

Peace Project Water Use Plan Monitoring Programs and Physical Works

Annual Report: 2013

For Implementation Year: June 2012 to May 2013

Physical Works

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- [GMSWORKS-2: PCR Baseline TGP/Temperature](#)
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For Water Licences 123018, 123019, 123020, 123021, 123025

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BC Hydro Peace Project Water Use Plan Annual Report: 2013

1 Introduction

This document summarizes the status of Peace Project Water Use Plan (WUP) physical work and monitoring program projects as of May 31, 2013. 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").

2 Glossary

The following acronyms, words, or phrases used throughout this document have the meanings given below:

BCH: BC Hydro

Committee Report: The consensus recommendations of the WUP Committee set forth in their report of December 2003. An Executive Summary of those recommendations can be viewed online at:

http://www.bchydro.com/about/sustainability/conservation/water_use_planning/northern_interior/peace_river.html

CWR: The Comptroller of Water Rights for the Province of British Columbia.

DNR: Dinosaur Reservoir.

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

FLNRO: Forests, Lands, and Natural Resource Operations.

Order: The order of the CWR, identified as the "Peace Order" and dated August 9, 2007, made pursuant to s. 88 of the *Water Act* of British Columbia and pertaining to implementation of the Peace WUP.

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.

ToR: Terms of Reference for WUP projects ordered by the CWR. The ToR can be viewed online at:

http://www.bchydro.com/about/sustainability/conservation/water_use_planning/northern_interior/peace_river.html

WLL: Williston Reservoir, also known as Williston Lake.

WUP: The Peace Project Water Use Plan accepted by the CWR on August 21, 2007. The WUP can be viewed online at:

http://www.bchydro.com/about/sustainability/conservation/water_use_planning/northern_interior/peace_river.html

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

3 Background

The water use planning process for BC Hydro's Peace River hydroelectric facilities was initiated in February 2001 and completed in December 2003. The conditions proposed in the WUP for the operation of the facilities reflect the December 2003 consensus recommendations (the Committee Report) of the Peace Water Use Planning Committee (the WUP Committee).

Following review by the provincial Cabinet, BC Hydro submitted the WUP to the CWR in June 2006. The CWR accepted the WUP on August 21, 2007.

On August 9, 2007, BC Hydro was ordered to implement the operating conditions proposed in the WUP and to prepare terms of reference (ToR) for specified physical work and monitoring program projects.

GMSWORKS-11 FSJ Water Well, a proposed project relating to the water supply to the community of Fort St. John, was conducted outside the WUP and is not part of this report.

GMSWORKS-15 WLL Digital Elevation Model has been combined with GMSWORKS-14 Airphotos and is described in the section relating to the latter project.

Between February 9, 2008 and present, ToR were submitted to the CWR at various times for approval and leave to commence ordered projects. In addition, addendums to various ToR have been submitted to the CWR at various times for approval. Leave to commence all projects for which ToR or addendums have been submitted has been granted.

ToR for a portion of GMSWORKS-28 Industry Feasibility & Design Study relating to the community of Mackenzie's sewage outfall have been submitted to, and accepted by, the CWR. ToR have been submitted for those portions of the project relating to the forest products mills in Mackenzie in 2012, and that study is currently underway.

The status of those projects is described in Section 5, below.

The WUP includes a number of "management plans", each addressing a key area of concern for the WUP Committee. Many WUP projects are intended to address specific management plans. The management plans and the projects addressing them are:

For Williston Reservoir:

- The Riparian and Wetland Habitat Management Plan, addressed primarily by GMSWORKS-16 and 17, and GMSMON-15.
- The Tributary Habitat Enhancement Management Plan, addressed primarily by GMSWORKS-19 and GMSMON-17.

- The Dust Control Management Plan, addressed primarily by GMSWORKS-20 and 21, and GMSMON-18.
- The Erosion Management Plan, addressed primarily by GMSWORKS-23 and GMSMON-19.
- The Williston Access, Navigation, and Safety Plan, addressed primarily by GMSWORKS-24 and GMSMON-20.
- The Debris Management Plan, addressed primarily by GMSWORKS-18 and 22 and GMSMON-16.
- The Peace/Williston Marine Radio Communications and Improved Signage Plan, addressed primarily by GMSWORKS-26.

For Dinosaur Reservoir, the Dinosaur Reservoir Management Plan, addressed primarily by GMSWORKS- 8, 9, and 12, and by GMSMON-14.

For the Peace River:

- The Peace Side Channel Plan, addressed primarily by GMSWORKS-3 and GMSMON-7.
- The Peace Ramping Plan, addressed primarily by GMSWORKS-3 and GMSMON-7.
- The Peace Flood Pulse Plan, addressed primarily by the Peace Spill Protocol (PSP), a collection of projects to be implemented in the event of a spill from the WAC Bennett or Peace Canyon Dams. The PSP includes GMSWORKS-2 and 7, and GMSMON-3, 4, 6, 7, 8, 9, 10, 11, 12, and 13.

The remainder of the Peace WUP projects either support multiple management plans or do not address a specific management plan.

The Order will be implemented until 2021, when the longest-running projects will end, except for ongoing maintenance on the GMSWORKS-26 marine communications system and any WUP boat ramps constructed.

A review of Williston Reservoir operations is to occur approximately five years after commencement of the WUP. The timing is not yet finalized but will likely be in 2014 because of the staggered start years of projects. During the review, the WUP Committee, as it is then constituted, will:

- 1) Consider the results of certain WUP projects and may recommend long-term operating constraints for Williston Reservoir to replace those currently in effect pursuant to the Order;
- 2) Review the results of certain projects and consider what adjustments, if any, are required to scope or methodology; and
- 3) Make decisions about proceeding with conditional next steps for appropriate projects.

A full review of the WUP will occur approximately ten years after commencement of the WUP. The timing is not yet finalized but the review will likely occur in 2021 or 2022 because of the staggered start years and fixed durations of the WUP projects.

4 Status

The following table outlines the dates that TOR for the Peace Water Use Plan monitoring programs and physical works were submitted to and approved by the CWR.

Table 4-1 Dates of Peace WUP TOR Submissions and Approvals by the Comptroller of Water Rights

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	Pending
GMSMON-04 WACB ENTRAINMENT	Schedule D.3.b	Feb 07, 2008	Apr 02, 2008	Apr 29, 2013	Pending
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	Pending
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	Pending
GMSMON-12 PCR WILDLIFE SURVEY	Schedule D.3.h	Feb 07, 2008	Apr 02, 2008	Apr 29, 2013	Pending
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		
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 13, 2011	Jun 01, 2011
GMSMON-19 WLL EROSION CONTROL	Schedule A.6.e	Oct 03, 2011	Nov 16, 2011		
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	Jun 27, 2011	Jul 28, 2011
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	Aug 07, 2009	Jan 20, 2010
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	Aug 07, 2009	Jan 20, 2010
GMSWORKS-18 WLL DEBRIS FIELD SURVEY	Schedule A.3.c	Nov 26, 2008	Dec 17, 2008		
GMSWORKS-19 WLL TRIAL TRIBUTARY(S)	Schedule A.2.b	May 09, 2008	Jun 02, 2008	Aug 07, 2009	Jan 20, 2010
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	Mar 05, 2013	Apr 04, 2013
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	Oct 03, 2011	Nov 16, 2011		
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 07, 2009	Jan 20, 2010
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		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
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	Apr 18, 2011	Apr 03, 2012
GMSWORKS-38 BOAT RAMP TAYLOR (Peace Island)	Schedule C.2.c	Jul 25, 2012	Aug 02, 2012	Mar 15, 2013	Pending
GMSWORKS-40 BOAT RAMP DESIGN BLACKFOOT PARK	Schedule C.2.d	Apr 15, 2010	Jun 28, 2010	Apr 18, 2011	Apr 3, 2012 Deferred
GMSWORKS-41 BOAT RAMP DESIGN HALFWAY RIVER	Schedule C.2.b	Apr 15, 2010	Jun 28, 2010	Apr 18, 2011	Apr 3, 2012 Deferred
GMSWORKS-43 BOAT RAMP INGENIKA (Billy's Bay)	Schedule A.4.b	Apr 18, 2011	Apr 3, 2012 Deferred		
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		
GMSWORKS-48 BOAT RAMP BLACKFOOT PARK	Schedule C.2.d	Apr 18, 2011	Apr 3, 2012 Deferred		
GMSWORKS-49 CAP BOAT RAMP DUNLEVY	Schedule A.4.a	Apr 18, 2011	Apr 3, 2012 Deferred		
GMSWORKS-51 BOAT RAMP HUDSONS HOPE (Dinosaur)	Schedule B.2	Apr 18, 2011	Apr 03, 2012	Sep 12, 2012	Oct 01, 2012
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	Sep 12, 2012	Oct 01, 2012
GMSWORKS-54 CAP BOAT RAMP DESIGN DUNLEVY	Schedule A.4.a	Apr 15, 2010	May 07, 2010	Apr 18, 2011	Apr 3, 2012 Deferred
GMSWORKS-55 BLACKFOOT PARK MAINTENANCE	Schedule C.2.d	Apr 18, 2011	Apr 3, 2012 Deferred		
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	Jul 20, 2012	Jul 26, 2012
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		
GMSWORKS-60 FINLAY 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	Pending		

5 Project Timing

Tables 5-1 and 5-2 outline the Peace WUP Physical Works and Monitoring Program projects implementation schedules.

