



CLIMATE ADAPTATION PLAN

Building Climate Resiliency, Revision 2

Abstract

Climate change is bringing more frequent extreme weather events to Nova Scotia, and we need to continue to adapt our infrastructure to withstand the impacts from climate change.

Revision no.	Effective Date	Changes
0	April 8, 2021	Document developed
1	April 9, 2025	Updated to reference existing Asset Management System procedures
2	September 23, 2026	Enhancements include expanded climate trend information, climate risk assessment methods, asset-specific climate impacts, adaptation actions underway, climate resilience priorities, and implementation challenges across major asset classes. Appendix A has been added with climate fact sheets.

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Executive Summary

Hurricane Fiona, which arrived in Nova Scotia in the fall of 2022, was the most damaging storm Nova Scotia Power Inc (NS Power) has ever experienced with 415,000 or 80 percent of customers impacted at its peak. At landfall in the province, Fiona was equivalent to a Category 2 hurricane and the wind speeds exceeded more than 220 kilometres per hour. The central pressure of 931 hPa reported during Fiona's landfall was the lowest pressure reported for any storm in Canadian history. Wind gusts over 100 kilometres per hour persisted for four hours in Metro, eight hours in Cape Breton East, and up to thirteen hours in the Northeast region.

NS Power understands that climate change is bringing more frequent extreme weather events to Nova Scotia, and we need to continue to adapt our infrastructure to withstand the impacts from climate change. The goal of this Climate Adaptation Plan is to ensure NS Power continues to successfully deliver on its mission to safely deliver cleaner, affordable, and reliable energy to its customers while improving its resilience to climate change risks.

In 2019, the Canadian Electricity Association (CEA, now Electricity Canada or EC) produced a guidance document *Climate Change and Extreme Weather: A Guide to Adaptation Planning for Electricity Companies in Canada*. NS Power supported the development of the guide and has now used the guide to inform its Climate Adaptation Plan as described in this document. In doing so, we have met the EC's aspirational goals for electric utilities to complete their own climate adaptation planning process.

NS Power's Leadership team's commitment to reliability in the face of climate change and will position the utility for readiness and long-term success in a low-carbon world. Although climate change mitigation is a key part of this strategy through decarbonization of the NS Power fleet, the content of this document summarizes NS Power's approach to climate adaptation and preparation for actual and expected future impacts of climate change.

To better prepare for the future, NS Power has obtained climate scenario data that provides insights into the degree of impact that can be expected on its assets and operations. We also commit to continuing to enhance our understanding of the changing climate as more data becomes available and models improve.

To understand and assess the potential risks to NS Power assets from climate change, NS Power is integrating the climate adaptation process into the existing asset risk management process. NS Power asset strategy committees are key to this process and will play a central role across the business to incorporate the potential climate impacts into the annual risk rankings of assets. For NS Power, key climate issues include: extreme weather events; storm surge and sea level rise; changes in seasonal precipitation; and changes in ambient temperatures. These climate-driven issues have the ability to significantly impact NS Power's assets and operations and as such need to be managed proactively and effectively.

To mitigate the impacts from key climate issues, and thus adapt and increase NS Power's resiliency, NS Power will consider the entire suite of approaches to risk mitigation and management. Options will range from ensuring there are critical spares readily available, to longer term options such as re-design, and strategic decisions such as those driven by in-depth asset life assessment. Prioritizing and ultimately selecting one or more options follows the current risk mitigation and management process including development of a business case, now also informed by climate intelligence. Capital projects required to mitigate or manage climate risks will

meet the capital expenditure justification criteria (CEJC), as approved by the Nova Scotia Energy Board.

In response to direction received from the Nova Scotia Energy Board through the 2025 General Rate Application proceeding, NS Power updated this Climate Adaptation Plan to provide additional detail regarding observed climate trends, climate risk assessment methods, asset-specific climate impacts, adaptation actions currently underway, and future climate resilience priorities across the generation, transmission, distribution, and substation asset classes.

Climate adaptation activities currently underway include storm hardening investments, flood risk assessments, wildfire mitigation programs, enhanced vegetation management, climate-informed engineering studies, and integration of climate risks into asset risk assessments and long-term investment planning. Detailed examples are provided throughout this Plan and in the accompanying Wildfire Mitigation Plan.

NS Power recognizes that climate adaptation planning and implementation is a process that must remain flexible and be improved as lessons are learned, and climate forecasting models evolve. We will utilize existing resources and processes to monitor our assets for exposure to climate risks and manage risk as new patterns and information emerge. Accountability for the Climate Adaptation Plan, while led by Enterprise Asset Management, is shared across many levels and functions within NS Power ensuring oversight and review of its implementation. Finally, NS Power commits to systematically improve our climate knowledge through actively collecting climate-related data and using external expertise to better understand future climate conditions in Nova Scotia.

Introduction

The Need for Adaptation Planning

*“Climate change is upon us, and its impacts are getting more severe with each passing year.”*¹ Increases in the intensity, frequency, duration, and geographic reach of extreme weather and changing climatic conditions are the new normal associated with a changing global climate.² Adaptation planning – the process of identifying and prioritizing climate-related physical risks, then selecting and implementing actions to reduce the associated impacts – is fundamental to building resilience in electric utilities today.

NS Power’s adaptation planning process is focused on physical climate change risks and their associated impacts to company assets and operations that can significantly affect an electric utility’s ability to meet its objectives, reliability, and ultimately, the services provided to its customers, as shown in Figure 1.1. Examples include damaged assets such as a flooded generation station associated with a storm surge; changes in the availability of natural resources such as water for hydro generation; and alterations to an asset’s surrounding environment such as changing wind speeds affecting wind turbine generation or changing vegetation management requirements for transmission and distribution assets.

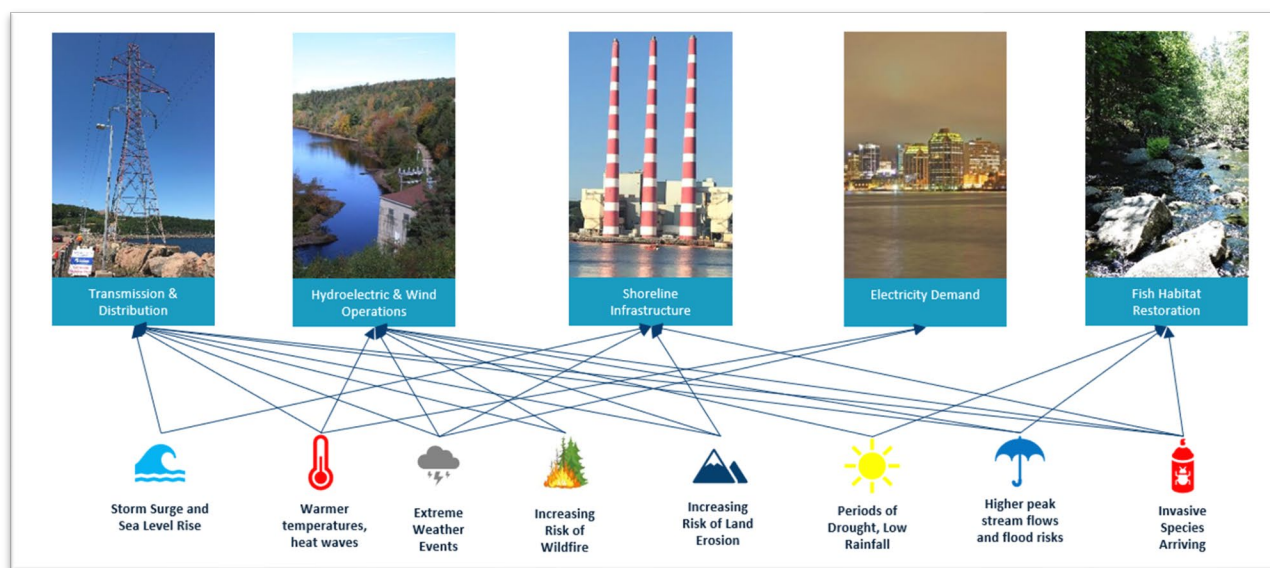


Figure 1.1 NS Power's Linking of Climate Impacts to Assets and Operations

About this Report

Nova Scotia Power Inc. (NS Power) utilizes the Electricity Canada (EC, formerly the Canadian Electricity Association) *Climate Change and Extreme Weather: A Guide to Adaptation Planning*

¹ Global Commission on Adaptation, “Adapt Now: A Global Call for Leadership on Climate Resilience” (Global Center on Adaptation and World Resources Institute, September 2019)

² Canadian Electricity Association, “Adapting to Climate Change a Risk Management Guide for Utilities” (September 2019)

for *Electricity Companies in Canada*³ (EC Guide) to develop its approach to climate adaptation planning. The EC Guide outlines eight practical steps for managing risks associated with climate change shown below.

Table 1 EC's Eight-Step Framework for Developing an Adaptation Plan

Phase of Development	Step in Process
Setting the Stage	Step One: Define objectives and engage leadership
Risk Assessment	Step Two: Identify critical and vulnerable assets and operations
	Step Three: Identify key potential climate impacts
	Step Four: Assess risks to critical and vulnerable assets and operations
Risk Response and Adaptation Planning	Step Five: Identify potential adaptation measures (risk controls)
	Step Six: Develop a business case for selected measures
Preparation for Implementation	Step Seven: Detail and document implementing control actions
	Step Eight: Establish a process to review and improve Plan

Chapter 1 Setting the Stage

NS Power recognizes that climate change is an enterprise risk to utilities and that adaptation planning is a prudent and important risk management strategy. This chapter comprises EC's step one which outlines the reasoning behind this view and how NS Power's goals and objectives support adaptation planning and the planning process.

1. Step 1: Define Objectives and Engage Leadership

The following section lays out the case for treating climate change as an enterprise risk and the need for adaptation planning.

1.1. Nova Scotia Power Inc.

NS Power is a vertically-integrated electric utility involved in all aspects of the electricity supply chain – generation, transmission, and distribution – across Nova Scotia. NS Power is a fully owned subsidiary of Emera Inc. and is publicly regulated by the Nova Scotia Energy Board. NS Power generates more than 2,400 megawatts of electricity from a variety of energy sources including hydro, coal, petroleum coke, fuel oil, biomass, natural gas, and wind to service more than half a million residential, commercial, and industrial customers across Nova Scotia.

³ Canadian Electricity Association, "Climate Change and Extreme Weather: A Guide to Adaptation Planning for Electricity Companies in Canada" (July 2019)

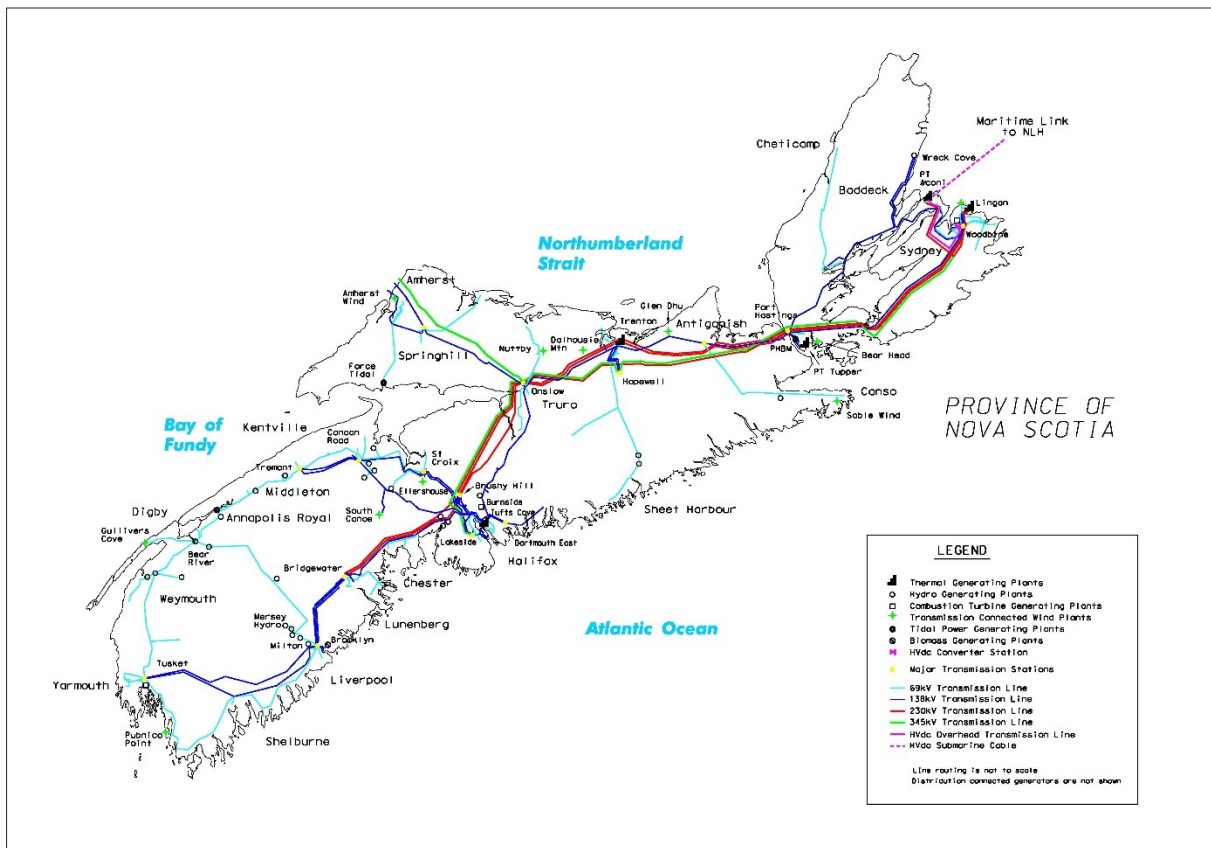


Figure 1.1 Map of NS Power Infrastructure

NS Power recognizes the need for proactive climate change risk management to anticipate, plan for, and respond to the significant effects associated with climate change and extreme weather events that impacts, or is anticipated to impact its approximately \$5 billion of electricity infrastructure across the province. As the provider of 95% of Nova Scotia’s electricity, NS Power also appreciates its significant responsibility to “...exercise reasonable care in preparing for and responding to...climate change and extreme weather hazards”⁴ to effectively manage the province’s electricity system. To protect its financial and physical assets in the long run and ensure its customers can depend on a safe, reliable and cost-effective source of electricity, NS Power is implementing this climate adaptation planning process.

The Strategic Asset Management Plan (SAMP), filed with the Nova Scotia Utility and Review Board (now the Nova Scotia Energy Board) on December 16, 2024, outlines NS Power’s comprehensive approach to managing its assets in alignment with corporate objectives and regulatory requirements. The SAMP emphasizes the importance of leveraging asset management principles to balance performance, risk, and cost, with the goal of ensuring safe, reliable, affordable, and environmentally-sound operation of assets. This plan is crucial for climate

⁴ Canadian Electricity Association, “Adapting to Climate Change a Risk Management Guide for Utilities” (September 2019)

adaptation, as it incorporates strategies to address emerging challenges such as climate change and the integration of renewable energy sources. By utilizing a risk-based decision-making approach, the SAMP supports the development of a resilient and adaptive grid, capable of responding to the increasing frequency and severity of climate-related disruptions. As explained in the subsequent sections, the climate adaptation planning process at NS Power is integrated into the asset management system defined in the SAMP, ensuring a cohesive and comprehensive approach to managing climate risks. This alignment with the climate adaptation plan ensures that NS Power remains committed to providing dependable and efficient power service to its customers while addressing the impacts of climate change.

1.2. Goals and Objectives

The goal of the Climate Adaptation Plan is to ensure the utility continues to successfully deliver on its mission to provide safe, reliable and affordable electricity, while improving its resilience to climate change risks. Climate change threatens this mission with potential damage to or changes in the operation of generation, transmission, and distribution assets used to meet Nova Scotia's electricity needs.

NS Power is keenly aware that proactive climate change risk management is a business imperative for Canadian electricity companies and that planned climate adaptation measures can be more effective and lower cost than future reactive repairs or replacements. The objectives below address NS Power's ability to identify climate change risks, maintain the assets on the ground, and lead industry with respect to climate adaptation.

The objectives of the Climate Adaptation Plan are as follows:

- i. Facilitate the identification, evaluation, and prioritization of climate-related risks for NS Power's assets through integration of those risks into existing asset management processes and the organization's enterprise risk management system;
- ii. Enhance NS Power's fundamental capacity to adapt to climate change by leveraging the best climate science and data available to inform decision-making processes;
- iii. Increase organizational resilience by reducing vulnerabilities to the physical impacts of climate change through development of adaptation actions;
- iv. Enhance cross-sectoral collaboration to drive climate adaptation best practices across the electric utilities industry; and
- v. Leverage new business opportunities and innovation across operational, planning, and design measures to adapt to near-, mid- and long-term impacts of climate change.

Scope of Adaptation Planning Exercise

This Climate Adaptation Plan is applicable to all NS Power's physical assets owned or managed by the Company and associated with the generation, transmission, and distribution of electricity in the province of Nova Scotia. This plan excludes the activities of partnerships and impacts associated with employee health and wellness.

Limitations of Adaptation Planning Exercise

NS Power acknowledges that climate change poses a broader set of risks beyond the physical impacts addressed in this Climate Adaptation Plan. These broader risks include transition risks⁵, associated with the shift to a lower-carbon economy. While transition risks are outside the scope of this adaptation planning exercise, they are considered through broader electricity system planning and regulatory processes, including strategic planning studies led by the Nova Scotia Independent Energy System Operator (NS IESO), such as the Integrated Resource Plan (IRP) and the 10-Year System Outlook (10YSO).

1.3. Leadership Engagement

NS Power's Executive Leadership Team (ELT) and senior management recognize that climate change presents both current and emerging risks to the utility's operations, assets, and customers. This perspective aligns with NS Power's parent organization, Emera, which identifies climate change as an enterprise risk within its sustainability reporting.

Climate adaptation planning supports NS Power's ongoing commitment to delivering safe, reliable, and affordable electricity to Nova Scotians. As the frequency and severity of climate-related hazards continue to evolve, understanding and managing climate risks is an important component of maintaining system reliability, protecting critical infrastructure, and delivering long-term value for customers.

Climate adaptation activities are integrated with Nova Scotia Power's broader asset management, reliability planning, and capital planning processes to help ensure climate risks are identified, assessed, and managed in a manner that supports the safe, reliable, and cost-effective delivery of electricity.

Business Case for Climate Change Adaptation

Warming of the global climate system is unequivocal and climate change impacts are expected to intensify in the future. Impacts of warming global average temperatures are wide-ranging and include (but are not limited to) flooding, wildfires, damage to infrastructure, loss of land to rising seas, risk to water supplies, and heat stress. For detailed information about how Canada's climate is changing and what changes are projected in the future, refer to *Canada's Changing Climate Report*.⁶

The World Economic Forum's (WEF) Annual Global Risks Report has shown climate change-related risks among the top five identified risks in terms of likelihood and impact since 2012. In the 2021 report, all five top risks by likelihood and four top risks by impact involved climate change including climate action failure, extreme weather, and biodiversity loss. The World Energy Council reports that from 1980 to 2014 there was a four-fold increase in extreme weather events affecting

Weather versus Climate:

Weather refers to the actual atmospheric conditions over a short period of time (i.e., hours, days), while climate refers to weather patterns experienced across a region over longer time periods, typically 30 years.

Extreme weather refers to events such as floods, droughts, snow and thunderstorms that are rare (i.e., in the bottom or top 10% of severity for a given event) for the season and region where they occur.

⁵ Transition risks are risks related to the transition to a lower-carbon economy including policy and legal risks, market and technological risks, and reputational risks.

⁶ B Bush, E. and Lemmen, D.S., editors, "Canada's Changing Climate Report" (Government of Canada, 2010)

global energy infrastructure.⁷ Addressing growing climate risks has become a global imperative and “...adaptation must become part of the ‘new normal’.”⁸

Adapting to the changing climate is not an alternative to increasing action to slow climate change, but adaptation has become a crucial complement to the overall effort to mitigate climate risks. The Global Commission on Adaptation recently made the economic case for adaptation having found that “...the overall rate of return on investments in improved resilience is very high, with benefit-cost ratios ranging from 2:1 to 10:1, and in some cases even higher”⁹.

Planning for adaptation can provide NS Power multiple benefits including avoided economic losses associated with reduced system outage time and infrastructure repair/replacement, as well as improved efficiencies associated with climate risk-based system maintenance.

Climate Change as an Enterprise Risk for Utilities

The electric utilities sector is being significantly impacted by physical effects of climate change. The Intergovernmental Panel on Climate Change (IPCC) reports that the electricity sector is one of the sectors most at risk of disruption from physical impacts associated with acute and chronic climate risks. Both acute and chronic risks can cause direct (i.e., damaged assets) and indirect (i.e., disrupted fuel supply to generating stations) climate impacts. In fact, many chronic risks such as increased temperature swings and water scarcity can be as impactful as more severe, yet less frequent, acute risks.

Acute disruptions are individual events such as increasingly unpredictable, volatile, and extreme weather events (i.e., hurricanes, floods) that damage, for example, generation, transmission, and distribution assets.

Chronic risks refer to longer-term shifts in climate patterns, for example, gradual temperature and precipitation changes altering the availability of key resources such as meltwater for hydro generators or sea level rise.

NS Power owns and operates most of the generation, transmission, and distribution assets in Nova Scotia. The majority of this infrastructure was designed and built to standards that did not consider the currently projected climatic conditions. Climate change is manifesting across this portfolio of assets as numerous acute and chronic risks. Progression of climate change is therefore an enterprise risk.

It is now necessary to consider anticipated direct and indirect physical impacts from climate change in adaptation planning to ensure the integrity of the electricity system.

Table 1.1, below presents some examples of the types of physical climate risk-related impacts expected for Canadian electric utilities such as NS Power.

⁷ World Energy Perspective, “The road to resilience – managing and financing extreme weather risks” (The World Energy Council, 2015)

⁸ Canadian Electricity Association, “Climate Change and Extreme Weather: A Guide to Adaptation Planning for Electricity Companies in Canada” (July 2019)

⁹ Global Commission on Adaptation, “Adapt Now: A Global Call for Leadership on Climate Resilience” (Global Center on Adaptation and World Resources Institute, September 2019)

Table 1.1: Physical Climate Risk-Related Impacts for Canadian Electric Utilities¹⁰

Affected Business Operation	
Electricity Generation	Transmission & Distribution
Damage to facilities and infrastructure (generating stations, wind turbines, equipment, buildings, etc.) from extreme weather (ice, wind, hail, etc.)	Damage to overhead wires and equipment due to high winds, ice loading, and accretion
Damage to coastal infrastructure due to sea level rise and storm surge causing inundation and flooding	Inundation and physical damage to transmission, distribution assets and transportation infrastructure enabling access from flooding, landslides, and erosion (poles, wires, roads)
Uncertainty for hydro generation due to changes in streamflow volume and timing	Damage to power lines and substations at risk from sea level rise
Increased flood risk affecting assets (buildings, vehicles, etc.) and infrastructure (roads, bridges, etc.)	Coastal storms threaten infrastructure and can damage coastal roads, preventing maintenance access to coastal transmission and distribution assets
Infrastructure impacts (e.g., on spillways) and dam failure/safety from extreme precipitation and flooding	Wildfires threaten wooden transmission poles, substations, and other infrastructure

While climate change poses many risks, adapting to physical climate risk also creates opportunities for Canadian electric utilities. As efforts to meet climate targets accelerate, some opportunities that may be available to utilities such as NS Power include:

- New product and service offerings such as distributed energy resources and services associated with EV charging stations;
- Implementation of energy storage solutions to reduce peak consumption levels and limit the impact of system outages to customers; and/or
- Increases in electrification as the customer base chooses non-emitting electricity to replace fossil fuel-based energy use in, for example, building and water heating and transportation.

An example, the Smart Grid Nova Scotia Project, as detailed in our regulatory filings with the Nova Scotia Utility and Review Board, highlights NS Power's commitment to modernizing the grid. This project includes the deployment of advanced technologies and infrastructure improvements to enhance grid resilience and reliability, further supporting the Company's climate adaptation efforts.

Electric utilities that choose to seize the opportunities associated with climate change will be better positioned for success in the future.

1.4. Understanding Climate Adaptation Versus Climate Mitigation

Climate change adaptation refers to being prepared for actual and expected future impacts of climate change.¹¹ It includes processes to identify and implement actions to moderate and/or reduce harm associated with a changing climate, such as safeguarding electricity assets. Climate mitigation refers to reducing greenhouse gas (GHG) emissions from human activities such as reducing fossil fuel consumption. Regardless of mitigation effectiveness, impacts will continue for

¹⁰ Natural Resources Canada, "Adaptation State of Play Report" (2017)

¹¹ Adapted from IPCC, Annex II Glossary, https://www.ipcc.ch/site/assets/uploads/2018/02/AR5_SYR_FINAL_Annexes.pdf

many decades due to feedback mechanisms in the global climate system.¹² Therefore, dealing with climate change requires both adaptations to address the locked-in climate change effects and mitigation to reduce or halt even greater climate change impacts.

Incorporating adaptation processes into electricity system planning and maintenance supports the proactive management of risk and can help boost resilience to long and short-term impacts of a changing climate.

1.5. Importance of Scenario Analysis for Understanding and Managing Climate Change

To better prepare for the future, electric utilities require data that can provide insights into the degree of impact that can be expected on their assets and operations. Credible data can help prioritize business activities and strategic planning in the short-, medium-, and long-term. However, the path that climate change will take is dependent on many factors, including but not limited to public policies, technological advancements, and population behaviour. To gain insight on the multiple possible paths, scenario analysis is recommended.

Scenarios consider different combinations of climate-related risks and provide insight for companies to assess how each risk may affect them financially, strategically, and operationally. Examples of scenarios commonly used by electric utilities to prepare for the impacts of climate change include the Representative Concentration Pathways (RCPs), which have been adopted by the IPCC for physical climate risks, and the International Energy Agency's (IEA's) World Energy Outlook (WEO) scenarios, which are largely focused on transitional climate risks for the energy sector. The RCP and WEO scenarios include a variety of factors, such as stated government policies, projected current climate trends, and assumed different levels of GHG emissions reductions by various target years. It is important to remember that scenario analysis does not attempt to predict the most likely future. Scenarios are intended to model various plausible futures to depict a spectrum of outcomes for organizations to better inform their decision-making.

