Parks Canada EIA Requirement Checklist

This template documents the initial analysis of the requirement for an EIA and is designed to be used with the EIA decision framework and a completed project description. Additional information (such as correspondence with local Parks Canada or other experts) can be appended as required. If you have any questions, please contact Jennifer.Carpenter@pc.gc.ca

Project Title: WLNP Kenow Wildfire Site Remediation

Project Location: Waterton Lakes National Park

Project File #: WLNP-2017-042

Proponent Contact Information: Sacha Osolo, 403-632-5166

Date of Request: 2018-06-20

Section A: No EIA Required

The project is exempted from EIA requirements under CEAA 2012 S. 70: (check the appropriate box)

- ☐ the project relates to matters of national security;
- ☐ the project is being carried out in response to a national emergency for which special temporary measures are being taken under the Emergencies Act; or
- ☐ the project is to be carried out in response to an emergency, and in the interest of preventing damage to property or the environment or in the interest of public health or safety.

The project is exempted from EIA requirements as the same project was previously assessed: (both boxes must be checked to apply this option)

- ☐ the previous EIA is adequate
- ☐ there is no change in information that would alter the results of the analysis.

The project is exempted from EIA requirements because an initial analysis has determined:

- ☐ there is NO potential for adverse effects to natural and cultural resources, including:
  - natural resources targeted in management objectives and ecological integrity monitoring indicators; listed species at risk, their residence or critical habitat. Additionally, the activity is not prohibited in a protection order under the Species at Risk Act.
  - cultural resources targeted in management objectives and identified in a Parks Canada cultural resource management document, or any structure, site or thing of historical, archaeological, paleontological or architectural significance.

OR

- ☐ potential adverse effects of the project are exclusive to cultural resources (including potential archaeological resources), and the Cultural Resource Impact Analysis (CRIA) will be used to assess impacts and determine appropriate mitigation measures.

Provide a concise explanation to justify the decision.

Click here to enter text.

If you have exempted the project from an EIA requirement by selecting one of the three options above, **Proceed to Section D.**

Section B: EIA Pathway Decision

The EIA pathway to be applied to the proposed project is:

- ☐ an approved alternate process (must be approved by VP PAEC)
- ☒ one or more approved Best Management Practices (BMPs)
- ☐ a Basic Impact Analysis (indicate if one or more BMPs are also being used)
- ☐ a Detailed Impact Analysis (indicate if one or more BMPs are also being used)

Insert the name of the approved alternate process and/or applicable BMPs and Continue to Section C.

Waterton Lakes National Park General Projects Best Management Practices modified for WLNP-2017-042: Parks Canada Agency Kenow Wildfire Site Remediation Program – Phase A.

Section C: Permitting Requirements

Indicate the types of permits that may be required:

☒ Development/Building ☐ Lease/License of Occupation ☐ Water Withdrawal ☒ Business License

☐ Add others as required (Fisheries Act, Navigation Protection Act, SARA authorization, etc.)

Section D: Cultural Resource Requirements

Indicate the types of Cultural Resource Impact Assessment that may be required:

- ☐ A separate request for Cultural Resource Impact Assessment must be submitted.
- ☐ No additional assessment is required. The accidental finds mitigation applies to all project activities.
- ☐ Cultural Resources (including archaeology) will be included as a Valued Component of the BIA or DIA.
- ☒ Archaeological Overview or Impact Assessment is required. (Attached)
- ☐ Additional mitigations related to Cultural Resources are indicated in section F below.

Section E: Recommendation and Approval

Prepared by (IAO name/position): Eri Hiraga, Environmental Assessment Officer	Date: 2018-07-04
Reviewed by: Edwin Knox, Cultural Resources Management Officer	Date: July 6/18
Reviewed by: Dennis Madsen, Resource Conservation Manager For: (S. MICNÉL, A/RCM)	Date: 2018-07-16
Recommended by (Project Manager name/position): Sacha Osolo, Project Manager	Date: 2018-07-24
Approved by (name of FUS, Director of a Waterway, or delegate): Ifan Thomas	Date: July 25/18

Signature (FUS, Director of a Waterway, or delegate):

(Note that EIA decisions regarding highway and waterway projects identified in Parks Canada's Investment Program may require joint approval with Associate VP, Asset Management and Project Delivery; however, the FUS/Dir. of a Waterway is responsible for issuing permits and authorizations for those projects).

Section F: Additional Comments
Adherence to mitigation measures in the BMP is a condition of project approvals. Project Scope includes site remediation activities at the following locations: 1. Gate House – Park Entrance 2. Heavy Equipment – Park Entrance 3. Sleep Shelters – Canyon Church Camp 4. Hospital – Canyon Church Camp 5. Director's Residence – Canyon Church Camp 6. Cook's Residence – Canyon Church Camp 7. Maintenance Shed – Waterton Lakes Golf Course Refer to the Archaeological Overview Assessment document for additional mitigation measures.
Section G: Attachments
• Project Description: Parks Canada Agency Kenow Wildfire Site Remediation Program • Waterton Lakes National Park General Projects Best Management Practices modified for WLNP-2017-042: Parks Canada Agency Kenow Wildfire Site Remediation Program • Archaeological Overview Assessment: Post-fire Contaminated Site Clean-up, Waterton Lakes National Park of Canada.

Project Description Template

Use this template to prepare a comprehensive description of a proposed project. Provide clear concise information as it will help determine the need for an environmental impact analysis (EIA). A well prepared project description will help move the project proposal forward efficiently. The level of detail should match the complexity of the proposed project and its potential to generate impacts of concern. Please include available designs and site photos.

If you have questions or need help contact the Impact Assessment Officer at the site where you are proposing work.

Project Title:

Project Contacts:

Parks Canada Agency – Sacha Osolo – 403 632 5166

Dillon Consulting – Andrew Thalheimer – 902 450 2008

Date of Request: 2018-06-20 **Proposed Project Start: 2018-08-08**

PROJECT DESCRIPTION *(to be completed by proponent)*

Project objective: *The project involves the remediation of 3 sites in Waterton Lakes National Park which were severely damaged by the 2017 Kenow wildfire. These sites are the Gate House, the Golf Course Maintenance Building and the Canyon Church Camp. Other sites such as the Alpine Stables, the former Visitor Reception Centre, the Compound helicopter landing pad and the salamander barriers have either been already remediated or are not contaminated based on test results.*

Project rationale (optional): *Burnt debris and contamination are known to be present at these 3 locations and it is incumbent upon the park to ensure the sites are remediated to the applicable environmental standards before they are re-opened to PCA staff and/or members of the public.*

Project location:

Primary Location: Gate House Areas

Footprint size: 350m²

Primary Location: Golf Course Maintenance Building

Footprint size: 400m²

Primary Location: Canyon Church Camp Sites

Footprint size:1,100m²

Project phases and activities:

The details of Contractor's construction methodology will only be confirmed after the contract has been awarded and a Work Plan has been submitted to Parks Canada for review, however the work at each site is expected to proceed in the following general order:

1. *Excavation and removal of all non-hazardous and hazardous waste materials for off-site disposal at a certified facility. The materials will be removed using heavy equipment and transported via covered dump trucks. In the case of the Canyon Church Camp, hazardous materials removal will involve Asbestos Abatement;*
2. *Break-up, transport and disposal of the concrete foundations from each site;*
3. *Excavation and removal of all contaminated soils for off-site disposal at a certified facility;*
4. *Sampling and verification by the Consultant (Dillon Consulting) to confirm the removal of all contamination from the site.*
5. *Import, placement and compaction of clean pit-run and topsoil materials to backfill the excavated areas at each site to the surrounding grade.*

The Contractor is required to locate, mark and cap any services (water, sewer etc.) found at each work site for possible future use by Parks Canada.

Project Environment

Other facilities that may be affected: N/A

Site history (previous use, contamination, buried tanks, lines, cables): Please see the draft Remedial Action and Risk Management Plan (RARMP) prepared by Dillon Consulting attached to this correspondence.

Known cultural resources (e.g. buildings, engineering works, landscapes and landscape features, historical and archaeological objects): N/A

Distance to nearest water body, water crossings, shoreline work:

The Gate House site is approximately 100m from the nearest water body i.e. Lower Waterton Lake. Canyon Church Camp is approximately 2km from the nearest water body i.e. Crandell Lake. The Golf Course Maintenance Building is approximately 300m from the nearest water body i.e. Lonesome Lake.

