for Site 102.5R in advance of GMSWORKS-3. Construction of Site 102.5R was completed in April 2014. Attached is the Year 2 report, dated March 2015.

7.4 GMSMON-7 – Peace River Side Channel Fisheries

This project commenced in the spring of 2013 to provide baseline data for Site 102.5R in advance of GMSWORKS-3. Construction of Site 102.5R was completed in April 2014. Attached is the Year 2 report, dated February 13, 2015.

7.5 GMSWORKS-1 – Peace River Aerial Photos

This work was initiated in October 2008, and the first complete set of photos for all required flows was completed by 2011. A second set of photos will be undertaken in 2016.

7.6 GMSWORKS-3 – Peace River Side Channels

The inventory work associated with this project was initiated in May 2009 and was completed in January 2010. A final report for the inventory stage was completed in May 2010.

Construction work at the first of two trial sites, Site 102.5R, was completed in spring 2014. Some erosion issues are being monitored in 2015 and the completion report will be submitted with the 2016 Annual Report.

The second trial site, 32L, is under review.

7.7 GMSWORKS-4 – Peace River Hydraulic Habitat

This project is complete.

7.8 GMSWORKS-5 – Peace River Hydraulic Model

This project is complete.

7.9 GMSWORKS-6 – Peace River Mainstem Stage Discharge

This work was initiated in May 2009 and is now complete. The original ten-year duration of the project was not required to reach the objective as per correspondence with the Comptroller of Water Rights (July 11, 2013). Attached are the reports for 2013 dated February 17, 2014 and 2014 dated March 17, 2015. Studies were not completed in 2011 and 2012.

7.10 GMSWORKS-7 – Peace River Riparian Habitat Assessment

This project is complete.

7.11 GMSWORKS-10 – Peace River Industry and Taylor Water Quality Assessment

This project is complete.

7.12 GMSWORKS-13 – Peace River Recreational Access

This project is complete.

7.13 GMSWORKS-29 – Lynx Creek Boat Ramp

Non-structural routine maintenance is in place.

7.14 GMSWORKS-30 – Peace Island Park Boat Ramp

This project is complete.

7.15 GMSWORKS-38 – Taylor Boat Ramp Construction

This project is complete.

7.16 GMSWORKS-40 – Boat Ramp Design Blackfoot Park

Relief from completion of the project was granted to BC Hydro from the Comptroller of Water Rights on October 10, 2013 due to constructability and flooding concerns.

7.17 GMSWORKS-41 – Boat Ramp Design Halfway River

Local stakeholders and BC Hydro agreed to delay development of this boat launch pending construction of Site C.

7.18 GMSWORKS-52 Boat Ramp Halfway River

Maintenance is in place.

7.19 GMSWORKS-63 Taylor Maintenance

Maintenance is in place.

8 Status of Monitoring Programs and Physical Works Projects under Schedule D: Protocols in the event of Spills

GMSMON-3, 4, 6, 8 – 12 are opportunistic studies to be implemented in the event of a spill. The studies remain active for the duration of the WUP in the event of a future trigger of the Peace Spill Protocol. The last time that these studies were conducted was in 2012. These studies were not triggered in 2014. Additional information for a number of these studies is provided below.

8.1 GMSMON-3 – Peace River Fish Stranding

See above.

8.2 GMSMON-4 – WAC Bennett Dam Entrainment

See above.

8.3 GMSMON-6 – Peace River Riparian Flooding

This is an opportunistic study to be implemented in 2017 and 2018 in the event of a spill release prior to 2017.

8.4 GMSMON-8 – Peace River Side Channel Response

See above. The sites monitored were based on the site selection process imbedded in GMSWORKS-3.

8.5 GMSMON-9 – Peace River Spill Hydrology

This opportunistic study with a pre-spill research component was completed in June of 2009. This study was not triggered in 2014.

8.6 GMSMON-10 – Peace River Spill Photos

See above.

8.7 GMSMON-11 – Peace River Spill TGP and Temperature

See above.

8.8 GMSMON-12 – Peace River Wildlife Stranding Survey

This opportunistic study with a pre-spill research component was conducted in May 2010. This opportunistic study remains active for the duration of the WUP in the

event of a future trigger of the Peace Spill Protocol. This study was not triggered in 2014.

8.9 GMSMON-13 – WLL Fish Index

This project is complete.

8.10 GMSWORKS-2 – Peace River Baseline TGP and Temperature

Temperature gauges were deployed in 2008. Temperature readings are downloaded quarterly. The project will continue until 2019. Attached is the report for Year 6 dated April 2015.