The IPCC RCP physical climate scenarios were used for the physical climate risk analysis technical study that supported the identification of climate impacts in NS Power's adaptation planning process. The technical study by Acclimatise, *Physical climate risk and prioritisation analysis*,¹³ utilized extensive climate modelling that has been completed by various organizations on global, national, and regional scales to create a substantial database of information on climate variables such as temperature, precipitation, and sea level rise. Utilities like NS Power can use this data to consider plausible future states based on varying degrees of climate impacts and better manage the uncertainties associated with the changing climate.

NS Power is aware of a new approach utilizing Shared Socioeconomic Pathways (SSPs) adopted by the IPCC for physical climate risks. However, NS Power has not updated its climate datasets at this time to incorporate this new approach. It is important to note that the outcomes for new datasets related to Coupled Model Intercomparison Project 6 (CMIP6) and the SSPs would not be significantly different from NS Power's current datasets based on CMIP5 and the RCPs. CMIP5 and CMIP6 are frameworks for coordinated climate model experiments designed to improve global knowledge of climate change.

¹² Canadian Electricity Association, "Adapting to Climate Change a Risk Management Guide for Utilities" (September 2019)

¹³ Acclimatise, Nova Scotia Power: Physical climate risk analysis, Phase 2 Technical Report (August 2020)

1.6. NS Power's Adaptation Planning Process

In 2019, NS Power began investigating how it might better understand and strategically manage climate-related risks and opportunities. NS Power recognized the potential magnitude of impact that climate change will have on its assets and to the reliability and sustainability of its operations and acknowledged the risk that climate change poses to the successful delivery on its mission and strategic mandate.

In early 2020, NS Power engaged Manifest Climate (Manifest, formerly Mantle314) for climate risk and adaptation consulting support. Manifest was contracted to deliver a training workshop for engineers and asset management leaders designed to level-set the group's understanding on climate change, its impact on business, on utilities, and on NS Power's assets. Manifest also conducted ten interviews with many of the leaders and engineers that had taken part in the training exercise. The interviews enabled Manifest to gather first-hand information for input to the adaptation planning process about how climate change is impacting NS Power assets and operations today and about potential impacts expected in the future.

In recognition that reliance on historical, experiential, and anecdotal data is insufficient to predict (or fully understand) future climate risk impacts on electricity assets and operations, NS Power leadership also tasked Manifest with identifying and engaging a physical climate risk assessment service provider. Acclimatise was selected to provide climate data analytics expertise and climate modelling services to support the assessment of physical climate change risks to NS Power's electricity infrastructure for the adaptation planning process. For more information about the physical climate risk analysis completed for the adaptation planning study, refer to Manifest's Climate Data Technical Report.¹⁴

¹⁴ Manifest Climate (formerly Mantle314 Inc.), Climate Data Technical Report (Final), Building NS Power's understanding of climate data to inform its risk management process (September 2020)

Chapter 2 Risk/Opportunity Assessment

Building on the industry-wide climate knowledge in Chapter 1, this chapter focuses on NS Power's adaptation plan, comprising on three steps: [Identify Critical Assets and Operations](#) (Step 2); [Identify Key Potential Climate Impacts](#) (Step 3); and [Assess Risks to Critical and Vulnerable Assets and Operations](#) (Step 4). This chapter explains the significant role scenario analysis, the usefulness of prioritization, and how these steps integrate with NS Power's existing risk management for assets.

2. Step 2: Identify Critical Assets and Operations

This section discusses how NS Power classifies its Generation, Transmission, and Distribution assets in the context of importance to overall objectives.

NS Power's assets and operations generate more than 10,000 gigawatt hours of electricity each year providing approximately 95% of Nova Scotia's electricity needs. This electricity is delivered to more than half a million residential, commercial, and industrial customers via approximately 5,400 km of transmission lines and 28,000 km of distribution facilities across the province. This utility activity is fundamental to the quality of life in Nova Scotia. NS Power defines the criticality of its electricity system assets on a scale, emphasizing their importance in achieving the mission of providing **safe, reliable, and affordable electricity to its customers**.

2.1. Identification of Assets and Operations Critical to NS Power's Mission and Mandate

The assessment and assignment of the Criticality of an asset is fundamental to NS Power's approach to risk evaluation and decision-making. Criticality is defined by the type and magnitude of impact the failure of an asset may have on the organizational goals. The types of impacts considered include:

- Health & Safety – for NS Power personnel, its service providers, and the public
- Environment – effective stewardship of natural resources
- Business Sustainability – Brand/Customer impact, Reliability, Regulatory, Reputation, etc.

This concept, utilized in the application of the Asset Management Mechanism, aligns with the matrices included in NS Power's Capital Execution Justification Criteria (CEJC) and illustrated in Figure 2.1.

NS Power has a comprehensive understanding of the need for rigorous operational management of its assets, and does so, through a strong foundation of asset risk assessments developed by Asset Strategy Committees (for information about these committees, see Section 4.1). NS Power utilizes this 1-5 scale, using methodology outlined in the Asset Management System Operating Procedure, Criticality Assessment (NSPI-AMS-002), to define the importance of an asset, with 5 being the most critical.

Health & Safety	Environment	Business Sustainability	Consequence
- Regulatory requirement breached. - Critical safety incident requiring support from external resources - Fatality or Permanent Disability.	- Regulatory requirement breached. - Loss of generating station or facility operating permit. - Critical liquid, chemical or particulate release with off-site or off-facility impact.	Business Sustainability Criticality Ranking is informed through factors such as replacement energy costs, Regulatory Requirements, SAIFI, SAIDI, DAFOR, System Upgrade Requirements, Code Requirements and Project Economics (payback period, NPV, Revenue Requirement).	Critical
- Major safety incident leading to JOHSC actions and controllable by internal resources. - Lost time Injury	- Corporate environmental target exceedance. - Major reportable environmental incident with off-site or off-facility impact.		Major
- Serious safety incident leading to JOHSC actions and controllable by internal resources. - Recordable injury, >1 medical Aid	Serious reportable environmental release causing license exceedance and off-site or off-facility impact.		Serious
- Moderate safety incident controllable by internal resources and no JOHSC actions required. - Recordable injury, < 1 Medical Aid	Moderate reportable environmental release without license exceedance and internal impact only.		Moderate
- Minor safety incident controllable by internal resources and no JOHSC actions required - First Aid Injury	Minor non-reportable environmental release with internal impact only and no license exceedance.		Minor

Figure 2.1: Criticality scale at NS Power from the Capital Expenditure Justification Criteria

3. Step 3: Identify Key Potential Climate Impacts

This section explains how NS Power has increased its knowledge on how climate impacts may develop over time and how they might be prioritized for adaptation. It summarizes the climate scenario data exercise with Acclimatise and Manifest and outlines key variables and data sources. The prioritization method is overviewed along with examples of scenario data applied to assets. The climate scenario data and the prioritization methodology are starting points to help guide the incorporation of climate risks into existing asset management processes including risk assessments.

The objective of this step is to identify the climate-related hazards and associated impacts that have the potential to affect assets and operations critical to NS Power's mission. Understanding how Nova Scotia's climate is changing allows the Company to better assess future risks, prioritize adaptation measures, and integrate climate considerations into asset management, system planning, engineering design, and operational decision-making.

Climate adaptation at NS Power is supported by a combination of observed climate trends, provincial climate studies, asset-specific engineering assessments, and NS Power's own climate projection datasets. Together, these resources provide insight into both current conditions and the range of future climate scenarios that may affect the Company's generation, transmission, distribution, and support infrastructure.

The following sections summarize the climate changes being observed in Nova Scotia, the climate information available to NS Power, and the key climate hazards that are being considered through the Company's climate adaptation planning process.

Identification of Potential Climate Hazards Associated with Physical Climate Impacts

- Identified and listed the relevant climate hazards¹⁵ that may cause a climate impact based on observed and local knowledge as well as climate information;
- Compiled all available climate data to support identification and assessment of resulting climate impacts using historical, experiential, and anecdotal knowledge gathered within NS Power;
- Completion of asset- or site-specific climate studies, as warranted.

Climate Hazard refers to a potential cause of damage, loss of infrastructure, or service provision associated with climate-related physical events or associated physical impacts

Example Climate Hazards:

Sea level rise, major precipitation event, storm surge, heat wave, water availability, ice storms, wildfires, hurricanes, etc.

3.1. Climate Change Trends in Nova Scotia

Climate change is already affecting Nova Scotia and is expected to continue altering environmental conditions throughout this century. Recent years have demonstrated that many of the projected climate impacts are no longer future concerns but are occurring today. Events such as Hurricane Fiona in 2022, the provincial wildfires of 2023 and 2025, record rainfall and flooding in July 2023, and periods of extreme heat and cold have highlighted the increasing vulnerability of critical infrastructure and communities to climate-related hazards.

Nova Scotia's climate is expected to become warmer, wetter, and more variable. Average temperatures are projected to increase across all seasons, resulting in more frequent hot days, longer heat waves, and a longer growing season. Climate projections used by NS Power indicate that by the 2050s the number of days above 30°C could increase from approximately five days per year today to sixteen days per year, while days above 35°C, historically rare in Nova Scotia, may occur several times annually. At the same time, the overall number of very cold days is projected to decline; however, extreme cold weather events will continue to occur and remain an important consideration for system planning and reliability as Nova Scotia remains a winter-peaking jurisdiction.

Precipitation patterns are also changing. Nova Scotia is expected to experience modest increases in annual precipitation, with a larger proportion falling as rain rather than snow. Heavy rainfall events are projected to become more frequent and more intense, increasing the risk of flash flooding, riverine flooding, erosion, and damage to infrastructure. While average annual precipitation may increase, longer dry periods and seasonal drought conditions are also expected, creating challenges for water management, hydroelectric operations, agriculture, and wildfire prevention.¹⁶

¹⁵ Appendix 3 of the EC Guide uses the term "climate impacts" to refer to both climate change phenomena such as sea level rise and the resulting harm to utility infrastructure. For clarity, in this study, we refer to the phenomena (the categories in the first column of the table in Appendix 3) as *climate hazards* and reserve *climate impacts* for the potential changes or damages a utility might experience.

¹⁶ Province of Nova Scotia. *Powering the Transition: Nova Scotia 2025 Climate Change Risk Assessment*, Department of Environment and Climate Change, 2025.

Scientific assessments indicate that while there remains uncertainty regarding changes in the overall frequency of Atlantic hurricanes, warmer ocean temperatures are contributing to an increase in storm intensity, rainfall rates, and the likelihood that hurricanes maintain strength farther north, increasing the potential for severe hurricane impacts in Atlantic Canada, including Nova Scotia. NS Power's climate analysis projects approximately a 36% increase in the number of hours experiencing winds greater than 80 km/h by the 2050s. These conditions increase the risk of damage to transmission and distribution infrastructure, coastal facilities, buildings, transportation networks, and natural ecosystems.

Sea level rise presents a significant long-term challenge for Nova Scotia due to the province's extensive coastline and concentration of infrastructure near coastal areas. Rising sea levels, combined with storm surge and coastal erosion, are expected to increase the frequency and severity of coastal flooding events. Climate projections indicate that relative sea levels in Nova Scotia may rise by approximately 0.3 metres by the 2050s and by more than one metre by the end of the century under some higher-emissions scenarios. These changes will increase risks to coastal substations, generating stations, transmission lines, access roads, and other critical infrastructure.

Wildfire risk is also emerging as an increasingly important climate consideration in Nova Scotia. Warmer temperatures, changing precipitation patterns, prolonged dry periods, and increases in extreme weather conditions are expected to increase both the likelihood and severity of wildfires. The Barrington Lake wildfire in 2023, the largest in Nova Scotia's recorded history, and the Long Lake wildfire in 2025 demonstrated that wildfire risk can no longer be considered a concern limited to western North America. Wildfires now represent a credible threat to electrical infrastructure, utility operations, and communities across the province. Please find a summary of these climate trends in Table 3.1.

Table 3.1: Climate Trends in Nova Scotia

Climate Trend	Operational Relevance to NS Power
Higher temperatures	Increased peak demand, transformer loading, conductor sag
More intense rainfall	Increased flooding risk at substations and generation sites
Sea-level rise	Increased coastal infrastructure exposure
Higher hurricane intensity	Increased storm damage and restoration requirements
Increased wildfire risk	Transmission and distribution corridor exposure

In addition to these physical changes, Nova Scotia is already experiencing climate-related effects on ecosystems, water quality, invasive species, and public health. Provincial climate assessments have identified high winds, inland flooding, heat extremes, drought, lower water quality, wildfire potential, and vector-borne diseases as among the most significant climate risks expected to affect Nova Scotians through the 2050s and beyond.

Understanding these observed and projected climate trends is fundamental to NS Power's adaptation planning process. The utility's infrastructure was generally designed using historical climate assumptions that may not adequately reflect future conditions. Incorporating climate

considerations into asset planning, engineering design, operations, maintenance, and investment decisions is essential to maintaining safe, reliable, and affordable electricity service for Nova Scotians in a changing climate.

3.2. Physical Climate Risk Analysis

To support climate-informed decision making, NS Power maintains a suite of climate datasets and planning resources that are used to evaluate potential climate impacts on assets and operations. These resources include climate projections, flood mapping, sea-level rise information, wildfire risk assessments, historical weather records, and asset-specific engineering studies. The datasets are used to support engineering design, risk assessments, adaptation planning, and asset management activities across the Company.

The climate information currently available to NS Power includes a range of variables relevant to electric utility operations, including temperature, precipitation, flooding, sea-level rise, wildfire risk, wind speeds, snow and ice conditions, and drought indicators. These datasets provide both historical observations and future projections to support long-term planning and investment decisions.

Table 3.2 maps the list of climate hazards from Appendix 3 of the EC Guide to the corresponding climate variables for the physical climate risk analysis. Note that three of the EC climate hazards do not have corresponding climate variables, because they are not currently included in climate models. For commentary, please see technical details in Section 8.2 of the Manifest Technical Report.

Table 3.2: Relevant Climate Hazards Mapped to Corresponding Climate Variables

EC Climate Hazard	Associated Climate Variables
Changes in mean annual and/or seasonal temperature	• Temperature, daily mean • Temperature, daily max • Temperature, daily min
Changes in runoff and ground conditions	• Riverine flooding • Land Slide susceptibility and hazard (rainfall-induced) • Freeze-Thaw cycles
Changes in type, timing and intensity of precipitation	• Total precipitation, daily • Snow fall • %Damage Liquid Precipitation • \$ Damage Solid Precipitation • Standardized Precipitation Index (SPI)
Changes in water availability	• Total precipitation, daily • Standardized Precipitation Index (SPI) • Snow fall
Changes to extent and duration of snow cover (e.g., timing of spring melt), permafrost melt and ice conditions (e.g., deepening of annual thaw)	• Total precipitation, daily • Snow fall • #Days with freeze-thaw cycles • #Days with freezing rain • #Days with wet snow • % Damage Liquid Precipitation • % Damage Solid Precipitation
Drought and wildfire	• Temperature, daily mean • Temperature, daily max • Temperature, daily min

EC Climate Hazard	Associated Climate Variables
	• Specific humidity • Fire Weather Index (FWI) • Standardized Precipitation Index (SPI)
Duration of growing season	• Growing Degree Days (Base 10)
Heat waves	• Temperature, daily mean • Temperature, daily max • Temperature, daily min • #Days > 30 °C • #Days > 35 °C
Ice storms and freezing rain	• Wind gust, (daily and annual) • #Days with freezing rain • #Days with wet snow • % Damage Liquid Precipitation • % Damage Solid Precipitation
Major precipitation events, overland flooding and storm surges	• Total precipitation, daily • Sea level rise • Coastal Flooding • Riverine Flooding
Sea level rise	• Sea level rise • Coastal Flooding
Wind events	• Wind gust, (daily and annual) • #Days with gusts > 80 km/h • #Hours with gusts > 80 km/h

*Electrical storms, pathogens, pests and diseases, shifts in species range, or reproductive patterns for plants and animals are not included in the climate models

Physical Climate Risk Analysis Parameters

For Acclimatise to harvest the most relevant data for NS Power, a number of parameters were needed to provide boundaries for the exercise. These parameters were determined in consultation with NS Power and Manifest and are summarized in Table 3.3. For more detailed information about the study approach or methodology, refer to Sections 7 and 8 of the Manifest Technical Report and Section 6 of the Acclimatise Technical Report.

Table 3.3: Physical Climate Risk Analysis Parameters Summary

Analysis parameter	Value	Notes
Baseline period	2000-2019 (present day)	This timeframe is centered on the year 2010 and it excludes 2020 as there was no climate data available for the full year of 2020 at the time of analysis.
Timeframe for future scenarios	2021-2040 2041-2060	These timeframes are centered on the years 2030 and 2050, respectively. These timeframes align with the “near-term” and “mid-term” timeframes in the EC Guide, respectively.
Spatial resolution	Ranges from 1km x 1km to 100km x 100km, depending on the climate variable	See Table 3.3 for the spatial resolutions of each climate variable
Temporal resolution	Ranges from daily to annually, depending on the climate variable.	Most variables are modeled with a monthly temporal resolution. See Table 3.3 for the temporal resolutions of each climate variable.

Analysis parameter	Value	Notes
Key potential climate hazards included in analysis	Changes in mean annual and/or seasonal temperature Changes in runoff and ground conditions Changes in type, timing and intensity of precipitation Changes in water availability Changes to extent and duration of snow cover (e.g., timing of spring melt), permafrost melt and ice conditions (e.g., deepening of annual thaw) Drought and wildfire Duration of growing season Heat waves Ice storms and freezing rain Major precipitation events, overland flooding and storm surges Sea level rise Wind events	All but three climate hazards listed in Table 3.1 were included in this analysis. The three excluded hazards were: electrical storms; pathogens, pests and diseases; and shifts in species range or reproductive patterns for plants and animals. Reasons for exclusion are provided in Section 8.2 of the Manifest Technical Report.
Means and extremes	Considered the 5 th and 95 th percentile and the mean of climate model outputs	For the coastal and riverine flooding variables, mean, minimum, and maximum were used.
Future warming scenarios	RCP 4.5 and RCP 8.5	RCP 8.5 was selected to represent the “worst case” climate scenario, and RCP 4.5 represented the lowest global warming or “best case” climate scenario for which the most up-to-date data was available. An overview of scenario analysis is provided in Step 1 .

The parameters described in Table 3.3 laid the foundation for the climate data selection and analytics required for NS Power’s physical climate data analysis. The following data sourcing hierarchy was used to select the most suitable, reliable, and credible sources:

- Tier 1: Canadian publicly available, nationally recognized, peer-reviewed climate data sources; e.g., Canadian Centre for Climate Modelling and Analysis, Canadian Wildland Fire Information System.
- Tier 2: Internationally recognized, publicly available, peer-reviewed climate data sources, e.g., IPCC, CMIP5.¹⁷ The international data sources were used to supplement the Canadian sources and fill any data gaps, where necessary.

For each climate variable listed in Table 3.2, Acclimatise sourced datasets to provide present-day conditions as well as future climate projections for the 2030 and 2050 planning horizons. Multiple climate models were used for future projections to support statistical analysis and account for climate modelling uncertainty. The datasets used in the physical climate risk analysis were derived from a range of observed and modelled climate information sources. The five primary

¹⁷ Coupled Model Intercomparison Project Phase 5 (CMIP5): CMIP is a standardized experimental framework for studying the results of coupled atmospheric-oceanic Global Climate Models. CMIP5 was the most current and up-to-date phase of the programme, with CMIP6 results issued by the IPCC in 2021.

dataset types used in this analysis, as described in the Acclimatise Technical Report, are outlined below:

- 1) **Reanalysis:** Reanalysis is the closest dataset available to pure observed data on a global scale. It combines large volumes of observed data from weather stations and remote sensors with high-resolution numerical weather models.
- 2) **Statistically downscaled climate projections (SDCP):** Statistical downscaling makes use of statistical relationships between local observed climate variables and larger-scale climate patterns. The derived statistical relationships are applied to the large-scale projections data from General Circulation Models¹⁸ (GCMs) to infer local-scale projections at resolutions on the order of 1-10km.
- 3) **Dynamically downscaled climate projections (DDCP):** Dynamic downscaling uses the outputs of GCMs to drive a numerical Regional Climate Model (RCM) at a higher spatial resolution than GCMs. Typical spatial resolutions of RCMs range between 25 and 50km.
- 4) **Global climate projections (GCP):** Climate projections obtained from GCMs. GCMs are coupled atmospheric-oceanic models that account for a wide range of physical processes. Due to their global coverage, GCMs have coarser spatial resolutions than downscaled climate projections and are typically in the order of 100km resolution.
- 5) **Climate-related hazard datasets from other internationally recognized sources:** Climate-related hazards not present in reanalysis or climate projections. These include the landslide susceptibility provided by NASA's Landslide Hazard Assessment for Situational Awareness (LHASA) and the coastal and riverine flooding hazard datasets from the World Resource Institute (WRI).

Table 3.3 provides a summary of the climate data sources including the five types listed above used for each climate variable. The sources for the present-day dataset (see five types described above) are identified along with corresponding spatial and temporal resolutions, statistic outputs, and output units. Table 3.4 also provides data source and type of dataset for future projections.

The output from the physical climate risk analysis exercise was a substantial amount of climate data for each of the 100 critical assets including:

- Monthly output data for each of the three study timeframes – present-day (2010), 2030, and 2050 that:
 - Represented two warming scenarios, RCP 4.5 (best case) and RCP 8.5 (worst case) to capture a range of uncertainties and possible future outcomes provided in various statistical formats:
 - Typically including the mean, 5th, and 95th percentiles, in addition, other statistics were provided where identified/requested by NS Power, such as minimums and maximums (refer to Table 3.3 for details).

¹⁸ Note that in common literature, “GCM” is also colloquially interpreted as “Global Climate Model”, as such, becomes interchangeable with the more formal description of “General Circulation Model”.

All of the climate data was provided to NS Power in GIS format so it could be input into its existing GIS framework and used for risk assessment by asset strategy committees.

Table 3.4: Summary of Present-Day and Future Projection Climate Data Sources, with Spatial & Temporal Resolutions where Available¹⁹

Climate variable	Present-day dataset	Dataset type for present-day	Present-day spatial resolution	Temporal scale	Statistic	Output units	Future projections analysis data source(s)	Dataset type for projections analysis
Temperature, daily mean	ERA5-Land	Reanalysis	9x9 km	Monthly	Mean, 95th, 5th	°C	CCCMA, ECCC, CMIP5	DDCP, SDCP, GCP
Temperature, daily max	ERA5-Land	Reanalysis	9x9 km	Monthly	Mean, 95th	°C	CCCMA, ECCC, CMIP5	DDCP, SDCP, GCP
Temperature, daily min	ERA5-Land	Reanalysis	9x9 km	Monthly	Mean, 5th	°C	CCCMA, ECCC, CMIP5	DDCP, SDCP, GCP
Total precipitation, daily	ERA5-Land	Reanalysis	9x9 km	Monthly	Mean, 95th, 5th	mm	CCCMA, ECCC, CMIP5	DDCP, SDCP, GCP
Snowfall	ERA5-Land	Reanalysis	9x9 km	Monthly	Mean, 95th, 5th	cm	CCCMA, CMIP5	DDCP, GCP
Precipitation type	ERA5	Reanalysis	30x30 km	Monthly	Mean, 95th, 5th	Dimensionless	CCCMA, CMIP5	DDCP, GCP
Surface pressure	ERA5-Land	Reanalysis	9x9 km	Monthly	Mean, 95th, 5th	Pa	CCCMA, CMIP5	DDCP, GCP
Specific humidity	ERA5	Reanalysis	30x30 km	Monthly	Mean, 95th, 5th	kg * kg-1	CCCMA, CMIP5	DDCP, GCP
Wind gust, daily	ERA5	Reanalysis	30x30 km	Monthly	Mean, 95th, 5th	m * s-1	CCCMA, CMIP5	DDCP, GCP
Wind gust, annual	ERA5	Reanalysis	30x30 km	Annual	n/a	m * s-1	CCCMA, CMIP5	DDCP, GCP
Sea surface temperature, daily mean	ERA5	Reanalysis	30x30 km	Monthly	Mean, 95th, 5th	°C	CMIP5	GCP
Sea level rise	CMIP5	Global Climate Projections	100x100 km	n/a (Annual)	Mean	m (relative to 1986-2005 baseline)	CMIP5	GCP

¹⁹ Adapted from Table 1 and Table 2 from Acclimatise Technical Report

Climate variable	Present-day dataset	Dataset type for present-day	Present-day spatial resolution	Temporal scale	Statistic	Output units	Future projections analysis data source(s)	Dataset type for projections analysis
Coastal flooding	WRI Aqueduct	Climate hazard dataset	1x1 km	n/a (Annual)	Mean, max, min	m	WRI Aqueduct	Climate hazard dataset
Riverine flooding	WRI Aqueduct	Climate hazard dataset	1x1 km	n/a (Annual)	Mean, max, min	m	WRI Aqueduct	Climate hazard dataset
Landslide susceptibility (rainfall-induced)	LHASA NASA	Climate hazard dataset	1x1 km	n/a (Annual)	n/a	susceptibility: 0 - 4	NASA	Climate hazard dataset
Wildfires (Fire Weather Index (FWI))	ERA5	Reanalysis	30x30 km	Daily	Mean, 95th, 5 th	Dimensionless	CMIP5	GCM
Wildfires (historical)	FIRMS NASA		1x1 km	n/a (historical)	n/a	Dimensionless	n/a	n/a

ECCC: Environment and Climate Change Canada, Statistically downscaled climate projections

CCCMA: Canadian Centre for Climate Modelling and Analysis, Dynamically downscaled climate projections

CMIP5: Coupled Model Intercomparison Project Phase 5, Global climate projections

ERA5: European Centre for Medium-Range Weather Forecasts, Reanalysis

ERA5-Land: European Centre for Medium-Range Weather Forecasts, Reanalysis

WRI Aqueduct: World Resources Institute (WRI) Aqueduct Floods, Present day and projected global flood risk

NASA: Landslide Hazard Assessment for Situational Awareness (LHASA)

CWFIS: Canadian Wildland Fire Information System

3.3. Identification of Critical Assets and Operations Vulnerable to Climate-related Risks

Building on the criticality assessment of NS Power assets and the climate datasets, this section focuses on identifying assets and operations vulnerable to physical climate risks. To identify assets and operations vulnerable to physical climate risks, NS Power used the “List of potential climate impacts” table provided in Appendix 3 of the EC Guide.²⁰ The climate hazards (column 1) and corresponding potential climate impacts (column 2) were then mapped to each NS Power asset class/operation included in the exercise to build NS Power’s *Climate Master spreadsheet*. Each of the potential climate hazards (see box to the right), and the associated potential climate impacts, were evaluated for each asset class/operation.