Fish & fish habitat: N/A

Species at risk, critical habitat, and residence of individuals (if any): N/A

Other species & habitat: N/A

Site photos or map attached: Please see attached Design Drawings

Red flags/ issues: N/A

Project timing: *details on proposed project schedule (Terms of Reference, contract package, construction phases & scheduling, in-service targets, reclamation activities).*

The Project Timing will be confirmed after the Contractor has submitted a Project Schedule for review however construction activities are expected to start in mid-August and last for 4-6 weeks.

Additional details (as required):

Potential for project to affect use of lands or resources by aboriginal persons (as relevant): N/A

Other jurisdictions or departments involved in project development, review & approval (as relevant): N/A

Project Description Template

Project Phases and Activities Table

Use this table to help identify phases of your project and associated activities.

	Phases	Examples of Associated Activities	Y / N	Details
Project Components	Construction / Site Preparation	Supply and storage of materials	N	
		Burning	N	
		Clearing	N	
		Demolition	Y	Concrete foundations at each site will be demolished.
		Disposal of waste	Y	Waste from each site will be disposed of at a licensed disposal facility
		Blasting/ Drilling	N	
		Dredging	N	
		Drainage	Y	
		Excavation	Y	
		Grading	Y	
		Backfilling	Y	
		Use of machinery	Y	Excavator, mini-excavator, skidsteer, dump trucks, packer
		Transport of materials/ equipment	Y	Debris and soil will be transported off-site via covered dump trucks.
		Building of fire breaks	N	
		Use of Chemicals	Y	Asbestos spray sealant may be used at the Canyon Church Camp site
		Set up of temporary facilities	Y	
		Other...		
	Operation/Implementation Decommissioning	Waste disposal	Y	
		Wastewater disposal	N	
		Maintenance	N	
		Use	N	
		Use/Removal of temporary facilities	Y	
		Use of Chemicals	Y	
		Active fire stage	N	
		Clean-up of prescribed burn	N	
		Planting	N	
		Culling	N	
		Vehicle Traffic	Y	Periodic traffic control may be required at key intersections such as where dump trucks enter and leave the highway.
		Other...		

Parks Canada Parcs Canada

Parks Canada
Waterton Lakes National Park
General Project Best Management Practices

May 2017

Version 2.0

Canada

Parks Canada Waterton Lakes National Park General Project Best Management Practices

Recommendation & Approval – Version 2.0

Compiled and authored by: Eri Hiraga Environmental Assessment Officer, Waterton Lakes National Park, Parks Canada Agency	Date:
Recommended by: Jennifer Carpenter Environmental Assessment Coordinator, Waterton Lakes National Park, Parks Canada Agency	Date:
Recommended by: Dennis Madsen Resource Conservation Manager, Waterton Lakes National Park, Parks Canada Agency	Date:
Approved by: <ORIGINAL SIGNED> Ifan Thomas, Superintendent, Waterton Lakes National Park / Bar U Ranch National Historic Site, Parks Canada Agency	Date:

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Definitions

Sensitive Features are any areas designated by the IAO or through the EIA process as locations that require additional care and consideration for project activities. Sensitive features are defined in the supplemental mitigations section. Examples of sensitive features include but are not limited to nests, dens and roosts, locations of cultural resources, critical habitat or residences for SAR, riparian areas, fescue grasslands, wildlife corridors, rare ecotypes, areas of management concern, etc.

Abbreviations

AIA	Archaeological Impact Assessment
AOA	Archaeological Overview Assessment
BIA	Basic Impact Analysis
BMP	Best Management Practices
CABIN	Canadian Aquatic Biomonitoring Network
CCME	Canadian Council of Ministers of the Environment
CEAA	Canadian Environmental Assessment Act
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CRZ	Critical Root Zone
DBH	Diameter at Breast Height
DFO	Department of Fisheries and Oceans
DIA	Detailed Impact Analysis
EAS	Environmental Alignment Sheets
EI	Ecological Integrity
EIA	Environmental Impact Analysis
ERP	Emergency Response Plan
ESCP	Erosion and Sediment Control Plan
GBSA	Grizzly Bear Secure Areas
HDD	Horizontal Directional Drill
IAO	Impact Assessment Officer
IDA	International Dark-Sky Association
LED	Light-emitting diode
LEED	Leadership in Energy and Environmental Design
PCA	Parks Canada Agency
PM	Project Manager / Functional Manager of Project
RAP	Restricted Activity Permit
SAR	Species at Risk
SARA	*Species at Risk Act*
SO	Surveillance Officer
TPZ	Tree Protection Zone
UNESCO	United Nations Educational, Scientific and Cultural Organization
UV	Ultra-violet
VC	Valued Component
WLNP	Waterton Lakes National Park

Introduction

The *Waterton Lakes National Park General Project Best Management Practices* will allow an identified suite of project activities to be undertaken in such a manner that there will not be resulting significant adverse environmental effects.

The Best Management Practice (BMP) pathway is applied when there is a suite of routine, repetitive projects or activities, with well understood and predictable effects. This fulfils Parks Canada's obligations under the *Canadian Environmental Assessment Act 2012* as a manager of federal land, see the **Guide to the Parks Canada EIA Process**. The BMP maximizes efficiency through creation of a pre-approved impact assessment for the defined suite of projects, to which standard mitigation and environmental management measures can be applied.

The *Waterton Lakes General Project Best Management Practices* can be applied in the following ways:

- Direct application: Use as is when the proposed project falls within the scope of the BMP(s) and its application will ensure there are no significant residual adverse effects.
- Application along with supplemental mitigations: Additional mitigations or slight modifications are required to ensure all potential impacts are mitigated and to provide project-specific clarifications (e.g., critical timing windows, contact information, SAR or cultural resources considerations). Supplemental mitigations are outlined in the supplemental mitigations section or by filling in check boxes in the appropriate sections of the BMP.
- Application as part of a Basic Impact Analysis (BIA) or Detailed Impact Analysis (DIA): where one or more BMPs may not address all the potential adverse effects of a proposed project, Field Units can apply the BMP(s) as part of a BIA or DIA.

The impact assessment officer (IAO) will review a proposed project and advise the functional manager of the project if and how this BMP should be applied. The IAO's advice will be based on whether the project falls within the scope of the BMP, and whether application of the mitigation measures in the BMP will adequately address potential adverse effects of the project. The IAO will also be responsible for adding any required supplemental mitigations to ensure site specific considerations are addressed.

Project Managers are responsible for ensuring all mitigation measures applicable to the project are added to the terms and conditions of any permits or contracts issued for the project.

The IAO must ensure the project, IA pathway applied and determination are recorded in the Parks Canada National Impact Assessment **Tracking System**.

Project Managers are responsible to ensure all mitigation measures applicable to the project are added to the terms and conditions of any permits or contracts issued for the project.

These BMPs have been compiled from a number of available documents, as listed at the end of this document, and have been adapted to address the predictable effects of routine, repetitive project or activities within the Waterton Lakes Field Unit.

Scope of Application

This BMP outlines the impact analysis of repetitive and routine projects[1]. Site security, worker safety and visitor safety are not included in the scope of this document. If a project involves some or all of below activities, and the initial assessment of site and project indicate "the project is unlikely to result in significant adverse environmental effects" the BMP can be applied. Projects that this BMP would likely be applied to include:

- The proposed maintenance, repair or upgrade of an **existing** development.
- **New** projects with restricted footprints that do not include sensitive habitats.
- Proposed restoration of **new** and **existing** developments.

For projects where further EIA is warranted, this BMP may be utilized as part of the mitigation package for the analysis. Therefore, this document also presents a minimum standard to provide consultants and contractors for environmental protection measures on work sites. In these cases, additional protection measures and mitigations may be required.

Exceptions

Supplemental analysis and/or mitigations are required for the following project activities:

- New projects or developments in natural areas;
- Projects adjacent to sensitive features;
- Work that may impact aquatic or terrestrial wildlife habitat connectivity, such as new fences or culverts;
- Physical works immediately adjacent to the international boundary;
- Elongation of culverts; realigning water courses; dredging; or work below the high water mark of a fish bearing water body;
- Bridge projects needing work to occur below the High-Water Mark[2], with permanent; alteration to the water course, such as replacement of piers/abutments or permanent installation of structures on the bed of a water body;
- Greater than 5% increase in land use footprint (e.g. project expansion); and,
- Work which might adversely impact any potential or established Aboriginal and Treaty rights or traditional use[3].

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[1] For repetitive and routine projects on roadways, highways and parkways, refer to the Parks Canada National Best Management Practices - Roadway, Highway, Parkway and Related Infrastructure.

2 High-water Mark is the usual or average level to which a body of water rises at its highest point and remains for a sufficient time so as to leave a mark on the land. (Fisheries and Oceans, 2015).