Table 5-1: Schedule of Peace WUP Physical Works Projects Implementation as of June 2013

Project	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
GMSWORKS-1: PCR Aerial Photos	✓ ⁷	✓ ⁷	✓ ⁷	✓ ⁷					■ ⁸	■ ⁸				
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	✓	✓	✓	✓ ³	u/w								
GMSWORKS-6: PCR Mainstem Stage Discharge	Del	✓	✓	✓	✓	u/w ⁵	■ ⁵	■ ³						
GMSWORKS-7: PCR Riparian Habitat Assessment			✓	✓	✓									
GMSWORKS-8: DNR Demonstration Tributary			✓			u/w ¹¹	■	■	■ ⁵					
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	■	■ ⁵	■ ⁵	■ ⁵	■ ⁵			
GMSWORKS-18: WLL Debris Field Survey		✓	✓	✓										
GMSWORKS-19: WLL Trial Tributaries	Del	✓			✓	u/w ¹⁰	■	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵		
GMSWORKS-20: WLL Dust Source Survey		✓	✓	✓	✓									
GMSWORKS-21: WLL Dust Control Trial	✓	✓	✓	✓										
GMSWORKS-22: WLL Debris Management		✓	✓	✓	✓	u/w	■	■	■	■	■	■ ³		
GMSWORKS-23: WLL Erosion Control Trial	Del ¹	Del ¹	Del ¹	Del ¹	Del ¹									
GMSWORKS-24: WLL Boat Access	Del	✓	✓											
GMSWORKS-25: WLL Bathymetric Mapping			✓	✓	✓									
GMSWORKS-26: WLL Communications/Safety	Del	✓	Del	✓	✓	u/w	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ^{5,9}
GMSWORKS-27: WLL Finlay River Access Information Plan		✓	✓											
GMSWORKS-28: Industry Feasibility & Design Study	Del	Del	✓ ²	✓ ²	✓	u/w								
GMSWORKS-28a: District of Mackenzie Effluent Discharge Feasibility & Design Study			✓	✓	✓									
GMSWORKS-29: Lynx Creek Boat Launch Maintenance			✓	✓	✓	u/w	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵
GMSWORKS-30: Taylor Boat Launch Design			✓	✓	✓									
GMSWORKS-31: Kw adacha Boat Launch Maintenance			✓	✓	✓	u/w	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵
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			✓	✓	✓	u/w								
GMSWORKS-38: Taylor Ramp Construction					✓	✓								
GMSWORKS-40: Boat Ramp Design Blackfoot Park			✓	✓	✓									
GMSWORKS-41: Boat Ramp Design Half way River			✓	✓										
GMSWORKS-43: Boat Ramp Ingenika								■						
GMSWORKS-47: Boat Ramp Mackenzie Landing							■							
GMSWORKS-49: Boat Ramp Dunlevy							■							
GMSWORKS-51: Dinosaur Boat Ramp Construction (Hudson's Hope)					✓	✓								
GMSWORKS-52: Boat Ramp Half way River						u/w								
GMSWORKS-53: Boat Ramp Design Hudson's Hope			✓	✓	✓									
GMSWORKS-54: Boat Ramp Design Dunlevy			✓	✓	✓	u/w								
GMSWORKS-56: Hudson's Hope Maintenance						■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵
GMSWORKS-57: Dunlevy Maintenance						■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵
GMSWORKS-58: Mackenzie Maintenance						■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵
GMSWORKS-59: Ingenika Maintenance						■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵
GMSWORKS-63: Taylor Maintenance						■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵	■ ⁵
Legend	■ Program to be undertaken/initiated in identified year													
	u/w Project is under way													
	✓ Project is completed for the year													
	Del Project is delayed for the year													

Footnotes: 1. Delayed pending completion of outstanding commitments under contract between BC Hydro, the Province of BC, and the Tsay Keh Dene First Nation.
2. The industry portion of this project is delayed pending resolution of the status of the plants in Mackenzie. The community's sewage outfall portion is underway.
3. Final report completion only.
4. Final report completion.
5. Work in this year represents maintenance at existing sites.
6. Project wrap up costs, only (i.e. data archiving, report edits, etc.)
7. One of five flows captured in 2008, two additional flows captured in 2009, none in 2010, and the two remaining flows were captured in 2011.
8. Flows not captured in Year 9 will be taken in Year 10.
9. Maintenance work will continue in future years.
10. Project planning will be initiated in 2012; construction planned for 2014.
11. Project planning will be initiated in 2012; construction planned for 2013 or 2014.

Table 5-2: Schedule of Peace WUP Monitoring Program Projects Implementation as of June 2013

Project	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
GMSMON-1: PCR Creel Survey				Del ³	Del ⁷									
GMSMON-2: PCR Fish Index	✓	✓	✓	✓	✓	u/w	■	■	■	■	■ ²			
GMSMON-3: PCR Fish Stranding		✓	✓	✓	✓ ⁴	✓ ²								
GMSMON-4: WACB Entrainment	✓			✓	✓ ⁴	✓ ²								
GMSMON-5: PCR Productivity			Del ⁵	Del ⁵	Del ⁵	u/w	■	■	■	■	■	■		
GMSMON-6: PCR Riparian Flooding										■	■			
GMSMON-7: PCR Side Channel Fisheries			Del ⁵	Del ⁵	Del ⁵	u/w	■	■	■	■	■	■		■ ²
GMSMON-8: PCR Side Channel Response					✓ ⁴	✓ ²								
GMSMON-9: PCR Spill Hydrology		✓	✓	✓	✓	✓ ²								
GMSMON-10: PCR Spill Photos					✓ ⁴	✓								
GMSMON-11: PCR Spill TGP/Temperature					✓ ⁴	✓ ²								
GMSMON-12: PCR Wildlife Survey		✓	✓		✓ ⁴	✓ ²								
GMSMON-13: WLR Fish Index	✓	✓												
GMSMON-14: DNR Tributary Habitat			✓	Del ⁵	Del ⁵	Del ⁵	■		■		■			
GMSMON-15: WLL Wetland Habitat			Del ⁵	✓	✓	u/w	■	■	■	■	■	■		
GMSMON-16: WLL Debris Trends				■	■ ²	■	■ ²				■	■ ²		
GMSMON-17: WLL Tributary Habitat			Del ⁵	✓	✓	u/w	■	■	■	■	■	■		
GMSMON-18: WLL Dust Control	✓	✓	✓	✓	✓	u/w	■	■	■	■	■ ²			
GMSMON-19: WLL Erosion Control	Del ¹	Del ¹	Del ¹	Del ¹	Del ¹									
GMSMON-20: WLL Recreation Use		✓	✓	✓	✓	u/w	■	■	■	■	■	■ ²		
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													
	u/w Project is under way													
	✓ Project is completed for the year													
	Del Project is delayed for the year													

Footnotes:

1. Delayed pending completion of outstanding commitments under contract between BC Hydro, the Province of BC, and the Tsay Keh Dene First Nation.
2. Final report completion only.
3. Delayed pending discussions with CWR re suitability of study to meet management objectives.
4. Opportunistic study to be implemented in the event of a spill meeting the criteria of the PSP.
5. Delayed one year due to delay of corresponding WORKS projects.
6. Delayed one year due to loss of resources.
7. Project cancelled.

6 WUP Physical Works Projects

6.1 GMSWORKS-1 – Peace River Aerial Photos

6.1.1 Status

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. Attached is an update for the 2011 work, dated October 19, 2012.

6.2 GMSWORKS-2 – Peace River Baseline TGP and Temperature

6.2.1 Status

Monitoring equipment was purchased in August 2008 and the temperature gauges deployed the following month. Temperature readings are downloaded quarterly. The project will continue until 2019.

6.3 GMSWORKS-3 – Peace River Side Channels

6.3.1 Status

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.

Implementation of two trial side channel works was delayed as result of the changes to the ToR and the spatial boundary of the study area. Planning for implementation based on the revised ToR was scheduled for late 2012/2013. Construction work is scheduled for the fall of 2013 at one of the two trial sites. The second trial site is under review and may be constructed in 2014.

