

Peace Water Use Plan

Monitoring Program Terms of Reference

HERITAGE AND CULTURE INFORMATION PLAN

- **GMSMON-21a Peace - Archaeological Overview Assessment**

HERITAGE AND CULTURE INFORMATION PLAN TERMS OF REFERENCE

1.0 OVERVIEW

This document presents Terms of Reference for the monitoring programs in the Peace Heritage and Culture Information Plan (Table 1). These programs will implement archaeological overview and erosion monitoring assessments focused on the effects of normal reservoir operations on heritage sites situated within the drawdown zones of each of Williston Lake and Dinosaur Lake reservoirs and within the Peace River channel between the Peace Canyon Dam and the confluence with the Alces River.

This document provides detailed Terms of Reference for the following programs

- 1) GMSMON-21a Peace – Archaeological Overview Assessment: a 1-year archaeological overview assessment of the drawdown zones of Williston and Dinosaur reservoirs and within the Peace River channel between the Peace Canyon Dam and the confluence with the Alces River.
- 2) GMSMON-21b Peace – Erosion Monitoring of Archaeological Resources: a 9-year non-intrusive erosion monitoring of archaeological resources located in each of the drawdown zones of Williston and Dinosaur reservoirs and within the Peace River channel between the Peace Canyon Dam and the confluence with the Alces River.

Table 1 Heritage and Culture Information Plan Monitoring Program Terms of Reference Submission Information

Name of Monitoring Program	Order Clause Fulfilled	Submitted with this Package	Previously Submitted To CWR	Submission Date	Leave to Commence
GMSMON-21a Peace – Archaeological Overview Assessment	Section 7.a	Yes	No	May 9, 2008	-
GMSMON-21b Peace – Erosion Monitoring of Archaeological Resources	Section 7.b	Yes	No	May 9, 2008	-

Terms of Reference for the Peace Water Use Plan Monitoring Programs Heritage and Culture Information Plan

1.0 MONITORING PROGRAM RATIONALE

During the Peace River Water Use Planning (WUP) process, the WUP Committee recognized the importance of heritage sites and locations of historic and ongoing cultural activity, to the First Nations with an interest in the area. The effects of reservoir operations on heritage sites represented by material culture and/or physical locations, such as village sites, burial places, ceremonial areas, trails, hunting and fishing locations, historic places and built heritage were a key concern raised during the WUP process. There are close to 200 documented archaeological sites within the drawdown zones of the Williston and Dinosaur reservoirs and along the shoreline of the Peace River system and it is expected that other undocumented heritage sites of significance exist within areas affected by reservoir operations. Concern for ongoing access to community resource use areas and locations used for ceremonial or spiritual activities was also raised. The WUP Committee was not able to fully evaluate the potential effects of operations on heritage and cultural sites due to incomplete information on their locations and condition

A Heritage and Culture Information Plan (HCIP) was recommended by the WUP Committee to provide a more accurate assessment of the impacts of BC Hydro operations on heritage and cultural sites. The WUP Committee recommended that a two-phase HCIP be implemented over a ten-year timeline beginning with a one-year site identification and prioritization phase followed by nine years of monitoring the effects of reservoir operations on “priority sites” identified in Phase 1.

Subsequently, the Comptroller of Water Rights (CWR) clarified that only non-intrusive heritage work could be included in an Order issued under the Water Act, thereby excluding any study that would require a permit under the Provincial Heritage Conservation Act such as: 1) inventories involving subsurface testing; 2) placement of physical structures onto an archaeological site for monitoring purposes; or 3) the collection of artifacts for analysis. As a result, terms of reference (TOR) for studies in the HCIP have been designed as non-intrusive studies to reflect this new understanding.

GMSMON-21a Peace – Archaeological Overview Assessment is a one-year study intended to address a knowledge gap regarding the number, location, elevation, condition, use, susceptibility to erosion and relative importance of heritage sites within the Williston and Dinosaur reservoirs and the Peace River that make up the Peace system. This study represents the recommended Phase 1 of the HCIP and will provide base information for GMSMON-21b.

GMSMON-21b Peace – Erosion Monitoring of Archaeological Resources will be conducted annually for nine years following the completion of GMSMON-21a. Non-intrusive monitoring techniques will be used at priority sites identified during GMSMON-21a to measure the effect of current reservoir operations on heritage

sites. This study represents the recommended Phase 2 of the HCIP and together these studies will provide information for the next Peace WUP review

The detailed approach, methods and budget for this study is presented in the attached terms of reference.

