

9. SUB-CLASS 2: SERVICE LINES

9.1. Description of Class of Projects

This Sub-Class addresses the construction of new service lines including underground natural gas, water, storm water, sewage, power and communication and aboveground power and communication. It also addresses the modification, operation, maintenance and repair, and abandonment and decommissioning of existing underground and aboveground lines. The MCSR covers the areas of the CSA as described in Section 1.3.

Parks Canada is the Responsible Authority under the Act for all construction, modification, operation, maintenance or repair, and abandonment and decommissioning projects in the park communities. The plans, directives, and guidelines in Tables 1.1 and 1.2 describe the capacities of services permitted in each community related to various land use districts.

Based on the *Canadian Environmental Assessment Act*, the following projects are included in this sub-class (for more details on projects covered by this class screening see Section 1.7):

- Construction of all new service lines,
- Modification, operation, maintenance or repair of existing lines within the areas listed in Schedules I, II, and III of the *National Parks Lease and Licence of Occupation Regulations* of the *Canada National Parks Act* where the projects:
 - Take place in areas that are not built-up;
 - Involve the cutting of indigenous trees;
 - Involve the likely release of a polluting substance into the environment (A polluting substance is a substance, either natural or man-made, that can potentially have adverse effects on the environment);
 - Increase the operating capacity of the water, sewer, gas, electricity or telephone service lines; or
 - Present risk of physical harm to mammals.

Note: Modification, operation, maintenance or repair of existing lines that do not involve any of the above do not require environmental assessment under the Act.

- Abandonment and decommissioning of existing lines.

Note: Any project and its associated activities that are carried out in or on or within 30 m of a water body may not be within the MCSR and therefore may require an individual environmental assessment. Any project that may impact sensitive resources or take place on a contaminated site may require an individual environmental assessment. For more details on projects covered by this class screening see Section 1.7.

9.2. Typical Projects Associated with the Provision of Service Lines

Both underground and aboveground service lines for water, sanitary waste, storm water, natural gas, power and communication are present in the CSA. Most new construction will be

underground and many aboveground services will be replaced with belowground when appropriate.

Utilities, including water, sanitary sewer, storm water, and natural gas, which are provided in pipes, are usually located under roadways, or across development properties. Utilities provided in electrical cable are usually provided together in a conduit wherever feasible, frequently following roadways, either above or underground.

All projects in this sub-class involve a pre-planning component. Pre-planning activities include the preparation of Emergency Response Plans for potential contamination, Sediment and Erosion Control Plans and scheduling work such that it does not conflict with peak usage times and critical wildlife life stages.

9.2.1. Underground Services

The following projects occur during construction, operation, modification, maintenance or repair, and decommissioning and abandonment of underground service lines:

- **Site Preparation** includes:
 - Surveying and clearing of vegetation in the right-of-way;
 - Thawing of frozen ground during the winter through burning of propane;
 - Grading to reduce steep slopes;
 - Excavation of trenches by open cutting with backhoes, usually 1 to 3 m deep and 1 to 2 m wide, depending on the utility being installed. Smaller lines, such as electrical or phone lines, can use a trenching machine, which is less disturbing than a backhoe. Main line sewer, water lines, and storm sewers require larger trenches; and
 - Dewatering involves the removal of excess water from the site using pumps, hoses and sediment traps, and redirecting to stable vegetation.
- **Installation** of new utility lines, including electricity, natural gas, telephone and cable television, sanitary sewer, storm water, and water lines includes installing conduit, pipe or cable (for pipe this includes hauling, stringing, bending, welding, coating and placement). Trench breakers and subdrains are installed to prevent the movement of water down the trench. Cathodic protection to prevent corrosion along the line is attached to metal natural gas lines. Projects that potentially have environmental impacts include:
 - Trenching, back filling and compacting: overburden is placed in the trench over the pipe, compacted and crowned over the trench to allow for subsidence. Final grading recontours the surface; and
 - Cable or telephone lines can be installed with a trenching machine, which opens the trench, lays the line and closes the trench in one pass.

- **Maintenance and Repair** of existing lines includes many of the same projects described under site preparation and installation. Additional projects include:
 - Annual inspection of lines and facilities for breaks, leaks or other malfunctions, and replacing damaged or broken lines, which includes the same activities as described above, but usually on a smaller scale;
 - Maintaining the right-of-ways, including mowing and removal of danger trees; and
 - Stormwater system maintenance, including cleaning storm sceptors and disposing of any sediment and trapped oils.
 - Inspection and maintenance and replacement of transformers
- **Decommissioning and Abandonment** includes:
 - Disconnecting and **either** removing and disposing of underground line or pipe, **or** capping/sealing to leave the disconnected line or pipe in place.