Climate Hazards, Column 1, Appendix 3 in CEA Guide
Changes in annual and/or seasonal patterns

- 1 Changes in mean annual and/or seasonal temperature
- 2 Changes in water availability
- 3 Changes in type, timing and intensity of precipitation
- 4 Changes in runoff and ground conditions
- 5 Changes to extent and duration of snow cover (e.g. timing of spring melt), permafrost melt and ice conditions (e.g., deepening of annual

Increasing frequency, intensity and/or duration of extreme events

- 6 Heat waves
- 7 Drought and wildfire
- 8 Wind events
- 9 Major precipitation events, overland flooding and storm surges
- 10 Ice storms and freezing rain
- 11 Electrical storms

Changes to ecosystem

- 12 Shifts in species range or reproductive patterns for plants & animals
- 13 Pathogens, pests and diseases
- 14 Duration of growing season
- 15 Sea level rise

The **Adaptation Degree** variable uses three classifications:

- Incremental - Climate impact is managed within existing processes
- Tactical - Climate impact requires new processes
- Strategic - Climate impact requires a significant change in assets or new assets

The **Expenditure Level** variables describe the operating and/or capital costs associated with climate impacts

The **Adaptation Timing** variable describes “when” NS Power expects to experience climate impacts

- Near-term – less than 5 years
- Medium-term – 5 to 10 years
- Long-term – more than 10 years

The asset classes or operational areas evaluated includes transmission lines, distribution lines, substations, thermal generating stations, hydroelectric generating stations, and wind generating assets. Through this process NS Power has developed a deeper understanding of the vulnerabilities for these different operational areas. Key climate impacts include both acute events, such as extreme weather interacting with transmission and distribution infrastructure, and chronic impacts, such as long-term changes in temperature and precipitation patterns.

²⁰ NS Power recognizes that the list of potential climate impacts in Appendix 3 of the EC Guide is not exhaustive but considers its 81 broadly illustrative impacts an excellent starting point from which to build this adaptation planning exercise.

Figure 1.1 in Section 1 illustrates how these various climate hazards, such as storm surges, sea level rise, extreme weather events, and increasing wildfire risks, affect critical operational areas like transmission and distribution, hydroelectric and wind operations, shoreline infrastructure, electricity demand, and fish habitat restoration. By identifying these vulnerabilities, NS Power prioritizes and integrates climate risk management into its asset reliability and operational strategies, ensuring the resilience and sustainability of its electricity system in the face of evolving climate challenges. Assessment of the level of criticality for each asset/operation in NS Power's system, and its associated climate vulnerability, is managed by the relevant Asset Strategy Committee(s).

To assist NS Power's EAM team with filtering through the extensive climate datasets generated, a prioritization tool called the Expenditure Level-Adaptation Degree (ELAD) Matrix was developed. The ELAD Matrix is designed to be used by Asset Strategy Committees to incorporate climate hazards/impacts into the development of asset risk profiles and associated asset management plans. The matrix prioritizes climate hazards and the associated variables based on the effort (Adaptation Degree) and resources (Expenditure Level) needed to manage the climate impacts as shown in Table 3.4.

Table 3.5: Expenditure Level - Adaptation Degree (ELAD) Matrix Scoring

Expenditure Level	High	3	3	6	9
	Medium	2	2	4	6
	Low	1	1	2	3
		1	2	3	
		Incremental	Tactical	Strategic	
		Adaptation Degree			

ELAD Matrix scores are currently derived using data from the *Climate Master spreadsheet*, which is based on experiential and historical/observed information from NS Power's Asset Strategy Committees. Once the climate datasets from the physical climate risk analysis are fully incorporated into NS Power's asset management mechanism, the data will be used to update the scores in the ELAD Matrix. This will ensure that the scores in the ELAD Matrix will be driven by quantitative climate data.

For a detailed explanation of the ELAD Matrix methodology, see Appendix F of the Manifest Technical Report. For the full scoring of each climate impact for each asset class, see Appendix B of the Acclimatise Technical Report.

3.4. Selection of Key Climate Impacts for NS Power

The extensive climate dataset developed through the physical climate risk analysis completed by Acclimatise is being incorporated into NS Power's assessment of climate impacts for its assets and operations. This comprehensive dataset also serves as the foundation to inform NS Power's characterization of climate risks in [Step 4](#) of its adaptation planning process.

Based on available climate projections, provincial climate risk assessments, engineering studies, operational experience, and recent extreme weather events, NS Power has identified a number

of climate hazards that have the potential to materially affect its assets and operations. These hazards include both acute events, such as hurricanes, flooding, and wildfires, as well as chronic changes, including rising temperatures, sea level rise, changing hydrology, and ecosystem changes. Table 3.5 summarizes the key climate hazards currently considered within NS Power's climate adaptation planning process and the primary business functions that may be affected.

Table 3.6: Relevant Climate Hazards and Associated Climate Impacts for NS Power

Climate Hazard	Expected Risk Level	Primarily Affected Business Units	Example Impacts
Extreme Weather Events (Hurricanes, High Winds, Ice Storms)	High	Transmission, Distribution, Wind, Substations, Operations & Maintenance	Damage to overhead lines, poles, towers, substations, wind turbines, and vegetation-related outages. Constraints on restoration activities and access to assets.
Flooding and Changing Precipitation Patterns	High	Hydroelectric Operations, Thermal Generation, Substations, Transmission & Distribution	Increased risk of overland flooding, flash flooding, drainage failures, erosion, damaged access roads, and impacts to electrical equipment and site infrastructure.
Sea Level Rise and Coastal Erosion	Medium-High	Thermal Generation, Substations, Transmission, Shoreline Infrastructure	Increased coastal flooding, storm surge impacts, shoreline erosion, reduced site accessibility, and increased risks to low-lying coastal infrastructure.
Warmer Temperatures and Heat Waves	Medium-High	Thermal Generation, Substations, Transmission, Distribution, System Operations	Increased cooling demand, reduced equipment performance, thermal derating, conductor sag, accelerated asset ageing, and increased maintenance requirements.
Drought and Water Availability	Medium	Hydroelectric Operations, Thermal Generation, Environment	Reduced water availability, changing streamflow timing, reservoir management challenges, lower hydroelectric generation flexibility, and increased stress on aquatic ecosystems.
Wildfire	Medium	Distribution, Transmission, Hydroelectric Operations, Wind Generation, Operations & Maintenance	Damage to electrical infrastructure, restricted site access, public safety concerns, smoke-related operational impacts, and increased vegetation management requirements.
Ecosystem Change, Water Quality and Invasive Species	Medium	Thermal Generation, Hydroelectric Operations, Environment	Increased biofouling, aquatic invasive species, changing water quality, increased vegetation growth

			rates, and changing environmental management requirements.
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It is also important to consider potential combined climate impacts that could elevate physical risks to NS Power’s assets and operations. For example, in the wintertime, ice accretion and wind events may form a combined impact. Trees and branches loaded with ice are more susceptible to breakage during wind events, threatening damage to transmission and distribution assets.

3.5. Sample Climate Impact Assessment for Two Assets Critical to NS Power’s Mission

Tufts Cove – Example of Key Climate Impacts of critical generation and substation asset identified in Step 2

Tufts Cove is a large, dual fuel generating station and is NS Power’s main natural gas-fired asset, providing fuel-flexibility and reliability to the electricity system.

NS Power-known climate risks: Sea level rise and storm surge are physical climate hazards for Tufts Cove because it is located on the coast. Changes in mean annual and/or seasonal temperatures are also priority climate hazards because the performance of generation and substation equipment can be significantly affected by temperature swings.

Physical climate risk analysis preliminary learnings: Data from the risk analysis indicated that the month of August is projected to have the largest increases in number of hot days. From a present-day value of 3.7 days the total number of hot days rises to ~9 by 2030 for both RCP scenarios and ~11 and ~13.5 by 2050 for RCP 4.5 and 8.5 respectively. There is also a reduction in number of days below -5°C projected, with larger reductions observed by 2050 than by 2030 and more for RCP 8.5 than for RCP 4.5.

Finally, the projections indicate that sea level is expected to rise from present-day by a further 13cm and 16cm by 2030 for RCP 4.5 and 8.5 respectively. This worsens by 2050, with sea level rise from present-day of 20cm and 26cm, under RCP 4.5 and 8.5 respectively. The overall coastal flooding risk for the Tufts Cove site under a 2100-time horizon is depicted in Figure 3.2 below.



Figure 3.1 Example of Tufts Cove flood mapping showing 1% annual exceedance probability and 2100-time horizon

Nova Scotia-New Brunswick Transmission Corridor – Example of Key Climate Impacts for Critical Transmission Asset Identified in Step 2

The three transmission lines (one 345kV line and two 138kV lines) connecting Nova Scotia and New Brunswick are critical to maintaining NS Power's system reliability.

NS Power-known climate risks: Flooding in this region has already been limited access for maintenance crews to transmission infrastructure. This region is bordered by the Bay of Fundy to the southwest and the Northumberland Strait to the northeast, so coastal flooding is a high priority climate hazard for this asset. In addition, ice accumulation and elevated temperatures can significantly affect the efficiency of transmission and distribution lines, as well as the physical integrity of the assets.

Adaptations: NS Power recognizes the importance of protecting critical infrastructure, such as those facilities within the Chignecto Isthmus, which is vital for maintaining reliable connections between Nova Scotia and the rest of Canada. The recent \$650 million funding agreement between Ottawa, New Brunswick, and Nova Scotia to reinforce the isthmus also reduces the risk to the critical transmission lines that run through this corridor, ensuring the continued reliability of power supply between NS and NB

The new NS-NB Reliability Tie was designed with climate change considerations, incorporating updated standards for overhead lines and enhanced foundations that reduce risks associated with extreme weather events and flooding. These measures enhance the resilience of the infrastructure, ensuring the when built it can withstand the increasing frequency and severity of climate-related impacts.

Physical climate risk analysis learnings: Data from the risk analysis indicated that projections of coastal flood depth increases between 2030 and 2050. The increase could be as low as 1.5m in 2030 under RCP 4.5 with a 2-year return period to almost 3m in 2050 under RCP 8.5 with a 1000-year return period. The percentage of liquid precipitation over total precipitation is projected to increase for the months of December and January in 2030 by ~1.3% and ~3.4% respectively for RCP 4.5 and by ~4% and ~2% respectively for RCP 8.5. As we move towards the 2050s or 2080s the number of freezing days will be fewer, suggesting that the probability of freezing rain eventually decreases. In addition, projections indicate August will experience the largest increases in number of hot days, with the total number of days rising to ~3.5 and ~3 by 2030 for RCP 4.5 and 8.5 respectively, and ~4 and ~ by 2050 for RCP 4.5 and 8.5 respectively. Increased hot days can cause transmission lines to sag, reduce their efficiency, and accelerate the aging of critical components, thereby impacting overall system reliability.

4. Step 4: Assess Risks to Critical and Vulnerable Assets and Operations

This section explains NS Power's existing asset risk assessment process and lays the groundwork for integrating climate impacts into assessments of generation and transmission and distribution assets. Details are given on how assets are assessed for risk, including the general scoring methodology. The resulting risk profile is utilized for risk mitigation planning, including adapting to climate considerations.

NS Power assesses climate-related risks through its existing Asset Management System rather than through a separate climate-specific risk process. Climate hazards and projected climate impacts are incorporated into the established asset risk assessment, planning, and investment processes used to manage generation, transmission, distribution, and substation assets. These processes are described in greater detail within the SAMP and the Asset Strategy Committee Process procedure.^{21 22}

The objective of this step is to ensure that climate-related risks are considered alongside other enterprise risks such as safety, environmental performance, reliability, regulatory compliance, and affordability. Climate information described in Section 3 is used to help identify assets and operations that may be vulnerable to future climate conditions and to support the development of risk mitigation strategies where warranted.

4.1. Asset Strategy Committees

Climate risks are primarily evaluated through NS Power's Asset Strategy Committees (formerly known as Asset Reliability Teams). Asset Strategy Committees are multidisciplinary groups of engineers, scientists, technicians, operators, and other subject matter experts responsible for developing Asset Management Plans, assessing asset condition and risk, identifying emerging risks, and recommending mitigation strategies for the assets within their area of responsibility.²²

As part of their regular review activities, Asset Strategy Committees consider the potential impacts of climate hazards on asset performance, reliability, condition, and lifecycle expectations. Climate-related risks identified through this process are incorporated into Asset Management Plans and risk mitigation strategies, ensuring that climate adaptation is integrated into ongoing asset management activities rather than managed separately.²²

4.2. Asset Risk Assessment and Climate Integration

NS Power utilizes a common enterprise-wide risk assessment methodology to evaluate asset risks across the organization. The process considers both the criticality of an asset and its condition or likelihood of failure, producing a risk profile used to guide investment planning, maintenance strategies, and risk mitigation activities.

Climate information and projections are incorporated into this process by providing additional context regarding future operating conditions and potential failure mechanisms. Depending on

²¹ Nova Scotia Power Inc., Strategic Asset Management Plan (SAMP), Revision 0, December 16, 2024. The SAMP defines Nova Scotia Power's enterprise asset management framework, risk-based decision-making approach, Asset Management System, and associated governance processes.

²² Nova Scotia Power Inc., NSPI-AMS-001 Asset Strategy Committee Process, Revision 1, Effective June 9, 2025. This procedure defines the responsibilities of Asset Strategy Committees, development of Asset Management Plans, assessment of asset risks, risk mitigation planning, and integration of emerging risks such as climate change into asset management activities.

the asset type, relevant climate variables may include wind speeds, flooding, sea level rise, precipitation intensity, wildfire risk, drought, or ambient temperatures. Asset Strategy Committees use this information to assess whether climate-related changes could materially affect asset condition, performance, accessibility, safety, or mission requirements.

Where climate risks materially influence an asset's risk profile, the resulting risk mitigation actions are managed through existing asset management processes and may include monitoring, operational changes, design modifications, replacement programs, asset hardening initiatives, emergency preparedness measures, or other adaptation activities discussed in Chapter 3.

Figure 4.1 provides a high-level overview of how climate information is integrated into NS Power's existing asset management and risk assessment framework.

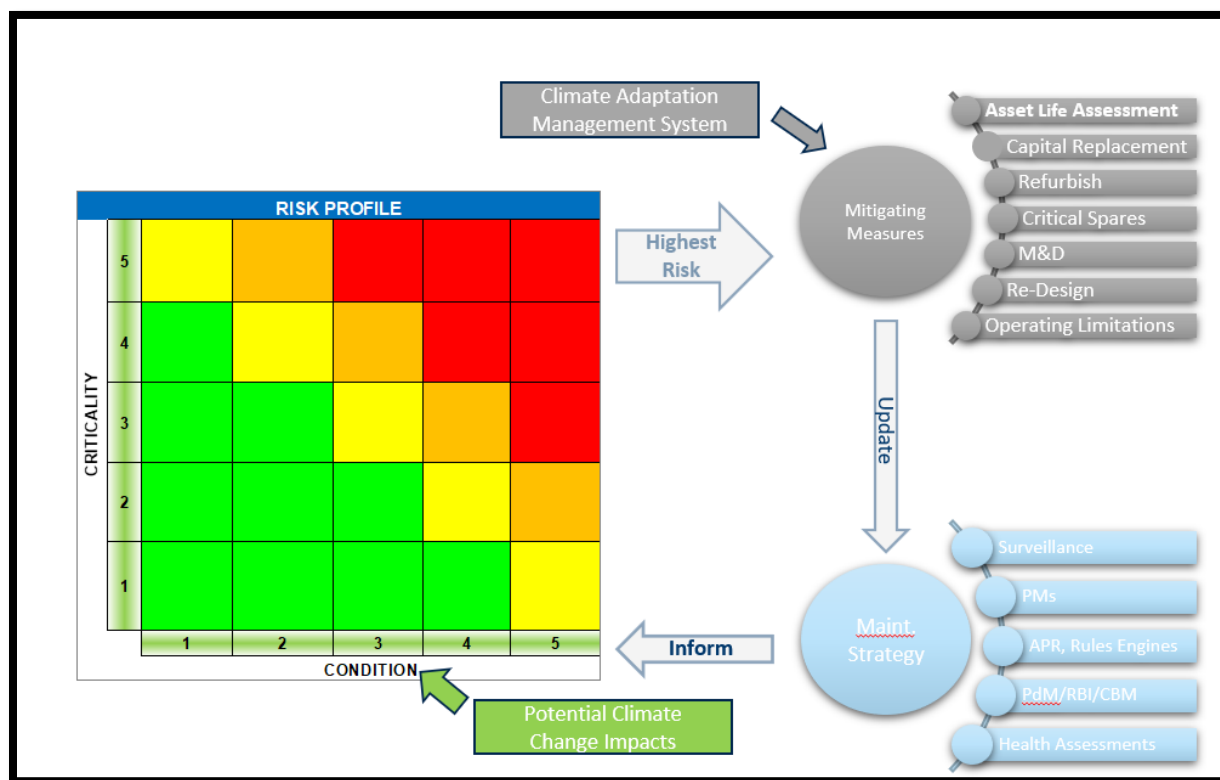


Figure 4.1: Overview of NS Power's Asset Management Mechanism

Climate information described in Section 3 is reviewed by the applicable Asset Strategy Committees and incorporated into the asset risk assessment process described within the SAMP and Asset Strategy Committee Process procedure. Climate datasets, site-specific studies, operational experience, and engineering judgement are used to assess whether changing climate conditions may affect asset condition, performance, reliability, accessibility, safety, environmental performance, or the long-term mission of an asset. Where climate-related risks materially affect an asset's risk profile, risk mitigation actions are identified, prioritized, and managed through existing asset management processes. These actions may include operational changes, enhanced monitoring, equipment refurbishment, design modifications, replacement programs, emergency preparedness initiatives, or other adaptation measures described in Chapter 3.

Chapter 3: Risk/Opportunity Response and Adaptation Planning

Chapter 3 comprises two steps that show how NS Power's asset risk assessment approach can be used to record and monitor climate data and feed learnings from the data into decisions on mitigating measures. This will enable NS Power to identify, rank and prioritize selected adaptation measures with an enterprise-wide perspective. The two steps are [Identify Potential Adaptation Measures](#) and [Develop a Business Case for Selected Measures](#).

5. Step 5 Identify Potential Adaptation Measures (risk controls)

This step reviews the types of risk mitigation measures that are available to NS Power to adapt to physical climate impacts and the Company's management system for climate information.

The objective of this step is to identify and implement appropriate actions to manage climate-related risks. NS Power integrates climate adaptation into its existing Asset Management System and capital planning processes rather than maintaining a standalone adaptation program. Climate-related risks identified through the processes described in Sections 3 and 4 are managed using the same risk-based decision-making framework used for all asset risks.

Potential adaptation measures may include operational changes, enhanced monitoring, changes to inspection and maintenance programs, design modifications, equipment replacement, infrastructure hardening, emergency preparedness activities, strategic spare equipment, or changes to long-term asset plans. The specific response selected depends on the nature of the risk, the asset's mission, expected climate impacts, cost, feasibility, and overall benefit to customers.

Detailed descriptions of NS Power's asset management processes, Asset Strategy Committees, Asset Management Plans, risk mitigation planning, and capital decision-making framework are provided within the SAMP and Asset Strategy Committee Process procedure.^{21 22}

5.1. Asset-Class Climate Adaptation Summaries

Thermal Generating Stations

Thermal assets experience increasing exposure to several climate hazards, particularly extreme precipitation and overland flooding, coastal flooding and storm surge, seasonal cooling-water temperature increases, and invasive species such as mussel fouling. These conditions place stress on wastewater systems, low-lying electrical rooms, condenser performance, and site access. Hurricane Fiona demonstrated these risks in practice and generated key operational lessons.

NS Power is addressing these risks through actions such as flood-risk studies, upgrades to drainage, pumping, and containment systems, shoreline protection, enhanced cooling-water monitoring, and operational adjustments like seasonal derating protocols. Longer-term adaptations include evaluating options for equipment relocation, coastal hardening, and upgrades to lightning and wind protection systems. Full details are provided in Appendix A.

Hydroelectric Generating Stations

Hydro facilities are highly sensitive to changing precipitation patterns, flood intensity, spring melt timing, drought, and wildfire exposure in watershed areas. These climate shifts affect dam safety, spillway capacity, slope stability, reservoir management, and access infrastructure.

To adapt, NS Power employs updated flood studies, climate-adjusted PMF evaluations, integration of climate data into Dam Safety Reviews, and operational adjustments to reservoir rule curves to respond to changing hydrology. Additional measures include erosion and slope-stability assessments, emergency access planning, and the integration of wildfire-risk mapping into asset planning. Further detail is included in Appendix A.

Wind Assets (Nuttby, Digby)

Wind facilities are exposed to hurricanes, extreme wind gusts, icing, precipitation-driven erosion, and wildfire risk. These hazards can affect turbine availability, energy yield, access roads, padmount transformers, and turbine thermal performance.

Adaptation actions include upgrading turbine cooling systems, enhanced icing detection, tower and foundation inspection programs, drainage improvements, and integration of wildfire mapping into operations planning. NS Power is also evaluating control-system updates for gust response and expanding erosion-resistance measures around foundations. Details are included in Appendix A.

Transmission System

The transmission network faces growing risks from high-wind events, icing and freezing rain, heat-related loading constraints, and erosion or flooding at water crossings. Climate projections highlight increasing hours of extreme winds, more intense icing interactions, and elevated summer temperatures affecting conductor ampacity and sag.

NS Power is addressing these risks through CSA-aligned design upgrades, ice-accretion monitoring, vegetation-condition assessments, conductor and pole replacements, and expansion of real-time monitoring and drone-based inspections. Appendix A provides detailed hazard-action tables.

Substations

Substations across Nova Scotia are increasingly affected by overland and coastal flooding, higher ambient temperatures, wildfire exposure, and extreme weather events such as hurricanes and ice storms. Flooding at the 82V Elmsdale substation in 2023 illustrates the system-wide vulnerability of low-lying stations. Adaptation measures include flood risk assessments, site-specific mitigation planning, drainage and containment reviews, enhanced equipment monitoring,

remote monitoring technologies, strategic spare equipment programs, and targeted site hardening initiatives to improve resilience and operational flexibility. Additional details are provided in Appendix A.

Distribution System

Distribution assets are highly exposed to windstorms, ice storms, wildfires, heat-driven loading, flooding, and coastal erosion. These hazards threaten overhead lines, padmount transformers, access roads, and switching operations.

NS Power is implementing extensive adaptation measures through its Five-Year Reliability Plan (discussed further below), including 617 km of targeted vegetation management work in 2025 and 862 km planned for 2026, conductor upgrades, build-to-roadside projects, padmount replacements, underground flood-proofing, and wildfire-informed vegetation strategies supported by satellite-derived vegetation and wildfire risk mapping. Appendix A provides additional details.

5.2. Five-Year Reliability Plan

The Five-Year Reliability Plan, filed with the Nova Scotia Utility and Review Board in December 2024, represents a significant investment of \$1.3 billion aimed at enhancing the resilience and reliability of NS Power's grid. This plan is linked to the Climate Adaptation Plan, ensuring that NS Power's infrastructure is prepared to withstand the increasing frequency and severity of climate-related events. By leveraging the Climate Adaptation Plan and processes described herein, the Reliability Plan focuses on three core programs: Storm Hardening - Vegetation Management, Storm Hardening - Targeted Equipment Replacements and Upgrades, and Advanced Grid Modernization.

Through these targeted investments, NS Power aims to reduce the duration and frequency of outages, while also improving grid resilience to meet performance standards for restoring service within 48 hours after major events. The Storm Hardening programs will manage vegetation around power lines and upgrade critical equipment to withstand extreme weather conditions, thereby reducing the risk of outages. Advanced Grid Modernization will implement cutting-edge technologies to create a more adaptive and resilient grid, capable of responding to evolving demands and integrating renewable energy sources.

By aligning reliability investments with climate adaptation strategies, NS Power is committed to building a power system that not only meets current reliability standards but is also equipped to handle future climate challenges. This integrated approach ensures that NS Power's customers receive dependable and efficient power service, even in the face of severe weather events.

5.3 Wildfire Mitigation Plan

As part of NS Power's comprehensive climate adaptation plan, the Wildfire Mitigation Plan plays a crucial role in enhancing the resilience of the Company's electrical infrastructure against the increasing threat of wildfires. Key wildfire adaptation activities currently underway include enhanced vegetation management, satellite-based vegetation condition assessments, Fire Weather Index monitoring, drone and LiDAR inspections, wildfire-informed risk profiling, and collaboration with provincial wildfire management agencies. NS Power is also advancing wildfire

risk mapping to better identify areas where wildfire hazard, vegetation conditions, and critical electrical infrastructure overlap. These assessments will support risk-based prioritization of mitigation measures, vegetation management activities, and future adaptation investments.

For additional details, please refer to **Appendix B: Wildfire Mitigation Plan**.

5.3. Step 6: Develop a Business Case for Selected Measures

This section overviews the procedure for prioritizing recommended adaptation measures. NS Power has robust existing operating and capital expenditure budgeting processes. Adaptation to climate change risks can be seamlessly integrated into these processes.

From [Step 5](#), NS Power will have a series of high-risk assets and identified mitigation options to address climate physical impacts. The selection of a particular risk management measure is dependent on cost and ease of implementation, likelihood of success in mitigating the risk, the expected benefit of the mitigating measure, as well as the asset mission and other inputs. NS Power strives to minimize costs for customers and maximize the operating capacity and life of its assets. Where there are multiple viable options, an economic analysis may be performed. In some cases, multiple types of risk mitigation are implemented on a single asset to better manage the risk. Risk management plans are proposed through collaboration by the multi-disciplinary asset strategy committees, receive management approval, regulatory approval as required, and are implemented by the responsible business unit.