Table 1 Proposed schedule and estimated annual expenditure for the implementation of monitoring programs associated with the Peace Heritage and Culture Information Plan

Reference	Monitoring Program	Total Cost
GMSMON21a	Peace Archaeological Overview Assessment	\$95,517
GMSMON21b	Peace Erosion Monitoring of Archaeological Resources	\$574,221
Total		\$669,738

Monitoring Program No. GMSMON-21a Peace – Archaeological Overview Assessment

1.0 Introduction

During the Peace River Water Use Planning (WUP) process, the WUP Committee recognized the importance of heritage sites and locations of historic and ongoing cultural activity to the First Nations with an interest in the area. The WUP Committee was not able to fully evaluate the effects of reservoir operations on heritage sites due to gaps in existing documented information. As part of a program for additional information the WUP Committee report recommended a Heritage and Culture Information Plan to address the Peace WUP objective to:

Protect heritage resources, access to known sites, and maintain and enhance opportunities for community resource use activities and spiritual and ceremonial use.

This Information Plan was to encompass areas that can be affected by a change in Williston or Dinosaur reservoir elevation or discharges to the Peace River from the Peace Canyon facility which include: Williston reservoir and tributaries, Dinosaur reservoir and tributaries and the Peace River and tributaries to the B.C./Alberta border.

Subsequent to the completion of the WUP Committee recommendations, the Comptroller of Water Rights clarified that only non-intrusive heritage work could be included in an Order issued under the Water Act, thereby excluding any study that would require a permit under the Provincial Heritage Conservation Act (e.g., subsurface testing or the collection of artifacts).

A separate Reservoir Archaeology Program aimed at achieving compliance with the Heritage Conservation Act is in development with the Archaeology Branch and is expected to address aspects of long-term archaeological management in the Williston and Dinosaur reservoirs that are not included in these Terms of Reference.

In consideration of the shared geographical and cultural areas of a variety of heritage and archaeological studies proposed for the Peace, efforts will be made to communicate findings and build upon the results of the studies conducted as part of the Peace Heritage and Culture Information Plan as they relate to work being done either simultaneously or sequentially under other BC Hydro programs such as the Reservoir Archaeology Program or archaeological impact assessments for physical works programs such as dust control or debris management. Similarly, efforts will be made to coordinate the work so as not to negatively impact the scheduling of any proposed BC Hydro heritage studies and programs.

1.1 Definitions

Some terms carry multiple meanings and the following definitions are provided for the purpose of these terms of reference:

“archaeology site” refers to heritage sites (see below) that are protected under the Heritage Conservation Act.

“community resource use activities” refers to historic and ongoing sustenance practices such as hunting, fishing, trapping, gathering, and guiding, as examples.

“heritage site” refers to locations represented by material culture and/or physical place, such as village sites, burial places, ceremonial areas, trails, hunting and fishing locations, historic places and built heritage.

2.0 STUDY RATIONALE

2.1 Background

The Williston Reservoir was impounded in 1967 with the construction of the W.A.C. Bennett dam and Gordon M. Shrum generating station and the Dinosaur Reservoir was created with the construction of the Peace Canyon Project which began in 1974. In accordance with Provincial heritage law of that time a number of archaeological inventory studies were carried out along the banks of the Peace, Parsnip and Finlay Rivers in advance of the construction of these projects (Borden 1962, McGhee 1963, Mitchell 1964).

Since construction of the dams, a number of heritage studies have been conducted within and adjacent to the reservoirs in relation to various developments, including mining, forestry and oil and gas. In 2003, at the request of the Tsay Keh Dene, BC Hydro commissioned an archaeological survey of the Williston reservoir draw down zone within Finlay Reach to assess the effects of reservoir operations and relic-collecting on archaeological sites in that area (Arcas 2004). Most recently, an archaeological impact assessment of proposed dust management areas in the Williston Lake drawdown, again primarily in the Finlay Reach, is underway in 2007.

Nearly 200 archaeological sites have been documented within the study area to date (Arcas 2006). Several documented sites appear to contain materials that are considered scientifically significant from an archaeological perspective as well as being of importance to local First Nation communities. In consideration of the amount of land within the study area that has never been surveyed for archaeology sites it is expected that additional undocumented heritage sites may exist in unexamined areas.

A review of documented First Nation traditional use and traditional ecological knowledge undertaken during the WUP indicates that information of this nature has not been comprehensively captured for the study area in report form and in some cases is not publicly available (Arcas 2001).

