

Table 10.2 Sub-Class 3: Mitigations for reducing impacts from Road, Sidewalk, Boardwalk and Parking Lot Projects

Activity	Potential Impacts	Mitigation Measures
<i>Pre-Planning</i>		
General activities	Runoff / sedimentation; Soil contamination	<ol style="list-style-type: none"> 1. Prepare an Emergency Response Plan for the worst case, i.e., heavy rainfall and runoff events, high winds, spills, fires, etc. 2. In the event of emergency operations (as defined in Section 10.11 of the MCSR), call Emergency Services and/or Parks Canada at the phone numbers indicated on Attachment 2. 3. Ensure all activities are conducted at least 30 m from waterbodies.
	Dust production	<ol style="list-style-type: none"> 4. Have a water source available to wet down exposed soil and dry areas.
	Wind and water erosion	<ol style="list-style-type: none"> 5. Prepare a satisfactory Sediment and Erosion Control Plan covering all construction and restoration periods. 6. Acquire necessary sediment control equipment, (i.e., straw bales, landscaping fabric, sediment fences, etc.) and install prior to construction. 7. Extra planning should be used for areas with silty deposits and sloped areas with sandy deposits.
	Compaction of soils	<ol style="list-style-type: none"> 8. Identify soils susceptible to compaction (fine textured and organic soils) 9. Wherever possible, use equipment of low bearing weight, low PSI tires, or tracked vehicles, especially in sensitive sites. 10. Building material storage must be contained in one area and clearly flagged to prevent soil compaction and reduce area of disturbance.
	Slope failure	<ol style="list-style-type: none"> 11. Assess slope stability (based on slope length, soil texture, steepness, soil depth) and adjust activities to avoid these areas if possible. Use appropriate setbacks. 12. Pay particular attention when planning for slopes of Class 6 (15-30%) or greater, especially where soils are shallow and likely to move with disturbance.
	Habitat loss and fragmentation or encroachment on wildlife movement corridor	<ol style="list-style-type: none"> 13. Identify wildlife habitat that may be impacted by activities and avoid sensitive areas. 14. Identify and avoid wetlands. 15. Ensure only necessary vegetation is removed and delineate areas to be avoided with biodegradeable flagging tape and/or temporary fences.

Model Class Screening Report for Routine Projects

Activity	Potential Impacts	Mitigation Measures
	Sensory disturbance and mortality of wildlife	<p>When working adjacent to natural areas:</p> <ol style="list-style-type: none"> 16. According to the wildlife that may be present, schedule high noise level activities and other intrusive construction activities to avoid critical life stages (breeding, nesting, rearing, migration). Consult with Parks Canada to discuss any localized wildlife concerns. 17. Confine “noise” activities to hours set out in Attachment 2. 18. Consider posting wildlife signs to reduce vehicle speeds and increase driver awareness near construction areas where wildlife mortality has or is likely to occur. 19. Educate workers to not harass or attract wildlife, keep the site free of food scraps, and dispose of garbage in bear proof containers.
	Disturbance of archaeological resources	<ol style="list-style-type: none"> 20. Determine whether there are archaeological sites in the area (see attached maps). 21. Consult with Parks Canada if sites are identified. 22. If potential archaeological sites may be subject to ground disturbance, then activities should be adapted to avoid them. 23. Educate workers to stop work immediately and to notify site supervisor upon finding any archaeological artefacts. Contact Parks Canada immediately.
	Public safety	<ol style="list-style-type: none"> 24. Outline traffic control measures and assess the need for flagging personnel. 25. Call utility line companies to identify infrastructure locations. 26. All roadway signage must be in accordance with provincial standards. Signs must be bilingual or symbolic.
	Reduced aesthetics	<ol style="list-style-type: none"> 27. Evaluate the site layout, access routes and construction activities to minimize their visual impact. 28. Plan work schedule to confine “noise” activities to hours set out in Attachment 2. 29. Work should be conducted during periods of low park visitation to reduce noise and visual impacts
<i>Modification of Roads and Construction, Modification, Decommissioning and Abandonment of Sidewalks, Boardwalks and Parking Lots</i>		
Grading and gravel resurfacing; Material stripping, excavation, subgrade repair:	Dust production / aesthetics	<ol style="list-style-type: none"> 30. Wet down dry, exposed soils, particularly during windy periods. 31. Ensure materials being stored or transported are covered with tarps or equivalent material. 32. Minimize grading and excavation on windy days to limit dust production. 33. Avoid spillage and excess applications.