The various forms of risk mitigation described in [Step 5](#) may be covered either operating expenditures or capital expenditures. Mitigating measures funded through operating budgets would be covered within existing operating budgets parameters managed by the business unit responsible for the asset. Capital risk mitigation options would fall within the NS Power Capital Expenditure Justification Criteria (CEJC) processes. The detailed documents for the CEJC process are covered within the *Nova Scotia Power Inc. Capital Planning & Capital Expenditure Justification Criteria Summary Document (July 31, 2023²³)*. Processes for evaluating and prioritizing suggested capital expenditures based on quantitative and qualitative cost and benefit data are described in the CEJC.

At the center of the CEJC process is NS Power's risk matrix deployed by the EAM team to assess risk and prioritize items being submitted for capital expenditures. This is the same 5x5 risk matrix outlined within [Step 4](#) of this adaptation planning document. Therefore, incorporating climate impacts into our existing risk ranking processes allows NS Power to utilize the longstanding process within the CEJC.

Where a recommendation requires more detailed economic analysis for justification (such as cases where more than one viable option exists), an Economic Analysis Model (EAM) is completed. The EAM template is approved by the Nova Scotia Energy Board through the CEJC approval process, and has consideration for payback period, likelihood of failure, anticipated future investments, time-value of money, interest costs, etc.

²³ This document is managed by the NS Power Regulatory Affairs team and is periodically submitted to the Nova Scotia Utility and Review Board for approval.

6 Chapter 4 Preparation for Implementation

Chapter 4 comprises two steps on forward-looking implementation. Although NS Power is well-prepared with a robust, existing asset risk management system, integrating climate data and long-term scenario learnings associated with climate change will require practice. These steps outline climate-related actions associated with different roles in NS Power and the monitoring and reporting to drive implementation and improvement.

6.3 Step 7: Detail and Document Implementing Control Actions

This section lists the various NS Power roles that will be involved in integrating climate considerations in order to fulfil this adaptation plan. Each role will have a list of specific actions that fall under its purview. Responsibility for various steps in this adaptation plan is spread from the leadership team to individual risk assessment personnel.

The objective of Step 7 in the EC Guide is to determine the governance needed to support the climate analysis and adaptation plan. As discussed in the previous sections, NS Power fully integrates the consideration of key climate impacts into the existing risk management processes deployed as part of the enterprise asset management system. The governance of the asset management system supports the various roles to ensure they have the right information to identify and assess climate-related adaptation needs and so that asset management processes can accommodate the adaptation measures.

6.3.1 Roles & Responsibilities

The governance of the Climate Adaptation Plan and the associated process will be managed within the following organization structure, utilizing existing resources. Effective implementation of the Climate Adaptation Plan depends on employees across many departments taking responsibility for various tasks. Specific accountabilities are covered in the roles and responsibilities for various key departments and positions shown in Figure 6.3.1 and as listed below.

6.3.1.1 NS Power Executive Leadership Team

- Ensures the Climate Adaptation Plan is compatible with the strategic direction of the organization;
- Provides visible leadership and strategic direction for the climate adaptation planning and programs in their area of responsibility;
- Periodically reviews climate adaptation programs and performance for appropriateness and fit with the company's needs; and
- Holds senior leaders accountable for implementation of the Climate Adaptation Plan and the effectiveness of the underlying risk management system as described in this manual.



Figure 6.3.1: Organizational Chart for Management & Oversight of Climate Adaptation Plan

6.3.1.2 Senior Directors (Asset Management and Environment)

- Provide visible leadership and strategic direction for the climate adaptation planning and programs;
- Ensure the Climate Adaptation Plan achieves its intended outcomes related to improving organizational resiliency to the physical impacts of climate change, prioritization of climate-related risks, and leveraging new business opportunities and innovation to adapt to climate change;
- Allocate adequate resources to enable implementation of climate adaptation planning programs consistent with corporate and business unit policies and standards; and
- Hold leaders accountable for the implementation of the climate adaptation planning programs and resulting performance.

6.3.1.3 Enterprise Asset Management (Managers)

- Is directly accountable for performance against key metrics for climate impacts (see Section 8.2);
- Allocates resources to enable implementation of Climate Adaptation Plan;
- Participates actively in the risk assessment of key climate impacts and as required, capital planning to mitigate risks; and
- Raises climate change issues or concerns to senior leaders where warranted.

6.3.1.4 Climate Adaptation Risk Lead

- Manages climate datasets;
- Integrates knowledge of key climate impacts and climate datasets into asset strategy committee risk assessments;
- Reviews climate-related asset risk scores from asset strategy committees;
- Maintains the content of the Climate Adaptation Management System (CAMS); and
- Monitors climate-related performance metrics;
- Obtains updated climate datasets on a periodic basis; and
- Maintains and updates the Climate Adaptation Plan document.

6.3.1.5 Asset Strategy Committee Leads/Members

- Become familiar with the key climate risks and associated impacts relevant to the particular asset class and, review available climate datasets relevant to those key climate risks and impacts;
- Factor the climate datasets and potential for climate impacts into the overall risk assessment of assets relevant to the asset strategy committee;
- Include considerations for climate risks in asset management plans;
- Maintain understanding of technological innovations that could be deployed to address climate impacts; and
- Proactively identify opportunities to improve climate adaptation programs and performance and share them with responsible asset management representatives.

NS Power's Asset Management System includes multiple internal tracking and reporting mechanisms that inform the roles described above about the decisions made and asset strategies implemented. The metrics reported through these communication pathways both measure the effectiveness of asset mitigation plans, including climate-related adaptation as well as drive continuous improvement as described in [Step 8](#).

6.4 Step 8: Establish a Process to Review and Improve Plan

Monitoring implementation and reviewing progress is an essential step to drive improvement. This section outlines metrics, reporting, review, and future steps to ensure NS Power has the best available climate information.

The objective of Step 8 in the EC Guide is to establish a process that will be used to monitor the adaptation plan. Monitoring provides a two-fold purpose: first, assessing the plan's suitability, adequacy, and effectiveness; and second, presenting implementing actions to ensure continual improvement of the plan. NS Power has several reporting pathways that support both objectives. These include performance metrics for transmission, distribution, and power generation assets, review of the asset strategy committees themselves, as well as ongoing and ad hoc event analysis. These are detailed below.

6.4.1 Performance Metrics & Reporting

System reliability and availability are monitored and reported on a regular basis through existing Enterprise Asset Management, Transmission & Distribution, and Generation performance reporting processes. These reports provide information on system reliability, asset performance, outage causes, equipment condition, and emerging risks, and are used to evaluate the effectiveness of risk mitigation strategies and identify areas requiring additional action.

Although these reporting processes are not dedicated climate adaptation metrics, they provide important insight into the impacts of climate-related hazards on NS Power's assets and operations. Information such as customer interruption frequency and duration, storm-related outages, equipment availability, forced outage rates, asset failures, and restoration performance can be evaluated to identify trends associated with changing climate conditions and to assess the effectiveness of adaptation measures.

For Transmission and Distribution assets, reliability metrics such as SAIFI, SAIDI, feeder performance indicators, storm performance, and asset condition information support the identification and prioritization of resilience and adaptation investments. For Generation assets, monthly and quarterly performance reporting, outage reviews, and Generation Equipment Reliability (GER) processes help identify equipment vulnerabilities, climate-related operating challenges, and opportunities for risk mitigation.

Where significant events occur, including those potentially influenced by climate-related factors, the findings may be incorporated into asset risk assessments, Asset Management Plans, and future adaptation activities through the Asset Strategy Committee process.

6.4.2 Continuous Improvement

NS Power's approach to climate adaptation utilizes existing programs and processes to ensure continuous improvement is achieved. The performance monitoring reports outlined above are one example of existing processes that provide the NS Power team with direction on areas to focus for continuous improvement.

As described in [Step 4](#), the asset management mechanism is another visual aid representing an ongoing process that clearly shows how continuous improvement is embedded in the NS Power asset management approach (see Figures 4.1 and 5.2). This evaluation is revisited by the asset strategy committees year-over-year but is also available for use as significant new information is available, or risks are identified. This evaluation can then trigger adaptation measures as described in [Step 5](#). This will serve the Climate Adaptation Plan well in terms of continuous improvement.

Another asset management function at NS Power that will support the continuous improvement of the Climate Adaptation Plan is the RCA program. The RCA program monitors safety, environmental incident reports, as well as forced outage/derate reports via participation in the GER reporting process for events that may require further analysis. In addition, investigations may be requested at any time by management, engineering or other personnel within the business. If major outages were to be caused by a climate impact, an RCA may be triggered. A series of recommendations would then be identified to reduce the likelihood of reoccurrence or reduce the future impact to the business for a similar set of circumstances.

The following Figure 6.4.6, taken from the NS Power SAMP, depicts continuous improvement of the NS Power asset management system. This figure outlines the approach to continuous improvement within the asset management system, which supports our climate adaptation plan.

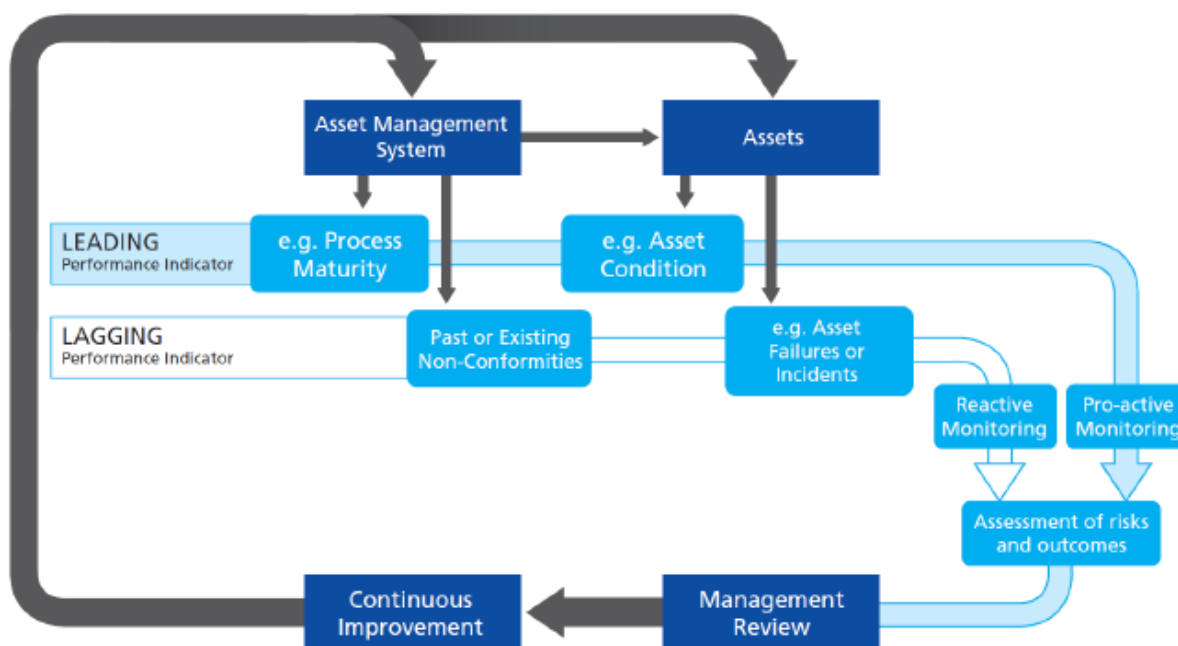


Figure 6.4.1: Assessment Performance of the Asset Management System Program and Processes

Performance reports, compliance reports, RCA reports, and engineering actions are all examples of existing asset management activities that will be utilized to promote continuous improvement of the Climate Adaptation Plan.

6.4.3 Climate Data

Chapter 1 of this plan detailed one of the goals of the Climate Adaptation Plan was to enhance NS Power's fundamental capacity to adapt to climate change by leveraging the best climate science and data available to inform NS Power's decision-making processes. To ensure this part of the plan is achieved, NS Power anticipates a regular check-in with expert third parties to validate existing climate datasets or to update those climate datasets when new relevant science is available.

In addition, NS Power understands the existing climate models are at times constrained based on the available present-day climate datasets. As such NS Power will commit, as part of the Climate Adaptation Plan improvement process, to enhance its current understanding of the climate within the Province through the following actions:

- **Monitoring Plan:** Creating a robust climate data and weather monitoring plan to continually collect observations of key climate variables;
- **Monitoring Resources:** Investigating what resources are available to dedicate to climate monitoring and, if resources limit the number of climate variables that can be monitored, selecting which climate variables to monitor (the ELAD prioritization may support this selection);
- **External Sources:** Building relationships or collaborations with academic, weather, and scientific organizations that may already be monitoring climate variables of interest;
- **Gather Data:** Reinforcing in-house monitoring teams and processes, for example, reinforcing or expanding smart meter program or other software or technology solutions; and
- **Benchmark Empirical Data:** As NS Power collects empirical data, it can be benchmarked against the trends provided by the projected climate data. This exercise may inform the pathway of climate change development.

Appendix A – Asset Class Climate Adaptation Profiles

This appendix provides climate adaptation profiles for NS Power's major asset classes. Each profile summarizes the primary climate hazards, observed and anticipated impacts, current adaptation activities, and future adaptation priorities used to support climate-informed asset management and risk mitigation activities.

A.1 Thermal Generation Climate Adaptation Profile



Asset Overview

NS Power's thermal generating fleet provides dispatchable generation capacity, system reliability, and operational flexibility as the grid continues to transition toward lower-carbon energy sources. These stations support peak demand, emergency generation requirements, and grid stability during extreme weather events. While many thermal assets are approaching retirement or transition milestones, climate adaptation efforts remain focused on maintaining safe and reliable service operations throughout their remaining service life.

Key Climate Hazards

**Storm Surge and
Sea Level Rise**



**Extreme Weather
Events**



**Warmer
temperatures,
heat waves**



**Invasive Species
Arriving**



**Higher peak
stream flows and
flood risks**



Climate Risk and Impact

Thermal generating stations face increasing climate-related risks associated with flooding, storm surge, rising cooling water temperatures, invasive aquatic species, and extreme weather events. These hazards can affect cooling water systems, wastewater infrastructure, site access, equipment performance, and operational reliability.

Adaptation in Practice

Example / Initiative	Why It Matters
Hurricane Fiona Flood Response at Trenton	Trenton Unit 6 was proactively removed from service ahead of projected storm surge flooding. Critical equipment was de-energized and temporary flood protection measures were installed around the battery and diesel generator rooms. The unit returned to service the following day with no damage to critical equipment, demonstrating the value of proactive flood preparedness and emergency planning.
Tufts Cove Coastal Flood and Shoreline Protection Study	Coastal flood modelling, storm surge analysis, and sea-level rise projections were incorporated into the design of shoreline protection upgrades to improve long-term resilience against coastal erosion and flooding.
Stormwater and Wastewater System Improvements	Initiatives at Trenton, Point Aconi, and Tufts Cove have reduced runoff volumes entering wastewater treatment systems, increased drainage capacity, and improved resilience to extreme rainfall events.
Cooling Water Monitoring	Monitoring programs are used to understand the operational impacts of increasing cooling water temperatures and support decisions regarding seasonal operating limitations and unit dispatch.
Biofouling Management Programs	Stations continue to manage increasing mussel growth, algae, and biological fouling within cooling water systems through enhanced maintenance programs and evaluation of alternative treatment technologies.

Current Adaptation Activities

Current climate adaptation activities for thermal assets include:

- Site-specific severe weather response procedures that establish actions before major storms, including drainage inspections, wastewater pond drawdowns, equipment protection measures, emergency generator checks, and post-event inspections.
- Ongoing review and continuous improvement of storm preparedness procedures based on lessons learned from Hurricane Fiona and other major weather events.
- Flood vulnerability assessments for thermal generating stations and shoreline infrastructure.
- Review of wastewater containment, stormwater management systems, and treatment pond capacity against climate-adjusted rainfall projections.

- Monitoring cooling water temperatures and evaluating impacts on unit capability and dispatch. Seasonal shutdowns at the Trenton Generating Station.
- Evaluation of alternative biofouling mitigation technologies, including ultraviolet treatment systems and chemical dosing options to reduce mussel growth in cooling water systems.
- Routine inspection and maintenance of intake structures, drainage systems, culverts, berms, and wastewater infrastructure to improve resilience during extreme precipitation events.

Future Adaptation Priorities

Over the next planning cycle, adaptation efforts will continue to focus on improving thermal system resilience through enhanced climate-informed planning and operational decision-making. Key priorities include:

Priority	Status
Implement recommendations from site drainage and stormwater studies, including culvert upgrades, improved runoff diversion, and/or pumping system enhancements	In Progress
Evaluate and deploy long-term biofouling mitigation technologies, including UV and chemical treatment alternatives where justified.	Planned
Assess long-term coastal flood protection measures at Tufts Cove, building on recent sea level rise, storm surge, and wave modelling studies used to support shoreline protection upgrades	Planned
Assess wastewater treatment and containment systems against future extreme rainfall projections	In progress
Expand monitoring and management of cooling water temperature impacts on generation capability	Ongoing
Integrate climate resilience considerations into future asset refurbishment, replacement, and retirement planning activities	Ongoing

Challenges and Considerations

- Coastal flood mitigation measures may require significant engineering and capital investment, particularly if high emission climate scenarios are expected to occur.
- Managing biofouling, cooling water temperatures, and extreme precipitation impacts may require ongoing operational adjustments, including impacts to resource capacity and/or availability, in addition to infrastructure investments.
- Retirement and transition planning for some thermal assets will influence the timing and scope of adaptation investments in line with the asset mission.

A.2 Hydro Generation Climate Adaptation Profile



Asset Overview

NS Power owns and operates 32 hydroelectric generating stations across 16 river systems throughout Nova Scotia, with approximately 400 MW of installed generating capacity. These facilities provide renewable electricity generation, system flexibility, voltage regulation, and grid reliability services that help support the integration of increasing levels of renewable energy across the province.

Unlike many other generation assets, hydroelectric facilities are directly influenced by watershed conditions and hydrological processes. Changes in precipitation patterns, runoff timing, snowpack, reservoir inflows, drought conditions, and extreme weather events can all influence the performance, reliability, and safety of hydroelectric infrastructure. As a result, climate adaptation for hydro assets is primarily focused on understanding and managing changing watershed conditions over the long-term.

Key Climate Hazards

**Storm Surge and
Sea Level Rise**



**Extreme Weather
Events**



**Increasing Risk
of Wildfire**



**Periods of
Drought, Low
Rainfall**



**Higher peak
stream flows and
flood risks**



Climate Risk and Impact

Hydroelectric assets are particularly sensitive to changes in watershed hydrology. Climate change may alter precipitation patterns, flood frequencies, runoff timing, reservoir inflows, and wildfire risk, affecting both operations and long-term asset management. Climate adaptation is being incorporated into planning, operations, and dam safety programs across the hydro fleet.

Adaptation in Practice

Example / Initiative	Why It Matters
Dam Safety Reviews and Climate-Informed Flood Studies	Dam Safety Reviews and Flood Studies are completed on a recurring basis across the hydro fleet. These studies evaluate dam performance under extreme flood conditions and increasingly incorporate climate change considerations to support long-term infrastructure resilience.
Annual Emergency Preparedness Exercises	Hydro operations conduct annual Emergency Preparedness Plan (EPP) exercises, including flood-focused and dam-related emergency scenarios. These exercises improve preparedness, test communication protocols, and strengthen coordination with emergency management agencies.
Flood Inundation Mapping	Detailed flood and dam breach modelling has been completed across hydro developments to understand downstream consequences and support emergency planning and public safety programs
Dam Risk Profiling and Capital Prioritization	NS Power maintains risk profiles for more than 150 dams and water-retaining structures. Risk rankings incorporate information from Dam Safety Reviews, flood studies, inspections, monitoring programs, condition assessments, and consequence classifications to help prioritize mitigation activities and capital investments.
Hydrologic Monitoring and Operational Surveillance	Continuous water level monitoring, routine operator rounds, semi-annual inspections, and surveillance activities support proactive management of changing hydrologic conditions and emerging asset risks.

Current Adaptation Activities

Current climate adaptation activities for hydro assets include:

- Dam Safety Reviews and Climate-Informed Flood Studies
- Annual Emergency Preparedness Exercises
- Dam Risk Profiling and Capital Prioritization
- Continuous Monitoring and Operational Surveillance
- Risk-Based Dam Refurbishment Program

Future Adaptation Priorities

Over the next planning cycle, adaptation efforts will continue to focus on improving hydro system resilience through enhanced climate-informed planning and operational decision-making. Key priorities include:

Priority	Status
Refine reservoir forecasting and water management tools to improve short-term, seasonal, and long-term water management decision-making under changing hydrologic conditions	In Progress
Update flood studies using climate-adjusted hydrology and emerging climate science	Ongoing
Expand use of climate-adjusted design considerations within hydro capital projects and rehabilitations	In Progress
Complete wildfire risk mapping across hydro developments and associated watersheds	In Progress
Develop site-specific wildfire response and preparedness plans for hydro facilities identified as having elevated wildfire risk due to their remote location and surrounding vegetation	Planned
Continue annual Emergency Preparedness Plan exercises with increased focus on climate-driven flood and extreme weather scenarios	Ongoing
Enhance remote monitoring and situational awareness capabilities at select reservoirs and water control structures	In Progress

Challenges and Considerations

- Future precipitation, drought, and hydrologic conditions remain uncertain and may significantly affect long-term reservoir management strategies.
- Updating flood studies and climate-adjusted hydrologic analyses across a large hydro fleet requires significant technical resources and may trigger the need for additional targeted capital investments.
- Wildfire risk within remote and often heavily forested watersheds remains difficult to fully mitigate through utility actions alone.
- Balancing dam safety, environmental (e.g. fish passage) requirements, generation flexibility, and climate adaptation objectives requires ongoing evaluation.

A.3 Wind Generation Climate Adaptation Profile



Asset Overview

NS Power's wind generation assets provide renewable electricity generation and support the province's clean energy transition. Wind facilities include turbine structures, foundations, collector systems, access roads, communication systems, and associated electrical infrastructure. As climate conditions evolve, adaptation efforts focus on maintaining asset reliability, safe operations, and long-term performance while supporting increasing renewable energy integration.

Key Climate Hazards

Extreme Weather Events



Increasing Risk of Wildfire



Increasing Risk of Land Erosion



Higher Peak Stream Flows and Flood Risk



Climate Risk and Impact

Wind generation assets are exposed to heat, severe weather, wildfire, lightning, erosion, and erosion. These hazards can affect turbine performance, site accessibility, equipment condition, and operational reliability. Climate adaptation activities focus on reducing asset vulnerabilities, protecting critical infrastructure, and maintaining energy production during increasingly variable environmental conditions.

Adaptation in Practice

Example / Initiative	Why It Matters
Icing Monitoring at Nuttby Mountain	Specialized ice monitoring systems have been deployed to improve visibility of icing conditions, support operational decision-making, and reduce generation losses associated with turbine icing events. While

Example / Initiative	Why It Matters
	long-term climate projections suggest icing risks may decline, significant icing events remain an operational consideration today.
Wildfire Preparedness and Vegetation Management	Wind facilities are generally located in remote and heavily forested areas. Vegetation management, site access maintenance, and emergency response planning help reduce wildfire impacts to critical infrastructure and personnel.
Lightning Protection and Grounding Programs	Routine inspection and maintenance of lightning protection systems, grounding networks, turbines, and collector systems help reduce outage and equipment failure risks during severe weather events.
Drainage and Erosion Control Improvements	Ongoing maintenance of roads, culverts, drainage systems, and erosion control measures improves site accessibility and protects foundations and electrical infrastructure during major rainfall events.

Current Adaptation Activities

Current climate adaptation activities for hydro assets include:

- Monitoring icing conditions and operational impacts at wind facilities, including the use of ice detection technologies.
- Reviewing and maintaining lightning protection and grounding systems.
- Maintaining roads, culverts, drainage systems, and erosion control infrastructure to improve resilience to extreme precipitation events.
- Evaluating turbine performance and condition trends associated with changing weather conditions.
- Reviewing severe storm response procedures and lessons learned following significant weather events.
- Assessing long-term operating strategies for aging wind facilities approaching the end of their original design life.

Future Adaptation Priorities

Over the next planning cycle, adaptation efforts will continue to focus on improving wind system resilience through enhanced climate-informed planning and operational decision-making. Key priorities include:

Priority	Status
Complete wildfire risk mapping and develop site-specific wildfire response plans for facilities located in elevated-risk areas	In Progress
Assess life extension opportunities for NS Power-owned wind facilities approaching end of design life	In Progress
Incorporate climate resilience considerations into future wind farm refurbishment, replacement, and repowering decisions	Planned

Challenges and Considerations

- Wind facilities are often located in remote and heavily forested areas where wildfire detection, access, and emergency response can be challenging.
- The long-term impacts of changing weather patterns on turbine performance and asset life remain uncertain and may challenge legacy assets without additional capital investment.
- Extreme weather events consistent with some climate scenarios may exceed historical design expectations for assets at some sites. This could result in temporary loss of generation or in severe cases, asset failure.
- Maintaining reliable site access during severe weather events remains a challenge at certain more remote facilities.

A.4 Transmission Climate Adaptation Profile



Asset Overview

NS Power's transmission system forms the backbone of the provincial electricity network, delivering bulk power between generating facilities, interconnections, substations, and major load centers. The system includes transmission lines, structures, insulators, rights-of-way, and associated infrastructure. Climate adaptation efforts are focused on maintaining reliability, reducing outage risk, and strengthening system resilience under increasingly severe environmental conditions.

Key Climate Hazards

Warmer temperatures, heat waves



Extreme Weather Events



Increasing Risk of Wildfire



Storm Surge and Sea Level Rise



Climate Risk and Impact

Transmission assets are exposed to high winds, ice storms, vegetation interaction, thermal loading, wildfire, and coastal impacts. These climate-related hazards can affect conductors, structures, rights-of-way, and system operability. Adaptation planning focuses on strengthening infrastructure design, improving monitoring capabilities, and reducing outage frequency and restoration time.

