



## Parks Canada Basic Impact Analysis Template

**Instructions for this form are available** (see the [Guidance and Tools section](#) of the Parks Canada Impact Assessment intranet site or request from Parks Canada impact assessment staff).

### 1. PROJECT TITLE & LOCATION

Highway 4 Alder Removal – Pacific Rim National Park Reserve, Long Beach Unit

### 2. PROPONENT INFORMATION

Jackie Godfrey, Assets Manager, Pacific Rim National Park Reserve of Canada

### 3. PROPOSED PROJECT DATES

Planned commencement: 2018-09-01

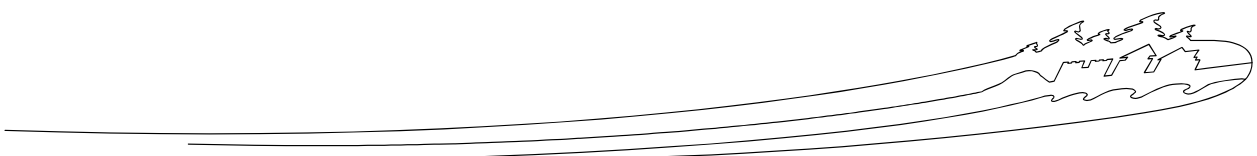
Planned completion: 2019-03-31

### 4. INTERNAL PROJECT FILE # PacRimNPR-0319

### 5. PROJECT DESCRIPTION

Alder removal is required along Highway 4 in the Long Beach Unit of Pacific Rim National Park as they are becoming a safety and maintenance concern. Alder are growing in clumps at high densities at the limits of the highway clear zone, are leaning over top of the highway, and are growing towards the BC Hydro power line on the opposite side of the highway.

- Fall and remove (chip or remove logs) 832 red alder (*Alnus rubra*) trees along the edge of Hwy 4. Work is to be done under the supervision of an ISA Certified Utility Arborist. All felling will be done by persons who are qualified according to the BC *Occupational Health and Safety Regulation* (BC OHS 26.21);
- Riparian areas will be treated as environmentally sensitive areas. All trees will be felled and yarded away from riparian areas. Riparian and other sensitive areas are shown in “Appendix 1: Site Plan Maps” and will be reviewed with Parks Canada staff prior to commencement of work;
- Larger alder stems and/or chips may be delivered to the Tla-o-qui-aht and Ucluth First Nations for cultural use. Storage areas stems and chips will be the Ty-histanis maintenance yard and the lisaak mill-site. All logs transported outside of PRNPR will require a valid timbermark, which is available from Parks Staff.
- All work will occur in the off season (Sept. to March) to avoid conflicts with the bird breeding window and busy tourism season;
- The worksite must be inspected by a qualified person authorized by BC Hydro to identify hazardous areas (BC OHS Policy S.19), prior to commencement of work. The minimum approach distance for this 25 kv powerline is 3 m. If the minimum approach distance cannot be maintained, BC Hydro must be contacted in order to develop a mitigation plan;
- Traffic control must be used during falling activities, and comply with the standards defined in the BC OHS (S.18);





- Danger tree assessment and removal was last done along the Hwy 4 corridor in March 2018. If other dangerous trees are identified within the work area by the contractor, they will be reviewed by Parks Staff and the contractor. Where necessary these will be felled by the contractor. Small dead trees (<15cm) that are within the work area and not marked with yellow ribbon should be felled.
- All practical efforts will be made to prevent the spread of invasive plants. Clean equipment prior to transport to PRNPR to avoid transfer of invasive seed. Chipping of material shall be limited to felled alder.
- Contractor is responsible for promptly sweeping work areas in order to maintain a debris-free roadway.

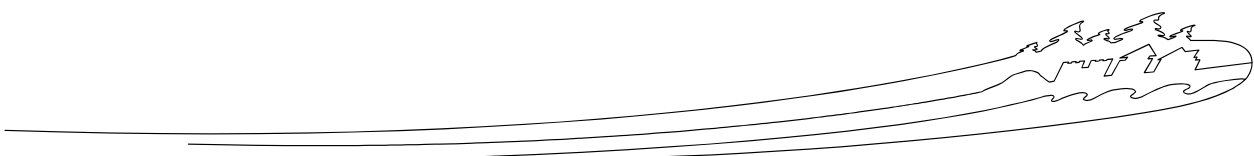
This project will take place between Sept. 1 2018 and March 31 2019, outside of the busy tourist season.