During the Peace WUP, performance measures were used to evaluate proposed operational regimes. For heritage sites the performance measures were based on two competing hypotheses:

- 1) that it is preferable to keep heritage sites inundated to prevent erosion and exposure to unauthorized artifact collection, and

- 2) that it is preferable to keep heritage sites exposed to allow access for traditional and/or community resource use or archaeological study.

Faced with these conflicting hypotheses, the WUP Committee chose Hypothesis 1 and evaluated proposed operating alternatives that would inundate heritage sites a greater number of days per year as preferable. Recognizing that the working hypothesis may not be supported by factual evidence, the WUP Committee recommended the HCIP to support the development of meaningful hypotheses for the next WUP review.

2.2 Archaeological Overview Purpose

The primary purpose of this archaeological overview is to provide information that can be used in future WUP processes and assist in developing any operating or non-operating proposals to address impacts at priority heritage sites for the next Peace WUP review period. During the WUP discussions, it became clear that an information gap exists regarding the number, location and condition of heritage sites in the Williston and Dinosaur reservoirs and along the banks of the Peace River. The contents and significance of documented sites within the reservoirs have not been comprehensively reviewed, and it is likely that additional undocumented heritage sites exist in areas which have not been previously surveyed. This study will provide information critical for identifying heritage sites suitable for long-term erosion monitoring in Phase 2 of the HCIP and identify the need for further study or monitoring.

3.0 ARCHAEOLOGICAL OVERVIEW STUDY PROPOSAL

3.1 Objective and Scope

The objective of this archaeological overview is to collect information on heritage resource potential or sensitivity within portions of the drawdown zones of the Williston and Dinosaur reservoirs and along the banks of the Peace River from the Peace Canyon Dam to the confluence of the Alces River near the B.C./Alberta border and, based on this research, identify heritage site locations suitable for long-term erosion monitoring under Phase 2 of the HCIP (Figure 3-1).

This project will involve documentary research, analysis, and the collection of information from local First Nation communities regarding heritage sites and ongoing community resource use activities within the study area that are regarded as significant to the communities. An in-field survey component will ground-truth areas expected to be of high potential for heritage sites particularly those that may be suitable for long-term monitoring due to their location in areas affected by reservoir operations, the presence of cultural material on the surface and accessibility. Documentary research for this overview will pertain to the entire study area described above. The field survey component will be undertaken at selected locations within the overall study area. The typical draw down elevation of Williston reservoir is between 671 and 657.4 m and for Dinosaur; between 502.7 and 501.6. These draw down areas and the banks of the Peace River as described above constitute the geographical scope of the study area.

3.2 Approach

The archaeological overview study will follow the guidelines established for Overview and Preliminary Field Reconnaissance in the Archaeological Impact Assessment Guidelines (Archaeology Branch 1998, Sect 3.4.3). The overview will provide an opportunity to review existing heritage data in detail and consolidate documented information as well as collect undocumented information from the local First Nation communities on locations within the study area that are culturally important. This information will be linked to a landscape-based analysis that develops hypotheses on archaeological potential. A preliminary field reconnaissance will be used to ground-truth the archaeological landscape hypotheses. The development of a preliminary evaluative framework for assessing site significance is expected. A key deliverable of this archaeological overview will be information regarding suitable candidate locations for erosion monitoring of archaeological resources. The project will be directed by a professional archaeologist. An archaeological technician will support the work of the archaeologist in the field primarily for surveying for archaeological materials. An in-office technician will provide support for data processing and/or GIS related work. These roles are designed to provide entry positions for local First Nations to directly participate in the study.

Local First Nations will be given the opportunity to comment on the overview plan before it is carried out. All reports will be shared with local First Nations.

In addition to methods described in Archaeological Impact Assessment Guidelines, the archaeologist will conduct accurate surveys in accordance with BC Hydro's *General and Technical Standards for Reservoir Archaeological Work*, meeting all relevant requirements.

