



Basic Environmental Impact Analysis

Highways Rock Scaling Program, Banff, Yoho and
Kootenay National Parks
2013-003K

Lake Louise, Yoho and Kootenay Field Unit

Date: February, 2013





1. PROJECT TITLE	Highways Rock Scaling Program	
2. PROJECT LOCATION (Park, Site, Canal, NMCA)	Banff, Yoho and Kootenay National Park of Canada	
3. PROJECT SITE(S)	<p>In 1997, an environmental assessment was completed for a rock scaling project on the Kootenay Parkway (1997-0007K), where the majority of the work was conducted on the rock cut in Sinclair Canyon (approximately two kilometres north of Radium). An addendum was prepared in 2004 (2004-0020K) to address environmental impacts to the rubber boa, a species at risk, from rock scaling work proposed above the Hot Springs Pool. Again in 2008, an addendum was prepared to address environmental impacts associated with the installation of an erosion control mesh/mat above an existing chain link fence. A final addendum was included in 2010 to cover blasting operations associated with rock scaling. All mitigations outlined in those EAs will apply to this project. Rock scaling is a routine maintenance procedure to reduce the amount of rockfall onto the highway, and in turn, risks to public safety and annual maintenance costs.</p> <p>In 2013, the scope has been altered to include additional rock scaling locations:</p> <ul style="list-style-type: none"> • Sinclair Canyon • Locations on the Icefields Parkway (highway 93N) • Locations on the TCH in Yoho National Park <p>And to include rock disposal locations:</p> <ul style="list-style-type: none"> • Pit 69 • Settler's Pit • Hector Pit • Ottertail Pit • Field Sand Pit • Niblock Pit 	
4. PROPONENT	Parks Canada Highways Service Centre	
5. PROPONENT CONTACT INFORMATION	Ryan Syme, Project Manager, Banff, 403-760-1334	
6. PROJECT DATES	Commencement: it is anticipated that project activities will be conducted during the Spring/Summer and/or Fall of 2013	Completion: Fall of 2013
7. INTERNAL PROJECT FILE #	2013-003K (Rockscaling KNP, YNP): Amendment of 1997-0007K	
8. PROJECT DESCRIPTION (For help completing this section see instructions at end of document)		
<p>The areas identified for rock scaling have all been scaled in the past and are part of an ongoing scaling program to maintain the highway infrastructure and ensure public safety.</p> <p>Planning</p> <p>Work is based on 2012 field assessment of slope stability (<i>Re-inspection of rock cuts and soil slopes – Kootenay National Park, Yoho National Park, Icefields Parkway</i>, EBA Engineering, 2012). Areas scheduled for work are of high or moderate</p>		





priority. Recommended actions include scaling, trimming, bolting and ditch cleaning. A qualified engineer has inspected the sites and the proposed work is feasible. Fewer or more sites may be completed depending on bids received.

Mobilization

Crew of up to 10 will be on-site, including supervisor, scalers, equipment operator, blaster, flag people. Equipment required will be loader, excavator, dump-trucks, rock drill, compressors, generators, traffic control vehicle, support trucks, ropes and hand tools.

All equipment will be brought to site via most direct route. Equipment will be staged in gated areas or pull-outs. If public areas are used a safety assessment will be done and if necessary the area will be closed to the public for the duration of work at that location. Temporary roadside signage will be installed. Crew will be housed in local accommodations. A pre-work briefing will be held to ensure familiarity with the job, safety and environmental concerns.

Slope Stabilization

Scaling – loose rock will be hand scaled using pry- bars and other hand tools. Workers will be roped and harnessed and work the slope from top anchors. Anchors will be rock when possible; trees may be used as well. Scaling will include removal of deadfall, shrubs and trees from the slope being cleaned. Small hand-placed explosives may be used to loosen larger rock masses. Crew size will be a minimum of 4 scalers and supervisor. Highway closures will be required to protect public. Closures will generally be limited to 20 minutes or less. Trained and certified flag persons will provide traffic control. Crews and equipment may set up temporary work space in ditch areas and road-side pull-outs.

Trimming

Larger masses of rock with the potential to release and land on the Highway will be removed using mechanical equipment or explosives.

