

STRATEGIC ENVIRONMENTAL ASSESSMENT of Potential Cumulative Impacts of all
Developments on the Outstanding Universal Value of **WOOD BUFFALO NATIONAL PARK**

STATEMENT OF WORK / TERMS of REFERENCE

Table of Contents

ABBREVIATIONS & ACRONYMS.....	4
DEFINITIONS.....	5
1.0 REQUEST	10
2.0 CONTEXT	10
2.1 Mikisew Cree First Nation Petition	10
2.2 World Heritage Committee Decision	10
2.3 Parks Canada’s State Party Role.....	11
2.4 Climate Change	11
3.0 BACKGROUND	12
3.1 Strategic Environmental Assessment.....	12
3.2 Project Description.....	12
3.3 Wood Buffalo National Park	13
3.4 The Outstanding Universal Value of Wood Buffalo National Park	14
4.0 STRATEGIC ENVIRONMENTAL ASSESSMENT GUIDANCE	14
4.1 Cabinet Directive	14
4.2 Parks Canada’s legislated mandate for environmental protection	15
4.3 Parks Canada’s Outcomes Based Approach to SEA	16
4.4 Regional Strategic Environmental Assessment Principles and Approach.....	17
4.5 World Heritage Advice Note on Environmental Assessment	17
Annex 2: Step-by-step guidance on integrating natural World Heritage Sites within Environmental Assessments	18
5.0 SCOPE OF WORK & MILESTONES	21
Detailed Description of SEA Requirements.....	21
5.1 General Approach and Need.....	21
5.2 Scoping	22
5.3 Cumulative Effects Assessment Considerations	23
5.4 Description of the Environment.....	24
5.5 Analysis of Environmental Effects.....	24
5.6 Information Sources and Analysis.....	26
5.7 Content of the Strategic Environmental Assessment Report	26
5.8 Milestones and Deliverables	26
Milestone 1: Review of Current Situation – Scoping and Scoping Document	26
Milestone 2: SEA Analysis and Initial Draft SEA Report Preparation	27

Milestone 3: Final SEA Report Preparation.....27

6.0 RESPONSIBILITIES28

6.1 Contractor Responsibilities28

6.2 Parks Canada's Responsibilities29

7.0 SCHEDULE and WORKPLAN OVERVIEW29

8.0 ATTACHMENTS AND LINKS30

9.0 SUPPORTING REFERENCES31

ABBREVIATIONS & ACRONYMS

AFN	Assembly of First Nations
CCME	Canadian Council of Ministers of the Environment
CEA	Cumulative Effects Assessment
CEAA	<i>Canadian Environmental Assessment Act, 2012</i>
CEA Agency	Canadian Environmental Assessment Agency
CEMA	Cumulative Environmental Management Association
CI	Commemorative Integrity
CNPA	<i>Canada National Parks Act</i>
Committee	World Heritage Committee
Convention	World Heritage Convention
CV	Curriculum Vitae
EI	Ecological Integrity
EIS	Environmental Impact Statement
FA	Federal Authority
IUCN	International Union for the Conservation of Nature
JRP	Joint Review Panel
Km	Kilometre
Km ²	Square Kilometre
NWT	Northwest Territories
OUV	Outstanding Universal Value
PAD	Peace-Athabasca Delta
PADEMP	Peace-Athabasca Delta Ecological Monitoring Program
PCA	Parks Canada Agency
PPPs	Policies, Plans, and Proposals
RSEA	Regional Strategic Environmental Assessment
RFP	Request for Proposals
RMM	Reactive Monitoring Mission
SARA	Species at Risk Act
SEA	Strategic Environmental Assessment
TK	Traditional Knowledge
ToR	Terms of Reference
UNESCO	United Nations Educational, Scientific and Cultural Organization
VC	Valued Component
VE	Visitor Experience
WBNP	Wood Buffalo National Park of Canada
WHC	World Heritage Centre
WHS	World Heritage Site

DEFINITIONS

Canadian Council of Ministers of the Environment (CCME)

Primary minister-led intergovernmental forum for collective action on environmental issues of national and international concern. It is comprised of the environment ministers from the Canadian federal, provincial, and territorial governments. The Council seeks to achieve positive environmental results, focusing on issues that are Canada-wide in scope and that require collective attention by a number of governments (CCME website).

Climate change

A long-term shift in weather conditions. It is measured by changes in a variety of climate indicators (e.g. temperature, precipitation, wind) including both changes in average and extreme conditions. Climate change can be the result of natural processes and/or human activity (Government of Canada).

Commemorative Integrity (CI)

Refers to the condition or state of a national historic site when the site is healthy and whole. This is the desired state for a national historic site. Wood Buffalo National Park has no national historic sites within it so consideration of impacts to CI is not required in this assignment (Parks Canada 2002).

Critical Factors

Those characteristics of the environment essential to the integrity of important ecological, cultural or visitor experience resources that are likely to be affected by the proposal or activity. See also *Valued Components*.

Cumulative Effect

A change in the environment caused by multiple interactions among human activities and natural processes that accumulate across space and time (CCME 2014).

Cumulative Effects Assessment (CEA)

A systematic process of identifying, analyzing, and evaluating cumulative effects (CCME 2014).

Cumulative Effects Management

Identification and implementation of measures to control, minimize or prevent the adverse consequences of cumulative effects (CCME 2014).

Cumulative Environmental Management Association (CEMA)

Multi-stakeholder group operating in the Regional Municipality of Wood Buffalo, Alberta that provides advice and recommendations to provincial and federal governments on management of cumulative impact of oil sands development in North-Eastern Alberta. The group has delivered management frameworks for Acid Deposition, Trace Metals, Nitrogen, Ecosystems and Water, and others parameters (Cumulative Effects Management Association).

Desired Outcomes

Predetermined conditions, parameters or thresholds that describe the state of environment necessary to maintain or restore ecological or commemorative integrity, or protect other essential environmental components integral to the Parks Canada's mandate including those related to species at risk, wilderness character or visitor experience. Realisation of desired outcomes occurs when the factors that affect the state of affairs directly or indirectly, have aggregate influences that produce the predetermined state.

Ecological Integrity (EI)

Parks Canada's definition of Ecological Integrity is rooted in the *Canada National Parks Act (CNPA)*, the law governing national parks in Canada. The *CNPA* defines "ecological integrity" with respect to a park as, "...a condition that is determined to be characteristic of its natural region and likely to persist, including abiotic components and the composition and abundance of native species and biological communities, rates of change and supporting processes." More information at <http://www.pc.gc.ca/eng/progs/np-pn/ie-ei.aspx>

Environment

Consistent with the Bellagio Principles of sustainable development, environment in this document adopts a holistic perspective and includes the biophysical and the human environment and their component interactions (CCME 2009).

Environmental Assessment (EA)

A generic term that is often used interchangeably as a qualifier for specific types of impact assessment, such as 'project-based' environmental assessment or 'strategic-based' environmental assessment (CCME 2009).

Environmental Impact Assessment (EIA)

The process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made.

Environmental Impact Assessment is focused on project-based proposals and undertakings (CCME 2009).

List of World Heritage in Danger

Properties which the World Heritage Committee has decided to include on the List of World Heritage in danger in accordance with Article 11 (4) of the *World Heritage Convention* (UNESCO. List of World Heritage in Danger).

Methodological Framework

A methodology is a higher-order activity—a framework or structure for organizing a process, a way by which SEA is performed, a system of conduct, a series of systematic steps (CCME 2009).

Outstanding Universal Value (OUV)

The basis for a site's inscription on the World Heritage List, it is defined in paragraph 49 of the *Operational Guidelines for the Implementation of the World Heritage Convention (WHC.15/01 8 July 2015)* as "...natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole. The Committee defines the criteria for the inscription of properties on the World Heritage List." (WHC.15/01. July 2015).

Peace-Athabasca Delta Ecological Monitoring Program (PADEMP)

Initiated by Parks Canada in 2008, PADEMP is a multi-stakeholder group established to develop an integrated ecological monitoring program that can measure, evaluate and communicate the state of the Peace Athabasca Delta ecosystem including any changes to this ecosystem that result from cumulative regional development. PADEMP includes 11 Indigenous governments, 6 provincial, federal and territorial governments, and 2 non-governmental organizations.

Project

For the purpose of this document, 'project' refers to physical actions, development activities, or physical works on the landscape as per the definition of 'project' under the *Canadian Environmental Assessment Act*. (CCME 2009).

Regional Strategic Environmental Assessment (RSEA)

A process designed to systematically assess the potential environmental effects, including cumulative effects, of alternative strategic initiatives, plans, or programs for a region (CCME 2009).