**6. VALUED COMPONENTS LIKELY TO BE AFFECTED**

Use the Effects Identification Matrix, as required, to identify potential interactions between the project and the surrounding environment.

**7. EFFECTS ANALYSIS**

VECs	Potential Environmental Effects
Air Quality and Noise	Decreased ambient air quality Increased ambient noise levels
Soils and Topography	Soil compaction Increased soil erosion Decreased slope stability and/or mass movement of soil Soil contamination due to leaks or accidental spills
Hydrological and Aquatic Resources	Reduced water quality due to sedimentation or deleterious substances
Vegetation	Damage to and/or removal of vegetation Introduction of non-native and invasive plant species or expansion of existing non-native plant populations Impacts on rare plants and valued vegetation features
Wildlife	Disruption to wildlife nesting and rearing Sensory disturbance causing displacement/habitat avoidance Wildlife habituation/attraction to artificial food sources Loss of habitat Decreased wildlife abundance due to direct mortality (e.g. road kill) Impacts on rare species
Cultural Resources	Loss or impacts to the heritage value of cultural resources, including built heritage, engineering works, archaeological resources, cultural landscapes and archaeological or historical objects
Visitor Experience	Reduced quality of visitor experience





Human Health and Safety	Injuries to public and workers
Assets	Damage to BC Hydro power line Damage to roads, bridges, buildings, and other Parks Canada Assets

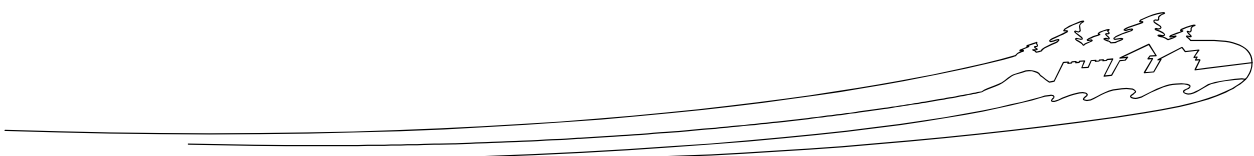
• **MITIGATION MEASURES**

VEC	Activity/Effect	Mitigation Measures
General	General	<ol style="list-style-type: none"> <li>1. Pacific Rim National Park will provide pre-trip and on-site arrival information (Tailgate pre-construction meeting) for all on-site staff.</li> <li>2. Work crews will be briefed on Parks Canada policy including wildlife, visitor safety, cultural resource management, and waste management.</li> <li>3. Work crews will be briefed upon the importance of adhering to environmental mitigation measures at the pre-construction meeting.</li> <li>4. Work crews will be briefed on locations of sensitive sites at the pre-construction meeting.</li> <li>5. A copy of the site plan will be kept at the work site.</li> <li>6. On site project surveillance will be conducted to ensure that prescribed mitigation measures are implemented and achieving the expected results. Sites that on-site Parks Canada staff monitoring are listed in the Site Plan.</li> <li>7. Keep the footprint of disturbance as small as possible (E.g. Clear minimum area necessary around felled trees).</li> <li>8. To the greatest extent possible, use existing roadways, trails or disturbed areas to access and travel within the site.</li> </ol>
	Tree Falling	<ol style="list-style-type: none"> <li>9. All work will be done under the supervision of an ISA Certified Utility Arborist. All felling will be done by persons who are qualified according to the BC <i>Occupational Health and Safety Regulation</i> (BC OHS 26.21). A qualified assistant is required for persons who are felling trees.</li> <li>10. Unless directed by Parks Canada staff, only red alder marked with yellow ribbon shall be felled.</li> <li>11. Leave roots and stumps in place.</li> <li>12. In the event that dangerous trees are identified within the work area, stop work and contact a Parks Canada representative.</li> </ol>
	Log Bucking	<ol style="list-style-type: none"> <li>13. Do not leave bucked logs in the ditch line.</li> <li>14. Trees that have been felled into the timber, beyond the ditch line should be left in place as coarse woody debris as directed by Parks Canada staff.</li> </ol>
	Chipping	<ol style="list-style-type: none"> <li>15. Do not chip into the woods in riparian areas (30m either side of streams). Stream crossings are shown on the Site Plan maps.</li> <li>16. Do not chip into the woods in sensitive areas. Sensitive areas are shown on the Site Plan maps.</li> <li>17. In riparian areas and environmentally sensitive areas, all chipping should be done into a truck. Disposal sites within the park will be identified by Parks Canada staff.</li> <li>18. In areas where chipping is permitted, chip all non-merchantable tops and branches into the woods to a maximum depth of 15cm.</li> <li>19. Chips will not be sprayed, spread nor left piled in the ditchline.</li> <li>20. Chipping of material will be limited to portions of felled alder unless directed otherwise by Parks Canada staff.</li> </ol>
	Traffic Control	<ol style="list-style-type: none"> <li>21. Traffic control must be used during falling activities, and comply with the standards defined in the BC <i>Occupational Health and Safety Regulation</i> (BC OHS S.18).</li> <li>22. Where possible, limit traffic stops to 10 minutes.</li> </ol>



