5.0 SUMMARY OF PROPOSED MITIGATION

Proposed mitigation for the Project is summarized in Table 5.1, below.

Table 5.1 Summary of Proposed Mitigation

#	Valued Component (VC) (if applicable)	Project Phase	Proposed Mitigation/Compensation Measure	Location within EIA Registration Document where Mitigation Measure is Identified
1.	N/A	Construction	In order to mitigate impact to the proposed transmission line, overhead ground wires (OHGW) will be strung above the conductor along the last approximately 1 km of transmission line adjacent to the substation to protect them from the high current and voltage surges present in lightning. In the event the line suffers a direct or indirect strike, these wires provide a path for the high current and voltage to safely discharge down through the structures and into the ground.	Section 2.4.1.3 Overhead Ground Wires and Counterpoise
2.	N/A	Construction	The training of personnel in spill prevention and response, and Workplace Hazardous Materials Information System (WHMIS)	Section 2.8.1 Hazardous Materials
3.	N/A	Construction	Following proper procedures within the existing NB Power Environmental Protection Plan (EPP)	Section 2.8.1 Hazardous Materials
4.	N/A	Construction	Design and installation of secondary containment for the transformer and associated equipment	Section 2.8.1 Hazardous Materials
5.	N/A	Construction	Routine cleaning, preventative maintenance, and visual inspections of hydraulic equipment and vehicles	Section 2.8.1 Hazardous Materials
6.	N/A	Construction	On-site spill response equipment	Section 2.8.1 Hazardous Materials
7.	N/A	Construction	Reporting spill to the appropriate Project personnel and New Brunswick Power Transmission System Operator (PSO) (1-800-756-8411). During normal business hours (*i.e.*, Monday to Friday from 8:15 am to 4:30 pm), the PSO will notify the appropriate authorities (*i.e.*, NBENV). Outside of normal business hours, on weekends and on holidays, the PSO will notify the Canadian Coast Guard/Spills Action Centre (1-800-565-1633)	Section 2.8.1 Hazardous Materials
8.	N/A	Construction	Equipping all vehicles with fire extinguishers sized and rated as appropriate	Section 2.8.2 Fire
9.	N/A	Construction	Training personnel in the location and use of fire extinguishers	Section 2.8.2 Fire
10.	N/A	Construction	Safely storing wastes that may be soaked in flammable materials (*i.e.*, oily rags)	Section 2.8.2 Fire
11.	N/A	Construction	Avoiding the parking of vehicles in areas of long grass	Section 2.8.2 Fire
12.	N/A	Construction	Immediately reporting a fire to local emergency response services	Section 2.8.2 Fire
13.	N/A	Construction	The implementation, as needed, of traffic control measures to reduce the potential for vehicle-to-vehicle collisions	Section 2.8.3 Vehicle Collisions
14.	N/A	Construction	Project staff will be appropriately licensed to operate vehicles on-site, will obey traffic rules and regulations, and will exercise due care and attention while on-site	Section 2.8.3 Vehicle Collisions
15.	N/A	Construction	Trucks will use only designated truck routes	Section 2.8.3 Vehicle Collisions
16.	N/A	Construction	If a collision does occur, Project personnel will immediately contact emergency services	Section 2.8.3 Vehicle Collisions
17.	N/A	Construction	Documentation, mapping and species identification of all nests on Project infrastructure	Section 2.8.4 Wildlife Encounters
18.	N/A	Operation and Maintenance	Scheduling of maintenance activities outside of nesting periods	Section 2.8.4 Wildlife Encounters
19.	N/A	Operation and Maintenance	Consultation with New Brunswick Department of Energy and Resource Development biologists prior to unplanned/emergency maintenance during nesting periods	Section 2.8.4 Wildlife Encounters
20.	N/A	Operation and Maintenance	Regular inspection and maintenance of infrastructure	Section 2.8.5 Infrastructure Malfunctions