6.4 GMSWORKS-4 – Peace River Hydraulic Habitat

6.4.1 Status

This work was initiated in May 2009, and was scheduled to be completed by January 2011. Delays in delivering the 2011 aerial photo work delayed this project deliverable date to November, 2012. Attached is the final report for 2012 dated November 30, 2012. This project is complete.

6.5 GMSWORKS-5 – Peace River Hydraulic Model

6.5.1 Status

This work was initiated in May 2009 and was scheduled to be completed by January 2013. This project is complete.

6.6 GMSWORKS-6 – Peace River Mainstem Stage Discharge

6.6.1 Status

This work was initiated in May 2009 and is scheduled to be completed by January 2015.

6.7 GMSWORKS-7 – Peace River Riparian Habitat Assessment

6.7.1 Status

Year 1 work was completed in 2010/2011 and the second and final year of the project was completed in 2012. Attached is the final Year 2 report dated February, 2013.

6.8 GMSWORKS-8 – Dinosaur Reservoir Demonstration Tributary

6.8.1 Status

This project has been delayed to allow for additional discussions with FLNRO regional staff to ensure the proposed approach, as recommended by the GMSWORKS-9 study, is acceptable. Planning for the detailed design phase is expected to commence in 2013.

6.9 GMSWORKS-9 – Dinosaur Reservoir Tributary Inventory and Feasibility

6.9.1 Status

This project was undertaken in the second half of 2009 and completed in early 2010.

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

6.10.1 Status

This work was initiated in May 2009 and was completed by December 2012. Based on the results of Years 1 and 2, a limited additional work program was recommended for Year 3. A decision was made to follow the recommendations of the consultant and complete this project in Year 3, rather than continue with Years 4 and 5 as planned in the original program. Attached is the Year 3 Final Report dated April 3, 2012.

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

6.11.1 Status

This project is complete.

6.12 GMSWORKS-13 – Peace River Recreational Access

6.12.1 Status

This project is complete.

6.13 GMSWORKS-14 – Williston Air Photos and DEM

6.13.1 Status

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. Attached is a report on the results of the Spring 2011 photo session.

6.14 GMSWORKS-16 – Williston Wetland Inventory

6.14.1 Status

This project is complete.

6.15 GMSWORKS-17 – Williston Trial Wetlands

6.15.1 Status

Construction of one of two trial sites was completed in 2013. Construction of the second trial site is scheduled for 2014. Attached is the Year 1 report dated March, 2011, with preliminary designs of the two trial sites. A completion report for the first site will be submitted with the 2014 annual report.

6.16 GMSWORKS-18 – Williston Debris Field Survey

6.16.1 Status

AECOM was contracted in 2009 and submitted their final report in June 2010. BC Hydro has reviewed the report and determined that report has adequately answered all three management questions. However, further to the contractual agreement with Tsay Keh Dene and Kwadacha First Nations regarding the joint planning of certain projects within the Peace WUP, BC Hydro has received a review of the June 2010 AECOM report from Tsay Keh Dene.

The Williston Reservoir Debris Management Strategy was also completed under this project heading. AECOM submitted their final report in April 2011. This report identifies options to be considered in a debris management strategy and makes recommendations on what to include in a strategy but did not produce a strategy as requested. More work will be required to complete a debris management strategy. BC Hydro and Tsay Keh will discuss the option of submitting an Addendum to the CWR regarding additional work under GMSMON-16 to complete the Debris Management Strategy. Further to the contractual agreement with Tsay Keh Dene and Kwadacha First Nations regarding the joint planning of certain projects within the Peace WUP, the April 2011 AECOM report for GMSMON-16 has been accepted by Tsay Keh Dene.

6.17 GMSWORKS-19 – Williston Reservoir Trial Tributaries

6.17.1 Status

Project planning will commence in 2013, and construction works are scheduled for 2014.

6.18 GMSWORKS-20 – Williston Dust Mapping

6.18.1 Status

This work was initiated in May 2009. The final season of field data was collected in 2012. The final report will be submitted with the 2014 annual report.

6.19 GMSWORKS-21 – Williston Dust Control Trials

6.19.1 Status

This project was originally scoped to be a three-year feasibility study. Work was initiated in April 2008. The tillage and irrigation trials that had originally concluded in 2010 have been extended to test the feasibility of new equipment and to demonstrate the dust control effectiveness of all the equipment used to roughen beaches. Vegetation trials continue with annual reports expected in February of each year, but trials were not conducted in 2013. The current estimated project completion date is upon submission of the contractors' 2012 final reports in 2014 for vegetation and dust control.

6.20 GMSWORKS-22 – Williston Targeted Debris Management

6.20.1 Status

This is a 10-year project. Work was initiated in May 2009 and is scheduled to be completed by January 2019. Annual reports are expected in January of each year. The 2012 report will be submitted with the 2014 annual report.

6.21 GMSWORKS-23 – Williston Erosion Control Trial

6.21.1 Status

This project will investigate the feasibility of erosion controls at the Tsay Keh village site and implement any chosen solution on a trial basis. The project has not been designed or awarded.

BC Hydro, the Province of British Columbia, and the TKD have signed an agreement with respect to certain grievances of the TKD. The final agreement impacts certain changes to Indian Reserve status in the area that may impact this project. This project is on hold pending resolution of Reserve creation.

6.22 GMSWORKS-24 – Finlay Reach Access

6.22.1 Status

This project is complete.

6.23 GMSWORKS-25 – Williston Reservoir Bathymetry

6.23.1 Status

This work was initiated in April 2010 and will be completed in 2013. The final report will be submitted with the 2014 annual report.

6.24 GMSWORKS-26 – Williston Communication and Safety

6.24.1 Status

This work was initiated in January 2009. Installation and commissioning of the radio communications network for Williston reservoir is expected to be completed by September 2013. Installation of signs at boat ramp facilities will commence in the spring of 2013 and proceed according to the construction schedules for each facility.

The maintenance portion of the project will continue through to 2029.

6.25 GMSWORKS-27 – Finlay River Access Information Plan

6.25.1 Status

This project is complete.

6.26 GMSWORKS-28 – Industry Feasibility & Design Study

6.26.1 Status

The components of this project relating to the Mackenzie mills resumed in early 2012, with project completion expected by December, 2013.

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

6.27.1 Status

Contractor's report has been submitted and will be combined with the Industry Feasibility & Design Study when that report is complete. .

6.28 GMSWORKS-29 – Lynx Creek Boat Ramp

6.28.1 Status

This project to upgrade the boat ramp has not yet begun. A site visit was carried out in May 2011 by a BC Hydro representative and an engineering consultant from Moffatt & Nichol. At that time structural maintenance was not deemed necessary as the ramp, road and breakwater appear to be in good working condition. Non-structural routine maintenance is underway annually or as necessary.

6.29 GMSWORKS-30 – Peace Island Park Boat Ramp

6.29.1 Status

Due to ongoing erosion problems and difficulties faced by users due to infrastructure failure, it was determined in 2011 that a new launch facility was required at the site. A construction project was initiated in 2012 (GMSWORKS-38) and was completed in the spring of 2013.

6.30 GMSWORKS-31 – Kwadacha Boat Ramp

6.30.1 Status

A maintenance contract is in place.

6.31 GMSWORKS-33 – Boat Ramp Design Ingenika

6.31.1 Status

Local users have requested a relocation of the planned site for this facility. A feasibility study for a new site will commence in 2014.

6.32 GMSWORKS-34 – Boat Ramp Design Finlay Bay

6.32.1 Status

The project has been deferred until recreational demand warrants upgrade work at this facility.

6.33 GMSWORKS-35 – Boat Ramp Design 6 Mile Bay

6.33.1 Status

The project has been deferred until recreational demand warrants upgrade work at this facility.

6.34 GMSWORKS-36 – Boat Ramp Design Cut Thumb Bay

6.34.1 Status

The project has been deferred until recreational demand warrants upgrade work at this facility.

6.35 GMSWORKS-37 – Boat Ramp Design Mackenzie Landing

6.35.1 Status

Construction work on the upper ramp at this facility is scheduled for spring 2014.

6.36 GMSWORKS-38 – Taylor Boat Ramp Construction

6.36.1 Status

Construction work to build a new ramp at Peace Island Park commenced in the fall of 2012, and was completed in the spring of 2013. Design work was completed under GMSWORKS-30.

6.37 GMSWORKS-40 – Boat Ramp Design Blackfoot Park

6.37.1 Status

This project is currently under review due to flooding concerns at the site.

6.38 GMSWORKS-41 – Boat Ramp Design Halfway River

6.38.1 Status

Designs have been submitted to Comptroller of Water Rights for review.