Adaptation in Practice

Example / Initiative	Why It Matters
Climate-Informed Design of the L-8005 Transmission Line	Climate projections and historical weather analyses were incorporated into the conceptual design of the proposed 345 kV L-8005 transmission line. Future wind and icing projections were evaluated and used to support climate-adjusted design loading criteria and improve long-term resilience.
Enhanced Vegetation and Corridor Management	Risk-based vegetation management programs reduce outage risks associated with storms, wildfire, and changing growing conditions while improving access to critical transmission corridors.
Dynamic Line Rating	Dynamic Line Rating and other monitoring technologies improve operational awareness of transmission system conditions, enabling more informed decision-making during high temperatures and extreme weather events.

Current Adaptation Activities

Current climate adaptation activities for hydro assets include:

- Applying climate-informed wind and ice loading criteria to major transmission projects and asset replacement programs.
- Updating climate datasets and weather assumptions used in transmission planning and engineering design.
- Implementing Dynamic Line Rating technologies on priority transmission corridors.
- Expanding the use of drones, aerial inspections, remote sensing technologies, and condition-monitoring tools.

Future Adaptation Priorities

Over the next planning cycle, adaptation efforts will continue to focus on improving transmission system resilience through enhanced climate-informed planning and operational decision-making. Key priorities include:

Priority	Status
Continue updating climate datasets and incorporating climate projections into transmission planning and design standards	Ongoing
Explore the expansion of Dynamic Line Rating applications across transmission corridors	In Progress
Increase use of real-time monitoring, remote sensing, and asset condition technologies	In Progress
Complete wildfire risk mapping and integrate results into risk-based vegetation management and transmission corridor planning programs	In Progress
Enhance resilience of high-risk transmission corridors through targeted asset replacement and hardening programs	Ongoing

Priority	Status
Advance risk-based vegetation management and wildfire mitigation initiatives for high-risk transmission corridors	Ongoing
Evaluate and expand Beyond Visual Line of Sight (BVLOS) drone capabilities for transmission corridor inspections and post-storm damage assessments	In Progress

Challenges and Considerations

- Much of the transmission network spans large geographic areas and is exposed to diverse climate hazards (even along a single line) including wind, ice, flooding, and wildfire. A mix of targeted risk mitigation interventions may be required to address different risks along a line.
- Climate-informed design standards continue to evolve as new climate data becomes available. The balance between the cost of more stringent standards and the likelihood of extreme events requires ongoing evaluation.
- Vegetation management requirements may increase due to changing growth patterns and extreme weather events.
- Resilience improvements on portions of the transmission system may require long planning horizons and significant capital investment.

A.5 Substation Climate Adaptation Profile



Asset Overview

NS Power's substations are critical facilities that connect generation, transmission, and distribution systems across the province. These assets include transformers, breakers, switches, protection systems, control buildings and supporting site infrastructure. Climate adaptation efforts focus on protecting critical equipment, maintaining system reliability, and reducing vulnerabilities associated with extreme weather and changing environmental conditions.

Key Climate Hazards

Warmer temperatures, heat waves



Extreme Weather Events



Increasing Risk of Wildfire



Storm Surge and Sea Level Rise



Climate Risk and Impact

Substations face increasing risk from flooding, coastal inundation, heat, wildfire, and severe weather events. These hazards can affect equipment performance, environmental containment systems, control buildings, access routes, and restoration activities. Climate adaptation planning focuses on improving site resilience, protecting critical equipment, and maintaining operational flexibility during major events.

Adaptation in Practice

Example / Initiative	Why It Matters
Flood Risk Assessments and Site Hardening	NS Power is completing flood risk assessments and site-specific resilience evaluations for vulnerable substations. For example, the 82V Elmsdale substation is currently undergoing a flood study and mitigation planning assessment to better understand future flood risks and identify potential adaptation measures. These assessments help prioritize investments such as drainage improvements, flood protection measures, equipment protection, and operational contingency planning.
Risk-Based Asset Management and Capital Planning	Substation investments are prioritized using structured risk profiles that consider asset condition, reliability impacts, environmental risks, health and safety considerations, and criticality. This supports informed adaptation and resilience investment decisions across the fleet.
Advanced Monitoring and Diagnostics Programs	Monitoring technologies, oil analysis programs, infrared inspections, GE APM integration, RTUs, online sensors, and diagnostic testing provide early warning of asset deterioration and improve visibility of equipment performance during extreme weather and high loading events, enabling proactive operational and maintenance decisions.
Mobile Substation and Critical Spares Programs	NS Power maintains mobile substations and strategic spare equipment inventories to improve operational flexibility and reduce customer impacts following major equipment failures or severe weather events.
Grid Modernization and Remote Monitoring	Expansion of RTUs, remote monitoring technologies, advanced sensors, and digital substation capabilities improves situational awareness, enhances response during extreme weather events, and supports predictive maintenance programs.

Current Adaptation Activities

Current climate adaptation activities for hydro assets include:

- Completing substation flood assessments and developing site-specific mitigation plans.
- Reviewing drainage systems, oil containment infrastructure, and site grading using climate-adjusted rainfall considerations.
- Monitoring transformer temperatures, oil quality, infrared inspection results, and equipment condition to identify climate-related stresses.
- Developing enhanced monitoring and operational readiness plans for high-priority substations and transformers during extreme cold weather, peak demand periods, and restoration events.
- Prioritizing substation investments using structured risk profiles that consider asset condition, reliability impacts, environmental risks, health and safety considerations, and

criticality. This supports informed adaptation and resilience investment decisions across the fleet.

- Expanding deployment of remote monitoring, RTUs, online sensors, and digital asset management tools.
- Evaluating wildfire exposure and vegetation management practices at substation sites.
- Maintaining critical spare equipment inventories and mobile substations to support emergency response and system recovery.

Future Adaptation Priorities

Over the next planning cycle, adaptation efforts will continue to focus on improving substation system resilience through enhanced climate-informed planning and operational decision-making. Key priorities include:

Priority	Status
Continue strengthening transformer spare coverage and contingency capabilities through risk-based planning and strategic investments aligned with future system needs	Ongoing
Evaluate opportunities to expand mobile substation capacity and deployment strategies to support load growth, severe weather response, and system resilience objectives	In Progress
Expand deployment of RTUs, online monitoring technologies, and digital substation capabilities at substation sites	In Progress
Evaluate outcomes from advanced monitoring pilots and deploy technologies that improve asset visibility, load management, and emergency response capabilities	Planned
Advance flood mitigation and site-hardening measures at vulnerable substations, including ongoing assessment and mitigation planning at 82V Substation	Ongoing

Challenges and Considerations

- Flood mitigation solutions are often highly site-specific and may require extensive data collection and detailed engineering studies.
- Many legacy substations are constrained by existing site layouts, neighbouring land uses, or physical location. This limits the available mitigating measures and their potential effectiveness.
- Extreme weather events can affect both equipment functionality and site accessibility during restoration activities.
- Adaptation investments must be prioritized across a large fleet of substations with varying climate exposure and risk profiles.

A.6 Distribution Climate Adaptation Profile



Asset Overview

NS Power's distribution system delivers electricity directly to homes, businesses, and communities throughout Nova Scotia. Distribution infrastructure includes poles, conductors, transformers, underground systems, switches, and associated equipment. Climate adaptation efforts are closely aligned with reliability improvement programs and focus on reducing climate related outages, improving restoration capability and strengthening long-term system resilience.

Key Climate Hazards

Warmer temperatures, heat waves



Extreme Weather Events



Increasing Risk of Wildfire



Higher peak stream flows and flood risks



Climate Risk and Impact

Distribution assets are highly exposed to severe weather, flooding, wildfire, coastal impacts, and increasing temperature extremes. These hazards can damage infrastructure, restrict access for restoration crews, increase equipment loading and contribute to customer outages. Climate adaptation planning focuses on system hardening, vegetation management, grid modernization,

and targeted infrastructure investments that improve reliability and resilience across the network.

Adaptation in Practice

Example / Initiative	Why It Matters
Risk-Based Feeder Planning	Distribution investments are prioritized using feeder risk profiles that incorporate outage history, asset condition, customer impacts, accessibility, loading, and reliability performance. This supports targeted investments in the highest-risk circuits and communities.
Enhanced Vegetation Management and Corridor Widening	Vegetation contacts remain the largest contributor to outages. Expanded right-of-way widening, hazard-tree removal, establishment of new rights-of-way, and satellite-based vegetation assessments are being used to reduce storm-related outages and improve restoration access.
Grid Modernization and Self-Healing Technologies	Reclosers, TripSavers, FLISR technology, RTUs, and enhanced communications systems improve fault isolation, reduce outage duration, and restore customers more quickly during severe weather events.
Climate-Informed Distribution Design Standards	Distribution design standards continue to evolve to address increasing wind, ice, and coastal exposure. New pole-loading assessments, coastal framing standards, larger pole classes, and updated engineering standards improve long-term system resilience.
Wildfire Risk Assessment and Community Resilience Initiatives	Wildfire risk assessments, community engagement, and targeted vegetation management activities help identify high-risk areas and support mitigation efforts that protect both electrical infrastructure and surrounding communities.

Current Adaptation Activities

Current climate adaptation activities for distribution assets include:

- Expanding vegetation management, right-of-way widening, and hazard tree removal programs to reduce weather-related outages.
- Replacing aging conductors, poles, transformers, and other equipment through targeted storm-hardening and reliability programs.
- Using satellite imagery and other technologies to improve assessment of vegetation conditions and target mitigation activities.

- Completing build-to-roadside projects to improve access for maintenance and storm restoration activities.

Future Adaptation Priorities

Over the next planning cycle, adaptation efforts will continue to focus on improving distribution system resilience through enhanced climate-informed planning and operational decision-making. Key priorities include:

Priority	Status
Continue implementation of reliability improvement programs focused on storm hardening and distribution system resiliency	Ongoing
Expand deployment of FLISR, reclosers, RTUs, and other self-healing grid technologies	In Progress
Increase use of satellite imagery, analytics, and digital technologies to improve vegetation and asset condition management	In Progress
Continue evolving distribution design standards to address future climate conditions, including wind, ice, and coastal exposure	Ongoing
Expand wildfire risk assessments and integrate findings into vegetation management and long-term distribution planning	Planned

Challenges and Considerations

- Distribution assets are widely dispersed and exposed to a broad range of climate hazards across the province, including extreme weather, flooding, vegetation growth, and wildfire risk.
- Vegetation management remains one of the largest contributors to reducing climate-related outage risk; however, increasing vegetation growth rates and expanding mitigation requirements may increase long-term program demands.
- Wildfire risk, changing weather patterns, and evolving climate conditions may require adaptation of design standards, inspection programs, and operational practices over time. Such changes are likely to result in additional capital investment and operational expense.
- Adaptation and resiliency investments must be balanced with customer affordability objectives. Consistent with NS Power's Asset Management Framework, risk-based prioritization is used to target interventions on the highest-risk assets and locations where reliability and resiliency benefits are expected to provide the greatest value to customers.
- Not all reliability and resiliency opportunities can be implemented simultaneously, requiring trade-offs between risk reduction, system performance improvements, implementation timelines, and overall customer cost impacts.

Appendix B – Wildfire Mitigation Plan



WILDFIRE MITIGATION PLAN

2026 Update

Abstract

This report summarizes a best practice review of wildfire mitigation practices already implemented by NSP, as well as those to be considered for future implementation.

Enterprise Asset Management
Asset Reliability & Risk Management

Revision no.	Effective Date	Changes
0	January 5, 2022	
1	August 8, 2024	Updated formatting of mitigation plan. Added additional mitigation details to several sections.
2	April 4, 2025	Minor updates
3	September 22, 2026	Comprehensive update to the Wildfire Mitigation Plan incorporating findings from the AiDash gap assessment, including additions and enhancements to ignition tracking, situational awareness, vegetation management, operational controls, compliance and assurance activities, and collaboration with government agencies and stakeholders. Updates also included expanded supporting documentation, additional detail throughout the plan, benchmarking of utility-caused wildfire data between Nova Scotia and Alberta, and incorporation of continuous improvement opportunities identified through industry review and internal assessments.

Executive Summary

The purpose of the NS Power's wildfire mitigation plan is to reduce the risk of wildfires caused by electrical infrastructure in Nova Scotia and to protect public safety. It aims to ensure the reliability of electricity services by implementing strategies such as vegetation management, equipment upgrades, and operational changes. The plan focuses on preventing wildfires, minimizing potential damage, and enhancing the resilience of the electrical grid against future wildfire events.

The assets covered within NS Power's wildfire mitigation plan include:

- **Transmission Lines:** High-voltage power lines that transport electricity over long distances.
- **Distribution Lines:** Lower-voltage lines that deliver electricity to homes and businesses.
- **Substations:** Facilities that transform voltage levels and distribute electricity to different areas.
- **Rights-of-Way or Vegetation Management Areas:** Zones around power lines and equipment where vegetation is managed to reduce fire risk.
- **Monitoring and Control Systems:** Technologies and systems used for real-time monitoring and control of the electrical grid to detect and respond to wildfire threats.

This comprehensive scope ensures that all critical areas and assets are addressed, enhancing the overall effectiveness of the wildfire mitigation plan.

NS Power's wildfire mitigation activities are guided by the following core values: public safety, system reliability, environmental stewardship, risk-informed decision making, and continuous improvement. These values inform planning, operational decisions, and investment priorities related to wildfire risk.

The main goals of the NS Power wildfire mitigation plan include:

1. **Reduce Wildfire Risk:** Minimize the likelihood of wildfires caused by electrical infrastructure.
2. **Protect Public Safety:** Ensure the safety of communities and individuals in wildfire-prone areas.
3. **Ensure Reliable Service:** Maintain the reliability and continuity of electricity supply during wildfire events.

The main objectives within the Wildfire Mitigation Plan for NS Power are summarized below.

	Risk Assessment & Mapping	Identify and prioritize high-risk areas for wildfires
	Situational Awareness	Maintain real-time awareness of conditions that could lead to wildfires.
	Inspection Programs	Regularly assess the condition of electrical infrastructure to prevent failures.
	Wildfire Risk Reduction	Strengthen electrical infrastructure to withstand wildfire conditions.
	Vegetation Management	Reduce the amount of flammable vegetation near electrical infrastructure.
	General Operating Practices	Adjust operational procedures to minimize wildfire risk.
	Emergency Response	Ensure rapid and effective response to wildfire incidents.
	Continuous Improvement	Outline of future initiatives and projects planned to further mitigate wildfire risk.

These goals and objectives work together within this wildfire mitigation plan to create a comprehensive approach to wildfire prevention and response, ensuring both safety and service reliability.

The long-term vision of a wildfire mitigation plan for NS Power is to create a resilient and sustainable electrical grid that can withstand and adapt to wildfire risks. This vision includes:

1. **Enhanced Safety:** Achieving a continued low number of wildfire incidents caused by electrical infrastructure in NS, ensuring the safety of communities and ecosystems.
2. **Reliable Service:** Maintaining uninterrupted and reliable electricity supply even during high-risk wildfire conditions.
3. **Innovative Technology:** Integrating advanced technologies such as smart grids, real-time monitoring systems, and predictive analytics to proactively manage wildfire risks.
4. **Community Partnership:** Fostering strong partnerships with communities, local governments, and stakeholders to collaboratively address wildfire challenges and enhance public awareness and preparedness.
5. **Continuous Improvement:** Regularly updating and refining mitigation strategies based on the latest research, data, and technological advancements.

This vision aims to ensure long-term safety, reliability, and sustainability in the face of evolving wildfire threats. At NS Power, we are steadfast in our commitment to reducing wildfire risk and protecting the communities we serve.

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1.0 Introduction

The purpose of the NS Power's wildfire mitigation plan is to reduce the risk of wildfires caused by electrical infrastructure in Nova Scotia and to protect public safety. It aims to ensure the reliability of electricity services by implementing strategies such as vegetation management, equipment upgrades, and operational changes. The plan focuses on preventing wildfires, minimizing potential damage, and enhancing the resilience of the electrical grid against future wildfire events.

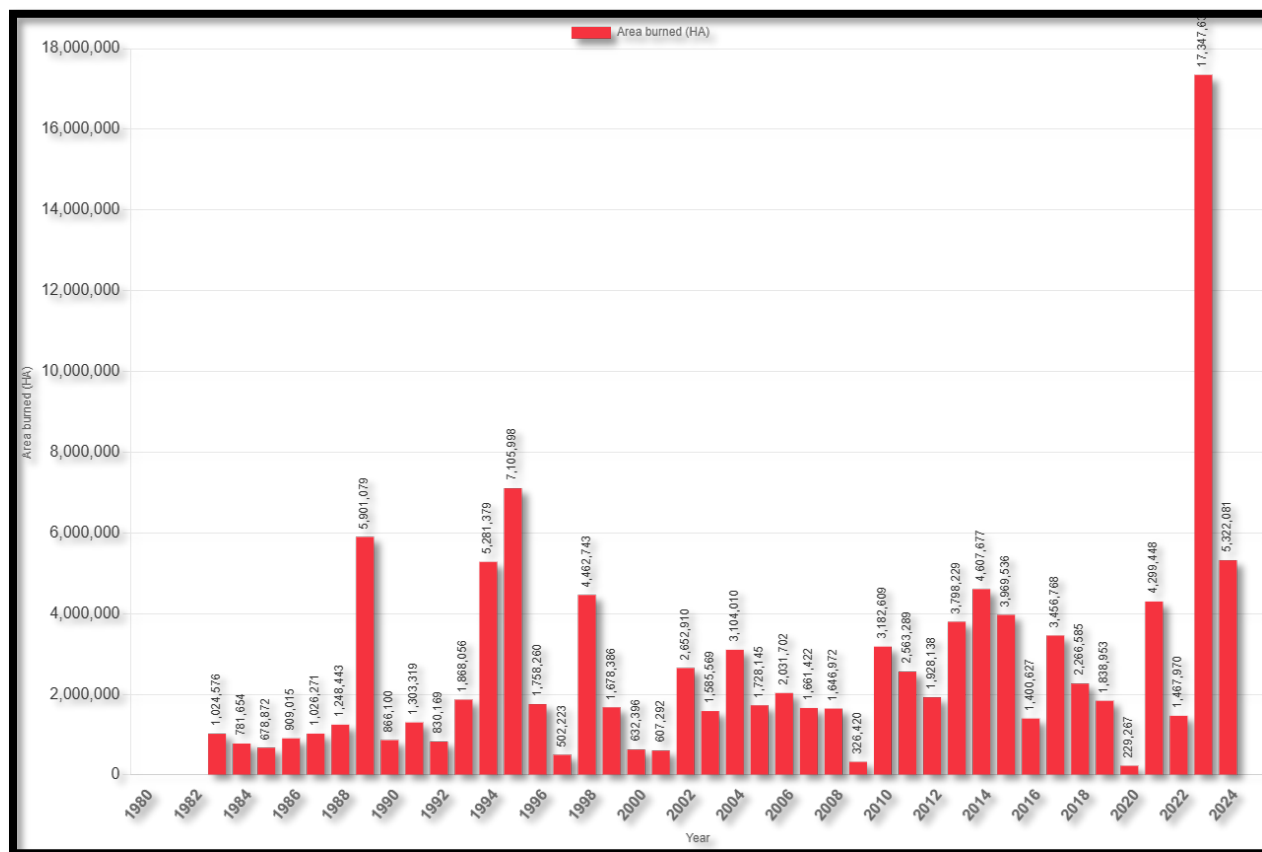
The main elements within NS Power's wildfire mitigation plan are summarized below and are expanded upon in the following sections of the plan.

	Risk Assessment & Mapping	Identify and prioritize high-risk areas for wildfires
	Situational Awareness	Maintain real-time awareness of conditions that could lead to wildfires.
	Inspection Programs	Regularly assess the condition of electrical infrastructure to prevent failures.
	Wildfire Risk Reduction	Strengthen electrical infrastructure to withstand wildfire conditions.
	Vegetation Management	Reduce the amount of flammable vegetation near electrical infrastructure.
	General Operating Practices	Adjust operational procedures to minimize wildfire risk.
	Emergency Response	Ensure rapid and effective response to wildfire incidents.
	Continuous Improvement	Outline of future initiatives and projects planned to further mitigate wildfire risk.

Wildfire seasons are getting longer and more severe due to climate change. Pacific Gas & Electric (PG&E) in California filed for bankruptcy in 2019 to deal with an estimated \$30 billion US in liabilities from wildfires that their equipment may have ignited in 2017 and 2018. Proactive prevention, mitigation, and preparedness are all methods for utilities to maintain safe systems, limit liability, and protect their assets.

In 2023, Nova Scotia experienced the largest wildfire in its history impact Shelburne County with over 23,000 hectares of land burned. Additionally, major fires in Tantallon simultaneously impacted hundreds of residences. In Canada there was over 17,000,000 hectares burned in 2023, as shown in Figure 1, more than doubling the previous high in 1995.

Figure 1: Annual area burned in Canada by wildfires (Source: Canadian Interagency Forest Fire Centre Inc. (CIFFC))



This document outlines the best practices at Nova Scotia Power to mitigate wildfires and minimize their impact on customers. The practices listed in this report are gathered from various subject matter experts (SMEs) at NS Power. This includes SMEs from transmission, distribution, forestry, and substations. Furthermore, the NS Power team continues to review industry best practices to ensure continuous improvement opportunities to further enhance wildfire risk management practices are identified.

2.0 Nova Scotia Wildfire Risk Assessment

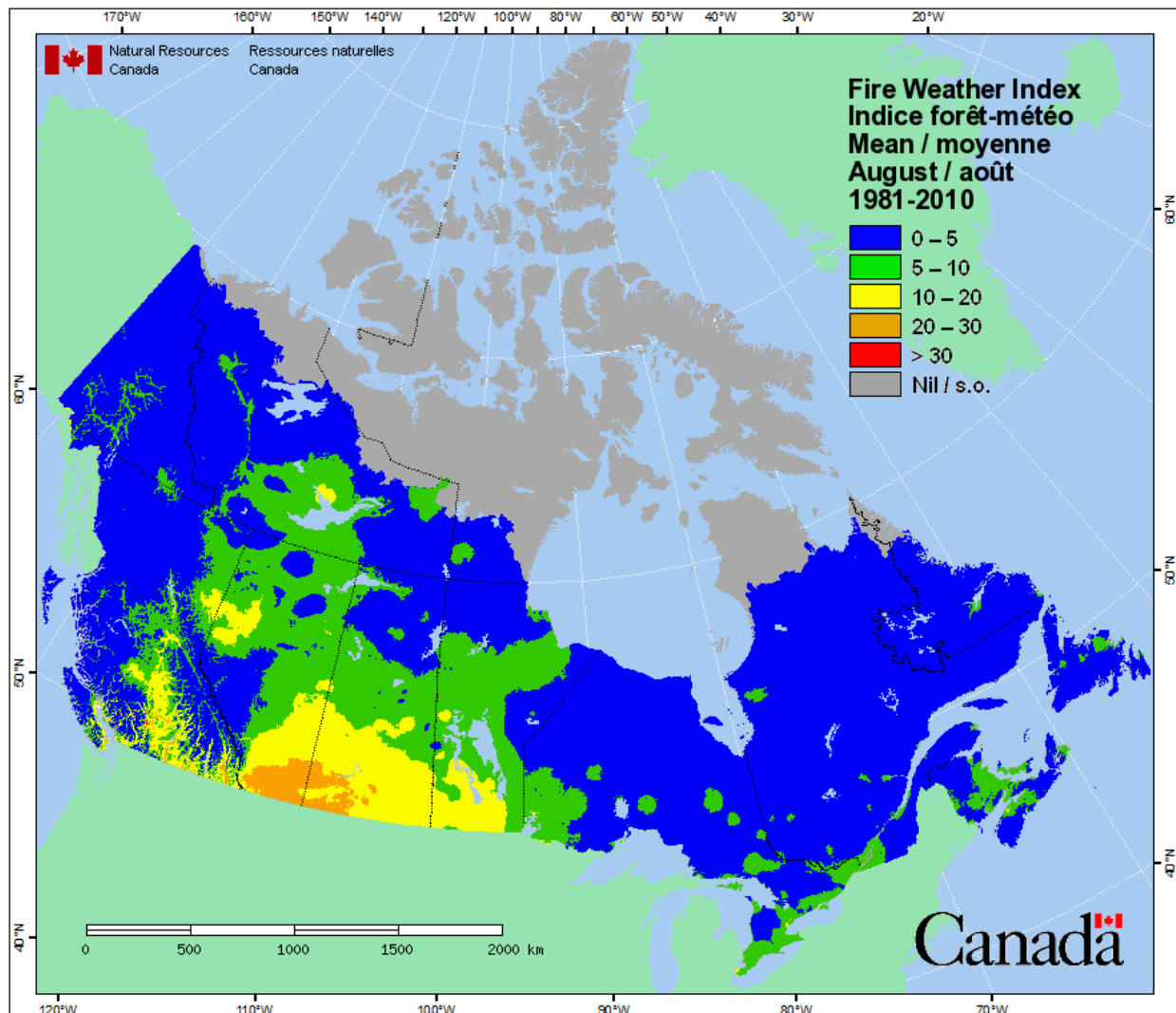
Wildfire risk in Canada is determined at a primarily national level; and generally, provincial climate and environmental conditions mean Nova Scotia has a much lower risk for wildfires compared to higher risk provinces of BC, Alberta, Saskatchewan, and Manitoba.