Bolting

Potentially unstable masses of rock can sometimes be stabilized using rock bolts, long steel rods drilled into the rock to bind it together. Rods are grouted in place using resin or cement. Steel plates are sometimes placed over the end of the bolt to provide a larger surface area.

Ditch Cleaning

Accumulations of debris in ditch reduce their effectiveness at trapping rockfall and reduce public safety. Ditches will be cleaned using a loader and hoe. Guardrails and rock fences may be temporarily removed to permit this activity. Rock disposal via dump truck will be at previously disturbed and identified locations: Pit 69, Settler's Pit, Hector Pit, Ottetail Pit, Field Sand Pit and Niblock Pit depending on budget and scope. At night or on weekends equipment will be placed well off highway or into nearby pull-outs. There may be closures of some pull-out areas for storage of equipment and materials.

Clean-up

All scaled rock will be removed to disposal locations, guard-rails and fences replaced. Highway will be cleared of any residual debris and temporary signage removed. Damage to road surface will be patched and repaired by contractor if required as part of regular road maintenance program.

9. ENVIRONMENTAL COMPONENTS LIKELY TO BE AFFECTED (For help completing this section see instructions at end of document)

This basic impact analysis will consider environmental impacts at the immediate area (site) level. Socio-economic and cumulative effects will be at the regional (park) level.





Environmental effects on wildlife (Bighorn Sheep) have the highest potential significance during this project. Sheep migrate from their winter range to their summer range through Sinclair Canyon between March and June. Females are pregnant and close to bearing young at this time of year and are particularly susceptible to disturbance. Minor adverse effects on air quality and wildlife disturbance are anticipated during the period of work, with no residual impacts expected. No impacts are considered likely to cultural or aquatic resources.

.1 Overview

The rock cut stabilization work will be dealing primarily with unstable sedimentary rock formations. These slopes are actively eroding, have been scaled before and have very little vegetation. The slopes are high angle with little forage value, therefore see little use by large or small mammals. Access to work areas will use adjacent less steep and less disturbed areas with greater potential for environmental impacts. Waste rock disposal sites are previously disturbed, unvegetated areas, immediately adjacent existing linear disturbances such as the Hwy and Railway.

.2 Eco-Sites / Vegetation

Work associated with this project will take place within the lower sub-alpine (Hwy 93, TCH) and montane (Kootenay) ecoregions. There are two potential areas of concern for vegetation resources; non-native plants and disturbance of rare plants.

Four areas considered for scaling that have known weed issues are:

- 17.7 to 18.0 17.5 km Toadflax and Knapweed in S ditch
- 34.4 to 35.20 35.2 Tansy and Orange Hawkweed in S ditch
- 35.3 Orange Hawkweed in S ditch
- 37.592 to 38.077 38.7 Leafy Spurge and Orange Hawkweed in S ditch.