9.2.2. Aboveground Services

The following projects occur during construction, operation, modification, maintenance or repair, and decommissioning and abandonment of aboveground service lines:

- **Site Preparation** includes:
 - Surveying and clearing of vegetation in the right-of-way;
 - Thawing of frozen ground during the winter through burning of propane;
 - Grading to reduce steep slopes;
 - Dewatering involves the removal of excess water from the site using pumps, hoses and sediment traps, and redirecting to stable vegetation.
- **Installation** of new utility lines aboveground includes:
 - digging holes for poles, planting poles, and stringing.
- **Maintenance and Repair** activities include:
 - Replacing poles and lines as necessary, including removing old poles, digging holes for new poles, planting poles, stringing, and replacing light bulbs; and
 - Maintenance of right-of-ways (outside town boundary), including mowing, clearing of shrubs, possible use of herbicides, and pruning or removal of danger trees.
- **Decommissioning and Abandonment** occurs when aboveground lines are replaced by underground service lines. This process involves:
 - Removal and disposal of aboveground poles and lines; and

- Re-installation of underground services (see Section 9.2.1).

9.2.3. Aboveground and underground services

The following activities are applicable to aboveground and underground services.

- **Restoration or Reclamation** includes the overall clean up and reclamation of the site after construction or decommissioning and abandonment, involving:
 - Removal of all garbage and debris, and
 - Revegetation by seeding, sodding or planting of native trees and shrubs.
- **General activities**, including:
 - **Materials Handling/Storage** includes stockpiling overburden for use during filling and compacting.
 - **Equipment Operation** occurs during all phases. For aboveground lines, it includes the use of bucket trucks for pruning and line work. For underground services, it includes the use of jackhammers, compressors, compactors, backhoes, trenchers, trucks, vacuum trucks, water pumps and gas rectifiers.
 - **Waste Production and Disposal** occurs during all phases of the project. This involves the collection of all waste and its removal to appropriate facilities. Vegetative material will be chipped and re-used, or composted. Diseased vegetation may be burned, and a burning permit is required.

9.2.4. Typical Seasonal Scheduling and Construction Duration

Service line activities can occur during all seasons of the year. However, most planned activities occur between April and November, when the ground is thawed. If necessary, ground can be thawed during the winter months by burning propane on the surface, although this is usually only done for emergency underground repair activities. Aboveground repair activities can be carried out at all times of the year. Scheduled vegetation removal on rights of way is usually scheduled to occur during the winter season when the ground is frozen.

Duration of activities varies depending upon the type and size of the project. Construction of new service lines may take up to two months to complete for major projects, major repairs may also take this long. Maintenance and minor repair activities can be done in a short period of time.

9.3. Description of Study Areas for Sub-Class 2

The MCSR is being prepared for projects that are conducted regularly and considered routine in nature, and the spatial and temporal extent of the impacts are well understood. Therefore, the potential size of the Study Area for each project subject to the MCSR has been defined below. The Study Areas are defined to include all the environmental components that could be affected by the proposed project.

Sub-Class 2 - Service Lines	Spatial Extent⁽ⁿ⁾	Temporal Extent
Construction of New Service Lines, and Modification, Operation,	<ul style="list-style-type: none">• Include linear corridor that extends the length of the	<ul style="list-style-type: none">• Construction - Duration of Construction Phase

Maintenance and Repair, and Decommission and Abandonment of Existing Lines	<p>service line</p> <ul style="list-style-type: none"> • Include width of Right-of-Way (for power and communication lines), or width of Right-of-Way plus 20 m from centre line on either side of Right-of-Way (for gas, sewage and water lines) 	<p>(e.g. 3 weeks to 1 year)</p> <ul style="list-style-type: none"> • Modification, Operation, Maintenance or Repair - Duration is Life of Service Line operation, or duration of modification, maintenance or repair (e.g. 1 day to 2 weeks) • Decommission and Abandonment, Reclamation or Restoration - Duration of Decommissioning and Abandonment Phase and time for site to re-establish vegetation for selected end land use (e.g. 3 weeks to 1 year)
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^(a) The size of the Study Area may need to be adjusted due to site-specific conditions as identified in the CSPR.

9.4. Typical Project Sites and Environmental Setting

Potential project sites are located within different ecosystems in the CSA. The environment in the CSA and their environmental characteristics and sensitivities are described in Sections 2.2, 3.2, 4.2, 5.2, 6.2, and 7.2.

9.5. Potential Environmental Effects of Projects Associated with Service Lines

Based on the environmental conditions, location and other site-specific conditions in each ecosite in the CSA, potential effects of project activities have been identified.

An environmental matrix (Table 9.1) has been used to identify which project activities will likely impact each environmental component. The matrix identifies the potential range of magnitudes of the impacts that could result from construction, modification, maintenance or repair, and decommissioning and abandonment of service lines if no mitigation measures are implemented. Potential impacts are rated as high, moderate or low magnitude, or none. Only those activities with impacts are included in the table.