A recommendation was made to delay approval of a new boat launch at Halfway River until the next stage in the Site C approval process, as this site would be inundated if Site C were to proceed. Maintenance of the site will continue. There was unanimous consent with local stakeholders to hold off any construction until a final decision on Site C is made.

6.39 GMSWORKS-43 Boat Ramp Ingenika

6.39.1 Status

This physical works has not yet been initiated and is pending selection of a site for a new boat ramp.

6.40 GMSWORKS-47 Boat Ramp Mackenzie Landing

6.40.1 Status

This physical works was initiated in 2012. Construction of a new boat ramp is scheduled for the spring of 2014.

6.41 GMSWORKS-49 Boat Ramp Dunlevy

6.41.1 Status

This physical works was initiated in 2010. Construction of a new boat ramp is scheduled for the spring of 2014.

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

6.42.1 Status

Construction work to build a new ramp, breakwater and floating dock commenced in the fall of 2012, and was completed in the spring of 2013. Minor deficiencies remain as of June, 2013, and the cost to correct these will be reported in the 2014 annual report. Design work for this boat ramp and dock, was completed under GMSWORKS-53. Attached is the final report for construction work dated May 16, 2013.

6.43 GMSWORKS-52 Boat Ramp Halfway River

6.43.1 Status

Designs have been submitted to Comptroller of Water Rights for review under GMSWORKS-41.

A recommendation was made to delay approval of a new boat launch at Halfway River until the next stage in the Site C approval process as this site would be inundated if Site C were to proceed. Maintenance of the site will continue. There was unanimous consent with local stakeholders to hold off any construction until a final decision on Site C is made.

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

6.44.1 Status

Designs were submitted to Comptroller of Water Rights for review in 2010 and again in 2012 after revision. Construction work at this facility was completed under project GMSWORKS-51.

6.45 GMSWORKS-54 – Boat Ramp Design Dunlevy

6.45.1 Status

Due to erosion concerns at the existing ramp, the feasibility of a more favorable orientation is under investigation. Construction work at this facility is scheduled for spring 2014.

6.46 GMSWORKS-56 Hudson's Hope Maintenance

6.46.1 Status

This physical works to maintain the new boat ramp constructed under GMSWORKS-51 was initiated in 2013 and will be carried out over 7 years.

6.47 GMSWORKS-57 Dunlevy Maintenance

6.47.1 Status

This physical works was initiated in 2013 on the existing boat ramp, and will be carried on the new ramp, to be constructed in 2014, for an additional 6 years.

6.48 GMSWORKS-58 Mackenzie Maintenance

6.48.1 Status

This physical works will be initiated in 2014 on the new ramp, to be constructed in 2014, and will be carried out on the new ramp for 6 years.

6.49 GMSWORKS-59 Ingenika Maintenance

6.49.1 Status

This physical works has not yet been initiated and is pending selection of a site for a new boat ramp.

6.50 GMSWORKS-63 Taylor Maintenance

6.50.1 Status

This physical works to maintain the new boat ramp constructed under GMSWORKS-38 was initiated in 2013, and will be carried out over 7 years.

7 Peace WUP Monitoring Program Projects

7.1 GMSMON-1 – Peace River Creel Survey

7.1.1 Status

On November 23, 2011, the CWR approved a request to cancel GMSMON-1 due to the scope, schedule and budget of this WUP monitoring project being insufficient to meet the ToR objectives.

7.2 GMSMON-2 – Peace River Fish Index

7.2.1 Status

Field work was successfully completed in 2011 and the annual report received in June 2012. Attached is the Year 5 report, dated March 15, 2013.

7.3 GMSMON-3 – Peace River Fish Stranding

7.3.1 Status

This is an opportunistic study to be implemented in the event of a spill. Pre-spill work was completed in 2010. A spill event meeting the minimum discharge and duration requirements to trigger this study occurred in the summer of 2012. The 2012 report will be submitted with the 2014 annual report.

7.4 GMSMON-4 – WAC Bennett Dam Entrainment

7.4.1 Status

This is an opportunistic study to be implemented in the event of a spill. A spill event meeting the minimum discharge and duration requirements to trigger this study occurred in the summer of 2012. The scope of the work was divided into two areas: fish indexing and hydroacoustic monitoring. Attached are the two reports for these phases, dated December 2012.

7.5 GMSMON-5 – Peace River Productivity

7.5.1 Status

The PCR Productivity monitoring program will assess the effectiveness of the PCR Side Channels and the PCR Ramping Plans, and address a data gap in the ecological knowledge of periphyton and invertebrate communities in Peace River side channel habitat.

The CWR was asked to render a decision on extending the geographic extents of the project area to include side channels downstream of the Pine River, in order to reduce potential effects that Site C (if it proceeds) may have on GMSWORKS-3, PCR Side Channels. On July 28, 2011, the CWR approved the extension of the study area to include site 102.5R, downstream of the Pine River confluence. This project commenced in the spring of 2013 to provide baseline data for site 102.5R in advance of GMSWORKS-3.

7.6 GMSMON-6 – Peace River Riparian Flooding

7.6.1 Status

This is an opportunistic study to be implemented in 2017 and 2018 in the event of a spill release prior to 2017. A spill event meeting the minimum discharge and duration requirements to trigger this study occurred in the summer of 2012.

7.7 GMSMON-7 – Peace River Side Channel Fisheries

7.7.1 Status

This PCR Side Channel Fisheries program will monitor side channels enhanced through physical works to assess their effectiveness at improving fish habitat.

The CWR was asked to render a decision on extending the geographic extents of the project area to include side channels downstream of the Pine River, in order to reduce potential effects that Site C (if it proceeds) may have on GMSWORKS-3, PCR Side Channels. On July 28, 2011, the CWR approved the extension of the study area to include site 102.5R, downstream of the Pine River confluence. This project commenced in the spring of 2013 to provide baseline data for site 102.5R in advance of GMSWORKS-3.

7.8 GMSMON-8 – Peace River Side Channel Response

7.8.1 Status

Opportunistic study, to be implemented in the event of a spill. A spill event meeting the minimum discharge and duration requirements to trigger this study occurred in the summer of 2012. The sites monitored were based on the site selection process imbedded in GMSWORKS-3. The 2012 report will be submitted with the 2014 annual report.

7.9 GMSMON-9 – Peace River Spill Hydrology

7.9.1 Status

Opportunistic PSP study with a pre-spill research component that commenced in June 2009. A spill event meeting the minimum discharge and duration requirements to trigger this study occurred in the summer of 2012. The 2012 report will be submitted with the 2014 annual report.

7.10 GMSMON-10 – Peace River Spill Photos

7.10.1 Status

Opportunistic study to be implemented in the event of a spill. A spill event meeting the minimum discharge and duration requirements to trigger this study occurred in the summer of 2012. Attached is the 2012 report.

7.11 GMSMON-11 – Peace River Spill TGP and Temperature

7.11.1 Status

Opportunistic study to be implemented in the event of a spill. A spill event meeting the minimum discharge and duration requirements to trigger this study occurred in the summer of 2012. The 2012 report will be submitted with the 2014 annual report.

7.12 GMSMON-12 – Peace River Wildlife Stranding Survey

7.12.1 Status

Opportunistic PSP study with a pre-spill research component that commenced in May 2010. A spill event meeting the minimum discharge and duration requirements to trigger this study occurred in the summer of 2012. Attached is the Year 5 report, dated March 2013.

7.13 GMSMON-13 – WLL Fish Index

7.13.1 Status

This project is complete.

7.14 GMSMON-14 – Dinosaur Reservoir Tributary Habitat

7.14.1 Status

This monitoring project for the DNR Demonstration Tributary (GMSWORKS-8) commenced in June 2010, but has since been delayed to allow for additional discussions with FLNRO regional staff to ensure the proposed approach for the demonstration tributary, as recommended by the GMSWORKS-9 study, is acceptable.

7.15 GMSMON-15 – Williston Wetland Habitat

7.15.1 Status

Work began in April 2011 and is to be completed by February 2021. Attached is the Year 2 report, dated February 2013, which covers a second year of pre-enhancement conditions. Enhancement work is scheduled for 2013 at one trial wetland site and 2014 at the second trial site, both under GMSWORKS-17; subsequent reports will monitor post-enhancement conditions.

7.16 GMSMON-16 – Williston Debris Trends

7.16.1 Status

The project had been rescheduled to begin April 2013 and run through January 2014, with a second project year from April 2015 to January 2016, and the third year from April 2018 to January 2019. The project is presently postponed indefinitely as a management plan has not been finalized.