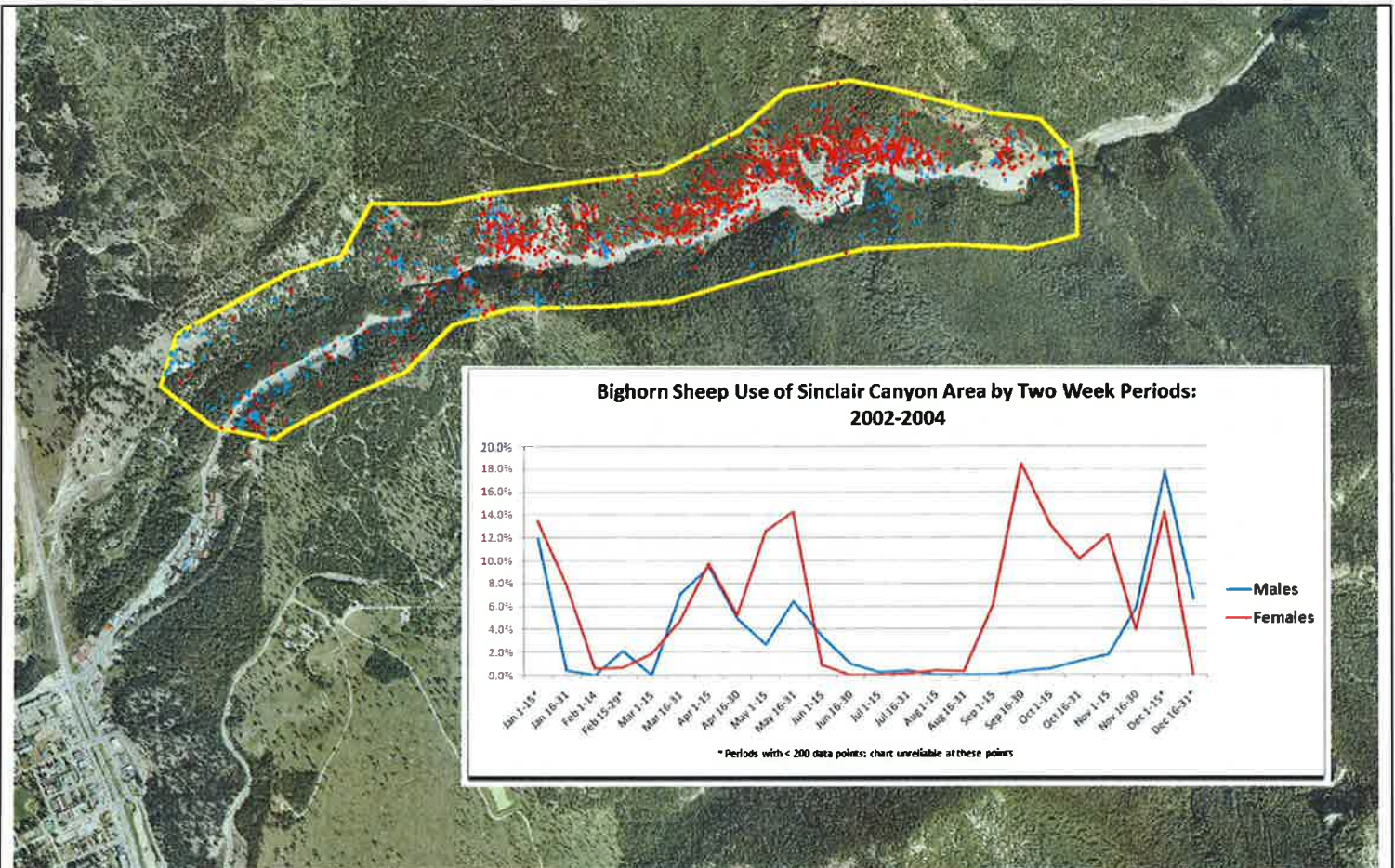
Disturbance from rock scaling operations could further disturb these sites and cause further distribution of these non-native species.

There is little information about the status of rare and listed species in the proposed scaling areas in Yoho and the Icefields Parkway. There are no current records of rare species in these areas but there is significant vegetation on some of these sites and they have the potential to house protected plants. Consultations with experts seem to indicate that there is low probability of rare plants occurring here.

.3 Wildlife

As stated, Bighorn Sheep make extensive use of Sinclair Canyon, especially during the spring and fall months as they travel between summer and winter ranges. In the spring, female sheep are pregnant and particularly susceptible to disturbance. Loud noises and interruption to their movements could have significant consequences for these listed species. The concern is especially significant between May 1- June 15.





.4 Aquatics

There will be no work or disturbance to streams with the scaling project so no effects are anticipated for aquatic resources.

.5 Cultural Resources

Pictograph sites in Sinclair Canyon have been identified in previous EA's as well as mitigations for dealing with those resources. Cultural resource specialists have been consulted and no other sites appear to have significant uses.

.6 Human Use

Both sites are adjacent busy highways and the work is necessary to prevent damage or injury to Highway users caused by uncontrolled rock-fall from the slopes. The Highways Service Centre is aware of traffic volumes on these highways during the summer months, the importance of positive visitor experience and the problems that closures can cause on a busy highway.

All sites are highly visible from the highway and will be observed by millions of people each year.

There is no traditional use, resource extraction use in the area of the proposed work.





10. EFFECTS IDENTIFIED

Please refer to Appendix 1: EFFECTS IDENTIFICATION MATRIX. Most project effects are expected to be minor, temporary and of limited spatial extent.