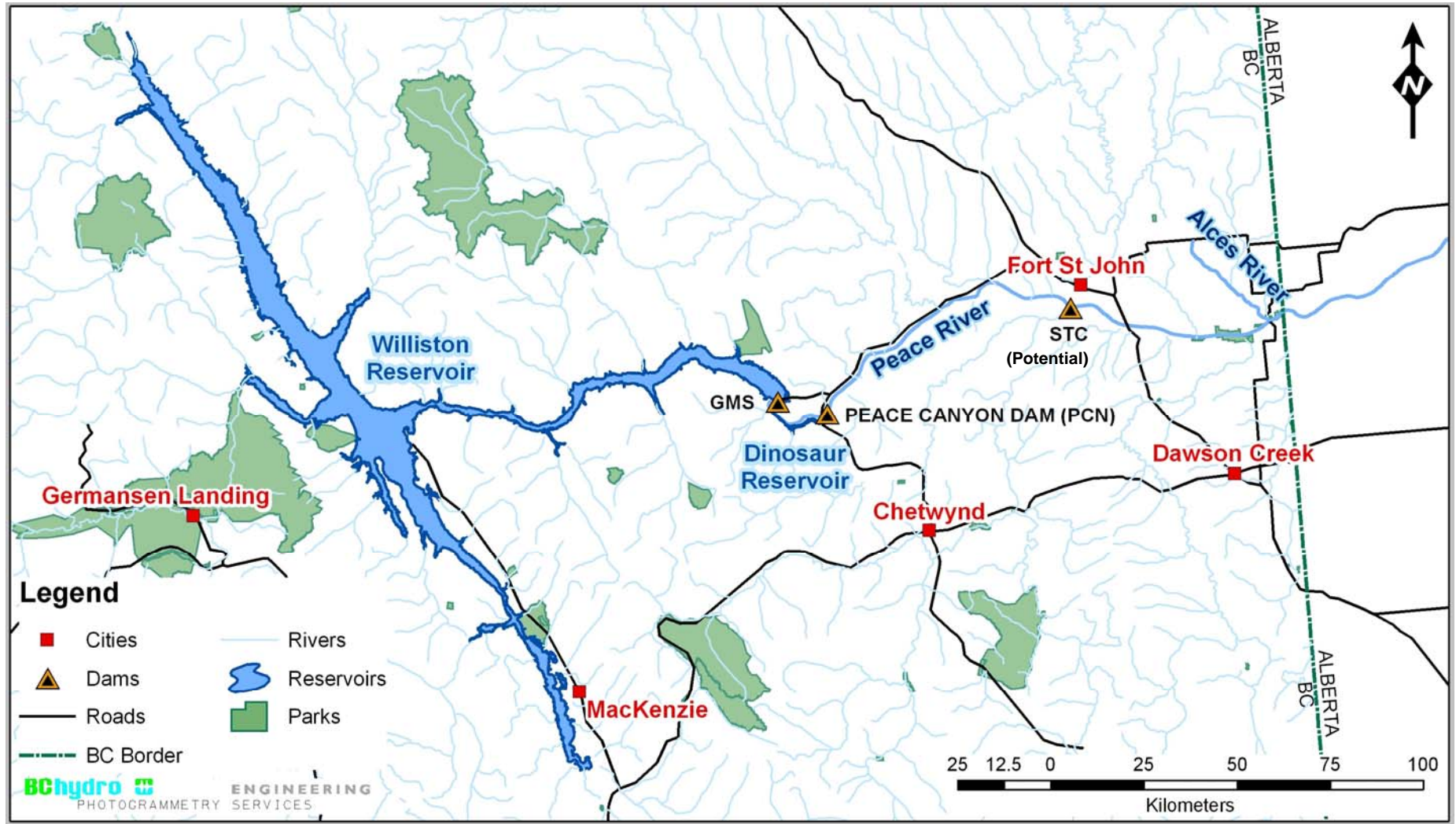


Figure 3-1: Location of Peace - Archaeological Overview Assessment Study Area

3.3 Methods

The overview will involve four basic tasks outlined below:

3.3.1 Task 1: Project Management

Project management will involve the general administrative and technical oversight of the project. This task will include, but not be limited to: 1) budget management, 2) study team management, 3) logistic coordination, 4) technical oversight of field and analysis components, and 5) facilitation of data transfer among other investigators, as required.

A safety plan must be developed and submitted to the BC Hydro contact for all aspects of the study involving field work, in accordance with BC Hydro procedures and guidelines. Specific safety training may be required.

3.3.2 Task 2: Documentary Research

This task includes, but is not limited to:

- 1) a review of published and unpublished reports, including Arcas 2001;
- 2) a review of all documented archaeological sites within the study area as described in Section 3.1;
- 3) direct contact with persons or organizations knowledgeable about the archaeological resources in the study area where this information has the potential to expand on available documentary information;
- 4) the development of a landscape-based hypotheses on archaeological potential;
and
- 5) the development of a preliminary evaluative framework for assessing site significance.