Model Class Screening Report for Routine Projects

Activity	Potential Impacts	Mitigation Measures
	Runoff / sedimentation (through intermittent drainage pathways including storm sewer systems)	<p>Particularly areas with slope class of 5 (5-15%) or greater and sites close to water.</p> <p>34. Wet down or cover stockpiles with polyethylene sheeting, tarps, or vegetative cover.</p> <p>35. Minimize vegetation cover removal.</p> <p>36. Filter or settle out sediment before the water enters any drainage pathway; including stormwater systems.</p> <p>37. Control overland flow up and down gradient of exposed areas by use of diversion ditches, bales, vegetative filter strips, and/or sediment traps.</p>
	Wind and water erosion	<p>All Ecosites in steeply sloped areas, and sloped areas with sandy loam/loamy sand soils for water erosion:</p> <p>38. Protect exposed soils with coarse granular materials, mulches, or straw along drainage pathways.</p> <p>39. Cover fills or stockpiles with polyethylene sheeting, tarps, or vegetative cover.</p> <p>40. Line steep ditches with filter fabric, rock or polyethylene lining to prevent channel erosion.</p>
	Contamination from runoff of poorly adhered seal coat	<p>41. Only apply seal coat to dry surface and not prior to (within 24 hrs.) or during rainfall.</p>
	Sensory disturbance	<p>42. According to the wildlife that may be present, schedule high noise level activities and other intrusive construction activities to avoid critical life stages (breeding, nesting, rearing, migration). Consult with Parks Canada to discuss any localized wildlife concerns.</p> <p>43. Educate workers to not harass or attract wildlife, keep the site free of food scraps, and dispose of garbage in bear proof containers.</p>
Post installation and replacement	Sensory disturbance and mortality to wildlife	<p>44. See mitigations for “General activities”.</p>
Painting lines	Contamination from accidental spills	<p>45. Spill contingency plans, equipment and supplies will be present on-site at all times and employees trained in their use.</p> <p>46. Paints should be selected that have minimal amounts of potentially harmful substances, particularly water soluble organic chemicals, lead and other metals. Rust inhibiting paints should be chosen over barrier types of paints to reduce the total volume of paint required over the long term.</p> <p>47. Hand painting is preferred over spray painting. Where sprayers are used, they must be properly adjusted and shielded to minimize the amounts of paint lost to overspray.</p> <p>48. Do not spray in high winds.</p>
Sidewalk, curb and guttering installation	Reduced aesthetics	<p>49. See mitigations under “General activities”.</p>