7.17 GMSMON-17 – Tributary Habitat Review

7.17.1 Status

This work began in April 2011 and is to be completed by February 2021. Attached is Year 2 report dated January 28, 2013, which covers a second year of pre-enhancement conditions. Enhancement work is scheduled for 2014 at both trial tributary sites under GMSWORKS-19; subsequent reports will monitor post-enhancement conditions.

7.18 GMSMON-18 – Williston Dust Control

7.18.1 Status

This work was initiated in April 2008 and is scheduled to be completed by March 2017.

The February 2012 report will be submitted with the 2014 annual report.

7.19 GMSMON-19 – Williston Erosion Control

7.19.1 Status

BC Hydro, the Province of British Columbia, and the TKD have signed an agreement with respect to certain grievances of the TKD. The final agreement impacts certain changes to Indian Reserve status in the area that may impact this project. This project is on hold pending resolution of Reserve creation.

7.20 GMSMON-20 – Reservoir Recreation Use

7.20.1 Status

This work was initiated in May 2009 and is scheduled to be completed by February 2019. Attached is the Year 4 report, dated March 15, 2013.

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

7.21.1 Status

This project is complete.

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

7.22.1 Status

This monitoring project commenced in the spring of 2010 and will continue annually.

8 Peace WUP Project Costs

Table 7-1 summarizes the financial status of all Peace WUP projects as of May 31, 2013.

Table 8-1: 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 Prepare Annual Report	\$8,198	\$8,861	\$1,793	\$10,654	(\$2,456)		Resubmit TOR before December 30, 2013
GMSMON-01 PCR Creel Survey		\$9,938	\$0	\$9,938	(\$9,938)	Project originally approved for \$293K, but cancelled subsequent to expenditures to review the management objectives.	
GMSM01A PCR Creel Survey - OR DM		\$9,938	\$0	\$9,938	(\$9,938)		
GMSM01A PCR Creel Survey - OR Imp			\$0	\$0	(\$0)		
GMSMON-02 PCR Fish Index	\$2,285,174	\$1,037,517	\$861,981	\$1,899,497	\$385,677		Budget will be reassessed in 2013.
GMSM02A PCR Fish Index - OR DM	\$112,133	\$43,993	\$14,169	\$58,162	\$53,971		
GMSM02A PCR Fish Index - OR Imp	\$2,173,041	\$993,524	\$847,812	\$1,841,335	\$331,706		
GMSMON-03 PCR Fish Stranding	\$225,156	\$141,376	\$0	\$141,376	\$83,780	Conditional spill study triggered in 2012. Project to be repeated in the event of another spill.	Budget will be reassessed in 2013.
GMSM03A PCR Fish Stranding - OR DM	\$12,272	\$10,772	\$0	\$10,772	\$1,500		
GMSM03A PCR Fish Stranding - OR Imp	\$212,884	\$130,604		\$130,604	\$82,280		
GMSMON-04 GMS Entrainment	\$468,168	\$259,794	\$710	\$260,504	\$207,664	Conditional spill study triggered in 2012. Project to be repeated in the event of another spill.	Budget will be reassessed in 2013.
GMSM04A GMS Entrainment - OR DM	\$45,505	\$30,505	\$710	\$31,215	\$14,290		
GMSM04A GMS Entrainment - OR Imp	\$422,663	\$229,289	\$0	\$229,289	\$193,374		
GMSMON-05 PCR Productivity	\$1,133,979	\$18,318	\$822,342	\$840,659	\$293,320	Project commencing in 2013.	Budget will be reassessed in 2013.
GMSM05A PCR Productivity - OR DM	\$129,576	\$18,318	\$20,418	\$38,735	\$90,841		
GMSM05A PCR Productivity - OR Imp	\$1,004,403		\$801,924	\$801,924	\$202,479		
GMSMON-06 PCR Riparian Flooding	\$226,273	\$3,128	\$97,531	\$100,659	\$125,614	Conditional spill study triggered in 2012. Project to be repeated in the event of another spill.	Budget will be reassessed in 2013.
GMSM06A PCR Riparian Flooding - OR DM	\$31,213	\$3,128	\$0	\$3,128	\$28,085		
GMSM06A PCR Riparian Flooding - OR Imp	\$195,060		\$97,531	\$97,531	\$97,529		
GMSMON-07 PCR Side Channel Fish	\$841,652	\$45,127	\$519,293	\$564,420	\$277,232	Project commencing in 2013.	Budget will be reassessed in 2013.
GMSM07A PCR Side Channel Fish - OR DM	\$148,761	\$20,244	\$24,904	\$45,149	\$103,612		
GMSM07A PCR Side Channel Fish - OR Imp	\$692,891	\$24,882	\$494,389	\$519,271	\$173,620		
GMSMON-08 PCR Side Channel Resp	\$138,752	\$56,652	\$8,958	\$65,610	\$73,142	Conditional spill study triggered in 2012. Project to be repeated in the event of another spill.	Budget will be reassessed in 2013.
GMSM08A PCR Side Channel Resp - OR DM	\$9,652	\$6,652	\$0	\$6,652	\$3,000		
GMSM08A PCR Side Channel Resp - OR Imp	\$129,100	\$50,000	\$8,958	\$58,958	\$70,142		
GMSMON-09 PCR Spill Hydrology	\$68,979	\$44,877	\$13,878	\$58,756	\$10,223	Conditional spill study triggered in 2012. Project to be repeated in the event of another spill.	Budget will be reassessed in 2013.
GMSM09A PCR Spill Hydrology - OR DM	\$18,979	\$18,190	\$7,878	\$26,068	(\$7,089)		
GMSM09A PCR Spill Hydrology - OR Imp	\$50,000	\$26,687	\$6,000	\$32,687	\$17,313		
GMSMON-10 PCR Spill Photos	\$297,996	\$110,765	\$14,980	\$125,745	\$172,251	Conditional spill study triggered in 2012. Project to be repeated in the event of another spill.	Budget will be reassessed in 2013.
GMSM10A PCR Spill Photos - OR DM	\$10,951	\$9,188	\$626	\$9,813	\$1,138		
GMSM10A PCR Spill Photos - OR Imp	\$287,045	\$101,577	\$14,354	\$115,931	\$171,114		
GMSMON-11 PCR Spill TGP/Temp	\$77,856	\$36,162	\$0	\$36,162	\$41,694	Conditional spill study triggered in 2012. Project to be repeated in the event of another spill.	Budget will be reassessed in 2013.
GMSM11A PCR Spill TGP/Temp - OR DM	\$15,371	\$12,371	\$0	\$12,371	\$3,000		