[3] Parks Canada must engage in additional and separate consultations with Aboriginal groups if there is a possibility of a project adversely affecting established or potential Aboriginal or Treaty rights. This is required to fulfil federal government responsibilities in upholding the honour of the crown. If there is uncertainty regarding the need for Aboriginal consultation with respect to a project, refer the matter to Parks Canada Legal Services for advice. Guidance on consultation may be sought from the **Aboriginal Affairs Secretariat** and from the guidance document "**A Handbook for Parks Canada Employees on Consultation with Aboriginal Peoples**".

If the project has the potential to have an adverse effect on the critical habitat of a species at risk (with endangered, threatened, or extirpated status) the project will require a separate environmental impact analysis.

If the project has the potential for **residual** adverse effects on a listed species at risk (including effects to individuals and residence of the individuals) the project will require a separate environmental impact analysis.

Note: If there is any uncertainty regarding potential adverse effects to species at risk, consult a member of the **National Office Species Conservation team**.

Approved Geographic Area of Application

This BMP is intended for use on projects completed in Waterton Lakes National Park (WLNP).

Roles and Responsibilities during Construction

The following is a select list of key roles that will be in place during the construction program[4]. The responsibilities of the key roles are not limited to those that are stated below, as this is a select list of roles most relevant to compliance with environmental commitments and regulations for projects where the proponent is the Parks Canada Agency (PCA).

Project Manager (PM)

The Project Manager is accountable to deliver the project and is responsible for managing risk, scope, time and budget. The Project manager is the Technical Authority and is the contractor's unique point of contact. The Project manager reviews and develops contract change order and supporting documents and conducts pre-construction meetings and chairs project team meetings. Note that where the proponent of a project is external to Parks Canada, a functional manager of the project within the Agency is designated.

Project Inspector

The Project Inspector reviews plans for compliance to building codes and development guidelines. The Project Inspector performs inspections on behalf of the Project manager and monitors contract compliance in consultation with procurement office. The Project Inspector is responsible for keeping daily logs.

Project Leader

The Project Leader is accountable for the overall success of the project. The Project Leader recommends approval to proceed to the construction phase and approves changes in scope, budget or schedule in consultation with Procurement Officer.

Impact Assessment Officer (IAO)

The Impact Assessment Officer is responsible for drafting and/or reviewing the EIA and ensuring that the scope of work of the environmental analysis complies with Parks Canada's responsibilities under the *Canadian Environmental Assessment Act* 2012 as well as all other

[4] The list of roles and key responsibilities have been modified from the PCA document *Construction Site Roles and Responsibilities.*

relevant regulations and guidelines. The IAO may also function as the SO for project construction.

Surveillance Officer (SO)

The Surveillance Officer is responsible for on-site surveillance of the work in accordance with the Parks Canada EIA and environmental regulations and guidelines. The SO will provide direction regarding environmental assessment / environmental infractions or emergencies through the Project Manager unless necessary. As the Parks Canada representative for environmental concerns, the SO may consult with relevant specialists to determine appropriate implementation for mitigation measures. The SO has the authority to stop work for National Parks Act violations, however, during normal operations does not give direction to the Contractor.

Consultants

Consultants recommend contract amendments, reviews and approves shop drawings and provides advice on project compliance. Consultants perform inspections on behalf of the Project Manager.

Environmental Consultants

Under the direction of the IAO, environmental consultants are responsible for producing deliverables as required for the Project, including, but not limited to: Environmental Impact Assessment, site-specific mitigation strategies, Environmental Alignment Sheets (EAS), Environmental Management Plan.

Prime Contractor

The Prime Contractor is responsible for developing a site-specific Occupational Safety and Health Management Plan. The Prime Contractor is responsible for guarding the health and safety of those working on and visiting the site through implementing occupational safety and health induction training. The Prime contractor also obtains materials and labour necessary to successfully complete the project. The Prime contractor will engage and plan the work of sub-contractors and acquire all necessary licenses and permits, provide any required EIA construction planning documents for review (see **Submissions Section**) and record minutes of site meetings.

Banff Dispatch 403-762-1473

911 proves 24-hour emergency dispatch services and will connect callers with emergency or other Parks Canada services as required (e.g., Warden/Law Enforcement Services, Duty Officers). Banff dispatch at 403-762-1473 can be used for 24 hour notification to Parks Canada in non-emergency situations. When calling, if unsure what services you require, request a Waterton Duty Officer.

Environmental Overview

Environmental Setting

Waterton Lakes National Park (WLNP) occupies approximately 505 km^2 in the southwest corner of Alberta in the southern Rocky Mountains. WLNP forms part of the Waterton-Glacier International Peace Park, and is a designated UNESCO World Heritage Site due to its significant ecological, scenic and cultural values. The park is rich in biodiversity, which includes 1001

vascular plant species, 23 fish species, 6 amphibian species, 4 reptile species, 62 mammal species and over 250 bird species.

As part of the Crown of the Continent ecosystem, WLNP makes up part of a north-south wildlife corridor including migratory bird and bat flight pathways (Lausen 2012). Five ecoregions - foothills parkland, montane, lower subalpine, upper subalpine and alpine – are represented within WLNP boundaries.

Ecological Integrity

Ecological Integrity (EI) is defined in the Canada National Parks Act 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".

The indicators used to assess EI in WLNP include: Forest, Freshwater, and Grasslands. Measures of these indicators are summarized and include: Terrestrial Birds, 5-Needled Pine – Health Transects, Area Forest Area Disturbed by Fire, Sensitive Species Secure Habitat, Multi-species Mammal Occupancy, Stream Biotic Health (CABIN), Lake Fish Index, Water Quality, Amphibian Occupancy, Stream Fish Community Index, Grassland Birds, Non-Native and Native Plants, Grassland Extent, Elk, and Grassland Area Disturbed by Fire.

Species at Risk

WLNP is host to a number of species that are Endangered, Threatened and Special Concern under Schedule 1 of the *Species at Risk Act* (SARA). Species listed as Endangered, Threatened and Special concern under COSEWIC, as well as the Alberta *Wildlife Act* are also considered in managing species at risk within WLNP. A list of species at risk and defined and proposed critical habitat within WLNP is found in the **appendices**.

Components of the environment that may be affected

Potential effects from projects occurring within WLNP are well understood and predictable. They include:

Water Resources:

- Adverse modifications to surface drainage patterns
- Reduced water quality due to increased erosion, sedimentation, transportation of debris and contamination (i.e. from leaks and accidental spills, etc.)
- Physical alteration of aquatic habitat

Soil/Land Resources:

- Change in slopes, landforms and landscape
- Soil compaction and rutting
- Slope instability due to increased soil exposure and improper excavation and storage
- Soil contamination

Air quality:

- Decreased ambient air quality (i.e. from dust, equipment emissions, etc.)
- Increased ambient noise levels
- Temporary increased levels of CO_2 and other pollutants
- Temporary increased localized temperatures from paving and equipment operation

Vegetation:

- Damage to and/or removal of vegetation in immediate or adjacent areas
- Introduction of non-native species populations, or expansion of existing populations

Wildlife:

- Introduction of non-native species populations, or expansion of existing populations
- Wildlife sensory disturbance causing displacement/preferred habitat avoidance
- Wildlife habituation/attraction to artificial food sources
- Impeded/altered wildlife movement
- Damage to nests/disruption of nesting animals
- Mortality from project activities
- Damage to the quality of nesting / spawning / roosting habitats

Cultural Resources:

- Adverse effects on the heritage value or character-defining elements of a cultural resource
- Impacts to archaeological resources (known or potential)

Visitor Experience / Safety

- Decreased quality of visitor experience due to temporary area closures, operation of equipment, sensory disturbance
- Potential impacts to visitor safety due to construction activities

Mitigation Measures

To use the document efficiently, keep the activity mitigation lists that apply to the project expanded and collapse the other activities by clicking on the section titles, print this as a pdf or paper document and include this section with the EIA determination record. This will reduce the overall size and scope of the mitigations to present to contractors and project managers. Supplementary mitigations specific to the project can be defined at the beginning of the mitigations section.

Choose all that apply to project. Each title is hyperlinked to the related section.

Modules

Mitigation Package

Parks Canada Waterton Lakes National Park General Project Best Management Practices
Recommendation & Approval – Version 1.5
Modified for: WLNP-2017-042: WLNP Kenow Wildfire Site Remediation

Contact Information

Project Manager:

Sacha Osolo: 604-789-7991

Impact Assessment Office: 403-859-5185
Jennifer Carpenter: 403-632-5167
Eri Hiraga: 403-632-6071
Erin Rowlands: 403-632-5046

First Contact Authority (for SPILLS):
First Contact Authority: 780-422-4505
OR 1-800-222-6514

Parks Canada Emergency Dispatch:
Banff Dispatch: 403-762-1473

24-hour Emergency Dispatch*:
Police, Fire, Ambulance: 9-1-1
* In an Emergency, 9-1-1 operators can also notify Banff Dispatch.