The highest magnitude potential **pre-mitigation** environmental effects as identified in Table 9.1 include:

- Impact on surface water quality from installation of underground service lines close to water bodies (but not closer than 30 m) and sedimentation from run-off during clearing and excavation activities, and dewatering into water bodies. Surface water runoff and increased sedimentation resulting from eroded soils can decrease the quality of surface waters that they enter. Changes in water quality can impact aquatic resources. Activities closer than 30 m to a water body are not covered by the MCSR, and require a separate environmental assessment;
- Potential impacts to soil, including:
 - Soil erosion during grading and excavation activities;

- Soil compaction during equipment operation; and
- Soil contamination from accidental spills and leaks from equipment operation and maintenance.
- Potential for loss or damage to adjacent vegetation from site clearing activities during site preparation.
- Impact on wildlife and wildlife habitat in previously undeveloped areas, including:
 - *Loss or fragmentation of habitat* where development occurs in or adjacent to previously undisturbed areas (including loss of nesting/seeding/resting areas);
 - *Sensory disturbance* from noise and activity during site preparation, installation and equipment operation; and
 - *Disruption of wildlife movement corridors*, where present.
- General negative aesthetic impacts including visual, noise and odour effects, and loss of the wilderness experience.

Table 9.1 Matrix of the Magnitude of Potential Environmental Impacts from the Provision of Service Lines - Sub-Class 2.

Activity and Development Phase	Environmental Components					
	Air Quality	Hydrology, Water Quality and Aquatic Resources	Landforms and Soil	Vegetation	Wildlife Habitat and Populations	Aesthetics (Vision, Noise)
<i>Underground and Aboveground Services</i>						
Site Preparation						
Clearing of vegetation	L	L-M	L	L-H	L-M	L-H
Thawing	L	—	L	—	—	L-M
Grading and excavation	L	L-M	L-H	L-M	L-M	L-H
Dewatering		L	L	L	L	L
<i>Underground Services</i>						
Installation, Maintenance and Repair						
Trenching, backfilling, compacting, grading	L	L	L-H	—	L-M	L
Right-of-way maintenance	L	L	—	L	L	—
Cleaning storm sceptors	—	L	L	—	—	—
Decommissioning and Abandonment						
Disconnection and removal of pipes/cables	—	L	L	—	L	L
<i>Aboveground Services</i>						
Installation, Maintenance and Repair						
Removal of poles and lines	—	P	L	—	L	P
Digging holes for replacement poles	—	L-M	L	L	L	—
Planting poles and stringing	—	L-M	L	—	L	L-H
Right-of-way maintenance	L	L	—	L	L	—
Decommissioning and Abandonment						
Removal of wires and poles, refilling holes	—	—	P	P	P	P
Reclamation and Restoration^(b)						
Revegetation	—	P	L	P	P	P
<i>Underground and Aboveground Services</i>						
General Activities^(c)						
Materials handling/storage	L	L	L-M	L-M	L-M	L-M
Equipment operation and maintenance	L	L-M	L-M	L	L-M	L
Waste management	—	—	L	—	L-H	L-M

Potential Magnitude of Impacts:

H = High
M = Moderate
L = Low
P = Positive
— = None

9.6. Mitigation Measures, Guidelines and Standards

Standard guidelines and procedures are available which significantly reduce the magnitude of these potential impacts.

Table 9.2 provides a summary of typical mitigation measures that should be used to address the potential environmental effects identified in Table 9.2. Mitigations associated with general activities should be fully considered in the pre-planning stage to ensure that they are the most effective while on-site. It is important to recognize that appropriate mitigation measures will depend on site-specific environmental characteristics, which can be determined from Table 9.1. Many of these outlined mitigation procedures are currently practised within the CSA.

Parks Canada and the utility companies operating the communities have documented specific mitigation measures (listed in Attachment 2) to be used during project activity. Utility companies and contractors in the CSA are required to be familiar with these recommended construction techniques, and to use them at all times to minimize the impact of their projects.

Table 9.2 Sub-Class 2: Service Lines - Mitigation for Reducing Impacts of Service Line Projects

Activity	Potential Impacts	Mitigation Measures
Underground and Aboveground Services		
Pre-Planning		
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 9.11 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.