2.1 Wildfire History in NS

For Nova Scotia specifically the Company references the [Canadian Wildland Fire Information System](#) to understand the level of wildfire risk. In Figure 2, the Fire Weather Index normals for Nova Scotia are in the “Very Low” to “Moderate” ratings based on historical data from 1981 to

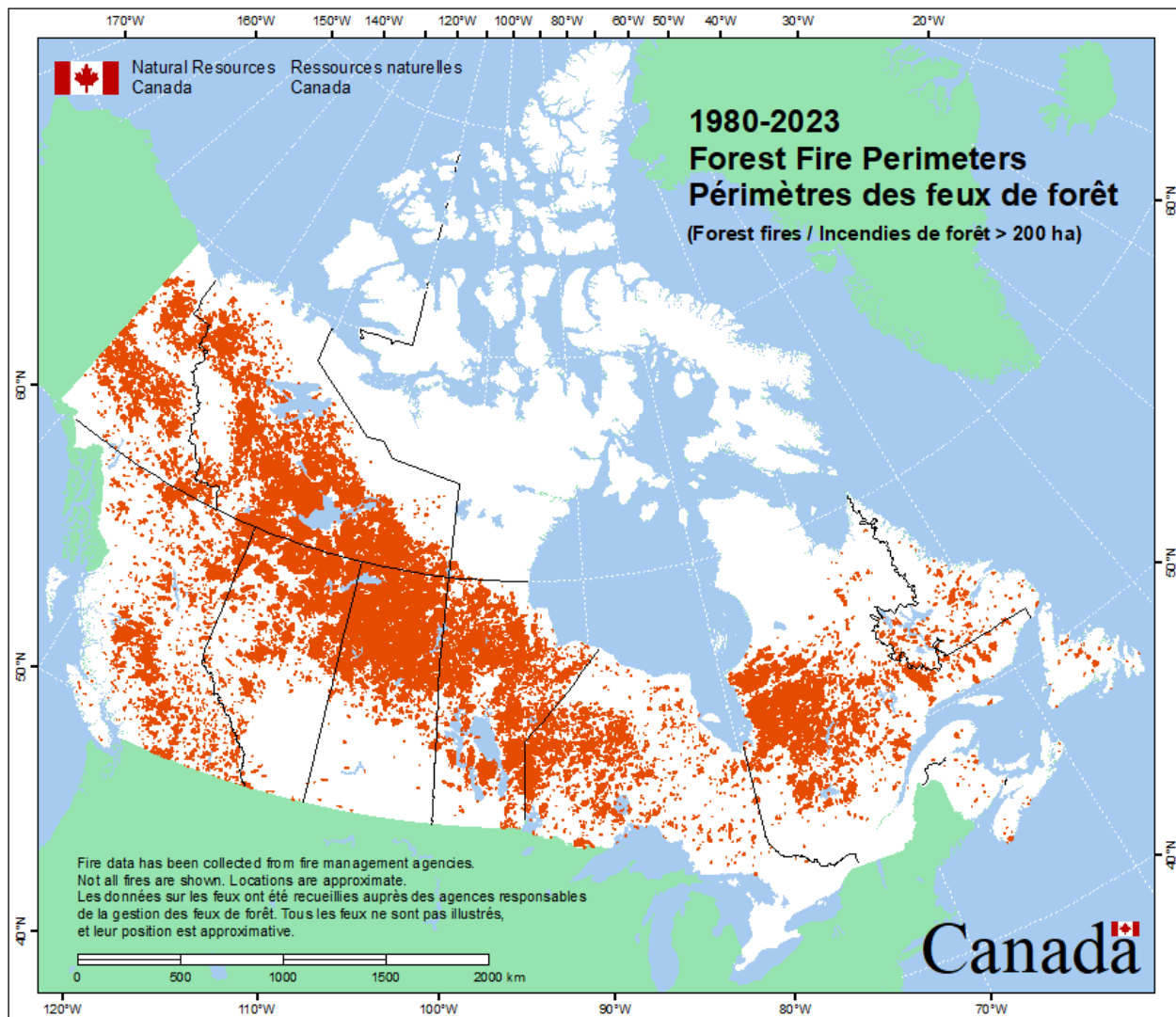
2010. Figure 3 illustrates the low number of large forest fires within these same service areas relative to other parts of Canada, with the data representing the period from 1980 to 2021.

Figure 2: Fire Weather Normals represented by the average value of a fire weather index from 1981 to 2010.¹



¹ [Canadian Wildland Fire Information System | Fire Weather Normals \(nrcan.gc.ca\)](https://www.nrcan.gc.ca/wildland-fire/11813)

Figure 3: Depiction of >200 hectares fires in Canada from 1980-2023 (NRCan)²



The NS Department of Natural Resources and Renewables (NRR)³ provided the following information about wildfires in Nova Scotia:

- Nova Scotia experiences an average of 225 wildfires of all sizes each season.
- Fire locations are correlated to areas of greater population density. Wildfires are generally started due to human activities with relatively few (about 3%) fires started by lightning.
- Fire season in Nova Scotia is March 15 to October 15, with May usually the most active month. In this period, vegetation is still somewhat dormant, and the moisture content of these fuels is low, making them more flammable. This is known as a "before green up" condition.

² [Canadian Wildland Fire Information System | Canadian National Fire Database \(CNFDB\) \(nrcan.gc.ca\)](https://www.nrcan.gc.ca/canadian-wildland-fire-information-system/canadian-national-fire-database/cnfdb)

³ [Wildfire | novascotia.ca](https://wildfire.novascotia.ca)

- Nova Scotia has a relatively wet climate; thus, the number of fires that typically occur in an average season is low compared to drier provinces in Western Canada.

NRR also tracks wildfires occurring in Nova Scotia each year. This includes the number of wildfires in an area, the cause of the wildfire, and how many hectares were burned. Table 1 shows the data NRR has collected for fires caused by powerline equipment. As shown in the data, there are only a small number of fires attributed to power lines each year in Nova Scotia, and these instances have not led to any significant wildfires. The specific circumstances behind each event have not been validated by NS Power.

Table 1: Fires caused by powerlines in Nova Scotia⁴

Year	# of Powerline Caused Fires	Hectares Burned
2025	25	4.36
2024	5	1.28
2023	21	Unknown
2022	7	3.75
2021	8	0.48
2020	15	Unknown
2019	8	0.88
2018	11	6.96
2017	11	1.8
2016	12	3.77
2015	7	47.06
2014	6	2.47
2013	4	2.35
2012	3	0.31

As previously noted, fire season in Nova Scotia is considered to run from March 15 to October 15 with the month of May usually the most active month. In this mid-to-late spring period, vegetation is still somewhat dormant, and the moisture content of these potential fuels is low, making them more flammable and prone to wildfire ignition and spread. This is known as a "before green up" condition. As vegetation in the province begins its more active growing season, moisture content increases, and wildfire risk abates significantly. Furthermore, Nova Scotia has a relatively wet climate; thus the number of fires that typically occur in an average season and the opportunity for significant spread is low compared to drier provinces. While current climate

⁴ [Nova Scotia Wildfire Statistics | novascotia.ca](https://novascotia.ca/nrr/wildfire-statistics)

projections indicate that overall annual precipitation in NS is expected to increase slightly over the coming decades, future years will likely be interspersed by longer periods of drought between major rainfall events. The net impact on wildfire risk from these factors is discussed in Section 2.2 Climate Modelling.

To provide additional context on utility-related wildfire occurrence, Nova Scotia's experience was compared against Alberta, one of Canada's highest wildfire-risk jurisdictions. Based on data from 2021-2025, Nova Scotia averaged approximately 13.2 utility-related wildfire ignitions per year, compared with 96.4 powerline- or utility-related wildfire ignitions per year in Alberta. While Alberta experiences substantially more utility-caused wildfires in absolute terms, it also operates a much larger transmission and distribution network.

Table 2: Amount of Utility Caused Fires in Alberta

Year	Power Line/Utility Fires	Power Line/Utility Ha Burned
2012	74	142.40
2013	69	622.40
2014	46	8.56
2015	79	52.00
2016	79	20.58
2017	62	1699.01
2018	72	511.34
2019	76	256.65
2020	62	9.67
2021	116	101.76
2022	81	49.96
2023	89	55729.80
2024	88	3250.10
2025	108	52524.17

To enable a more meaningful comparison, annual utility-caused wildfire ignitions were normalized by the total transmission and distribution line kilometres in each province and expressed as ignitions per 1,000 km of line. Using approximately 31,800 km of electrical infrastructure in Nova Scotia and 226,000 km in Alberta, Nova Scotia experiences approximately 0.415 utility-caused wildfire ignitions per 1,000 km of line annually, compared with 0.427 in Alberta.

This comparison demonstrates that utility-caused wildfire ignitions are not unique to traditionally high-risk jurisdictions. Even in Nova Scotia's comparatively moderate wildfire environment, utility

infrastructure can be a source of ignition. As a result, continued investment in wildfire risk reduction measures remains prudent and consistent with industry best practice. These measures include vegetation management, equipment inspections, asset renewal, system hardening, wildfire detection, and operational controls designed to reduce both the likelihood and consequences of utility-caused wildfires.

2.2 Climate Modelling

NS Power has completed Climate Modelling to understand how the inputs for wildfire risk will change into the future. This includes precipitation levels, temperature, and wind speeds. These climate risks are integrated into NS Power's Risk Frameworks and used to develop mitigation strategies, including but not limited to, directing capital investment. Through the climate adaptation planning process, the company has preliminarily evaluated the potential impacts from wildfire on infrastructure. Based on the available climate models and understanding, current wildfire risk across NS Power's service area is deemed to be low.

Willis Tower Watson's Climate Hub (formerly Acclimatise) provided data on how Fire Weather Index (FWI) is predicted to change into the future. Table 2 shows the number of days with an FWI above 10 during wildfire season. The data predicts a minimal increase in the number of days with wildfire risk in the future. This is a result of longer periods of drier conditions during the summer months compared with historically more favourable conditions in the past.

Creating a risk map increases the awareness of wildfire risk and assists in decision making. GIS climate maps have been created for Nova Scotia using data from a third-party climate change company, Acclimatise. These maps show the localized FWI values for different climate scenarios as well as the average number of days that have a high FWI over a year period. The maps can be used to illustrate what areas in Nova Scotia have the highest historical and predicted future FWI values potentially leading to more frequent and/or severe wildfires occurring in that given area. Fortunately, Nova Scotia Power's climate projections suggest no significant change in the total number of days in NS with a FWI rating greater than 10 or a 'High' rating during wildfire season.

Table 3: Number of Days Above an FWI of 10 During Wildfire Season

Month	Present Day	2030s	2050s
March	0.18	0.15	0.20
April	1.32	1.76	1.82
May	4.16	4.30	4.30
June	7.37	7.52	7.52
July	9.71	9.89	9.99

Month	Present Day	2030s	2050s
August	9.16	9.54	9.54
September	6.31	6.71	6.79
October	1.43	1.63	1.58

Please refer to section 4.1 for additional information on the FWI.

Generally, Nova Scotia is a wet coastal environment that sees annual precipitation in the range of 1,315 mm per year. Climate projections show a slight increase in total annual precipitation for Nova Scotia in future decades, as shown in Table 3.

Table 4: Nova Scotia future precipitation estimates⁵

	Baseline (1981-2010)	2050s (2035-2065)	2080s (2065-2095)
Annual Precipitation	1315 mm	1401 mm (+ 6%)	1456 mm (+ 11%)
Days with Rain	112	124	132
Days with Snow	39	25	17
Days with > 1 mm	151	150	149
Days with > 20 mm	16	18	20
Max 1-day	53 mm	60 mm	63 mm
Max 5-day	90 mm	99 mm	105 mm

As a result of the combination of FWI, precipitation and Standardized Precipitation Index (SPI) projections, Nova Scotia is not expected to see a dramatic change in the level of wildfire risk conditions in the future.

The SPI projections for NS indicate a trend towards moderately dry conditions, with values typically ranging from -0.99 to -1.12 through the 2050s. These SPI values suggest a persistent deficit in precipitation, which can exacerbate drought conditions and increase the risk of wildfires. But, on the scale of relative values, NS Power is not expected to face severely dry or extremely dry conditions.

2.0+	extremely wet
1.5 to 1.99	very wet
1.0 to 1.49	moderately wet
-.99 to .99	near normal
-1.0 to -1.49	moderately dry
-1.5 to -1.99	severely dry
-2 and less	extremely dry

⁵ Reference: Data presented to Climate Adaptation Leadership Program: Electricity Sector by NSECC in 2022.

3.0 Risk Mapping

Mapping wildfire risk in the vicinity of utility assets is essential to inform the most appropriate mitigation strategies to prevent fires from occurring and managing at-risk assets during fire season. Using wildfire risk mapping, NS Power can identify locations where strategic prevention and mitigation efforts will see the most benefit.

3.1 Enhanced Risk Profiling

A summarized risk map that shows the overall ignition probability and estimated wildfire consequence along the electric lines and equipment

NS Power maintains detailed risk profiles for its transmission lines and distribution feeders across its service territory. These risk profiles incorporate a variety of condition, reliability, and criticality indicators and can be overlaid with wildfire-related information to support identification of areas with elevated wildfire risk. Risk profiles are updated as new information becomes available, at least annually, and include both lagging indicators, such as wildfire-related outages and ignition events, as well as leading indicators such as vegetation encroachment, asset condition, and inspection findings. Please see Figures 4 and 5 for sample distribution and transmission risk profiles.

In 2025-2026, NS Power initiated a project with an external consultant to develop a province-wide wildfire risk assessment focused on the potential impacts of wildfire on electrical infrastructure. The assessment is intended to evaluate wildfire hazard, vegetation and fuel conditions, topography, infrastructure exposure, and asset vulnerability to better understand areas where wildfire could pose a greater risk to transmission and distribution assets. The resulting wildfire risk maps are expected to provide a more detailed geospatial understanding of wildfire risk to NS Power infrastructure and support risk-informed decision making related to vegetation management, asset hardening, emergency preparedness, operational response, and future investment planning.

The wildfire risk mapping project remains under development and the final results are expected later in 2026. Upon completion, the risk mapping outputs will be incorporated into NS Power's existing risk management processes and used alongside asset risk profiles, wildfire history, Fire Weather Index monitoring, and operational experience to further enhance wildfire preparedness and mitigation activities.

Future versions of this plan are expected to include representative wildfire risk mapping figures and examples once the assessment has been finalized and validated.

Figure 4: Sample from NS Power Distribution Feeder Risk Profiles

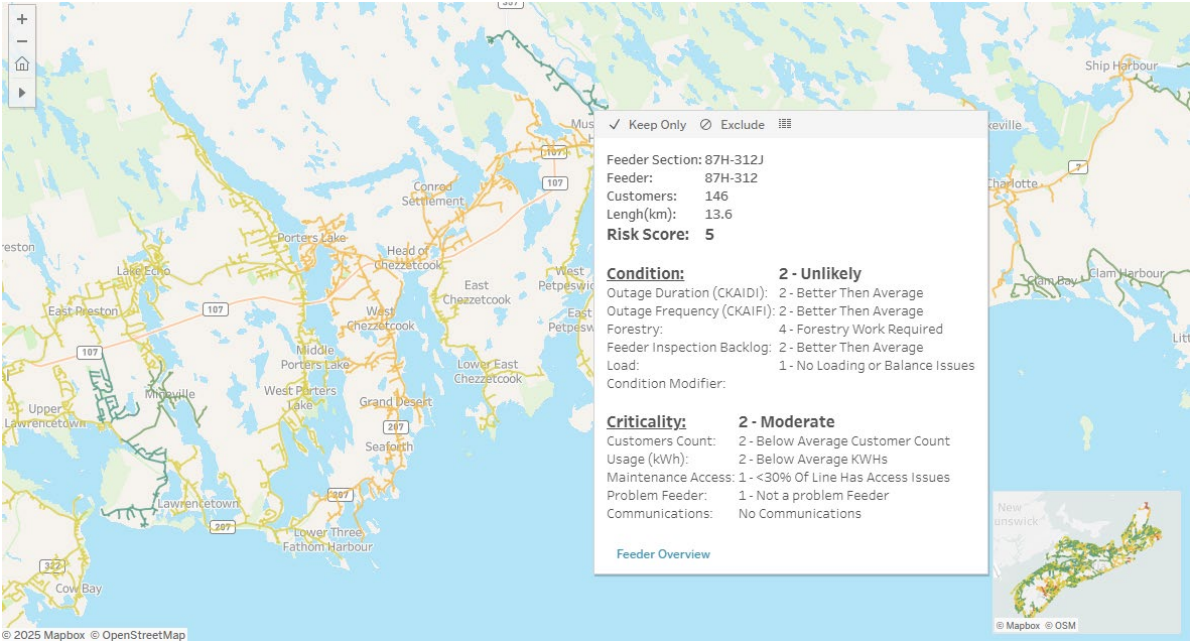
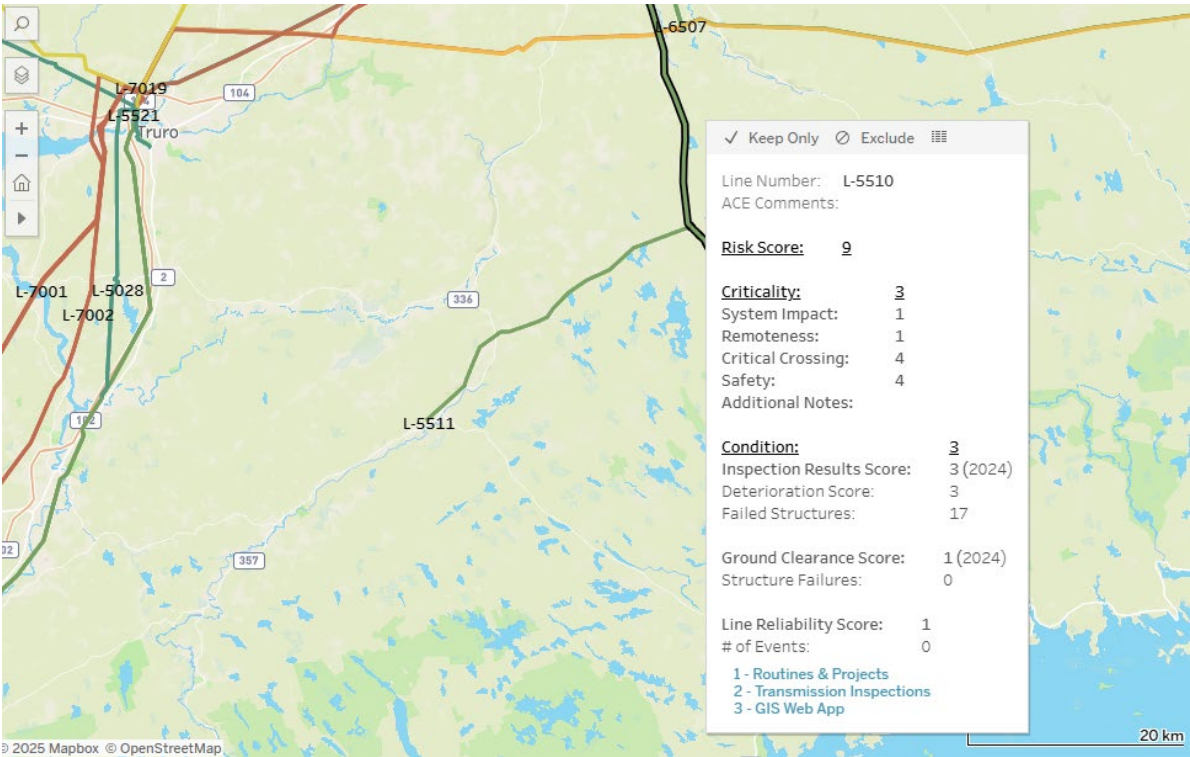


Figure 5: Sample of NS Power’s Transmission Line Risk Profile



3.2 Tracking and Analysis of Wildfires and Near-Miss Ignitions

The purpose of this practice is to track ignitions and potential ignitions and perform root cause analysis to detect and understand patterns or correlations. The resulting data can then be used to help inform and refine future fire prevention decisions.

On a regular basis, NS Power receives forest fire data from NS NRR on any wildfires believed to be attributable to power line infrastructure as the cause of the fire. These items are reviewed by the Vegetation Reliability Team and assessed for any trends or prioritization of vegetation management activities.

Through NS Power's Outage Management System all outage events are tracked and categorized with all relevant information, including its cause. Consequently, a particular outage related to a wildfire can be analysed with respect to root cause.

3.3 Ignition Tracking and Documentation

NS Power's mitigation plan includes maintaining a structured and documented process to identify, record, assess, and analyze confirmed utility caused ignitions, suspected utility caused ignitions, and near missed utility caused ignitions associated with electrical infrastructure. This process aligns with established incident reporting and investigation practices and is intended to support root cause analysis, identify recurring trends, and inform continuous improvement in wildfire mitigation strategies. Ignition related events may be identified through multiple sources, including internal outage and incident reporting systems, field observations, post event reviews, and notifications received from external agencies such as the Halifax Regional Municipality (HRM) Fire Services or the Nova Scotia Department of Natural Resources (DNR).

For each reported ignition or near miss event, relevant information is documented where available, including the date, time, location, assets involved, event description, contributing environmental or operational conditions, suspected or confirmed case, and any immediate response or mitigation action. This documentation supports thorough investigation and enables the identification of underlying hazards, consistent with the organizations approach to hazard identification and risk assessment.

Ignition-related events are reviewed as part of an existing reliability, vegetation management, and safety processes. Consistent with management expectations, supervisors, technical teams, and subject matter experts contribute to the evaluation of the events to identify hazards, assess risks, and determine opportunities for corrective actions or system improvements where applicable.

Ignition data can be reviewed and analyzed by the Vegetation Asset Strategy Committee to assess patterns, identify contributing factors, and note areas of elevated risk. Such review supports

targeted mitigation efforts such as vegetation management prioritization, inspection enhancements, operational adjustments, and other interventions.

Information obtained from ignition tracking can be integrated into broader wildfire mitigation activities and continuous improvement. Lessons learned, identified trends, and corrective actions are incorporated as applicable into safety programs, inspection follow ups, operational procedures, and/or strategic investment planning. This approach also supports risk informed decision making and prioritization of mitigation measures, consistent with NS Power's asset management framework, where identified risks are evaluated and addressed based on asset condition and criticality.

3.4 Ignition probability

Utilities in North America are developing and using tools and processes to assess the risk of ignition across regions of the grid (or more granularly, e.g., circuits, spans, or assets). Power lines contribute to wildfires in several ways, including trees contracting lines during high wind events; high impedance faults causing fires when conductors hit the ground without blowing a fuse or tripping a protective device; branches spanning two phase conductors; conductor slapping; and repetitive faults.

As described in section 2.1, NRR provide annual statistics on powerline related wildfire incidents, and these continue to cause a very small percentage of the total number of wildfires in NS each year. The small number of powerline-related wildfires in Nova Scotia are most commonly a result of one of the following three conditions:

1. Trees touching powerlines either by wind or growth;
2. Failed insulator on a utility pole which then causes the pole to catch fire; and
3. Energized downed powerlines.

When fires occur as a result of NS Power equipment, they are generally contained quickly by PLTs or other emergency responders. This is illustrated by Nova Scotia's wildfire statistics showing the acres burned associated with the powerline fires is relatively low (see Table 1 above).

Vegetation contacting overhead electrical equipment is the number one contributor leading to ignitions by NS Power equipment. Specifically, vegetation encroachment on bare secondary wires has led to previous documented ignitions. Due to the typically smaller vegetation clearances required, distribution equipment has historically been more likely to be an ignition source than transmission equipment. Although NS Power has not developed a specific wildfire ignition probability assessment, rights-of-way risk profiles (refer to section 4.1) provide an indirect measure of ignition likelihood. These risk profiles factor in the condition of vegetation within the right-of-way, with areas of increased growth and potential for tree contacts assigned a higher

risk level. NS Power targets higher risk areas for vegetation management activities, as well as other capital investments, such as relocating a line to roadside, as appropriate.

4.0 Situational Awareness

The centralized aggregation of data from power system assets provides visibility into the state of the power system so that appropriate actions can be taken to match fire risk conditions. Understanding this state when a fault occurs on equipment allows for a quicker response to a potential ignition source. Enhancements to situational awareness, including increased visibility to downline protective devices, would improve NS Power's ability to respond in future.

4.1 Fire Weather Forecasts

In terms of near real-time wildfire risk, Nova Scotia Power leverages available wildfire forecasts and risk maps provided by the provincial government ([Fire Weather Forecast Maps and Indices | novascotia.ca](https://www.fireweatherforecastmapsandindices.novascotia.ca)). The Department of Natural Resources and Renewables provide Fire Weather Forecasts daily. Their weather stations provide a Fire Weather Index (FWI) value associated with different areas across Nova Scotia. There are 31 weather stations (see Figure 6) that collect the data used in the FWI calculation. The FWI classifications for Nova Scotia are shown in Table 4.

The Fire Weather Index (FWI) within these Nova Scotia datasets factor in observations from the 31 weather stations measuring temperature, relative humidity, wind, rain, as well as assessing the moisture in vegetation.

Figure 6: DNR Weather Stations in Nova Scotia in relation to NS Power transmission lines



The primary tool used in Canada by all fire management agencies to track and map fuel moisture conditions across their jurisdictions is the Canadian Forest Fire Weather Index (FWI) System. This system consists of six components that account for the effects of fuel moisture and weather conditions on fire behavior. Table 4 provides the FWI Index in Canada as well as the ranges specific to Nova Scotia.

Having high coverage of FWI data across Nova Scotia and procedures in place for different situations allows for informed operational decisions to be made. Various NS Power operational groups review the FWI values daily during wildfire season, including Forestry⁶ and the Control Centre, with their actions in the field adjusted accordingly.

As per NS Power Forestry operating practices, during any period where the index reaches a rating of **Moderate** or above for the area(s) in which vegetation management activities are ongoing, a daily review of fire risks is necessary. A formal record of the daily hazard rating for the area in which the activity is occurring is to be maintained on site by the Contractor and be made available for audit by NS Power.

Whenever the fire hazard index rates the hazard as **High**, documented daily inspections for adequacy and functionality of fire-fighting equipment on each job site are to be conducted by the Contractor. This documentation is to be maintained on site by the Contractor and be made available for audit by NS Power.

Whenever the fire index reaches **Very High** for the area in which vegetation management work is taking place, and remains so for more than two consecutive days, modified hours shall be put into effect on the third day and remain so until such time as the hazard rating subsides to **Moderate**. Under Modified hours, all vegetation management operations are to be shutdown daily by 1:00 pm. A fire watch is to be maintained on site for 1-hour following such shutdown.

Whenever the index reaches **Extreme** in NS:

- All cross-country (distribution and transmission) operations will be shut down until such a time as the index drops to a maximum of **Very High**.
- Roadside operations may proceed based on joint agreement between the Forestry Coordinator responsible for the job, System Forester, and the Forestry Manager.