Reactive Monitoring Mission (RMM)

A component of statutory reporting on the state of conservation of specific properties that are under threat (see Paragraph 169), as undertaken by the Secretariat and the Advisory Bodies to the World Heritage Committee. They are requested by the World Heritage Committee to ascertain, in consultation with the State Party concerned, the condition of the property, the dangers to the property and the feasibility of adequately restoring the property or to assess progress made in implementing such corrective measures, and include a reporting back to the Committee on the findings of the mission (see Paragraph 176.e). The terms of reference of Reactive Monitoring missions are proposed by the World Heritage Centre, in line with the decision adopted by the World Heritage Committee, and consolidated in consultation with the State Party and the relevant Advisory Body(ies). (WHC.15/01. July 2015).

State Party

States Parties are countries that adhere to the World Heritage Convention. In the Canadian context Canada is the State Party, and as such, works with the provinces and territories in its implementation of the Convention. In the context of Decision 39 COM 7B.18, Canada as State Party, is working with Provincial and Territorial Governments with a role in approving or managing projects that may potentially generate impacts upon the OUV of WBNP. This includes the governments of Canada, British Columbia, Alberta, and the Northwest Territories. Parks Canada, as the federal agency responsible for implementation of the World Heritage Convention in Canada, is taking a lead role to plan and host a Reactive Monitoring Mission (RMM) whereby World Heritage Centre and IUCN representatives visit Canada at the request of the Committee to investigate the state of conservation of WBNP and the threats to its conservation status.

Strategic Environmental Assessment (SEA)

The systematic process of evaluating the potential environmental effects of proposed or existing policies, plans, and programs and their alternatives (CCME 2009).

Traditional Knowledge (TK)

Commonly understood to refer to collective knowledge of traditions used by Indigenous groups to sustain and adapt themselves to their environment over time. This information is passed on from one generation to the next within the Indigenous group. Such Traditional Knowledge is unique to Indigenous communities and is rooted in the rich culture of its peoples (AFN).

Valued Components (VCs)

Components of the environment (biophysical and human) that are identified as important ecologically, socially, or economically and are the focus of attention in environmental assessment (CCME 2009).

Visitor Experience (VE)

The sum total of visitors' personal interaction with a protected heritage place that helps them create meaning and establish connection with the place. It includes participation in recreational and interpretive activities, and the use of accommodation, trails, services and supporting infrastructure. Investments in the different stages of the visitor experience cycle facilitate opportunities for enjoyment and learning, leading to a sense of personal connection and the continued relevance of Canada's protected heritage places for Canadians.

World Heritage Centre (WHC)

Secretariat to the World Heritage Committee, housed at UNESCO. Ensures day-to-day management of the Convention, organizes annual sessions of the World Heritage Committee and its Bureau, provides advice to States Parties in the preparation of site nominations, organizes international assistance from the World Heritage Fund upon request, and coordinates reporting on the condition of sites and the emergency action undertaken when a site is threatened. The Centre also organizes technical seminars and workshops, updates the World Heritage List and database, and keeps the public informed of World Heritage issues (UNESCO. World Heritage Centre).

World Heritage Committee (the Committee)

21 member committee drawn from State Parties to the World Heritage Convention responsible for the implementation of the World Heritage Convention. It has the final say on whether a property is inscribed on the World Heritage List. It examines reports on the state of conservation of inscribed properties and asks States Parties to take action when properties are not being properly managed. It also decides on the inscription or deletion of properties on the List of World Heritage in Danger (UNESCO. World Heritage Committee).

World Heritage Convention

The World Heritage Convention, (Full title: "*The Convention Concerning the Protection of the World Cultural and Natural Heritage*"), was adopted by UNESCO in 1972 and signed by Canada in 1976. As of August 15, 2014 there are 191 countries ("State Parties") that are party to The Convention. Through this instrument nations of the world agree to inventory, recognize, and protect unique and irreplaceable properties of universal value.

World Heritage List

A list of properties recognised by UNESCO pursuant to the *Convention*, for their cultural heritage and natural heritage, and considered to have outstanding universal value. The World Heritage Committee establishes, maintains, and publishes, under the title of "World Heritage List," a list of properties so designated based on evaluation criteria for Outstanding Universal Value (UNESCO. World Heritage List).

World Heritage Site

Exceptional places around the world that are considered to have Outstanding Universal Value. As such, they are part of the common heritage of humankind. "State Parties," such as Canada, which have ratified *UNESCO's 1972 Convention Concerning the Protection of the World Cultural and Natural Heritage*, have pledged to ensure the identification, protection, conservation, presentation and transmission to future generations of World Heritage sites in their territory and to avoid deliberate measures that could damage World Heritage in other countries (Parks Canada. World Heritage in Canada).

Definition Sources:

(AFN) Assembly of First Nations. Traditional Knowledge. <http://www.afn.ca/uploads/files/env/ns - traditional knowledge.pdf>

CCME (Canadian Council of Ministers of the Environment) website. <http://www.ccme.ca/>

CCME 2009. Regional Strategic Environmental Assessment in Canada: Principles and Guidance. Canadian Council of Ministers of the Environment, Winnipeg, MB. http://www.ccme.ca/files/Resources/enviro_assessment/rsea_principles_guidance_e.pdf

CCME. 2014. Canada-wide Definitions and Principles for Cumulative Effects (2014).
http://www.ccme.ca/files/Resources/enviro_assessment/CE%20Definitions%20and%20Principles%201.0%20EN.pdf

Cumulative Effects Management Association. <http://cemaonline.ca/>

Government of Canada. Canada's Action on Climate Change: Facts on Climate Change. Website. Date modified: 2015-12-11.
<http://climatechange.gc.ca/default.asp?lang=En&n=F2DB1FBE-1>

Parks Canada 2002. Guide to the Preparation of Commemorative Integrity Statements.
<http://www.pc.gc.ca/eng/docs/pc/guide/guide/table.aspx>

Parks Canada. World Heritage in Canada. <http://whc.unesco.org/en/world-heritage-centre/>

UNESCO. List of World Heritage in Danger. <http://whc.unesco.org/pg.cfm?cid=86>

UNESCO. World Heritage Centre. <http://whc.unesco.org/en/world-heritage-centre/>

UNESCO. World Heritage Committee. <http://whc.unesco.org/en/committee/>

UNESCO. World Heritage List. <http://whc.unesco.org/en/list/>

WHC.15/01. July 2015. Operational Guidelines for the Implementation of the World Heritage Convention
<http://whc.unesco.org/en/guidelines>

1.0 REQUEST

The Parks Canada Agency (PCA) requires a Contractor to conduct a Strategic Environmental Assessment (SEA) to assess the cumulative impacts of all developments (including hydroelectric dams, oil sands development, and mining) on the outstanding universal value of Wood Buffalo National Park of Canada (WBNP). This Terms of Reference (ToR) document outlines the scope of work, expected approach, required products, and responsibilities involved in undertaking the work. The final product of this work will be an SEA report documenting how the Outstanding Universal Value (OUV) of WBNP is impacted by the factors listed above. The final SEA report will be available for public viewing, or download, from the International Union for Conservation of Nature (IUCN) website.

2.0 CONTEXT

2.1 Mikisew Cree First Nation Petition

In December 2014, the Mikisew Cree First Nation [petitioned](#) the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Committee (hereafter “the Committee”) requesting Wood Buffalo National Park be included on the List of World Heritage Sites in Danger.

2.2 World Heritage Committee Decision

On July 8, 2015 the World Heritage Committee adopted [Decision 39 COM 7B.18](#) concerning the state of conservation of Wood Buffalo National Park (WBNP). Decision 39 COM 7B.18 outlines a number of things that the State Party¹ is requested to achieve. Paragraphs 3, 5 and 6 of the Decision describe requirements for the Strategic Environmental Assessment (SEA). Excerpt from [Decision 39 COM 7B.18](#):

“The World Heritage Committee,

- 1. Having examined Document WHC-15/39.COM/7B.Add,*
- 2. Notes that the World Heritage Centre has received a petition submitted by the Mikisew Cree First Nation expressing their concern about the state of conservation of the property, as well as a response from the State Party;*
- 3. Notes with concern the environmental impacts on the Peace-Athabasca Delta from hydroelectric dams, oil sands development, and proposed open-pit mining in the vicinity of the property, which could negatively impact its Outstanding Universal Value (OUV);*
- 5. Requests the State Party to undertake a Strategic Environmental Assessment (SEA) to assess the potential cumulative impacts of all developments on the OUV of the property, including hydroelectric dams, oil sands development, and mining, in line with IUCN’s World Heritage Advice Note on Environmental Assessment;*
- 6. Also requests the State Party not to take any decision related to any of these development projects that would be difficult to reverse, and to submit the SEA to the World Heritage Centre, for review by IUCN, in accordance with Paragraph 172 of the Operational Guidelines;”.*

¹ States Parties are countries that adhere to the World Heritage Convention. In the Canadian context Canada is the State Party, and as such, works with the provinces and territories in its implementation of the Convention. In the context of Decision 39 COM 7B.18, Canada as State Party, is working with Provincial and Territorial Governments with a role in approving or managing projects that may potentially generate impacts upon the OUV of WBNP. This includes the governments of Canada, British Columbia, Alberta, and the Northwest Territories.