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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, adapt activities 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.
	Reduced aesthetics (visual and noise)	<ol style="list-style-type: none"> 26. Evaluate the site layout, access routes and construction activities to minimize their visual impact. 27. Plan work schedule to confine "noise" activities to hours set out in Attachment 2.
Site Preparation		
Clearing of vegetation	Dust production	<ol style="list-style-type: none"> 28. Wet down dry, exposed soils, particularly during windy periods. 29. Ensure materials being stored or transported are covered with tarps or equivalent material.
	Runoff / sedimentation	<p>In all ecosites and on areas with a slope class of 5 (5-15%) or greater:</p> <ol style="list-style-type: none"> 30. Minimize vegetation cover removal. 31. Assess slopes stability (based on slope length, soil texture, steepness, soil depth). 32. Use appropriate geo-technical control measures to stabilize slopes. 33. To minimize site runoff, control overland flow up and down gradient of exposed areas by use of diversion ditches, bales, vegetative filter strips, and/or sediment traps. 34. When possible, hand clear slopes > 35%. Wait to clear steep sloped areas until immediately before scheduled construction and reclaim immediately afterwards. 35. Regularly inspect and repair erosion control structures.

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Activity	Potential Impacts	Mitigation Measures
	Wind and water erosion	<p>Particularly in areas with silty deposits and sloped areas with sandy deposits:</p> <ul style="list-style-type: none"> 36. Clear minimum area necessary in ROW. Where possible, leave stumps and roots in place. 37. Protect exposed soils with granular materials, mulches, or straw. 38. Cover stockpiles of soil with polyethylene sheeting, tarps, or vegetative cover. 39. Minimize grubbing. 40. Where possible schedule clearing in winter to minimize soil disturbance.
	Damage to adjacent vegetation	<p>To protect areas adjacent to development site:</p> <ul style="list-style-type: none"> 41. Minimize area cleared. Clearly mark area to be cleared with biodegradable flagging tape and/or temporary fences. 42. Ensure sensitive resources identified in Attachment 3 and 4 (if applicable) are protected. 43. See Attachment 2 for replanting directions. 44. Fencing around trees to be retained must be installed beyond the tree's drip line before starting work on site. 45. Where required obtain permit before removing any trees. See Attachment 2 for details. 46. Ensure excavated material does not damage or bury plant material that is to be retained on the site or in adjacent areas. 47. Trees are to be cut so they fall inside the cleared perimeters. 48. Care must be taken during grubbing and stripping to ensure trees and roots on the edge of the cleared area are not disturbed. 49. Grubbing and stripping may not be permitted on steep slopes to reduce the potential for erosion.
	Habitat fragmentation and wildlife corridor encroachment, loss of wilderness quality	<p>When working adjacent to undeveloped areas and areas bordering natural habitat:</p> <ul style="list-style-type: none"> 50. Clear only the minimum area required for construction activities. 51. Retain vegetation barriers where possible, especially trees and shrubbery.
Thawing	Decrease in ambient air quality due to emissions	<ul style="list-style-type: none"> 52. Only use ground thawing measures in emergency situations. 53. Minimize use of propane for thawing by scheduling activities for spring/summer/fall.
Grading and excavation	Dust production / aesthetics	<ul style="list-style-type: none"> 54. Wet down dry, exposed soils, particularly during windy periods. 55. Ensure fine materials being stored or transported are covered with tarps or equivalent material. 56. Minimize grading and excavation on windy days to limit dust production.

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Activity	Potential Impacts	Mitigation Measures
	Runoff/ sedimentation	<p>57. Halt construction activity on exposed soil during events of high rainfall intensity and runoff.</p> <p>58. Assess slopes stability (based on slope length, soil texture, steepness, soil depth).</p> <p>59. Use appropriate geo-technical control measures to stabilize slopes.</p> <p>60. Cover stockpiles of soil with polyethylene sheeting, tarps, or vegetative cover.</p> <p>Sites close to waterbodies, but not closer than 30 m:</p> <p>61. To ensure site runoff is minimized, control overland flow up and down gradient of excavated areas by use of effective diversion ditches, bales, vegetation filter strips, or sediment traps.</p>
	Wind and water erosion	<p>Particularly in areas with silty deposits and sloped areas with sandy deposits:</p> <p>62. Protect exposed soils with coarse granular materials, mulches, or straw.</p> <p>63. Cover stockpiles of soil with polyethylene sheeting, tarps, or vegetative cover.</p>
	Loss of top soil and/or top soil/subsoil mixing	<p>64. Topsoil separation is required.</p> <p>65. Topsoil will be stored away from any slopes, subsoils, spoil material, construction activities and day-to-day operations.</p>
	Slope failure	<p>66. Avoid work on steep slopes, especially areas with slope Class 6 (15-30%) or greater.</p> <p>67. Assess slopes stability (based on slope length, soil texture, steepness, soil depth).</p> <p>68. Use appropriate geo-technical control measures to stabilize slopes.</p> <p>69. Topsoil will be stored away from any slopes, subsoils, spoil material, construction activities and day-to-day operations.</p>
	Non-point source hydrocarbon contamination	<p>70. When constructing and upgrading storm sewers, install oil sumps.</p>
Dewatering	Runoff / sedimentation	<p>71. Dewatering is not permitted into any waterbody.</p> <p>72. Dewatering is permitted on previously disturbed vegetation or natural vegetation if the following conditions are met:</p> <ul style="list-style-type: none"> • sediment controls are used (i.e., silt fences, silt bags, etc.). • water velocity is controlled to dissipate energy, prevent soil erosion and allow for infiltration. • dewatering structures are continuously monitored to ensure no damage is being done to soil or vegetation. <p>73. Dewatering into the sanitary or stormwater system is restricted as indicated in Attachment 2.</p> <p>74. Sediment from the traps may be used as fill on the construction site.</p>
	Damage to adjacent vegetation	<p>75. For undeveloped areas adjacent to development site, ensure water and sediment is directed away from natural areas.</p>