1. Supplementary Mitigations

Include any supplemental, or site-specific mitigations

1. Vegetation Removal is not part of the scope of the project. Vegetation Removal requires the approval of the Surveillance Officer and is required to comply with mitigation measures in Section 7 (Vegetation Removal Mitigation Measures).

2. The fire has removed vegetative ground cover throughout the park. As such, the soils are particularly sensitive to erosion. Avoid travelling on burnt soils and work from hardened surfaces to the extent possible.

3. Restore sites with topsoil and seeding only in areas where the likelihood of redevelopment is low (i.e., Golf Course Maintenance shed, Heavy Equipment area). In areas where redevelopment is likely (i.e., Canyon Church Camp, Gate House), confirm with PCA representative and Surveillance Officer before commencing topsoil placement and restoration.

4. Seeding of the disturbed areas will be completed by PCA following placement of topsoil by contractors in the approved locations. Seedmix will be determined by the Vegetation Ecologist.

2. Environmental Surveillance

2.1. All projects are subject to environmental surveillance by the SO to ensure that mitigation measures as outlined through the EIA process are implemented during all phases of construction, including clearing, grading, construction, cleanup, and restoration.

2.2. The SO will report deficiencies to the PM and summarize site visit observations in a surveillance report. The surveillance report will be filed into a database to supplement information for restoration activities in the future.

2.3. The Prime Contractor is responsible for keeping the SO informed of project activities and will notify the SO prior to the following activities:

- Vegetation clearing and soil stripping < 30 m from sensitive features;
- Activities in and < 30 m from water;
- Species at risk mitigation measures;
- Rare plant mitigation measures; and
- As otherwise outlined in the project EIA.

3. Submissions

3.1. Check box of attachments / plans required prior to the start of construction.

Attachments / Plans	Required	Responsible Party	Reviewer and Submission Deadline
Environmental Alignment Sheets	☐		
Erosion and Sediment Control Plan	☐		
ERP (Emergency Response Plan)	☒	Contractor	As specified in the contract specifications
Spill Response Plan	☒	Contractor	As specified in the contract specifications
Fire Contingency Plan	☒	Contractor	As specified in the contract specifications
Avalanche Safety Plan	☒	Contractor	As specified in the contract specifications
Site-specific Mitigation Details	☐		
Restoration Plan	☐		
HDD or Geotechnical Drill Plan	☐		

4. Erosion and Sediment Control Plan

4.1. An Erosion and Sediment Control Plan (ESCP) will be prepared that covers all construction and restoration periods.

4.2. The requirements for an erosion and sediment control plan can be scaled to the scope and associated risks of the project, as determined by the IAO or SO.

4.3. The Erosion and Sediment Management Plan will be developed by a qualified professional and is subject to approval of the IAO.

Timing of Works

4.4. Schedule work to avoid extreme wet, windy and rainy periods that may increase erosion and sedimentation.

4.5. Avoid soil disturbing activities during periods with saturated soils, periods of runoff, high rainfall intensity, high winds, or wet snow. Temporarily stop work when wet ground conditions contribute to erosion and sediment transport.

General Mitigations

4.6. Erosion control measures that prevent sediment transport into any waterway, water body or wetland shall be implemented by the contractor.

4.7. Identify high risk areas or components of the project including areas with fine-grained soils, sandy deposits, slopes, shallow soils, or adjacent to sensitive features (e.g., riparian areas).

4.8. Identify sources of potential runoff (e.g., ditches, slopes) from within the construction site or from upslope areas. Construct and maintain structures to deflect sources of runoff from entering areas of exposed soils (e.g., diversion ditches, vegetative filter strips).

4.9. Acquire necessary erosion and sediment control equipment (i.e., landscaping fabric, sediment fences, coir rolls etc.) and install prior to risk of sediment transport.

4.10. Minimize slope lengths and angles, promote surface roughness on slopes, and avoid designs and construction practices that result in smooth, uniform slopes. Incorporate texture and organics into the cover of slopes to reduce soil erodibility.

4.11. Plan project activities to minimize soil handling.

4.12. Limit equipment movement over exposed soils.

4.13. Avoid activities that contribute to soil compaction and use practices that roughen and decompact soils to promote infiltration.

4.14. Ensure all activities are conducted at least 30 m from waterbodies wherever possible.

4.15. Minimize extent of vegetation cover removal and grubbing. Clearly mark construction boundaries to prevent accidental damage to vegetation.

4.16. Where vegetation cannot be retained, apply soil covers to erodible areas (granular materials, mulches, tackifier, tarps). Note that tarp covers may not be suitable at most locations in WLNP where high winds are common.

4.17. Minimize the length of time soils are exposed and complete work in one area before commencing work in another area.

4.18. If vegetation clearing is scheduled early due to timing windows, grubbing should be delayed until just prior to construction activities, in order to maintain soil stability.

4.19. Initiate replanting of disturbed areas immediately after construction is completed.

4.20. Ensure all erosion and sediment control devices are weed free. Straw and hay based erosion control is not permitted.

4.21. Avoid use of coconut matting due to ungulate hoof entrapment.

4.22. Maintain and repair all erosion and sediment control structures in a timely manner. If the design of the control measures is not functioning effectively they are to be repaired.

4.23. The site will be secured against erosion during any periods of construction inactivity or shutdown.

4.24. Install all erosion and sediment control devices according to Typical Drawings included in ESCP. Typical Drawings must be on site and available at the request of the SO.

Minimum Requirements

4.25. The minimum requirements of an erosion and sediment control plan include consideration of:

- Project design and spatial concept of environmental sensitivities (e.g. watercourses, wetlands, steep slopes etc.);
- Erosion prevention procedures (e.g., project schedule, minimization of work area, site management, ground cover measures);
- Sediment control measures (e.g. sediment fences, check dams, sediment traps, etc.) including specifications and Typical Drawings of sediment control structures;
- Detailed plans for instream works including site isolation measures and project timelines;
- Water management plans including site control, equipment necessary and proposed dewatering locations;
- Locations of erosion and sediment control measure application;
- Monitoring of prevention and control measures and corrective actions (e.g., repairs).
- Removal of non-biodegradable materials once site is stabilized.

5. Emergency Response Plan Module

5.1. The general emergency contact for WLNP is 9-1-1.

Spill Response Plan

5.2. The Prime Contractor is responsible for ensuring that a Spill Response Plan is developed prior to start of work and the plan is subject to approval of the IAO.

5.3. The Prime Contractor is responsible for ensuring that spill kits sufficient to contain and clean up 110% of the site's largest possible fuel / chemical spill must be retained on site at each location of potential spills (sites where equipment is working).

5.4. The Prime Contractor is responsible for ensuring that all crew members and sub-consultants on site receive a briefing about the Spill Response Plan and are aware of the location and use of spill kits and containment devices.

General Mitigations

5.5. Avoid work in high risk areas, particularly in areas of high water table, steep slopes or in close proximity to streams.

5.6. Have spill containment equipment on-hand and ensure that all personnel are aware of their location and trained in their use.

5.7. Absorbent booms must be immediately available on site during works in and near water.

5.8. Ensure all construction equipment is free of leaks from oil, fuel or hydraulic fuels. See **General Activities** module for the requirements for equipment inspection by the SO prior to entry to WLNP.

5.9. The crossing of any waterbody (including wetlands) by construction equipment, or the use of such equipment within waterbodies is strictly prohibited unless prior approval has been confirmed from the SO.

5.10. Designate refuelling areas at least 100 m away from any water body. Refuelling activities should not be conducted where run-off could carry contaminants into drainage pathways (including storm sewers).

5.11. Hazardous or toxic products shall be stored no closer than 100 metres from streams, wetlands, water bodies or waterways.

5.12. Equipment will be fuelled on hardened surfaces wherever possible.

5.13. Spill kits shall be provided at re-fuelling, lubrication, and repair locations.

5.14. Dispose of contaminated materials at provincially certified disposal sites outside of WLNP. No treatment of contaminated soils (e.g., bioremediation) is allowed in WLNP. All applicable documentation demonstrating proper disposal will be provided to Parks Canada.

5.15. If potentially hazardous materials (e.g. cement-based products, sealants or paints) are used on site ensure raw material, mixed compounds and wash water are not released to any watercourse or soils. Secondary containment measures such as collection/drip trays and berms lined with occlusive material such as plastic and a layer of sand, and double-lined fuel tanks are required.