The full text of Decision 39 COM 7B.18 is available [online](#) and a copy is appended to this Terms of Reference document.

The undertaking of a Strategic Environmental Assessment (SEA) to assess the potential cumulative impacts of all developments, including hydroelectric dams, oil sands development, and mining, on the Outstanding Universal Value (OUV) of Wood Buffalo National Park World Heritage Site, as described in [Decision 39 COM 7B.18](#), is the subject of the assignment described in this Terms of Reference (ToR).

2.3 Parks Canada's State Party Role

Parks Canada is the federal agency responsible for the World Heritage Convention in Canada and is committed to protecting the Outstanding Universal Value of Wood Buffalo National Park. On behalf of the State Party, Parks Canada has the lead role planning and hosting a Reactive Monitoring Mission (RMM) whereby WHC and IUCN representatives will visit Canada to investigate the state of conservation of WBNP and the threats to its conservation status. The RMM was initially scheduled to take place in late May and early June 2016 but was rescheduled due to the Fort McMurray fire emergency situation. The mission will now take place from Sept 25 – Oct 4, 2016. The RMM is not a part of the SEA, but discussions and information shared during the RMM may prove useful to the conduct of the SEA. Members of the RMM from the Committee, and the IUCN will prepare a report summarising their findings. The report will contain recommendations and guidance to the Government of Canada, and the Committee, to help ensure the ongoing conservation of WBNP OUV. The draft mission report for Canada's review is expected to be available in November 2016. Further details on the RMM are listed in the *Terms of Reference Joint World Heritage Centre / IUCN Reactive Monitoring Mission Wood Buffalo National Park (Canada) May/June 2016*, a copy of which is appended to this SEA ToR.

2.4 Climate Change

Incorporation of the consideration of the effects of climate change is an established best practice in impact assessment methodologies practiced in many jurisdictions including Canada. The need to take into account the effects of climate change is also mentioned in the two key documents that provide direction for the IUCN-WHC assessment of the state of conservation of WBNP's OUV, and the SEA described in this ToR:

1. State of Conservation Report for Wood Buffalo National Park (Canada). Analysis and Conclusion by World Heritage Centre and the Advisory Bodies in 2015.
2. Draft Terms of Reference. Joint World Heritage Centre / IUCN Reactive Monitoring Mission. Wood Buffalo National Park (Canada). 26 May – 4 June 2016

State of Conservation. Wood Buffalo National Park (Canada).

<http://whc.unesco.org/en/soc/3318>

Analysis and Conclusion by World Heritage Centre and the Advisory Bodies in 2015

"It is recommended that the Committee urge the State Party to review the cumulative impacts of all of the hydroelectric dam projects, oil sands development and open pit mining on the property's OUV, taking the effect of climate change into full consideration, and to complete a Strategic Environmental Assessment (SEA), in line with IUCN's World Heritage Advice Note on Environmental Assessment."

Although the Reactive Monitoring Mission (RMM) is separate undertaking and not part of the SEA, the two undertakings are complimentary, and will be completed to address requests made of the State Party by the

IUCN and WHC. The Contractor undertaking this assignment will therefore need to ensure that the SEA includes consideration of the effects of climate change at all stages of the SEA scoping and analysis. The full text of both documents are appended to this ToR. Excerpts from each of these documents are provided here for quick reference.

Draft Terms of Reference. Joint World Heritage Centre / IUCN Reactive Monitoring Mission. Wood Buffalo National Park (Canada). 26 May – 4 June 2016

“In particular the mission should undertake the following:

1. *Review and assess the impact using the current understanding of:*
 - a. *the current effects of Peace River flow regulation activities associated with operation of the W.A.C. Bennett Dam and Peace Canyon Dam, on the OUV of the property;*
 - b. *the potential (cumulative) impacts of the planned Site C Hydroelectric Dam on the hydrological regime of the PAD that could impact the OUV of the property, and the ecological processes as they relate to the OUV of the property, also taking into account the effects of climate change;*
 - c. *.....”.*

3.0 BACKGROUND

3.1 Strategic Environmental Assessment

Strategic Environmental Assessment (SEA) is a widely accepted impact assessment practice typically used to evaluate the collective environmental effects of programs, or groups of projects to enable informed decision-making. An SEA is meant to identify and evaluate potential positive, negative and cumulative environmental effects that will arise as a result of implementation of a program proposal, or a group of projects. It is a means of incorporating environmental considerations into the development of public policies, plans and program proposals to support environmentally sound decision-making. Since its inception, SEA has generally been considered to be one of the best ways of assessing cumulative environmental effects. More recently Regional SEA (RSEA) methods have emerged. These offer even more promise to fully assess the cumulative effects of a specific sector, or of all developments and activities within a particular geographic area. Section 4 of this ToR contains additional important information on both SEA and RSEA.

3.2 Project Description

The objective of this assignment is to assess the cumulative impacts of present and proposed industrial development projects located outside WBNP upon the Outstanding Universal Value of Wood Buffalo National Park. The SEA requirements outlined in the UNESCO WHC decision document ([Decision 39 COM 7B.18](#)) are the primary requirement that must be fulfilled in this contract. Methods employed in undertaking this work will be based on scientific analysis using the best existing information available, not on primary investigations, or field work.

Key steps and products:

1. Preparation of a Scoping Document that focuses attention on the key impacts and associated pathways impacting WBNP OUV.
2. Preparation of a draft final SEA Report for review/comment by Parks Canada.
3. Preparation of final SEA report.

The Contractor will be provided with copies of important impact assessment documents from current and past development proposals of interest, or information on where such documents may be obtained. Parks Canada will help facilitate contractor access to Government of Canada scientists and experts relevant to this assignment.

3.3 Wood Buffalo National Park

Park Establishment - 1922

Wood Buffalo National Park was established in 1922 to protect the last remaining herds of bison in northern Canada. Today, it protects an outstanding and representative example of Canada's Northern Boreal Plains. Straddling the boundary of northern Alberta and southern Northwest Territories, WBNP is the largest national park in Canada with an area of 44,807 square kilometres.

IUCN Recognition - 1982

In 1982, the IUCN recognized that WBNP protected two wetland areas of international significance — the Peace-Athabasca Delta (PAD), and the whooping crane nesting area. These areas were subsequently designated as Ramsar² sites — an important international environmental designation under the Ramsar Convention whose focus is identification and protection of critical habitat for migratory birds.

Inscription on the World Heritage List - 1983

In 1983, Wood Buffalo National Park became the eighth site in Canada to be inscribed on the UNESCO World Heritage List. Wood Buffalo was inscribed on the World Heritage List in recognition of its outstanding natural value. Specifically, WBNP is the most ecologically complete and largest example of the entire Great Plains-Boreal grassland ecosystem of North America, and is the only place where the predator-prey relationship between wolves and wood bison has continued, unbroken, over time. It also provides the only breeding habitat in the world for the whooping crane, an endangered species; and contains rare and superlative natural phenomena including a large inland delta, salt plains and gypsum karst that are of international significance. The full inscription text is available online from the WHC website.

² The Convention on Wetlands, called the Ramsar Convention, is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. Source: <http://www.ramsar.org/>

In recognition of its contribution to global biological diversity, the PAD has been designated a Wetland of International Importance pursuant to the Ramsar Convention, an inter-governmental treaty adopted in 1971 by countries concerned about the increasing loss and degradation of wetland habitat for migratory birds. The designation of Ramsar sites focuses on protection of critical habitat for migratory birds and areas of international significance in terms of ecology, botany, zoology, limnology and hydrology. As a signatory to the Convention, Canada commits to designating Wetlands of International Importance and to ensuring their effective management. (Source: Parks Canada's Submission to the Joint Review Panel for BC Hydro's Site C Clean Energy Project. Submission of Parks Canada Agency November 25, 2013).

3.4 The Outstanding Universal Value of Wood Buffalo National Park

The Outstanding Universal Value of WBNP World Heritage Site (WHS) was approved by the World Heritage Committee. The full text is available on the [WHC website](#). A verbatim copy of key components of what OUV means for WBNP is listed in the text box.