9 Status of Monitoring Programs and Physical Works Projects under Schedule A, B, and C

9.1 GMSWORKS-26 – Williston Communication and Safety

This work was initiated in January 2009. Installation and commissioning of the radio communications network for Williston reservoir was completed in September 2013. Installation of signs at boat ramp facilities commenced in the spring of 2013 and will proceed according to the construction schedules for each facility. Monitoring of the communication from May to November was initiated in 2013 and is ongoing. The radio strength survey of the Peace Arm and Dinosaur Reservoir planned for fall 2013 has been delayed.

10 Status of Monitoring Programs and Physical Works Projects under Order Clause 7

10.1 GMSMON-21A – Heritage and Culture Information Plan: Archaeological Overview Assessment

This project is complete.

10.2 GMSMON-21B – Peace River Erosion Monitoring – Archaeological Resources

This monitoring project commenced in the spring of 2010 and will continue annually for nine years (completed in 2018). Attached is the monitoring report for 2014 dated January 29, 2015. Reports for previous years are in draft and will be submitted with the 2016 Annual Report.

11 Peace WUP Project Costs

Table 12-1 summarizes the financial status of all Peace WUP projects as of April 30, 2015.

Table 11-1: Peace 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
Peace River WUP Annual Report	\$43,074	\$15,844	\$27,230	\$43,074	\$0		
GMSM01A PCR Creel Survey	\$9,937	\$9,937	\$0	\$9,937	(\$0)	Project Cancelled.	
GMSM01A PCR Creel Survey - OR DM	\$9,937	\$9,937	\$0	\$9,937	(\$0)		
GMSM01A PCR Creel Survey - OR Imp	\$0	\$0	\$0	\$0	(\$0)		
GMSM02A PCR Fish Index	\$2,285,174	\$1,502,832	\$782,342	\$2,285,174	(\$0)		
GMSM02A PCR Fish Index - OR DM	\$112,133	\$59,059	\$661	\$59,719	\$52,414		
GMSM02A PCR Fish Index - OR Imp	\$2,173,041	\$1,443,774	\$781,681	\$2,225,455	(\$52,414)		
GMSM03A PCR Fish Stranding	\$225,156	\$142,773	\$82,383	\$225,156	(\$0)		
GMSM03A PCR Fish Stranding - OR DM	\$12,272	\$12,169	\$103	\$12,272	(\$0)		
GMSM03A PCR Fish Stranding - OR Imp	\$212,884	\$130,604	\$82,280	\$212,884	\$0		
GMSM04A GMS Entrainment	\$468,168	\$260,765	\$207,403	\$468,168	(\$0)		
GMSM04A GMS Entrainment - OR DM	\$45,505	\$31,476	\$14,029	\$45,505	(\$0)		
GMSM04A GMS Entrainment - OR Imp	\$422,663	\$229,289	\$193,374	\$422,663	(\$0)		
GMSM05A PCR Productivity	\$1,133,979	\$224,500	\$909,479	\$1,133,979	\$0		
GMSM05A PCR Productivity - OR DM	\$129,576	\$32,242	\$97,334	\$129,576	\$0		
GMSM05A PCR Productivity - OR Imp	\$1,004,403	\$192,258	\$812,145	\$1,004,403	\$0		
GMSM06A PCR Riparian Flooding	\$226,273	\$3,128	\$223,145	\$226,273	(\$0)		
GMSM06A PCR Riparian Flooding - OR DM	\$31,213	\$3,128	\$28,085	\$31,213	(\$0)		
GMSM06A PCR Riparian Flooding - OR Imp	\$195,060	\$0	\$195,060	\$195,060	(\$0)		
GMSM07A PCR Side Channel Fish	\$841,652	\$230,655	\$610,997	\$841,652	(\$0)		
GMSM07A PCR Side Channel Fish - OR DM	\$148,761	\$38,643	\$110,118	\$148,761	(\$0)		
GMSM07A PCR Side Channel Fish - OR Imp	\$692,891	\$192,012	\$500,879	\$692,891	\$0		