Model Class Screening Report for Routine Projects

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Light installation (10 or more)	Runoff / sedimentation	50. Light installations requiring small excavations for pre-formed concrete bases should minimize the amount of disturbed soil. 51. Minimize the time that borrow is exposed and the excavation remains open. Where required, use site specific erosion control methods (see mitigations for “Grading and gravel resurfacing”). 52. Do not schedule work during wet weather
	Reduced aesthetics	53. See mitigations under “General activities”.
<i>Maintenance and Repair of Roads</i>		
Patching	Runoff of poorly adhered seal coat	54. Only apply seal coat to dry surface and not prior to (within 24 hrs.) or during rainfall
Storage and application of road salts and abrasives	Salt contamination/ salt impact on vegetation	55. Store salt under dry shelter, away from wind or water erosion on impervious platform. 56. Ensure no runoff from storage of salt to soil or water. For dangerous locations: 57. Minimize the application rate of salt to the road. 58. Restrict application of salt (including liquid deicer) to the traveled surface of the road, and ensure calibration is tightly controlled. 59. Salt-minimizing measures include pre-wetting of salt; calibration of spreaders; combined use with sand and gravel; early snow removal from roads
	Contamination from accidental spills	60. Prepare an appropriate Spill Response Plan In the event of emergency operations (as defined in Section 10.11 of the MCSR), call Emergency Services and/or Parks Canada at the phone numbers indicated on Attachment 2. Parks Canada must be notified in the event of a spill.
	Attraction of wildlife to roads (salt) causing mortality	61. Minimize the application rate of salt to the roads, particularly in proximity to wildlife corridors. 62. Restrict salt to the traveled surface of the road. 63. Reduce speed limits.
Snow removal and storage	Salt contamination	64. Accumulated snow contaminated with salt should only be disposed at designated areas away from sensitive vegetation and drainage pathways. 65. Dispose of snow in designated Parks Canada snow dump. 66. Minimize the application rate of salt to the roads, and ensure the calibration is tightly controlled so salt application is restricted to the road surface.
Vegetation management	Contamination from fertilizers and herbicides	67. Accurately assess the need for chemicals during right-of-way maintenance. An approved current integrated pest management plan must be in place. 68. Avoid herbicide/fertilizer use in proximity to, or where run-off may reach waterbodies. 69. Ensure adjacent natural areas are not affected by herbicide use.

Model Class Screening Report for Routine Projects

Activity	Potential Impacts	Mitigation Measures
	Damage to adjacent vegetation, loss of native vegetation	To protect areas adjacent to development site: 70. Minimize area cleared. Clearly mark area to be cleared with biodegradable flagging tape and/or temporary fences. 71. Ensure sensitive resources listed on the form or attached are protected. 72. Fencing around trees to be retained must be installed beyond the tree's drip line prior to commencement of site work. 73. Where required obtain permit before removing any trees. See Attachment 2 for details. 74. Ensure excavated material does not damage or bury plant material that is to be retained on the site or in adjacent areas. 75. Trees are to be cut so they fall inside the cleared perimeters. 76. Care must be taken during grubbing and stripping to ensure trees and roots on the edge of the cleared area are not disturbed. 77. Minimize grubbing in all areas. Grubbing and stripping may not be permitted on steep slopes.
Dust control	Runoff of CaCl into water bodies	78. Avoid spillage and excess applications. Use water, when possible.
Site Reclamation and Restoration		
Grading	Dust production	79. Wet down dry, exposed soils, particularly during windy periods. 80. Ensure materials being stored or transported are covered with tarps or equivalent material.
	Runoff/ sedimentation	81. Halt grading on exposed soil during events of high rainfall intensity and runoff. Consult the Sediment and Erosion Control Plan. 82. Cover stockpiles of soil with polyethylene sheeting, tarps, or vegetative cover. Establish containment structures to trap runoff.
	Wind and water erosion	Particularly in areas with silty deposits and sloped areas with sandy deposits: 83. Protect exposed soils with coarse granular materials, mulches, or straw along drainage pathways. 84. Recontour slopes to predisturbance conditions.
Revegetation	Runoff / Sedimentation (through intermittent drainage pathways including storm sewers)/erosion	85. Initiate replanting of disturbed areas immediately after construction is completed. 86. For every tree cleared, plant at least two native trees, or as directed by Attachment 2. 87. Protect exposed soils with coarse granular materials, mulches, or straw along drainage pathways.
	Compaction of soils	88. Cultivate affected areas before reclaiming, especially areas with fine textured or organic soils.