“Outstanding Universal Value

Brief synthesis

Wood Buffalo National Park is an outstanding example of ongoing ecological and biological processes encompassing some of the largest undisturbed grass and sedge meadows left in North America. It sustains the world’s largest herd of wood bison, a threatened species. The park’s huge tracts of boreal forest also provide crucial habitat for a diverse range of other species, including the endangered whooping crane. The continued evolution of a large inland delta, salt plains and gypsum karst add to the park’s uniqueness.

Criterion (vii): The great concentrations of migratory wildlife are of world importance and the rare and superlative natural phenomena include a large inland delta, salt plains and gypsum karst that are equally internationally significant.

Criterion (ix): Wood Buffalo National Park is the most ecologically complete and largest example of the entire Great Plains-Boreal grassland ecosystem of North America, the only place where the predator-prey relationship between wolves and wood bison has continued, unbroken, over time.

Criterion (x): Wood Buffalo National Park contains the only breeding habitat in the world for the whooping crane, an endangered species brought back from the brink of extinction through careful management of the small number of breeding pairs in the park. The park’s size (4.5 million ha), complete ecosystems and protection are essential for in-situ conservation of the whooping crane.”

4.0 STRATEGIC ENVIRONMENTAL ASSESSMENT GUIDANCE

The Strategic Environmental Assessment for this assignment will be undertaken using accepted practices in Canada, with guidance from Parks Canada’s outcomes based approach to SEA, and the Canadian Council of Ministers of the Environment (CCME) guide to *Regional Strategic Environmental Assessment in Canada: Principles and Guidance* (CCME 2009), while keeping in mind the principles in *IUCN’s World Heritage Advice Note on Environmental Assessment*. Each of these guidance pieces is described in greater detail below.

4.1 Cabinet Directive

In Canada, the [Cabinet Directive on Environmental Assessment of Policy, Plan and Program Proposals](#) outlines SEA policy and methods for the federal government. The Canadian Environmental Assessment Agency (CEA Agency) is responsible for providing guidance and direction on the application of the Cabinet Directive and has developed [Guidelines for Implementing the Cabinet Directive](#). The guidelines outline the generic SEA process and reporting requirements expected for SEAs done in accordance with the Cabinet Directive. However because the needs of policy analysts, program managers and Ministers vary according to the nature of the strategic proposal, there is no single prescribed SEA process across the federal government. There is, instead, a series of customized processes based on common principles.

4.2 Parks Canada's legislated mandate for environmental protection

Three Pillars of Mandate

Parks Canada has a mandate for environmental protection established in legislation, regulation, and subsequent policies, programs and plans. The mandate of Parks Canada is to:

"On behalf of the people of Canada, we protect and present nationally significant examples of Canada's natural and cultural heritage, and foster public understanding, appreciation and enjoyment in ways that ensure the ecological and commemorative integrity of these places for present and future generations."

Protection of Ecological Integrity³ (EI) and Commemorative Integrity⁴ (CI), as well as safe guarding important Visitor Experiences (VE), are three primary factors that influence management decisions made by Parks Canada. They also help focus the PCA and its involvement in impact assessment processes.

For this assignment, the potential impacts of all developments upon the EI of Wood Buffalo National Park and its outstanding universal value, is the primary factor to be assessed as described in this ToR. Commemorative Integrity, and Visitor Experience are of secondary importance, and should only be included in relation to impacts upon these elements from losses of EI.

Participation in EA Reviews for Projects Outside of National Parks

Parks Canada participates in environmental assessment reviews for projects outside of Wood Buffalo National Park that may have impacts on the Park. In addition, Parks Canada works with a host of partners, including federal, provincial and Indigenous representatives and researchers, to monitor what impacts may actually be taking place so that information can be used in future project reviews and in management decisions made for WBNP. For example, Parks Canada chairs the Peace-Athabasca Delta Ecological Monitoring Program (PADEMP). The PADEMP [website](#) describes the group's formation and role in the following manner:

"Concerns about cumulative impacts from regional development and climate change have led to the formation of the Peace-Athabasca Delta Ecological Monitoring Program (PADEMP) by a group of stakeholders working together for long-term monitoring and reporting on the health of the Peace-Athabasca Delta through western science and traditional knowledge."

Information from PADEMP and other similar organizations will be an important resource for the successful contractor undertaking the SEA contract work.

Ecological Integrity Monitoring Program

Parks Canada has developed a monitoring program to measure the effectiveness of efforts to maintain or restore the EI of the lands it manages. It is based on development of a unique set of EI Indicators and Measures for every national park. The monitoring program provides comprehensive monitoring data for specific indicators and measures considered to be most important to EI. Monitoring results are analysed, and

³ The *Canada National Parks Act*, the law governing national parks in Canada, defines "ecological integrity" with respect to a park as, "...a condition that is determined to be characteristic of its natural region and likely to persist, including abiotic components and the composition and abundance of native species and biological communities, rates of change and supporting processes." More at <http://www.pc.gc.ca/eng/progs/np-pn/ie-ei.aspx>

⁴ Commemorative Integrity -- Commemorative integrity refers to the condition or state of a national historic site when the site is healthy and whole. This is the desired state for a national historic site. WBNP has no national historic sites within it so consideration of impacts to CI is not required in this assignment.

periodically summarised, in State of Park Reports that document the state of EI for individual national parks. The most recent State of the Park Report for WBNP was published in 2009, **Wood Buffalo National Park of Canada: State of the Park Report 2009 (Parks Canada 2009)**. A copy of the report is appended to this ToR. The report outlines some of the key stressors affecting WBNP.

Staff from PCAs National Office (Monitoring and Ecological Information group) and WBNP (Resource Conservation group) are currently undertaking analyses to more fully define what EI means (objectives, targets, parameters) within WBNP for various components such as the frequency of flooding; vegetation changes in the PAD; and muskrat distribution and abundance. The results of these analyses will more clearly define what desired outcomes for EI actually mean on the landscape of WBNP. This information will be shared with the successful contractor for the SEA project detailed in this ToR document.

Information on the state of EI and desired ecosystem objectives for WBNP are important elements to consider when analysing and assessing if the desired states that protect and maintain OUV are achievable now and in the future. A Parks Canada document, **Consolidated Guidelines for Ecological Integrity Monitoring in Canada's National Parks, Parks Canada Agency 2011**, describes the EI monitoring program in greater detail. A copy is appended to this ToR.

4.3 Parks Canada's Outcomes Based Approach to SEA

The main purpose of the SEA scoping process is to focus assessment effort on impact pathways that may impact environmental factors critical to achieving Parks Canada's mandate – ecological integrity, commemorative integrity and meaningful visitor experience. Scoping also serves to “weed out” concerns less important to the Parks Canada mandate, or that can be more effectively dealt with by other means such as during a later project level impact assessment.

There are three primary stages to the scoping process in an outcomes based approach to SEA:

1. Identifying projects, activities or actions arising from the strategic proposal that may result in important interactions with the environment.
2. Identifying and describing “critical factors” – those characteristics of the environment essential to the integrity of important ecological, cultural or visitor experience resources that are likely to be affected by the proposal or activity. To be useful and efficient, the SEA must focus on strategically important impacts to the three areas (EI, CI, and VE) of Parks Canada's mandate and not attempt to assess every potential impact.
3. Establishing Desired Outcomes in relation to critical factors -- a desired outcome is a clearly defined management objective, associated with a critical factor, that must be achieved to maintain or enhance the integrity of important ecological, cultural or visitor experience resources.

Parks Canada's ability to achieve these outcomes provides a foundation for analysing the impact of strategic proposals, current activities, or both. It also provides a means to: 1) identify the need for additional information or mitigation; 2) draw conclusions on the acceptability of impacts; and 3) supply defensible rationale for making informed management decisions. These are the core attributes of Parks Canada's 'outcomes based' approach to SEA. In the context of this ToR, this means the ability of Parks Canada to achieve its desired EI outcomes within WBNP related to protecting and maintaining the values associated with its OUV.

Parks Canada's Outcomes based approach to SEA is closely aligned with, and incorporates, many of the principles and approaches of Regional Strategic Environmental Assessment.

4.4 Regional Strategic Environmental Assessment Principles and Approach

Various academics and practitioners have described shortcomings of the effectiveness of cumulative effects assessment during reviews of individual project proposals. Regional Strategic Environmental Assessment (RSEA) approaches have emerged as a means of more fully and effectively analysing cumulative impacts on a broader regional or sectoral scale. The Canadian Council of Ministers of the Environment (CCME) identified RSEA as a key area of interest and subsequently commissioned some research analysis investigations and reports on the subject. The results of these investigations were subsequently published in a 2009 CCME report: [Regional Strategic Environmental Assessment in Canada: Principles and Guidance](#), Canadian Council of Ministers of the Environment, Winnipeg, MB.