5.16. All gas generators and water pumps require secondary containment. Electric pumps are preferred.

5.17. Follow all applicable regulations and codes for the management and handling of hazardous waste.

5.18. The costs involved in a spill incident (the control, clean up, disposal of contaminants and site remediation to pre-spill conditions), shall be the responsibility of the Prime Contractor. The site will be inspected by the SO to ensure completion to the expected standard and to the satisfaction of Parks Canada.

5.19. Timely and effective action shall be taken to stop, contain and clean-up all spills as long as the site is safe to enter. In the event of a major spill, all other work shall be stopped and all personnel devoted to spill containment and clean-up.

5.20. The SO shall be notified immediately of any spill. In the event of a major spill, Banff Dispatch (403-762-1473) shall be notified immediately along with the First Contact Authority (1-800-222-6514).

A major spill is defined below:

Material	**Immediate Notification Requirements**	**Written Spill Report Requirements**
Any deleterious substance that enters a water body of any type (e.g., stream, lake, wetland, drainage, sewer) or poses a threat to human safety (e.g., slippery road, explosive hazard, poisonous gas).	**Any Quantity, notify the SO and Banff Dispatch.**	**Required; Major Spill**
Any substance that is hazardous or toxic to the environment including but not limited to, waterproofing agents, grout, cement, concrete finishing agents, hot poured rubber membrane materials, asphalt cement, sand blasting agents, paint, solvents and hydrocarbons (e.g., fuel, grease, hydraulic fluid).	<100 L, immediately notify the SO. > 100 L, immediately notify the SO and Banff Dispatch.	At the discretion of the SO. Major Spill if not contained. Required; Major Spill

Minimum Requirements

5.21. The Spill Response Plan must at minimum, include the following information:

- List of products and materials that are considered or defined as hazardous or toxic to the environment. Such products include, but are not limited to, waterproofing agents, grout, cement, concrete finishing agents, hot poured rubber membrane materials, asphalt cement, sand blasting agents, paint, solvents and hydrocarbons.
- required equipment on site and location of spill kits;
- spill prevention procedures (i.e., containment and storage of materials, security, handling, use and disposal of empty containers, surplus product or waste generated in the application of these products in accordance with all applicable federal and provincial legislation);
- fuelling procedures, fuel storage;
- spill response (i.e., containment, clean-up, disposal of contaminated materials, etc.);
- spill reporting procedure; and
- up-to-date emergency response contact list including contact information for reporting spills.

Spill Reporting Requirements

5.22. Immediate spill reports are verbal notifications and must include all available information. Follow-up written spill reports must include the following:

- Prime Contractor Name
- Name and Contact Number
- Location and time the spill occurred
- Type and quantity of the substance spilled
- Cause of the spill
- Size of area the spill spread to
- Was the spill in water or on land
- Does the spill have potential to enter a water body
- Detail of immediate action taken to control the spill
- Additional actions required or ongoing to control the spill
- Any restoration required at the spill site
- Names of PCA representatives that were present at the spill site

Fire Contingency Plan

5.23. An emergency fire contingency plan is required for projects where risk of fire exists (e.g. for operations on dry grassland habitats) as requested by the IAO in consultation with the Fire Management Officer.

5.24. Fires or burning of waste materials is not permitted.

5.25. The Prime Contractor is responsible for ensuring that all crew members and sub-consultants on site receive a briefing about the Fire Contingency Plan and are aware of the location of emergency equipment, such as fire extinguishers.

5.26. Where an emergency fire contingency plan has been requested, the prime contractor should provide, at minimum the required equipment as defined in the Schedule of the *Alberta Forest and Prairie Protection (Ministerial) Regulation.*

5.27. The fire contingency plan must at minimum contain the following information:

- required equipment on site;
- fire prevention procedures;
- initial response;
- fire reporting procedure; and
- up-to-date emergency response contact list.

Table 1 Adapted Alberta Forest and Prairie Fire Protection (Ministerial) Regulations AR 65/2017, Schedule

Required Equipment for Fire Control	People Employed at the Site of Operations									
	1	2	3	4	5	6-10	11-20	21-30	31-40	41+
Shovels	1	1	2	2	3	5	10	15	20	Same as 31-40 plus increase as required by SO in consultation with the Parks Canada Fire Management Officer.
Back pack with pump	1	1	1	2	3	5	10	15	20	
Axe or Pulaski	1	1	1	1	2	5	10	15	20	
Fire pump	0	0	0	0	0	0	0	1	1	
Fire hose (metres)	0	0	0	0	0	0	0	450 m	450 m	
Power saw	0	0	0	0	0	0	0	1	1	

Avalanche Safety Plan

5.28. Before work commences in a workplace where there is or may be a risk from an avalanche to a person working in the workplace, an avalanche risk assessment must be completed.

5.29. If an avalanche risk assessment identifies an avalanche risk zone, no work may be conducted in the avalanche risk zone at any time when snow conditions have the potential to create an avalanche unless an avalanche safety plan has been developed and implemented.

5.30. If the avalanche safety plan is drafted by the Prime Contractor, it must be approved by Parks Canada Avalanche Forecasters.

5.31. In some situations the Prime Contractor may be permitted to work under the Parks Canada Avalanche Safety Plan provided that this has been communicated to the WLNP Visitor Safety Technician and acknowledged in writing.

5.32. The Prime Contractor is responsible for ensuring and documenting that all crew members and sub-consultants have the required certification and training for work in avalanche terrain, as outlined in the Avalanche Safety Plan.

6. General Activities Mitigations Module

Construction activities involve the use of laydown/staging areas, equipment operations, storage and handling of hazardous materials. Potential adverse effects include: alteration of vegetation, erosion and sedimentation, constriction for wildlife movements and introduction/spread of non-native vegetation.

6.1. All employees must attend an environmental briefing with a SO before beginning work at the site to review and explain the mitigations that are conditions of the

project approvals. Employees must attend this briefing before beginning their work at this site.

6.2. All equipment and vehicles will be made available for inspection by the SO on arrival to WLNP. The Prime Contractor will give 48 hours' notice and schedule equipment inspection with the SO. Water trucks require a written restricted activity permit from the SO to enter the Park. The permit is received at initial inspection.

Construction Timing / Visitor Experience

6.3. Confine construction activities to hours set below, and if possible to periods of low visitation in order to reduce sensory disturbance to wildlife and visitors.

6.4. Time activities to minimize vehicle conflicts on access roads (*i.e.*, where possible, schedule activities so that equipment operations does not disrupt traffic flow; result in wildlife collisions).

6.5. All Parks Canada designated speed limits apply to construction vehicles. Additional speed restrictions may be required to protect wildlife and visitor safety.

	Required	Location(s)	Notes
Additional Speed Limits	☐		
Work Hour Restriction	☐		
Designated Truck Routes	☐		

Timing Windows

6.6. Timing windows to reduce erosion, maintain compliance with the *Migratory Birds Convention Act*, *Fisheries Act*, *Species at Risk Act* and may be part of best practices to reduce erosion and environmental effects. See detailed mitigations for timing windows under **Erosion and Sediment Control**, **Vegetation Removal** and **Buildings** modules where these activities are part of project works. A summary of these restrictions is made below.

Consideration	Applicable	Restricted Window	Notes
Migratory Bird General Breeding Period	☒	April 1 to August 31	Vegetation Removal is not part of the scope of the project. Vegetation Removal requires the approval of the Surveillance Officer and is required to comply with mitigation measures in Section 7 (Vegetation Removal Mitigation Measures).
Bat Maternity Roost Activity Period	☐	April 1 to August 31	
Bat General Activity Period	☐	April 1 to October 31	
Amphibian Calling Window	☐	April 15 to June 15	
Bull Trout Restricted Work Periods	☐	August 31 to August 15	
Other Fish Species Restricted Work Periods	☐	Consult IAO	
Grassland Dormancy	☐	October 1 to February 28	

Consideration	Applicable	Restricted Window	Notes
Additional Timing Considerations (e.g., weed seed set, soil protection)	☐	Dry late summer and fall conditions	

Work Site Conditions/Staging/Laydown

6.7. Minimize vegetation-clearing activities and ground disturbance by staging on existing hardened areas wherever possible.

6.8. Delineate the work zone; clearly mark the limits to active construction, sensitive features and the access and egress locations.

6.9. The Prime Contractor is responsible for security and safety of the work site.

6.10. Strong winds are a regular occurrence in WLNP. Prevent materials from blowing off of work site.

6.11. If contamination is found, cease work immediately and if necessary, implement Emergency Response Plan.

Wildlife Observations and Encounters

6.12. Notify the SO immediately of any dens, litters, nests, carcasses (road kills or other), wildlife encounters, or carnivore (bears, wolves or cougars) observations on or around the worksite.