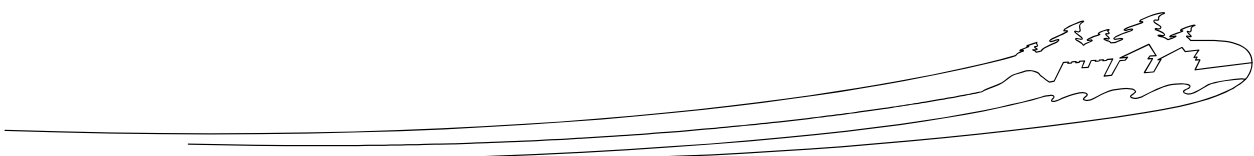


	<p>Fuel Storage, Fuelling Operations, and Spill Response</p>	<p>23. The contractor is responsible for producing a spill contingency response plan which will be located on site. An adequate amount of absorbent material and berms to contain the volume of stored fuel will be located on site.</p> <p>24. Ensure machinery is in good working order and free of leaks.</p> <p>25. Fuelling of equipment will be conducted in a manner which restricts the potential release of petroleum products into a watercourse, or the receiving environment.</p> <p>26. Store fuel and hazardous materials in a berm or secondary containment designed to contain 125% of the product's volume.</p> <p>27. Clean up all spills immediately, as per the spill response plan and inform the Parks Canada project contact or Duty officer</p> <p>28. Report all spills of hazardous materials to the BC RAPP line.</p> <p>29. Identify and handle all toxic/hazardous materials as required under the Canadian Environmental Protection Act, Transportation of Dangerous Goods Act and Workplace Hazardous Materials Information Service.</p> <p>30. Dispose of contaminated soil at provincially certified disposal sites outside of the field unit. Documentation confirming proper disposal must be provided to Parks Canada Environmental Assessment Officer.</p>
	<p>Garbage and General Waste</p>	<p>31. All debris and deleterious substances generated during project activities shall be contained in the immediate work area, collected and appropriately disposed of in accordance with all applicable legislation, guidelines, and best management practices or as prescribed in this list of mitigation measures.</p> <p>32. At no time shall any waste material be allowed to enter any watercourse associated with the works.</p> <p>33. The Contractor/Operator shall be responsible for assuring that all reasonable efforts are implemented to eliminate or minimize waste production.</p> <p>34. All food wastes, and discarded food items, shall be stored in closed, leak-proof storage container that prevents access by nuisance wildlife. All material which can be recycled, such as paper and cardboard products, glass bottles and plastic and metal containers will be recycled where possible. The Contractor/Operator is responsible for the proper collection and transportation of garbage and recyclable waste to disposal facilities (e.g. Tofino landfill and appropriate recycling facilities).</p> <p>35. Open burning is strictly prohibited, unless authorized by regulating bodies.</p>
<p><b>Air Quality</b></p>	<p>Decreased ambient air quality</p>	<p>36. Where possible, equipment/vehicles will be shut down when not in active use to reduce noise levels and levels of particulate matter from exhaust emissions.</p> <p>37. Ensure all equipment is properly tuned, in good operating order, and fitted with standard air emission control devices.</p>
	<p>Increased ambient noise levels</p>	<p>38. Confine "noise" activities to daylight hours to reduce sensory disturbance to wildlife</p>
<p><b>Soils and Topography</b></p>	<p>General</p>	<p>39. Stabilize soil and other material storage piles against wind erosion.</p> <p>40. Cover and contain fine particulate materials during transportation to and from the site.</p> <p>41. Stop work during periods of high rainfall and/or high ground water levels as directed by Parks Canada staff.</p>
	<p>Soil compaction</p>	<p>42. Identify and avoid soils susceptible to compaction (e.g. fine textured and organic soils)</p> <p>43. Where necessary, use equipment of low bearing weight, low PSI (Pounds per Square Inch) tires or tracked vehicles in sensitive areas.</p> <p>44. Avoid vehicle traffic on exposed soils. Use existing roadways or disturbed areas to access and travel within the site.</p>