Section 5.3 of the document outlines the Core Principles of RSEA, and section 5.4 lists Methodological Principles. While all of these principles are important to the proper conduct of RSEA, the principles considered critically important to the contract assignment are listed below.

Strategic: identifies strategic initiatives, evaluates alternatives, and formulates a strategy for moving forward.

Futures-oriented: focuses on identifying possible futures and the means to shape regional outcomes.

Cumulative effects-focused: identifies cumulative effects as the real effects of concern operating at the regional scale.

Multi-tiered: assessment informs, and is informed by, broader regional and multi-regional environmental management and also downstream project assessment and decision-making.

Multi-scaled: primary issues of cumulative effects can be revisited, where needed, not only at different tiers but also at different spatial scales.

Multi-sectoral: encompasses the activities, policies and plans of multiple sectors that may exist in a region or that may influence regional-based processes and decision-making.

Regional VEC-based: Cumulative effects processes are often linked with highly complex global and regional environmental management issues such as climate change or biodiversity. Thus, the concept of a valued ecosystem component in R-SEA must be relevant to a regional scale of analysis, and be represented by broad indicators of ecosystem health and regional environmental change.

Structured and systematic: A methodological framework provides general guidance and is applicable to a broad range of situations and contexts. R-SEA should be flexible to the particular policy and planning context, but there is a continued appeal to ensure that systematic and structured methodological frameworks are employed at the strategic level.

Some important elements of RSEA principles are integrated into another CCME document published in 2014: CCME 2014. [Canada-wide Definitions and Principles for Cumulative Effects \(2014\)](#). These include **Outcomes and environmental objectives-based**; and **Future-focused** approaches when undertaking cumulative effects assessment and management.

Regional Strategic Environmental Assessment approaches are well suited to addressing the IUCN - WHC request for an SEA that assesses potential impacts of all developments on WBNP OUV.

4.5 World Heritage Advice Note on Environmental Assessment

Decision 39 COM 7B.18 requests that the SEA be undertaken in line with IUCN's 2013 [World Heritage Advice Note on Environmental Assessment](#). **Section 3 Environmental Assessment and natural World Heritage Sites**,

and **Section 4 IUCN's position on Environmental Assessment for proposals affecting natural World Heritage Sites**, of the World Heritage Advice Note provide important guidance for conduct of an environmental assessment involving a World Heritage site.

Section 4 of the EA Advice Note sets out IUCN's position on Environmental Assessments for proposals affecting natural World Heritage sites. The advice is predominantly aimed at avoiding these types of activities within a WHS but also gives counsel on circumstances where projects outside a WHS may impact the site:

“Concerning extractives, IUCN’s position is that mineral and oil/gas exploration and exploitation projects (including associated infrastructure and activities) are incompatible with the long-term objective of preserving natural World Heritage Sites for future generations and should not be permitted within these sites. Mineral and oil/gas exploration and exploitation outside natural World Heritage Sites may also have serious negative impacts on their Outstanding Universal Value and should be systematically assessed through an Environmental Assessment.”

Annex 2: Step-by-step guidance on integrating natural World Heritage Sites within Environmental Assessments

Annex 2 of the **IUCN Advice Note** provides useful guidance on all steps in the impact assessment process. Brief explanations of how some of these steps relate to the WBNP SEA are provided here. A complete list of all 18 steps is listed in the green text box on the next page of this ToR, or in the [IUCN advice Note](#).

2. Proposals located outside World Heritage Site boundaries should also be assessed

This is consistent with Parks Canada’s practice of participating in EA reviews of large projects outside of WBNP World Heritage Site boundaries that may impact the ecological integrity of the park.

5. Many of the issues that should be included in the assessment can be identified by referring to the site’s Statement of Outstanding Universal Value

Provides important direction regarding how to scope and assess impacts to a World Heritage site such as WBNP. It states:

“An Environmental Assessment for a development proposal affecting a natural World Heritage Site should assess likely impacts on the site’s Outstanding Universal Value, namely on values, integrity and protection and management. A site’s OUV is particular to each site and is described in its Statement of Outstanding Universal Value, which can be found on the UNESCO World Heritage Centre website on the [site description page](#).”

7. Experts with World Heritage, protected area and biodiversity knowledge should be involved early on

Parks Canada is facilitating World Heritage involvement and will share this ToR and associated documents with the WHC.

8. Consultation should begin at the scoping stage and the scoping document should be publically available

A formal consultation process is not envisioned for this SEA. There will be considerable engagement with individuals, groups, Aboriginal groups, and experts during the data collection and analysis phases of the SEA. The RMM agenda and process includes extensive involvement by a wide range of interests. The RMM Mission Report and findings will be an important information source to guide the conduct of the SEA.

10. All likely effects on Outstanding Universal Value should be assessed, including direct, indirect and

cumulative.

World Heritage Advice Note on Environmental Assessment

Annex 2: Step-by-step guidance on integrating natural World Heritage Sites within Environmental Assessments.

1. *All proposals that may adversely affect a natural World Heritage Site will require early and rigorous Environmental Assessment.*
2. *Proposals located outside World Heritage Site boundaries should also be assessed.*
3. *Strategic Environmental Assessments should be systematically undertaken for large-scale or multi-sectoral development proposals*
4. *Mining and oil/gas projects are incompatible with World Heritage status.*
5. *Many of the issues that should be included in the assessment can be identified by referring to the site's Statement of Outstanding Universal Value.*
6. *Social issues must also be assessed.*
7. *Experts with World Heritage, protected area and biodiversity knowledge should be involved early on.*
8. *Consultation should begin at the scoping stage and the scoping document should be publically available*
9. *Development Proposals, Terms of Reference, Scoping Report should be submitted as early as possible to the UNESCO World Heritage Centre.*
10. *All likely effects on Outstanding Universal Value should be assessed, including direct, indirect and cumulative.*
11. *Additional data may need to be collected in order to assess likely impacts on Outstanding Universal Value.*
12. *Alternative development options should be identified and assessed, including the 'no project' option and the most sustainable options in relation to Outstanding Universal Value.*
13. *Mitigation measures should be identified in line with the mitigation hierarchy, which requires first avoiding potential negative impacts and secondly reducing unavoidable residual impacts through mitigation measures.*
14. *A separate chapter on World Heritage impacts must be included in the Environmental Assessment report, and a summary of this chapter reflected in the Executive Summary.*
15. *Draft Environmental Reports should be submitted to the UNESCO World Heritage Centre as early as possible.*
16. *Thorough public consultation is key.*
17. *The Environmental Management Plan must relate to Outstanding Universal Value.*
18. *The implementation of this plan should be independently audited at regular intervals.*

14. A separate chapter on World Heritage impacts must be included in the Environmental Assessment report, and a summary of this chapter reflected in the Executive Summary.

A Separate Chapter on World Heritage Impacts

Section 7 of the main text, and section 14 of Annex 2 of the IUCN's World Heritage Advice Note on Environmental Assessment outline a requirement for the environmental assessment report to contain a separate chapter on world heritage impacts. Section 14 of Annex 2 is listed directly above, and Section 7 of the main text below:

Section 7 IUCN's review process for Environmental Assessments (page 8)

"Note that Draft Environmental Reports must include a separate chapter on the proposal's likely impacts on Outstanding Universal Value. If the chapter on World Heritage impacts is not included, IUCN is unable to review the report. In such cases, IUCN will consider that the assessment is not adequate and will recommend that it is amended to include this chapter, in line with the guidance provided in Annex 2, before it is re-submitted to the UNESCO World Heritage Centre for review by IUCN."

Decision 39 COM 7B.18 directs the State Party to undertake an SEA to assess the potential cumulative impacts of all developments on the OUV of the property, including hydroelectric dams, oil sands development, and mining, in line with IUCN's World Heritage Advice Note on Environmental Assessment. **The contractor will therefore need to prepare a separate chapter in the SEA report on the likely impacts of all developments on the OUV of Wood Buffalo National Park World Heritage Site.**

Annex 2 also refers to the availability of more detailed guidance contained in two supporting documents:

1. Commission for Environmental Assessment. April 2006. [Voluntary Guidelines on Biodiversity-Inclusive Impact Assessment](#).
2. Ramsar 2010. [Handbook 16: Impact Assessment. 4th edition](#).

In summary, the Contractor undertaking this assignment will need to integrate principles, approaches, or considerations from the SEA guidance materials described in this section of the ToR, into the planning and execution of the SEA work, namely:

- *The Cabinet Directive on Environmental Assessment of Policy, Plan and Program Proposals; and the Guidelines for Implementing the Cabinet Directive.*
- Parks Canada's environmental protection mandate.
- Parks Canada's Outcomes Based Approach to SEA.
- Regional Strategic Environmental Assessment Principles and Approaches as outlined in *Regional Strategic Environmental Assessment in Canada: Principles and Guidance (CCME 2009)*.
- *World Heritage Advice Note on Environmental Assessment (IUCN 2013)*.