6.13. If wildlife is observed at or near the work site, allow the animal(s) the opportunity to leave the work area to the surrounding habitat and away from areas of potential conflict.

6.14. If potentially dangerous wildlife (e.g., bear, cougar, wolf, deer, sheep) persistently enter the work area or display aggressive behaviour, the contractor will immediately stop work, notify 9-1-1 or Banff Dispatch (1-888-WARDENS), and safely evacuate the area.

6.15. Contractor will make bear spray, bear spray training, and wildlife awareness training mandatory to all workers on site.

6.16. Secure all materials that might attract wildlife (e.g. petroleum products, human food, recyclable food and drink containers and garbage).

6.17. No feeding, baiting or luring of any wildlife (including bears, small mammals, birds); do not approach or harass wildlife in any way. Notify the SO immediately if wildlife obtain garbage or human food. If wildlife get into attractants that have been intentionally or accidentally left out, individuals or the contractor could be charged under the *Canada National Parks Act* Regulations.

Equipment Operations & Fuelling

6.18. Equipment movements and workers' private vehicles shall be restricted to the designated footprint of the construction area.

6.19. Protective measures, including using appropriately sized equipment, or protective access matting must be employed if entry into wet areas is required.

6.20. Due to the importance of fescue grassland within WLNP, vehicles must not be driven onto any open grassland areas unless it has been designated by the SO as a parking area prior to construction activities.

6.21. Machinery must arrive on site in a clean and dry condition and be maintained free of fluid leaks, vegetative material (*i.e.,* invasive species, noxious weeds) and soils from off-site. All construction equipment from outside WLNP will be washed prior to arrival to minimize the risk of introducing weeds or aquatic invasive species. Additional weed-cleaning stations may be designated by the SO depending on project activities and locations (see table below).

	Required	Location(s)	Notes
Are additional weed cleaning stations required?	☒	All other sites	Minimize the movement of soils and vegetative material on equipment between sites by removing as much soil and vegetative materials as feasible prior to moving equipment between sites.

6.22. Inspect equipment daily for fluid/fuel leaks and maintain equipment in good working order.

6.23. Equipment fuelling and maintenance sites will be identified by the Contractor and approved by the SO. Fuelling should occur on hardened areas > 100 m from streams, wetlands, waterbodies or watercourses. Fuelling personnel shall maintain presence at and provide immediate attention to the fuelling operation.

6.24. Mobile fuel containers (e.g., slip tanks) shall remain in the service vehicle at all times.

6.25. Operate machinery on land above the high water mark, on ice, or in another manner that minimizes disturbance to the banks and bed of any water body.

6.26. Limit machinery crossing (fording) a stream or watercourse to a one-time event (i.e., over and back), and only if no alternative crossing method is available. If repeated crossings of the watercourse are required, construct a temporary crossing structure in compliance with the *Fisheries Act*.

6.27. For fording equipment without a temporary crossing structure, use stream bank and bed protection methods (e.g., swamp mats, pads) if minor rutting is likely to occur during fording.

6.28. Use temporary crossing structures or other practices to cross streams or water bodies with steep and highly erodible (e.g., dominated by organic materials and silts) banks and beds.

6.29. Equipment that will work adjacent to or within a stream or watercourse should be free of external grease, oil or other fluids, excessive mud, dirt and vegetation before entering the work area.

Small Equipment

6.30. All small equipment (e.g., chainsaws, mowers, etc.) should be kept in good working condition and free of oil and fuel leaks.

6.31. Where possible, chain oil should be vegetable-based.

6.32. Fuelling of chainsaws will take place outside of riparian areas and sensitive features.

Site Clean Up/Waste Disposal

6.33. Clean tools and equipment at an appropriate off-site facility to prevent the release of wash water that may contain deleterious substances.

6.34. Sweep up loose material or debris. Any material that may pose a risk of contamination to soils, surface water or groundwater should be disposed of appropriately off-site.

6.35. No construction waste (sawdust, soil, vegetation, debris, pumped water, hydrocarbon, chemicals, cement, asphalt, etc.) shall be allowed to enter an aquatic habitat or be deposited on undisturbed lands unless the said lands are part of the project works and approved for temporary waste storage.

6.36. Construction, trade, hazardous waste and domestic waste materials shall not be burned, buried or discarded at the construction site or elsewhere in WLNP. These wastes shall be contained and removed in a timely and approved manner and disposed at an appropriate waste landfill site located outside WLNP.

6.37. Construction waste storage containers, shall be emptied when 90% full. Waste containers will have lids, be wildlife proof if containing attractants, and waste loads shall be covered while being transported.

6.38. Sanitary facilities, such as a portable container toilet, shall be provided and maintained in a clean condition. Sanitary facilities must be in good condition, and located away from sensitive resources including water bodies.

6.39. Camping and other recreational activities at the work site by contractors is not permitted without prior approval from the IAO and the Project Manager. These activities, if deemed appropriate, are conditional upon specific mitigations that address risks to wildlife, safety and any other additional environmental effects.

Air Quality Mitigations

6.40. Diesel equipment used on the project shall be fuelled with low sulfur diesel fuels and shall conform to local emission requirements.

6.41. Minimize idling of engines at all times.

6.42. Schedule dust generating activities during periods with lower wind speeds.

6.43. Ensure fine materials being transported are covered and protected.

Cultural Resources

6.44. All work in WLNP is subject to the accidental finds clause whereby on finding any unexpected Cultural Resources, workers shall stop work in the immediate area and notify the SO. Parks Canada's Terrestrial Archaeology section will provide advice and assessment of significance and determine requirements to mitigate the chance find. Examples of archaeological artefacts encountered in WLNP include buried bison bones, stone tools, and above ground cairns.

6.45. Where deep excavation is planned within the townsite, notify the Parks Canada Terrestrial Archaeology section to coordinate a site visit to look at the subsurface deposits with buried soils whenever possible.

6.46. If applicable, follow additional mitigations outlined in the Cultural Resources Impact Assessment.

	Required	Location(s)	Notes
Are additional mitigations for cultural resources required?	☒	Canyon Church Camp	Any work exceeding the existing disturbed footprint may require additional review. Archaeological monitoring is required at the Canyon Church Camp where clean-

			up involves ground disturbance outside of the Church camp building's disturbed footprints outlined in the project clean-up plan. Refer to the Archaeological Overview Assessment for further details.

7. Vegetation Removal Mitigations Module

Project activities that may alter or remove vegetation include mowing, brushing, and landscape maintenance activities, non-native species management, fire hazard reduction and prescribed burn operations and pre-construction site clearing. Grubbing (stump and root removal) may be required to prepare the ground surface for other activities.

Wildlife Timing Windows

All vegetation, including grassland, has the potential to provide habitat for wildlife. Applicable timing windows for individual project vegetation removal is listed under the **General Activities Mitigations Module**.

7.1. The regional bird/songbird nesting period in WLNP is **April 1 to August 31**. Avoid all vegetation removal during this time. If vegetation removal is scheduled to occur within this period, the SO may complete pre-work surveys for nesting migratory birds. See **appendices** for regulatory guidance and detail on the MBCA and SARA.

- Nesting surveys must be completed within 7 days of project activities.
- There is a **risk of delays** to project activities due to the presence of nesting migratory birds.
- If a nest is found during the pre-work surveys, the vegetated area will be left intact with a suitable sized protected buffer until the young have left the nest and vicinity. Size of buffer is species dependent, to be determined by the SO in consultation with federal regulatory guidance.

7.2. Vegetation clearing can negatively impact bats in spring and summer. The timing windows for avoidance of vegetation removal activities in WLNP is April 1 to August 31 for vegetation likely to support roosting bats. If vegetation removal is scheduled to occur within this period, the SO may complete pre-work surveys for bat roosts.

- Roosting surveys must be completed within 7 days of project activities.
- There is a **risk of delays** to project activities due to the presence of bat roosts.
- If a potential bat roost is located, a site-specific mitigation strategy must be developed dependent on the type of roost and species present, to be determined by the SO in consultation with federal regulatory guidance.

7.3. Vegetation removal can negatively impact amphibians and reptiles, especially during breeding, transformation and important movement periods within and close to wetlands.

- If vegetation removal is to occur within 300 m from a confirmed or potential amphibian breeding wetland, or within 500 m from a confirmed SAR amphibian

breeding wetland, additional impact analysis may be required and site-specific mitigations developed.
- If vegetation removal is scheduled to occur during non-frozen conditions, the SO may complete an amphibian and reptile ground search immediately prior to equipment activities.
- If ground disturbance activities are scheduled to occur in frozen conditions, amphibian exclusion fencing may be required in the preceding fall season at the discretion of the SO.