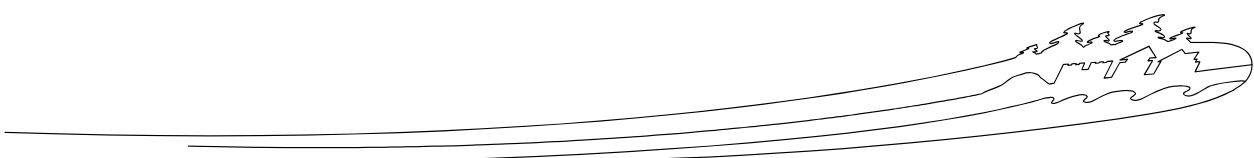


	Soil erosion	<p>45. Where possible lift stems rather than dragging to prevent damage to organic soil layers.</p> <p>46. Where large areas of soil (&gt;1m<sup>2</sup>) are disturbed, they should be rehabilitated by restoring organic layers. Where it is not possible to restore organic layers, erosion control matting that is biodegradable and made from natural materials (eg. coir) may be used.</p> <p>47. Employ necessary measures to prevent sedimentation of water sources (eg. sediment fences, erosion control matting). All sediment control structures will be approved by Parks Canada staff.</p>
	Decreased slope stability and/or mass movement of soil	<p>48. Do not operate machinery on steep slopes (&gt;30%)</p> <p>49. Stop work during periods of high rainfall and/or high ground water levels as directed by Parks Canada staff.</p>
	Soil contamination due to leaks or accidental spills	<p>50. See section relating to Fuel Storage, Fuelling Operations, and Spill Response (#24 – 31)</p>
<b>Hydrological and Aquatic Resources</b>	Reduced water quality due to sedimentation or deleterious substances	<p>51. Assess site for sediment control requirements and implement control measures as required (e.g. tarps, erosion blankets, silt fencing)</p> <p>52. Periodically inspect erosion control structures for effectiveness. If not effective, replace with different mitigation measure.</p> <p>53. Where possible, use vegetable oils rather than petroleum based oil in machinery when working in and around waterbodies.</p>
<b>Vegetation</b>	Damage to and/or removal of vegetation	<p>54. Fell trees and operate equipment carefully to avoid damaging surrounding vegetation.</p> <p>55. Do not cut trees that are not flagged with yellow ribbon. Small un-flagged dead alder (&lt;15cm) within the worksite may be felled.</p> <p>56. Felling of danger trees must be approved by Parks Canada Staff.</p> <p>57. Do not buck coarse woody debris within the work site unless it is required for worker safety.</p>
	Introduction of non-native invasive plant species	<p>58. All practical efforts will be made to prevent the spread of invasive plants. Clean equipment prior to transport to PRNPR to avoid transfer of invasive seed. Chipping of material shall be limited to felled alder unless directed otherwise by Parks Canada staff.</p>
	Impacts on rare plants and valued vegetation features	<p>59. Follow instructions and site mitigations (eg. no chipping) in sensitive areas as identified by the Site Plan.</p> <p>60. On site project surveillance will be conducted to ensure that prescribed mitigation measures are implemented and achieving the expected results. Sites that on-site Parks Canada staff monitoring are listed in the Site Plan.</p>
<b>Wildlife</b>	Disruption to wildlife nesting and rearing	<p>61. All work will occur outside of the bird breeding window.</p> <p>62. Report any bird nest, wildlife den site or other areas of wildlife habitation that are occupied to Parks Canada staff immediately upon encountering them within the work site or its environs.</p>
	Sensory disturbance causing displacement /	<p>63. Limit activities to daylight hours</p>