5.0 SCOPE OF WORK & MILESTONES

This section of the ToR sets out the key considerations for scoping and successfully completing the required work for this SEA contract. The What, Why, How, and When of the work is briefly summarised in the text box below, and described in greater detail in the subsequent sections.

WHAT

“The World Heritage Committee, Requests the State Party to undertake a Strategic Environmental Assessment (SEA) to assess the potential cumulative impacts of all developments on the OUV of the property, including hydroelectric dams, oil sands development, and mining, in line with IUCN’s World Heritage Advice Note on Environmental Assessment;”

WHY

“The World Heritage Committee, Notes with concern the environmental impacts on the Peace-Athabasca Delta from hydro-electric dams, oil sands development, and proposed open-pit mining in the vicinity of the property, which could negatively impact its Outstanding Universal Value (OUV);”

HOW

As described in this ToR.

WHEN

Contract initiation July 2016, and completion in July 2017.

Detailed Description of SEA Requirements

5.1 General Approach and Need

The requirement for this assignment is rooted in WHC [Decision 39 COM 7B.18](#) wherein section 5 it directs the State Party (Canada) to:

“...assess the potential cumulative impacts of all developments on the OUV of the property, including hydroelectric dams, oil sands development, and mining”.

It will be important for the Contractor to use information on the state of EI and desired ecosystem objectives with WBNP, when analysing and assessing if desired states that protect and maintain WBNP OUV are achievable now and in the future. A key question to answer when assessing the potential cumulative impacts of development on WBNP OUV will be:

Do the outcomes from various project reviews, including regulatory agency permit authorization conditions, or Joint Panel Review recommendations, in concert with the management regime Parks Canada has in place, provide ecosystem states in WBNP that fulfill desired outcomes (states) important to WBNP’s World Heritage Site Outstanding Universal Value?

Wood Buffalo National Park – Outstanding Universal Value

The complete wording of WBNP OUV is available on the [WHC website](#). A paraphrased summary of OUV is provided here as determining what OUV means will be a critically important factor when scoping the SEA. Paraphrased Summary of Wood Buffalo National Park Outstanding Universal Value:

- *An outstanding example of ongoing ecological and biological processes encompassing some of the largest undisturbed grass and sedge meadows left in North America.*
- *Sustains the world's largest herd of wood bison, a threatened species*
- *The park's huge tracts of boreal forest also provide crucial habitat for a diverse range of other species, including the endangered whooping crane.*
- *The continued evolution of a large inland delta, salt plains and gypsum karst add to the park's uniqueness.*

The justification for WBNP's OUV per relevant World Heritage criteria:

Criterion (vii): The great concentrations of migratory wildlife are of world importance and the rare and superlative natural phenomena include a large inland delta, salt plains and gypsum karst that are equally internationally significant.

Criterion (ix): Wood Buffalo National Park is the most ecologically complete and largest example of the entire Great Plains-Boreal grassland ecosystem of North America, the only place where the predator-prey relationship between wolves and wood bison has continued, unbroken, over time.

Criterion (x): Wood Buffalo National Park contains the only breeding habitat in the world for the whooping crane, an endangered species brought back from the brink of extinction through careful management of the small number of breeding pairs in the park. The park's size (4.5 million ha), complete ecosystems and protection are essential for in-situ conservation of the whooping crane

In undertaking this assignment, the Contractor will be required to develop an SEA approach that incorporates RSEA principles including the need for a structured methodological framework, and an outcomes based – futures focused approach, relevant to the factors that support the OUV of WBNP WHS. The approach developed must be consistent with the *IUCN World Heritage advice note on Environmental Assessment* (IUCN 2013), and the CCME's *Regional Strategic Environmental Assessment in Canada Principles and Guidance* (CCME 2014).

The following subsections describe requirements the contractor must fulfil while undertaking the individual steps of the SEA process for this assignment.

5.2 Scoping

Purposeful and precise definition of the scope of the SEA is one of the most important steps of the assessment process. Identification of Valued Components⁵, and definition of desired outcomes for those VCs, influences SEA scope, and all subsequent steps in the assessment process.

⁵ The term Valued Component or VC, in the context of this assignment is synonymous with the term and concept of "critical factor" as described in *Section 4.3 Parks Canada's Outcomes Based Approach to SEA*, and as "critical factor" is defined in the definition section of this ToR document.

The Contractor must scope the SEA investigation to those aspects where there are demonstrable, or probable, pathway of effects linkages between the current and proposed activities in the region and the OUV of WBNP. The scoping exercise will identify existing, or potential developments and activities that may result in important positive or negative impacts to ecological integrity at the local and regional ecosystem scale and relate these to requirements necessary to maintain OUV.

The Contractor will restrict the scope of assessment and analysis to the Outstanding Universal Value of WBNP and not allow it to broaden to include the Ecological Integrity of all of WBNP. This will require a consistent, disciplined and methodical approach to undertaking the SEA from the scoping phase and onward through all subsequent stages of the SEA process.

Some components of WBNP OUV may not be impacted from the cumulative impacts of development to be assessed as part of this SEA. Potential developments or activities that do not interact with parameters that are a component of WBNP OUV may be excluded from further consideration in the Strategic Environmental Assessment. Arguments to support the rationale for eliminating these factors should be briefly explained in the scoping report and the final SEA report. Where there is uncertainty about the linkages between impact pathways and OUV, scoping should be done conservatively so additional effort expended on researching impact pathways and their strength of effect can lead to factors being eliminated from further consideration and analysis, or identified as pathways to be included in the SEA analysis.

5.3 Cumulative Effects Assessment Considerations

Cumulative effects considerations are centrally important to the conduct of this SEA contract and need to be integrated into all steps of the process including identification and evaluation of VCs (scoping), and analysis of individual impact pathways affecting identified VCs. An integrated CEA approach utilises existing knowledge and experience with ecosystem function and integrity; as well as threats to park ecosystems, cultural resources, and visitor experience values. With this method EI indicators, management plan targets and objectives, monitoring thresholds, and other information are used at the earliest stages of project assessment to help identify important cumulative effects. In summary, an integrated cumulative effects assessment approach includes:

- Using existing cumulative effects knowledge to identify potential valued components;
- Using known cumulative effects stressors to focus on key cumulative project/environment interactions at early stages of the assessment process;
- Using known cumulative effects factors to determine the scope and approach to assessment;
- Identifying cumulative effects management outcomes, or environmental performance parameters to gauge impacts against;
- Ensuring project design, mitigations and implementation address cumulative effects so management outcomes and performance parameters will be achieved;
- Determining residual effects and significance with specific reference to both project level and cumulative effects stressors and outcomes.

Cumulative environmental effects need to be considered throughout all steps of analysis, rather than just as a result of identified residual effects as per typical project level CEA conducted in Canada.

The Contractor must incorporate cumulative effects assessment principles from CCME ([CCME 2014](#)) into the approach developed to complete the contract assignment. This will require use of an outcomes based, future

focussed approach through all stages of the scoping and analysis of the SEA. The final SEA report must detail how the CCME cumulative effects assessment principles were fulfilled, and document the findings and recommendations developed to address identified key issues/areas of concern.

5.4 Description of the Environment

The SEA will focus primarily on cumulative effects assessment at the regional and local ecosystem scales. Each of these scales is briefly described below. Park Ecosystem Models may be used to help define the appropriate scale of assessment in relation to the VCs considered as factors in the assessment.

Regional Ecosystem

The vast majority of Wood Buffalo National Park is in the Northern Boreal Plains region (92%), characterized by poorly drained (hydric) lowlands underlain by sedimentary rock and karst topography. This region is marked by vast areas of boreal forest and wetlands. The Southern Boreal Plains and Plateau make up the remaining 8% of the park and these regions are defined by extensive areas of black spruce muskeg on flat, poorly drained land. A few outliers of the granite hills of the Canadian Shield, which lies to the east of the plain, are also found within the park. Two of Alberta's largest rivers, the Peace, and the Athabasca, flow into the park and converge at the western end of Lake Athabasca to create the Peace-Athabasca Delta.

Local Ecosystem

The local ecosystem includes specific and unique features of the park as well as ecosystem features immediately adjacent, and linked by hydrological and aerial pathways, that may be affected by development projects and activities. Specific examples of local ecosystem features include the extensive Salt Plains and associated salt-adapted plants; the Peace / Athabasca / Slave River system; and two Ramsar (Convention on Wetlands) Wetlands of International Importance: 1) The Peace-Athabasca Delta; and 2) the breeding habitat of the whooping crane (*Grus americana*), an endangered species in Canada. The local ecosystem provides habitat for significant wildlife populations including the world's largest herd of free-ranging wood bison (*Bison athabascae*); and continentally significant populations of migrating, nesting, breeding and moulting waterfowl. Significant ecosystem processes of note include the park's intact forest fire regime, its significantly altered seasonal flood regime (lower Peace River and delta) and the uninterrupted natural predator-prey relationship between wood bison and grey wolves (*Canis lupus*).