Other Timing Considerations

7.4. Where ground disturbance accompanies vegetation removal, time activities to minimize soil handling, soil compaction, and erosion potential. Avoid extreme dry windy and wet conditions.

7.5. In areas with weed infestations, reduce weed spread through vegetation removal prior to seed set.

Vegetation Removal Mitigations

7.6. If previously unidentified sensitive features are found during construction, immediately stop work and notify the SO (e.g., raptor nest).

7.7. Vegetation removal should be limited to the minimum area required for safe operations during construction or to meet the objectives of the clearing activities (i.e., fire breaks, sight lines etc.).

7.8. Minimize full removal and retain vegetation when possible to reduce erosion.

7.9. Retain 30 metre vegetated buffer around sensitive features; where disturbance is unavoidable < 30 metres, a restoration plan is required and the SO must be on site during disturbance activities.

7.10. Do not deposit debris in water bodies.

7.11. Limbing must be completed using the appropriate equipment to minimize damage to the tree (i.e., using a hoe bucket to limb trees is not appropriate as it can cause the bark to tear and can make the remaining tree vulnerable to diseases and rot).

Tree removal

7.12. Safety of workers and the public is the first priority for all tree removal operations. In consultation with the SO, felling of snags or hazard trees outside the designated work area may be permitted, where required for safety of fellers.

7.13. Unless approved by the SO due to site-specific limitations be felled away from sensitive features, such as watercourses, wetlands, riparian zones, or ecological features.

7.14. Ensure tree limbs/stumps are flush cut as close to the ground or stem as possible.

7.15. Fallers should assess each tree individually for critical wildlife features such as nests or cavities. Notify the SO if unexpected features are identified.

7.16. Mechanical falling can be used where it is determined that machines will cause minimal site degradation, due to suitable soil conditions, or on a site that is to be developed for future access or facilities.

7.17. Mechanical falling may be preferable on sites with numerous hazard trees to be retained for their habitat values, or where mechanical falling equipment can be used

to minimise soil disturbance and better direct fallen trees away from environmentally sensitive areas.

7.18. Logs and other salvage materials are to be conveyed to and placed at a storage site without spread of debris or damage to other standing trees or landscape resources outside the marked clearing or storage limits. They shall not be skidded through wetlands, waterways or water bodies.

7.19. During the grubbing component, stumps, roots, imbedded logs and other non-soil debris shall be pulled and shaken free of loose soil and rocks before transport.

7.20. Where possible, preserve identified wildlife trees by limbing or topping if they are not assessed as hazard trees.

Disposal of Vegetation Debris

7.21. All debris that is not being disposed of on-site must be removed as soon as possible from the project footprint, by transporting off-site for disposal.

7.22. If temporary storage is required, store debris on already disturbed areas to minimize footprint of disturbance.

7.23. All vegetation containing non-native species will be bagged and removed off site to disposal facility.

7.24. Firewood must be salvaged and bucked and stacked at the government compound as per the specifications.

8. Soil Handling Mitigations Module

To successfully complete restoration of disturbed areas, and protect areas from erosion, proper soil handling and backfilling procedures must be followed. Post excavation and stripping soil and vegetation restoration mitigations should be applied. See Section 10 of this BMP for **Soil and Vegetation Restoration**.

8.1. All soil handling activities require consideration of erosion and sediment control. **See ESCP Section**.

Soil Stripping

8.2. No stripping shall occur outside of the delineated work area or within 1 metre of the drip line of existing forest.

8.3. Stripping close to any watercourse, water body or wetland shall employ methods to ensure materials are not pushed, do not fall or erode into the water or wetlands.

8.4. Soil must be stripped in accordance with the **ESCP**. Key components for soil stripping are:

- Minimize soil movement and handling at all times.
- Strip topsoil under dry conditions, whenever possible.
- In the event of a work program shutdown during inclement weather (e.g. winter conditions unfavourable for construction, heavy rain events, construction delays, etc.) contingency planning for bared soils or excavated material stockpiles is required.

Excavation

8.5. All trenches or ditches left unattended overnight must be fenced or covered to prevent wildlife entrapment or provide appropriate egress for wildlife.

8.6. Workers must inspect trench for trapped wildlife prior to backfilling. If trench has been left open for > 24 hours, SO must be notified and time allowed for the SO to complete additional inspection for trapped wildlife such as salamanders.

8.7. Materials shall be placed at storage sites or on the grade without spillage outside the working limits. Any material inadvertently falling outside the work limits is to be removed promptly in a manner that does not damage trees or vegetation.

8.8. Special precautions may have to be taken during excavation in the vicinity of intermittent or active drainage channels.

8.9. Minimize changes to the ground surface that affects its infiltration and runoff characteristics and maintain/re-establish effective surface drainage on completion of the project.

8.10. Backfill and compact excavations as soon as possible. Optimize degree of compaction to minimize erosion and allow for re-vegetation.

8.11. To limit over compaction, use equipment which minimizes surface disturbance including low ground pressure tracks/tires, blade shoes and brush rake attachments.

8.12. All excavations will remain free of water (see **dewatering mitigations**).

Excavated Material Storage

8.13. Allow space for separate storage of topsoil and spoil; where space is available, separate stored topsoil from spoil by at least 1 m. Use appropriate material (e.g., geo-textile) to separate soil components where space is limited.

8.14. Topsoil from separate ecotypes or areas of the project may not be mixed without approval of the SO (i.e., grassland soils must be kept separate from forested soils).

8.15. Topsoil may be stored on hardened surfaces, geo-textile material, in topsoil storage containers or directly on undisturbed vegetation. If storage occurs on vegetation, material recovery by hand may be required.

8.16. Topsoil should be stockpiled on the uphill side of the disturbance on sloped terrain and away from any grades, subsoils, spoil material, construction activity and day to day operations.

8.17. Construct barricades to prevent losses on steep terrain (>18°, 3:1).

Excess Materials and Waste (Overburden Removal)

8.18. Remove excess excavated material from site where it cannot be used for the final grading of the area. Site specific arrangements must be made for disposal locations and procedures of overburden.

8.19. Surplus excavated material may be used to fill depressions around the project site providing topsoil is stripped before filling, with approval from SO.

9. Soil and Vegetation Restoration Mitigations Module

Almost all projects activities included in this BMP will require some ecological restoration- *the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed.* The restoration plan can be a simple application of the following mitigations and can be at the site or both at the site and in concert with another site designated to offset the

permanent impact of a project. A restoration plan is required for all projects but the scale and scope can be adapted to that required by the project (i.e., BMPs, site restoration plan, etc.). Restoration works can often be considered projects in and of themselves. Soil and vegetation restoration must apply the principles of effective, efficient and engaging solutions.

Restoration Plan

9.1. Develop restoration plan as part of the project scoping and specifications prior to project approvals.

9.2. Ensure that the appropriate restoration materials are available as needed immediately following construction activities.

9.3. The restoration plan will be subject to the approval of the IAO, who will be responsible for consulting with the Park Vegetation Ecologist.

9.4. The restoration plan should the following minimum information

- Site description;
- Site-specific restoration goals and objectives;
- Schedule of clean-up activities;
- Timing of restoration activities;
- Restoration Standards; and
- Follow-up Protocols (i.e., supplemental seeding, native transplants, weed control, etc.)

Timing Windows

9.5. Complete initial seeding as soon as possible.

9.6. Supplemental planting should be timed for the species and location. Seeding in the fall allows for full scarification of the seed over the winter. Consider using seed that requires shorter scarification times for spring and summer applications. Transplants may do best in the spring and summer and can require watering or other maintenance.

9.7. Time weed control measures to prevent seed propagation.

Topsoil Replacement

9.8. Implement restoration plan for the disturbed area immediately following completion of construction.

9.9. Minimize soil movement and handling to protect existing native seed bank.

9.10. Replace topsoil to all areas immediately following fine grading.

9.11. Do not compact topsoil.

9.12. Backfilling should allow settling to prevent depressions however, long term roach piles on linear disturbances should be minimal.

9.13. Imported soil may be used as a last resort and must be from a supplier that has been inspected and approved by the Park Vegetation Ecologist. Methods of improving vegetation succession using locally sourced, weed and contaminant free materials are preferred.

9.14. Slopes to be seeded should be no steeper than 2 horizontal to 1 vertical (2:1) and covered with a minimum of 5 cm (2 inch) of topsoil. Finish grading should always follow top soil placement. Maintain structure (i.e., rocks, roots, woody debris) in topsoil.