	habitat avoidance	
	Wildlife habituation / attraction to artificial food sources	<p>64. Keep site free of garbage and dispose of garbage in bear proof containers or remove daily from the site.</p> <p>65. No foodstuffs or food wastes will be fed by workers to wildlife. While these materials are on site, they must at all times, be stored in a secure location that prevents animals accessing them.</p> <p>66. Educate workers that wildlife harassment or feeding is not permitted</p> <p>67. Communicate potential problem and/or habituated wildlife immediately to PRNPR project contact</p> <p>68. Report any observations of wolves or cougar immediately to PRNPR project contact.</p> <p>69. Store fuels, oils and lubricants that are attractants in a manner that they are not accessible to wildlife.</p>
	Loss of habitat	<p>70. Do not cut trees that are not flagged with yellow ribbon. Small un-flagged dead alder (&lt;15cm) within the worksite may be felled.</p> <p>71. Felling of danger trees must be approved by Parks Canada Staff.</p> <p>72. Do not buck coarse woody debris within the work site unless it is required for worker safety.</p> <p>73. All work will occur outside of the bird breeding window.</p>
	Decreased wildlife abundance due to direct mortality	<p>74. Observe local speed limits</p>
	Impacts on rare species	<p>75. Follow instructions and site mitigations (eg. no chipping) in sensitive areas as identified by the Site Plan.</p> <p>76. On site project surveillance will be conducted to ensure that prescribed mitigation measures are implemented and achieving the expected results. Sites that on-site Parks Canada staff monitoring are listed in the Site Plan.</p>
Cultural Resources	Loss or damage to the heritage value of cultural resources	<p>77. Follow instructions and site mitigations (eg. no chipping) in sensitive areas as identified by the Site Plan.</p> <p>78. On site project surveillance will be conducted to ensure that prescribed mitigation measures are implemented and achieving the expected results. Sites that on-site Parks Canada staff monitoring are listed in the Site Plan.</p> <p>79. The PRNPR Cultural Resource Management (CRM) Advisor, or designated Park staff member, will provide an on-site 'tail-gate' orientation on cultural resources to the crew at the start of the project, prior to work commencing.</p> <p>80. <u>Chance Finds</u>: In the event that any cultural feature or material, as indicated below, is encountered, stop work immediately, and contact the PRNPR CRM Advisor to assess. Cultural features and material includes: archaeological material, e.g., black greasy shell-bearing sediment, fire-cracked rock, bone; historic materials, e.g., metal, ceramic, glass objects; and/or any bones that are, or are suspected to be, human remains.</p> <p>81. The collection or disturbance of artefacts of possible historic significance by project employees will be strictly prohibited.</p>
Visitor Experience	Reduced quality of visitor experience	<p>82. Limit activities to daylight hours</p> <p>83. Where possible, limit traffic stops to 10 minutes. Public notification may be done through Parks Canada media representatives. Liaise with Parks Canada staff relating to traffic control plan.</p>





		84. Maintain a clean and tidy construction site. All construction waste, accumulated debris, litter, and food garbage must be removed at the end of each day.
Human Health and Safety	Injuries to public and workers	85. Work will be conducted in a manner that clearly separates visitors from the active construction site to minimize potential for public safety accidents. 86. If large wildlife (black bears, cougars or wolves) are observed, notify the Park Contact immediately – or contact the Park Office Immediately: 250-725-5300. 87. All personal will be fully trained, experienced and will use all appropriate safety gear and equipment. 88. Contractor will be responsible for maintaining and operating under a safety plan and will be self-sufficient in the event of an emergency. 89. Operator will carry a minimum of 2 million dollars per incident 3 <sup>rd</sup> party liability insurance with 'Her Majesty the Queen, in right of Canada as represented by the Parks Canada Agency' as additional insured.
Assets	BC Hydro Power Line	90. The worksite must be inspected by a qualified person authorized by BC Hydro to identify hazardous areas (BC OHS Policy S.19), prior to commencement of work. 91. The minimum approach distance for this 25 kv powerline is 3 m. If the minimum approach distance cannot be maintained, BC Hydro must be contacted in order to develop a mitigation plan.
	Damage to roads, buildings, or other Parks Canada assets	92. Operator will carry a minimum of 2 million dollars per incident 3 <sup>rd</sup> party liability insurance with 'Her Majesty the Queen, in right of Canada as represented by the Parks Canada Agency' as additional insured.