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Activity	Potential Impacts	Mitigation Measures
	Sensory disturbance and mortality of wildlife	<p>When working adjacent to natural areas:</p> <p>76. 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>77. Confine "noise" activities to hours set out in Attachment 2.</p> <p>78. Consider posting wildlife signs to reduce vehicle speeds and increase driver awareness near construction areas where wildlife mortality has or is likely to occur.</p> <p>79. Educate workers to not harass or attract wildlife.</p>
Underground Services		
Installation, Maintenance and Repair		
Trenching, backfilling, compacting, grading	Dust production / aesthetics	<p>80. Minimize the amount of open trench at any given time.</p> <p>81. Cover stockpiles of soil with polyethylene sheeting, tarps, or vegetative cover.</p> <p>82. Wet down dry, exposed soils, particularly during windy periods.</p> <p>83. Minimize trenching, backfilling and compacting on windy days.</p>
	Runoff / sedimentation	<p>84. Assess slopes stability (based on slope length, soil texture, steepness, soil depth).</p> <p>85. Use appropriate geo-technical control measures to stabilize slopes.</p> <p>86. All excavations will remain free of water (see mitigations for "Dewatering").</p> <p>Sites close to waterbodies, but not closer than 30 m:</p> <p>87. To ensure site runoff is minimized, control overland flow up and down gradient of excavated areas by use of effective diversion ditches, bales, vegetation filter strips, or sediment traps.</p> <p>88. Stockpiles related to excavations will be stored a minimum of 2 m from embankments, slumps, water bodies and containment sources to prevent material loss or degradation.</p> <p>89. Following excavations, lightly tamp disturbed areas to minimize slumping and potential pooling or water.</p>
	Non-point source hydrocarbon contamination	<p>90. When constructing and upgrading storm sewers, install oil sumps.</p>
	Erosion (wind and water)	<p>91. Install trench breakers of impervious material to direct groundwater seepage to the surface.</p> <p>92. Minimize the length of exposed trench and the time of excavated soil exposure.</p> <p>93. Use interceptor ditches or berms (bales) upgradient of construction to divert overland flow around exposed soil surfaces.</p> <p>94. Line steep ditches with filter fabric, rock or polyethylene lining to prevent channel erosion.</p>
	Trench collapse	<p>95. Delay trenching until just prior to lowering-in pipeline.</p> <p>96. Use trench reinforcement device (i.e. cage), if possible.</p>

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Activity	Potential Impacts	Mitigation Measures
	Compaction	97. Compact soil to approximate preconstruction conditions while allowing for settling.
	Habitat loss, fragmentation, wildlife mortality	98. Minimize the length of open trench, and the time a trench is open to reduce its affect as a barrier or trap for terrestrial wildlife. 99. Fence trench if it is to be left unattended over night.
Right-of-way maintenance (outside community boundaries)	Dust production / aesthetics	100. Wet down dry, exposed soils, particularly during windy periods. 101. Ensure materials being stored or transported are covered with tarps or equivalent material. 102. Minimize trenching, backfilling and compacting on windy days.
	Loss of wilderness quality	103. Retain vegetation barriers where possible, especially trees and shrubbery. 104. Minimize the amount of vegetation removed.
	Contamination from fertilizers and herbicides	105. Accurately assess the need for chemicals during right-of-way maintenance. An approved current integrated pest management plan must be in place. 106. Avoid herbicide/fertilizer use in proximity to, or where runoff may reach waterbodies.
	Wind and water erosion	107. Where possible schedule vegetation clearing in winter to minimize soil disturbance.
Cleaning storm sceptors (stormwater sewers)	Sedimentation/contamination of water	108. Ensure stormwater storm sceptors are cleaned regularly. 109. Dispose of sediment and trapped oils and debris at appropriate facilities.
Decommissioning and Abandonment		
Disconnection and removal of pipes/cables	Runoff / sedimentation	110. Stockpiles related to excavations will be stored a minimum of 2 m from embankments, slumps, water bodies and containment sources to prevent material loss or degradation. 111. Following excavations, lightly tamp disturbed areas to minimize slumping and potential pooling or water.
	Wind and water erosion	112. Begin revegetation immediately. 113. Protect exposed soils with coarse granular materials, mulches, or straw.
	Compaction	114. Select appropriate equipment, especially in erosion/slump prone areas. If possible, use wide tracked equipment, rubber tired vehicles and low bearing pressure weight equipment in sensitive areas.
	Other	115. Pipes to be abandoned must be pressure tested for leaks and sealed with no part of the line exposed above the surface. 116. The proponent will retain responsibility for the line until it is removed.
Aboveground Services		
Installation, Maintenance and Repair		