GMSM11A PCR Spill TGP/Temp - OR Imp	\$62,485	\$23,791	\$0	\$23,791	\$38,694		
GMSMON-12 PCR Wildlife Survey	\$339,669	\$139,353	\$420	\$139,772	\$199,897	Conditional spill study triggered in 2012. Project to be repeated in the event of another spill.	Budget will be reassessed in 2013.
GMSM12A PCR Wildlife Survey - OR DM	\$18,231	\$15,515	\$420	\$15,935	\$2,296		
GMSM12A PCR Wildlife Survey - OR Imp	\$321,438	\$123,838		\$123,838	\$197,600		
GMSMON-13 WLL Fish Index	\$124,909	\$74,302	\$0	\$74,302	\$50,607	Project completed.	Efficiencies found during project implementation.
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		
GMSMON-14 DNR Tributary Habita	\$150,364	\$31,497	\$100,591	\$132,088	\$18,276		Budget will be reassessed in 2013.
GMSM14A DNR Tributary Habita - OR DM	\$57,080	\$13,988	\$19,691	\$33,679	\$23,401		
GMSM14A DNR Tributary Habita - OR Imp	\$93,284	\$17,509	\$80,900	\$98,409	(\$5,125)		
GMSMON-15 WLL Wetland Habitat	\$981,420	\$197,093	\$20,971	\$218,064	\$763,356	Project forecast incomplete; waiting on vendor estimate	Budget to be updated in 2013.
GMSM15A WLL Wetland Habitat - OR DM	\$157,922	\$24,716	\$11,099	\$35,815	\$122,107		
GMSM15A WLL Wetland Habitat - OR Imp	\$823,498	\$172,377	\$9,873	\$182,250	\$641,248		
GMSMON-16 WLL Debris Trends	\$215,564	\$4,233	\$126,993	\$131,226	\$84,338	Forecasting underspend.	Budget to be updated in 2013.
GMSM16A WLL Debris Trends - OR DM	\$46,860	\$4,233	\$14,955	\$19,188	\$27,672		
GMSM16A WLL Debris Trends - OR Imp	\$168,704		\$112,038	\$112,038	\$56,666		
GMSMON-17 WLL Tributary Habita	\$1,467,158	\$319,086	\$1,093,659	\$1,412,744	\$54,414		Budget to be updated in 2013.
GMSM17A WLL Tributary Habita - OR DM	\$133,598	\$32,398	\$16,442	\$48,840	\$84,758		
GMSM17A WLL Tributary Habita - OR Imp	\$1,333,560	\$286,688	\$1,077,217	\$1,363,905	(\$30,345)		
GMSMON-18 WLL Dust Control	\$4,784,865	\$2,153,542	\$2,269,494	\$4,423,036	\$361,829	Forecasting underspend.	Budget to be updated in 2013.
GMSM18A WLL Dust Control - OR DM	\$184,905	\$51,205	\$101,437	\$152,642	\$32,263		
GMSM18A WLL Dust Control - OR Imp	\$4,599,960	\$2,102,337	\$2,168,057	\$4,270,394	\$329,566		
GMSMON-19 WLL Erosion Control		\$2,852	\$0	\$2,852	(\$2,852)	Not approved.	
GMSM19A WLL Erosion Control - OR DM		\$2,852	\$0	\$2,852	(\$2,852)		
GMSM19A WLL Erosion Control - OR Imp			\$0	\$0	(\$0)		
GMSMON-20 WLL Recreation Use	\$268,906	\$108,334	\$108,115	\$216,450	\$52,456	Forecasting underspend.	Budget to be updated in 2013.
GMSM20A WLL Recreation Use - OR DM	\$115,060	\$25,558	\$6,422	\$31,980	\$83,080		
GMSM20A WLL Recreation Use - OR Imp	\$153,846	\$82,776	\$101,693	\$184,470	(\$30,624)		
GMSMON-21A WLL Arch Overview	\$113,614	\$111,608	\$0	\$111,608	\$2,006	Project completed.	Efficiencies found during project implementation.
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		
GMSMON-21B WLL Arch Monitor	\$705,659	\$165,714	\$436,324	\$602,038	\$103,621	Forecasting underspend.	Budget to be updated in 2013.
GMSM21B B WLL Arch Monitor - OR DM	\$119,954	\$17,768	\$32,021	\$49,789	\$70,165		
GMSM21B B WLL Arch Monitor - OR Imp	\$585,705	\$147,946	\$404,303	\$552,249	\$33,456		
GMSWORKS-01 PCR Aerial Photos	\$709,995	\$230,929	\$127,201	\$358,130	\$351,865	Forecasting underspend.	Budget to be updated in 2013.
GMSW01A PCR Aerial Photos - OR DM	\$15,318	\$9,392	\$2,201	\$11,592	\$3,726		
GMSW01A PCR Aerial Photos - OR Imp	\$694,677	\$221,537	\$125,000	\$346,537	\$348,140		
GMSWORKS-02 Baseline TGP Temp	\$254,554	\$110,495	\$71,054	\$181,549	\$73,005		Budget to be updated in 2013.
GMSW02A Baseline TGP Temp - OR DM	\$77,340	\$15,663	\$17,074	\$32,736	\$44,604		
GMSW02A Baseline TGP Temp - OR Imp	\$177,214	\$94,832	\$53,981	\$148,813	\$28,401		
GMSWORKS-03 PCR Trial Side Chan	\$548,139	\$151,962	\$544,820	\$696,782	(\$148,643)	Forecasting overspend.	TOR Re-submission by July 31, 2013.
GMSW03A PCR Trial Side Chan - OR DM	\$128,339	\$31,439	\$4,018	\$35,457	\$92,882		
GMSW03A PCR Trial Side Chan - OR Imp	\$419,800	\$120,523	\$540,802	\$661,324	(\$241,524)		
GMSWORKS-04 PCR Hydraulic Habit	\$134,816	\$162,279	\$0	\$162,279	(\$27,463)	Project complete.	TOR resubmission by July 31, 2013
GMSW04A PCR Hydraulic Habit - OR DM	\$17,728	\$21,417	\$0	\$21,418	(\$3,690)		
GMSW04A PCR Hydraulic Habit - OR Imp	\$117,088	\$140,862	\$0	\$140,862	(\$23,774)		
GMSWORKS-05 PCR Hydraulic Model	\$270,648	\$202,860	\$20,257	\$223,117	\$47,531	Forecasting underspend.	Budget to be updated in 2013.
GMSW05A PCR Hydraulic Model - OR DM	\$31,742	\$27,020	\$4,257	\$31,277	\$465		
GMSW05A PCR Hydraulic Model - OR Imp	\$238,906	\$175,840	\$16,000	\$191,840	\$47,066		
GMSWORKS-06 PCR Mainstem Stage	\$306,437	\$221,433	\$85,288	\$306,721	(\$284)	Forecasting underspend.	Budget to be updated in 2013.
GMSW06A PCR Mainstem Stage - OR DM	\$37,664	\$30,786	\$15,007	\$45,793	(\$8,129)		
GMSW06A PCR Mainstem Stage - OR Imp	\$268,773	\$190,647	\$70,281	\$260,928	\$7,845		
GMSWORKS-07 PCR Riparian Habit	\$181,857	\$150,696	\$0	\$150,696	\$31,161	Project complete.	
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		
GMSWORKS-08 DNR Demonstration	\$247,265	\$14,658	\$946,469	\$961,127	(\$713,862)	Project not yet begun. Forecast based on feasibility study.	TOR Re-submission expected in 20114.
GMSW08A DNR Demonstration - OR DM	\$63,222	\$6,650	\$11,681	\$18,330	\$44,892		
GMSW08A DNR Demonstration - OR Imp	\$184,043	\$8,008	\$934,788	\$942,797	(\$758,754)		