**8. MITIGATION MEASURES**

- DRAFT Vegetation Management Plan for Pacific Rim National Park Reserve
- Parks Canada National Best Management Practices – Common Activities
- Parks Canada National Best Management Practices – Roadway, Highway, Parkway, and Related Infrastructure

**9. OTHER Considerations**

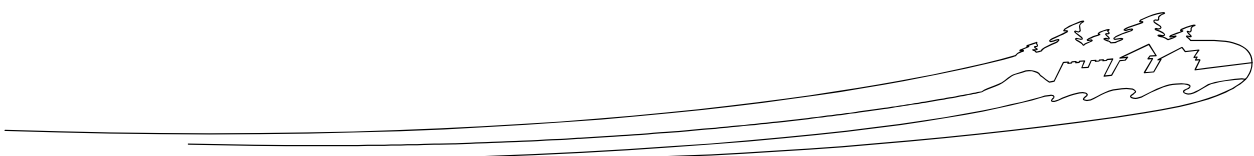
Check all that apply

- Public/stakeholder engagement
- Aboriginal engagement or consultation

*Working with Tammy Dorward, First Nation Consutation and Engagement Officer, this project has been discussed with the Tla-o-qui-aht and Ucluth First Nations. Both nations have expressed interest for firewood and alder chips for smokehouses.*

- Surveillance

On-site environmental surveillance has been prescribed for culturally significant and environmentally sensitive sites. Surveillance activities will be done by Mike Davis, PRNPR Environmental Surveillance Officer and/or Caron Olive, PRNPR Cultural Resource Management Advisor.





- Follow-up monitoring, required to evaluate effectiveness of mitigation measures and/or assess restoration success
- Follow-up monitoring, required by legislation or policy (indicate basis of requirement e.g. required by the *Species at Risk Act*)
- SARA Notification

For any of the boxes checked above, briefly describe what was done, how the results were incorporated into the BIA and/or outline plans for what is needed.

## 10. SIGNIFICANCE OF RESIDUAL ADVERSE EFFECTS

### EFFECTS OF THE ENVIRONMENT ON THE PROJECT

Environmental factors that could potentially affect the Project include extreme weather, seismic activity and tsunamis, and climate change and sea level rise.

Weather-related events, such as extreme rainfall, flooding, wildfire, extreme winds and landslides, delay project activities and cause damage to resource features. Most of the environmental effects of these events as they relate to routine projects (e.g. increased runoff from the work site causing sedimentation) are anticipated in this report. No significant adverse environmental effects on the project resulting from the existing environment are likely with proper implementation of the identified mitigation measures.

#### Extreme Weather

- Extreme weather events may include excessive fog, rainfall, snowfall, wind, or thunderstorms.
- Fog can reduce site safety and productivity. Fog is a regular occurrence in the park.
- Extreme rainfall events (25mm in a 24 hour period) can result in project shutdowns and project delays. Extreme rainfall is a regular occurrence in the park.
- During the months from November to March, icy conditions, extreme weather events or snowfall can make it difficult to perform the work in an environmentally sound manner.
- Extreme winds can cause unsafe working conditions through windthrow. Extreme wind events are common in the park during the winter months.
- Thunderstorm events may cause forest fires which can be a safety hazard. Thunderstorms are not common in the region (although these types of events have been increasing in frequency).

#### Seismic Activity: Earthquakes and Tsunamis

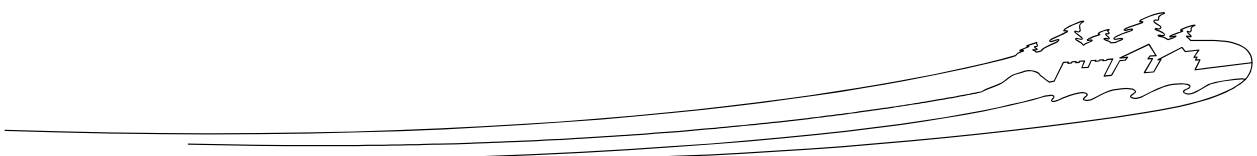
The Cascadia Subduction Zone runs offshore from somewhere near the top of Vancouver Island to northern California. Over the duration of the project, the risk of an earthquake occurring is expected to be low. Impacts to the project may include the creation of a Tsunamis, tree fall, loss of power, and restricted site access. Such an event could result in project delays.

The west coast of Vancouver Island in particular, is a high risk area for Tsunamis. Wave heights of 10 m plus are anticipated in the event of a significant magnitude seismic event.