⁶ Vegetation Management Operating Procedure VM2.05, Fire Season (June 30, 2014)

Table 5: Nova Scotia Fire Weather Index (FWI) Classification

Risk Classification	FWI Range in NS	FWI Ranges from Natural Resources Canada
Low	0-3.9	0-5
Moderate	4-9.9	5-10
High	10-16.9	10-20
Very High	17-22.9	20-30
Extreme	≥23	>30

NS Power's operational teams refer to the Nova Scotia Department of Natural Resources [Fire Weather Forecast](#) and its Fire Weather Actuals, to maintain active awareness of the current and near-term wildfire risk present throughout the service area.

In addition, NS Power has contracts in place with meteorological services companies to provide daily weather forecasts. These daily forecasts allow for the Company's teams to identify potential meteorological risks and assess when weather conditions may cause an impact on infrastructure. This allows the company to mobilize appropriate field resources to address any potential events.

Should the FWI increase substantially in a particular section of its service area, NS Power may adjust its operations, limit high risk work and/or remove personnel from the high wildfire risk areas in consultation with internal and external stakeholders.

Utilization of situational awareness tools such as weather stations, cameras, and the Fire Weather Index have shown to be beneficial for utilities in system planning and emergency operations. A critical component of wildfire mitigation is the ability to assess and forecast the fire risk based on weather conditions and other environmental factors. These variables are dynamic, and accurate forecasting requires processing a large amount of data from multiple sources.

4.2 Wildfire Tracking

There are several publicly available maps to allow for daily tracking of active wildfires across Canada. Ongoing fire activities such as local fire bans, advisories and active wildfires, and provide additional near-real-time information to NS Power's control center regarding current wildfire risks. NS Power has integrated wildfire tracking maps into the internal GIS mapping, making it easier for employees to assess wildfire locations. Here's a list of the maps that may be utilized during active wildfires:

- Wildfire Nova Scotia Viewer, Department of Natural Resources – Forest Protection, <https://experience.arcgis.com>
- Situation Report, Canadian Interagency Forest Fire Centre Inc, <https://ciffc.net/situation/>

- Interactive Map, Canadian Wildland Fire Information System, Natural Resources Canada, <https://cwfis.cfs.nrcan.gc.ca/interactive-map>
- Canada Wildland Fires, MappingSupport.com, <https://mappingsupport.com/p2/>
- Smoke Forecast, FireSmoke, <https://firesmoke.ca/forecasts/current/>

4.3 Personnel Monitoring

NS Power's field resources working across NS Power are subject to the Automatic Vehicle Location (AVL) Policy, where fleet vehicle locations can be monitored in real-time. During an emergency event such as a wildfire, NS Power has direct access to quickly identify what field resources may be in proximity to elevated fire risk conditions, and they can be contacted to both inform operational decisions through field observations as well as notifying personnel of the potential wildfire risk.

4.4 Operational Changes due to Situational Awareness

NS Power has incorporated situational awareness into operational decision making to manage wildfire risk, particularly during periods of elevated environmental and system risk. Situational awareness is informed through continuous monitoring of fire weather forecasts, Fire Weather Index (FWI) conditions, active wildfire activity, field observations, and real time personnel location data. This information is further supported by operational technologies and system tools such as SCADA systems, remote telemetry utilities (RTUs), and outage management programs, which show real time visibility of system conditions and support informed decision making. As wildfire risk conditions increase, NS Power may implement graduated operational controls to reduce ignition likelihood and protect employees, contractors, the public, and system reliability. These measures are supported by established safety practices requiring employees and supervisors to identify hazards, assess risks, and implement appropriate controls prior to and during work activity.

Operational adjustments may include enhanced Field Level Risk Assessment (FLRA), restrictions on high-risk activities, modifications to work schedules, and implementation of additional fire prevention or suppression measures. In alignment with safety protocols, employees are expected to continuously reassess work conditions and adjust activities where changing conditions introduce increased risk.

Where conditions warrant, crews may be repositioned, relocated, or withdrawn from operational areas experiencing elevated or rapidly changing wildfire risk. These decisions are consistent with the responsibility to eliminate or mitigate hazards and, where necessary, to stop work when safe conditions cannot be maintained. Daily weather forecasts and FWI monitoring allow NS Power's teams to identify meteorological risks in advance and mobilize appropriate field resources appropriately ahead of potential events. Should the FWI increase substantially in a particular

section, NS Power may adjust its operations, limit high-risk work, and/or remove personnel from the field where applicable.

During an active or escalating wildfire event triggering emergency response, the EOC coordinates with safety teams to confirm field personnel compliance with high fire risk conditions, while the external Officer-in-Charge (OIC) of the wildfire response retains overall accountability for operational decisions. NS Power crews are only reactivated once given the confirmation from the OIC.

System operations are centrally coordinated through the Energy Control Center (ECC), where situational awareness data is integrated into switching operations, restoration planning, and outage response activity. Advanced distribution and system control capabilities, including fault detection and isolation technologies (e.g., Fault Location, Isolation, Service Restoration, FLISR), further support rapid response, system protection, and wildfire risk reduction during high-risk conditions.

Protective devices such as automatic reclosers, fault indicators, and circuit breakers are deployed across NS Power's system to support both system reliability and wildfire ignition risk reduction. Automatic recloser settings are applied to balance the clear of transient faults with the safe isolation of permanent faults. Preventing multiple reclosing on a permanent fault will reduce the likelihood of arcing and ignition risk. During periods of elevated wildfire risk, alternate protection settings may be utilized. Fault indicators may be used where automatic reclosing is disabled, supporting fault detection and enabling a faster field response should any further ignition occurs. Circuit breakers play a role and de-energizing lines to prevent further damage during already high-risk conditions. The operation of these devices is coordinated with situational awareness data operational controls, and where risk thresholds warrant.

In severe wildfire conditions, additional operational controls may be implemented in accordance with emergency response protocols. These may include further restrictions on field activities as well as increased coordination with emergency management and fire suppression agencies.

All operational decisions made in response to elevated wildfire risk are documented and subject to post-event-review. Consistent with incident reporting and post incident review practices, these evaluations support continuous improvement, allowing lessons learned to inform future operational strategies, procedures, and wildfire mitigation planning.

5.0 Inspection Programs

Inspection and maintenance programs enable utilities to identify and address deficient conditions and components to reduce potential impacts to the electric system, minimizing hazards, and maintaining system reliability. Existing condition assessment programs should be

reviewed for continuous improvement opportunities and new programs should be identified and considered for incorporation as appropriate.

5.1 Inspection Intervals and Prioritization

NS Power currently maintains established inspection programs and intervals for its transmission, distribution, and substation assets based on asset condition, reliability considerations, regulatory requirements, and operational risk. As enhanced wildfire risk mapping becomes available, NS Power will evaluate opportunities to further refine inspection prioritization to better address wildfire risk.

The wildfire risk mapping will be used to identify areas of elevated wildfire exposure in proximity to critical electrical infrastructure. Following completion of this assessment, NS Power will review whether additional inspection frequencies, targeted patrols, or enhanced condition assessment activities are warranted for assets located within higher-risk areas. This risk-informed approach will help ensure inspection resources are focused on locations where the potential consequences of wildfire-related asset failures or ignition events are greatest.

Any changes to inspection intervals or prioritization criteria will be evaluated in consideration of overall system risk, operational feasibility, and alignment with wildfire mitigation objectives. This review will be incorporated into future updates of NS Power's wildfire mitigation program as wildfire risk data and experience continue to evolve.

5.2 Ground Patrol Inspections

Detailed inspections of electric lines and equipment

Careful inspections of overhead electric lines and equipment where individual assets are examined visually and through use of routine diagnostic tests. For distribution circuits, deficiencies are collected by exception for prioritization and corrective action. For transmission lines, the condition of each structure and span (including vegetation condition) is rated and recorded.

Inspection programs are used to identify potential future equipment failures or vegetation contacts which can be ignition sources under wildfire conditions. For transmission, the following equipment and structures are assessed and documented during inspections: wood frame structures, steel lattice structures, steel pole structures, line disconnect switches, insulators, contacts, leads, and grounds. For distribution, the feeder equipment that are assessed are: arrestors, capacitors, control boxes, conductors, cut-outs, framing, guys, insulators, metering tanks, poles, reclosers, services, step-downs, streetlights, switches, transformers, and voltage regulators. Vegetation impacts and wildlife interactions such as nesting are also inspected on the lines.

Quality assurance / quality control of inspections

NS Power uses a two-part quality program. The first is quality control for the regular inspection programs to ensure they are being performed as planned and the inspectors are well-aligned with the inspection criteria. The second part relates to quality control of capital project work after completion. Examples of the latter would be confirming if the correct design or equipment were installed following corrective action. This approach applies to both transmission and distribution programs. For distribution, continuous improvement efforts are in progress to better address the post-construction portion of the quality control program for capital projects.

5.3 Helicopter Inspections

Helicopter inspections allow for an aerial perspective of overhead structures, conductor spans, and right-of-way encroachments. These inspections are designed to identify obvious structural or vegetation problems and hazards.

Helicopter inspections are primarily used for transmission line due diligence patrols to address visible risks. These are typically performed in the fall to help identify possible hazards, including potential ignition sources that can be mitigated ahead of the upcoming wildfire season.

5.4 LiDAR Surveys

Accurate surveys of rights-of-way are critical for effective and appropriate line management. Light Detection and Ranging (LiDAR) data provides a detailed source of structure, conductor, and vegetation data for power line right of-ways as well as surrounding areas. This data can be used to address vegetation encroachment to lines, and consequently wildfire mitigation. LiDAR data is a critical source for providing detailed and accurate assessment to support ROW vegetation management. LiDAR data is collected along a corridor and processed to identify areas that may result in clearance issues under particular line loading and/or weather conditions. This data can then be used to develop targeted intervention that are designed to improve conductor clearances or to address the surrounding vegetation, decreasing the likelihood of "grow-in" or "fall-in" occurrences as necessary. A regular LiDAR inspection program is in place for high-voltage lines and is being evaluated for further expansion.

5.5 New Inspection Technologies

Drones are another technology currently being deployed at NS Power for inspections of transmission and distribution lines. As drones collect video and still images, there is a combination of manual and AI approaches to review and identify deficiencies. Due to the additional angles and heights assessable by drone this approach can better detect certain

equipment issues. NS Power deploys drones for ad hoc detailed inspections of transmission and distribution lines, as well as during emergency response scenarios, such as wildfire events.

Satellite imagery assessment is designed to assess vegetation condition across rights-of-way at a large scale that would be otherwise impossible using traditional techniques. By analysing this imagery through AI, the proximity of vegetation to distribution lines can be determined and areas of potential contact identified. This enables NS Power's vegetation management team to classify condition system-wide, integrate with feeder risk ratings, and effectively target corrective interventions across the province. Beyond improving overall vegetation management practice, potential wildfire ignition sources can be identified, prioritized, and addressed as appropriate. See section 7 for more details on Vegetation Management.

NS Power completed two pilots of satellite imagery to assess distribution vegetation condition over the past five years. The findings of these projects indicate that the use of this imagery analysis can deliver a sufficient level of detail for us in strategic and tactical vegetation management, including wildfire mitigation. NS Power implemented a system-wide program in 2024 and is conducting a condition data refresh in 2026.

5.6 Substation Inspections

Substation inspections are conducted primarily to identify and address reliability and environmental concerns but incidentally provide additional wildfire mitigation benefits. Specifically, the inspection program mitigates the risk of equipment failure by identifying equipment deterioration to undertake the repair or replacement before failure occurs. Equipment failure can lead to fires in oil-filled substation equipment, and while those fires are typically contained within the substation, any uncontrolled fires may pose an ignition risk.

The typical, modern approach of substation design, with the use of steel structures, gravel, and concrete equipment bases makes it difficult for a fire to spread outside the substation. Furthermore, vegetation is removed around the exterior of the substation fence and gravel is extended outwards whenever possible. It would take a significant explosion force to cause flaming material to reach a surrounding area with power transformers designed to prevent such large explosions from occurring.

6.0 Wildfire Risk Reduction

Components in poor condition are at higher risk of unplanned failure and should be prioritized for replacement or upgrade. Investment in maintaining or upgrading overhead lines will reduce the potential for transmission or distribution circuits or other equipment to cause wildfire ignition. Incorporating improved equipment and modern materials contributes to increasing hardening.

NS Power continues to make targeted, data-driven investments to make its system more resilient to wildfires and the broader effects of climate change. Examples include:

- Build-to-roadside programs;
- Right-of-way widening programs;
- Increased investment in vegetation management;
- Animal guards deployed on pole-top transformers and on substation equipment;
- Nest deterrents and standalone nest platforms;
- Equipment inspection and replacement programs;
- Design and Construction Standards updates;
- Drone and helicopter inspections during wildfire conditions to identify risks;
- Satellite monitoring of vegetation condition and encroachment; and
- Substation design and vegetation management to ensure appropriate fire breaks around substation locations.

6.1 Design Standards

Revising NS Power standards to bond hardware

Transmission Engineering has revised NS Power standards to bond all transmission hardware on new construction. With unbonded equipment, a structure's wood components contribute to the overall structure insulation. If a flashover occurs, the arc quenching properties of the wood may result in a fire on crossarms and poles. Bonding all equipment adds more grounds to the structure and if a fault or flashover occurred in this case, it would trip the line, reducing the likelihood of wood components being impacted.

Pole hardening and replacement program based on pole loading assessment program

Actions are taken to remediate, adjust, or install replacement poles that the utility has identified as failing to meet modern requirements in accordance with utility standards in NS Power's pole loading assessment program.

Updated pole design standards for all new transmission pole installations have been developed and adopted. These standards consider more severe loading conditions for 69 kV transmission poles. For distribution construction, standards are reviewed periodically to determine the need for updates.

Substation Building Standards

Roofing materials are a major determinant of whether a wildfire will ignite a nearby structure. To protect NS Power's building assets, the targeted roof classification is "A", "B" or "C" where Fire Rating Classification "A" is recognized as the best in class, which includes metal roofs.

Incorporating roof sprinkler systems on flammable roofs and maintaining internal building sprinkler systems where appropriate in high-risk fire areas is considered by NS Power Asset Strategy Committees.

Control buildings at NS Power vary when it comes to design, fabrication, and construction. Some buildings are prefabricated and are delivered to site with composite roofing, some are steel frame designed with 20-year asphalt shingles and others are wood framed with steel roofs. NS Power's current standard specifies the use of asphalt shingles for all new construction.

Some substation control buildings are being retrofitted to use compressed inert gas as their fire suppression system. The Inergen suppression system protects enclosed areas by filling the room with gas and extinguishes any fire by lowering the oxygen content below the level that supports combustion. It is recommended that all substation control buildings continue to have fire suppression systems added and building designs to be reviewed and evaluated for whether additional fire prevention measures are required.

6.2 System Hardening

Transmission structure maintenance and replacement

Remediation, adjustments, or installations of new equipment to improve or replace existing transmission structures (e.g., H-Frames, lattice steel towers, or tubular steel poles that support lines at, or above 69kV).

NS Power has an existing inspection and maintenance program in place for all transmission structures.

Replacement of wooden poles

NS Power targets replacement of wood poles that have deteriorated and/or pose a risk as an ignition source if they are subject to weather conditions that exceed their operating design standards. Poles in high-risk locations should be considered for replacement with materials that are more fire resistant such as steel, concrete, or composite material.

Wooden poles are inspected to identify deterioration and replaced using assets aligning with modern design standards, including a higher class of pole if required.

Different pole materials have been discussed for future use in transmission applications such as steel, concrete, and fiberglass. NS Power's transmission system is primarily a combination of steel

and wood structures. While alternative pole types are more expensive than wood, they are considered for replacements in high-risk areas as appropriate.

Covered conductor installation

Covered conductors act as a physical barrier between energized electrical equipment and vegetation, animal contact, and other external contacts. This reduces the possibility of power line arcing or sparking if contact occurs. Hendrix cables are a type of covered conductor that has contributed to risk reduction in other jurisdictions. Covered conductor is currently applied in a limited number of targeted locations on distribution lines for NS Power. Expanded use of covered conductors is under consideration.

Circuit Breaker replacement

Replacing aging substation infrastructure such as obsolete 138kV and 69kV substation circuit breakers, electro-mechanical relays, and Remote Terminal Units (RTUs) ensures NS Power's protection and control equipment is functioning effectively and reduces the risk of incorrect or delayed fault clearing that could initiate a wildfire. Circuit breakers are inspected and replaced when conditions require.

Lightning arrestor removal and replacement

Lightning arrestors are a piece of electrical equipment designed to mitigate the impact of transient overvoltage on the electric system. Overvoltage can cause damage to more expensive equipment, therefore lightning arrestors are used as protection devices. However, if the overvoltage duration is too long or too high, the arrestor can become thermally overloaded, causing failure and a potential ignition source. From climate projection data, it is predicted that lightning activity in Nova Scotia will increase in the future, potentially contributing to increased failures.

Lightning arrestors are used on all significant pieces of equipment as a standard for distribution (i.e. transformers, reclosers, etc.). Transmission lines use grounding wires rather than lightning arrestors. Substations use a higher class of arrestors that do not generally pose an ignition risk (in part due to substation vegetation management).

New arrestor designs are emerging that may help reduce the potential of becoming an ignition source and are being evaluated for inclusion into distribution standards as applicable.

Crossarm replacement

NS Power deploys an inspection program for transmission and distribution equipment, including crossarms. Crossarms are assessed for condition and replaced as appropriate. A new transmission

standard now in place allows for the replacement of wooden crossarms with a steel version, to further reduce the risk of a crossarm failure contributing to a wildfire initiation.

6.3 Wildlife Protections

In addition to interruptions, wildlife interaction with electrical equipment can lead to ignitions. Installation of bird and wildfire deterrents on structures and assets are used to reduce the likelihood of these interactions. NS Power employs a series of initiatives to reduce the risk of wildfire caused by wildlife interactions with Company infrastructure. This includes:

- Wildlife guards on all new pole-top transformers;
- Line cover;
- Nest deterrents on poles;
- Alternate nest platforms; and
- Line markings (e.g. bird flight diverters)

Appropriate wildlife protection methods depend on the assets present on the system. These are summarized in Table 5.

Table 6: Wildlife Mitigation for NS Power Equipment

System	Wildlife Interaction	Mitigation Used
Substations	Animals interfering with the substation equipment, specifically birds.	Installation of animal guards at some substations. These are applied to reduce locations where animals may bridge gaps between energized equipment and ground. NS Power plans to continue retrofitting deterrents for high-risk substations and have the deterrents installed at all new substations.
Transmission	Most common type of interaction is birds nesting on the lines or flying into lines.	There are deterrence spikes that are placed on the cross arms to reduce interaction. Bird diverters are mainly used for T-lines. They are being installed for any new installs across water crossings. When a bird nest is determined to be a hazard, it is removed. A nest platform nearby is then installed to prevent nesting on the transmission structure from occurring again.
Distribution	Birds are the main source of wildlife interfering with equipment.	A standard for nesting and perching deterrents is in place and is used in areas where nesting has been observed. Transformer animal guards are installed on all new pole-top transformers. For in-service transformers, after a wildlife caused outage guards are installed. Bird wire is also installed at some locations to prevent interactions with jumpers.

Figure 7: Wildlife protections on distribution



Figure 8: Alternate nest platform



Figure 9: Nest deterrents installed on top of distribution pole



6.4 Personnel Training

Personnel work procedures and training in conditions of elevated fire risk

Work activity guidelines designate what type of work can be performed during operating conditions at different levels of wildfire risk (Normal, Elevated, Extreme).

As conditions increase in severity, activities that present an increased risk of ignition have additional mitigation requirements. Where risk cannot be mitigated, work activity might cease.

- Normal – normal operating procedures are followed with baseline tools and equipment
- Elevated – certain at-risk work activities may require additional mitigation measures to proceed with work. The additional mitigation measures will be documents
- Extreme – most overhead work activities will cease, except where not performing the work would create a greater risk than doing so. In those cases, a designated coordinator for such work would be consulted and additional; mitigation steps implemented as needed.

NS Power's *Vegetation Management Operating Procedure VM2.05* provides formal guidelines on what vegetation management work can be done under different wildfire risk conditions. The Forestry team currently reviews the FWI forecast and will proactively limit their activities according to their procedure. Field level risk assessments are conducted to determine specific risks, and based on these assessments, activities are reviewed by the Safety team. Temporary limitations, such as not driving all terrain vehicles in rights-of-way, are enacted when a risk is identified. Additionally, some contractors are subject to certain restrictions depending on the fire risk, such as what time of day work can proceed.

Crew-accompanying ignition prevention and suppression resources and services

NS Power's internal and contractor crews carry appropriate fire suppression equipment in case of small fires breaking out. If a larger fire results from utility-related work or if a fire is approaching a work site, it is not expected for crews to undertake fire suppression; instead, firefighters will be contacted to address the situation. As an example, the Forestry team engages with its contractors at the start of the annual fire season to ensure they have the necessary fire suppression equipment, as mandated by the NS Forest Fire Protection Regulations.

In addition to equipping crews with the necessary tools, NS Power emphasizes the importance of training and awareness. Personnel receive regular training on fire prevention, suppression techniques, and emergency response protocols. The Department of Natural Resources ensures that contractors are well-prepared for fire suppression and integrates wildfire response into

forest health prioritization. The Nova Scotia Emergency Management Office (EMO) coordinates emergency preparedness and response efforts, fosters community resilience, and ensures effective communication during wildfire incidents. By working together, these organizations enhance the overall effectiveness of wildfire mitigation and response through training and awareness programs.

6.5 Proactive De-energization (Public Safety Power Shutoff)

NS Power is required to ensure the safe operation of the transmission and distribution system and has the authority to interrupt circuits for various public safety risks, including wildfire. Emergency management organizations may also request that circuits be de-energized in consultation with the Energy Control Centre when required to support wildfire suppression activities or protect public safety. In recent years, NS Power has de-energized facilities and circuits during active wildfire events through direct coordination with provincial emergency management organizations, fire services, and the Nova Scotia Department of Natural Resources.

Public Safety Power Shutoffs (PSPS) is the proactive de-energization of electrical infrastructure during periods of elevated wildfire risk to reduce the potential for utility-caused ignitions. This measure of last resort has been adopted or evaluated by several utilities in North America. While PSPS may provide an additional risk mitigation tool in some jurisdictions, NS Power has not determined whether a formal PSPS program is required or appropriate for Nova Scotia at this time. The Company continues to evaluate the applicability of PSPS as part of its broader wildfire mitigation strategy, recognizing Nova Scotia's operating environment, wildfire risk profile, electrical system characteristics, and potential impacts on customers and communities.

Should PSPS be considered in the future, any decision framework would need to evaluate multiple risk factors rather than relying solely on a single indicator such as the Fire Weather Index (FWI). Potential considerations could include wildfire risk forecasts, sustained wind speeds and wind forecasts, drought conditions and fuel moisture levels, wildfire hazard mapping, infrastructure-specific ignition risk, active wildfire activity, circuit risk profiles, operational situational awareness, and potential consequences to public safety and critical infrastructure. Community impacts, including effects on vulnerable customers, water systems, emergency services, telecommunications, healthcare facilities, and other critical community functions, would also need to be assessed as part of any decision-making process.

A conceptual PSPS framework would generally involve:

- Assessment of wildfire risk indicators, forecasts, and situational awareness information;
- Review of asset-specific and geographic wildfire risk profiles;

- Evaluation of potential customer and community consequences;
- Consultation and coordination with emergency management agencies and government stakeholders;
- Consideration of alternative mitigation measures;
- Decision-making by designated operational authorities; and
- Post-event review and continuous improvement activities.

NS Power recognizes that proactive de-energization can introduce significant public safety, social, and economic consequences. Experiences from other jurisdictions have demonstrated that successful implementation requires extensive engagement with municipalities, Indigenous communities, emergency management organizations, regulators, critical infrastructure operators, vulnerable customer groups, and the public. The FortisBC PSPS program in British Columbia highlighted the importance of comprehensive stakeholder consultation, emergency response planning, and community preparedness before any such program is implemented. As a result, NS Power would undertake substantial stakeholder engagement and regulatory consultation before advancing any formal PSPS program in Nova Scotia.

At present, NS Power's primary focus remains on wildfire prevention, vegetation management, asset inspections, system hardening, situational awareness, emergency response preparedness, and coordination with government agencies. PSPS continues to be monitored as a potential future mitigation measure and would be considered only as a tool of last resort where the wildfire risk reduction benefits clearly outweigh the impacts to customers and communities.

7.0 Vegetation Management

NS Power's electrical system is made up of over 32,000 km of power lines—the majority of which run through forested areas and along tree lined roads. Each year, the Company's vegetation management team identifies vegetation risks and targets mitigation work throughout the province. NS Power and vegetation management contractors manage right-of-way paths to ensure power lines are clear of trees and bushes. In 2023, NS Power invested approximately \$32 million in vegetation management, and this has increased to \$45 million in 2024 and again in 2025-2026.⁷

NS Power uses a combination of methods to trim and prevent trees from growing near power lines. Options in rural areas include manually trimming tree branches and other higher growing vegetation near the power lines, removing trees in the right-of-way and where possible, applying targeted herbicides on shorter trees and stumps to restrict tree regrowth.

⁷ Five-Year Reliability Plan 2025-2029, Nova Scotia Power, filed December 20, 2024 with NSUARB

The Vegetation Management Program is designed to proactively reduce tree contacts with power lines, which can be an initiating cause for wildfires. By increasing the width of distribution and transmission corridors and executing proactive vegetation control strategies, the program aims to reduce power interruptions, improve system reliability, and mitigate wildfire risks in the following ways:

- **Greater access for crews conducting routine maintenance and/or post-storm repairs:** Wider corridors allow for easier access, enabling quicker response times and reducing the risk of fires spreading due to delays.
- **Clear rights-of-way allow for easier visual and drone inspections:** Enhanced visibility helps identify potential wildfire hazards, such as dry vegetation and fallen branches, before they cause outages or ignite fires.
- **Fewer power line conductor failures:** By preventing tree contacts, the program reduces the chances of line faults that could lead to fire outbreaks.