It is expected that the research team will work with First Nations Leadership to determine acceptable means of collecting undocumented site information and determine key locations that are of interest to the communities to incorporate into the research design where possible.

3.3.3 Task 3: Preliminary Field Reconnaissance

Using judgmental survey sampling techniques assess the archaeological resource potential of sampled portions of the drawdown zones with reference to the documentary research, archaeological landscape hypotheses and community interest. A minimum of twelve locations will be surveyed in the field as follows: Williston (n=6), Dinosaur (n=2) and Peace River (n=4). Pedestrian survey methods supported with vehicle and/or boat access will be employed.

The Williston reservoir drawdown zone will be accessible for the preliminary field reconnaissance in the late spring while water levels are low and snow coverage on the shoreline is minimal. The optimal period for fieldwork will be from early April to the end of June. The Dinosaur reservoir draw down and Peace River shoreline will be intermittently accessible for a longer period as the water level fluctuates more frequently within a narrow range. Actual reservoir levels are dependent on weather variability during spring runoff and on reservoir operations. Shoreline areas above the MNRL are accessible anytime after they are snow free in late spring. Areas subject to inspection will be selected based on a review of maps, air photos and the landforms they exhibit, community interest and the professional judgment of the project archaeologist. Also, it may be necessary to exempt certain areas from intensive inspection owing to topographic constraints (excessive slope, landslides, etc.) or status (land ownership or land use).

3.3.4 Task 4: Analysis and Reporting

A draft report that summarizes the methods employed and study findings will be prepared shortly after the conclusion of the preliminary field reconnaissance. A final report for the study will include:

- an executive summary;
- a description of the methods employed;
- results of research on documented and/or known sites in the reservoir;
- a detailed landscape-based hypotheses on archaeological potential;
- site significance evaluation matrix;
- a detailed summary of the preliminary field reconnaissance findings;
- hard copy and digital maps, in an acceptable format, showing survey coverage and the location of all documented archaeological sites; and
- specific recommendations regarding the suitability for long-term erosion monitoring of specific heritage sites and the scope of further studies

Reports will follow the standard format that is being developed for WUP monitoring programs. All reports will be provided in hard-copy and as Microsoft Word and Adobe Acrobat (*.pdf) format, and all maps and figures will be provided either as embedded objects in the Word file or as separate files.

The preparation and submission of B.C. Archaeological Site Inventory Forms for all newly identified sites or updates to previously documented site data records is also required.

3.4 Schedule

The study will take place during one year with a preliminary field reconnaissance survey taking place in 2008/2009. The exact timing will depend on site conditions, but it is expected that the greatest amount of the drawdown zone will be exposed between April and June. Low water levels and minimal snow cover on the ground are needed for an effective survey.

3.5 Budget

The total budget for the Peace Archaeological Overview Assessment study is estimated at \$88,000 (in 2004 dollars).

Assumed Inflation Rate	2%	\$90,969
Contingency	5%	\$95,517

3.6 References

Arcas Consulting Archeologists Ltd. 2001. Peace Water Use Plan: First Nation's traditional Use and Traditional Ecological Knowledge Summary and Data Gap Analysis. Prepared for BC Hydro.

Arcas Consulting Archeologists Ltd. 2004. Finlay Reach Archaeological Study: Permit 2003-318 Final Report. Report on File, Archaeology Branch, Victoria

Arcas Consulting Archeologists Ltd. 2006. Archaeological Data Summary to 2005 in BC Hydro Reservoirs Archaeological Data Collection Project. Prepared for BC Hydro (Williston reservoir and Dinosaur reservoir sections).

Archaeology Branch, Ministry of Tourism, Sport and the Arts. 1998. British Columbia Archaeological Impact Assessment Guidelines, Victoria.

BC Hydro Engineering Services. 2006. Reservoir Shorelines, Reservoir Impact Inventory and Review for Archaeological Studies. Prepared for BC Hydro.

Borden, Charles. 1962. Peace River Basin Archaeology project – Stage: Terrain Reconnaissance. Report on File, Archaeology Branch, Victoria.

McGhee, Robert. 1963. An Archaeological Survey in the Area of the Portage Mountain Dam Reservoir. Report on File, Archaeology Branch, Victoria.

Mitchell, Donald H. 1964. An archaeological Survey of the Peace River Valley Section of the Peace River Power Project Reservoir. Report on File, Archaeology Branch, Victoria.