Model Class Screening Report for Routine Projects

Activity	Potential Impacts	Mitigation Measures
	Contamination from fertilizers and herbicides	<p>89. Accurately assess the need for chemicals during site revegetation. An approved current integrated pest management plan must be in place.</p> <p>90. Do not use fertilizers and herbicides in areas where residue or run-off may enter a waterbody or drainage pathway.</p> <p>91. Do not over water.</p>
	Weed invasion	<p>92. Revegetate exposed areas at first opportunity.</p> <p>93. Ensure topsoil is clean and weed free. If clean fill is unavailable, monitor the site, and treat as needed, to ensure appropriate weed control for 3 years following landscaping (applicable to construction crews only).</p> <p>94. Revegetate with Parks Canada approved grass seed mix, if applicable, or the Town seed mix for landscape rehabilitation (see Attachment 2).</p> <p>95. An approved current integrated pest management plan must be in place.</p>
General Activities		
Materials handling/storage	Dust production	<p>96. Wet down dry, exposed soils or cover with tarps.</p> <p>97. Ensure materials being stored or transported are covered with tarps or equivalent material.</p>
	Damage to adjacent vegetation	<p>98. If tree damage does occur, a horticultural sealant will be applied to the tree damage as soon as possible. Diseased vegetation should be disposed of through burning. A burning permit must be obtained.</p> <p>99. Protect undisturbed land by only stockpiling materials on heavy canvas or polypropylene tarpaulins to protect native vegetation. Excavated material will not be permitted to damage or bury plant material that is to be retained on the construction site or in adjacent areas.</p>
	Decreased aesthetics (visual) and public safety	<p>100. Materials will be stored within the delineated confines of the work site.</p>
Equipment operation and maintenance	Decrease in ambient air quality due to emissions	<p>101. Ensure all equipment is properly tuned, free of leaks, in good operating order, and fitted with standard air emission control devices.</p> <p>102. Minimize idling of engines at all times.</p>
	Dust production	<p>103. Wet down dry and dusty roads.</p> <p>104. Do not use oil-based dust suppressants.</p> <p>105. Reduce speeds.</p> <p>106. Ensure materials being stored or transported are covered with tarps or equivalent material.</p>

Model Class Screening Report for Routine Projects

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	Contamination of soil and water from accidental spill	<p>107. Prepare an appropriate Spill Response Plan. In the event of emergency operations (as defined in Section 10.11 of the MCSR), call Emergency Services and/or Parks Canada at the phone numbers indicated on Attachment 2. All spills must be reported to Parks Canada.</p> <p>108. Avoid work in high risk areas, particularly in areas of high water table, steeply sloped sites or in close proximity to streams.</p> <p>109. Spill contingency plans, equipment and supplies (to clean up 110% of the site's largest possible fuel/chemical spill) will be present on-site at all times and employees trained in their use.</p> <p>110. Ensure all construction equipment is free of leaks from oil, fuel or hydraulic fuels.</p> <p>111. In-stream 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 by Parks Canada.</p> <p>112. Designate refuelling areas at least 100 m away from any water body. Equipment will be fuelled on hardened surfaces. Stationary stores of fuel will be bermed with an impermeable liner or other suitable secondary containment to contain 125% of the anticipated fuel quantity. Any contaminated rainwater will be moved out of the park.</p> <p>113. Refuelling activities should not be conducted where run-off could carry contaminants into drainage pathways (including storm sewers).</p> <p>114. Dispose of contaminated materials at provincially certified disposal sites outside of the park. No treatment of contaminated soils (e.g., bioremediation) is allowed in the park. All applicable documentation demonstrating proper disposal will be provided to Parks Canada.</p>
	Compaction of soils	<p>115. Restrict vehicular travel and other equipment operation to the construction site and approved access routes.</p> <p>116. Vehicle parking will be restricted to specialized areas on the construction site.</p> <p>117. Minimize or halt construction traffic during wet conditions when the soil shows signs of ponding or rutting.</p> <p>118. In sensitive areas, if possible, use equipment which minimizes surface disturbance including low ground pressure tracks/tires, blade shoes and brush rake attachments.</p>
	Damage to adjacent vegetation	<p>Undeveloped areas adjacent to development site:</p> <p>119. Careful machine operation is required to ensure that damage to surrounding vegetation does not occur.</p> <p>120. Excavated material must not be permitted to bury plant material that is to be retained. Snow fences may be used to prevent excavated material escaping into the surrounding forest.</p>