.1 Vegetation

1. There is limited vegetation present on slopes to be scaled. Isolated clumps of trees, shrubs, grasses, mosses, lichens may be damaged or removed by project activities.
2. Vegetation along worker access routes to the top of slopes will be trampled and compacted.
3. Vegetation in disposal areas will be covered by rock debris.
4. Vegetation in the area around work site may be impacted by blast-rock and dust accumulation.
5. Because the status of rare plants is unknown, project managers will alert the ESO one to two weeks in advance of project commencement on site. Vegetation surveys will occur during this window with appropriate mitigations put in place in advance of project works as to not impede project process. Vegetations surveys and appropriate mitigations will be performed by LLYK Resource Conservation staff.

.2 Wildlife

1. Sheep migration occurs in Sinclair Canyon from Mid-April until mid-June. Pregnant females migrate primarily from early May and could be stressed by the scaling operations. No scaling will occur in the Sinclair Canyon between May 1 - June 15.
2. There is some wildlife use of slopes to be scaled and access routes.
3. Habitat of some small mammals may be affected by scaling and disposal activity.
4. Wildlife will likely be displaced from area due to noise of equipment operating, workers and blasting. Wildlife could become habituated to human presence through worker presence, through traffic stoppages, or public exiting their vehicles in atypical locations. Wildlife could access food, garbage or toxic substances.

.3 Aquatics

1. There are no aquatic resources in the project area, therefore no impacts are anticipated.

.4 Cultural Resources

1. Pictograph sites could be affected if not protected.
2. The character of the canyon could change slightly with blasting work, although this viewscape has changed significantly over time through various works in the canyon.

.5 Human Use

1. Work is scheduled to occur in during the spring, summer and/or fall of 2013. The visiting public and commercial operators will experience delays up to 20 minutes due to scaling and blasting activities. Traffic will be let through if a lineup exceeds 1km long.
2. Delays may affect emergency response of resource conservation service staff through Sinclair Canyon or on the Icefields Parkway. Any emergency vehicles with lights and sirens activated will be let through as soon as the worksite is safe – they will not be held in the line up.
3. Public will be exposed to increased risk of rockfall during project activities, decreased risk subsequent to project completion.
4. No impacts are anticipated on railway operations, traditional use or cultural sites.
5. Minor impacts are expected to air quality due to dust, vehicle and equipment emissions.
6. Potential for spill of hazardous substances from equipment such as fuel, oil, hydraulic fluid.
7. Potential for spill of cement grout if rock bolts are used.
8. Human waste will be generated by staff at sites and potentially by tourists stuck in closures as well.