GMSM08A PCR Side Channel Resp	\$138,752	\$57,050	\$81,702	\$138,752	(\$0)		
GMSM08A PCR Side Channel Resp - OR DM	\$9,652	\$6,652	\$3,000	\$9,652	(\$0)		
GMSM08A PCR Side Channel Resp - OR Imp	\$129,100	\$50,398	\$78,702	\$129,100	\$0		
GMSM09A PCR Spill Hydrology	\$68,979	\$47,077	\$21,902	\$68,979	\$0		
GMSM09A PCR Spill Hydrology - OR DM	\$18,979	\$20,389	\$598	\$20,987	(\$2,008)		
GMSM09A PCR Spill Hydrology - OR Imp	\$50,000	\$26,687	\$21,304	\$47,991	\$2,009		
GMSM10A PCR Spill Photos	\$297,996	\$123,969	\$174,027	\$297,996	\$0		
GMSM10A PCR Spill Photos - OR DM	\$10,951	\$11,171	\$0	\$11,171	(\$220)		
GMSM10A PCR Spill Photos - OR Imp	\$287,045	\$112,798	\$174,027	\$286,825	\$220		
GMSM11A PCR Spill TGP/Temp	\$77,856	\$36,772	\$41,084	\$77,856	\$0		
GMSM11A PCR Spill TGP/Temp - OR DM	\$15,371	\$12,626	\$2,744	\$15,371	\$0		
GMSM11A PCR Spill TGP/Temp - OR Imp	\$62,485	\$24,145	\$38,340	\$62,485			
GMSM12A PCR Wildlife Survey	\$339,669	\$140,487	\$199,182	\$339,669	\$0		
GMSM12A PCR Wildlife Survey - OR DM	\$18,231	\$16,649	\$1,582	\$18,231	(\$0)		
GMSM12A PCR Wildlife Survey - OR Imp	\$321,438	\$123,838	\$197,600	\$321,438	\$0		
GMSM13A WLL Fish Index	\$124,909	\$74,302	\$0	\$74,302	\$50,607	Project Completed	
GMSM13A WLL Fish Index - OR DM	\$14,296	\$12,796	\$0	\$12,796	\$1,500		
GMSM13A WLL Fish Index - OR Imp	\$110,613	\$61,506	\$0	\$61,506	\$49,107		
GMSM14A DNR Tributary Habita	\$150,364	\$31,497	\$118,867	\$150,364	(\$0)		
GMSM14A DNR Tributary Habita - OR DM	\$57,080	\$13,988	\$40,521	\$54,509	\$2,571		
GMSM14A DNR Tributary Habita - OR Imp	\$93,284	\$17,509	\$78,346	\$95,855	(\$2,571)		
GMSM15A WLL Wetland Habitat	\$981,420	\$366,049	\$615,371	\$981,420	\$0		
GMSM15A WLL Wetland Habitat - OR DM	\$157,922	\$42,909	\$74,233	\$117,142	\$40,780		
GMSM15A WLL Wetland Habitat - OR Imp	\$823,498	\$323,140	\$541,138	\$864,278	(\$40,780)		
GMSM16A WLL Debris Trends	\$215,564	\$4,233	\$211,331	\$215,564	\$0		
GMSM16A WLL Debris Trends - OR DM	\$46,860	\$4,233	\$42,627	\$46,860	(\$0)		
GMSM16A WLL Debris Trends - OR Imp	\$168,704	\$0	\$168,704	\$168,704	(\$0)		
GMSM17A WLL Tributary Habita	\$1,467,158	\$628,616	\$838,542	\$1,467,158	\$0		
GMSM17A WLL Tributary Habita - OR DM	\$133,598	\$54,534	\$18,256	\$72,790	\$60,808		
GMSM17A WLL Tributary Habita - OR Imp	\$1,333,560	\$574,082	\$820,286	\$1,394,368	(\$60,808)		
GMSM18A WLL Dust Control	\$5,806,148	\$3,425,163	\$2,380,985	\$5,806,148	(\$0)		
GMSM18A WLL Dust Control - OR DM	\$184,905	\$67,774	\$117,131	\$184,905	(\$0)		
GMSM18A WLL Dust Control - OR Imp	\$5,621,243	\$3,357,389	\$2,263,854	\$5,621,243	\$0		
GMSM19A WLL Erosion Control	\$0	\$2,852	\$0	\$2,852	(\$2,852)	Project not yet approved	
GMSM19A WLL Erosion Control - OR DM	\$0	\$2,852	\$0	\$2,852	(\$2,852)		
GMSM19A WLL Erosion Control - OR Imp	\$0	\$0	\$0	\$0	(\$0)		
GMSM20A WLL Recreation Use	\$268,906	\$180,711	\$169,716	\$350,427	(\$81,521)	Project costs higher than expected	TOR resubmission by January 30, 2016
GMSM20A WLL Recreation Use - OR DM	\$115,060	\$35,628	\$14,557	\$50,185	\$64,875		