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Activity	Potential Impacts	Mitigation Measures
Removal of poles and lines	Compaction	<p>117. Compact soil to approximate precondition conditions while allowing for settling.</p> <p>118. Select appropriate equipment, especially in erosion/slump prone areas. If possible, use wide tracked equipment, rubber tired vehicles and low bearing pressure weight equipment in sensitive areas.</p>
Digging holes for poles	Slope failure	<p>119. Assess slopes stability (based on slope length, soil texture, steepness, soil depth).</p> <p>120. Use appropriate geo-technical control measures to stabilize slopes.</p>
	Loss of or damage to vegetation, weed invasion	121. Protect undisturbed land by only stockpiling materials on heavy canvas or polypropylene tarpaulins to protect native vegetation. Excavated material should not be permitted to damage or bury plant material that is to be retained on the RoW or in adjacent areas.
Planting poles and stringing	Heavy equipment and excavation activities may result in soil compaction, loss of organic matter, erosion and loss of topsoil	122. Soil that has been temporarily moved away from poles and placed on tarps will be shovelled back against the pole and lightly tamped to prevent slumping or pooling of water.
	Reduced aesthetics (noise)	123. Confine "noise" activities to hours set out in Attachment 2.
Right-of-way maintenance	Dust production / aesthetics	<p>124. Wet down dry, exposed soils, particularly during windy periods.</p> <p>125. Ensure fine materials being stored or transported are covered with tarps or equivalent material.</p>
	Contamination from fertilizers and herbicides	<p>126. Accurately assess the need for chemicals during right-of-way maintenance. An approved current integrated pest management plan must be in place.</p> <p>127. Avoid herbicide/fertilizer use in proximity to, or where runoff may reach waterbodies.</p>
	Loss of wilderness quality	<p>128. Retain vegetation barriers where possible, especially trees and shrubbery.</p> <p>129. Minimize the amount of vegetation removal.</p>

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Activity	Potential Impacts	Mitigation Measures
Decommissioning and Abandonment		
Removal wires and poles, refilling holes	Heavy equipment and excavation activities may result in soil compaction, loss of organic matter, erosion and loss of topsoil.	130. Soil that has been temporarily moved away from poles and placed on tarps will be shovelled back against the pole and lightly tamped to prevent slumping or pooling of water.
	Weed invasion	131. See mitigations for "Revegetation".
	Sensory disturbance	When working adjacent to natural areas: 132. 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. 133. Educate workers to not harass wildlife. 134. Trade waste will be disposed of at appropriate facilities.
Revegetation	Runoff/ sedimentation, wind and water erosion	135. Initiate replanting of disturbed areas immediately after construction is completed. 136. Protect exposed soils with coarse granular materials, mulches, or straw. 137. Use stockpiled topsoil to facilitate reclamation.
	Contamination from fertilizers and herbicides	138. Accurately assess the need for chemicals during right-of-way maintenance. An approved current integrated pest management plan must be in place. 139. Do not use fertilizers and herbicides in areas where residue or runoff may enter a waterbody or drainage pathway. 140. Do not over water.
	Compaction	141. Cultivate affected areas before reclaiming, especially areas with fine textured or organic soils.
	Weed invasion	142. Revegetate exposed areas at first opportunity. 143. 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). 144. Revegetate with Parks Canada approved grass seed mix, if applicable, or the Town seed mix for landscape rehabilitation (see Attachment 2). 145. An approved current integrated pest management plan must be in place.
	Habitat loss, fragmentation and wildlife corridor encroachment.	146. Revegetate exposed areas at first opportunity.
	Attraction of wildlife to palatable, non-native species	147. Seed with Parks Canada-approved seed mix (see Attachment 2) and native plants that are non-palatable to wildlife.
Underground and Aboveground Services		

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Activity	Potential Impacts	Mitigation Measures
General Activities		
Materials handling/storage	Dust production	148. Wet down dry soil or cover with tarp. 149. Ensure materials being stored or transported are covered with tarps or equivalent material.
	Runoff/ sedimentation	150. Cover stockpiles with polyethylene sheeting, tarps, or vegetative cover.
	Damage to adjacent vegetation	151. Excavated material will not be permitted to damage or bury plant material that is to be retained on the site or in adjacent areas. 152. Protect undisturbed land by only stockpiling materials on heavy canvas or polypropylene tarpaulins to protect native vegetation. Excavated material should not be permitted to damage or bury plant material that is to be retained on the construction site or in adjacent areas.
Equipment operation and maintenance	Decrease in ambient air quality due to emissions	153. Ensure all equipment is properly tuned, free of leaks, in good operating order, and fitted with standard air emission control devices. 154. Minimize idling of engines at all times.
	Dust production	155. Wet down dry and dusty roads. 156. Do not use oil-based dust suppressants. 157. Reduce speeds. 158. Ensure materials being stored or transported are covered with tarps or equivalent material.