Model Class Screening Report for Routine Projects

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	Weed invasion	<p>121. All construction equipment from outside a national park will be steam cleaned prior to arrival to minimize the risk of introducing weeds.</p> <p>122. Construction equipment from outside a park will not be washed while in the park.</p>
	Sensory disturbance to wildlife	<p>All undeveloped areas and areas bordering natural habitat, especially wildlife movement corridors and natural wetlands:</p> <p>123. Use existing roadways, pathways and previously disturbed areas for site access and travel within the site.</p> <p>124. Educate workers not to enter wildlife corridors.</p> <p>125. Confine “noise” activities to hours set out in Attachment 2.</p>
	Increased traffic levels	126. Time construction activities to minimize vehicle conflicts on access roads and/or use flagging personnel.
	Public Safety	<p>127. If equipment infringes on driving lane, flag persons are required.</p> <p>128. All roadway signage must be in accordance with provincial standards. Signs must be bilingual or symbolic.</p> <p>129. The proponent is responsible for site security at all times.</p>
	Aesthetics	130. All heavy equipment operating on paved surfaces should be equipped with street pads. Damage to paved surfaces will be restored to original conditions.
Waste management (general)	Contamination of soil and water from accidental spill or improper disposal	131. No rock, silt, cement, grout, asphalt, petroleum product, lumber, vegetation, domestic waste, or any deleterious substance shall be placed or allowed to disperse into any stream, river, pond, storm or sanitary sewer, or other water course. Excess material will not be disposed of on or adjacent to the site.
	Aesthetics (visual and smell)	<p>132. Collect all waste, store appropriately and dispose trade waste at appropriate facilities.</p> <p>133. All garbage and food must be stored in bear-proof bins.</p> <p>134. Keep site maintained in a tidy condition, free from the accumulation of waste products, debris and litter.</p> <p>135. Construction sites must undergo thorough clean-up, including removal of general litter, survey stakes and flagging tape at project completion.</p>

Model Class Screening Report for Routine Projects

Activity	Potential Impacts	Mitigation Measures
Hazardous materials collection and handling	Contamination of soil or water	<p>136. Prepare an appropriate Spill Response Plan. In the event of emergency operations (as defined in Section 10.11 of the MCSR), call Emergency Services and/or Parks Canada at the phone numbers indicated on Attachment 2.</p> <p>137. All toxic/hazardous materials will be identified during demolition and will be handled as required under the Canadian Environmental Protection Act, Transportation of Dangerous Goods Act and Workplace Hazardous Materials Information Service.</p> <p>138. Dispose of contaminated materials at provincially certified disposal sites outside of the park. No treatment of contaminated soils (e.g., bioremediation) is allowed in the park. All applicable documentation demonstrating proper disposal should be obtained.</p> <p>139. All hazardous materials and wastes will be clearly labelled with WHMIS labels and information.</p> <p>140. Spill contingency plans, equipment and supplies will be present on-site at all times and employees trained in their use.</p> <p>141. All fuels, oils, lubricants and other petrochemical products will not be stored within 100 meters of any waterbody (including wetlands).</p> <p>142. Do not store fuels, lubricants, solvents, paints, and other chemicals on site overnight except within construction trailers secured with lock and key. Storage should be on a bermed, impervious site (secondary containment). Contact Parks Canada to determine if an additional permit is necessary.</p> <p>143. No rock, silt, cement, grout, asphalt, petroleum product, lumber, vegetation, domestic waste, or any deleterious substance shall be placed or allowed to disperse into any stream, river, pond, storm or sanitary sewer, or other water course.</p> <p>144. All construction sites will be equipped with containers suitable for the secure, temporary storage of hazardous wastes. Hazardous wastes will be separated by type. Follow all applicable regulations and codes for the management and handling of hazardous wastes.</p> <p>145. If any hazardous waste is uncovered during excavation/construction it must be investigated, source identified, properly removed and disposed to an approved landfill.</p>