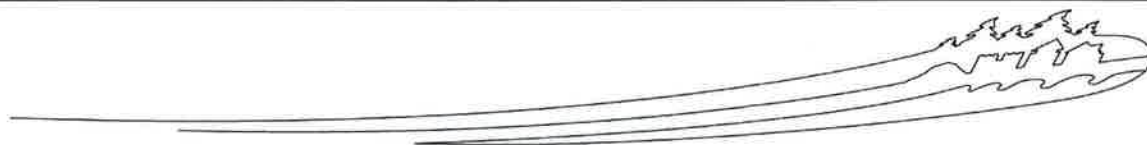




11. MITIGATION MEASURES (For help completing this section see instructions at end of document)

1 Project Specific Mitigations:

1. There will be no rock scaling in Sinclair Canyon between May 1 and June 15.
2. Project managers will alert the ESO one to two weeks in advance of project commencement on site. LLYK Resource Conservation staff will conduct vegetations surveys and carry out appropriate mitigations.
3. As per mitigations in previous EAs, pictograph sites will be identified and protected during scaling operations.
4. Explosives are to be stored outside of the Park in a location compliant with federal and provincial regulations.
5. Banff Dispatch (Police, Fire Ambulance and other Columbia Valley Emergency Services) will be made aware of proposed closures. All regular commercial users of Hwy 93, such as tour operators, buses, and operations based along Hwy 93 will be contacted about proposed work. Updates will continue to be provided for the duration of the project.
6. The contractor will obtain the services of a certified traffic control crew who are efficient and competent when dealing with high traffic volumes.
7. The contractor will provide a traffic control plan, for review and approval by the HSC, prior to work taking place. The plan will include ample warning to motorists to ensure that drivers are informed of work zone.
8. The plan will include a commitment to a three person traffic control team, two to flag and one to monitor the status of the signs and the length of lineups.
9. Generally, traffic will be stopped for 20-minute periods during all scaling and trimming work. If, during the 20-minute interval, the line-up extends further than 1km, the traffic control supervisor will advise the work supervisors and the work zone will be prepared for an opening. The traffic control supervisor will monitor the lineups and signage. PCA kiosks and information centers will ensure that motorists are made aware of the expected length of the delays. Delays longer than 20min will be pre-scheduled with Parks Canada.
10. The contractor will not work on the Friday, Saturday, Sunday or Monday of a holiday weekend.
11. Blasting is to be avoided during peak visitation periods. Efforts will be made to avoid scheduling blasting on weekends. If required, any longer delays (due to blasting activities) will be scheduled from dawn to 09:00 and from 16:00 to Dusk (when traffic volumes are at the minimum).
12. There will be full time on-site project supervision by an Engineering Consultant retained by the Highway Service Centre. Highway Service Centre engineers will also be involved in the project and will make periodic trips to the site to review progress, safety, environmental compliance, traffic accommodation, etc.
13. A comprehensive pre-job meeting will be scheduled including the work supervisor, the traffic control team, project managers from Highway Service Centre and Consultant and the Environmental Surveillance Officer.
14. Electronic signage may be used in advance of the work zone, realizing that this will not take the place of the traffic control supervisor's responsibility to communicate with drivers.
15. Roads will be temporarily closed where rock-scaling operations present major safety hazards to passing motorists. When roads not closed, flagmen and warning signs will be used to alert and control traffic. Road closures will generally be limited to 20 minutes or less. Contractor will maintain record of all closure durations. Provision will be made for the expedited passage of emergency vehicles through the job-site in the event of an emergency incident in the Icefields area. Contact Banff Dispatch at 403.762.1473, the contractor will be provided with a handheld Park radio.
16. Resource Conservation staff shall be notified prior to any blasting to determine the potential for disturbance to nesting, staging, spawning or other critical periods for fish and wildlife.
17. Rock from scaling will be disposed of in pre-designated areas established for that purpose. Acceptable locations are: Pit 69, Settler's Pit, Hector Pit, Ottertail Pit, Field Sand Pit, and Niblock Pit. Rock disposal will not occur at any other location.
18. Material from rock scaling is particularly suitable for rip rap and embankments because of its sharp edges.





Separation of fly rock from other waste materials should be considered, so that it can be recycled for future use.

19. Measures shall be taken to control dust as much as possible during the removal and falling of rock materials down slope.

.2 Standard Mitigations:

1. The Project Manager is responsible to ensure compliance by Contractor and employees with the environmental protection requirements identified for this project as well as the approved terms and conditions outlined in this agreement. Failure to comply with the terms and conditions herein may result in cancellation of all permits and approvals issued for the project pending rectification of the problem.
2. All activities pursuant to the project shall be governed by and carried out in accordance with the Canada National Parks Act and Regulations and with all other laws of Canada and the Provinces of Alberta and British Columbia.
3. The proponent is responsible to obtain all necessary permits and approvals before any project activities start. No work will take place until appropriate permits are issued and a start-up meeting with the Environmental Surveillance Officer has occurred.
4. Permits required:
 - a. Park Business licence for contractor and sub contractors,
 - b. Disturbance of natural objects,
 - c. Travel in restricted area (disposal sites),
 - d. Overweight vehicle on Icefields Parkway.
5. Parks Canada will assign an ESO (to the project to ensure compliance with the identified environmental protection measures. In addition to measures identified in this document the ESO, in consultation with the Project Manager, may require other mitigation in response to any unforeseen environmental impacts. The ESO, in consultation with the project manager, may suspend work that is in non-compliance of this approval.
6. The ESO must be contacted at least two weeks prior to project start-up to arrange contractor start-up briefing and site surveillance.
7. The ESO and Project Manager will identify and delineate the designated work areas for vehicle access, parking, equipment, material storage and disposal before work begins. No work will be carried out beyond these limits.
8. The Project Manager is responsible to provide advance notification of the project in local media advising the local community of where and when the work will occur and shall be responsible for addressing any public inquiries. (This is generally done by local Parks Communication staff utilizing information provided by the Project Manager).
9. Public access to the project will be prevented with appropriate signing and fencing if required. If necessary to protect the public, pullouts or other areas may be closed. Appropriate traffic management system needs to be implemented prior to project start-up and continued until project completion. Signs must be bilingual or symbolic to warn motorists of equipment and men working.
10. All workers must have the required protective equipment for the job and be trained in accordance with the provisions included in the *Alberta Occupational Health and Safety Act* and *Workers Compensation Board*. All sites must have a first aid kit, fire extinguisher and a list of emergency contact numbers.
11. Noise and air pollution on site from equipment and trucks will be kept to a minimum by shutting off all motors while not in use.
12. Equipment will be inspected daily for fluid/fuel leaks and kept in good working order. Drips will be immediately treated with absorbent spill pads and leaks repaired.
13. The Project Manager or contractor must have an emergency response plan and spill kit available at each work site and all staff shall be aware of its location and trained in its use in case of spill or leak. In the event of any fuel/lubricant leaks, absorbent material will be provided for clean up and any contaminated soils will be hauled to an appropriate disposal facility.
14. Parks Canada Dispatch (403.762.1473) should be notified immediately of any fluid spills or leaks exceeding 5 litres.