9.15. Where remaining soils are unstable due to steepness or soil characteristics, immediate installation of sod or other erosion control is required.
9.16. Methods of bioengineering such as terracing, willow staking, live pole drain systems should be assessed as solutions where soils are steeper or remain unstable.

Soil Amendments

Fertilizer Application

9.17. Avoid use of fertilizer to limit non-native vegetation growth and allow for local species to use available nutrients.
9.18. If needed use locally sourced mycorrhizae compost teas to improve vegetative success, as approved by WLNP vegetation ecologist.

Topsoil substitute

9.19. Apply an organic cellulose only amendment as a soil substitute if restoration standards are not being met within the defined time frame.
9.20. Determine the type of organic amendment based on the site-specific requirements (e.g., peat moss, compost) at the discretion of WLNP vegetation ecologist.

10. Water Withdrawal and Dewatering Mitigations Module

Construction often requires the use of water; many common methods of excavation and site isolation require dewatering. Temporary, short term water withdrawal provides an efficient uncontaminated water source for local project sites. Dewatering can allow sites to be effectively dry during construction, reducing the impact of sediment laden water entering fish bearing waters.

Additional Permits

10.1. All water withdrawal requires a Restricted Activity Permit issued by the IAO.

Equipment Cleaning

10.2. All hoses, pumps, intake hoses, or equipment from outside of WLNP must be clean and dry on arrival and require approval and inspection by the SO prior to use in WLNP (see **General Activities Section**).
10.3. Do not bring equipment into WLNP from areas that have known infestations of aquatic invasives (e.g., USA, east of Saskatchewan).
10.4. Thoroughly clean water trucks, hoses, pumps and intake hoses using clean HOT WATER with as much pressure as possible.
10.5. If last use of equipment was out of province, allow hoses, pumps and intake hoses to dry completely and then remain dry (ideally for >20 days).

Water Withdrawal

- Water withdrawal is not permitted from a natural waterbody or watercourse.
- Water is available at the stand-pipe at the operations compound.

Dewatering

10.6. A site specific dewatering plan is required be provided before commencing a pump-out sump to dewater excavation sites with specific details on how and where the water will be discharge.

10.7. Site specific mitigations may be required depending on the conditions of the discharge area, freezing conditions operation, overflow avoidance, decanting and settlement pond restoration.
10.8. Water containing suspended materials shall not be pumped into watercourses, drainage systems or on to land, except with the permission of the SO.
10.9. Soil and vegetation erosion protection is required for water pumped on to land.

11. Buildings & Structures

These mitigations are currently in development. Consult with the IA Office for more information.

General Activities

11.1. As appropriate for project activities, a Phase I Environmental Site Assessment and/or hazardous material survey must be completed by qualified personnel. Mitigations to safely and effectively manage any impacts of hazardous materials on people or the environment will require additional project planning (e.g., asbestos, ground contamination).
11.2. If building systems will incorporate glycol or antifreeze, ensure design includes containment and spill response plan. If risk to aquatic habitat cannot be mitigated, use alternative system.
11.3. Refer to **Section 2, Project Planning and Design** for addition mitigations related to building design.
11.4. Be aware that high winds are common in WLNP and all materials need to be secured to prevent materials from blowing off site, particularly during high risk activities such as roofing.

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Appendix 1 Regulatory Guidance

Jurisdictions

While all projects on lands managed by Parks Canada must adhere to Federal law and regulation, it is considered best practice to refer to local community, regional, provincial regulation and best practices where federal guidance is silent and/or attempt to meet those targets if it can reduce the overall impact of the project.

Some of the project activities reviewed have potential environmental impacts that are addressed by various provincial, federal and territorial acts and regulations. All activities must meet current environmental law and regulations in their design and construction. The following is a brief description of some of the key federal acts and regulations. Further review, understanding and application of other federal, provincial and territorial environmental laws are part of a rigorous approach to project planning and execution.

Canada National Parks Act and Regulations-Parks Canada

All work inside National Parks and Protected Areas must be performed in accordance with the laws and regulations set out in the *Canada National Parks Act* and Regulations. This includes the requirement for most activities described to only be done under a permit such as: business licence for contractor, disturbance of natural objects, travel in restricted areas, special events or use of disposal sites.

Fisheries Act - Fisheries and Oceans Canada

If a project is to be conducted near water, it is the proponent's responsibility to ensure they avoid causing **serious harm to fish** in compliance with the ***Fisheries Act***. The **advice in on the Fisheries and Oceans website** will help a proponent avoid causing harm and comply with the Act.

If the water body in the project area has fish or is connected to waters at any time that have fish the project must meet the **self-assessment criteria on the Fisheries and Oceans website**, if not a project review can be made by Fisheries and Oceans Canada to assess whether the project requires authorization or authorization can be requested directly. Given the level of detail required for a review and/or authorization request the EIA officer may need to consider a more involved EIA pathway in those circumstances.

Migratory Bird Convention Act – Environment Canada

The purpose of this Act is to implement the Convention by protecting and conserving migratory birds - as populations and individual birds - and their nests. Section 6 - prohibits the disturbance, destruction, or taking of a nest, egg, or nest shelter of a migratory bird.

In Canada, the general nesting period may start as early as mid-March and may extend until end of August. This is a general nesting period that covers most federally protected migratory bird species. This period varies regionally across Canada mainly due to differences in species assemblages, climate, elevation and habitat type. Generally, the nesting period is delayed in more northerly latitudes, corresponding to vegetation development and food availability. (Environment Canada, 2014). To help with determining regionally relevant periods where nesting is likely to occur, Environment Canada is publishing estimated regional nesting periods within large geographical areas across Canada referred as "nesting zones". These periods are

estimated for each zone and consider the time of first egg-laying until the young have naturally left the vicinity of the nest. Field Units may wish to refine this section and add their known local nesting periods.

Species at Risk Act

If a species listed under the *Species at Risk Act* (SARA) is found within the project area, any potential adverse effects from the proposed project to the individuals of the species, their residences and/or their critical habitat must be understood. Species at risk considerations require specific expertise, due to additional legal requirements under the SARA and CEAA 2012. If the projects or activities to be addressed by the BMP could affect a listed species or its critical habitat, the EIA officer may need to consider a more involved EIA pathway in those circumstances.

Archaeological Overview Assessment : Three locations,

WLNP-2017-042 Kenow Wildfire site remediation project

Prepared by Bill Perry, Archaeologist, Terrestrial Archaeology, IACHD, Parks Canada

June 27, 2018

This document acts as an update on recommendations first forwarded by the author on September 27, 2017 (Perry 2017). For detailed recommendations and requirements please consult that document. For purposes of archaeological recommendations for:

1. Gate house areas
2. Golf Course Maintenance Building
3. Canyon Church Camp Sites

The following interventions are ***required***:

Table 1

Project	
Gate house	The project's landform has moderate archaeological potential. **Any remedial work that goes beyond the present disturbed footprint (including utility lines) will need to be monitored by Terrestrial Archaeology. In all previously disturbed areas, Accidental Finds protocol (see below) will be applied.**
Golf Course Maintenance shed	The project's landform has limited archaeological potential. **Any remedial work that goes beyond the present disturbed footprint (including utility lines) will need to be monitored by Terrestrial Archaeology. In all previously disturbed areas, Accidental Finds protocol (see below) will be applied.**
Canyon Church Camp sleep shelters hospital utility building	Site 1486R is the historic Canyon Church Camp and outlying buildings. The landform has archaeological potential (evidenced by adjacent Indigenous campsite 656R). Many of the camp buildings were historic and the remaining lodge was built in 1944 by local builder Carl Carlson and Japanese Canadian Prisoner of War labour. **The contaminated cleanup that involves ground disturbance outside of the Church camp building's disturbed footprints outlined in the project cleanup plan will require archaeological monitoring.**

The archaeological monitoring requirement for the Canyon Church Camp is based on archaeological potential of the landforms and presence of known nearby archaeological sites and **is required only for areas outside of previously disturbed areas**. If required, depending on time commitments and project scheduling, the recommended archaeological monitoring **may be able** to be covered in-house depending on project scheduling and availability of PCA Archaeology staff. Terrestrial Archaeology has a Standing Offer list that can facilitate a contractor in relatively short notice if required.

Accidental Finds

As archaeological testing is by nature sampling (not 100 percent coverage) there could be a chance, however low, that features or artifact concentrations are encountered in the course of work. If cultural features (i.e., structural remains and/or artifact concentrations) are encountered when a professional archaeologist is not onsite, work should stop in the immediate area, photographs and a GIS reading should be taken, and the Parks Canada project

manager informed. The project manager should then contact Parks Canada's Terrestrial Archaeology section for advice and assessment of significance that will in turn determine what will be required to mitigate the chance find.

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