Table 5.1 Summary of Proposed Mitigation

#	Valued Component (VC) (if applicable)	Project Phase	Proposed Mitigation/Compensation Measure	Location within EIA Registration Document where Mitigation Measure is Identified
21.	N/A	Operation and Maintenance	If a malfunction does occur, it will be responded to within 24 hours of detection/reporting	Section 2.8.5 Infrastructure Malfunctions
22.	Atmospheric Environment	Construction	Scheduled preventative maintenance for Project equipment to lessen air contaminant, GHG, and noise emissions	Section 4.3.1 Atmospheric Environment
23.	Atmospheric Environment	Construction	Implementation of an idling awareness program to lower emissions associated with non-essential vehicle idling	Section 4.3.1 Atmospheric Environment
24.	Atmospheric Environment	Construction	Implementation of standard dust control mitigation practices such as immediate revegetation of exposed soil, as well as the use of dust suppressants (such as water sprays) on unpaved areas under dry or windy conditions	Section 4.3.1 Atmospheric Environment
25.	Atmospheric Environment	Construction	Construction during daytime hours to reduce disturbances (such as noise) to nearby residents	Section 4.3.1 Atmospheric Environment
26.	Water Resources	Construction	Using mechanical rock breaking methods where practical	Section 4.3.2 Water Resources
27.	Water Resources	Construction	Where blasting is required, carefully plan and limit load and pattern to only that required to installation of poles and guy wires	Section 4.3.2 Water Resources
28.	Water Resources	Planning	Locating centreline of RoW to make use of topographical features which contribute to terrain stability	Section 4.3.2 Water Resources
29.	Water Resources	Construction	Revegetating the RoW to reduce runoff	Section 4.3.2 Water Resources
30.	Water Resources	Construction	Installing sediment traps and erosion and sediment control techniques in areas where the vegetation mat has been broken and there are exposed soils in order to minimize erosion and run-off of silt-laden water	Section 4.3.2 Water Resources
31.	Water Resources	Construction	Minimize rutting during the Construction and Maintenance of the Project	Section 4.3.2 Water Resources
32.	Water Resources	Construction	Grade exposed faces to a maximum slope of 2:1	Section 4.3.2 Water Resources
33.	Water Resources	Construction	Inspecting vehicles for hydraulic fluid leaks prior to going into the field	Section 4.3.2 Water Resources
34.	Fish and Fish habitat	Construction	Heavy equipment will not be used for clearing of vegetation for areas within 30 m of the banks of a watercourse. If required, vegetation within 30 m of a watercourse will be managed according to the EPP, WAWA permit conditions. This 30 m buffer will be clearly marked at all watercourses.	Section 4.3.3 Fish and Fish Habitat
35.	Fish and Fish habitat	Construction, Decommissioning and Abandonment	No fording of watercourses will occur; instead temporary bridges will be used (as needed) to provide access for all machinery and equipment to cross watercourses, and all bridges will be installed as per the EPP and any applicable WAWA requirements	Section 4.3.3 Fish and Fish Habitat
36.	Fish and Fish habitat	Construction, Decommissioning and Abandonment	Installation of sediment and erosion control (i.e., silt fence) downgradient of all areas where soils may be disturbed and the risk of surface water run-off or transport of sediments or woody debris entering a watercourse is increased	Section 4.3.3 Fish and Fish Habitat
37.	Fish and Fish habitat	Construction, Decommissioning and Abandonment	Maintenance and management of sediment and erosion control measures until the disturbed area is stable from erosion. These features will be managed so that they do not enter a watercourse, and are removed once the RoW has stabilized	Section 4.3.3 Fish and Fish Habitat
38.	Fish and Fish habitat	Construction, Decommissioning and Abandonment	Adherence to the Project design for a maximum RoW width of 30 m	Section 4.3.3 Fish and Fish Habitat
39.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction	Flag and avoid known locations of individuals of SAR and SOCC, when possible	Section 4.3.4 Terrestrial Environment
40.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction	Use the existing NB Power EPP for all phases of the Project	Section 4.3.4 Terrestrial Environment