ESO should be informed of all spills.

15. Equipment will be fuelled on hardened surfaces.
16. All stationary stores of liquid hazardous material (e.g. fuel) and stationary operating equipment with fuel tanks or hydraulic systems (e.g. pumps) will be located in a impervious secondary containment area (e.g. a bermed area with impervious liner) capable of holding 110% of the contents of the largest container in the area. Refueling may be done from a slip tank in the back of a pick-up. All tanks will be equipped with automatic shut off nozzles and break away couplings.
17. All equipment is to be steam cleaned or pressure washed prior to arrival in LLYK to prevent the introduction of non-native vegetation into the park. Once final work locations have been identified, the sites will be inspected by LLYK Non-Native Plant Control staff. Should non-native species of concern be identified at a work site, equipment will be re-washed before being relocated to a new site to prevent the spread of non-native plants within the park.
18. Parks Canada Non-Native Plant Control staff will treat sites prior to commencement of scaling operations as necessary. Staff will be notified as far in advance as possible of the scaling schedule so they can effectively time their treatments.
19. Daylight operation of all mechanised equipment will be respected.
20. Observations of wildlife-vehicle collisions, carcasses or other wildlife encounters will be reported to Banff Dispatch immediately (403.762.1473).
21. Feeding or harassment of wildlife is prohibited. Any problems including aggressive encounters with wildlife (e.g. bears, sheep, elk, and coyotes) will be reported to the Banff Dispatch immediately (403.762.1473).
22. All garbage will be stored and handled in compliance with the National Park Garbage Regulations.
23. Vehicle speed through the park is enforced by the RCMP to reduce wildlife mortality.
24. Burning or burial of waste is not permitted.
25. Portable toilets are required at job-sites for workers and for tourists along highway during closures.
26. The Contractor assumes all risk to public safety and personal injury resulting from the project activities.

12. IMPACT SIGNIFICANCE (For help completing this section see instructions at end of document)

Assuming that mitigating measures are adhered to, there is not expected to be any ongoing impact.

.1 Temporary Impacts

- Noise and disturbance of wildlife – short-term and localized – **not significant**.
- Disturbance of vegetation on slopes and access routes- medium to long term, localized – **not significant**.
- Disturbance and inconvenience of Park visitors. – short-term delays and inconvenience, minor impairment of park experience to visitors – **not significant**. Work will increase public safety along the highway corridors.
- Potential spills during work – unlikely, localized and reversible – **not significant**.

.2 Residual Impacts

- Loss of some limited vegetation, expansion of disposal area – minor negative environmental impacts – **not significant**.

.3 Cumulative Impacts

Other projects known or anticipated to occur in close proximity to this work are: on-going highway operation and maintenance; continued railway operation and maintenance; and potential future twinning of the TCH.

Rock scaling will continue to be a routine maintenance activity throughout the Park and is not expected to contribute significantly to cumulative environmental effects.





13. SITE INSPECTION (For help completing this section see instructions at end of document)

☐ Site inspection not required

☒ Site inspection required

Site Inspection program details

This project has potential for limited environmental effects when all mitigations in screening report are adhered to. Inspection is required to ensure compliance with recommended mitigations. Inspection will consist of a pre-work start-up briefing by the Environmental Surveillance Officer (ESO) to project manager, crew foremen, and crew members. On-going compliance monitoring will be responsibility of the project manager. Occasional spot checks of compliance will be performed by ESO or designate.