GMSM20A WLL Recreation Use - OR Imp	\$153,846	\$145,083	\$155,160	\$300,242	(\$146,396)		
GMSM21A WLL Arch Overview	\$113,614	\$111,608	\$0	\$111,608	\$2,006	Project Completed	
GMSM21A WLL Arch Overview - OR DM	\$16,186	\$18,388	\$0	\$18,388	(\$2,202)		
GMSM21A WLL Arch Overview - OR Imp	\$97,428	\$93,220	\$0	\$93,220	\$4,208		
GMSM21B B WLL Arch Monitor	\$705,659	\$242,154	\$463,505	\$705,659	\$0		
GMSM21B B WLL Arch Monitor - OR DM	\$119,954	\$18,615	\$48,871	\$67,485	\$52,469		
GMSM21B B WLL Arch Monitor - OR Imp	\$585,705	\$223,539	\$414,634	\$638,173	(\$52,468)		
GMSW01A PCR Aerial Photos	\$709,995	\$230,929	\$479,066	\$709,995	\$0		
GMSW01A PCR Aerial Photos - OR DM	\$15,318	\$9,392	\$5,926	\$15,318	\$0		
GMSW01A PCR Aerial Photos - OR Imp	\$694,677	\$221,537	\$473,140	\$694,677	\$0		
GMSW02A Baseline TGP Temp	\$254,554	\$154,062	\$55,491	\$209,554	\$45,000		
GMSW02A Baseline TGP Temp - OR DM	\$77,340	\$20,870	\$5,897	\$26,768	\$50,572		
GMSW02A Baseline TGP Temp - OR Imp	\$177,214	\$133,192	\$49,594	\$182,786	(\$5,572)		
GMSW03A PCR Trial Side Chan	\$2,477,678	\$1,196,620	\$1,281,057	\$2,477,678	\$0		
GMSW03A PCR Trial Side Chan - OR DM	\$48,977	\$42,195	\$6,782	\$48,977	\$0		
GMSW03A PCR Trial Side Chan - OR Imp	\$2,428,701	\$1,154,425	\$1,274,275	\$2,428,701	\$0		
GMSW04A PCR Hydraulic Habit - OR	\$134,816	\$134,816	\$0	\$134,816	(\$0)	Project Completed	
GMSW04A PCR Hydraulic Habit - OR DM	\$17,728	\$17,728	\$0	\$17,728	(\$0)		
GMSW04A PCR Hydraulic Habit - OR Imp	\$117,088	\$117,088	\$0	\$117,088	(\$0)		
GMSW05A PCR Hydraulic Model	\$270,648	\$208,246	\$0	\$208,246	\$62,402	Project Completed	
GMSW05A PCR Hydraulic Model - OR DM	\$31,742	\$28,581	\$0	\$28,581	\$3,161		
GMSW05A PCR Hydraulic Model - OR Imp	\$238,906	\$179,665	\$0	\$179,665	\$59,241		
GMSW06A PCR Mainstem Stage	\$306,437	\$294,612	\$0	\$294,612	\$11,825	Project Completed	
GMSW06A PCR Mainstem Stage - OR DM	\$39,515	\$32,612	\$0	\$32,612	\$6,903		
GMSW06A PCR Mainstem Stage - OR Imp	\$266,922	\$262,000	\$0	\$262,000	\$4,922		
GMSW07A PCR Riparian Habit	\$181,857	\$150,696	\$0	\$150,696	\$31,161	Project Completed	
GMSW07A PCR Riparian Habit - OR DM	\$22,854	\$28,928	\$0	\$28,928	(\$6,074)		
GMSW07A PCR Riparian Habit - OR Imp	\$159,003	\$121,768	\$0	\$121,768	\$37,235		
GMSW08A DNR Demonstration	\$247,265	\$15,481	\$0	\$15,481	\$231,784	Project has been delayed pending a decision on the recommendation from GMS WORKS 9	
GMSW08A DNR Demonstration - OR DM	\$63,222	\$7,472	\$0	\$7,472	\$55,750		
GMSW08A DNR Demonstration - OR Imp	\$184,043	\$8,008	\$0	\$8,008	\$176,035		
GMSW09A DNR Tributary Inven	\$41,013	\$32,016	\$0	\$32,016	\$8,997	Project Completed	
GMSW09A DNR Tributary Inven - OR DM	\$16,013	\$8,890	\$0	\$8,890	\$7,123		
GMSW09A DNR Tributary Inven - OR Imp	\$25,000	\$23,125	\$0	\$23,125	\$1,875		
GMSW10A PCR Industry & Tay	\$220,253	\$159,484	\$0	\$159,484	\$60,769	Project Completed	
GMSW10A PCR Industry & Tay - OR DM	\$69,761	\$26,652	\$0	\$26,652	\$43,109		
GMSW10A PCR Industry & Tay - OR Imp	\$150,492	\$132,832	\$0	\$132,832	\$17,660		