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
GMSWORKS-09 DNR Tributary Inven	\$41,013	\$32,016	\$0	\$32,016	\$8,997	Project completed.	Efficiencies found during project implementation.
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		
GMSWORKS-10 PCR Industry & Tay	\$220,253	\$159,484	\$0	\$159,484	\$60,769	Project completed.	Efficiencies found during project implementation.
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		
GMSWORKS-11 FSJ Water Supply		(\$352)	\$0	-\$352	\$352	Project cancelled.	
GMSW11A FSJ Water Supply - OR DM		(\$352)	\$0	-\$352	\$352		
GMSW11A FSJ Water Supply - OR Imp			\$0	\$0	(\$0)		
GMSWORKS-12 DNR Recreation Acc	\$118,729	\$71,586	\$0	\$71,586	\$47,143	Project completed.	Efficiencies found during project implementation.
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		
GMSWORKS-13 PCR Recreation Acc	\$326,409	\$130,138	\$0	\$130,138	\$196,271	Project completed.	Efficiencies found during project implementation.
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		
GMSWORKS-14 WLL Air Photos & Dem	\$2,804,180	\$1,738,885	\$625,229	\$2,364,114	\$440,066	Forecasting underspend.	Budget to be updated in 2013.
GMSW14A WLL Air Photos & Dem - OR DM	\$30,295	\$26,325	\$8,429	\$34,755	(\$4,460)		
GMSW14A WLL Air Photos & Dem - OR Imp	\$2,773,885	\$1,712,560	\$616,800	\$2,329,360	\$444,525		
GMSWORKS-16 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		
GMSWORKS-16 WLL Wetland Invent - ONR		\$5,375		\$5,375	(\$5,375)	Final reporting resulted in additional Implementation and Direct Management costs.	Project completed.
GMSW16A WLL Wetland Invent - ONR DM OS		\$2,300		\$2,300	(\$2,300)		
GMSW16A WLL Wetland Invent - ONR Imp OS		\$3,075		\$3,075	(\$3,075)		
GMSWORKS-17 WLL Trial Wetlands	\$1,294,688	\$168,758	\$925,298	\$1,094,056	\$200,632	Forecasting underspend.	Budget to be updated in 2014.
GMSW17A WLL Trial Wetlands - OR DM	\$44,268	\$24,520	\$4,434	\$28,955	\$15,313		
GMSW17A WLL Trial Wetlands - OR Imp	\$1,250,420	\$144,238	\$920,864	\$1,065,102	\$185,318		
GMSWORKS-18 WLL Debris Field	\$258,412	\$306,145	\$0	\$306,145	(\$47,733)	Guide to explanations below	Guide to corrective action below
GMSW18A WLL Debris Field - OR DM	\$20,735	\$16,011	\$0	\$16,011	\$4,724		
GMSW18A WLL Debris Field - OR Imp	\$237,677	\$290,134	\$0	\$290,134	(\$52,457)		
GMSWORKS-19 WLL Trial Tributary	\$536,522	\$167,729	\$609,013	\$776,742	(\$240,220)	Forecasting overspend.	Resubmit TOR before September 30, 2013
GMSW19A WLL Trial Tributary - OR DM	\$135,156	\$34,114	\$5,483	\$39,597	\$95,559		
GMSW19A WLL Trial Tributary - OR Imp	\$401,366	\$133,614	\$603,530	\$737,144	(\$335,778)		
GMSWORKS-20 Dust Source Survey	\$733,672	\$678,106	\$53,791	\$731,897	\$1,775		Budget to be updated in 2013.
GMSW20A Dust Source Survey - OR DM	\$35,587	\$37,537	\$0	\$37,537	(\$1,950)		
GMSW20A Dust Source Survey - OR Imp	\$698,085	\$640,569	\$53,791	\$694,360	\$3,725		
GMSWORKS-21 WLL Dust Ctrl Trial	\$2,998,110	\$2,449,904	\$1,538,618	\$3,988,522	(\$990,412)	Forecast not correct, project nearly complete.	Forecast update required.
GMSW21A WLL Dust Ctrl Trial - OR DM	\$98,108	\$97,044	\$23,661	\$120,705	(\$22,597)		
GMSW21A WLL Dust Ctrl Trial - OR Imp	\$2,900,002	\$2,352,859	\$1,514,957	\$3,867,817	(\$967,815)		
GMSWORKS-22 WLL Debris Removal - ONR	\$5,470,099	\$1,334,466	\$3,580,788	\$4,915,254	\$554,845	Forecasting underspend.	Forecast update required.
GMSW22A WLL Debris Removal - ONR DM	\$75,919	\$62,959	\$89,027	\$151,986	(\$76,067)		
GMSW22A WLL Debris Removal - ONR Imp	\$5,394,180	\$1,271,507	\$3,491,761	\$4,763,268	\$630,912		
GMSWORKS-22 WLL Debris Removal - OR	\$5,470,099	\$2,157,257	\$3,242,890	\$5,400,147	\$99,952	Forecasting underspend.	Budget to be updated in 2013.
GMSW22A WLL Debris Removal - OR DM	\$75,919	\$70,436	\$0	\$70,436	\$5,483		
GMSW22A WLL Debris Removal - OR Imp	\$5,394,180	\$2,086,821	\$3,242,890	\$5,329,711	\$64,469		
GMSWORKS-23 Erosion Ctrl Trial		\$106	\$0	\$106	(\$106)	Guide to explanations below	Guide to corrective action below
GMSW23A Erosion Ctrl Trial - OR DM		\$106	\$0	\$106	(\$106)		
GMSW23A Erosion Ctrl Trial - OR Imp			\$0	\$0	(\$0)		
GMSWORKS-24 WLL Boat Access	\$891,306	\$212,865	\$0	\$212,865	\$678,441	Project completed.	Efficiencies found during project implementation.
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		
GMSWORKS-25 WLL Bathymetric Ma	\$1,379,386	\$1,360,270	\$23,040	\$1,383,310	(\$3,924)	Forecasting overspend.	Budget to be updated in 2013.
GMSW25A WLL Bathymetric Ma - OR DM	\$50,979	\$46,619	\$5,040	\$51,659	(\$680)		
GMSW25A WLL Bathymetric Ma - OR Imp	\$1,328,407	\$1,313,651	\$18,000	\$1,331,651	(\$3,244)		
GMSWORKS-26 WLL Comm Safety	\$1,610,081	\$608,838	\$282,862	\$891,700	\$718,381	Forecasting underspend.	Budget to be updated in 2013.
GMSW26A WLL Comm Safety - OR DM	\$425,173	\$75,266	\$184,398	\$259,664	\$165,509		
GMSW26A WLL Comm Safety - OR Imp	\$1,184,908	\$533,572	\$98,463	\$632,035	\$552,873		
GMSWORKS-27 WLL Finlay River A	\$82,146	\$73,699	\$0	\$73,699	\$8,447	Project completed.	Efficiencies found during project implementation.
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)		
GMSWORKS-28 Industry Feasibili	\$1,594,520	\$389,386	\$1,258,683	\$1,648,069	(\$53,549)	Forecasting overspend.	Budget to be updated in 2013.
GMSW28A Industry Feasibili - OR DM	\$114,520	\$84,243	\$0	\$84,243	\$30,277		
GMSW28A Industry Feasibili - OR Imp	\$1,480,000	\$305,143	\$1,258,683	\$1,563,827	(\$83,827)		
GMSWORKS-29 Lynx Creek	\$280,376	\$5,488	\$7,324	\$12,812	\$267,564		Budget to be updated in 2013.
GMSW29A Lynx Creek - OR DM	\$91,709	\$1,711	\$6,524	\$8,235	\$83,474		
GMSW29A Lynx Creek - OR Imp	\$188,667	\$3,777	\$800	\$4,577	\$184,090		
GMSWORKS-30 Taylor Ramp	\$260,501	\$255,123	\$0	\$255,123	\$5,378	Project completed.	Efficiencies found during project implementation.
GMSW30A Taylor Ramp - OR DM	\$2,641	\$20,454	\$0	\$20,454	(\$17,813)		
GMSW30A Taylor Ramp - OR Imp	\$257,860	\$234,668	\$0	\$234,668	\$23,192		
GMSWORKS-31 Kwadacha	\$354,136	\$36,071	\$40,000	\$76,071	\$278,065	Forecasting underspend.	Budget to be updated in 2013.
GMSW31A Kwadacha - ONR DM	\$165,469	\$3,033	\$0	\$3,033	\$162,436		
GMSW31A Kwadacha - ONR Imp	\$188,667	\$33,038	\$40,000	\$73,038	\$115,629		
GMSWORKS-32 BRD Deserter's Dump		\$54,866	\$0	\$54,866	(\$54,866)	Project cancelled.	
GMSW32A BRD Deserter's Dump - ONR DM		\$1,489	\$0	\$1,489	(\$1,489)		
GMSW32A BRD Deserter's Dump - ONR Imp		\$53,377	\$0	\$53,377	(\$53,377)		
GMSWORKS-33 BRD Billy's Bay		\$63,477	\$341,383	\$404,860	(\$404,860)	New project with unapproved costs.	Variance will self-correct when budget for ramp is approved.
GMSW33A BRD Billy's Bay - ONR DM		\$5,479	\$1,383	\$6,863	(\$6,863)		
GMSW33A BRD Billy's Bay - ONR Imp		\$57,998	\$340,000	\$397,998	(\$397,998)		
GMSWORKS-34 BRD Finlay Bay		\$62,736	\$0	\$62,736	(\$62,736)	Project cancelled subsequent to management expenditures.	
GMSW34A BRD Finlay Bay - ONR DM		\$5,854	\$0	\$5,854	(\$5,854)		
GMSW34A BRD Finlay Bay - ONR Imp		\$56,882	\$0	\$56,882	(\$56,882)		