Table 5.1 Summary of Proposed Mitigation

#	Valued Component (VC) (if applicable)	Project Phase	Proposed Mitigation/Compensation Measure	Location within EIA Registration Document where Mitigation Measure is Identified
41.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction	Avoid clearing activities, in areas of native vegetation during the normal breeding season for migratory birds (April 1 to August 31), where possible	Section 4.3.4 Terrestrial Environment
42.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction, Decommissioning and Abandonment	Use approved noise arrest mufflers on equipment to reduce potential environmental effects of noise	Section 4.3.4 Terrestrial Environment
43.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction	Use full cut-off lighting during Construction to reduce attraction to migrating birds.	Section 4.3.4 Terrestrial Environment
44.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction	Restrict clearing activities to the minimum amount required, particularly around wetlands and the Meduxnekeag Valley PNA	Section 4.3.4 Terrestrial Environment
45.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction	Employ standard erosion and sedimentation control measures, particularly to avoid silt laden runoff into wetlands	Section 4.3.4 Terrestrial Environment
46.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction	Implement standard dust control measures to avoid siltation of wetlands	Section 4.3.4 Terrestrial Environment
47.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction	Use quarried, crushed material for road building in and near wetlands, to reduce the risk of introducing or spreading exotic and/or invasive vascular plant species	Section 4.3.4 Terrestrial Environment
48.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction	Examine all equipment that arrives at the site to make sure it is clean and free of soil or vegetative debris	Section 4.3.4 Terrestrial Environment
49.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction	Operate vehicles and equipment on previously disturbed areas, wherever feasible	Section 4.3.4 Terrestrial Environment
50.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction	Limit size of temporary workspaces	Section 4.3.4 Terrestrial Environment
51.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction, Decommissioning and Abandonment	Properly store and dispose of construction site wastes that might attract wildlife	Section 4.3.4 Terrestrial Environment
52.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction, Decommissioning and Abandonment	Allow for natural regeneration when possible, and when not possible, use a native seed mix for revegetation	Section 4.3.4 Terrestrial Environment
53.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction	Restrict vegetation management to necessary areas and by mechanical means wherever possible.	Section 4.3.4 Terrestrial Environment
54.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Operation and Maintenance	During the Operation and Maintenance phase, restrict travel through wetlands for inspection or maintenance activities.	Section 4.3.4 Terrestrial Environment

Table 5.1 Summary of Proposed Mitigation

#	Valued Component (VC) (if applicable)	Project Phase	Proposed Mitigation/Compensation Measure	Location within EIA Registration Document where Mitigation Measure is Identified
55.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction, Decommissioning and Abandonment	Restore temporarily disturbed areas to pre-construction conditions	Section 4.3.4 Terrestrial Environment
56.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction, Decommissioning and Abandonment	Manage invasive species through minimizing Operation activities in wetland areas and clean equipment before entering a wetland	Section 4.3.4 Terrestrial Environment
57.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Construction	Limit the use of herbicides, and use mechanical or hand clearing when possible, particularly within 30 m of wetlands	Section 4.3.4 Terrestrial Environment
58.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	All Phases	Comply with the conditions of the integrated vegetation management program and the permit issued by NBDELG.	Section 4.3.4 Terrestrial Environment
59.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Decommissioning and Abandonment	Avoid Decommissioning and Abandonment activities during the normal breeding season for migratory birds (April 1 to August 31).	Section 4.3.4 Terrestrial Environment
60.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	Decommissioning and Abandonment	Provide nesting platforms during and following Decommissioning if any bird species are nesting on poles.	Section 4.3.4 Terrestrial Environment
61.	Terrestrial Environment (Including Wetlands, Vegetation and Wildlife)	All Phases	Avoid disturbance of all wetlands to the extent possible, and where avoidance is not possible, compensate for the permanent net loss of wetland function (for GeoNB-mapped wetlands only) according to a plan to be developed in coordination with, and approved by, NBDELG.	Section 4.3.4 Terrestrial Environment
62.	Socioeconomic Environment	Construction	Siting of Project infrastructure has been undertaken to reduce disruption of land use, where feasible.	Section 4.3.5 Socioeconomic Environment
63.	Socioeconomic Environment	Construction	Owners of private land will be consulted and accommodated, as appropriate, prior to Construction; access to those properties will be maintained during the Project.	Section 4.3.5 Socioeconomic Environment
64.	Socioeconomic Environment	All Phases	NB Power will communicate schedules affected landowners and stakeholders for all Project activities, particularly those related to clearing activities and related access restrictions.	Section 4.3.5 Socioeconomic Environment
65.	Socioeconomic Environment	All Phases	Access restrictions will be defined and will be limited in size to reduce the interactions with land and resource users.	Section 4.3.5 Socioeconomic Environment
66.	Socioeconomic Environment	All Phases	Mitigation described for the Atmospheric Environment (Section 4.3.1) will be used to reduce nuisance effects. These include limiting noise emitting construction activities to daytime hours (i.e., between the hours of 7:00 am and 10:00 pm).	Section 4.3.5 Socioeconomic Environment
67.	Socioeconomic Environment	All Phases	A public, stakeholder and Aboriginal engagement program has been initiated will be undertaken to identify and address Project concerns.	Section 4.3.5 Socioeconomic Environment
68.	Socioeconomic Environment	All Phases	Environmental protection and management measures will be used to guide Project planning, design, construction and operation. They include, but are not limited to, the implementation of NB Power's Environmental Protection Plan, which also contains provisions relating to emergency response and contingency planning.	Section 4.3.5 Socioeconomic Environment
69.	Heritage Resources	Construction	An additional AIA will be completed for the portion of realigned PDA near the US border, any additional mitigation recommended as a result of that survey will be completed prior to the initiation of ground breaking construction activities.	Section 4.3.6 Heritage Resources
70.	Heritage Resources	All Phases	If the location of the proposed Project is altered from that reviewed during the AIA and paleontological assessment, NB Power will undertake additional impact assessments of the new locations, and implement any recommended mitigation prior to the initiation of ground breaking construction activities.	Section 4.3.6 Heritage Resources