The program includes the following targeted strategies, explained further below:

- Distribution Corridor Widening with Managed Rights-of-Way,
- Transmission Corridor Widening with Managed Rights-of-Way,
- Establishing New Rights-of-Way (ROW), and
- Trimming and removal of trees around existing power lines.

7.1 Vegetation Clearance Specifications

On its transmission system, NS Power maintains vegetation clearance specifications to reduce the likelihood of vegetation contact with energized overhead conductors. These specifications support wildfire mitigation by reducing potential ignition sources associated with vegetation encroachment, conductor contact, falling trees, and vegetation related outages.

Transmission vegetation management is planned and prioritized to prevent incompatible vegetation from growing within the Limits of Approach. NS Power's Integrated Vegetation Management Program identifies vegetation that can grow into proximity with energized conductors and manages both vertical and horizontal growth to maintain safe clearances. Transmission plans are developed annually, with work prioritized based on vegetation coming into the Limits of Approach, danger, and hazard trees, vegetation identified through sag analysis, Bulk Power System lines, and treatment thresholds defined in vegetation management procedures.

Standard transmission corridor widths applied by NS Power are summarized in Table 6.

Table 7: Transmission Corridors for Specific Levels of Energized Conductors

Transmission Series	Voltage Class	Corridor Width
5000 Series	69 kV	20 m
6000 Series	138 kV	30 m
7000 Series	230 kV	40 m
8000 Series	345 kV	50 m

NS Power also applies voltage-specific vegetation treatment thresholds to identify vegetation requiring action based on conductor clearance and, where applicable, sag analysis. These thresholds are summarized in Table 7.

Table 8: Voltage Specific Vegetation Treatment Thresholds for Different Classes

Voltage Class	Treatment Threshold
69 kV	≤ 3.0 m
138 kV	≤ 3.8 m
230 kV	≤ 4.3 m
345 kV	≤ 4.9 m

For 138 kV, 230 kV, and 345 kV facilities, vegetation threat levels are further assessed using conductor sag analysis. The associated clearance criteria are provided in Table 8.

Table 9: Clearance Distances for Specific Energized Overhead Conductors Regarding Sag Analysis

Threat Level	138 kV	230 kV	345 kV
Encroachment	3.8 m	4.3 m	4.9 m
Hazard	1.8 m	2.3 m	2.9 m
Danger	0.9 m	1.4 m	2.0 m

These clearances are supported through field inspections, growth prediction, sag analysis, and LiDAR-based assessments. The Vegetation Management Team identifies that transmission clearances are calculated at maximum sag to classify vegetation as encroachment, hazard, danger, or fall in threats. The procedure also notes that sag analysis procedures span-by-span clearance reports and that LiDAR modelling can identify vegetation issues by measuring structures, conductors, vegetation, and other features within the right of way.

Where LiDAR identifies sag hazard or sag danger in vegetation, spans are issued for removal prior to the growing season of the year of analysis. Encroachment spans are treated prior to the growing season of the following year. This approach allows NS Power to prioritize vegetation

work based on measured clearance risk and address vegetation conditions before they develop into higher risk conductor contact or ignition concerns.

Distribution vegetation management is also addressed through condition-based monitoring. Vegetation conditions along distribution corridors are monitored through feeder inspections, satellite-imagery data, tree related outage data, regional operations input, and Forestry Coordination review. Once a feeder or feeder segment is identified for work, a detailed work inventory is created, and vegetation management actions are prescribed based on specific conditions of the span or feeder segment. The NS Power standard for distribution rights-of-way is a total width of 6 meters, or 3 meters on either side of the conductor, where feasible. In some situations, achieving a 6-meter clearance is not possible due to various constraints, including limited easements, municipal restrictions, and landowner approval. In these cases, best efforts are made to minimize risk by ensuring that tree contact with conductors is avoided.

7.2 Right-of-Way Management

Right-of-way (ROW) management, including widening, is directed by the Forestry team at NS Power. Targeted widening is dependent on the site, but targeted widths are generally between 18-32 meters for transmission and 6 meters for distribution. The New Distribution ROW program, which created 6 meters of clearance on the forest side of the lines where possible, helped inform the decision to pursue this additional ROW width. Targeted projects can be applied to sections of ROW that are currently at 3 meters clearance to increase clearance further.

As tree trimmings and slash can pose a fuel hazard, brush resulting from vegetation management activities is broken into smaller pieces to decompose more easily. NS Power's Forestry team management philosophy is to build sustainable rights-of-way wherever possible that do not require regular cutting or grubbing to achieve necessary clearances.

Hazard Trees

Hazard trees pose a risk to powerlines from branch contact, partial tree, or whole tree failure. The resulting risks include outages, property damage, personal injury, and wildfire ignition. Successful hazard tree evaluation mitigates the risks associated with tree/powerline conflicts. While some trees are beneficial and align with the integrated vegetation management methodology, such as low-growing trees and shrubs that are acceptable to plant in NS Power's rights-of-way, others pose risks. NS Power promotes the Plant the Right Tree in the Right Place program⁸ and regularly discusses this with customers and community leaders. Hazard trees are

⁸ Right Tree Program, Nova Scotia Power, 2025. [Tree Trimming - When To Contact Us | Nova Scotia Power](#)

quantified by collecting points of interest from inspection programs, ensuring proactive management and wildfire risk reduction.

Vegetation inventory system

In 2025 and 2026 NS Power is advancing a project to further enhance its existing vegetation inventory system, and this initiative will integrate and leverage new and existing vegetation management data for enhanced risk-based decision-making on the transmission and distribution system. It includes conflation of vegetation condition data, including span-level assessment from satellite imagery analysis, with additional condition factors (reliability, asset condition) and asset criticality to enhance NS Power's understanding of system risk. This project will integrate a detailed vegetation condition data set into overall risk profiles to improve NS Power's vegetation management interventions. Key components include integration of condition data into Business Intelligence (BI) tools, such as Tableau, condition score updates based on executed work, and time-series trending of vegetation condition.

7.3 Stakeholder Engagement for Vegetation

NS Power engages with both the Nova Scotia FireSmart and Prevention Committee and the Halifax Wildfire Advisory Committee. These collaborations aim to enhance wildfire risk reduction strategies and ensure effective communication and coordination during wildfire incidents. Through these partnerships, NS Power participates in developing and implementing comprehensive wildfire prevention and mitigation plans. This includes sharing best practices, conducting joint training exercises, and coordinating response efforts during wildfire events. By leveraging the expertise and resources of these committees, NS Power is better equipped to address the challenges posed by wildfires and protect both infrastructure and communities.

7.4 Substation Vegetation Management

During regular substation inspections, any vegetation present is assessed, and Forestry is contacted to intervene as required. Vegetation is cleared 2-3 meters outside of the fence line, and all vegetation within the substation yard is removed to ensure safety and reliability. This proactive approach helps prevent potential fire hazards and maintains clear access for maintenance and emergency response. Additionally, this vegetation management creates a buffer that protects substations from wildfires in the area, ensuring these critical assets are safeguarded.

8.0 General Operational Practices

NS Power's wildfire mitigation plans include operational practices that enhance fault detection and system protection. By deploying advanced technologies such as distribution automation

systems, current limiting devices, and improved reclosers and sensors, NS Power can more quickly identify and isolate faults, thereby minimizing the potential for ignitions. Fault indicators and circuit breakers play a crucial role in narrowing down fault locations and de-energizing affected lines to prevent further damage. Additionally, the Company is prioritizing the installation of intelligent field devices and communication systems to improve situational awareness and expedite response times during wildfire events. These proactive measures not only safeguard the electrical grid but also contribute to the overall resilience and safety of Nova Scotian communities.

8.1 Fault Indicators, Circuit Breakers, & Reclosers

Automatic Reclosers

NS Power deploys automatic reclosers across its system to interrupt faults of various causes. The settings applied on these devices are designed to balance both customer reliability (clearing transient faults) and safely isolating permanent faults. Preventing multiple reclosing operations on a permanent fault through judicious application of settings reduces the likelihood of an ignition due to tree contact or equipment failure.

Fault Indicators

Fault indicators are used to detect faults on electric lines and equipment. They may be utilized when automatic reclosing is disabled or if alternative protection settings are applied during times of wildfire risk. Disabling automatic reclosing is not a regular practice for NS Power.

In general, fault indicators help narrow down the area NS Power personnel need to patrol in order to determine where a system failure has occurred. This allows for a potentially faster response to the site if an ignition occurs, a greater chance of determining and correcting a fault cause (when not immediately obvious), and improved customer restoration.

For transmission, a small number of fault indicators are installed at some line taps. These indicate which section of the line has experienced a fault should one occur, while circuit breakers will automatically isolate the line to avoid further damage. This allows the fault location to be identified more quickly.

Due to the higher volume of protection devices present on the distribution system to isolate faults, fault indicators are used less often. They are strategically placed in isolated or difficult-to-access circuits, such as 85S-401 in Northern Cape Breton, to assist in narrowing down fault locations.

Circuit Breakers and Reclosers

Circuit breakers detect short-circuit fault conditions and operate to limit damage to the system. They are used in substations to de-energize transmission lines if a fault is detected. Reclosers serve a similar role on distribution feeders, de-energizing the line if they detect a fault.

Wildfire Risk-Informed Operation of Protective Devices

During periods of elevated wildfire risk, protective devices such as circuit breakers and reclosers may be used in coordination with situational awareness, and broader operational controls. This coordination supports system reliability, faster fault identification, and the reduction of wildfire ignition risk associated with electrical infrastructure.

Downline Device Monitoring and Communication

NS Power is expanding the implementation of telecommunications connectivity providing telemetry and controls to intelligent field devices throughout the grid, including Remote Terminal Units (RTU) and communications to distributed protection equipment. This allows for improved awareness of outages, expedited knowledge of fault locations and remote operation capabilities as well as enhanced data allowing for more in-depth asset management activities to increase the resiliency of electrical power systems against the risk of wildfires

8.2 Smart Meters

NS Power has installed smart meters for the majority of its customers, allowing events and alarms to be automatically sent to the control center. This technology enhances visibility and response at the individual customer level, which is particularly beneficial for isolated locations where customers may be seasonal residents. The smart meter network across Nova Scotia significantly improves the visibility and traceability of faults and outages, enabling faster response times and reducing conditions that may otherwise lead to wildfires. They also can provide load and voltage data in near real-time, maintaining situational awareness around problem areas or at the sites of mobile substations or generators, and confirm switching operations and verify outage restoration as circuits return to their original configurations.

NS Power is on track to achieve the benefits from AMI for wildfire risk reduction with existing integrations, primarily through the capability of pinging meters to validate power status. There are opportunities to further integrate AMI data with outage management systems for better visibility to System Operators and to provide a consolidated dataset of outage and AMI data. This consolidated dataset lays the foundation for more advanced performance analysis by SMEs. Additionally, future integration of smart meter alarms and power quality data into outage management systems provides System Operators and engineers with additional context on outage events, informing restoration tactics during events and post-event analysis

9.0 Emergency Response

The purpose of an emergency response program is to coordinate safe and effective emergency preparedness. The response should extend to safely and efficiently prepare for, respond to, and recover from all threats and hazards, including wildfires.

9.1 Emergency Services Restoration Plan

NS Power has an Emergency Services Restoration Plan (ESRP) that is deployed to co-ordinate restoration response for events that are expected to result in customer outages of longer than 36 hours or 50,000 customers for more than 24 hours as well as other emergency situations as needed. The ESRP is reviewed annually by NS Power and any changes or learnings from storms or drills are filed with the NSEB for approval.

The plan includes guidance for the allocation and deployment of resources, including personnel, equipment, and materials, to support restoration efforts during emergencies. The ESRP emphasizes the importance of communication and coordination with federal, provincial, and local fire authorities, as well as other emergency response organizations, to ensure a unified and effective response. The plan incorporates safety protocols to protect both the public and NS Power employees during emergency response and restoration activities. In the event of a wildfire(s) impacting a large volume of NS Power's system and/or customers, the ESRP would be activated to support the restoration plans in response to the wildfire(s).

9.2 Cooperation with Suppression Agencies

Coordination with federal, provincial, and local fire authorities to support the planning and operations of firefighting in real-time, including information-sharing, dispatch of resources, and dedicated staff.

NS Power's Energy Control Centre (ECC) has a standard operating procedure to call upon during a wildfire response situation in relation to the potential for transmission impacts. The ECC coordinates directly with Nova Scotia Department of Natural Resources and with relevant emergency response organizations (NS EMO, local firefighters, police, etc.), as required.

Water and other flame suppression products that fire authorities use during wildfire response can cause issues with overhead electrical equipment. It has been regularly communicated to authorities that water bombers should avoid hitting overhead equipment directly with water as it can cause further damage. Salt water is discouraged to be used around energized equipment due to the increased potential for flashover. For ground-based firefighting, there are recommended minimum separation distances for people and conductive materials to power lines. These are summarized in Table 9. Any water from a fire hose would be included in these recommendations.

NS Power communicates wildfire related information to customers, communities, and stakeholders through established communication and engagement channels. These communications support public safety, situational awareness, and coordination during periods of elevated wildfire risk and during active wildfire season. Communication activities include coordination with provincial and municipal emergency management agencies, operational notifications to affected customers, and public information updates issued through appropriate channels. During wildfire related events or larger risk conditions, communications are tailored to the nature and severity of the event and may include notifications related to operational impacts, and safety considerations, where applicable.

NS Power's communication practices are designed to complement broader emergency management efforts and support informed decision making by emergency responders, customers, and communities. These practices are reviewed and redefined following major events or exercises to support continuous improvement.

Table 10: Normal Limits of Approach for unqualified persons and conductive materials

NSPI Nominal Circuit Voltage (Phase to Phase)	CSA Voltage Range (Phase to Ground)	Limit of Approach (Metres)	Limit of Approach (Feet)
0.75 – 25 kV	0.4 – 18 kV	3.0	10
40 kV	18 – 22 kV	3.0	10
69 kV	22 – 50 kV	3.0	10
138 kV	50 – 90 kV	5.0	16.5
230 kV	120 – 150 kV	6.1	20
345 kV	190 – 220 kV	6.1	20

9.3 Materials Management

As part of NS Power's wildfire mitigation strategy, the Transmission and Substation Asset Strategy Committees are committed to regularly reviewing existing critical spare equipment. This ongoing assessment aims to identify additional spare equipment requirements for emergency response and determine optimal storage locations. Incorporating the availability of spares to address potential losses in areas with higher fire risk is a key recommendation for enhancing utility preparedness.

For distribution equipment, which often consists of standard parts applicable to most sites, NS Power reviews the minimum and maximum quantities and updates necessary quantities as needed. This proactive approach ensures that on-hand quantities are increased as required, enhancing readiness and resilience for wildfires as needed.

NS Power's materials management has been rigorously tested through several severely damaging storms, including Hurricane Dorian in 2019 and Fiona in 2022. During these events, NS Power

successfully maintained a critical supply of distribution equipment, facilitating timely repairs and restoration for customers. The same levels of equipment are available to support wildfire response efforts, ensuring that distribution equipment impacted by wildfires can be swiftly repaired and restored.

Safety Communication: Afterglow on CCA Poles

NS Power primarily utilizes wood poles treated with Chromated Copper Arsenate (CCA) for new installations. These poles have a characteristic known as Afterglow, where the heavy metal preservative enhances heat transfer into the pole's interior, causing the temperature to increase. When a CCA-treated pole fire is extinguished, the heat energy transfers back to the surface, potentially causing re-ignition. Fires in CCA poles are often due to insulation failure on attachments, and even after extinguishing, the pole could re-ignite up to 2 hours later. Poles treated with oil-borne preservatives, like Penta-Chlorophenyl (PCP), develop outer char that insulates interior wood and self-extinguishes, limiting damage.

Caution is necessary when handling CCA-treated poles exposed to wildfire conditions. Workers must protect themselves from hot surfaces and possible re-ignition. Poles or pole pieces above grade, extinguished for more than 3 hours, are less likely to re-ignite. All pole butts (below grade) must be fully removed due to retained heat. Employees should check for heat before removal.

Precautions for Removing CCA-Treated Pole Butts from Wildfire Areas:

Expect re-ignition when the pole butt is exposed to oxygen. Have fire extinguishers or a water hose/supply ready.

Always wear leather gloves free from oil or other combustibles, cracks, or holes.

Avoid contact between the pole piece and any other part of the body.

Remove pole pieces from the site in a metal container or trailer. Do not leave them on the ground in the right of way.

9.4 Compliance and Assurance

NS Power's wildfire mitigation activities are supported by documented procedures, operational records, audits, and post-event reviews, with defined roles and accountabilities assigned across functional teams. These controls help verify that mitigation measures are implemented consistently and supporting monitoring, accountability, and continuous improvement.

Contractor vegetation management activities are subject to formal compliance requirements, including daily hazard record-keeping tied to Fire Weather Index ratings, documented inspections of firefighting equipment during elevated fire risk periods, and site-specific risk assessments where deviation from standard procedure is required.

Operational response activities, including wildfire emergency response near transmission rights-of-way and proactive de-energizing events, are governed by defined procedures with clear role-based accountabilities. Decision making authority, approval requirements, and communication protocols are documented at each stage of escalation, and all relevant decisions are logged, time-stamped, and archived by the responsible functional teams. Post-event lessons reports are completed following significant wildfire related events.

Where applicable, lessons learned are used to inform updates to procedures, practices, and future versions of this plan, supporting a cycle of continuous improvement.

9.5 Collaboration with Government and Stakeholders

Shared Responsibility for Wildfire Risk Reduction

Wildfire mitigation is a shared responsibility among utilities, governments, emergency management organizations, municipalities, landowners, and the public. While NS Power directly manages wildfire risk associated with electrical infrastructure through vegetation management, equipment inspections, asset replacement programs, operational controls, and emergency response procedures, overall wildfire risk is also influenced by broader factors outside the Company's direct control. These factors include wildfire ignition sources not related to utility operations, vegetation and fuel conditions, wildfire detection capabilities, suppression response times, land use practices, and community preparedness activities. As a result, effective wildfire risk reduction requires collaboration between NS Power and external stakeholders across Nova Scotia.

NS Power maintains working relationships with provincial agencies, emergency management organizations, municipal governments, fire services, industry organizations, and other stakeholders to support a coordinated approach to wildfire preparedness, prevention, response, and recovery. These partnerships enhance situational awareness, improve emergency coordination, support risk informed decision making, and contribute to continuous improvement of wildfire mitigation strategies.

Risk Assessment and Information Sharing

NS Power supports continued collaboration with provincial agencies to advance wildfire risk assessment and planning through enhanced information sharing. Opportunities include the continued development and sharing of Community Wildfire Protection Plans, wildfire hazard

mapping, fuel-load assessments, climate projections, drought monitoring data, and historical wildfire occurrence information. Access to these datasets supports more informed risk-based decision making, including vegetation management prioritization, investment planning, emergency preparedness, and operational response activities. Continued collaboration through provincial wildfire working groups or committees such as FireSmart initiatives would further enhance a coordinated approach to wildfire risk management across Nova Scotia.

Wildfire Detection and Situational Awareness

Early wildfire detection remains one of the most effective methods of reducing wildfire consequences and improving suppression response. Nova Scotia currently maintains several wildfire detection capabilities through the Department of Natural Resources, including public reporting programs, provincial wildfire monitoring systems, and contracted aerial wildfire patrols. During periods of elevated wildfire risk, aerial surveillance patrols provide rapid coverage across the province and support early identification, location, and assessment of wildfire activity. Public reporting of smoke sightings and wildfires also continues to play an important role in the overall detection system and frequently serves as an initial notification mechanism for emerging incidents.

As wildfire detection technologies continue to evolve, opportunities may exist to supplement existing capabilities through the deployment of camera networks, weather stations, satellite monitoring, and artificial intelligence-assisted detection systems. These technologies may improve situational awareness by identifying potential smoke plumes and areas requiring further investigation. However, such systems may also produce false positive indications resulting from atmospheric conditions, industrial activities, fog, dust, or other non-fire sources. As a result, suspected wildfire detections generally require validation through other means before suppression resources are deployed.

NS Power supports continued evaluation of emerging detection technologies in collaboration with provincial agencies, municipalities, emergency management organizations, and other stakeholders. Future opportunities may include use of utility infrastructure to support deployment of detection equipment at strategic locations, while recognizing that such technologies are most effective when integrated with existing detection and response programs, including aerial patrols, field verification, and public reporting systems.

Vegetation and Fuel Management

Vegetation management remains one of NS Power's most important wildfire mitigation activities. Through inspection programs, right-of-way maintenance, hazard tree assessments, corridor widening initiatives, and ongoing vegetation management investments, the Company actively works to reduce wildfire ignition risks associated with electrical infrastructure. These activities

also contribute to overall system reliability by reducing tree-related outages and improving access for inspection, maintenance, and emergency response activities.

Additional opportunities exist for provincial agencies, municipalities, regulators, and other stakeholders to further support wildfire risk reduction efforts associated with electrical infrastructure. These include streamlined approvals and permitting processes for the removal of hazard trees posing elevated wildfire or reliability risk, increased flexibility to manage vegetation outside traditional utility rights-of-way where wildfire consequences to communities or critical infrastructure may be significant, enhanced sharing of information related to fuel loading conditions and high-risk vegetation areas, support for strategic fuel reduction projects adjacent to electrical infrastructure and critical community assets, and improved coordination of FireSmart initiatives and Community Wildfire Protection Plans with utility vegetation management programs.

There is also an opportunity to strengthen collaboration with municipalities regarding urban forestry and vegetation planting practices. While NS Power has worked collaboratively with municipalities, including Halifax Regional Municipality, to develop lists of utility-compatible tree species that are less likely to create long-term conflicts with overhead electrical infrastructure, opportunities remain to further align tree planting programs with electrical system reliability and wildfire mitigation objectives. Increased use of compatible vegetation beneath and near power lines, combined with greater consideration of mature tree height, growth characteristics, and proximity to critical infrastructure, can help reduce future vegetation-related reliability issues, wildfire ignition risks, and vegetation management costs while supporting municipal urban canopy objectives.

Beyond utility-specific vegetation management activities, broader landscape-level fuel management can further reduce wildfire consequences for communities and critical infrastructure. Opportunities exist for collaboration on strategic fuel reduction projects, fuel breaks near communities, forest management activities adjacent to critical infrastructure, and expanded FireSmart initiatives. These actions have the potential to reduce wildfire intensity and spread, improve public safety, and enhance the resilience of both electrical infrastructure and surrounding communities. Continued collaboration between utilities, municipalities, regulators, environmental agencies, emergency management organizations, Indigenous communities, and government departments can help ensure wildfire risks are managed using a balanced approach that considers public safety, environmental stewardship, system reliability, and community resilience.

Additional Investment Requirement

NS Power continues to fund wildfire mitigation through its approved capital and operating programs, with investments prioritized using asset condition, reliability, criticality, and wildfire risk information. However, within the current funding and cost-recovery framework, the Company faces significant challenges with recovering any incremental costs required to materially accelerate or expand wildfire mitigation strategies beyond approved program levels.

Further reductions in wildfire risk, including a faster pace of vegetation management, corridor widening, system hardening, advanced inspection and detection technologies, and enhanced situational awareness, would therefore require additional funding or cost-sharing from other sources. Potential mechanisms could include federal or provincial climate adaptation and disaster-mitigation programs, targeted government grants, partnerships with municipalities or other public agencies, and regulatory mechanisms that provide timely recovery of prudently incurred incremental costs.

Any incremental funding would be directed to the highest-risk and highest-value opportunities identified through wildfire risk mapping, ignition and near-miss analysis, asset risk profiles, and operational experience. Funding arrangements should be stable and multi-year to support efficient program delivery, while including appropriate governance, performance measures, reporting, and post-implementation review. Without an additional funding pathway, the pace and scale of further wildfire risk reduction will remain constrained by NS Power's approved capital and operating plans and the need to balance wildfire mitigation with other safety, reliability, affordability, and regulatory obligations.

10.0 Resources for Wildfire Prevention and Mitigation Best Practices

NS Power continues to engage with electric utilities and other stakeholders to ensure its proactive approach to wildfire risk management is aligned and/or leading industry practices. NS Power is engaged with Electricity Canada's Climate Change Adaptation Committee where wildfire-related work is discussed and shared with other Canadian utilities. NS Power is also working with Electricity Canada's Best Practices Transmission Committee (BPTC), who have been drafting an updated Utilities Wildfire Mitigation Best Management Practices Guide. In addition, NS Power is a member of several groups with the Centre for Energy Advancement Through Technological Innovation (CEATI), such as the Asset Management in Generation (AMIG), Overhead Transmission Equipment (OTE) group, and the Vegetation Management group that discuss and collaborate on various climate adaptation best practices, such as wildfire mitigation

plans. CEATI has representation from utilities across North America and internationally. NS Power also contributes to the development of standards through the Canadian Standards Association (CSA) which is incorporating climate risk into its standards, including those which guide distribution system design.

From the Electricity Canada (formerly CEA) guidelines, it is advised for utilities to develop a comprehensive Wildfire Prevention, Preparedness, and Response plan that incorporates best practices. The best practices that were reviewed include: the CEA Wildfire Mitigation Guide⁹, the BPA 2021 Wildfire Mitigation Plan¹⁰ and the SDG&E 2020-2022 Wildfire Mitigation Plan.¹¹ NS Power also engages with other member utilities of the EEI and had participated in Wildfire Mitigation Summits with PG&E. The Wildfire Mitigation Plan (WMP) is reviewed on an annual basis. Reviews consider wildfire activity, asset inspection outcomes, operational performance, post-event assessments, and emerging industry best practices. Updates are incorporated as required to support continuous improvement.

⁹ CEA, 'Utility Wildfire Mitigation Guide', <https://electricity.ca/wp-content/uploads/2020/05/WildfireMitigationGuide.pdf>, 2020

¹⁰ Bonneville Power Administration, 'BPA 2021 Wildfire Mitigation Plan', <https://www.bpa.gov/news/pubs/GeneralPublications/BPA-Wildfire-Mitigation-Plan.pdf>, 2021

¹¹ San Diego Gas & Electric Company, '2020-2022 Wildfire Mitigation Plan Update', [Microsoft Word - SDGE 2021 WMP Update DRAFTv2](#), 2021