	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
Monitoring Programs							
GMSW11A FSJ Water Supply	\$0	(\$352)	\$0	(\$352)	\$352	Project Cancelled.	
GMSW11A FSJ Water Supply - OR DM	\$0	(\$352)	\$0	(\$352)	\$352		
GMSW11A FSJ Water Supply - OR Imp	\$0	\$0	\$0	\$0	(\$0)		
GMSW12A DNR Recreation Acc	\$118,729	\$71,586	\$0	\$71,586	\$47,143	Project Completed	
GMSW12A DNR Recreation Acc - OR DM	\$60,765	\$15,400	\$0	\$15,400	\$45,365		
GMSW12A DNR Recreation Acc - OR Imp	\$57,964	\$56,186	\$0	\$56,186	\$1,778		
GMSW13A PCR Recreation Acc	\$326,409	\$130,138	\$0	\$130,138	\$196,271	Project Completed	
GMSW13A PCR Recreation Acc - OR DM	\$96,825	\$15,624	\$0	\$15,624	\$81,201		
GMSW13A PCR Recreation Acc - OR Imp	\$229,584	\$114,514	\$0	\$114,514	\$115,070		
GMSW14A WLL Air Photos & Dem	\$2,804,180	\$1,738,885	\$1,065,295	\$2,804,180	\$0		
GMSW14A WLL Air Photos & Dem - OR DM	\$30,295	\$26,325	\$6,658	\$32,983	(\$2,688)		
GMSW14A WLL Air Photos & Dem - OR Imp	\$2,773,885	\$1,712,560	\$1,058,637	\$2,771,197	\$2,688		
GMSW16A WLL Wetland Invent - OR	\$143,076	\$143,076	\$0	\$143,076	\$0	Project Completed	
GMSW16A WLL Wetland Invent - OR DM	\$12,656	\$12,656	\$0	\$12,656	\$0		
GMSW16A WLL Wetland Invent - OR Imp	\$130,420	\$130,420	\$0	\$130,420	\$0		
GMSW17A WLL Trial Wetlands	\$2,323,692	\$2,051,092	\$272,600	\$2,323,692	(\$0)		
GMSW17A WLL Trial Wetlands - OR DM	\$30,273	\$32,598	\$12,766	\$45,364	(\$15,091)		
GMSW17A WLL Trial Wetlands - OR Imp	\$2,293,419	\$2,018,495	\$259,834	\$2,278,329	\$15,090		
GMSW18A WLL Debris Field - OR	\$342,368	\$341,253	\$0	\$341,253	\$1,115		
GMSW18A WLL Debris Field - OR DM	\$20,735	\$17,302	\$0	\$17,302	\$3,433		
GMSW18A WLL Debris Field - OR Imp	\$321,633	\$323,951	\$0	\$323,951	(\$2,318)		
GMSW19A WLL Trial Tributar	\$2,552,026	\$1,976,846	\$575,180	\$2,552,026	\$0		
GMSW19A WLL Trial Tributar - OR DM	\$40,649	\$36,931	\$14,939	\$51,871	(\$11,222)		
GMSW19A WLL Trial Tributar - OR Imp	\$2,511,377	\$1,939,915	\$560,241	\$2,500,155	\$11,222		
GMSW20A Dust Source Survey	\$733,672	\$714,406	\$3,811	\$718,216	\$15,456		
GMSW20A Dust Source Survey - OR DM	\$35,587	\$37,537	\$3,811	\$41,347	(\$5,760)		
GMSW20A Dust Source Survey - OR Imp	\$698,085	\$676,869	\$0	\$676,869	\$21,216		
GMSW21A WLL Dust CtrlTrial	\$3,361,598	\$2,978,368	\$2,540	\$2,980,908	\$380,690		
GMSW21A WLL Dust CtrlTrial - OR DM	\$140,246	\$118,766	\$2,540	\$121,306	\$18,940		
GMSW21A WLL Dust CtrlTrial - OR Imp	\$3,221,352	\$2,859,602	\$0	\$2,859,602	\$361,750		
GMSW22A WLL Debris Removal - ONR	\$5,470,099	\$2,655,023	\$2,815,076	\$5,470,099	\$0		
GMSW22A WLL Debris Removal - ONR DM	\$75,919	\$76,136	\$42,195	\$118,331	(\$42,412)		