Table 5.1 Summary of Proposed Mitigation

#	Valued Component (VC) (if applicable)	Project Phase	Proposed Mitigation/Compensation Measure	Location within EIA Registration Document where Mitigation Measure is Identified
71.	Heritage Resources	Construction	Planned avoidance (e.g., transmission tower placement) of areas of elevated potential for archaeological resources identified during the walkover survey.	Section 4.3.6 Heritage Resources
72.	Heritage Resources	Construction	If avoidance is not possible, where elevated archaeological potential is confirmed, a shovel testing program will be developed based on the results of the archaeological survey and in consultation with AS. The proposed shovel testing program would be submitted to AS for review before it is implemented.	Section 4.3.6 Heritage Resources
73.	Heritage Resources	Construction	If a shovel testing program is required, it will be supervised and completed under the direction of a provincially permitted archaeologist(s), and undertaken before construction and completed as required under the Guidelines, and undertaken in consultation and participation of Indigenous communities and persons, should the Maliseet communities so desire.	Section 4.3.6 Heritage Resources
74.	Heritage Resources	Construction	If archaeological or heritage resources are identified during a shovel testing program, the findings will be immediately reported to NB Power and the province of New Brunswick, and the First Nation community as applicable. Further mitigation (e.g., systematic archaeological excavation or realignment of project components) would be implemented in consultation with NB Power, AS, First Nations, and completed according to the Guidelines (AS 2012).	Section 4.3.6 Heritage Resources
75.	Heritage Resources	All Phases	The development of an environmental protection plan for the Project that includes an archaeological response protocol that includes a protocol for the unanticipated discovery of heritage resources during construction, up to and including the temporary stoppage of construction activities in proximity to the discovery until the discovery is investigated and any applicable mitigation is implemented.	Section 4.3.6 Heritage Resources
76.	Current Use of Land and Resources for Traditional Purposes by Aboriginal Persons	All Phases	Continue engagement activities with Aboriginal communities to determine if there is any Current Use within the proposed Project RoW.	Section 4.3.7 Current Use of Land and Resources for Traditional Purposes by Aboriginal Persons
77.	Current Use of Land and Resources for Traditional Purposes by Aboriginal Persons	Construction	If any use is identified, provide Aboriginal communities or individuals who currently use the PDA the opportunity to harvest/gather any species of importance to traditional activities that might be affected by Project activities prior to the initiation of any construction activities. It is further recommended that the opportunity to conduct these harvesting/gathering activities be timed appropriately for the seasonality of the species of interest.	Section 4.3.7 Current Use of Land and Resources for Traditional Purposes by Aboriginal Persons
78.	Effects of the Environment on the Project	All Phases	All components and physical activities associated with the project will follow the PSEPP.	Section 4.3.8 Effects of the Environment on the Project
79.	Effects of the Environment on the Project	All Phases	Infrastructure will be designed and maintained to the standards of the Canadian Electrical Code (CSA 2015).	Section 4.3.8 Effects of the Environment on the Project
80.	Effects of the Environment on the Project	All Phases	All aspects of Project design, including selection of materials and equipment to be used, planning, and maintenance, will consider normal and extreme climate/weather conditions that may be encountered throughout the life of the Project. Work will also be scheduled, where feasible, to avoid predicted times of extreme weather for the safety of crews and Project infrastructure.	Section 4.3.8 Effects of the Environment on the Project
81.	Effects of the Environment on the Project	All Phases	The Project will be constructed to meet applicable, safety and industry codes and standards for wind, snowfall, ice, extreme precipitation, and other weather variables associated with climate. These standards and codes, as described in in the Canadian Electrical Code: Overhead Systems. CAN/CSA-C22.3 No. 1-15 (CSA 2015), provide factors of safety regarding environmental loading on Project infrastructure.	Section 4.3.8 Effects of the Environment on the Project
82.	Effects of the Environment on the Project	All Phases	All aspects of Project design will consider predictions for climate change and measures for adaptation. Several publications are available to guide design engineers in this regard, such as the Public Infrastructure Engineering Vulnerability Committee's "Engineering Protocol for Infrastructure Vulnerability Assessment and Adaptation to a Changing Climate" (2011).	Section 4.3.8 Effects of the Environment on the Project
83.	Effects of the Environment on the Project	All Phases	Implementation of a maintenance and safety management program.	Section 4.3.8 Effects of the Environment on the Project
84.	Effects of the Environment on the Project	All Phases	Implementation of contingency plans, including emergency back-up power for necessary operations and dispatch of crews for emergency repairs of storm damage.	Section 4.3.8 Effects of the Environment on the Project