### EFFECTS OF MALFUNCTIONS OR ACCIDENTS

Project activities that could result in accidents and malfunctions largely relate to the operation and maintenance of machinery, structural failure and human error. The likelihood of accidents or malfunctions occurring and causing negative environmental is minimal. Potential accidents and malfunctions include:

- vehicle collisions







- fire
- equipment failure/or leaks
- injury to workers or members of the public
- damage to vehicles, BC hydro powerlines, roads, buildings, and other Parks Canada assets

The potential environmental effects that could result from these events are: reduced air quality, soil damage (eg. compaction, erosion, mass movement) or contamination, reduced water quality and nutrient loading, damage to vegetation, and loss of cultural features.

No significant adverse environmental effects are likely with proper implementation of the identified mitigation measures.

**EFFECTS ON KNOWN AND POTENTIAL CULTURAL RESOURCES**

The project area has been surveyed by Caron Olive, PRNPR Cultural Resource Management Advisor. All known cultural sites have been mapped as sensitive sites in the project Site Plan. The northern park boundary and Ty-histanis north to Grice Bay road sites will require Park Canada staff to be on-site. In the event that any cultural feature or material, as indicated below, is encountered, stop work immediately, and contact the PRNPR CRM Advisor to assess. Cultural features and material includes: archaeological material, e.g., black greasy shell-bearing sediment, fire-cracked rock, bone; historic materials, e.g., metal, ceramic, glass objects; and/or any bones that are, or are suspected to be, human remains. The collection or disturbance of artefacts of possible historic significance by project employees will be strictly prohibited.

**11. EXPERTS CONSULTED**

*Include Parks Canada experts. Add as many entries as necessary for the project.*

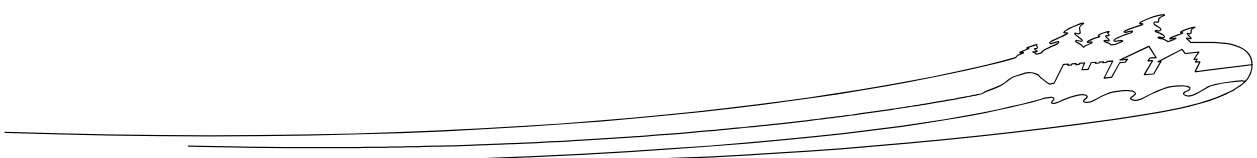
Department/Agency/Institution: Pacific Rim National Park Reserve Parks Canada	Date of Request: 2018-03-08
Expert's Name & Contact Information:	Title:
Expertise Requested: Cultural Resources Management	
Response:	

Department/Agency/Institution: Pacific Rim National Park Reserve Parks Canada	Date of Request: 2018-02-28
Expert's Name & Contact Information:	Title:
Expertise Requested: Professional Forestry – Alder marking and preparation of Site Plan	
Response:	

**12. 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.





*NOTE: If the project is identified as likely to cause significant adverse effects, CEAA 2012 prohibits approval of the project unless the Governor in Council (Cabinet) determines that the effects are justified in the circumstances. A finding of significant effects therefore means the project CANNOT go ahead as proposed.*

**FOR SARA REQUIREMENTS:**

- There are no residual adverse effects to species at risk and therefore the SARA-Compliant Authorization Decision Tool was not required

**OR**, the SARA-Compliant Authorization Decision Tool ([Appendix 2](#)) was used and determined:

- There is no contravention of SARA prohibitions
- Project activities contravene a SARA prohibition and CAN be authorized under SARA
- Project activities contravene a SARA prohibition and CANNOT be authorized

**13. RECOMMENDATION AND APPROVAL**

*(Add additional blocks as required)*

<p><b>Prepared by:</b></p> <p>EIA author (name &amp; position):</p> <p>Reviewed by:</p>	<p>Date:</p>
<p><b>Recommended by:</b></p> <p>Functional manager of the project (name):</p>	<p>Date:</p>
<p><b>Approval signature:</b></p> <p>Name &amp; position (<i>Field Unit Superintendent, Director of a Waterway</i>):</p>	<p>Date:</p>

**14. ATTACHMENTS**

**Appendix 1: Site Plan Maps**

**15. NATIONAL IMPACT ASSESSMENT TRACKING SYSTEM**

- Project registered in [tracking system](#)
- Not yet registered (*CEAA 2012 requires PCA submit a report to Parliament annually. EIAs must be entered in the tracking system **by the end of April** to enable reporting.*)

**\*\*\*Ensure that all required mitigation measures and conditions (e.g. follow-up monitoring requirements) are included in project permits and authorizations\*\*\***