GMSW22A WLL Debris Removal - ONR Imp	\$5,394,180	\$2,578,887	\$2,772,881	\$5,351,768	\$42,412		
GMSW22A WLL Debris Removal - OR	\$5,470,099	\$2,655,024	\$2,815,075	\$5,470,099	\$0		
GMSW22A WLL Debris Removal - OR DM	\$75,919	\$76,136	\$42,195	\$118,331	(\$42,412)		
GMSW22A WLL Debris Removal - OR Imp	\$5,394,180	\$2,578,888	\$2,772,880	\$5,351,768	\$42,412		
GMSW23A Erosion Ctrl Trial	\$0	\$106	\$0	\$106	(\$106)	Project not yet approved	
GMSW23A Erosion Ctrl Trial - OR DM	\$0	\$106	\$0	\$106	(\$106)		
GMSW23A Erosion Ctrl Trial - OR Imp	\$0	\$0	\$0	\$0	(\$0)		
GMSW24A WLL Boat Access	\$891,306	\$212,865	\$0	\$212,865	\$678,441	Project Completed	
GMSW24A WLL Boat Access - OR DM	\$427,592	\$42,110	\$0	\$42,110	\$385,482		
GMSW24A WLL Boat Access - OR Imp	\$463,714	\$170,755	\$0	\$170,755	\$292,959		
GMSW25A WLL Bathymetric Ma - OR	\$1,379,386	\$1,379,386	\$0	\$1,379,386	(\$0)	Project Completed	
GMSW25A WLL Bathymetric Ma - OR DM	\$50,979	\$50,979	\$0	\$50,979	(\$0)		
GMSW25A WLL Bathymetric Ma - OR Imp	\$1,328,407	\$1,328,407	\$0	\$1,328,407	(\$0)		
GMSW26A WLL Comm Safety	\$1,610,081	\$807,165	\$802,917	\$1,610,081	(\$0)		
GMSW26A WLL Comm Safety - OR DM	\$425,173	\$97,040	\$149,023	\$246,063	\$179,110		
GMSW26A WLL Comm Safety - OR Imp	\$1,184,908	\$710,125	\$653,894	\$1,364,019	(\$179,111)		
GMSW27A WLL Finlay River A	\$82,146	\$73,699	\$0	\$73,699	\$8,447	Project Completed	
GMSW27A WLL Finlay River A - OR DM	\$21,284	\$12,198	\$0	\$12,198	\$9,086		
GMSW27A WLL Finlay River A - OR Imp	\$60,862	\$61,501	\$0	\$61,501	(\$639)		
GMSW28A Industry Feasibili	\$1,594,520	\$1,050,798	\$543,723	\$1,594,520	(\$0)		
GMSW28A Industry Feasibili - OR DM	\$114,520	\$118,907	\$12,114	\$131,021	(\$16,501)		
GMSW28A Industry Feasibili - OR Imp	\$1,480,000	\$931,890	\$531,609	\$1,463,499	\$16,501		
GMSW29A Lynx Creek	\$280,376	\$5,488	\$274,889	\$280,376	(\$0)		
GMSW29A Lynx Creek - OR DM	\$91,709	\$1,711	\$9,171	\$10,881	\$80,828		
GMSW29A Lynx Creek - OR Imp	\$188,667	\$3,777	\$265,718	\$269,495	(\$80,828)		
GMSW30A Taylor Ramp	\$260,501	\$255,463	\$0	\$255,463	\$5,038	Project Completed	
GMSW30A Taylor Ramp - OR DM	\$2,641	\$20,454	\$0	\$20,454	(\$17,813)		
GMSW30A Taylor Ramp - OR Imp	\$257,860	\$235,009	\$0	\$235,009	\$22,851		
GMSW31A Kwadacha	\$354,136	\$129,716	\$224,421	\$354,136	(\$0)		
GMSW31A Kwadacha - ONR DM	\$165,469	\$7,011	\$2,773	\$9,783	\$155,686		
GMSW31A Kwadacha - ONR Imp	\$188,667	\$122,705	\$221,648	\$344,353	(\$155,686)		
GMSW32A BRD Deserter's Dump	\$0	\$54,866	\$0	\$54,866	(\$54,866)	Project deferred. Costs associated with design prior to decision.	
GMSW32A BRD Deserter's Dump - ONR DM	\$0	\$1,489	\$0	\$1,489	(\$1,489)		
GMSW32A BRD Deserter's Dump - ONR Imp	\$0	\$53,377	\$0	\$53,377	(\$53,377)		