GMSWORKS-35 BRD Six Mile Bay		\$55,535	\$0	\$55,535	(\$55,535)	Project cancelled.	
GMSW35A BRD Six Mile Bay - ONR DM		\$4,666	\$0	\$4,666	(\$4,666)		
GMSW35A BRD Six Mile Bay - ONR Imp		\$50,869	\$0	\$50,869	(\$50,869)		
GMSWORKS-36 BRD Cut Thumb Bay		\$59,186	\$0	\$59,186	(\$59,186)	Project cancelled.	
GMSW36A BRD Cut Thumb Bay - ONR DM		\$6,193	\$0	\$6,193	(\$6,193)		
GMSW36A BRD Cut Thumb Bay - ONR Imp		\$52,993	\$0	\$52,993	(\$52,993)		
GMSWORKS-37 BRD Mackenzie Landing	\$59,201	\$237,681	\$148,725	\$386,406	(\$327,205)	Forecasting overspend.	TOR re-submission by July 31, 2013.
GMSW37A BRD Mackenzie Landing - ONR DM	\$7,494	\$14,396	\$0	\$14,396	(\$6,902)		
GMSW37A BRD Mackenzie Landing - ONR Imp	\$51,707	\$223,285	\$148,725	\$372,010	(\$320,303)		
GMSWORKS-38 Taylor Ramp Construct	\$3,679,499	\$5,715,136	\$261,281	\$5,976,417	(\$2,296,918)	Project overspent.	TOR re-submission in place.
GMSW38A Taylor Ramp Construct - OR DM	\$234,378	\$35,497	\$0	\$35,497	\$198,881		
GMSW38A Taylor Ramp Construct - OR Imp	\$3,445,121	\$5,679,639	\$261,281	\$5,940,920	(\$2,495,799)		
GMSWORKS-40 BRD Blackfoot Park		\$89,164	\$510,174	\$599,338	(\$599,338)	New project with unapproved costs.	Variance will self-correct when budget for ramp is approved.
GMSW40A BRD Blackfoot Park - OR DM		\$17,508	\$0	\$17,508	(\$17,508)		
GMSW40A BRD Blackfoot Park - OR Imp		\$71,656	\$510,174	\$581,830	(\$581,830)		
GMSWORKS-41 BRD Halfway River		\$52,642	\$0	\$52,642	(\$52,642)	Project deferred. Unapproved costs forecast.	TOR resubmission pending Site C development.
GMSW41A BRD Halfway River - OR DM		\$11,093	\$0	\$11,093	(\$11,093)		
GMSW41A BRD Halfway River - OR Imp		\$41,549	\$0	\$41,549	(\$41,549)		
GMSWORKS-43 BRC Billy's Bay		\$113	\$4,061,596	\$4,061,709	(\$4,061,709)	New project with unapproved costs.	Variance will self-correct when budget for ramp is approved.
GMSW43A BRC Billy's Bay - ONR DM		\$113	\$1,596	\$1,709	(\$1,709)		
GMSW43A BRC Billy's Bay - ONR Imp			\$4,060,000	\$4,060,000	(\$4,060,000)		
GMSWORKS-44 BRC Finlay Bay		\$113	\$0	\$113	(\$113)	Project cancelled.	
GMSW44A BRC Finlay Bay - ONR DM		\$113	\$0	\$113	(\$113)		
GMSW44A BRC Finlay Bay - ONR Imp			\$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
GMSWORKS-45 BRC Six Mile Bay			\$0	\$0	(\$0)	Project cancelled.	
GMSW45A BRC Six Mile Bay - ONR DM			\$0	\$0	(\$0)		
GMSW45A BRC Six Mile Bay - ONR Imp			\$0	\$0	(\$0)		
GMSWORKS-46 BRC Cut Thumb Bay		\$113	\$0	\$113	(\$113)	Project cancelled.	
GMSW46A BRC Cut Thumb Bay - ONR DM		\$113	\$0	\$113	(\$113)		
GMSW46A BRC Cut Thumb Bay - ONR Imp			\$0	\$0	(\$0)		
GMSWORKS-47 BRC Mackenzie Landing	\$2,591,978	\$278,573	\$5,305,221	\$5,583,794	(\$2,991,816)	Forecasting overspend.	TOR re-submission by December 31, 2013.
GMSW47A BRC Mackenzie Landing - ONR DM	\$22,762	\$40,900	\$558	\$41,459	(\$18,697)		
GMSW47A BRC Mackenzie Landing - ONR Imp	\$2,569,216	\$237,673	\$5,304,662	\$5,542,335	(\$2,973,119)		
GMSWORKS-48 BRC Blackfoot Park		\$150,792	\$7,477,128	\$7,627,920	(\$7,627,920)	New project with unapproved costs.	Variance will self-correct when budget for ramp is approved.
GMSW48A BRC Blackfoot Park - OR DM		\$4,332	\$2,128	\$6,459	(\$6,459)		
GMSW48A BRC Blackfoot Park - OR Imp		\$146,460	\$7,475,000	\$7,621,460	(\$7,621,460)		
GMSWORKS-49 BRC Dunlevy		\$100,734	\$5,150,955	\$5,251,689	(\$5,251,689)	Forecasting overspend.	TOR re-submission by July 31, 2013.
GMSW49A BRC Dunlevy - ONR DM		\$90,058	\$17,201	\$107,260	(\$107,260)		
GMSW49A BRC Dunlevy - ONR Imp		\$10,675	\$5,133,754	\$5,144,429	(\$5,144,429)		
GMSWORKS-50 BRC Elizabeth			\$1,596	\$1,596	(\$1,596)	Project cancelled.	
GMSW50A BRC Elizabeth - ONR DM			\$1,596	\$1,596	(\$1,596)		
GMSW50A BRC Elizabeth - ONR Imp			\$0	\$0	(\$0)		
GMSWORKS-51 BRC Dinosaur	\$3,258,435	\$4,133,274	\$130,784	\$4,264,059	(\$1,005,624)	Forecasting overspend.	Budget to be updated in 2013.
GMSW51A BRC Dinosaur - ONR DM	\$180,300	\$4,503	\$0	\$4,503	\$175,797		
GMSW51A BRC Dinosaur - ONR Imp	\$3,078,135	\$4,128,771	\$130,784	\$4,259,555	(\$1,181,420)		
GMSWORKS-52 Halfway River	\$180,000	\$11,550	\$15,000	\$26,550	\$153,450	New construction deferred; interim maintenance works approved.	TOR resubmission pending Site C development.
GMSW52A Halfway River - OR DM		\$883	\$0	\$883	(\$883)		
GMSW52A Halfway River - OR Imp	\$180,000	\$10,668	\$15,000	\$25,668	\$154,332		
GMSWORKS-53 BRD Dinosaur		\$87,965	\$62,315	\$0	\$25,650	Project completed.	
GMSW53A BRD Dinosaur - ONR DM		\$12,965	\$9,694	\$0	\$9,694		
GMSW53A BRD Dinosaur - ONR Imp		\$75,000	\$52,621	\$0	\$22,379		
GMSWORKS-54 BRD Dunlevy		\$432,550	\$641,122	\$1,073,672	(\$1,073,672)	Forecasting overspend.	TOR re-submission by July 31, 2013.
GMSW54A BRD Dunlevy - ONR DM		\$18,077	\$0	\$18,077	(\$18,077)		
GMSW54A BRD Dunlevy - ONR Imp		\$414,473	\$641,122	\$1,055,595	(\$1,055,595)		
GMSWORKS-55 Blackfoot Maintenance			\$0	\$0	(\$0)		
GMSW55A Blackfoot Maintenance - OR DM			\$0	\$0	(\$0)		
GMSW55A Blackfoot Maintenance - OR Imp			\$0	\$0	(\$0)		
GMSWORKS-56 Dinosaur Maintenance	\$100,000	\$955	\$1,416	\$2,370	\$97,630	Forecasting underspend.	Budget to be updated in 2013.
GMSW56A Dinosaur Maintenance - ONR DM		\$955	\$216	\$1,170	(\$1,170)		
GMSW56A Dinosaur Maintenance - ONR Imp	\$100,000		\$1,200	\$1,200	\$98,800		
GMSWORKS-57 Dunlevy Maintenance	\$194,971	\$130,656	\$59,569	\$190,224	\$4,747	Forecasting underspend.	Budget to be updated in 2013.
GMSW57A Dunlevy Maintenance - ONR DM	\$13,000	\$5,321	\$2,933	\$8,253	\$4,747		
GMSW57A Dunlevy Maintenance - ONR Imp	\$181,971	\$125,335	\$56,636	\$181,971	\$0		
GMSWORKS-58 Mackenzie Maintenance	\$150,000		\$7,570	\$7,570	\$142,430	Forecasting underspend.	Budget to be updated in 2013.
GMSW58A Mackenzie Maintenance - ONR DM			\$1,170	\$1,170	(\$1,170)		
GMSW58A Mackenzie Maintenance - ONR Imp	\$150,000		\$6,400	\$6,400	\$143,600		
GMSWORKS-59 Ingenika Maintenance			\$40,000	\$40,000	(\$40,000)	New project with unapproved costs.	Variance will self-correct when budget for ramp is approved.
GMSW59A Ingenika Maintenance - ONR DM			\$0	\$0	(\$0)		
GMSW59A Ingenika Maintenance - ONR Imp			\$40,000	\$40,000	(\$40,000)		
GMSWORKS-60 Finlay Maintenance			\$0	\$0	(\$0)	Project cancelled.	
GMSW60A Finlay Maintenance - ONR DM			\$0	\$0	(\$0)		
GMSW60A Finlay Maintenance - ONR Imp			\$0	\$0	(\$0)		
GMSWORKS-61 6 Mile Maintenance			\$0	\$0	(\$0)	Project cancelled.	
GMSW61A 6 Mile Maintenance - ONR DM			\$0	\$0	(\$0)		
GMSW61A 6 Mile Maintenance - ONR Imp			\$0	\$0	(\$0)		
GMSWORKS-62 CutThumb Maintenance			\$0	\$0	(\$0)	Project cancelled.	
GMSW62A CutThumb Maintenance - ONR DM			\$0	\$0	(\$0)		
GMSW62A CutThumb Maintenance - ONR Imp			\$0	\$0	(\$0)		
GMSWORKS-63 Taylor Maintenance	Pending	\$1,287	\$1,318	\$2,604	#VALUE!	TOR re-submitted June 2013	To be updated upon approval of TOR
GMSW63A Taylor Maintenance - OR DM		\$1,287	\$118	\$1,404	(\$1,404)		
GMSW63A Taylor Maintenance - OR Imp			\$1,200	\$1,200	(\$1,200)		
OR - Ordered Remissible							
ONR - Ordered Non-Remissible							

* Red values in parentheses denote overage.