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Activity	Potential Impacts	Mitigation Measures
	Contamination of soil and water from accidental spill	<p>159. Prepare an appropriate Spill Response Plan. In the event of emergency operations (as defined in Section 9.11 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>160. Avoid work in high risk areas, particularly in areas of high water table, steep slopes or in close proximity to streams.</p> <p>161. 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>162. Ensure all construction equipment is free of leaks from oil, fuel or hydraulic fuels.</p> <p>163. 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.</p> <p>164. Designate refuelling areas at least 100 m away from any water body. Stationary stores of fuel will be bermed with an impermeable liner to contain 125% of the anticipated fuel quantity. Any contaminated rainwater will be moved out of the park.</p> <p>165. Refuelling activities should not be conducted where run-off could carry contaminants into drainage pathways (including storm sewers).</p> <p>166. Equipment will be fuelled on hardened surfaces.</p> <p>167. 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>168. Restrict vehicular travel and other equipment operation to the construction site and approved access routes.</p> <p>169. Vehicle parking will be restricted to specialized areas on the construction site.</p> <p>170. Minimize or halt construction traffic during wet conditions when the soil shows signs of ponding or rutting. Use low impact equipment when possible and repair rutted areas with approved methods</p> <p>171. In sensitive areas, if possible, use equipment that 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>172. Careful machine operation is required to ensure that damage to surrounding vegetation does not occur.</p> <p>173. 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>

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Activity	Potential Impacts	Mitigation Measures
	Weed invasion	174. All construction equipment from outside a national park will be steam cleaned prior to arrival to minimize the risk of introducing weeds. 175. Construction equipment from outside the park will not be washed while in the park.
	Sensory disturbance to wildlife	All undeveloped areas and areas bordering natural habitat, especially wildlife movement corridors and natural wetlands: 176. Use existing roadways, pathways and previously disturbed areas for site access and travel within the site. 177. Educate workers not to enter wildlife corridors. 178. Confine "noise" activities to hours set out in Attachment 2.
	Increased traffic levels	179. Time construction activities to minimize vehicle conflicts on access roads and/or use flagging personnel.
	Public Safety	180. If equipment infringes on driving lane, flag persons are required. 181. All roadway signage must be in accordance with provincial standards. Signs must be bilingual or symbolic. 182. The proponent is responsible for site security at all times.
	Aesthetics	183. 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	184. 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)	185. Collect all waste, store appropriately and dispose of trade waste at appropriate landfills. 186. All garbage and food must be stored in bear-proof bins. 187. Keep site maintained in a tidy condition, free from the accumulation of waste products, debris and litter. 188. Construction sites must undergo thorough clean-up, including removal of general litter, survey stakes and flagging tape at project completion.

9.7. Residual Impacts

Residual impacts are those impacts remaining **after all appropriate mitigation has been implemented**.

The potential residual impacts likely to result from Sub-class 2 projects have been defined using the following terms:

- **Magnitude of Impact** refers to the percentage of a population or resource that may be affected. High, medium or low are the terms identified.
- **Direction** refers to whether an impact to a population or resource is considered to be positive, negative or neutral.
- **Duration** refers to the time it takes a population or resource to recover from the impact. It can be identified as short-term (< 3 to 6 months), moderate-term (6 months to 2 years) and long-term (> 3 years).
- **Frequency** refers to the number of times an activity is likely to occur and can be identified as once, intermittent, or continuous.
- **Geographical Extent** refers to the geographical area potentially affected by the impact and may be rated as local (within CSA), or regional (within the national park) or provincial.
- **Degree of Reversibility** refers to the extent an adverse effect is reversible or irreversible over a 5 year period.
- **Degree of certainty** in assessing residual impacts.

If the appropriate measures are followed, most of the potential impacts identified in Table 9.1 and described in Section 9.5 should be reduced to insignificant levels. The degree of certainty in predicting the residual impacts and significance is high because these are well understood mitigations and in known environments.