GMSW33A BRD Ingenika	\$0	\$63,477	\$540,000	\$603,477	(\$603,477)	Project deferred. Costs associated with design prior to decision.	
GMSW33A BRD Ingenika - ONR DM	\$0	\$5,479	\$0	\$5,479	(\$5,479)		
GMSW33A BRD Ingenika - ONR Imp	\$0	\$57,998	\$540,000	\$597,998	(\$597,998)		
GMSW34A BRD Finlay Bay	\$0	\$62,736	\$0	\$62,736	(\$62,736)	Project deferred. Costs associated with design prior to decision of deferral.	
GMSW34A BRD Finlay Bay - ONR DM	\$0	\$5,854	\$0	\$5,854	(\$5,854)		
GMSW34A BRD Finlay Bay - ONR Imp	\$0	\$56,882	\$0	\$56,882	(\$56,882)		
GMSW35A BRD Six Mile Bay	\$0	\$55,535	\$0	\$55,535	(\$55,535)	Project deferred. Costs associated with design prior to decision of deferral.	
GMSW35A BRD Six Mile Bay - ONR DM	\$0	\$4,666	\$0	\$4,666	(\$4,666)		
GMSW35A BRD Six Mile Bay - ONR Imp	\$0	\$50,869	\$0	\$50,869	(\$50,869)		
GMSW36A BRD Cut Thumb Bay	\$0	\$59,186	\$0	\$59,186	(\$59,186)	Project deferred. Costs associated with design prior to decision of deferral.	
GMSW36A BRD Cut Thumb Bay - ONR DM	\$0	\$6,193	\$0	\$6,193	(\$6,193)		
GMSW36A BRD Cut Thumb Bay - ONR Imp	\$0	\$52,993	\$0	\$52,993	(\$52,993)		
GMSW37A BRD Mackenzie Landing	\$743,878	\$532,188	\$0	\$532,188	\$211,690	Project Completed	
GMSW37A BRD Mackenzie Landing - ONR DM	\$24,396	\$15,766	\$0	\$15,766	\$8,630		
GMSW37A BRD Mackenzie Landing - ONR Imp	\$719,482	\$516,422	\$0	\$516,422	\$203,060		
GMSW38A Taylor Ramp Construct	\$5,408,200	\$5,404,060	\$0	\$5,404,060	\$4,140	Project Completed	
GMSW38A Taylor Ramp Construct - OR DM	\$145,100	\$35,497	\$0	\$35,497	\$109,603		
GMSW38A Taylor Ramp Construct - OR Imp	\$5,263,100	\$5,368,563	\$0	\$5,368,563	(\$105,463)		
GMSW40A BRD Blackfoot Park	\$93,732	\$94,702	\$0	\$94,702	(\$970)	Project Cancelled.	
GMSW40A BRD Blackfoot Park - OR DM	\$17,508	\$17,508	\$0	\$17,508	\$0		
GMSW40A BRD Blackfoot Park - OR Imp	\$76,224	\$77,194	\$0	\$77,194	(\$970)		
GMSW41A BRD Halfway River	\$0	\$52,642	\$0	\$52,642	(\$52,642)	Project deferred pending construction of Site C. Costs associated with design prior to decision.	
GMSW41A BRD Halfway River - OR DM	\$0	\$11,093	\$0	\$11,093	(\$11,093)		
GMSW41A BRD Halfway River - OR Imp	\$0	\$41,549	\$0	\$41,549	(\$41,549)		
GMSW43A BRC Ingenika	\$0	\$113	\$0	\$113	(\$113)	Project deferred. Costs associated with design prior to decision.	
GMSW43A BRC Ingenika - ONR DM	\$0	\$113	\$0	\$113	(\$113)		
GMSW43A BRC Ingenika - ONR Imp	\$0	\$0	\$0	\$0	(\$0)		
GMSW44A BRC Finlay Bay	\$0	\$113	\$0	\$113	(\$113)	Project deferred. Costs associated with design prior to decision of deferral.	
GMSW44A BRC Finlay Bay - ONR DM	\$0	\$113	\$0	\$113	(\$113)		
GMSW44A BRC Finlay Bay - ONR Imp	\$0	\$0	\$0	\$0	(\$0)		