5.5 Analysis of Environmental Effects

The analysis of environmental effects will build from the scoping report and describe/analyse in greater detail the scope and nature of environmental effects that could arise from current and proposed activities and projects. The focus of the analysis is to look at known or potential cumulative environmental effects acting at the regional and local ecosystem scales, and the attendant effects of these on the OUV of WBNP.

Valued Components (VCs)

The assessment of environmental effects will be facilitated through the identification of Valued Components (VCs). For the purpose of this SEA, valued components include those ecosystem functions, structures or components essential to the maintenance or restoration of ecosystem states that support the outstanding universal value of WBNP WHS. The identification and evaluation of VCs will be based on the regional and local ecosystem scales, and focus on cumulative environmental effects known to, or that may, impact OUV.

Ecological Integrity Questions

A series of ecological integrity questions may be used to identify key pathways and impacts of concern as part of the SEA impact analysis. The questions are meant to expose potential cumulative effects of present and proposed developments at the local and regional scale, and help identify those that may impact the EI of

WBNP and compromise the ability to achieve desired outcomes that support maintenance, or enhancement, of features important to OUV.

These questions reflect key parameters of ecological integrity consistently identified in peer reviewed published literature, and grey literature of organizations with a protected areas mandate. The questions also incorporate criteria from CEA Agency guidance documents for determining the significance of potential environmental effects (Canadian Environmental Assessment Agency. 2015. [Operational Policy Statement: Determining Whether a Designated Project is Likely to Cause Significant Adverse Environmental Effects under the Canadian Environmental Assessment Act, 2012](#)). These include the well accepted impact significance evaluation factors of magnitude, geographic extent, duration, frequency, reversibility, ecological context and relevance, and cumulative effect.

The questions below may be used as a means of stimulating discussion when identifying and investigating the potential for important or uncertain environmental effects in relation to Parks Canada's legislated ecological integrity mandate.

Do the "potential cumulative impacts of all developments on the OUV of the property, including hydroelectric dams, oil sands development, and mining", either directly or through the alteration, disruption or destruction of ecosystem composition, structure or function:

- *Affect ecosystem composition, structure or function at spatial or temporal scales relevant to species or other ecological factors important to WBNP OUV?*
- *Threaten the continued existence of a native species population, or ecological community?*
- *Result in changes to native species composition or abundance outside of the natural range of variability?*
- *Affect key physical processes such as flooding and fire that support native biodiversity in disturbance regime type ecosystems?*
- *Affect changes to habitat parameters that reduce the availability of natural resources, or impair the ability of wildlife to fulfill normal life cycle requirements?*
- *Cause shifts in aquatic or terrestrial habitat structure outside the historic range of variability?*
- *Compromise the resistance or resilience of the system against natural or anthropogenic stressors?*
- *Impair the availability of renewable natural resources for traditional or other human use?*
- *Result in the introduction of pollutants or disease, or changes to other environmental parameters that impair human health, or the health of native biota?*
- *Result in the need for active management measures to sustain key ecosystem populations, structure or functions?*
- *Affect the ability of Parks Canada to achieve its protected areas ecological goals? And ultimately...*
- *Collectively impact PCA's ability to achieve desired outcomes, or states, required for maintenance of parameters important to the OUV of WBNP?*

These questions influence the SEA by helping to define appropriate spatial and temporal scales, identify factors to be assessed, gathering and analyzing information, and ultimately evaluating the importance of the various environmental effects, and effects pathways, on the OUV of WBNP.

A suite of VCs have been identified for each of the large scale projects that have undergone systematic environmental assessment review in recent years. The Site C Clean Energy Project is a recent example of such a review. The Contractor will need to determine the relevance of the VCs identified in these review processes, to the impact pathways that may affect WBNP OUV.

Parks Canada staff can provide background and context on these aspects of the assessment based on participation in past and current EA reviews of large scale industrial projects, and knowledge of WBNP ecology and landscape management. While this may provide a useful starting point for the strategic analysis, it will be necessary for the consultant to employ a methodical approach when identifying and analyzing industrial development and OUV environment interactions throughout the strategic assessment process. This will help ensure that all appropriate VCs have been identified and considered in the scope of this SEA.

Regardless of the environmental effects analysis methods employed by the contractor, Parks Canada requires an assessment of impacts from all regional developments upon the OUV of WBNP and will be looking for the same in all reports produced by the contractor.

5.6 Information Sources and Analysis

The Contractor shall use information sources and develop specific analytical tools as required to provide an objective analysis of potential impacts of current and proposed activities and projects on the OUV of WBNP. This may include use of relevant scientific literature, previous environmental assessments, local area and park management plans, expert advice, and the development and use of analytical tools such as matrices, predictive modelling, and geographic information systems. Traditional Knowledge (TK) sources should be included where the information is relevant to the OUV of WBNP.

Parks Canada will supply EI indicators and targets to the Contractor for use in this assignment.

5.7 Content of the Strategic Environmental Assessment Report

The Contractor shall document the results of SEA in a report that reflects the major topics described within these terms of reference. The report shall be complete with any graphics, mapping, or other analysis completed specifically for the purpose of the strategic assessment process.

The SEA report must clearly document the factors, and likelihood of WBNP OUV, being maintained in the presence of environmental impacts and stressors currently acting, and forecast to act on WBNP World Heritage Site.

This Terms of Reference includes the following key deliverables and milestones:

5.8 Milestones and Deliverables

Milestone 1: Review of Current Situation – Scoping and Scoping Document

The scoping document will lock in the scope of work to be conducted under this contract. The scope of work may be refined slightly as the work progresses, but the scoping document will substantially define the key requirements of the work to be undertaken by the Contractor.

The key focus of this milestone is to review the current conservation status of WBNP (Sources: Parks Canada State of Parks Reports + IUCN State of Conservation Reports + large project EA documents), and the key outcomes of environmental review of large scale industrial projects downstream or proximal to WBNP. Based on this information, scope the SEA to the aspects of WBNP OUV where there is a known link or a high probability of a link with development activities. Steps include:

- Review current information on WBNP OUV, State of Conservation, stressors and State of the Park;
- Review environmental assessment project records for development projects that may cumulatively impacts the OUV of WBNP;
- Prepare a scoping document.

Deliverable:

- A scoping document that clearly identifies at a preliminary stage of investigation, those aspects of current and proposed development activities that are, or may, produce impacts affecting WBNP OUV.

The Contractor should have a well-developed understanding of key issues upon completing the scoping report. The RMM is likely to provide important insights into issues affecting WBNP OUV so should be considered an important information source when developing the scoping document and SEA methodology. WHC and IUCN will prepare an RMM report upon completion of the Reactive Monitoring Mission. The RMM report is expected to be available in November 2016 a few months after commencement of the Contract.

Milestone 2: SEA Analysis and Initial Draft SEA Report Preparation

This milestone is to write and submit to PCA for review a well advanced draft SEA report for review and comment. The report should be comprehensive and include content in all areas that will be included in the final SEA report. Parks Canada will undertake a detailed review of this draft and provide written comments to the Contractor.

Deliverable:

- Preliminary SEA report (outline, approach, and initial draft of final SEA report).

Milestone 3: Final SEA Report Preparation

Prepare a comprehensive final SEA report based on continued analysis. Incorporate revisions as appropriate in response to comments received from Parks Canada based on a review of the initial draft SEA and ongoing dialogue with PCA staff while conducting the SEA.

The results of the Strategic Environmental Assessment shall be documented in a report that reflects the major headings within these Terms of Reference. The report shall be complete with any graphics, mapping, or other analysis completed specifically for the purpose of the strategic assessment process.

The SEA report will document the SEA process including sections describing:

- How cumulative effects assessment was integrated into all steps of the SEA process;
- How VCs were identified and assessed;
- The scope including relevant “critical factors” or “valued components” likely to be affected;
- Desired outcomes for all critical factors;
- The methodology and final results of the research and analysis;
- How potential VCs that did not carry through the assessment were determined to warrant dismissal;
- How significance of individual and cumulative effects was determined;
- A conclusion section summarising the key finding of the SEA;
- A list of recommendations of how impacts to WBNP OUV might be mitigated so the desired outcomes for OUV can be maintained or improved;

- A separate chapter on OUV as outlined in the IUCN World Heritage EA Advice Note.