Table 5.1 Summary of Proposed Mitigation

#	Valued Component (VC) (if applicable)	Project Phase	Proposed Mitigation/Compensation Measure	Location within EIA Registration Document where Mitigation Measure is Identified
85.	Effects of the Environment on the Project	Construction	Route selection to minimize the number of crossings or interactions with watercourses, waterbodies, wetlands, and their 30 m buffers. Avoiding these areas increases the distance that surface waters from the RoW must travel before reaching low-lying areas.	Section 4.3.8 Effects of the Environment on the Project
86.	Effects of the Environment on the Project	Construction, Decommissioning & Abandonment	Incorporation of a maximum slope grade of 2H:1V for graded surfaces within the PDA, to improve erosion protection and slope stability where grading must occur.	Section 4.3.8 Effects of the Environment on the Project
87.	Effects of the Environment on the Project	All Phases	Emergency measures will be in place, in conjunction with existing NB Power, community, and provincial plans to provide rapid detection and response to any fire threat, and quickly control and extinguish the flames prior to contact with any flammable structures (e.g., wood). Mitigation for Project-caused fires is discussed in Section 2.8.2.	Section 4.3.8 Effects of the Environment on the Project
88.	Effects of the Environment on the Project	All Phases	There will be a cleared operational buffer zone established around Project components (e.g. RoW) to decrease the likelihood of a fire causing substantive damage to the Project, and to reduce the risk of fallen trees or other debris damaging Project infrastructure.	Section 4.3.8 Effects of the Environment on the Project
89.	Effects of the Environment on the Project	All Phases	Weather forecasts will be monitored to predict poor weather conditions (i.e., extreme precipitation, wind, fog), and allowance for them will be included in the Construction schedule.	Section 4.3.8 Effects of the Environment on the Project
90.	Effects of the Environment on the Project	All Phases	Ground vegetation and low shrubs will be left to grow within the proposed right-of-way (RoW)and will filter and absorb runoff, slowing down the movement of runoff and providing protection against surface erosion and runoff channeling.	Section 4.3.8 Effects of the Environment on the Project