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
GMSW45A BRC Six Mile Bay	\$0	\$0	\$0	\$0	(\$0)	Project deferred.	
GMSW45A BRC Six Mile Bay - ONR DM	\$0	\$0	\$0	\$0	(\$0)		
GMSW45A BRC Six Mile Bay - ONR Imp	\$0	\$0	\$0	\$0	(\$0)		
GMSW46A BRC Cut Thumb Bay	\$0	\$113	\$0	\$113	(\$113)	Project deferred.	
GMSW46A BRC Cut Thumb Bay - ONR DM	\$0	\$113	\$0	\$113	(\$113)		
GMSW46A BRC Cut Thumb Bay - ONR Imp	\$0	\$0	\$0	\$0	(\$0)		
GMSW47A BRC Mackenzie Landing	\$4,242,756	\$2,561,870	\$0	\$2,561,870	\$1,680,886	Project Completed	
GMSW47A BRC Mackenzie Landing - ONR DM	\$55,854	\$44,190	\$0	\$44,190	\$11,664		
GMSW47A BRC Mackenzie Landing - ONR Imp	\$4,186,902	\$2,517,681	\$0	\$2,517,681	\$1,669,221		
GMSW48A BRC Blackfoot Park	\$45,481	\$45,481	\$0	\$45,481	(\$0)	Project Cancelled	
GMSW48A BRC Blackfoot Park - OR DM	\$5,026	\$5,026	\$0	\$5,026	(\$0)		
GMSW48A BRC Blackfoot Park - OR Imp	\$40,455	\$40,455	\$0	\$40,455	(\$0)		
GMSW49A BRC Dunlevy	\$5,065,450	\$4,270,523	\$794,927	\$5,065,450	\$0		
GMSW49A BRC Dunlevy - ONR DM	\$15,000	\$2,092	\$12,908	\$15,000	\$0		
GMSW49A BRC Dunlevy - ONR Imp	\$5,050,450	\$4,268,431	\$782,019	\$5,050,450	\$0		
GMSW50A BRC Elizabeth	\$0	\$0	\$0	\$0	(\$0)	Project Cancelled	
GMSW50A BRC Elizabeth - ONR DM	\$0	\$0	\$0	\$0	(\$0)		
GMSW50A BRC Elizabeth - ONR Imp	\$0	\$0	\$0	\$0	(\$0)		
GMSW51A BRC Dinosaur	\$3,258,435	\$4,250,851	\$0	\$4,250,851	(\$992,416)	Project Completed	
GMSW51A BRC Dinosaur - ONR DM	\$180,300	\$6,156	\$0	\$6,156	\$174,144		
GMSW51A BRC Dinosaur - ONR Imp	\$3,078,135	\$4,244,695	\$0	\$4,244,695	(\$1,166,560)		
GMSW52A Halfway River	\$180,000	\$32,705	\$106,733	\$139,438	\$40,562		
GMSW52A Halfway River - OR DM	\$0	\$5,733	\$1,733	\$7,466	(\$7,466)		
GMSW52A Halfway River - OR Imp	\$180,000	\$26,972	\$105,000	\$131,972	\$48,028		
GMSW53A BRD Dinosaur	\$87,965	\$62,315	\$0	\$62,315	\$25,650	Design phase 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		
GMSW54A BRD Dunlevy	\$1,247,610	\$903,425	\$0	\$903,425	\$344,185	Design phase complete	
GMSW54A BRD Dunlevy - ONR DM	\$46,765	\$29,283	\$0	\$29,283	\$17,482		
GMSW54A BRD Dunlevy - ONR Imp	\$1,200,845	\$874,143	\$0	\$874,143	\$326,702		
GMSW55A Blackfoot Maintenance	\$0	\$0	\$0	\$0	(\$0)		
GMSW55A Blackfoot Maintenance - OR DM	\$0	\$0	\$0	\$0	(\$0)		
GMSW55A Blackfoot Maintenance - OR Imp	\$0	\$0	\$0	\$0	(\$0)		
GMSW56A Dinosaur Maintenance	\$100,000	\$35,684	\$64,316	\$100,000	\$0		
GMSW56A Dinosaur Maintenance - ONR DM	\$0	\$4,147	\$5,328	\$9,475	(\$9,475)		
GMSW56A Dinosaur Maintenance - ONR Imp	\$100,000	\$31,537	\$58,988	\$90,525	\$9,475		
GMSW57A Dunlevy Maintenance	\$194,971	\$117,081	\$77,890	\$194,971	(\$0)		
GMSW57A Dunlevy Maintenance - ONR DM	\$13,000	\$6,872	\$11,695	\$18,567	(\$5,567)		
GMSW57A Dunlevy Maintenance - ONR Imp	\$181,971	\$110,209	\$66,195	\$176,404	\$5,567		
GMSW58A Mackenzie Maintenance	\$150,000	\$4,515	\$145,485	\$150,000	(\$0)		
GMSW58A Mackenzie Maintenance - ONR DM	\$0	\$4,515	\$5,419	\$9,934	(\$9,934)		
GMSW58A Mackenzie Maintenance - ONR Imp	\$150,000	\$0	\$140,066	\$140,066	\$9,934		
GMSW59A Ingenika Maintenance	\$0	\$0	\$40,000	\$40,000	(\$40,000)	Project deferred until ramp constructed.	
GMSW59A Ingenika Maintenance - ONR DM	\$0	\$0	\$0	\$0	(\$0)		
GMSW59A Ingenika Maintenance - ONR Imp	\$0	\$0	\$40,000	\$40,000	(\$40,000)		
GMSW60A Finlay Maintenance	\$0	\$0	\$0	\$0	(\$0)	Project deferred until ramp constructed.	
GMSW60A Finlay Maintenance - ONR DM	\$0	\$0	\$0	\$0	(\$0)		
GMSW60A Finlay Maintenance - ONR Imp	\$0	\$0	\$0	\$0	(\$0)		
GMSW61A 6 Mile Maintenance	\$0	\$0	\$0	\$0	(\$0)	Project deferred until ramp constructed.	
GMSW61A 6 Mile Maintenance - ONR DM	\$0	\$0	\$0	\$0	(\$0)		
GMSW61A 6 Mile Maintenance - ONR Imp	\$0	\$0	\$0	\$0	(\$0)		
GMSW62A CutThumb Maintenance	\$0	\$0	\$0	\$0	(\$0)	Project deferred until ramp constructed.	
GMSW62A CutThumb Maintenance - ONR DM	\$0	\$0	\$0	\$0	(\$0)		
GMSW62A CutThumb Maintenance - ONR Imp	\$0	\$0	\$0	\$0	(\$0)		
GMSW63A Taylor Maintenance	\$204,443	\$23,938	\$180,505	\$204,443	\$0		
GMSW63A Taylor Maintenance - OR DM	\$18,585	\$7,512	\$6,495	\$14,007	\$4,578		
GMSW63A Taylor Maintenance - OR Imp	\$185,858	\$16,426	\$174,010	\$190,436	(\$4,578)		

OR - Ordered Remissible
ONR - Ordered Non-Remissible

* Red values in parentheses denote overage.