14. EXPERTS CONSULTED (Including PCA Experts)

Department/Agency/Institution	Parks Canada
Contact Information	Michael den Otter
Date of Request	2012-11-29
Expertise Requested	Environmental Assessment Scientist
Response	Revised and amended the original environmental assessment (1997-0007K) under the <i>Parks Canada Interim Directive on implementation of the Canadian Environmental Assessment Act 2012</i> .

Department/Agency/Institution	Parks Canada
Contact Information	Alan Dibb
Date of Request	2013-01-28
Expertise Requested	Wildlife Biologist
Response	Confirmed the need for restricting access to Sinclair Canyon during sheep migration and provided data to support the claim.

Department/Agency/Institution	Parks Canada
Contact Information	Jed Cochrane
Date of Request	2013-02-14
Expertise Requested	Vegetation Specialist
Response	Expressed the need for potential non-native plant control measures at each site prior to commencement of work as well as the unknown nature of the rare plant situation at each site.

15. PUBLIC PARTICIPATION ☒ No

☐ Yes

16. DECISION

Taking into account implementation of mitigation measures outlined in the analysis, the project is:

☒ Not likely to cause significant adverse environmental effects.

☐ Likely to cause significant adverse environmental effects.

SIGNATURES AND APPROVAL

Environmental Impact Reviewer

Name: Michael den Otter

Title: Environmental Assessment Scientist

Signature

Date:

Name: Ryan Syme

Title: Parks Canada Highway Project Manager



Signature

Date

DECISION APPROVAL

Name: Alex Kolesch

Title: LLYK, Integrated Land Use Policy & Planning Manager

Signature

Date May 29/13

Name: Melanie Kwong

Title: LLYK, Field Unit Superintendent

Signature

NOT REQUIRED

Date

17. REFERENCE LIST

Parks Canada Agency (2012) *Parks Canada Interim Directive on implementation of the Canadian Environmental Assessment Act 2012*.

Axys Environmental Consulting Ltd. and David Walker & Associates. 1998. *Best Available Methods for Common Leaseholder Activities*. Prepared for Line Leaseholders Working Group, Jasper National Park. Calgary.

Delcan Corporation, Environmental Systems Group. 1989. *Environmental Standards for Road Maintenance Functions in National Parks*. Submitted to Natural Resources Branch, Canadian Parks Service, Environment Canada, Ottawa.

Dobson, B., 2005, Locations of Haller's Apple Moss in Jasper National Park, personal communication.

EBA Engineering. 2006. *Re-inspection of rock cuts and soil slopes – Banff Yoho and Kootenay National Parks*.

Holland and Coen 1983, *Biophysical Inventory of Jasper and Banff National Parks*, Banff, AB

Jasper Environmental Assessment Services. 2003. *Standard Mitigations For Environmental Assessments*, Jasper, AB.

Rissling-Wynn, L., 2003, *Class Screening For Routine Hwy Maintenance Activities (DRAFT)*, Jasper, AB.

18. ATTACHMENTS LIST

APPENDIX 1: EFFECTS IDENTIFICATION MATRIX

Components of Environment and Mandate Elements Affected by Environmental Change

		Use the following matrix to identify if your project may have potential impacts on components of the environment	Natural Resources					Cultural Resources		Visitor Experience				
			Air	Soil	Water	Flora	Fauna	Historic Value	Character defining elements	Viewscape	Visitor appreciation & access	Recreational /other opportunities	Public Safety	Unique character & connection to place
Project Components	Phases	Examples of Associated Activities												
	Construction/P reparation	Scaling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	x	x	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Trimming/blasting	x	<input type="checkbox"/>	<input type="checkbox"/>	x	x	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>	x	<input type="checkbox"/>
		Bolting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Ditch cleaning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Clean-up	x	<input type="checkbox"/>	<input type="checkbox"/>	x	x	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	x	<input type="checkbox"/>	x	<input type="checkbox"/>

19. ADDITIONAL CONSIDERATIONS / COMMENTS

The potential impacts described in this environmental impact analysis are part of an on-going disturbance regime which



has been occurring for years. The mitigation measures identified are designed to reduce the magnitude of impacts. The adverse effects identified are reversible and human-use management actions can be undertaken to reduce or eliminate the effects.