The SEA analysis and report must be sufficiently detailed with respect to cumulative effects analysis so an independent third party reviewer is likely to find its content and conclusions to be reasonable, accurate, and defensible.

The final SEA report is the main deliverable of the Contract and will be part of Parks Canada's submission to the World Heritage Centre for review by the Advisory Body IUCN in response to the SEA requirement outlined in [Decision 39 COM 7B.18](#).

Excerpt from Decision 39 COM 7B.18

"The World Heritage Committee,

5. Requests the State Party to undertake a Strategic Environmental Assessment (SEA) to assess the potential cumulative impacts of all developments on the OUV of the property, including hydroelectric dams, oil sands development, and mining, in line with IUCN's World Heritage Advice Note on Environmental Assessment;

8. Requests moreover the State Party to submit to the World Heritage Centre, by 1 December 2016, an updated report, including a 1-page executive summary, on the state of conservation of the property and the implementation of the above, for examination by the World Heritage Committee at its 41st session in 2017."

6.0 RESPONSIBILITIES

6.1 Contractor Responsibilities

The Contractor must:

- Demonstrate neutrality and objectivity in conducting all phases of this work including assessing positive or negative environmental impacts of various projects and activities upon WBNP OUV.
- Provide all labour, materials, equipment, transportation and accommodation required to complete the work outlined in this contract unless otherwise stated within the Contract or agreed to in writing by the Contractor and Project Authority.
- Expeditiously undertake and complete all tasks ascribed to the Contractor as described in this ToR document.
- Seek direction from Parks Canada on any areas of the Contract that are uncertain prior to engaging in that aspect of the Contract.
- Submit all draft deliverables to the Project Authority who will coordinate review and input by PCA. Incorporate review comments and input into the final SEA report.
- Discuss any areas of conflicting input with the Project Authority if needed.
- Ensure all milestones are met in a timely manner.
- Ensure products and procedures adhere to this ToR and the Contract.
- Safe keeping and return of all materials provided by Parks Canada.

6.2 Parks Canada's Responsibilities

Parks Canada shall:

- Respond to Contractor requests for information and feedback in a timely manner, and provide clear direction on the desired deliverables for the Contract.
- Provide the Contractor with Parks Canada resource materials, and other relevant information, or information on how to obtain such materials.
- Arrange for input and review of draft products by Parks Canada staff, and provide input in a timely fashion.
- Provide the Contractor with access to all relevant documents in the possession of Parks Canada related to this project including, but not limited to: park management plans, policy and legislation documents, research reports, environmental assessment reports, maps and air photos, and digital data.
- Facilitate contractor access to Government of Canada scientists and experts relevant to this assignment.

7.0 SCHEDULE and WORKPLAN OVERVIEW

The Contract is to be completed as shown in the schedule below with deliverables achieved as per identified milestones.

Commencement

- Contractor begins the Work August-September 2016.
- Contractor attends teleconference or videoconference with PCA team for project start-up orientation meeting;
 - Overview and requirements of assignment.
 - Information and data/report sharing.
 - Roles and Responsibilities.

Scoping

- Initial scoping report document prepared and submitted to Parks Canada by December 31, 2016.
- Assessment Methodology.
- Assessment Framework and Timeline.
- Initial Information Collection and Analysis.

Impact Analysis

- Detailed analysis.

Refinement

- RMM report published in November 2016.
- SEA approach modified as needed based on direction in RMM report (minor adjustments anticipated, rather than substantial changes to approach or inputs).

Reporting and Closure

- Solid 1st draft of SEA report by March 31, 2017.
- PCA will submit comments on 1st draft SEA by May 15, 2017.
- Draft final SEA report submitted to PCA in July 2017.

- Final SEA Report submitted to Parks Canada no later than August 31, 2017.

The PCA team working on reviews of large industrial projects that may impact WBNP is highly decentralised (Gatineau headquarters; Vancouver satellite office; and field unit staff in Fort Smith and Fort Chipewyan NWT) and works mostly by teleconference and email. Interactions between the Contractor and PCA staff would utilise the same approach for communication.

8.0 ATTACHMENTS AND LINKS

1. Terms of Reference Joint World Heritage Centre / IUCN Reactive Monitoring Mission Wood Buffalo National Park (Canada) 26 May – 4 June 2016.
2. World Heritage Committee Decision 39 COM 7B.18 (included as Annex 1 of Attachment 1).
3. Statement of Outstanding Universal Value of Wood Buffalo National Park (included as Annex 3 of Attachment 1).
4. IUCN. 2013. WORLD HERITAGE ADVICE NOTE: ENVIRONMENTAL ASSESSMENT. 18 November 2013. https://www.iucn.org/about/work/programmes/wcpa_worldheritage/policies/env_assessment/
5. World Heritage Impact Assessment Principles (included within text of Attachment 6).
6. Parks Canada. 2010 Wood Buffalo National Park of Canada Management Plan. http://www.pc.gc.ca/eng/docs/bib-lib/~media/pn-np/nt/woodbuffalo/pdfs/wbnp-plan2010_e.ashx
7. Wood Buffalo National Park of Canada: State of the Park Report 2009 (Parks Canada 2009).
8. Consolidated Guidelines for Ecological Integrity Monitoring in Canada's National Parks (Parks Canada Agency 2011).
9. G. L. Worboys, M. Lockwood, A. Kothari, S. Feary and I. Pulsford (eds) (2015) Protected Area Governance and Management, ANU Press, Canberra. IUCN. <https://portals.iucn.org/library/node/45127>
10. CCME. 2009. Regional Strategic Environmental Assessment in Canada: Principles and Guidance. Canadian Council of Ministers of the Environment, Winnipeg, MB. http://www.ccme.ca/files/Resources/enviro_assessment/rsea_principles_guidance_e.pdf
11. CCME. 2014. Canada-wide Definitions and Principles for Cumulative Effects (2014). http://www.ccme.ca/files/Resources/enviro_assessment/CE%20Definitions%20and%20Principles%201.0%20EN.pdf
12. Peace-Athabasca Delta Ecological Monitoring Program (PADEMP). <http://pademp.com>
13. IUCN. 13 Nov 2014. IUCN Conservation Outlook Assessment Wood Buffalo National Park (Canada). Available http://www.worldheritageoutlook.iucn.org/search-sites/-/wdpaid/en/10902?p_p_auth=o2ZGqxaI

9.0 SUPPORTING REFERENCES

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Canadian Environmental Assessment Agency. 2015. Operational Policy Statement: Determining Whether a Designated Project is Likely to Cause Significant Adverse Environmental Effects under the Canadian Environmental Assessment Act, 2012. Available <http://www.ceaa-acee.gc.ca/default.asp?lang=En&n=363DF0E1-1>

Canadian Environmental Assessment Agency. 2014. Technical Guidance for Assessing Cumulative Environmental Effects under the Canadian Environmental Assessment Act, 2012. Available <http://www.ceaa-acee.gc.ca/default.asp?lang=en&n=B82352FF-1&offset=&toc=hide>

Church, Michael. December 2014. The Regulation of Peace River: A Case Study for River Management. ISBN: 978-1-118-90614-9. 296 pages. Wiley-Blackwell. <http://bcs.wiley.com/he-bcs/Books?action=index&itemId=1118906144&bcsId=9251/> The book includes a companion website with supporting data files on the regulation of Peace River at <http://blogs.ubc.ca/peacerriver/>

Commission for Environmental Assessment. April 2006. Voluntary Guidelines on Biodiversity-Inclusive Impact Assessment. Available <http://www.cbd.int/doc/publications/imp-bio-eia-and-sea.pdf>

IUCN World Heritage Advice Note: Mining and Oil/Gas Projects. 4 March 2013. Available http://cmsdata.iucn.org/downloads/iucn_advice_note_on_mining_in_wh_sites_final_060512_2_.pdf

Partidario, MR 2012. Strategic Environmental Assessment Better Practice Guide - methodological guidance for strategic thinking in SEA. Agência Portuguesa do Ambiente e Redes Energéticas Nacionais. Lisboa. Available http://ec.europa.eu/environment/eia/pdf/2012%20SEA_Guidance_Portugal.pdf

Privy Council Office and the Canadian Environmental Assessment Agency. 2010. The Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals. Available <http://www.ceaa.gc.ca/default.asp?lang=En&n=A4C57835-1>

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Timoney, Kevin P. 2013. The Peace-Athabasca Delta: Portrait of a Dynamic Ecosystem. The University of Alberta Press. ISBN-10: 0888647301. 608 pp. <http://www.amazon.ca/The-Peace-Athabasca-Delta-Portrait-Ecosystem/dp/0888647301>

WHC.15/01. July 2015. Operational Guidelines for the Implementation of the World Heritage Convention <http://whc.unesco.org/en/guidelines>