After appropriate mitigation measures are taken, the following residual impacts may remain:

- Sedimentation from site preparation and dewatering activities and contamination of surface water from equipment operation should be reduced provided contractors use appropriate mitigations as described in Table 9.2. These mitigations address equipment operation in proximity to water bodies, including using geotextile materials on steeper slopes, halting activities on steep slopes during heavy rainfall events, and ensuring an appropriate spill response plan is in place prior to operating equipment. Resulting effects would be low, negative, short-term, intermittent, local, reversible and are not considered not significant.
- Following the mitigations in Table 9.2 during site preparation activities and equipment operation can reduce soil impacts such as erosion, compaction and contamination. Mitigations include restricting vehicular traffic and other equipment operation to designated areas and using equipment of low bearing weight, where possible. Provided these and other mitigations are followed, the residual impact to soil would be low, negative, short term, local, reversible and are not considered significant.

- Minimizing vegetation clearing and avoiding use of off-site areas for material storage or access can reduce loss of wildlife habitat. Fragmentation or encroachment on wildlife movement corridors from project activities is more difficult to mitigate. The major residual impacts to wildlife will occur in and in close proximity to previously undisturbed areas. Impacts in these areas will be low to moderate (depending on the specific location), negative, short-term, intermittent, local and reversible.
- Negative aesthetic impacts can be greatly reduced by adhering to noise restrictions and reducing facility-related visual impacts by careful placement. If this is done, aesthetic impacts should be insignificant. Aesthetic impacts during site preparation will be negligible, negative, short term, local, reversible and are not considered significant.

In summary, appropriate mitigation should be effective in reducing potential impacts from service line projects to insignificant levels, except in or adjacent to previously undisturbed areas.

9.8. Malfunctions and Accidents

The likelihood of accidents and malfunctions occurring that would cause negative environmental impacts is minimal, as the projects associated with service lines are routine and their effects predictable. The likelihood of malfunctions occurring is reduced through use of appropriate operation and maintenance procedures. Examples of unlikely accidents or malfunctions that may occur include:

- Damage to or breakage of underground service lines during operation could result in flooding, gas leaks, explosions, etc. Normal safety procedures would reduce the likelihood of this occurring, and Emergency Response Plans minimize any environmental effects.
- Trees falling onto the line, lightning, and extreme ice and wind loading, and impacts from vehicles or birds could damage aboveground power lines. This could result in personal safety concerns.
- Wood pole structures can malfunction due to extreme weather situations. Wood poles can also malfunction due to loss of strength through rot.
- Substation malfunctions typically occur through mechanical failure.
- Heavy rains during construction or maintenance could lead to unexpected erosion and overflow of sediment traps or exposure of pipeline or cable. Possible mitigation measures include the use of erosion control devices to contain and direct flow.
- Spills of petroleum products from equipment. Possible mitigation includes having Emergency Response Procedures and standard spill containment kits available at all times and cleaning up spills.

9.9. Effects of the Environment on the Project

Natural events including flooding, avalanches, forest fire, heavy wind or snow have the potential to affect projects associated with service lines, and, in extreme cases, create emergency situations. These issues and concerns are considered to be mitigable through use of careful planning and Emergency Response procedures. Such measures should be included in Emergency Response Plan, as recommended under Table 9.2.

9.10. Emergencies

The Agency has advised Parks Canada “that pursuant to Section 7(1) of the Act, an environmental assessment is not required of a project where the project is to be carried out in response to an emergency and the project is carried out in the interest of preventing damage to property, the environment, or is in the interest of public health and safety. The scope and magnitude of actions taken by Federal Authorities in these circumstances will be defined by the powers that authorize the emergency actions. However, Federal Authorities should, as a matter of policy, attempt to ensure that environmental considerations are factored into their emergency response planning to the extent possible.”

Emergencies within these national parks, other than those of a national scale, include but are not limited to the actual occurrence of, and/or imminent threat of flooding, dam failure, extreme erosion, facility structural damage and forest fire, snow, rock or debris avalanche, natural gas leaks or explosions, train derailments and railway track failure, toxic materials release or spill, natural event blockage of highways or railways, and telephone or electrical failure. Initial actions or immediate containment will be approved but will require a post project environmental assessment and follow-up. If a longer-term project arises from the initial emergency, the normal environmental assessment protocol will apply to any further undertakings.

If a project would normally be covered by the MCSR, then it would also be covered if it resulted from emergency situations that occur within the CSA. Projects that would not normally be covered by the MCSR would not be covered in an emergency situation.

9.10.1. Emergency Situation Environmental Assessment Procedure

Protocols in the event of one of the above-specified emergencies include calling Parks Canada and/or emergency responders at the numbers listed in Attachment 2. Inform Parks Canada of the nature and location of the emergency, initial action proposed and any subsequent follow-up.

The week following an emergency, a CSPR form must be completed and submitted to Parks Canada as outlined in Section 9.12.

9.10.2. Post Emergency Environmental Assessment

Should the emergency action require further long-term work already covered in the MCSR, a CSPR form may be used. When emergency repair is outside the activities included under the MCSR, an individual environmental assessment will be required.